
The MINOR PLANET CIRCULARS/MINOR PLANETS AND COMETS are published, on behalf of
Commission 20 of the International Astronomical Union, usually in batches

on the date of each full moon, by:

Minor Planet Center, Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.

IAUSUBS@CFA.HARVARD.EDU or FAX 617-495-7231 (subscriptions)

BMARSDEN@CFA.HARVARD.EDU or GWILLIAMS@CFA.HARVARD.EDU (science)

Phone 617-495-7244/7440/7444 (for emergency use only).

World-Wide Web address <http://cfa-www.harvard.edu/iau/mpc.html>

Brian G. Marsden, Director

Gareth V. Williams, Associate Director

© Copyright 1998 Minor Planet Center

Syuichi Nakano, Liaison in Japan

EDITORIAL NOTICE

The following item is reprinted from *IAUC* 6811: “The IAU Small Bodies Names Committee, after more than 15 weeks of deliberation, has decided that the comet announced in the third item on *IAUC* 6754 and discussed further on *IAUC* 6759 is to be named P/1997 T3 (Lagerkvist-Carsenty). At the same time, it was agreed that the comet announced on *IAUC* 6677, and for which a name was indicated on *IAUC* 6681, will be *renamed* C/1997 L1 (Zhu-Balam). Although the renaming of a comet is not something to be taken lightly, the Committee wishes to make the point that these two cases, in effect very similar to each other, are quite unlike others that have heretofore arisen. Although there are many examples of comets judged by their initial discoverers to be asteroidal, yet found by subsequent observers to be cometary, there was no reason to believe, from the apparent sky positions and motions available, that C/1997 L1 was different from the main-belt minor planets reported in the same batch of data, or that P/1997 T3 was not a Trojan of the type being surveyed at the time. It is therefore reasonable to name these two comets, not only for the people who drew attention to the objects themselves, but also for the observers who recognized the physical cometary characteristics of the objects and publicized this fact in a timely manner. In appreciating that modern CCD and computer technology renders it likely that similar situations will arise in the future, the Committee hastens to point out that, if the initial positional information shows an apparently asteroidal object to be dynamically unusual, possibly—but not necessarily—by the time the discovery has been widely publicized, an observer who then recognizes cometary characteristics has no claim for recognition in the comet’s name.”

Last month’s record number of observations published has again been broken, as more than 26 700 observations are being published in the *MPCs* and *MPSs* this month. Although a system has been set up whereby the observations made by the large NEO-search programs are received, identified (when possible) and linked at the Minor Planet Center on a daily basis, other observers are reminded that, in the interests of efficiency, they should generally report in a single communication the observations of unidentified minor planets (or uncertain identifications of minor planets, particularly those previously observed at a single opposition or that are far from their predicted positions) made on multiple nights and use a consistent notation when doing so. It is sufficient to interpret “multiple nights” as meaning two nearby nights (which can be consecutive). We mention this point because one new observer refrained from reporting *any* observations of two of his new discoveries until he had observed them every few nights for 4–5 *months*. While this simplified the work of the Minor Planet Center enormously, he was lucky not to have lost these discoveries to others in the mean time; as it happened, he was credited as the

principal-opposition discoverer of the brighter object, for which past observations were subsequently identified. On the other hand, if an observer relies on the Minor Planet Center or another observer to link observations of a new discovery on the first two nights (except, of course, for NEO candidates placed in the WWW on The NEO Confirmation Page), it should be understood that the Minor Planet Center or that other observer is a participant in the discovery process.

In addition to acknowledging the work of the members of the Small Bodies Names Committee on the new names of minor planets appearing in the current batch of *MPCs*, the Minor Planet Center wishes to recognize the contribution by Susan Russell, a partner in The Russell Mark Group, of Albany, California, in researching and editing several of the citations. The Group is involved in the process of naming new companies and commercial products, and we welcome her professional experience in this area and her interest in the naming of minor planets.

NEW OBSERVATORY CODES

The following listing is a continuation to that on *MPC* 31045. 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	$\rho \cos \phi'$	$\rho \sin \phi'$	
144	1.6661	0.65549	+0.75268	Bray et Lu
428	153.3970	0.88271	−0.46837	Reedy Creek
468	13.3296	0.74652	+0.66349	Astronomical Observatory, Campo Catino
633	9.9339	0.71930	+0.69238	Romito
681	245.8858	0.62954	+0.77459	Calgary
699	248.6433	0.81938	+0.57193	Lowell Observatory-LONEOS
757	280.0050	0.8096	+0.5851	High Point

CORRECTED OBSERVATIONS

The following observations correct those previously published.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Mag.	N Obs.
1997 UF ₇	* 1997 10 27.27219		04 34 50.51	+23 25 46.3	<i>MPS</i>	132 18.5 V	1 721
1997 UF ₇	1997 10 27.32315		04 34 48.91	+23 25 58.5	<i>MPS</i>	132 18.6 V	1 721
1997 UF ₇	1997 10 28.22346		04 34 21.55	+23 29 26.9	<i>MPS</i>	132 18.7 V	1 721
1997 UF ₇	1997 10 28.27193		04 34 20.04	+23 29 38.3	<i>MPS</i>	132 18.3 V	1 721
(253)	1995 05 08.12258		10 02 10.52	+10 08 28.4	<i>MPC</i> 25708		2 711

(253)	1995 05 08.15045	10 02 11.02	+10 08 28.3	MPC25708	2 711
(253)	1995 05 09.12593	10 02 30.07	+10 08 22.1	MPC25708	2 711
(253)	1995 05 09.13732	10 02 30.27	+10 08 22.4	MPC25708	2 711
(253)	1995 05 31.13068	10 13 36.85	+09 40 15.2	MPC25611	711
(253)	1995 05 31.14359	10 13 37.34	+09 40 13.4	MPC25611	711
(253)	1995 06 01.12037	10 14 16.45	+09 37 54.0	MPC25611	711
(253)	1995 06 01.13884	10 14 17.18	+09 37 51.3	MPC25611	711
(253)	1995 06 25.13353	10 33 35.01	+08 16 24.9	MPC25611	711
(253)	1996 01 20.52781	14 49 30.01	-13 21 22.7	MPC26864	711
(253)	1996 01 20.53084	14 49 30.20	-13 21 23.0	MPC26864	711
(253)	1996 01 21.52206	14 50 31.74	-13 24 04.2	MPC26864	711
(253)	1996 01 21.52507	14 50 31.93	-13 24 04.5	MPC26864	711
(253)	1996 01 22.52324	14 51 33.30	-13 26 41.6	MPC26864	711
(253)	1996 01 22.52626	14 51 33.48	-13 26 42.1	MPC26864	711
(433)	1995 05 06.47848	22 38 47.32	-08 07 11.7	MPC25708	2 711
(433)	1995 05 06.48188	22 38 47.68	-08 07 08.6	MPC25708	2 711
(433)	1995 05 31.44932	23 19 43.06	-01 49 53.1	MPC25611	711
(433)	1995 05 31.45260	23 19 43.37	-01 49 50.1	MPC25611	711
(433)	1995 05 31.45622	23 19 43.69	-01 49 46.7	MPC25611	711
(433)	1995 05 31.45948	23 19 43.97	-01 49 43.8	MPC25611	711
(433)	1995 06 01.44575	23 21 13.86	-01 34 28.8	MPC25611	711
(433)	1995 06 01.45187	23 21 14.40	-01 34 23.2	MPC25611	711
(433)	1995 06 01.45554	23 21 14.73	-01 34 19.8	MPC25611	711
(433)	1995 06 24.42818	23 53 07.51	+04 27 08.0	MPC25611	711
(433)	1995 06 25.43206	23 54 22.15	+04 43 11.3	MPC25611	711
(433)	1995 06 25.43488	23 54 22.35	+04 43 14.0	MPC25611	711
(433)	1995 06 26.43659	23 55 35.95	+04 59 15.9	MPC25611	711
(433)	1995 06 26.44029	23 55 36.23	+04 59 19.6	MPC25611	711
(433)	1995 07 25.44221	00 23 16.92	+12 51 19.0	MPC25611	711
(433)	1995 07 25.44512	00 23 17.02	+12 51 21.8	MPC25611	711
(433)	1995 07 26.41825	00 23 52.80	+13 07 22.8	MPC25611	711
(433)	1995 07 27.44843	00 24 28.68	+13 24 20.0	MPC25611	711
(433)	1995 08 26.33001	00 24 34.10	+21 18 42.5	MPC25611	711
(433)	1995 08 26.33267	00 24 33.99	+21 18 44.6	MPC25611	711
(433)	1995 08 28.31936	00 23 05.62	+21 46 48.5	MPC25611	711
(433)	1995 09 21.26349	23 49 25.05	+25 37 09.8	MPC25708	2 711
(433)	1995 09 21.26778	23 49 24.54	+25 37 10.6	MPC25708	2 711
(433)	1995 10 25.22678	22 54 07.52	+22 43 41.3	MPC26116	711
(433)	1995 10 25.22950	22 54 07.38	+22 43 39.5	MPC26116	711
(433)	1995 10 26.13750	22 53 26.11	+22 34 09.7	MPC26116	711
(433)	1995 10 26.14383	22 53 25.82	+22 34 06.1	MPC26116	711
(433)	1995 10 26.14967	22 53 25.51	+22 34 02.3	MPC26116	711
(433)	1995 11 28.04785	23 04 20.86	+18 09 22.1	MPC26864	711
(433)	1995 11 28.05051	23 04 21.05	+18 09 21.5	MPC26864	711
(433)	1995 11 29.05841	23 05 39.21	+18 05 22.6	MPC26864	711
(433)	1995 11 29.06113	23 05 39.40	+18 05 21.9	MPC26864	711
(433)	1996 01 21.13826	01 07 34.16	+19 40 20.0	MPC26864	711
(433)	1996 01 21.14102	01 07 34.66	+19 40 20.7	MPC26864	711
(433)	1996 01 22.12873	01 10 39.28	+19 45 17.3	MPC26864	711
(433)	1996 01 22.13145	01 10 39.79	+19 45 18.1	MPC26864	711
(2019)	1995 05 08.46164	19 05 39.25	-21 54 12.8	MPC25708	2 711
(2019)	1995 05 09.45282	19 06 19.74	-21 49 58.6	MPC25708	2 711
(2019)	1995 05 31.40828	19 11 58.03	-20 19 36.5	MPC25612	711

(2019)	1995 05 31.41730	19 11 57.90	-20 19 34.5	MPC25612	711
(2019)	1995 06 01.40515	19 11 46.78	-20 15 50.1	MPC25612	711
(2019)	1995 06 01.41291	19 11 46.66	-20 15 48.5	MPC25612	711
(2019)	1995 06 24.35893	18 58 09.16	-19 01 23.7	MPC25612	711
(2019)	1995 06 25.32847	18 57 16.62	-18 58 49.8	MPC25612	711
(2019)	1995 06 26.35154	18 56 20.08	-18 56 10.4	MPC25612	711
(2019)	1995 07 25.28266	18 31 27.37	-18 04 54.7	MPC25612	711
(2019)	1995 07 27.27131	18 30 23.11	-18 03 08.8	MPC25612	711
(2019)	1995 08 26.18864	18 31 52.28	-17 56 53.4	MPC25612	711
(2019)	1995 08 26.19796	18 31 52.58	-17 56 53.4	MPC25612	711
(2019)	1995 08 27.19983	18 32 29.27	-17 57 00.0	MPC25612	711
(2019)	1995 08 27.20977	18 32 29.61	-17 57 00.1	MPC25612	711
(2019)	1995 08 28.20913	18 33 08.29	-17 57 06.1	MPC25612	711
(2019)	1995 08 28.21905	18 33 08.65	-17 57 06.9	MPC25612	711
(2019)	1995 10 24.14940	19 49 19.16	-16 40 26.4	MPC26116	711
(2019)	1995 10 24.15235	19 49 19.46	-16 40 25.6	MPC26116	711
(2019)	1995 10 25.12576	19 51 04.25	-16 36 47.9	MPC26116	711
(2019)	1995 10 25.12872	19 51 04.57	-16 36 47.0	MPC26116	711
(2968)	1995 05 09.11472	08 47 50.16	+09 43 28.8	MPC25884	2 711
(3840)	1996 01 20.53543	14 53 19.22	-14 53 46.2	MPC26865	711
(3840)	1996 01 21.52977	14 55 00.33	-15 01 55.0	MPC26865	711
(3840)	1996 01 21.53585	14 55 00.95	-15 01 58.1	MPC26865	711
(3840)	1996 01 22.53089	14 56 41.62	-15 10 02.1	MPC26865	711
(3840)	1996 01 22.53708	14 56 42.23	-15 10 05.3	MPC26865	711

Note 1: time changed by +1 hour. 2: time slightly corrected.

DELETED OBSERVATIONS

The following observations are to be deleted.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Obs.
1997 YO ₁	1998 01 04.63484	07 33 19.45	+11 42 34.2	MPS	336	327
1997 YO ₁	1998 01 04.64453	07 33 18.93	+11 42 37.0	MPS	336	327
1997 YO ₁	1998 01 04.65421	07 33 18.44	+11 42 39.4	MPS	336	327

IDENTIFICATION CHANGES

Continuation to MPC 31046.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	Obs.
1976 UB ₂₁	* 1976 10 25.31607	08 24 33.71	+10 15 26.7	1976 UT ₅			809
1982 RN ₃	* 1982 09 13.83403	22 17 05.65	-09 28 44.7	1982 PM	17.5		095
1987 SM ₃₀	* 1987 09 27.88465	00 12 49.64	+00 03 58.9	1987 SL ₂₈	16.0	V	095
1989 EM ₁₂	* 1989 03 06.39757	11 37 47.21	+00 35 40.5	1989 ER			675
1991 VE ₁₇	* 1991 11 12.20347	04 21 04.70	+09 44 57.1	1991 VC ₇	18.8		809
1991 VE ₁₇	1991 11 12.21667	04 21 04.21	+09 44 56.1	1991 VC ₇			809
1991 VE ₁₇	1991 11 12.22986	04 21 03.71	+09 44 55.3	1991 VC ₇			809
1994 HU ₁	* 1994 04 17.69271	13 54 24.18	+02 38 03.4	1994 GK ₁			896
1994 HU ₁	1994 04 17.71644	13 54 23.10	+02 38 08.4	1994 GK ₁			896
1996 UG ₅	* 1996 10 17.44656	02 41 20.74	+17 09 18.3	1996 TU ₁₇			691
1996 UG ₅	1996 10 17.46846	02 41 19.71	+17 09 13.4	1996 TU ₁₇	17.5	V	691
1996 UG ₅	1996 10 17.49045	02 41 18.69	+17 09 08.8	1996 TU ₁₇			691
1997 YH ₂₀	* 1997 12 30.93125	01 51 19.93	+14 26 08.2	1997 UU ₁₀	19.1	V	557
1997 YH ₂₀	1997 12 30.94564	01 51 20.21	+14 26 10.0	1997 UU ₁₀			557

1997 YJ ₂₀	*	1997 12 29.72633	07 48 58.88	+24 20 30.7	1997 YV ₁₀	327
1997 YJ ₂₀		1997 12 29.73604	07 48 58.27	+24 20 31.6	1997 YV ₁₀	327
1997 YJ ₂₀		1997 12 29.74563	07 48 57.71	+24 20 32.3	1997 YV ₁₀	18.1 327
1998 AD ₁₁	*	1998 01 04.65925	07 42 32.82	+24 19 37.6	1997 YN ₁₈	327
1998 AD ₁₁		1998 01 04.66872	07 42 32.15	+24 19 37.7	1997 YN ₁₈	17.7 327
1998 AD ₁₁		1998 01 04.67818	07 42 31.55	+24 19 38.1	1997 YN ₁₈	327

NUMBERING OF A PERIODIC COMET

Continuation to the list on *MPC* 30933.

135P/1992 G2 = 1998 B1 (Shoemaker-Levy 8)

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

045	Vienna.	0.36-m astrograph + CCD.	Observer P. Jackson.
046	Kleť.	0.57-m $f/5.2$ reflector + CCD.	Observers J. Tichá, M. Tichý and Z. Moravec.
118	Modra.	0.6-m $f/5.5$ reflector + CCD.	Observers A. Galád, P. Kolény, L. Kornoš and A. Pravda.
126	Monte Viseggi.	0.40-m $f/6$ reflector + CCD.	Observers P. Pietrapiana, L. Sannino, A. Bondielli and L. Zannoni.
127	Bornheim.	0.19-m $f/4$ reflector + CCD.	Observer N. Ehring.
143	Gnosca.	0.20-m $f/6.3$ reflector.	Observer S. Sposetti.
249	SOHO.	SOHO-LASCO coronagraph C3.	Observers D. A. Biesecker and C. St. Cyr. Reduction by G. V. Williams.
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 $f/6.0$ reflector + CCD.	Observer H. Abe.
402	Dynic Astronomical Observatory.	0.60-m $f/4.0$ reflector + CCD.	Observer A. Sugie.
403	Kani.	0.28-m $f/6.3$ Schmidt-Cassegrain + CCD.	Observer Y. Mizuno.
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.
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.	Observer E. Meyer.
557	Ondřejov.	0.65-m $f/3.6$ reflector + CCD.	Observers P. Pravec and L. Šarounová.
561	Piszkéstető.	0.60-m Schmidt telescope + CCD.	Observer L. Kiss.
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.
587	Sormano.	0.5-m reflector + CCD.	Observers A. Testa, P. Chiavenna, P. Sicoli, G. Ventre and M. Cavagna.
691	Kitt Peak.	0.91-m Spacewatch telescope.	Observers T. Gehrels, J. Larsen, J. Montani and J. V. Scotti.
693	Lunar and Planetary Laboratory, Catalina Station.	1.5-m reflector + CCD.	Observer C. W. Hergenrother.

696	Mt. Hopkins.	1.2-m reflector + CCD.	Observer C. W. Hergenrother.
700	Chinle.	0.30-m $f/10$ Schmidt-Cassegrain + CCD.	Observer J. Bruton.
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 J. Sharma.
735	Needville.	0.91-m reflector + CCD.	Observer W. G. Dillon.
758	Cocoa.	0.3-m reflector + CCD.	Observer I. Griffin.
844	Los Molinos.	0.35-m $f/6.4$ reflector + CCD.	Observers T. Gallardo, N. Sosa, A. Galli, J. C. Tulic, O. Mendez and J. Scheck.
867	Saji Observatory.	1.03-m $f/4.8$ reflector + CCD.	Observers M. Yamanishi, A. Miyamoto, M. Aimoto and T. Oribe.
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, M. Hoffmann and G. Hahn.
954	Teide Observatory.	0.82-m $f/11.3$ reflector + CCD.	Observer R. Casas.
966	Church Stretton.	0.25-m Schmidt-Cassegrain + CCD.	Observer S. P. Laurie.
970	Chelmsford.	0.30-m $f/5.25$ reflector + CCD.	Observer N. D. James.

Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N Obs.
C/1995 O1 (Hale-Bopp)						
C/1995 O1	1995 08 28.26142		18 22 59.0	-30 51 42		566
C/1995 O1	1995 08 29.33835		18 22 32.9	-30 48 48		566
C/1995 O1	1995 08 29.35660		18 22 32.4	-30 48 47		566
C/1995 O1	1995 08 29.39712		18 22 31.7	-30 48 42		566
C/1995 O1	1995 08 30.27159		18 22 11.1	-30 46 17		566
C/1995 O1	1995 08 30.31320		18 22 10.2	-30 46 10		566
C/1995 O1	1995 08 30.31409		18 22 10.5	-30 46 12		566
C/1995 O1	1995 08 30.34180		18 22 09.6	-30 46 06		566
C/1995 O1	1995 08 30.40602		18 22 08.1	-30 45 55		566
C/1995 O1	1997 03 12.16076		22 37 48.17	+41 20 10.9		045
C/1995 O1	1997 03 12.16667		22 37 51.21	+41 20 22.8		045
C/1995 O1	1997 03 22.75868		00 16 35.58	+45 40 17.9		045
C/1995 O1	1997 03 27.78819		01 07 11.04	+45 38 32.1		045
C/1995 O1	1997 04 03.82361		02 12 25.21	+43 22 33.5		045
C/1995 O1	1997 04 03.82951		02 12 28.08	+43 22 22.2		045
C/1995 O1	1997 04 07.78958		02 44 03.98	+41 15 48.6		045
C/1995 O1	1997 04 07.80035		02 44 08.81	+41 15 25.5		045
C/1995 O1	1997 04 18.81181		03 51 38.03	+34 02 11.7		045
C/1995 O1	1997 04 23.82986		04 14 22.40	+30 38 07.7		045
C/1995 O1	1997 04 24.80833		04 18 21.81	+29 59 04.3		045
C/1995 O1	1997 05 04.81319		04 52 50.02	+23 41 52.2		045
C/1995 O1	1998 01 16.46779		05 39 10.38	-63 49 58.8	13.2 N	422
C/1995 O1	1998 01 16.46842		05 39 10.28	-63 49 58.8	13.1 N	422
C/1995 O1	1998 01 16.46907		05 39 10.22	-63 49 58.7	13.2 N	422
C/1995 O1	1998 01 17.46094		05 37 11.92	-63 44 51.1	13.8 N	422
C/1995 O1	1998 01 17.46182		05 37 11.83	-63 44 50.7	13.8 N	422
C/1995 O1	1998 01 17.46270		05 37 11.73	-63 44 50.5	13.9 N	422
C/1995 O1	1998 01 22.48166		05 27 55.10	-63 14 48.4	13.8 N	422
C/1995 O1	1998 01 22.48265		05 27 55.01	-63 14 48.1	13.6 N	422
C/1995 O1	1998 01 22.48366		05 27 54.93	-63 14 47.1	13.4 N	422
C/1995 O1	1998 01 23.58092		05 26 02.78	-63 07 22.9	13.8 N	422
C/1995 O1	1998 01 23.58178		05 26 02.67	-63 07 22.5	13.8 N	422

C/1995 O1	1998 01 23.58265	05 26 02.58	-63 07 22.2	13.8 N	422
C/1995 O1	1998 01 26.49802	05 21 22.23	-62 46 23.6		426
C/1995 O1	1998 01 26.50457	05 21 21.61	-62 46 20.8		426
C/1995 O1	1998 01 26.51170	05 21 20.95	-62 46 17.6	10.7 N	426
C/1995 O1	1998 01 28.49805	05 18 24.29	-62 31 02.4	12.9 N	422
C/1995 O1	1998 01 28.49913	05 18 24.25	-62 31 01.9	12.9 N	422
C/1995 O1	1998 01 31.22031	05 14 40.78	-62 08 59.9		844
C/1995 O1	1998 01 31.24916	05 14 38.40	-62 08 46.2		844
C/1995 O1	1998 01 31.27022	05 14 36.73	-62 08 35.5		844
C/1995 O1	1998 02 01.45823	05 13 06.38	-61 58 40.4	12.7 N	422
C/1995 O1	1998 02 01.45922	05 13 06.32	-61 58 39.8	12.7 N	422
C/1995 O1	1998 02 01.46022	05 13 06.23	-61 58 39.2	12.6 N	422
C/1995 O1	1998 02 08.26069	05 05 44.20	-60 58 13.9	10.2 T	844
C/1995 O1	1998 02 08.26882	05 05 43.76	-60 58 10.0	10.1 T	844
C/1995 O1	1998 02 08.27998	05 05 43.14	-60 58 03.7	10.1 T	844

C/1996 J1 (Evans-Drinkwater)

C/1996 J1-B	1998 01 15.75678	02 08 14.93	+31 52 00.9		118
C/1996 J1-B	1998 01 15.76005	02 08 15.00	+31 52 00.1		118
C/1996 J1-B	1998 01 15.76380	02 08 15.05	+31 51 59.3	16.5 T	118
C/1996 J1-B	1998 01 16.45667	02 08 27.13	+31 49 16.3	16.3 T	403
C/1996 J1-B	1998 01 16.46812	02 08 27.30	+31 49 13.8		403
C/1996 J1-B	1998 01 16.47865	02 08 27.61	+31 49 12.2	16.3 T	360
C/1996 J1-B	1998 01 16.48299	02 08 27.68	+31 49 11.1		360
C/1996 J1-B	1998 01 18.56674	02 09 06.57	+31 41 17.9		897
C/1996 J1-B	1998 01 18.58063	02 09 06.80	+31 41 18.7		897
C/1996 J1-B	1998 01 18.58690	02 09 06.92	+31 41 16.0	16.7 T	897
C/1996 J1-A	1998 01 23.83567	02 10 48.25	+31 23 10.9		118
C/1996 J1-B	1998 01 23.83567	02 10 59.52	+31 23 28.0		118
C/1996 J1-B	1998 01 23.84157	02 10 59.67	+31 23 26.7		118
C/1996 J1-A	1998 01 23.84575	02 10 48.50	+31 23 08.7	18.1 T	118
C/1996 J1-B	1998 01 23.84974	02 10 59.86	+31 23 25.5	16.8 T	118
C/1996 J1-B	1998 01 27.84569	02 12 38.82	+31 11 39.6		118
C/1996 J1-B	1998 01 27.85498	02 12 39.08	+31 11 37.9	16.7 T	118
C/1996 J1-B	1998 01 29.46670	02 13 22.68	+31 07 14.5	17.0 T	403
C/1996 J1-B	1998 01 29.47461	02 13 22.34	+31 07 19.1		403
C/1996 J1-B	1998 01 29.47881	02 13 22.33	+31 07 17.9		403
C/1996 J1-B	1998 01 29.80938	02 13 31.46	+31 06 27.1		118
C/1996 J1-B	1998 01 29.81942	02 13 31.73	+31 06 25.6	16.9 T	118
C/1996 J1-B	1998 01 29.87634	02 13 33.24	+31 06 16.7		118
C/1996 J1-B	1998 01 30.76984	02 13 58.09	+31 04 02.4		118
C/1996 J1-B	1998 01 30.78319	02 13 58.51	+31 04 00.4	16.7 T	118
C/1996 J1-B	1998 01 31.77526	02 14 26.65	+31 01 35.7	16.9 T	118
C/1996 J1-B	1998 01 31.78693	02 14 26.98	+31 01 34.1		118
C/1996 J1-B	1998 02 04.85208	02 16 28.61	+30 52 38.6		118
C/1996 J1-B	1998 02 04.85950	02 16 28.82	+30 52 37.2	16.7 T	118
C/1996 J1-B	1998 02 05.89243	02 17 01.27	+30 50 35.4		1 118
C/1996 J1-B	1998 02 05.89927	02 17 01.47	+30 50 34.3	16.6 T	1 118
C/1996 J1-B	1998 02 08.74890	02 18 34.12	+30 45 27.0	17.0 T	046
C/1996 J1-B	1998 02 08.75140	02 18 34.24	+30 45 26.1		046
C/1996 J1-B	1998 02 08.75612	02 18 34.33	+30 45 26.0		046

C/1996 P2 (Russell-Watson)

C/1996 P2	1998 02 02.15505	03 05 43.60	-07 07 38.3	22.8 N	691
C/1996 P2	1998 02 02.15946	03 05 43.64	-07 07 38.3	20.8 T	691
C/1996 P2	1998 02 02.16392	03 05 43.66	-07 07 36.4	20.4 T	691

C/1997 BA₆ (Spacewatch)

C/1997 BA ₆	1998 01 18.04591	09 32 15.95	-05 03 54.3	17.2 T	118
C/1997 BA ₆	1998 01 18.05161	09 32 15.75	-05 03 55.2		118
C/1997 BA ₆	1998 01 18.05506	09 32 15.62	-05 03 55.7		118
C/1997 BA ₆	1998 01 21.63721	09 30 07.97	-05 13 03.7	17.3 T	355
C/1997 BA ₆	1998 01 21.64439	09 30 07.67	-05 13 04.7		355
C/1997 BA ₆	1998 01 21.64897	09 30 07.45	-05 13 05.6		355
C/1997 BA ₆	1998 01 24.08365	09 28 37.74	-05 18 49.4		118
C/1997 BA ₆	1998 01 24.09124	09 28 37.46	-05 18 50.4		118
C/1997 BA ₆	1998 01 24.09560	09 28 37.29	-05 18 51.0	17.4 T	118
C/1997 BA ₆	1998 01 25.58336	09 27 41.49	-05 22 06.9		897
C/1997 BA ₆	1998 01 25.63030	09 27 39.65	-05 22 14.7	17.8 T	897
C/1997 BA ₆	1998 01 26.07488	09 27 22.78	-05 23 12.9		118
C/1997 BA ₆	1998 01 26.08550	09 27 22.36	-05 23 14.2	17.1 T	118
C/1997 BA ₆	1998 01 26.92535	09 26 50.43	-05 24 59.4		587
C/1997 BA ₆	1998 01 26.92951	09 26 50.27	-05 25 00.3		587
C/1997 BA ₆	1998 01 26.94288	09 26 49.80	-05 25 01.4	17.5 T	587
C/1997 BA ₆	1998 01 29.71285	09 25 02.59	-05 30 33.2	17.1 T	360
C/1997 BA ₆	1998 01 29.71736	09 25 02.41	-05 30 33.6		360
C/1997 BA ₆	1998 02 02.63021	09 22 27.88	-05 37 27.0	17.0 T	360
C/1997 BA ₆	1998 02 02.63507	09 22 27.69	-05 37 27.3		360
C/1997 BA ₆	1998 02 03.93318	09 21 35.71	-05 39 30.7	17.0 T	046
C/1997 BA ₆	1998 02 03.93582	09 21 35.60	-05 39 31.6		046
C/1997 BA ₆	1998 02 03.93823	09 21 35.52	-05 39 31.4		046
C/1997 BA ₆	1998 02 04.01736	09 21 32.28	-05 39 38.2		118
C/1997 BA ₆	1998 02 04.02484	09 21 31.97	-05 39 38.8	17.2 T	118
C/1997 BA ₆	1998 02 05.00863	09 20 52.40	-05 41 08.4	17.2 T	046
C/1997 BA ₆	1998 02 05.01066	09 20 52.32	-05 41 08.4		046
C/1997 BA ₆	1998 02 05.01280	09 20 52.26	-05 41 08.4		046
C/1997 BA ₆	1998 02 05.01395	09 20 52.19	-05 41 08.1		118
C/1997 BA ₆	1998 02 05.01652	09 20 52.09	-05 41 08.3		118
C/1997 BA ₆	1998 02 05.02102	09 20 51.90	-05 41 08.8	17.3 T	118

P/1997 C1 (Gehrels)

P/1997 C1	1997 12 31.52037	11 55 34.34	-02 15 37.8	23.7 N	691
P/1997 C1	1997 12 31.53273	11 55 34.29	-02 15 39.1	22.1 T	691
P/1997 C1	1997 12 31.54260	11 55 34.54	-02 15 39.0	22.1 T	691
P/1997 C1	1998 02 02.51598	11 53 43.57	-02 14 21.4	23.2 N	691
P/1997 C1	1998 02 02.52592	11 53 43.44	-02 14 22.1	21.9 T	691
P/1997 C1	1998 02 02.53563	11 53 43.38	-02 14 20.1	22.6 T	691

C/1997 D1 (Mueller)

C/1997 D1	1998 01 05.53929	03 25 21.06	-12 47 02.5	14.4 T	352
C/1997 D1	1998 01 05.54207	03 25 20.66	-12 47 03.4		352
C/1997 D1	1998 01 05.54485	03 25 20.24	-12 47 04.7		352
C/1997 D1	1998 01 12.88685	03 08 58.10	-13 15 59.9		046
C/1997 D1	1998 01 12.88815	03 08 57.97	-13 16 00.1		046
C/1997 D1	1998 01 12.88943	03 08 57.83	-13 16 00.2		046
C/1997 D1	1998 01 16.48924	03 02 26.63	-13 23 11.1	14.4 T	360

C/1997 D1	1998 01 16.49236	03 02 26.32	-13 23 11.5		360
C/1997 D1	1998 01 17.99678	02 59 58.86	-13 25 06.9	15.2 T	758
C/1997 D1	1998 01 17.99879	02 59 58.63	-13 25 06.9	15.2 T	758
C/1997 D1	1998 01 18.00573	02 59 57.96	-13 25 08.0	15.3 T	758
C/1997 D1	1998 01 18.55370	02 59 06.21	-13 25 40.0	15.0 T	897
C/1997 D1	1998 01 18.56097	02 59 05.52	-13 25 42.9		897
C/1997 D1	1998 01 23.80365	02 51 48.13	-13 27 46.7		2 118
C/1997 D1	1998 01 23.80962	02 51 47.70	-13 27 46.8	15.0 T	2 118
C/1997 D1	1998 01 25.51509	02 49 45.65	-13 27 19.6	15.0 T	897
C/1997 D1	1998 01 25.52050	02 49 45.39	-13 27 19.7		897
C/1997 D1	1998 01 26.01254	02 49 11.84	-13 27 07.8	15.7 N	758
C/1997 D1	1998 01 26.01687	02 49 11.53	-13 27 07.8	15.6 N	758
C/1997 D1	1998 01 26.01966	02 49 11.34	-13 27 08.6	15.5 N	758
C/1997 D1	1998 01 26.46602	02 48 41.53	-13 26 50.9		426
C/1997 D1	1998 01 26.47877	02 48 40.67	-13 26 50.8		426
C/1997 D1	1998 01 26.49088	02 48 39.86	-13 26 50.2	15.2 T	426
C/1997 D1	1998 01 28.04944	02 47 01.02	-13 25 54.1	15.8 T	758
C/1997 D1	1998 01 28.09723	02 46 58.00	-13 25 51.5	15.8 T	758
C/1997 D1	1998 01 28.09873	02 46 57.89	-13 25 52.0	15.8 T	758
C/1997 D1	1998 01 29.03383	02 46 02.20	-13 25 07.1	15.9 T	758
C/1997 D1	1998 01 29.05643	02 46 00.81	-13 25 05.6	15.8 T	758
C/1997 D1	1998 01 29.06454	02 46 00.31	-13 25 05.6	15.7 T	758
C/1997 D1	1998 01 30.45399	02 44 42.02	-13 23 46.9	14.5 T	360
C/1997 D1	1998 01 30.45712	02 44 41.83	-13 23 46.9		360
C/1997 D1	1998 01 30.47370	02 44 40.92	-13 23 45.9	15.8 T	402
C/1997 D1	1998 01 30.47648	02 44 40.76	-13 23 45.4		402
C/1997 D1	1998 01 30.47926	02 44 40.60	-13 23 45.4		402
C/1997 D1	1998 01 31.00868	02 44 12.25	-13 23 11.6	16.0 T	758
C/1997 D1	1998 01 31.01190	02 44 12.10	-13 23 11.5	15.6 T	758
C/1997 D1	1998 01 31.47104	02 43 47.92	-13 22 41.2		355
C/1997 D1	1998 01 31.47317	02 43 47.82	-13 22 40.4	16.4 T	355

P/1997 G1 (Montani)

P/1997 G1	1998 01 31.51540	11 07 00.34	+00 36 58.2	22.9 N	691
P/1997 G1	1998 02 01.76669	11 06 36.65	+00 38 19.9	18.6 T	867
P/1997 G1	1998 02 01.77331	11 06 36.51	+00 38 20.1		867
P/1997 G1	1998 02 01.77991	11 06 36.34	+00 38 20.9		867
P/1997 G1	1998 02 02.73715	11 06 17.58	+00 39 28.4	19.1 T	360
P/1997 G1	1998 02 02.74375	11 06 17.39	+00 39 28.8		360
P/1997 G1	1998 02 02.74931	11 06 17.30	+00 39 28.9		360

C/1997 H3 (SOHO)

C/1997 H3	1997 04 25.53558	02 25 24.8	+10 10 10		249
Geocentric position (AU)	+0.00557007	+0.00855053	+0.00332127		
C/1997 H3	1997 04 25.58767	02 25 01.5	+10 16 22		249
Geocentric position (AU)	+0.00556594	+0.00855543	+0.00332192		
C/1997 H3	1997 04 25.61903	02 24 46.0	+10 19 32		249
Geocentric position (AU)	+0.00556345	+0.00855837	+0.00332231		
C/1997 H3	1997 04 25.67378	02 24 19.0	+10 26 32		249
Geocentric position (AU)	+0.00555911	+0.00856351	+0.00332299		
C/1997 H3	1997 04 25.69809	02 24 04.0	+10 28 46		249
Geocentric position (AU)	+0.00555719	+0.00856579	+0.00332329		
C/1997 H3	1997 04 25.84402	02 22 47.3	+10 45 46		249
Geocentric position (AU)	+0.00554567	+0.00857943	+0.00332509		

C/1997 H3	1997 04 25.88770	02 22 23.4	+10 50 59		249
Geocentric position (AU)	+0.00554223	+0.00858350	+0.00332562		
C/1997 H3	1997 04 25.89032	02 22 22.4	+10 51 59		249
Geocentric position (AU)	+0.00554202	+0.00858375	+0.00332566		
C/1997 H3	1997 04 25.95155	02 21 45.5	+10 59 56		249
Geocentric position (AU)	+0.00553720	+0.00858945	+0.00332640		
C/1997 H3	1997 04 25.98975	02 21 21.6	+11 04 12		249
Geocentric position (AU)	+0.00553420	+0.00859300	+0.00332687		
C/1997 H3	1997 04 26.03142	02 21 00.0	+11 09 32		249
Geocentric position (AU)	+0.00553093	+0.00859687	+0.00332737		
C/1997 H3	1997 04 26.08002	02 20 28.2	+11 17 06		249
Geocentric position (AU)	+0.00552712	+0.00860138	+0.00332796		
C/1997 H3	1997 04 26.12657	02 19 58.5	+11 23 49		249
Geocentric position (AU)	+0.00552347	+0.00860569	+0.00332852		
C/1997 H3	1997 04 26.16337	02 19 32.2	+11 28 55		249
Geocentric position (AU)	+0.00552060	+0.00860909	+0.00332896		
C/1997 H3	1997 04 26.19216	02 19 12.9	+11 33 43		249
Geocentric position (AU)	+0.00551834	+0.00861176	+0.00332930		
C/1997 H3	1997 04 26.23976	02 18 43.0	+11 40 26		249
Geocentric position (AU)	+0.00551463	+0.00861615	+0.00332987		
C/1997 H3	1997 04 26.28161	02 18 14.7	+11 47 20		249
Geocentric position (AU)	+0.00551136	+0.00862001	+0.00333037		
C/1997 H3	1997 04 26.33767	02 17 33.0	+11 58 49		249
Geocentric position (AU)	+0.00550699	+0.00862518	+0.00333103		
C/1997 H3	1997 04 26.37935	02 17 04.4	+12 05 47		249
Geocentric position (AU)	+0.00550375	+0.00862901	+0.00333153		

C/1997 J1 (Mueller)

C/1997 J1	1998 01 16.53300	06 24 25.17	+31 14 51.5		403
C/1997 J1	1998 01 16.53730	06 24 24.60	+31 14 50.1	15.4 T	403
C/1997 J1	1998 01 16.54424	06 24 23.71	+31 14 43.9		355
C/1997 J1	1998 01 16.54623	06 24 23.40	+31 14 42.5	14.6 T	355
C/1997 J1	1998 01 16.54700	06 24 23.37	+31 14 41.8		403
C/1997 J1	1998 01 16.55000	06 24 22.89	+31 14 40.0		355
C/1997 J1	1998 01 16.60192	06 24 16.25	+31 14 05.7		897
C/1997 J1	1998 01 16.60951	06 24 15.25	+31 14 00.0	15.2 T	897
C/1997 J1	1998 01 17.81729	06 21 41.36	+31 00 11.6	16.0 T	504
C/1997 J1	1998 01 17.81873	06 21 41.16	+31 00 10.7		504
C/1997 J1	1998 01 23.99941	06 09 31.87	+29 48 46.9		118
C/1997 J1	1998 01 24.00597	06 09 31.15	+29 48 42.1	16.7 T	118
C/1997 J1	1998 01 26.26204	06 05 30.26	+29 22 37.7	17.5 T	700
C/1997 J1	1998 01 26.26616	06 05 29.91	+29 22 34.5	16.9 T	700
C/1997 J1	1998 01 26.27066	06 05 29.41	+29 22 31.6	17.1 T	700
C/1997 J1	1998 01 27.95024	06 02 38.95	+29 03 10.2	16.3 T	118
C/1997 J1	1998 01 27.95313	06 02 38.70	+29 03 08.6		118
C/1997 J1	1998 01 27.95530	06 02 38.42	+29 03 06.9		118
C/1997 J1	1998 01 28.53618	06 01 41.19	+28 56 28.6	16.5 T	403
C/1997 J1	1998 01 28.54750	06 01 40.07	+28 56 22.4		403
C/1997 J1	1998 01 28.54995	06 01 40.01	+28 56 17.6		403
C/1997 J1	1998 01 29.20286	06 00 36.80	+28 48 50.4	16.7 T	700
C/1997 J1	1998 01 29.21264	06 00 35.79	+28 48 44.5	16.5 T	700
C/1997 J1	1998 01 29.22201	06 00 34.90	+28 48 37.8	17.2 T	700
C/1997 J1	1998 02 01.84343	05 55 05.08	+28 07 42.8	17.0 T	118

C/1997 J1	1998 02 01.85014	05 55 04.47	+28 07 38.9		118
C/1997 J1	1998 02 02.58438	05 54 01.74	+27 59 29.0	15.8 T	360
C/1997 J1	1998 02 02.58750	05 54 01.48	+27 59 26.8		360
C/1997 J1	1998 02 03.88175	05 52 14.42	+27 45 08.3		118
C/1997 J1	1998 02 03.88904	05 52 13.81	+27 45 03.7		118
C/1997 J1	1998 02 03.89185	05 52 13.59	+27 45 01.7	16.3 T	118
C/1997 J1	1998 02 04.88646	05 50 54.26	+27 34 07.8		118
C/1997 J1	1998 02 04.89413	05 50 53.64	+27 34 03.1	16.5 T	118

C/1997 J2 (Meunier-Dupouy)

C/1997 J2	1998 01 11.69887	19 45 46.01	+38 53 51.0	12.8 T	540
C/1997 J2	1998 01 11.70164	19 45 46.32	+38 53 50.0		540
C/1997 J2	1998 01 11.70441	19 45 46.69	+38 53 47.5		540
C/1997 J2	1998 01 17.97749	19 58 50.93	+37 50 18.9	13.1 T	758
C/1997 J2	1998 01 17.98129	19 58 51.49	+37 50 16.7	13.2 T	758
C/1997 J2	1998 01 17.98824	19 58 52.50	+37 50 10.3	13.1 T	758
C/1997 J2	1998 01 20.37344	20 03 41.74	+37 27 31.9	12.5 T	402
C/1997 J2	1998 01 20.37552	20 03 42.02	+37 27 31.0		402
C/1997 J2	1998 01 20.37760	20 03 42.27	+37 27 29.7		402
C/1997 J2	1998 01 25.85414	20 14 28.93	+36 38 29.6		897
C/1997 J2	1998 01 25.85603	20 14 29.15	+36 38 29.0		897
C/1997 J2	1998 02 05.72175	20 34 38.14	+35 13 51.0		046
C/1997 J2	1998 02 05.72278	20 34 38.24	+35 13 50.7		046
C/1997 J2	1998 02 05.72476	20 34 38.46	+35 13 50.2		046

C/1997 L1 (Zhu-Balam)

C/1997 L1	1998 02 02.82309	17 08 20.27	+08 48 40.5	19.0 T	360
C/1997 L1	1998 02 02.82865	17 08 20.57	+08 48 44.4		360
C/1997 L1	1998 02 02.83438	17 08 20.67	+08 48 46.7		360
C/1997 L1	1998 02 04.83611	17 09 22.40	+09 05 05.3	18.7 T	360
C/1997 L1	1998 02 04.84063	17 09 22.43	+09 05 06.6		360
C/1997 L1	1998 02 04.84653	17 09 22.65	+09 05 09.8		360

C/1997 O1 (Tilbrook)

C/1997 O1	1998 01 20.52569	15 58 27.25	+41 51 20.7	16.9 T	696
C/1997 O1	1998 01 20.52956	15 58 27.39	+41 51 27.0	17.1 T	696
C/1997 O1	1998 01 30.83760	16 05 22.39	+47 03 02.5	17.7 T	897
C/1997 O1	1998 02 04.19505	16 07 38.65	+49 18 48.9		118
C/1997 O1	1998 02 04.19669	16 07 38.71	+49 18 52.0	17.3 T	118
C/1997 O1	1998 02 04.82188	16 07 56.19	+49 38 30.2	17.3 T	360
C/1997 O1	1998 02 04.82622	16 07 56.33	+49 38 37.6		360
C/1997 O1	1998 02 04.82986	16 07 56.35	+49 38 44.9		360
C/1997 O1	1998 02 05.15057	16 08 04.95	+49 48 47.6		118
C/1997 O1	1998 02 05.15594	16 08 05.09	+49 48 57.9	17.5 T	118

C/1997 P3 (SOHO)

C/1997 P3	1997 08 07.63973	08 52 36.2	+14 16 07		249
Geocentric position (AU)	-0.00378058	-0.00782674	-0.00380720		
C/1997 P3	1997 08 07.65292	08 52 53.0	+14 17 53		249
Geocentric position (AU)	-0.00378315	-0.00782471	-0.00380668		
C/1997 P3	1997 08 07.66358	08 53 04.9	+14 19 15		249
Geocentric position (AU)	-0.00378522	-0.00782306	-0.00380627		
C/1997 P3	1997 08 07.68714	08 53 36.6	+14 21 04		249
Geocentric position (AU)	-0.00378981	-0.00781943	-0.00380535		

C/1997 P3	1997 08 07.74256	08 54 36.1	+14 27 04		249
Geocentric position (AU)	-0.00380059	-0.00781088	-0.00380318		
C/1997 P3	1997 08 07.76926	08 55 08.9	+14 29 50		249
Geocentric position (AU)	-0.00380578	-0.00780675	-0.00380213		
C/1997 P3	1997 08 07.79116	08 55 32.6	+14 32 21		249
Geocentric position (AU)	-0.00381004	-0.00780336	-0.00380127		
C/1997 P3	1997 08 07.82685	08 56 17.3	+14 36 21		249
Geocentric position (AU)	-0.00381698	-0.00779783	-0.00379986		
C/1997 P3	1997 08 07.85497	08 56 51.7	+14 40 01		249
Geocentric position (AU)	-0.00382244	-0.00779347	-0.00379875		
C/1997 P3	1997 08 07.89208	08 57 35.8	+14 43 18		249
Geocentric position (AU)	-0.00382965	-0.00778771	-0.00379728		
C/1997 P3	1997 08 07.91927	08 58 14.6	+14 47 40		249
Geocentric position (AU)	-0.00383493	-0.00778348	-0.00379620		
C/1997 P3	1997 08 07.93420	08 58 35.9	+14 49 07		249
Geocentric position (AU)	-0.00383784	-0.00778116	-0.00379560		
C/1997 P3	1997 08 07.96359	08 59 13.5	+14 51 57		249
Geocentric position (AU)	-0.00384354	-0.00777658	-0.00379443		
C/1997 P3	1997 08 07.98549	08 59 42.2	+14 54 57		249
Geocentric position (AU)	-0.00384780	-0.00777317	-0.00379356		
C/1997 P3	1997 08 08.00921	09 00 15.4	+14 58 56		249
Geocentric position (AU)	-0.00385240	-0.00776947	-0.00379261		
C/1997 P3	1997 08 08.03521	09 00 52.9	+15 01 21		249
Geocentric position (AU)	-0.00385745	-0.00776541	-0.00379156		
C/1997 P3	1997 08 08.06549	09 01 36.5	+15 05 27		249
Geocentric position (AU)	-0.00386333	-0.00776068	-0.00379035		
C/1997 P3	1997 08 08.07625	09 01 53.2	+15 07 29		249
Geocentric position (AU)	-0.00386542	-0.00775900	-0.00378992		
C/1997 P3	1997 08 08.11317	09 02 46.8	+15 11 57		249
Geocentric position (AU)	-0.00387258	-0.00775323	-0.00378843		
C/1997 P3	1997 08 08.12385	09 03 03.1	+15 13 49		249
Geocentric position (AU)	-0.00387466	-0.00775155	-0.00378800		

C/1997 S2 (SOHO)

C/1997 S2	1997 09 25.44183	11 44 51.4	-02 14 59		249
Geocentric position (AU)	-0.00851569	-0.00357586	-0.00109949		
C/1997 S2	1997 09 25.48147	11 45 40.7	-02 13 32		249
Geocentric position (AU)	-0.00851406	-0.00358460	-0.00110432		
C/1997 S2	1997 09 25.48976	11 45 51.9	-02 12 33		249
Geocentric position (AU)	-0.00851372	-0.00358643	-0.00110533		
C/1997 S2	1997 09 25.52656	11 46 41.1	-02 11 37		249
Geocentric position (AU)	-0.00851220	-0.00359454	-0.00110981		
C/1997 S2	1997 09 25.57517	11 47 46.1	-02 09 35		249
Geocentric position (AU)	-0.00851017	-0.00360524	-0.00111572		
C/1997 S2	1997 09 25.67725	11 50 01.7	-02 06 23		249
Geocentric position (AU)	-0.00850589	-0.00362769	-0.00112813		
C/1997 S2	1997 09 25.70169	11 50 34.7	-02 04 48		249
Geocentric position (AU)	-0.00850486	-0.00363306	-0.00113110		
C/1997 S2	1997 09 25.71962	11 51 05.7	-02 04 38		249
Geocentric position (AU)	-0.00850410	-0.00363700	-0.00113327		
C/1997 S2	1997 09 25.74612	11 51 39.2	-02 03 07		249
Geocentric position (AU)	-0.00850297	-0.00364282	-0.00113649		

C/1997 S2	1997 09 25.76547	11 52 06.5	-02 02 12	249
Geocentric position (AU)	-0.00850214	-0.00364707	-0.00113884	
C/1997 S2	1997 09 25.78142	11 52 28.5	-02 01 56	249
Geocentric position (AU)	-0.00850146	-0.00365056	-0.00114078	
C/1997 S2	1997 09 25.86862	11 54 33.0	-01 57 41	249
Geocentric position (AU)	-0.00849772	-0.00366968	-0.00115136	
C/1997 S2	1997 09 25.90889	11 55 37.5	-01 56 06	249
Geocentric position (AU)	-0.00849597	-0.00367850	-0.00115624	
C/1997 S2	1997 09 25.94161	11 56 27.7	-01 53 32	249
Geocentric position (AU)	-0.00849455	-0.00368566	-0.00116021	
C/1997 S2	1997 09 25.96684	11 57 05.1	-01 52 56	249
Geocentric position (AU)	-0.00849345	-0.00369118	-0.00116327	
C/1997 S2	1997 09 25.98211	11 57 31.5	-01 51 54	249
Geocentric position (AU)	-0.00849278	-0.00369452	-0.00116512	
C/1997 S2	1997 09 26.01613	11 58 23.8	-01 50 39	249
Geocentric position (AU)	-0.00849129	-0.00370196	-0.00116924	
C/1997 S2	1997 09 26.03698	11 58 56.4	-01 49 25	249
Geocentric position (AU)	-0.00849038	-0.00370651	-0.00117177	
C/1997 S2	1997 09 26.06545	11 59 44.7	-01 47 49	249
Geocentric position (AU)	-0.00848912	-0.00371273	-0.00117522	
C/1997 S2	1997 09 26.11542	12 01 10.5	-01 44 22	249
Geocentric position (AU)	-0.00848691	-0.00372364	-0.00118127	
C/1997 S2	1997 09 26.14462	12 01 58.9	-01 42 43	249
Geocentric position (AU)	-0.00848561	-0.00373001	-0.00118480	

C/1997 T1 (Utsunomiya)

C/1997 T1	1998 01 25.86010	18 49 54.11	-00 36 59.7	897
C/1997 T1	1998 01 25.86419	18 49 54.12	-00 37 02.6	897
C/1997 T1	1998 01 30.85469	18 49 42.65	-01 25 16.7	897
C/1997 T1	1998 01 30.86334	18 49 42.61	-01 25 21.7	897
C/1997 T1	1998 02 06.80734	18 48 57.06	-02 29 42.8	13.0 T 355
C/1997 T1	1998 02 06.80902	18 48 57.03	-02 29 43.0	355

P/1997 V1 (Larsen)

P/1997 V1	1998 01 16.44323	00 46 13.12	+10 10 55.9	3 360
P/1997 V1	1998 01 16.44844	00 46 13.38	+10 10 56.1	3 360
P/1997 V1	1998 01 16.45399	00 46 13.75	+10 10 57.3	3 360
P/1997 V1	1998 01 20.38651	00 50 03.77	+10 21 16.8	16.9 T 402
P/1997 V1	1998 01 20.38928	00 50 03.90	+10 21 17.4	402
P/1997 V1	1998 01 20.39206	00 50 04.15	+10 21 17.8	402
P/1997 V1	1998 01 20.44015	00 50 06.93	+10 21 25.0	16.9 T 897
P/1997 V1	1998 01 20.44709	00 50 07.37	+10 21 28.5	897
P/1997 V1	1998 01 20.45404	00 50 07.63	+10 21 28.5	897
P/1997 V1	1998 01 22.73993	00 52 25.66	+10 28 03.1	587
P/1997 V1	1998 01 22.74444	00 52 25.99	+10 28 03.9	587
P/1997 V1	1998 01 22.74826	00 52 26.17	+10 28 05.5	587
P/1997 V1	1998 01 22.75868	00 52 26.78	+10 28 07.3	17.2 T 587
P/1997 V1	1998 01 23.76057	00 53 28.14	+10 31 07.9	118
P/1997 V1	1998 01 23.76756	00 53 28.56	+10 31 09.2	17.0 T 118
P/1997 V1	1998 01 26.43927	00 56 14.71	+10 39 35.0	897
P/1997 V1	1998 01 30.42483	01 00 29.43	+10 53 07.0	17.4 T 360
P/1997 V1	1998 01 30.42899	01 00 29.71	+10 53 07.9	360
P/1997 V1	1998 01 30.44021	01 00 30.37	+10 53 09.5	17.3 T 402
P/1997 V1	1998 01 30.44299	01 00 30.52	+10 53 10.2	402

P/1997 V1	1998 01 30.44576	01 00 30.74	+10 53 10.8	402
P/1997 V1	1998 02 03.80287	01 05 18.00	+11 09 09.0	118
P/1997 V1	1998 02 03.80877	01 05 18.40	+11 09 10.1 15.6 T	118

C/1998 A1 (SOHO)

C/1998 A1	1998 01 12.28611	19 53 29.6	-24 29 34	249
Geocentric position (AU)	-0.00061706	-0.00927795	-0.00419990	
C/1998 A1	1998 01 12.32457	19 53 18.6	-24 23 48	249
Geocentric position (AU)	-0.00061118	-0.00927717	-0.00419835	
C/1998 A1	1998 01 12.36708	19 53 00.3	-24 16 10	249
Geocentric position (AU)	-0.00060468	-0.00927631	-0.00419665	
C/1998 A1	1998 01 12.40949	19 52 45.7	-24 08 42	249
Geocentric position (AU)	-0.00059818	-0.00927545	-0.00419494	
C/1998 A1	1998 01 12.45193	19 52 31.7	-24 00 57	249
Geocentric position (AU)	-0.00059166	-0.00927459	-0.00419323	
C/1998 A1	1998 01 12.49593	19 52 09.6	-23 53 13	249
Geocentric position (AU)	-0.00058491	-0.00927369	-0.00419146	
C/1998 A1	1998 01 12.53517	19 51 58.5	-23 46 29	249
Geocentric position (AU)	-0.00057887	-0.00927288	-0.00418987	
C/1998 A1	1998 01 12.56823	19 51 41.3	-23 40 52	249
Geocentric position (AU)	-0.00057378	-0.00927220	-0.00418854	
C/1998 A1	1998 01 12.60990	19 51 22.8	-23 33 19	249
Geocentric position (AU)	-0.00056735	-0.00927134	-0.00418685	
C/1998 A1	1998 01 12.65156	19 51 03.1	-23 25 51	249
Geocentric position (AU)	-0.00056092	-0.00927047	-0.00418516	
C/1998 A1	1998 01 12.69323	19 50 44.0	-23 17 24	249
Geocentric position (AU)	-0.00055448	-0.00926960	-0.00418348	
C/1998 A1	1998 01 12.73490	19 50 21.4	-23 09 41	249
Geocentric position (AU)	-0.00054804	-0.00926873	-0.00418178	
C/1998 A1	1998 01 12.77656	19 49 58.0	-23 02 10	249
Geocentric position (AU)	-0.00054158	-0.00926785	-0.00418009	
C/1998 A1	1998 01 12.86124	19 49 06.9	-22 45 27	249
Geocentric position (AU)	-0.00052844	-0.00926606	-0.00417664	
C/1998 A1	1998 01 12.90564	19 48 39.8	-22 35 58	249
Geocentric position (AU)	-0.00052153	-0.00926512	-0.00417483	
C/1998 A1	1998 01 12.98633	19 47 40.3	-22 19 06	249
Geocentric position (AU)	-0.00050896	-0.00926339	-0.00417153	
C/1998 A1	1998 01 13.02896	19 47 00.3	-22 10 06	249
Geocentric position (AU)	-0.00050231	-0.00926247	-0.00416979	

9P/Tempel 1

9P	1998 01 20.19535	05 13 26.75	+27 13 41.0	21.3 T 4 696
9P	1998 01 20.19958	05 13 26.64	+27 13 41.1	21.4 T 4 696
9P	1998 01 20.20381	05 13 26.47	+27 13 40.1	21.3 T 4 696

10P/Tempel 2

10P	1998 02 02.75556	11 45 21.27	+13 08 11.1	19.8 T 360
10P	1998 02 02.76215	11 45 21.11	+13 08 13.9	360
10P	1998 02 02.76771	11 45 20.99	+13 08 15.6	360

21P/Giacobini-Zinner

21P	1998 01 20.53778	16 29 17.53	-03 56 54.1	21.9 T 4 696
21P	1998 01 20.54162	16 29 17.80	-03 56 54.1	21.6 T 4 696
21P	1998 01 20.54549	16 29 17.96	-03 56 54.0	22.0 T 4 696

22P/Kopff						
22P	1998 01 30.10336	03 28 50.66	+14 36 25.5	21.3 T	691	
22P	1998 01 30.12553	03 28 50.92	+14 36 29.2	21.5 T	691	
22P	1998 01 30.14796	03 28 51.03	+14 36 32.4	21.5 T	691	

29P/Schwassmann-Wachmann 1						
29P	1998 01 24.17853	13 39 46.35	-19 57 00.2		118	
29P	1998 01 24.18701	13 39 46.42	-19 57 02.0	13.7 T	118	
29P	1998 01 24.66728	13 39 51.32	-19 58 17.3		426	
29P	1998 01 24.67759	13 39 51.44	-19 58 19.0		426	
29P	1998 01 24.68801	13 39 51.53	-19 58 20.7	13.4 T	426	
29P	1998 01 25.83974	13 40 02.28	-20 01 25.5		897	
29P	1998 01 25.84240	13 40 02.29	-20 01 25.7		897	
29P	1998 01 25.85013	13 40 02.36	-20 01 27.1	13.7 T	897	
29P	1998 01 26.13863	13 40 04.93	-20 02 12.3		118	
29P	1998 01 26.14377	13 40 04.97	-20 02 13.1	13.4 T	118	
29P	1998 01 28.61815	13 40 24.96	-20 08 27.5	16.8 N	422	
29P	1998 01 28.61881	13 40 24.97	-20 08 27.9	16.6 N	422	
29P	1998 01 28.61948	13 40 25.00	-20 08 27.9	16.4 N	422	
29P	1998 01 29.56760	13 40 31.58	-20 10 46.7	16.3 N	422	
29P	1998 01 29.56859	13 40 31.60	-20 10 47.3	16.9 N	422	
29P	1998 01 29.56960	13 40 31.61	-20 10 47.4	16.9 N	422	
29P	1998 01 29.78889	13 40 32.90	-20 11 21.5	12.8 T	360	
29P	1998 01 29.79323	13 40 32.93	-20 11 22.1		360	
29P	1998 01 30.82625	13 40 39.36	-20 13 49.6	13.5 T	897	
29P	1998 01 30.83175	13 40 39.39	-20 13 50.4		897	
29P	1998 02 01.23450	13 40 46.89	-20 17 04.3	13.9 T	844	
29P	1998 02 01.24731	13 40 47.00	-20 17 05.5	13.9 T	844	
29P	1998 02 01.25758	13 40 47.04	-20 17 06.5	13.9 T	844	
29P	1998 02 01.27725	13 40 47.14	-20 17 09.7	13.8 T	844	
29P	1998 02 01.65606	13 40 48.98	-20 18 01.4	17.1 N	422	
29P	1998 02 01.65925	13 40 48.98	-20 18 01.5	17.4 N	422	
29P	1998 02 01.66115	13 40 49.02	-20 18 02.0	17.5 N	422	
29P	1998 02 02.79097	13 40 53.77	-20 20 34.4	12.7 T	360	
29P	1998 02 02.79410	13 40 53.77	-20 20 34.8		360	
29P	1998 02 04.19723	13 40 58.61	-20 23 35.7	13.6 T	046	
29P	1998 02 04.19912	13 40 58.63	-20 23 35.9		046	
29P	1998 02 04.20119	13 40 58.66	-20 23 36.4		046	
29P	1998 02 04.78785	13 41 00.35	-20 24 50.2	12.8 T	360	
29P	1998 02 04.79340	13 41 00.37	-20 24 50.6		360	
29P	1998 02 06.74678	13 41 04.39	-20 28 47.1		355	
29P	1998 02 06.74924	13 41 04.38	-20 28 47.0	13.8 T	355	

43P/Wolf-Harrington						
43P	1998 01 18.31006	10 10 10.87	-20 12 38.5		844	
43P	1998 01 18.31647	10 10 10.62	-20 12 42.3		844	
43P	1998 01 18.32926	10 10 10.11	-20 12 50.8		844	
43P	1998 01 20.62333	10 08 43.12	-20 35 38.4	13.2 T	897	
43P	1998 01 20.63046	10 08 42.85	-20 35 42.4		897	
43P	1998 01 20.63443	10 08 42.65	-20 35 44.6		897	
43P	1998 01 24.66354	10 05 47.48	-21 09 12.9		426	
43P	1998 01 24.67415	10 05 46.96	-21 09 17.5		426	
43P	1998 01 24.68417	10 05 46.46	-21 09 22.0	14.7 T	426	
43P	1998 01 26.03838	10 04 41.98	-21 18 56.8		118	

43P	1998 01 26.04885	10 04 41.46	-21 19 01.0	14.1 T	118	
43P	1998 01 29.72431	10 01 34.58	-21 39 51.7	13.2 T	360	
43P	1998 01 29.72760	10 01 34.39	-21 39 52.7		360	
43P	1998 02 03.98493	09 56 44.36	-21 57 25.3		118	
43P	1998 02 03.98846	09 56 44.17	-21 57 25.9		118	
43P	1998 02 03.99433	09 56 43.82	-21 57 26.5	14.2 T	118	
43P	1998 02 05.03003	09 55 44.44	-21 59 11.8		046	
43P	1998 02 05.03193	09 55 44.32	-21 59 12.0		046	
43P	1998 02 05.03338	09 55 44.24	-21 59 12.0		046	

55P/Tempel-Tuttle						
55P	1998 01 02.05043	12 35 54.39	+33 34 58.0		966	
55P	1998 01 02.06918	12 35 53.54	+33 36 49.2		966	
55P	1998 01 05.60404	12 32 05.37	+40 29 28.2	12.6 T	352	
55P	1998 01 05.60682	12 32 05.04	+40 29 50.1		352	
55P	1998 01 05.60959	12 32 04.82	+40 30 14.5		352	
55P	1998 01 06.96030	12 29 36.45	+43 52 13.8		587	
55P	1998 01 06.96933	12 29 35.32	+43 53 41.6		587	
55P	1998 01 07.01771	12 29 28.79	+44 01 32.6		561	
55P	1998 01 07.01844	12 29 28.68	+44 01 39.6		561	
55P	1998 01 07.01916	12 29 28.59	+44 01 46.6		561	
55P	1998 01 08.95625	12 24 05.82	+49 48 58.3		587	
55P	1998 01 08.95972	12 24 05.08	+49 49 40.2		587	
55P	1998 01 14.83258	11 08 30.99	+75 14 57.6		504	
55P	1998 01 14.83347	11 08 28.77	+75 15 14.6		504	
55P	1998 01 14.83384	11 08 27.86	+75 15 20.5		504	
55P	1998 01 14.83707	11 08 19.66	+75 16 18.7		504	
55P	1998 01 14.83777	11 08 17.93	+75 16 31.4		504	
55P	1998 01 14.83844	11 08 16.15	+75 16 44.4		504	
55P	1998 01 14.84230	11 08 06.23	+75 17 53.6		504	
55P	1998 01 14.84270	11 08 05.27	+75 18 01.2		504	
55P	1998 01 15.82675	10 04 36.57	+79 56 51.0		970	
55P	1998 01 15.82817	10 04 28.38	+79 57 13.1		970	
55P	1998 01 15.82961	10 04 20.28	+79 57 34.7		970	
55P	1998 01 15.83150	10 04 09.38	+79 58 04.6		970	
55P	1998 01 16.51850	08 35 27.53	+82 21 20.0		897	
55P	1998 01 16.52321	08 34 40.51	+82 22 02.1		897	
55P	1998 01 16.52608	08 34 11.62	+82 22 27.2		897	
55P	1998 01 16.59788	08 21 50.27	+82 32 10.9	11.3 T	355	
55P	1998 01 16.60254	08 21 01.19	+82 32 45.7		355	
55P	1998 01 16.61558	08 18 42.41	+82 34 22.3		355	
55P	1998 01 17.83921	04 38 47.12	+81 24 57.2		504	
55P	1998 01 17.83946	04 38 45.00	+81 24 53.7		504	
55P	1998 01 17.83970	04 38 43.14	+81 24 51.1		504	
55P	1998 01 17.84016	04 38 39.41	+81 24 44.8		504	
55P	1998 01 17.84275	04 38 18.56	+81 24 12.4		504	
55P	1998 01 17.84300	04 38 16.58	+81 24 09.5		504	
55P	1998 01 17.84343	04 38 13.10	+81 24 03.7		504	
55P	1998 01 18.59255	03 24 55.41	+78 11 02.7		897	
55P	1998 01 18.59634	03 24 39.62	+78 09 56.2		897	
55P	1998 01 19.22552	02 50 23.51	+74 59 33.6	12.9 T	735	
55P	1998 01 19.22733	02 50 18.86	+74 58 59.5	13.5 T	735	
55P	1998 01 19.22876	02 50 15.19	+74 58 33.0	12.8 T	735	

1998 FEB. 11

M.P.C. 31185

55P	1998 01 20.57315	02 12 18.69	+67 55 58.2		897	55P	1998 01 26.85588	01 29 09.05	+42 06 06.3		970
55P	1998 01 20.57493	02 12 16.69	+67 55 24.4		897	55P	1998 01 27.48484	01 27 43.98	+40 16 56.4		360
55P	1998 01 20.57985	02 12 11.20	+67 53 52.3		897	55P	1998 01 27.48657	01 27 43.76	+40 16 39.0		360
55P	1998 01 21.05310	02 04 24.14	+65 28 34.3	13.2 T	758	55P	1998 01 27.49149	01 27 43.11	+40 15 49.1		360
55P	1998 01 21.06490	02 04 13.41	+65 24 58.1	13.7 T	758	55P	1998 01 27.98296	01 26 44.92	+38 55 26.7	12.9 T	758
55P	1998 01 21.07844	02 04 01.43	+65 20 51.2	13.2 T	758	55P	1998 01 28.03004	01 26 39.10	+38 47 56.2	13.1 T	758
55P	1998 01 23.78325	01 40 11.32	+52 54 51.3		504	55P	1998 01 28.03668	01 26 38.30	+38 46 52.4	13.1 T	758
55P	1998 01 23.78409	01 40 11.08	+52 54 39.1		504	55P	1998 01 28.99873	01 24 59.62	+36 21 38.3	12.9 T	758
55P	1998 01 23.78498	01 40 10.72	+52 54 25.7		504	55P	1998 01 29.00477	01 24 59.09	+36 20 46.4	12.8 T	758
55P	1998 01 23.78503	01 40 10.58	+52 54 24.3		143	55P	1998 01 29.01149	01 24 58.34	+36 19 47.9	13.0 T	758
55P	1998 01 23.78530	01 40 10.64	+52 54 20.8		504	55P	1998 01 29.45824	01 24 18.16	+35 17 06.3	11.0 T	403
55P	1998 01 23.78543	01 40 10.49	+52 54 18.8		143	55P	1998 01 29.46079	01 24 17.72	+35 16 44.8		403
55P	1998 01 23.78582	01 40 10.32	+52 54 13.0		143	55P	1998 01 29.46678	01 24 17.36	+35 15 55.6		360
55P	1998 01 23.78895	01 40 09.35	+52 53 26.8		143	55P	1998 01 29.46956	01 24 17.12	+35 15 32.9		360
55P	1998 01 23.78895	01 40 09.47	+52 53 27.6		504	55P	1998 01 29.83876	01 23 46.56	+34 25 55.5		126
55P	1998 01 23.78934	01 40 09.17	+52 53 20.8		143	55P	1998 01 29.84718	01 23 45.72	+34 24 48.3		126
55P	1998 01 23.78973	01 40 09.09	+52 53 15.6		143	55P	1998 01 30.42079	01 23 02.27	+33 11 24.5	11.7 T	402
55P	1998 01 23.79090	01 40 08.82	+52 52 58.2		504	55P	1998 01 30.42237	01 23 02.16	+33 11 12.8		402
55P	1998 01 23.79287	01 40 08.07	+52 52 28.8		143	55P	1998 01 30.42396	01 23 02.04	+33 11 00.9		402
55P	1998 01 23.79326	01 40 07.95	+52 52 23.4		143	55P	1998 01 30.99265	01 22 22.86	+32 02 16.9	13.1 T	758
55P	1998 01 23.79365	01 40 07.81	+52 52 17.5		143	55P	1998 01 30.99667	01 22 22.57	+32 01 48.7	13.2 T	758
55P	1998 01 23.79663	01 40 06.97	+52 51 34.0		504	55P	1998 01 31.00201	01 22 22.18	+32 01 10.6	13.2 T	758
55P	1998 01 23.79678	01 40 06.76	+52 51 31.5		143	55P	1998 01 31.41060	01 21 56.08	+31 14 04.3		355
55P	1998 01 23.79718	01 40 06.62	+52 51 25.5		143	55P	1998 01 31.41646	01 21 55.69	+31 13 24.5	10.9 T	355
55P	1998 01 23.79757	01 40 06.54	+52 51 20.0		143	55P	1998 01 31.41792	01 21 55.60	+31 13 14.7		355
55P	1998 01 23.80070	01 40 05.49	+52 50 33.5		143	55P	1998 01 31.98461	01 21 22.49	+30 11 02.9	13.3 T	758
55P	1998 01 23.80109	01 40 05.39	+52 50 27.9		143	55P	1998 01 31.99279	01 21 21.92	+30 10 10.7	13.3 T	758
55P	1998 01 23.80148	01 40 05.28	+52 50 22.2		143	55P	1998 01 31.99642	01 21 21.76	+30 09 47.9	13.3 T	758
55P	1998 01 23.80551	01 40 03.95	+52 49 23.1		143	55P	1998 02 01.72472	01 20 43.22	+28 54 33.7		046
55P	1998 01 23.80591	01 40 03.81	+52 49 17.2		143	55P	1998 02 01.72850	01 20 43.03	+28 54 11.9		046
55P	1998 01 23.80630	01 40 03.71	+52 49 11.3		143	55P	1998 02 01.72991	01 20 42.97	+28 54 02.9		046
55P	1998 01 23.80943	01 40 02.68	+52 48 25.5		143	55P	1998 02 01.85363	01 20 36.40	+28 41 45.8		126
55P	1998 01 23.80982	01 40 02.52	+52 48 19.4		143	55P	1998 02 01.85731	01 20 36.18	+28 41 25.5		126
55P	1998 01 23.81021	01 40 02.45	+52 48 14.0		143	55P	1998 02 01.86333	01 20 36.20	+28 40 49.7		126
55P	1998 01 23.81335	01 40 01.42	+52 47 27.3		143	55P	1998 02 03.10709	01 19 40.18	+26 45 06.0	18.5 N	691
55P	1998 01 23.81374	01 40 01.31	+52 47 21.8		143	55P	1998 02 03.74828	01 19 15.17	+25 50 15.8		118
55P	1998 01 23.81413	01 40 01.19	+52 47 16.1		143	55P	1998 02 03.75010	01 19 15.10	+25 50 06.4		118
55P	1998 01 23.81726	01 40 00.16	+52 46 29.8		143	55P	1998 02 03.75182	01 19 15.01	+25 49 57.9	11.3 T	118
55P	1998 01 23.81765	01 40 00.04	+52 46 23.9		143	55P	1998 02 05.79416	01 18 07.53	+23 14 02.3		046
55P	1998 01 23.81804	01 39 59.92	+52 46 18.6		143	55P	1998 02 05.79626	01 18 07.47	+23 13 53.4		046
55P	1998 01 23.88391	01 39 39.02	+52 30 09.3		118	55P	1998 02 05.79799	01 18 07.42	+23 13 46.0		046
55P	1998 01 23.88729	01 39 37.95	+52 29 20.2	11.6 T	118	55P	1998 02 05.99867	01 18 01.72	+22 59 54.2	12.9 T	758
55P	1998 01 25.52499	01 32 53.55	+46 22 19.1		897	55P	1998 02 06.00884	01 18 01.41	+22 59 11.9	13.0 T	758
55P	1998 01 25.52873	01 32 52.82	+46 21 32.5		897	55P	1998 02 06.01977	01 18 01.09	+22 58 26.7	12.9 T	758
55P	1998 01 25.99061	01 31 27.64	+44 48 45.3	13.6 N	758	55P	1998 02 06.46338	01 17 48.78	+22 28 23.7	10.7 T	355
55P	1998 01 25.99843	01 31 26.17	+44 47 13.4	13.2 N	758	55P	1998 02 06.46429	01 17 48.77	+22 28 19.8		355
55P	1998 01 26.00179	01 31 25.67	+44 46 33.8	13.2 N	758	55P	1998 02 06.46525	01 17 48.78	+22 28 15.9		355
55P	1998 01 26.73079	01 29 28.00	+42 28 42.2		118	55P	1998 02 08.72572	01 16 55.80	+20 10 18.1		046
55P	1998 01 26.73218	01 29 27.77	+42 28 28.3		118	55P	1998 02 08.72764	01 16 55.76	+20 10 11.6		046
55P	1998 01 26.73791	01 29 26.83	+42 27 26.1	12.4 T	118	55P	1998 02 08.72831	01 16 55.73	+20 10 09.4		046
55P	1998 01 26.84147	01 29 11.21	+42 08 41.3		970						
55P	1998 01 26.84568	01 29 10.69	+42 07 56.0		970						
55P	1998 01 26.85102	01 29 09.90	+42 06 58.1		970						

62P/Tsuchinshan 1					
62P	1998 01 18.86909	02 07 26.81	+05 37 11.9		954
62P	1998 01 18.87038	02 07 26.90	+05 37 12.5		954
62P	1998 01 18.87166	02 07 26.98	+05 37 13.7		954
62P	1998 01 18.87295	02 07 27.03	+05 37 14.9		954
62P	1998 01 18.87423	02 07 27.13	+05 37 15.8		954
62P	1998 01 18.87552	02 07 27.21	+05 37 17.1		954
62P	1998 01 18.87680	02 07 27.34	+05 37 18.6		954
62P	1998 01 18.87808	02 07 27.37	+05 37 20.0		954
62P	1998 01 18.87937	02 07 27.45	+05 37 20.7		954
62P	1998 01 18.88067	02 07 27.56	+05 37 21.5		954
62P	1998 01 18.88195	02 07 27.64	+05 37 22.5		954
62P	1998 01 18.88323	02 07 27.73	+05 37 23.7		954
62P	1998 01 18.88452	02 07 27.82	+05 37 24.7		954
62P	1998 01 18.88580	02 07 27.87	+05 37 26.4		954
62P	1998 01 18.88709	02 07 27.98	+05 37 27.2		954
62P	1998 01 18.88837	02 07 28.03	+05 37 28.0		954
62P	1998 01 18.88966	02 07 28.16	+05 37 29.8		954
62P	1998 01 18.89094	02 07 28.21	+05 37 30.9		954
62P	1998 01 18.89223	02 07 28.29	+05 37 31.9		954
62P	1998 01 18.89351	02 07 28.38	+05 37 33.4		954
62P	1998 01 29.47569	02 20 55.59	+08 19 03.4	17.6 T	360
62P	1998 01 29.48021	02 20 55.95	+08 19 07.8		360
62P	1998 01 29.48576	02 20 56.43	+08 19 12.8		360
62P	1998 02 05.79919	02 32 13.54	+10 15 35.9	1	118
62P	1998 02 05.80449	02 32 14.07	+10 15 41.0	16.5 T	1 118
65P/Gunn					
65P	1998 01 30.41372	00 42 25.58	-02 52 22.1	16.6 T	360
65P	1998 01 30.41892	00 42 25.83	-02 52 19.7		360
69P/Taylor					
69P	1998 01 05.58266	08 28 26.73	+23 18 34.2	14.3 T	352
69P	1998 01 05.58544	08 28 26.72	+23 18 37.5		352
69P	1998 01 05.58822	08 28 26.63	+23 18 41.1		352
69P	1998 01 16.55181	08 22 53.77	+27 03 38.2	13.7 T	403
69P	1998 01 16.56919	08 22 53.12	+27 03 59.6		403
69P	1998 01 18.11528	08 21 57.06	+27 35 07.7	13.7 N	758
69P	1998 01 18.13395	08 21 56.30	+27 35 30.2	13.6 N	758
69P	1998 01 18.60513	08 21 38.71	+27 44 55.3	14.0 T	403
69P	1998 01 18.61505	08 21 38.28	+27 45 06.6		403
69P	1998 01 18.62714	08 21 37.78	+27 45 21.5		897
69P	1998 01 18.63140	08 21 37.61	+27 45 26.7	13.0 T	897
69P	1998 01 18.63854	08 21 37.32	+27 45 35.4		897
69P	1998 01 19.11421	08 21 19.48	+27 55 04.4		954
69P	1998 01 19.11544	08 21 19.43	+27 55 06.0		954
69P	1998 01 19.11667	08 21 19.38	+27 55 07.4		954
69P	1998 01 19.11789	08 21 19.33	+27 55 08.9		954
69P	1998 01 19.11912	08 21 19.28	+27 55 10.3		954
69P	1998 01 19.12036	08 21 19.23	+27 55 11.8		954
69P	1998 01 19.12160	08 21 19.18	+27 55 13.2		954
69P	1998 01 19.12282	08 21 19.13	+27 55 14.7		954
69P	1998 01 19.12406	08 21 19.08	+27 55 16.1		954
69P	1998 01 19.12531	08 21 19.02	+27 55 17.6		954

69P	1998 01 19.12655	08 21 18.97	+27 55 19.1		954
69P	1998 01 19.12779	08 21 18.92	+27 55 20.5		954
69P	1998 01 19.12900	08 21 18.88	+27 55 22.0		954
69P	1998 01 19.13024	08 21 18.83	+27 55 23.4		954
69P	1998 01 19.13146	08 21 18.78	+27 55 24.9		954
69P	1998 01 19.13269	08 21 18.72	+27 55 26.3		954
69P	1998 01 19.13394	08 21 18.67	+27 55 27.8		954
69P	1998 01 19.13515	08 21 18.62	+27 55 29.2		954
69P	1998 01 19.13639	08 21 18.58	+27 55 30.7		954
69P	1998 01 19.13762	08 21 18.52	+27 55 32.1		954
69P	1998 01 19.13883	08 21 18.47	+27 55 33.6		954
69P	1998 01 19.14006	08 21 18.42	+27 55 35.1		954
69P	1998 01 19.14130	08 21 18.37	+27 55 36.5		954
69P	1998 01 19.14252	08 21 18.32	+27 55 37.9		954
69P	1998 01 19.14376	08 21 18.27	+27 55 39.5		954
69P	1998 01 19.14500	08 21 18.22	+27 55 40.9		954
69P	1998 01 19.14625	08 21 18.17	+27 55 42.3		954
69P	1998 01 19.14748	08 21 18.12	+27 55 43.8		954
69P	1998 01 19.14872	08 21 18.07	+27 55 45.3		954
69P	1998 01 19.14994	08 21 18.02	+27 55 46.7		954
69P	1998 01 21.59314	08 19 46.11	+28 43 41.0	13.7 T	355
69P	1998 01 21.59543	08 19 46.00	+28 43 43.7		355
69P	1998 01 24.12350	08 18 08.71	+29 31 50.3		118
69P	1998 01 24.12896	08 18 08.51	+29 31 56.3	13.1 T	118
69P	1998 01 25.55780	08 17 14.44	+29 58 27.8		897
69P	1998 01 25.56824	08 17 14.00	+29 58 39.4		897
69P	1998 01 25.91847	08 17 00.72	+30 05 00.7	14.5 T	127
69P	1998 01 25.92582	08 17 00.35	+30 05 08.4	14.5 T	127
69P	1998 01 25.93014	08 17 00.20	+30 05 13.5	14.5 T	127
69P	1998 01 26.10910	08 16 52.90	+30 08 28.9		118
69P	1998 01 26.11610	08 16 52.62	+30 08 36.0	13.2 T	118
69P	1998 01 26.33290	08 16 44.67	+30 12 35.0	14.8 T	700
69P	1998 01 26.33703	08 16 44.49	+30 12 39.6	14.8 T	700
69P	1998 01 28.32591	08 15 30.23	+30 48 02.1	13.9 T	566
69P	1998 01 28.33557	08 15 29.83	+30 48 11.2	13.7 T	566
69P	1998 01 28.34546	08 15 29.42	+30 48 21.9	13.7 T	566
69P	1998 01 28.60674	08 15 19.50	+30 52 54.8	13.9 T	403
69P	1998 01 28.60976	08 15 19.38	+30 52 57.5		403
69P	1998 01 28.62780	08 15 18.66	+30 53 16.7		403
69P	1998 01 29.25898	08 14 55.62	+31 04 10.3	14.3 T	700
69P	1998 01 29.26341	08 14 55.42	+31 04 15.0	13.9 T	700
69P	1998 01 29.27344	08 14 55.06	+31 04 25.8	14.3 T	700
69P	1998 01 29.56385	08 14 44.49	+31 09 22.7	13.9 T	403
69P	1998 01 29.57794	08 14 43.98	+31 09 36.9		403
69P	1998 01 29.57847	08 14 43.99	+31 09 39.3	12.7 T	360
69P	1998 01 29.58177	08 14 43.86	+31 09 42.7		360
69P	1998 01 29.90140	08 14 32.33	+31 15 05.5		143
69P	1998 01 29.90925	08 14 32.02	+31 15 13.5		143
69P	1998 01 29.91709	08 14 31.73	+31 15 21.4		143
69P	1998 01 30.61784	08 14 06.34	+31 27 09.3	14.0 T	403
69P	1998 01 30.62071	08 14 06.24	+31 27 13.0		403
69P	1998 01 30.62463	08 14 06.01	+31 27 16.3		403
69P	1998 02 02.59201	08 12 24.12	+32 15 07.7	12.8 T	360

1998 FEB. 11

M.P.C. 31187

69P	1998 02 02.59514	08 12 24.01	+32 15 10.6		360
69P	1998 02 03.84272	08 11 43.89	+32 34 15.7		046
69P	1998 02 03.84536	08 11 43.80	+32 34 18.1		046
69P	1998 02 03.84771	08 11 43.72	+32 34 20.3		046
69P	1998 02 04.05207	08 11 36.76	+32 37 23.6		118
69P	1998 02 04.05493	08 11 36.67	+32 37 26.6		118
69P	1998 02 04.06039	08 11 36.51	+32 37 31.3	13.0 T	118
69P	1998 02 04.99499	08 11 07.87	+32 51 23.9		046
69P	1998 02 04.99689	08 11 07.81	+32 51 25.5		046
69P	1998 02 04.99873	08 11 07.75	+32 51 27.1		046
69P	1998 02 05.10321	08 11 04.43	+32 52 56.4		118
69P	1998 02 05.10606	08 11 04.34	+32 52 59.0		118
69P	1998 02 05.11181	08 11 04.16	+32 53 03.9	13.4 T	118
69P	1998 02 05.59485	08 10 50.16	+33 00 07.2	13.9 T	403
69P	1998 02 05.59819	08 10 50.05	+33 00 09.5		403
69P	1998 02 05.60182	08 10 49.90	+33 00 13.4		403

74P/Smirnova-Chernykh

74P	1998 01 23.72080	00 58 09.05	+00 49 21.1		118
74P	1998 01 23.72567	00 58 09.18	+00 49 22.5		118
74P	1998 01 23.73015	00 58 09.34	+00 49 23.8	18.0 T	118
74P	1998 02 04.75156	01 05 18.58	+01 50 18.8		1 118
74P	1998 02 04.75920	01 05 18.85	+01 50 21.1	18.3 T	1 118

78P/Gehrels 2

78P	1998 01 05.55392	06 29 16.46	+13 11 09.9		352
78P	1998 01 05.55670	06 29 16.33	+13 11 10.2		352
78P	1998 01 05.55948	06 29 16.21	+13 11 10.0		352
78P	1998 01 16.04090	06 22 00.94	+13 25 17.2		844
78P	1998 01 16.04501	06 22 00.82	+13 25 17.7		844
78P	1998 01 16.06155	06 22 00.19	+13 25 19.1		844
78P	1998 01 16.06652	06 22 00.03	+13 25 19.9		844
78P	1998 01 16.06858	06 21 59.97	+13 25 20.0		844
78P	1998 01 16.08928	06 21 59.18	+13 25 22.0		844
78P	1998 01 16.52343	06 21 44.16	+13 26 02.1	14.4 T	403
78P	1998 01 16.52954	06 21 43.89	+13 26 03.0		403
78P	1998 01 16.57131	06 21 42.36	+13 26 07.7		355
78P	1998 01 16.57344	06 21 42.27	+13 26 07.9	13.6 T	355
78P	1998 01 16.57941	06 21 42.06	+13 26 08.3		355
78P	1998 01 16.58851	06 21 41.74	+13 26 09.3		897
78P	1998 01 16.59678	06 21 41.45	+13 26 10.1		897
78P	1998 01 17.79865	06 21 01.22	+13 28 23.3		504
78P	1998 01 17.80032	06 21 01.17	+13 28 23.9		504
78P	1998 01 17.80530	06 21 01.00	+13 28 24.2	13.4 T	504
78P	1998 01 17.80771	06 21 00.88	+13 28 24.6	13.6 T	504
78P	1998 01 17.90899	06 20 57.35	+13 28 36.0	12.8 T	118
78P	1998 01 17.91868	06 20 56.99	+13 28 37.1		118
78P	1998 01 18.05403	06 20 52.77	+13 29 00.8		844
78P	1998 01 18.05602	06 20 52.78	+13 29 01.3		844
78P	1998 01 18.05690	06 20 52.70	+13 29 01.6		844
78P	1998 01 18.07720	06 20 52.00	+13 29 03.6		844
78P	1998 01 18.10072	06 20 51.21	+13 29 06.4		844
78P	1998 01 18.10174	06 20 51.15	+13 29 06.9		844
78P	1998 01 18.17690	06 20 48.61	+13 29 15.3		844

78P	1998 01 18.62423	06 20 34.41	+13 30 01.5	13.9 T	403
78P	1998 01 18.63471	06 20 34.06	+13 30 02.4		403
78P	1998 01 23.83728	06 18 10.38	+13 41 04.0		143
78P	1998 01 23.84512	06 18 10.18	+13 41 04.9		143
78P	1998 01 23.85296	06 18 09.98	+13 41 05.8		143
78P	1998 01 25.96575	06 17 23.56	+13 46 00.9		118
78P	1998 01 25.97779	06 17 23.33	+13 46 02.6	13.2 T	118
78P	1998 01 26.28811	06 17 17.21	+13 46 49.1	14.4 T	700
78P	1998 01 26.29416	06 17 17.08	+13 46 49.2	14.5 T	700
78P	1998 01 26.29911	06 17 16.98	+13 46 50.9	14.2 T	700
78P	1998 01 26.51840	06 17 12.88	+13 47 27.3		426
78P	1998 01 26.52547	06 17 12.72	+13 47 28.0		426
78P	1998 01 26.53234	06 17 12.58	+13 47 29.0	12.9 T	426
78P	1998 01 28.55368	06 16 37.03	+13 52 25.5	13.6 T	403
78P	1998 01 28.55703	06 16 37.10	+13 52 24.3		403
78P	1998 01 28.56131	06 16 37.02	+13 52 25.4		403
78P	1998 01 29.23344	06 16 26.87	+13 54 03.5	14.8 T	700
78P	1998 01 29.24016	06 16 26.72	+13 54 04.6	14.9 T	700
78P	1998 01 29.24806	06 16 26.62	+13 54 05.5	15.0 T	700
78P	1998 01 29.53076	06 16 22.69	+13 54 49.2	13.6 T	403
78P	1998 01 29.53316	06 16 22.54	+13 54 48.4	12.7 T	360
78P	1998 01 29.53423	06 16 22.66	+13 54 50.4		403
78P	1998 01 29.53802	06 16 22.46	+13 54 49.1		360
78P	1998 01 29.53861	06 16 22.53	+13 54 50.2		403
78P	1998 01 30.49611	06 16 09.80	+13 57 15.5		900
78P	1998 01 30.50535	06 16 09.64	+13 57 17.3		900
78P	1998 01 30.58554	06 16 08.61	+13 57 30.1	14.0 T	403
78P	1998 01 30.58782	06 16 08.79	+13 57 32.1		403
78P	1998 01 30.59362	06 16 08.46	+13 57 30.9		403
78P	1998 02 01.80366	06 15 45.57	+14 03 14.2		046
78P	1998 02 01.80428	06 15 45.55	+14 03 14.4		046
78P	1998 02 01.80499	06 15 45.55	+14 03 14.9		046
78P	1998 02 01.85600	06 15 45.04	+14 03 22.9	13.8 T	118
78P	1998 02 01.86031	06 15 44.97	+14 03 23.7		118
78P	1998 02 03.91799	06 15 31.18	+14 08 51.4		118
78P	1998 02 03.92251	06 15 31.15	+14 08 52.6	13.0 T	118
78P	1998 02 04.94226	06 15 26.99	+14 11 37.3		118
78P	1998 02 04.94642	06 15 26.98	+14 11 37.9		118
78P	1998 02 04.94904	06 15 26.97	+14 11 38.2	13.7 T	118
78P	1998 02 05.57093	06 15 25.46	+14 13 22.2	14.1 T	403
78P	1998 02 05.57302	06 15 25.45	+14 13 21.7		403
78P	1998 02 05.57650	06 15 25.48	+14 13 22.9		403

88P/Howell

88P	1997 12 31.52668	13 17 00.07	-04 03 40.9	21.6 N	691
88P	1997 12 31.53771	13 17 00.76	-04 03 44.7	20.0 T	691
88P	1997 12 31.54781	13 17 01.36	-04 03 48.0	20.0 T	691
88P	1998 01 28.21904	13 42 10.49	-06 09 34.8	19.4 T	910
88P	1998 01 28.22711	13 42 10.81	-06 09 36.7	19.2 T	910
88P	1998 01 28.23246	13 42 11.17	-06 09 37.9	19.9 T	910
88P	1998 01 29.18314	13 42 53.51	-06 12 47.8	20.5 T	910
88P	1998 01 29.18675	13 42 53.48	-06 12 47.9	21.8 T	910
88P	1998 01 29.19014	13 42 53.87	-06 12 48.8	20.9 T	910

88P	1998 01 29.19685	13 42 54.14	-06 12 50.7	20.3 T	910	104P	1998 01 20.41045	00 28 59.80	+08 09 59.5	13.1 T	897
88P	1998 01 29.20021	13 42 54.18	-06 12 50.9	19.5 T	910	104P	1998 01 26.39462	00 45 55.31	+08 42 45.1	13.5 T	897
88P	1998 01 29.20356	13 42 54.37	-06 12 51.6	20.4 T	910	104P	1998 01 26.40388	00 45 57.02	+08 42 49.0		897
88P	1998 01 29.20692	13 42 54.43	-06 12 51.4	21.2 T	910	104P	1998 01 26.42483	00 46 00.44	+08 42 55.9		897
88P	1998 01 29.21028	13 42 54.70	-06 12 52.6	20.1 T	910	104P	1998 01 26.70395	00 46 48.91	+08 44 29.9	14.5 T	118
88P	1998 01 29.82673	13 43 21.64	-06 14 52.0	19.0 T	360	104P	1998 01 26.71497	00 46 50.75	+08 44 34.3		118
88P	1998 01 29.83160	13 43 21.86	-06 14 52.9		360	104P	1998 01 29.42500	00 54 43.49	+09 00 29.7	13.8 T	360
88P	1998 01 29.83785	13 43 22.11	-06 14 54.4		360	104P	1998 01 29.42795	00 54 43.99	+09 00 30.8		360
88P	1998 01 31.52722	13 44 34.29	-06 20 11.5	22.7 N	691	104P	1998 01 31.44333	01 00 40.22	+09 12 38.8		355
88P	1998 01 31.53964	13 44 34.75	-06 20 14.0	20.1 T	691	104P	1998 01 31.44484	01 00 40.50	+09 12 39.1	15.0 T	355
88P	1998 02 02.80139	13 46 07.46	-06 26 51.6	19.0 T	360	104P	1998 02 04.80984	01 13 45.25	+09 39 39.4		118
88P	1998 02 02.80799	13 46 07.72	-06 26 53.2		360	104P	1998 02 04.81432	01 13 46.06	+09 39 41.1	14.9 T	118
88P	1998 02 02.81458	13 46 07.95	-06 26 54.0		360	104P	1998 02 05.77932	01 16 41.91	+09 45 45.7		046
103P/Hartley 2						104P	1998 02 05.78317	01 16 42.63	+09 45 47.4		046
103P	1998 01 06.67372	23 58 29.21	-06 32 16.9		561	104P	1998 02 05.78638	01 16 43.23	+09 45 48.5		046
103P	1998 01 06.67767	23 58 30.42	-06 32 14.3		561	118P/Shoemaker-Levy 4					
103P	1998 01 06.68168	23 58 31.63	-06 32 11.9		561	118P	1998 02 02.54204	14 35 11.49	-07 54 10.9	22.6 N	691
103P	1998 01 16.45218	00 49 30.41	-04 37 40.5	15.4 N	422	118P	1998 02 02.54683	14 35 11.64	-07 54 10.5	20.2 T	691
103P	1998 01 16.45305	00 49 30.68	-04 37 40.1	15.1 N	422	118P	1998 02 02.55071	14 35 11.78	-07 54 10.6	20.3 T	691
103P	1998 01 16.45393	00 49 30.94	-04 37 39.1	15.4 N	422	119P/Parker-Hartley					
103P	1998 01 16.47554	00 49 37.82	-04 37 33.7		355	119P	1997 12 31.48664	11 27 57.63	-02 44 59.8	22.4 N	691
103P	1998 01 16.47782	00 49 38.56	-04 37 31.6		355	119P	1997 12 31.50256	11 27 57.69	-02 45 02.0	19.9 T	691
103P	1998 01 16.47973	00 49 39.16	-04 37 30.8		355	119P	1998 01 26.09324	11 25 57.42	-03 06 39.5	19.3 T	4 557
103P	1998 01 20.12006	01 08 38.05	-03 49 26.5		696	119P	1998 01 26.12185	11 25 56.92	-03 06 38.4		4 557
103P	1998 01 20.12078	01 08 38.27	-03 49 25.8		696	119P	1998 01 31.52049	11 24 13.95	-03 01 47.2	22.6 N	691
103P	1998 01 20.12150	01 08 38.50	-03 49 25.3		696	119P	1998 02 04.08880	11 22 52.87	-02 56 47.7	17.7 T	118
103P	1998 01 20.37627	01 09 58.17	-03 45 58.3		897	119P	1998 02 04.10187	11 22 52.56	-02 56 46.4		118
103P	1998 01 20.38955	01 10 02.24	-03 45 47.6		897	119P	1998 02 04.11213	11 22 52.30	-02 56 45.8	18.1 T	118
103P	1998 01 25.40768	01 35 54.38	-02 35 59.1		897	119P	1998 02 05.05806	11 22 29.14	-02 55 11.9	18.7 T	118
103P	1998 01 25.43505	01 36 02.69	-02 35 35.8		897	119P	1998 02 05.07387	11 22 28.73	-02 55 10.5		118
103P	1998 01 26.45630	01 41 14.97	-02 20 52.9		426	128P/Shoemaker-Holt 1					
103P	1998 01 26.46888	01 41 18.78	-02 20 42.4		426	128P-B	1998 01 16.57223	04 01 11.60	+16 47 26.7		897
103P	1998 01 26.48147	01 41 22.58	-02 20 31.0	10.5 T	426	128P-B	1998 01 16.58332	04 01 11.66	+16 47 27.3	15.4 T	897
103P	1998 01 28.46652	01 51 25.46	-01 52 03.9	15.4 N	422	128P-B	1998 01 23.91748	04 02 22.68	+16 52 26.2		118
103P	1998 01 28.46714	01 51 25.63	-01 52 03.3	15.4 N	422	128P-B	1998 01 23.92335	04 02 22.75	+16 52 26.5		118
103P	1998 01 28.46775	01 51 25.85	-01 52 02.8	15.4 N	422	128P-B	1998 01 23.92620	04 02 22.79	+16 52 26.6	16.1 T	118
103P	1998 01 31.45892	02 06 22.82	-01 09 03.0	12.0 T	355	128P-B	1998 01 24.46944	04 02 30.99	+16 53 03.0		426
103P	1998 01 31.45985	02 06 23.12	-01 09 01.8		355	128P-B	1998 01 24.48007	04 02 31.12	+16 53 03.1		426
103P	1998 01 31.46127	02 06 23.54	-01 09 00.4		355	128P-B	1998 01 24.49015	04 02 31.26	+16 53 04.3	17.5 T	426
103P	1998 02 01.45322	02 11 17.44	-00 54 29.6	15.6 N	422	128P-B	1998 01 28.49797	04 03 43.29	+16 57 34.4	16.5 T	403
103P	1998 02 01.45411	02 11 17.68	-00 54 28.8	15.7 N	422	128P-B	1998 01 28.50466	04 03 43.31	+16 57 34.6		403
103P	1998 02 01.45498	02 11 17.93	-00 54 28.1	15.7 N	422	128P-B	1998 01 29.49189	04 04 04.17	+16 58 52.2	18.0 T	403
103P	1998 02 05.80420	02 32 24.43	+00 07 53.9		046	128P-B	1998 01 29.49507	04 04 04.28	+16 58 49.8		403
103P	1998 02 05.80512	02 32 24.67	+00 07 54.8		046	128P-B	1998 01 29.50330	04 04 04.53	+16 58 52.7	15.8 T	360
103P	1998 02 05.80642	02 32 25.07	+00 07 55.7		046	128P-B	1998 01 29.50764	04 04 04.63	+16 58 52.9		360
104P/Kowal 2						128P-B	1998 01 29.50939	04 04 04.69	+16 58 53.3		403
104P	1998 01 19.44588	00 26 19.72	+08 05 02.5		355	128P-B	1998 01 29.79868	04 04 11.15	+16 59 16.2		143
104P	1998 01 19.44764	00 26 20.03	+08 05 03.2		355	128P-B	1998 01 29.80652	04 04 11.31	+16 59 19.1		143
104P	1998 01 20.39678	00 28 57.56	+08 09 55.2	13.7 T	402	129P/Shoemaker-Levy 3					
104P	1998 01 20.39956	00 28 58.00	+08 09 55.9		402	129P	1998 01 17.96716	07 39 05.98	+22 44 26.2	15.8 T	118
104P	1998 01 20.40234	00 28 58.45	+08 09 56.7		402	129P	1998 01 17.97834	07 39 05.41	+22 44 26.2		118
104P	1998 01 20.40351	00 28 58.71	+08 09 57.5		897						

129P	1998 01 17.99125	07 39 04.74	+22 44 26.3		118
129P	1998 01 18.61206	07 38 34.00	+22 44 27.9		897
129P	1998 01 18.62177	07 38 33.45	+22 44 28.8	15.7 T	897
129P	1998 01 20.15713	07 37 17.98	+22 44 28.1	16.1 T	704
129P	1998 01 20.18090	07 37 16.82	+22 44 27.3	16.0 T	704
129P	1998 01 20.20028	07 37 15.83	+22 44 27.3	16.5 T	704
129P	1998 01 20.21967	07 37 14.86	+22 44 25.9	16.7 T	704
129P	1998 01 20.23922	07 37 13.85	+22 44 27.5	16.8 T	704
129P	1998 01 20.25924	07 37 12.84	+22 44 27.1	16.4 T	704
129P	1998 01 23.24074	07 34 48.45	+22 44 10.1	17.6 T	704
129P	1998 01 23.26230	07 34 47.40	+22 44 08.6	17.5 T	704
129P	1998 01 23.28394	07 34 46.31	+22 44 09.8	17.4 T	704
129P	1998 01 23.30623	07 34 45.24	+22 44 09.0	17.7 T	704
129P	1998 01 23.32762	07 34 44.21	+22 44 08.9	17.5 T	704
129P	1998 01 24.03549	07 34 10.59	+22 44 00.9		118
129P	1998 01 24.04360	07 34 10.20	+22 44 00.5	15.9 T	118
129P	1998 01 24.21996	07 34 02.13	+22 43 59.8	17.8 T	704
129P	1998 01 24.24135	07 34 01.06	+22 43 59.7	17.9 T	704
129P	1998 01 24.26315	07 33 59.98	+22 43 59.2	17.7 T	704
129P	1998 01 24.28508	07 33 58.90	+22 43 59.1	17.5 T	704
129P	1998 01 24.30647	07 33 57.85	+22 43 58.8	18.2 T	704
129P	1998 01 25.26561	07 33 13.09	+22 43 45.7	17.8 T	704
129P	1998 01 25.28751	07 33 12.03	+22 43 45.6	17.3 T	704
129P	1998 01 25.30917	07 33 10.98	+22 43 45.6	18.1 T	704
129P	1998 01 25.33071	07 33 09.95	+22 43 44.2	18.0 T	704
129P	1998 01 25.35203	07 33 08.88	+22 43 44.3	17.8 T	704
129P	1998 01 26.00429	07 32 38.87	+22 43 33.3		118
129P	1998 01 26.01515	07 32 38.37	+22 43 32.8	16.3 T	118
129P	1998 01 28.59345	07 30 42.63	+22 42 42.7	16.5 T	403
129P	1998 01 28.59814	07 30 42.43	+22 42 42.8		403
129P	1998 01 28.60249	07 30 42.23	+22 42 42.5		403
129P	1998 01 29.54637	07 30 01.28	+22 42 19.4	16.3 T	403
129P	1998 01 29.55111	07 30 01.12	+22 42 19.7		403
129P	1998 01 29.55667	07 30 00.88	+22 42 19.5		403
129P	1998 01 29.56806	07 30 00.39	+22 42 19.1	16.2 T	360
129P	1998 01 29.57292	07 30 00.18	+22 42 18.9		360
129P	1998 01 30.60172	07 29 16.61	+22 41 50.5	18.4 T	403
129P	1998 01 30.61351	07 29 15.90	+22 41 50.9		403
129P	1998 02 01.52073	07 27 57.81	+22 40 51.3	16.5 T	367
129P	1998 02 01.52906	07 27 57.43	+22 40 50.9		367
129P	1998 02 03.95035	07 26 23.72	+22 39 20.3		118
129P	1998 02 03.95543	07 26 23.52	+22 39 19.9		118
129P	1998 02 03.95817	07 26 23.41	+22 39 20.0	16.0 T	118
129P	1998 02 04.91186	07 25 48.50	+22 38 40.2	16.0 T	046
129P	1998 02 04.91424	07 25 48.41	+22 38 40.2		046
129P	1998 02 04.91626	07 25 48.34	+22 38 40.2		046
129P	1998 02 04.97184	07 25 46.24	+22 38 37.6		118
129P	1998 02 04.97969	07 25 45.95	+22 38 37.3		118
129P	1998 02 04.98248	07 25 45.84	+22 38 37.2	16.1 T	118
129P	1998 02 05.55222	07 25 25.62	+22 38 13.4	16.2 T	403
129P	1998 02 05.56380	07 25 25.20	+22 38 13.2		403
129P	1998 02 05.56715	07 25 25.10	+22 38 13.2		403

132P/Helin-Roman-Alu 2

132P	1998 01 05.52569	02 29 36.79	+06 46 32.8		352
132P	1998 01 05.52847	02 29 36.99	+06 46 34.3		352
132P	1998 01 05.53125	02 29 37.26	+06 46 33.4		352
132P	1998 01 20.48068	02 49 03.60	+08 48 17.7	18.2 T	897
132P	1998 01 20.48763	02 49 04.13	+08 48 18.7		897
132P	1998 01 29.49253	03 02 29.92	+10 05 53.7	17.6 T	360
132P	1998 01 29.49688	03 02 30.30	+10 05 55.8		360

134P/Kowal-Vávrová

134P	1998 01 20.51284	10 31 52.46	+04 15 28.7	19.8 T	696
134P	1998 01 20.51669	10 31 52.42	+04 15 29.4	19.8 T	696
134P	1998 01 20.52054	10 31 52.38	+04 15 30.0	19.7 T	696
134P	1998 01 31.48284	10 28 00.73	+04 34 09.6	22.3 N	691
134P	1998 01 31.49473	10 28 00.43	+04 34 11.3	20.0 T	691
134P	1998 01 31.50474	10 28 00.13	+04 34 12.6	20.1 T	691
134P	1998 02 01.68822	10 27 28.90	+04 37 04.6	19.1 T	867
134P	1998 02 01.71843	10 27 28.02	+04 37 08.8		867
134P	1998 02 02.69010	10 27 01.32	+04 39 36.4	19.4 T	360
134P	1998 02 02.69983	10 27 01.00	+04 39 37.9		360
134P	1998 02 02.70608	10 27 00.83	+04 39 39.0		360

135P/Shoemaker-Levy 8

135P	1998 01 22.23128	07 28 13.12	+14 00 30.7	21.8 T	696
135P	1998 01 22.23514	07 28 13.05	+14 00 30.7	21.7 T	696
135P	1998 01 22.23898	07 28 12.92	+14 00 30.5	22.0 T	696
135P	1998 01 28.34848	07 24 02.92	+14 11 32.2		693
135P	1998 01 28.37097	07 24 02.00	+14 11 35.3	22.6 T	693

Note 1: measurement difficult. 2: poor configuration of reference stars. 3: bad seeing. 4: faint image.

OBSERVATIONS OF MINOR PLANETS

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

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

1993 PP₆, 4, 2, 1; 1994 BP₅ *, 3, 1, 0; 1996 OJ₂, 3, 1, 0; [10, 3, 1*, 1993/08/16–1994/01/31]

012 Uccle

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

Observers E. Elst, T. Pauwels

Measurer T. Pauwels

0.85-m $f/2.5$ Schmidt + CCD

GSC 1.2

1981 EY₂₈, 2, 1, 0; 1989 SJ₅, 5, 2, 5; 1990 VR₈, 3, 1, 0; 1992 GG₃, 8, 3, 9; 1992 YL₂, 3, 1, 0; 1993 TQ₂₃, 3, 1, 0; 1993 TP₂₄, 2, 1, 0; 1996 XG₉, 3, 1, 0; 1998 BE₂₀, 3, 1, 0; 1998 BN₃₃, 6, 2, 6; 1998 BO₃₃, 3, 1, 0; 1998 BF₃₆ *, 6, 2, 6; 1998 BG₃₆ *, 6, 2, 6; 1998 BH₃₆ *, 5, 2, 5; 1998 CZ *, 5, 2, 3; (8175), 3, 1, 0; [66, 16, 4*, 1998/01/14–1998/02/04]

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, A. Mrkos

Measurers M. Tichý, Z. Vávrová

0.57-m $f/5.2$ reflector + CCD

GSC, USNO-SA1.0

1969 TR₁, 3, 1, 0; 1970 JB, 3, 1, 0; 1977 TD, 3, 1, 0; 1980 GG, 6, 2, 1; 1980 VA, 3, 1, 0; 1981 EB₃₇, 5, 2, 1; 1981 SN, 6, 2, 1; 1982 RW₁, 6, 2, 1; 1982 VF, 6, 2, 1; 1983 UG, 12, 4, 21; 1984 BQ, 6, 2, 1; 1984 HR, 12, 4, 20; 1984 SK₁, 8, 2, 14; 1984 SS₁, 3, 1, 0; 1986 RE₁, 6, 2, 1; 1986 TG₃, 6, 2, 1; 1986 TX₃, 15, 5, 21; 1988 AA₂, 6, 2, 1; 1989 RV₂, 6, 2, 1; 1991 VH, 3, 1, 0; 1992 AB, 6, 2, 19; 1993 BE₂, 3, 1, 0; 1993 QO, 4, 1, 0; 1993 WD, 2, 1, 0; 1994 XY₄, 3, 1, 0; 1995 EN, 6, 2, 1; 1995 EO, 6, 2, 2; 1996 DH, 6, 2, 3; 1996 FG₃, 3, 1, 0; 1996 OK, 6, 2, 1; 1996 ON, 6, 2, 1; 1996 TE, 6, 2, 2; 1996 TJ₉, 6, 2, 2; 1996 TL₉, 9, 3, 4; 1996 TR₉, 6, 2, 1; 1996 TT₉, 6, 2, 2; 1996 TU₉, 6, 2, 1; 1996 VP, 6, 2, 9; 1996 VQ, 6, 2, 1; 1996 VR₁, 6, 2, 2; 1996 VJ₂, 12, 4, 19; 1996 VM₅, 6, 2, 1; 1996 XO₂, 12, 4, 21; 1996 XQ₁₃, 6, 2, 1; 1997 CT₁, 7, 2, 1; 1997 CU₂₆, 3, 1, 0; 1997 SE₅, 6, 2, 10; 1997 UF₉, 7, 2, 22; 1997 VB₁, 5, 1, 0; 1997 WU₃, 6, 2, 1; 1997 WS₂₂, 10, 3, 20; 1997 WT₂₂, 7, 2, 7; 1997 WU₂₂, 6, 2, 20; 1997 XS₂, 3, 1, 0; 1997 XF₁₁, 6, 2, 17; 1997 YA₁, 18, 6, 31; 1997 YM₃, 11, 3, 17; 1997 YX₃, 3, 1, 0; 1997 YB₈, 19, 6, 27; 1997 YL₁₁, 3, 1, 0; 1998 AK₈, 12, 4, 23; 1998 AS₈ *, 25, 7, 24; 1998 AA₁₀ *, 9, 2, 2; 1998 BE₇, 8, 2, 7; 1998 BX₇, 13, 4, 8; 1998 BY₇, 12, 4, 11; 1998 BZ₇, 16, 5, 12; 1998 BG₉, 13, 4, 8; 1998 BB₁₀, 12, 4, 8; 1998 BM₁₀, 7, 2, 1; 1998 BN₁₀ *, 6, 2, 1; 1998 BO₁₀ *, 9, 2, 1; 1998 BP₁₀ *, 7, 2, 1; 1998 BQ₁₀ *, 6, 2, 1; 1998 BJ₁₅, 9, 3, 3; 1998 BQ₂₅ *, 6, 2, 2; 1998 BR₂₅ *, 8, 2, 2; 1998 BS₂₅ *, 27, 7, 9; 1998 BT₂₅ *, 6, 2, 2; 1998 BO₂₆, 5, 2, 1; 1998 BP₂₆, 9, 3, 8; 1998 BU₂₆ *, 7, 2, 1; 1998 BL₃₀ *, 8, 2, 1; 1998 BM₃₀ *, 9, 2, 1; 1998 BZ₃₃ *, 8, 2, 1; 1998 CE *, 9, 2, 1; 1998 CF *, 7, 2, 1; 1998 CG *, 9, 2, 1; 1998 CH *, 9, 2, 1; 1998 CJ *, 7, 2, 1; 1998 CK *, 9, 2, 1; 1998 CM *, 6, 2, 1; 1998 CN *, 8, 2, 1; 1998 CO *, 6, 2, 1; 1998 CP *, 8, 2, 1; 1998 CR *, 8, 2, 1; 1998 CU *, 7, 2, 1; 1998 CV *, 7, 2, 1; 1998 CW *, 9, 2, 1; 1998 CX *, 9, 2, 1; 1998 CY *, 9, 2, 1; 1998 CB₁ *, 7, 2, 1; 1998 CK₁ *, 9, 2, 1; 1998 CP₁ *, 13, 2, 2; 4545 P-L, 6, 2, 9; (433), 3, 1, 0; (699), 3, 1, 0; (1236), 3, 1, 0; (1620), 3, 1, 0; (1727), 3, 1, 0; (1951), 6, 2, 1; (1959), 3, 1, 0; (1980), 3, 1, 0; (2060), 3, 1, 0; (2212), 4, 1, 0; (2647), 6, 2, 1; (3424), 6, 2, 19; (3639), 3, 1, 0; (3701), 6, 2, 1; (3800), 3, 1, 0; (3905), 6, 2, 1; (4183), 3, 1, 0; (4741), 7, 2, 1; (5094), 3, 1, 0; (5145), 3, 1, 0; (5751), 3, 1, 0; (5817), 3, 1, 0; (5819), 6, 2, 1; (5870), 3, 1, 0; (5912), 3, 1, 0; (6281), 6, 2, 1; (6369), 6, 2, 1; (8143), 6, 2, 1; (8153), 6, 2, 1; (8201), 3, 1, 0; [932, 135, 33*, 1997/12/27–1998/02/08]

098 Asiago Observatory, Cima Ekar

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

Observers U. Munari, A. Boattini, M. Tombelli

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

0.67-m $f/3.2$ Schmidt

1985 QG₅, 2, 1, 0; 1996 TW₁₀, 4, 2, 1; 1996 TR₄₁, 4, 2, 1; 1997 XL₁₀, 2, 1, 0; 1997 XN₁₀, 2, 1, 0; 1998 AS₈, 4, 2, 1; 1998 BV, 4, 2, 1; 1998 BW, 4, 2, 1; 1998 BC₁, 4, 2, 1; 1998 BD₁, 4, 2, 1; 1998 BA₃₄ *, 4, 2, 1; 1998 BL₃₆ *, 4, 2, 1; 1998 BU₄₃ *, 6, 3, 7; 1998 BV₄₃ *, 4, 2, 7; (1788), 2, 1, 0; (2185), 2, 1, 0; (2431), 4, 2, 1; (2632), 6, 3, 7; (2736), 2, 1, 0; (3884), 2, 1, 0; (4927), 2, 1, 0; (5118), 2, 1, 0; (5227), 2, 1, 0; (5523), 2, 1, 0; (5579), 2, 1, 0; (5583), 2, 1, 0; (5820), 2, 1, 0; (5918), 2, 1, 0; (6304), 2, 1, 0; (6441), 4, 2, 1; (8133), 2, 1, 0; (8149), 2, 1, 0; (8185), 2, 1, 0; [98, 33, 4*, 1997/12/27–1998/02/02]

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, M. Tombelli, V. Cecchini

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

0.40-m $f/5$ reflector + CCD

GSC

1981 EF₁₈, 3, 1, 0; 1981 EZ₁₈, 2, 1, 0; 1989 YF₁, 3, 1, 0; 1991 RZ₈, 3, 1, 0; 1992 EK₁, 3, 1, 0; 1994 BA₁, 4, 2, 1; 1995 KN, 9, 3, 22; 1995 OG, 2, 1, 0; 1996 FG₃, 3, 1, 0; 1996 OJ₂, 11, 3, 12; 1996 RD₄, 6, 2, 9; 1996 UO, 3, 1, 0; 1996 UL₁, 9, 3, 9; 1996 VS, 7, 2, 6; 1996 VU₂, 6, 2, 17; 1996 XN₂₆, 3, 1, 0; 1996 XG₃₂, 1, 1, 0; 1997 UK₅, 3, 1, 0; 1997 XH₁₀, 3, 1, 0; 1997 XN₁₀, 2, 1, 0; 1997 YL₁₁, 3, 1, 0; 1998 AK₈, 4, 1, 0; 1998 BZ₇, 3, 1, 0; 1998 BG₉, 3, 1, 0; 1998 BB₁₀, 3, 1, 0; 1998 BH₁₀ *, 14, 4, 13; 1998 BM₁₀, 3, 1, 0; 1998 BP₂₄ *, 24, 6, 12; (2703), 3, 1, 0; [146, 29, 2*, 1998/01/15–1998/02/08]

108 Montelupo

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

[iau@arcetri.astro.it]

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

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

GSC

1994 BA₁, 6, 2, 1; 1998 BH₁₀, 3, 1, 0; 1998 BZ₄₀, 3, 1, 0; (7141), 5, 2, 1; (7198), 7, 2, 1; [24, 5, 0*, 1998/02/05–1998/02/07]

113 Volkssternwarte Drebach, Schönbrunn

G. Lehmann, Volkssternwarte Drebach, D-09430 Drebach, Germany

[lehmann@stw-drebach.zp.sn.schule.de]

Observers J. Kandler, G. Lehmann, K. Hofmann

Measurers G. Lehmann, J. Kandler

0.18-m $f/9$ refractor + CCD, 0.50-m $f/4$ reflector + CCD

GSC

1987 SQ₁₀, 5, 2, 1; 1988 VS₆, 18, 5, 18; 1989 CE₆, 5, 2, 4; 1989 WD, 2, 1, 0; 1991 GH₁₀, 12, 4, 9; 1991 RT₄₀, 4, 1, 0; 1991 TT₁₃, 20, 7, 25; 1992 AB, 6, 2, 1; 1992 FO₃, 11, 4, 9; 1992 SO₂₄, 8, 3, 8; 1994 GY₉, 17, 5, 18; 1997 CU₂₆, 14, 6, 25; 1997 UA₄, 4, 1, 0; 1998 AK₈, 7, 1, 0; 1998 BF₁₄ *, 18, 5, 9; 1998 CA *, 17, 3, 4; (1200), 2, 1, 0; (1843), 3, 1, 0; (1951), 6, 2, 6; (1980), 6, 2, 1; (2770), 2, 1, 0; (3474), 2, 1, 0; (3489), 5, 1, 0; (3800), 3, 1, 0; (4080), 2, 1, 0; (4663), 2, 1, 0; (4856), 6, 1, 0; (4963), 2, 1, 0; (5162), 2, 1, 0; (5609), 2, 1, 0; (5751), 5, 2, 1; (6290), 6, 3, 2; (6488), 12, 2, 1; (7246), 3, 1, 0; [239, 34, 2*, 1998/01/10–1998/02/05]

116 Giesing

H. Beuchat, European Patent Office, Erhardstrasse 27, D-80331 Munich, Germany

[100341.75@compuserve.com]

Observer P. Sala

0.20-m reflector + CCD

1997 SG₁, 11, 4, 8; [11, 1, 0*, 1998/01/04–1998/01/12]

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

1990 BZ, 5, 2, 3; 1991 VH, 2, 1, 0; 1992 AB, 9, 4, 14; 1992 BF, 7, 3, 9; 1993 WD, 2, 1, 0; 1995 OO, 2, 1, 0; 1996 DH, 2, 1, 0; 1996 EN, 2, 1, 0; 1996 FG₃, 8, 3, 15; 1996 PK, 11, 5, 16; 1996 YG₁, 13, 6, 14; 1997 CT₁, 5, 2, 2; 1997 QA, 5, 2, 11; 1997 WS₂₂, 4, 2, 2; 1997 WT₂₂, 11, 4, 11; 1997 XF₁₁, 6, 2, 3; 1997 YM₃, 11, 4, 15; 1998 AW₄, 14, 6, 29; 1998 AP₇, 12, 5, 19; 1998 AQ₇, 16, 6, 17; 1998 AV₈ *, 23, 9, 26; 1998 BG *, 6, 2, 1; 1998 BH *, 5, 2, 1; 1998 BM₄ *, 22, 8, 11; 1998 BE₇, 2, 1, 0; 1998 BX₇, 5, 2, 1; 1998 BY₇, 10, 4, 13; 1998 BZ₇, 11, 4, 10; 1998 BG₉, 6, 3, 2; 1998 BB₁₀, 13, 5, 9; 1998 BV₁₄ *, 17, 7, 13; 1998 BW₁₄ *, 14, 5, 10; 1998 BX₁₄ *, 19, 7, 10; 1998 BP₂₆, 9, 4, 8; 1998 BS₂₆ *, 6, 2, 3; 1998 BT₂₆ *, 6, 2, 1; 1998 BV₄₁ *, 12, 5, 9; 1998 CB *, 6, 2, 1; 1998 CC *, 6, 2, 1; 1998 CQ *, 6, 2, 1; 1998 CT *, 5, 2, 1; 1998 CL₁ *, 5, 2, 1; (1236), 2, 1, 0; (1620), 2, 1, 0; (1866), 4, 2, 12; (1980), 2, 1, 0; (3639), 2, 1, 0; (3691), 4, 2, 11; (3752), 6, 3, 12; (3838), 2, 1, 0; (3859), 2, 1, 0; (4130), 4, 2, 5; (4183), 2, 1, 0; (4663), 4, 2, 10; (5646), 2, 1, 0; (5751), 4, 2, 14; (5836), 4, 2, 6; (5870), 2, 1, 0; (6500), 2, 1, 0; (7304), 6, 3, 14; (7889), 5, 2, 10; (8201), 2, 1, 0; [424, 62, 15*, 1998/01/10–1998/02/09]

126 Monte Viseggi

P. Pietrapiana, Associazione Astroflì Spezzini, Casella Postale 11, I-19100 La Spezia, Italy [MC7316@mcclink.it]

Observers P. Pietrapiana, L. Sannino, A. Bondielli, L. Zannoni

Measurers P. Pietrapiana, L. Sannino

0.40-m $f/6$ reflector + CCD

USNO-SA1.0, GSC

1997 YT₈, 5, 2, 2; 1998 AZ₄, 6, 2, 2; 1998 BC₇ *, 12, 4, 3; 1998 BG₁₄ *, 12, 4, 6; (1035), 2, 1, 0; [37, 5, 2*, 1998/01/15–1998/02/01]

127 Bornheim

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

0.19-m $f/4$ FFC + CCD

GSC

1979 UH, 4, 2, 1; 1986 QQ, 3, 1, 0; 1989 SG, 4, 2, 1; 1992 SU₁₄, 4, 2, 1; 1998 AH, 18, 5, 9; [33, 5, 0*, 1998/01/09–1998/01/27]

132 Bedoin

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

[Pierre.Antonini@wanadoo.fr]

0.16-m $f/3.3$ reflector + CCD

GSC

1978 RL₁, 4, 2, 6; 1991 GG₇, 8, 2, 2; 1997 WA₂₂, 4, 2, 2; 1997 XT₅, 3, 1, 0; 1998 BP₆ *, 9, 3, 4; 1998 BH₃₀ *, 5, 2, 1; 1998 BJ₃₀ *, 5, 2, 1; 1998 BK₃₀ *, 6, 2, 1; 1998 BG₃₁, 6, 3, 7; (6816), 4, 2, 6; [54, 10, 4*, 1998/01/22–1998/02/04]

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 YX₃, 3, 1, 0; 1998 BW₁ *, 16, 6, 13; (5387), 3, 1, 0; [22, 3, 1*, 1998/01/19–1998/02/01]

134 Groszschwabhausen

H.-G. Reimann, Astrophysikalisches Institut und Universitätssternwarte Jena,

Schillergäßchen 2, D-07745 Jena, Germany [rei@astro.uni-jena.de]

0.90-m $f/2$ Schmidt + CCD

GSC

1991 TT₁₃, 2, 1, 0; [2, 1, 0*, 1998/01/31]

141 Hottviller

P. Buttani, 2 Allée Blaise Pascal, F-67800 Bischheim, France

[philippe.buttani@hol.fr]

Observers P. Buttani, B. Malzak, R. Philipps

Measurer P. Buttani

0.31-m $f/6$ Newton + CCD

GSC, USNO-SA1.0

1998 BH₃₀, 3, 1, 0; [3, 1, 0*, 1998/02/06]

143 Gnosca

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

0.20-m $f/6.3$ reflector + CCD

GSC

1992 AB, 15, 3, 7; 1997 YX₃, 5, 1, 0; 1998 BZ₇, 4, 1, 0; 1998 BM₁₀, 7, 1, 0; (419), 3, 1, 0; (656), 3, 1, 0; (1035), 3, 1, 0; (1951), 12, 1, 0; (2738), 3, 1, 0; (3800), 4, 1, 0; (7977), 3, 1, 0; [62, 11, 0*, 1998/01/26–1998/02/02]

144 Bray et Lu

L. Parmeggiani, 11 residence Croix Sante, F-95710 Bray et Lu, France

[lionel.parmeggiani@hol.fr]

0.13-m $f/5.5$ reflector + CCD

GSC

(628), 6, 1, 0; [6, 1, 0*, 1998/02/06]

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 AA, 5, 2, 16; [5, 1, 0*, 1997/12/29–1998/01/14]

327 Peking Observatory, Xinglong Station

J. Zhu, Peking Astronomical Observatory, Chinese Academy of Sciences,

Zhongguancun, Peking 100080, Peoples Republic of China

[jinzhu@sun.ihep.ac.cn]

Observers B. Zhao, X. Zhou, L. C. Deng, J. Zhu, X. M. Teng, X. Y. Li, Y. J. Chen,

Z. Y. Zheng, Z. J. Jiang, H. T. Zhang, R. Chen, Z. Zheng, X. Z. Zheng

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

0.60-m Schmidt + CCD

1975 VV₂, 4, 1, 0; 1979 SP₁₄, 3, 1, 0; 1981 ES₂₀, 3, 1, 0; 1981 EJ₂₃, 3, 1, 0; 1981 UZ₉, 3, 1, 0; 1989 TM₁, 6, 2, 1; 1991 GG₇, 3, 1, 0; 1991 PN₇, 4, 1, 0; 1991 PG₁₆, 3, 1, 0; 1992 EK₁, 3, 1, 0; 1992 PJ₂, 3, 1, 0; 1995 DO₁, 3, 1, 0; 1995 HG, 3, 1, 0; 1995 SK₅₃, 3, 1, 0; 1996 CC, 3, 1, 0; 1996 EU₂, 3, 1, 0; 1996 RG₁, 3, 1, 0; 1996 RE₄, 4, 1, 0; 1996 SJ₄, 3, 1, 0; 1996 SS₆, 6, 2, 15; 1996 SR₇, 3, 1, 0; 1996 TV₁, 3, 1, 0; 1996 TB₆, 3, 1, 0; 1996 TO₁₃, 3, 1, 0; 1996 TY₂₇, 7, 2, 1; 1996 UO, 4, 1, 0; 1996 UC₄, 9, 3, 14; 1996 UF₄, 3, 1, 0; 1996 UG₅, 3, 1, 0; 1996 YU₁, 6, 2, 15; 1996 YH₃, 4, 1, 0; 1997 AN₂₂, 6, 2, 5; 1997 BB₁, 3, 1, 0; 1997 CM₂₈, 2, 1, 0; 1997 ST, 6, 2, 3; 1997 SW₃₃, 4, 1, 0; 1997 SX₃₃, 6, 2, 22; 1997 TT₂₆, 6, 2, 27; 1997 UF₇, 3, 1, 0; 1997 US₈, 3, 1, 0; 1997 UM₂₄, 6, 2, 64; 1997 VD₂, 7, 2, 3; 1997 VB₃, 3, 1, 0; 1997 VJ₃, 3, 1, 0; 1997 VA₅, 3, 1, 0; 1997 VU₆, 3, 1, 0; 1997 VF₇, 3, 1, 0; 1997 VN₈, 3, 1, 0; 1997 WC₂₁, 4, 1, 0; 1997 WA₂₂, 9, 3, 18; 1997 WC₃₆, 3, 1, 0; 1997 WN₃₆, 3, 1, 0; 1997 WO₄₇ *, 3, 1, 0; 1997 WP₄₇ *, 6, 2, 9; 1997 WQ₄₇ *, 3, 1, 0; 1997 WR₄₇ *, 3, 1, 0; 1997 WS₄₇ *, 3, 1, 0; 1997 WT₄₇ *, 3, 1, 0; 1997 WU₄₇ *, 3, 1, 0; 1997 WV₄₇ *, 3, 1, 0; 1997 WA₄₈, 3, 1, 0; 1997 WF₄₈, 3, 1, 0; 1997 WZ₄₈ *, 3, 1, 0; 1997 WQ₄₉ *, 6, 2, 6; 1997 WW₄₉, 3, 1, 0; 1997 WZ₄₉, 6, 1, 0; 1997 WA₅₀, 3, 1, 0; 1997 WE₅₀ *, 2, 1, 0; 1997 WF₅₀ *, 3, 1, 0; 1997 WJ₅₀ *, 3, 1, 0; 1997 WK₅₀ *, 3, 1, 0; 1997 WV₅₀, 3, 1, 0; 1997 WS₅₄, 3, 1, 0; 1997 WZ₅₄, 3, 1, 0; 1997 XO₂, 3, 1, 0; 1997 XX₃, 3, 1, 0; 1997 XF₅, 7, 2, 1; 1997 XD₆, 3, 1, 0; 1997 XT₉, 3, 1, 0; 1997 XU₉, 3, 1, 0; 1997 XS₁₀, 3, 1, 0; 1997 XK₁₁, 3, 1, 0; 1997 XO₁₁, 3, 1, 0; 1997 XA₁₂, 9, 3, 32; 1997 XP₁₂, 3, 1, 0; 1997 YL₁, 6, 2, 8; 1997 YX₂, 3, 1, 0; 1997 YM₃, 2, 1, 0; 1997 YS₃, 3, 1, 0; 1997 YX₃, 6, 2, 10; 1997 YE₄, 6, 2, 42; 1997 YK₄, 7, 2, 9; 1997 YR₇, 3, 1, 0; 1997 YT₁₀, 9, 3, 14; 1997 YW₁₀, 3, 1, 0; 1997 YB₁₄, 6, 2, 5; 1997 YO₁₄, 6, 2, 2; 1997 YU₁₆, 3, 1, 0; 1997 YY₁₆, 6, 2, 2; 1997 YF₁₈, 3, 1, 0; 1997 YH₁₈, 3, 1, 0; 1997 YJ₁₈, 3, 1, 0; 1997 YK₁₈, 2, 1, 0; 1997 YO₁₈, 4, 1, 0; 1997 YQ₁₉, 3, 1, 0; 1998 AC₃, 3, 1, 0; 1998 AD₃, 3, 1, 0; 1998 AE₃, 3, 1, 0; 1998 AC₅, 11, 2, 1; 1998 AL₆, 3, 1, 0; 1998 AM₆, 3, 1, 0; 1998 AO₆, 9, 3, 21; 1998 AR₆, 3, 1, 0; 1998 AT₆, 6, 2, 18; 1998 AU₆, 10, 3, 28; 1998 AW₆, 4, 1, 0; 1998 AX₆, 7, 2, 11; 1998 AY₆, 3, 1, 0; 1998 AZ₆, 3, 1, 0; 1998 AF₇, 3, 1, 0; 1998 AH₇, 7, 2, 10; 1998 AL₈, 17, 4, 12; 1998 BK₁, 3, 1, 0; 1998 BV₁ *, 10, 3, 5; 1998 BW₁, 3, 1, 0; 1998 BV₂, 3, 1, 0; 1998 BL₄, 3, 1, 0; 1998 BC₅, 3, 1, 0; 1998 BM₇, 3, 1, 0; 1998 BU₈ *, 12, 4, 33; 1998 BV₈ *, 12, 4, 25; 1998 BW₈ *, 6, 2, 1; 1998 BX₈ *, 9, 3, 14; 1998 BY₈ *, 9, 3, 14; 1998 BZ₈ *, 9, 3, 14; 1998 BA₉, 6, 2, 2; 1998 BW₁₀, 3, 1, 0; 1998 BW₁₁, 3, 1, 0; 1998 BX₃₂, 3, 1, 0; 1998 BY₃₂, 3, 1, 0; 1998 BJ₃₃, 3, 1, 0; 1998 BC₄₂ *, 6, 2, 13; 1998 BE₄₂ *, 6, 2, 10; 1998 BF₄₂ *, 6, 2, 2; 1998 BG₄₂ *, 6, 2, 2; 1998 BH₄₂ *, 6, 2, 3; 1998 BJ₄₂ *, 6, 2, 3; 1998 BK₄₂ *, 6, 2, 3; 1998 BL₄₂ *, 6, 2, 3; 1998 CC₁ *, 9, 3, 2; 1998 CD₁ *, 6, 2, 5; 1998 CE₁ *, 6, 2, 5; 1998 CF₁ *, 4, 1, 0; 1998 CG₁ *, 6, 2, 5; 1998 CH₁ *, 6, 2, 1; 1998 CJ₁ *, 6, 2, 1; 1998 CM₁ *, 6, 2, 1; 1998 CN₁ *, 6, 2, 1; 1998 CO₁ *, 6, 2, 1; 6579 P-L, 3, 1, 0; 2209 T-1, 3, 1, 0; 1188 T-3, 6, 2, 1; 2480 T-3, 3, 1, 0; (19), 3, 1, 0; (121), 3, 1, 0; (477), 3, 1, 0; (499), 9, 3, 2; (835), 3, 1, 0; (981), 3, 1, 0; (996), 3, 1, 0; (1073), 3, 1, 0; (1228), 3, 1, 0; (1295), 3, 1, 0; (1348), 7, 2, 9; (1553), 4, 1, 0; (1570), 3, 1, 0; (2181), 3, 1, 0; (2195), 4, 1, 0; (2248), 3, 1, 0; (2293), 3, 1, 0; (2318), 4, 1, 0; (2505), 9, 2, 1; (2587), 3, 1, 0; (2695), 3, 1, 0; (2880), 3, 1, 0; (3049), 3, 1, 0; (3128), 4, 1, 0; (3233), 7, 2, 11; (3419), 4, 1, 0; (3535), 3, 1, 0; (3621), 3, 1, 0; (3866), 3, 1, 0; (3917), 3, 1, 0; (4106), 3, 1, 0; (4332), 3, 1, 0; (4584), 2, 1, 0; (5042), 3, 1, 0; (5094), 3, 1, 0; (5535), 6, 2, 5; (5549), 3, 1, 0; (5623), 3, 1, 0; (5702), 3, 1, 0; (5708), 6, 2, 2; (5945), 3, 1, 0; (5994), 3, 1, 0; (6159), 9, 2, 1; (6194), 4, 1, 0; (6214), 3, 1, 0; (6253), 3, 1, 0; (6402), 3, 1, 0; (6932), 6, 2, 3; (7028), 3, 1, 0; (7427), 3, 1, 0; (7753), 3, 1, 0;

(7963), 4, 1, 0; (7991), 3, 1, 0; (8015), 3, 1, 0; (8132), 3, 1, 0; (8172), 3, 1, 0; (8177), 3, 1, 0; [950, 220, 39*, 1996/11/27–1998/02/09]

352 Konan

M. Hotta, Kibougaoka 2-5-3, Konan-cho, Koka-gun, Shiga 5203333, Japan
[mhotta@mx.biwa.or.jp]

0.28-m $f/5.0$ reflector + CCD

GSC

1992 AB, 3, 1, 0; (1980), 3, 1, 0; (5751), 3, 1, 0; [9, 3, 0*, 1998/01/06]

355 Hadano

A. Asami, 28-1 Nishitawara, Hadano, Kanagawa-Ken, 257 Japan
[asami@st.rim.or.jp]

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

GSC

1988 CW₄, 5, 2, 1; 1989 SG, 2, 1, 0; 1997 CU₂₆, 2, 1, 0; 1998 AF, 2, 1, 0; 1998 BZ₇, 12, 4, 11; 1998 BG₉, 3, 1, 0; 1998 BB₁₀, 9, 3, 5; (1843), 2, 1, 0; (2060), 2, 1, 0; [39, 9, 0*, 1998/01/21–1998/02/06]

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

1981 EM₁, 6, 2, 1; 1981 JE₃, 2, 1, 0; 1989 WB₂, 3, 1, 0; 1991 VP₄, 2, 1, 0; 1992 BF, 6, 2, 13; 1994 CN₂, 6, 2, 5; 1995 BU₄, 2, 1, 0; 1995 DY₁, 4, 2, 2; 1995 OO, 3, 1, 0; 1996 DH, 3, 1, 0; 1996 EN, 6, 2, 3; 1996 FG₃, 3, 1, 0; 1996 OL, 4, 2, 2; 1996 TK₇, 8, 3, 4; 1996 UC, 2, 1, 0; 1996 WC₃, 5, 2, 2; 1997 CU₂₆, 2, 1, 0; 1997 UF₉, 3, 1, 0; 1997 US₉, 3, 1, 0; 1997 WS₂₂, 3, 1, 0; 1997 WT₂₂, 3, 1, 0; 1997 WU₂₂, 3, 1, 0; 1997 XF₁₁, 3, 1, 0; 1997 YD₁₈, 5, 2, 11; 1998 BX₇, 3, 1, 0; 1998 BY₇, 12, 4, 6; 1998 BZ₇, 6, 2, 6; 1998 BG₉, 6, 2, 6; 1998 BB₁₀, 9, 3, 4; 1998 BO₂₆, 3, 1, 0; 1998 BP₂₆, 9, 3, 6; 1998 CS *, 9, 3, 3; 1998 CA₁ *, 9, 3, 2; 4041 P-L, 3, 1, 0; (2316), 2, 1, 0; (3130), 3, 1, 0; (3399), 9, 3, 2; (3989), 9, 3, 2; (5621), 3, 1, 0; (5622), 2, 1, 0; (7414), 2, 1, 0; [189, 41, 2*, 1998/01/16–1998/02/06]

367 Yatsuka

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

0.26-m $f/6.0$ reflector + CCD

GSC

1998 BY₇, 2, 1, 0; 1998 BB₁₀, 2, 1, 0; [4, 2, 0*, 1998/02/01]

376 Uenohara

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

0.30-m reflector + CCD

GSC

1992 DY, 5, 2, 7; 1997 SD₂₅, 2, 1, 0; 1997 YO₉, 4, 2, 4; 1998 BY₁ *, 7, 4, 7; 1998 BZ₁ *, 8, 4, 7; 1998 BQ₆ *, 6, 3, 7; 1998 BE₁₅, 4, 2, 3; 1998 BZ₁₈, 2, 1, 0; 1998 BW₂₅ *, 6, 3, 9; 1998 BG₃₃ *, 4, 2, 2; 1998 BJ₃₃ *, 6, 3, 7; 1998 BJ₃₆ *, 8, 4, 10; [62, 12, 7*, 1997/12/24–1998/02/05]

381 Kiso

D. J. Asher, Communications Research Laboratory, Hirai 893-1, Kashima, Ibaraki-Ken, 314 Japan [david@crl.go.jp]

Observers S. Isobe, Y. Asakura, M. Saito, K. Sasahara, H. Maehara, K. Nakajima, N. Ohshiba

Measurer D. J. Asher

1.05-m Kiso Schmidt + CCD

GSC

1994 TL₁₇ *, 3, 1, 0; [3, 1, 1*, 1994/10/14]

385 Nihondaira Observatory

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

[urata@sannet.ne.jp]

0.31-m $f/4.7$ reflector + CCD

GSC, USNO-A1.0

1986 WB, 3, 1, 0; 1992 WN₃, 4, 2, 3; 1993 UN, 2, 1, 0; 1995 OU, 2, 1, 0; 1995 OV, 3, 2, 6; 1996 PW₆, 4, 2, 2; 1996 QP₁, 4, 2, 2; 1996 TG₇, 2, 1, 0; 1996 US, 4, 2, 7; 1996 VP₁, 4, 2, 7; 1996 VA₅, 2, 1, 0; 1996 VN₅, 6, 3, 5; 1996 XT₃₀, 2, 1, 0; 1997 AU₃, 2, 1, 0; 1997 RZ₇, 3, 1, 0; 1997 UF₁, 2, 1, 0; 1997 VE₄, 2, 1, 0; 1997 WK₇, 2, 1, 0; 1997 WO₇, 2, 1, 0; 1997 WP₇, 5, 3, 18; 1997 WJ₁₃, 2, 1, 0; 1997 WK₁₃, 2, 1, 0; 1997 WL₁₃, 2, 1, 0; 1997 WD₂₁, 2, 1, 0; 1997 XJ₅, 2, 1, 0; 1997 XF₈, 2, 1, 0; 1997 XM₁₀, 2, 2, 1; 1997 YG₁₆, 2, 1, 0; 1998 BJ, 6, 3, 4; 1998 BS₂, 4, 2, 7; 1998 BT₂, 6, 3, 3; 1998 BU₂, 2, 1, 0; 1998 BV₂, 3, 2, 7; 1998 BW₂, 1, 1, 0; 1998 BX₂, 6, 3, 14; 1998 BY₂, 6, 3, 14; 1998 BC₄, 6, 3, 13; 1998 BD₄, 4, 2, 13; 1998 BE₄, 4, 2, 6; 1998 BF₄, 2, 1, 0; 1998 BG₄, 4, 2, 6; 1998 BH₄, 2, 1, 0; 1998 BJ₄, 2, 1, 0; 1998 BK₄, 2, 1, 0; 1998 BL₄ *, 10, 5, 14; 1998 BT₁₄, 2, 1, 0; 1998 BU₁₄, 2, 1, 0; 1998 BX₂₅, 2, 1, 0; (930), 3, 1, 0; [155, 49, 1*, 1998/01/02–1998/02/06]

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

1991 UK₃, 2, 1, 0; 1993 WT *, 2, 1, 0; 1994 AC₁₇, 2, 1, 0; 1997 YV₁₃, 2, 1, 0; 1997 YW₁₃, 2, 1, 0; [10, 5, 1*, 1993/11/16–1998/01/02]

400 Kitami

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

Observer K. Endate

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

GSC

1993 BP₁₅ *, 2, 1, 0; [2, 1, 1*, 1993/01/24]

402 Dynic Astronomical Observatory

A. Sugie, Dynic Astronomical Observatory, Taga 283-1, Taga, Inukami-Gun, Shiga-Ken 522-03, Japan [hhf00201@niftyserve.or.jp]

0.60-m $f/5.0$ reflector + CCD

GSC

1979 KJ, 3, 1, 0; 1997 QN, 6, 2, 14; 1997 TA₁₈, 6, 2, 14; 1997 WM₁₆, 3, 1, 0; 1997 WC₂₁, 6, 2, 10; 1997 XJ₁, 6, 2, 14; 1997 XB₁₀, 3, 1, 0; 1997 XF₁₁, 3, 1, 0; 1998 BD₇, 3, 1, 0; [39, 9, 0*, 1998/01/16–1998/01/30]

403 Kani

T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan

Observer Y. Mizuno

Measurer T. Furuta

0.20-m $f/4.0$ hyperboloid astrocamera

GSC

1989 RO₂, 3, 1, 0; 1989 SG, 6, 2, 1; 1991 RQ₁₁, 3, 1, 0; 1992 AB, 5, 2, 2; 1992 SW₁₀, 3, 1, 0; 1993 OA₃, 6, 2, 1; (8141), 3, 1, 0; [29, 7, 0*, 1998/01/16–1998/02/05]

409 Kiyose

S. Suzuki, 3-15-302, Midorimachi 2 chome, Musashino, Tokyo, 180 Japan

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

GSC

1997 VX₈, 2, 1, 0; [2, 1, 0*, 1998/01/05]

1998 FEB. 11

M.P.C. 31193

411 Oizumi

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

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

GSC

1981 EY₁₁, 4, 2, 1; 1981 EC₁₉, 4, 2, 1; 1983 UG, 2, 1, 0; 1986 QN₃, 2, 1, 0; 1987 DQ₆, 4, 2, 1; 1988 FM₁, 4, 2, 1; 1989 SR₃, 4, 2, 1; 1990 HW₁, 4, 2, 1; 1991 LM, 4, 2, 1; 1991 VN₄, 4, 2, 1; 1991 VD₆, 4, 2, 1; 1992 GF₄, 2, 1, 0; 1992 SQ₂₆, 2, 1, 0; 1993 FS₁₄, 2, 1, 0; 1993 SQ₅, 2, 1, 0; 1993 XN₁, 4, 2, 9; 1994 AQ, 4, 2, 9; 1994 AO₂, 4, 2, 8; 1994 CS₂, 4, 2, 1; 1995 AJ, 2, 1, 0; 1995 BG₂, 5, 2, 9; 1995 CY, 4, 2, 8; 1995 CO₁, 2, 1, 0; 1995 DJ₁, 2, 1, 0; 1995 DQ₁, 5, 2, 8; 1995 FT, 2, 1, 0; 1996 PL₂, 4, 2, 1; 1996 RE₁, 4, 2, 1; 1997 XH, 4, 2, 1; 1997 XD₅, 4, 2, 1; 1997 XT₅, 2, 1, 0; 1997 XD₁₀, 2, 1, 0; 1997 YK, 2, 1, 0; 1997 YL, 2, 1, 0; 1997 YO, 2, 1, 0; 1997 YQ, 2, 1, 0; 1997 YR, 2, 1, 0; 1997 YS, 2, 1, 0; 1997 YU, 2, 1, 0; 1997 YV, 2, 1, 0; 1997 YW, 2, 1, 0; 1997 YX, 2, 1, 0; 1997 YY, 2, 1, 0; 1997 YZ₁, 2, 1, 0; 1997 YB₂, 2, 1, 0; 1997 YC₂, 2, 1, 0; 1997 YD₂, 2, 1, 0; 1997 YE₂, 5, 2, 15; 1997 YF₂, 2, 1, 0; 1997 YG₂, 2, 1, 0; 1997 YH₂, 2, 1, 0; 1997 YJ₂, 2, 1, 0; 1997 YK₂, 2, 1, 0; 1997 YM₂, 2, 1, 0; 1997 YN₂, 2, 1, 0; 1997 YX₂, 2, 1, 0; 1997 YY₂, 4, 2, 15; 1997 YZ₂, 2, 1, 0; 1997 YA₃, 2, 1, 0; 1997 YB₃, 2, 1, 0; 1997 YC₃, 2, 1, 0; 1997 YD₃, 2, 1, 0; 1997 YE₃, 2, 1, 0; 1997 YF₃, 2, 1, 0; 1997 YG₃, 2, 1, 0; 1997 YH₅, 4, 2, 12; 1997 YJ₅, 4, 2, 12; 1997 YK₅, 4, 2, 12; 1997 YL₅, 4, 2, 12; 1997 YM₅, 4, 2, 12; 1997 YN₅, 2, 1, 0; 1997 YO₅, 4, 2, 12; 1997 YP₅, 4, 2, 12; 1997 YQ₅, 4, 2, 12; 1997 YR₅, 4, 2, 12; 1997 YS₅, 4, 2, 12; 1997 YT₅, 4, 2, 12; 1997 YU₅, 4, 2, 12; 1997 YV₅, 4, 2, 12; 1997 YW₅, 4, 2, 12; 1997 YX₅, 4, 2, 12; 1997 YY₅, 4, 2, 12; 1997 YZ₅, 4, 2, 12; 1997 YA₆, 8, 4, 19; 1997 YG₇, 4, 2, 15; 1997 YH₇, 4, 2, 12; 1997 YJ₇, 4, 2, 15; 1997 YK₇, 2, 1, 0; 1997 YL₇, 2, 1, 0; 1997 YM₇, 3, 1, 0; 1997 YN₇, 2, 1, 0; 1997 YP₇, 2, 1, 0; 1997 YQ₇, 2, 1, 0; 1997 YR₇, 4, 2, 12; 1997 YC₁₀, 2, 1, 0; 1997 YD₁₀, 2, 1, 0; 1997 YE₁₀, 4, 2, 13; 1997 YF₁₀, 6, 3, 13; 1997 YG₁₀, 4, 2, 13; 1997 YJ₁₀, 4, 2, 13; 1997 YK₁₀, 6, 3, 13; 1997 YL₁₀, 4, 2, 13; 1997 YM₁₀, 2, 1, 0; 1997 YN₁₀, 2, 1, 0; 1997 YO₁₀, 4, 2, 13; 1997 YP₁₀, 4, 2, 13; 1997 YQ₁₀, 4, 2, 13; 1997 YJ₁₁, 2, 1, 0; 1997 YK₁₁, 4, 2, 13; 1997 YL₁₁, 2, 1, 0; 1997 YS₁₁, 2, 1, 0; 1997 YT₁₁, 2, 1, 0; 1997 YU₁₁, 2, 1, 0; 1997 YV₁₁, 2, 1, 0; 1997 YP₁₃, 4, 2, 14; 1997 YR₁₃, 4, 2, 6; 1997 YS₁₃, 4, 2, 6; 1997 YT₁₃, 4, 2, 6; 1997 YU₁₃, 4, 2, 6; 1997 YV₁₃, 4, 2, 14; 1997 YW₁₃, 4, 2, 14; 1997 YX₁₃, 6, 3, 11; 1997 YY₁₃, 4, 2, 6; 1997 YZ₁₃, 2, 1, 0; 1997 YA₁₄, 4, 2, 14; 1997 YB₁₄, 4, 2, 6; 1997 YC₁₄, 4, 2, 6; 1997 YD₁₄, 4, 2, 6; 1997 YE₁₄, 4, 2, 6; 1997 YF₁₄, 4, 2, 6; 1997 YG₁₄, 4, 2, 6; 1997 YH₁₄, 4, 2, 6; 1997 YJ₁₄, 4, 2, 6; 1997 YK₁₄, 4, 2, 6; 1997 YL₁₄, 4, 2, 14; 1997 YM₁₄, 4, 2, 14; 1998 AL, 4, 2, 11; 1998 AM, 4, 2, 11; 1998 AN, 6, 3, 11; 1998 AP, 4, 2, 11; 1998 AQ, 4, 2, 11; 1998 AR, 4, 2, 11; 1998 AS, 4, 2, 11; 1998 AV, 4, 2, 9; 1998 AW, 4, 2, 11; 1998 AX, 6, 3, 10; 1998 AY, 4, 2, 11; 1998 AZ, 4, 2, 11; 1998 AA₁, 4, 2, 11; 1998 AB₁, 4, 2, 11; 1998 AC₁, 4, 2, 9; 1998 AK₇, 4, 2, 9; 1998 AL₇, 2, 1, 0; 1998 BA *, 9, 4, 17; 1998 BB *, 8, 4, 17; 1998 BC *, 8, 4, 13; 1998 BD *, 9, 4, 17; 1998 BE *, 6, 3, 10; 1998 BK *, 8, 4, 13; 1998 BL *, 11, 5, 15; 1998 BM *, 8, 4, 13; 1998 BN *, 8, 4, 15; 1998 BO *, 8, 4, 15; 1998 BP *, 8, 4, 15; 1998 BT *, 8, 4, 14; 1998 BU *, 8, 4, 12; 1998 BV *, 8, 4, 14; 1998 BW *, 8, 4, 14; 1998 BX *, 11, 5, 14; 1998 BY *, 8, 4, 12; 1998 BZ *, 8, 4, 12; 1998 BA₁ *, 8, 4, 14; 1998 BB₁ *, 9, 4, 14; 1998 BC₁ *, 8, 4, 14; 1998 BD₁ *, 8, 4, 14; 1998 BE₁ *, 8, 4, 12; 1998 BF₁ *, 8, 4, 12; 1998 BG₁ *, 8, 4, 12; 1998 BH₁ *, 8, 4, 12; 1998 BJ₁ *, 8, 4, 14; 1998 BK₁ *, 8, 4, 14; 1998 BL₁ *, 8, 4, 14; 1998 BM₁ *, 8, 4, 14; 1998 BN₁ *, 8, 4, 12; 1998 BO₁ *, 8, 4, 12; 1998 BP₁ *, 6, 3, 7; 1998 BQ₁ *, 8, 4, 14; 1998 BR₁ *, 8, 4, 12; 1998 BS₁ *, 8, 4, 12; 1998 BT₁ *, 8, 4, 12; 1998 BU₁ *, 8, 4, 12; 1998 BR₆ *, 8, 4, 9; 1998 BS₆ *, 8, 4, 11; 1998 BT₆ *, 8, 4, 11; 1998 BU₆ *, 8, 4, 11; 1998 BV₆ *, 8, 4, 11; 1998 BW₆ *, 8, 4, 11; 1998 BX₆ *, 8, 4, 11; 1998 BY₆ *, 8, 4, 11; 1998 BZ₆ *, 8, 4, 11; 1998 BA₇ *, 8, 4, 11; 1998 BB₇ *, 8, 4, 11; 1998 BA₈ *, 8, 4, 10; 1998 BB₈ *, 6, 3, 6; 1998 BC₈ *, 4, 2, 1; 1998 BD₈ *, 8, 4, 10; 1998 BE₈ *, 8, 4, 10; 1998 BF₈ *, 6, 3, 6; 1998 BG₈ *, 8, 4, 10; 1998 BH₈ *, 8, 4, 10; 1998 BJ₈ *, 6, 3, 6; 1998 BK₈ *, 8, 4, 10; 1998 BL₈ *, 8, 4, 6; 1998 BM₈ *, 6, 3, 6; 1998 BN₈ *, 6, 3, 6; 1998 BO₈ *, 8, 4, 6; 1998 BP₈ *, 6, 3, 6; 1998 BQ₈ *, 6, 3, 6; 1998 BR₈ *, 6, 3, 6; 1998 BS₈ *, 6, 3, 6; 1998 BT₈ *, 8, 4, 10; 1998 BR₁₀ *, 7, 3, 8; 1998 BS₁₀ *, 7, 3, 8; 1998 BQ₂₄ *, 8, 4, 7; 1998 BR₂₄ *, 6, 3, 5; 1998 BS₂₄ *, 6, 3, 5; 1998 BT₂₄ *, 6, 3, 5; 1998 BU₂₄ *, 6, 3, 5; 1998 BV₂₄ *, 6, 3, 5; 1998 BW₂₄ *, 6, 3, 5; 1998 BX₂₄ *, 6, 3, 5; 1998 BY₂₄ *, 6, 3, 5; 1998 BZ₂₄ *, 6, 3, 5; 1998 BA₂₅ *, 6, 3, 5; 1998 BB₂₅ *, 6, 3, 5; 1998 BC₂₅ *, 6, 3, 5; 1998 BD₂₅ *, 6, 3, 5; 1998 BE₂₅ *, 6, 3, 5; 1998 BF₂₅ *, 6, 3, 5; 1998 BG₂₅ *, 6, 3, 5; 1998 BH₂₅ *, 6, 3, 5; 1998 BJ₂₅ *, 6, 3, 5; 1998 BK₂₅ *, 6, 3, 5; 1998 BL₂₅ *, 6, 3, 5; 1998 BM₂₅ *, 6, 3, 7; 1998 BN₂₅ *, 6, 3, 5; 1998 BO₂₅ *, 6, 3, 7; 1998 BP₂₅ *, 6, 3, 5; 1998 BY₂₅ *, 6, 3, 6; 1998 BZ₂₅ *, 6, 3, 6; 1998 BA₂₆ *, 6, 3, 6; 1998 BB₂₆ *, 6, 3, 6; 1998 BC₂₆ *, 6, 3, 6; 1998 BE₃₀ *, 4, 2, 1; 1998 BK₃₃ *, 6, 3, 4; 1998 BL₃₃ *, 6, 3, 4; 1998 BM₃₃ *, 6, 3, 4; 1998 BN₃₃ *, 6, 3, 4; 1998 BO₃₃ *, 6, 3, 4; 1998 BP₃₃ *, 6, 3, 4; 1998 BQ₃₃ *, 6, 3, 4; 1998 BR₃₃ *, 6, 3, 4; 1998 BS₃₃ *, 6, 3, 4; 1998 BT₃₃ *, 8, 4, 4; 1998 BU₃₃ *, 6, 3, 4; 1998 BV₃₃ *, 6, 3, 4; 1998 BW₃₃ *, 6, 3, 4; 1998 BX₃₃ *, 6, 3, 4; 1998 BY₃₃ *, 6, 3, 4; 1998 BB₃₄ *, 7, 3, 4; 1998 CD *, 6, 3, 3; [1338, 271, 118*, 1998/01/16-1998/02/04]

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

GSC

1996 FG₃, 3, 1, 0; 1997 YX₃, 6, 2, 11; 1997 YL₁₁, 2, 1, 0; 1998 AK₈, 3, 1, 0; 1998 BX₇, 3, 1, 0; 1998 BY₇, 2, 1, 0; 1998 BZ₇, 9, 3, 4; 1998 BG₉, 6, 2, 4; 1998 BB₁₀, 9, 3, 4; 1998 BP₂₆, 3, 1, 0; (40), 3, 1, 0; (140), 11, 4, 15; (433), 3, 1, 0; (699), 3, 1, 0; (1980), 5, 2, 12; (2703), 12, 4, 15; (2938), 3, 1, 0; (3648), 3, 1, 0; (4451), 3, 1, 0; (5751), 3, 1, 0; (5870), 2, 1, 0; (7977), 6, 2, 11; [103, 22, 0*, 1998/01/17-1998/02/01]

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

1987 BO₁, 5, 2, 8; 1991 FD, 1, 1, 0; 1991 UK₃, 8, 3, 12; 1994 GH₉, 11, 3, 9; [25, 4, 0*, 1998/01/17-1998/02/01]

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

1975 TO₂, 9, 3, 6; 1978 NY, 6, 2, 1; 1979 QT₈, 6, 2, 2; 1981 DF₂, 5, 2, 4; 1981 EF₁₈, 6, 2, 4; 1981 RQ₁, 6, 2, 11; 1985 TW, 6, 2, 2; 1989 TP₁₁, 6, 2, 1; 1990 QV₅, 6, 2, 5; 1990 RV, 6, 2, 2; 1991 RK₁₁, 6, 2, 2; 1993 QJ₄, 6, 2, 1; 1993 SW₃, 5, 2, 2; 1994 AD, 6, 2, 2; 1995 GA, 5, 2, 2; 1997 YA, 5, 2, 4; 1997 YG₁, 3, 1, 0; 1997 YA₅, 6, 2, 13; 1997 YB₅, 5, 2, 3; 1997 YN₈, 6, 2, 3; 1998 AA₅, 6, 2, 3; 1998 AB₅, 6, 2, 3; 1998 BE₅ *, 6, 2, 4; 1998 BJ₁₀ *, 6, 2, 2; 1998 BK₁₀ *, 6, 2, 2; 3002 P-L, 6, 2, 1; (2605), 5, 2, 4; (4130), 4, 2, 4; [160, 28, 3*, 1998/01/06-1998/01/26]

428 Reedy Creek

J. Broughton, 18 Branch Crescent, Reedy Creek, QLD 4228, Australia

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

GSC

1982 JB₂, 13, 8, 54; 1987 DF₆, 1, 1, 0; 1993 SZ, 2, 1, 0; 1994 AF, 5, 4, 17; 1997 PD₆ *, 16, 11, 118; 1997 PE₆ *, 13, 10, 142; 1997 QD₅ *, 4, 3, 3; 1997 QE₅ *, 4, 4, 9; 1997 QF₅ *, 5, 3, 9; 1997 QG₅ *, 4, 3, 4; 1997 UK₃, 14, 9, 55; 1997 UW₁₈, 2, 2, 10; 1997 VU₃, 11, 6, 48; 1997 WH₃₅, 5, 4, 7; 1997 XL₁₃ *, 4, 2, 1; 1997 XM₁₃ *, 6, 2, 4; 1998 AL₁₀ *, 5, 4, 17; 1998 AM₁₀ *, 4, 4, 17; 1998 AN₁₀ *, 4, 4, 17; (5866), 2, 1, 0; (7872), 2, 1, 0; [126, 21, 11*, 1997/08/05-1998/01/19]

468 Astronomical Observatory, Campo Catino

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

Observers F. Mallia, G. Masi, F. Rossi

0.80-m $f/4.0$ refractor + CCD

GSC

1998 BZ₇, 2, 1, 0; 1998 BP₂₆, 2, 1, 0; (1268), 5, 2, 20; (2285), 3, 1, 0; (2816), 3, 1, 0; (3521), 2, 1, 0; (3648), 3, 1, 0; (4130), 3, 1, 0; [23, 8, 0*, 1998/01/09-1998/02/07]

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

(12), 32, 1, 0; (54), 13, 1, 0; (63), 3, 1, 0; (190), 3, 1, 0; (241), 3, 1, 0; (563), 3, 1, 0; [57, 6, 0*, 1998/01/21-1998/01/22]

494 Stakenbridge

B. G. W. Manning, Moonrakers, Stakenbridge, Churchill, Kidderminster, Worcs.

DY10 3LS, England [bgwm@star.sr.bham.ac.uk]

0.26-m $f/7.3$ reflector + CCD

PPM

1997 WL₂₃, 2, 1, 0; 1997 YY₆, 6, 2, 8; [8, 2, 0*, 1998/01/16–1998/02/02]

504 Le Creusot

J.-C. Merlin, 18 rue P. Mendès-France, F-71200 Le Creusot, France

[merlin@obsmp.fr]

0.40-m $f/5.1$ reflector + CCD

GSC

1997 XQ₂, 3, 2, 9; [3, 1, 0*, 1998/01/14–1998/01/23]

540 Linz

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

Observers E. Meyer, E. Obermair

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

GSC

1992 BF, 7, 2, 13; 1997 YX₃, 4, 1, 0; 1998 AK₈, 5, 2, 15; 1998 BQ *, 7, 2, 9; 1998 BZ₇, 6, 2, 5; 1998 BS₁₃ *, 10, 3, 6; (5819), 8, 2, 9; [47, 7, 2*, 1998/01/04–1998/02/01]

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

1983 TC, 2, 1, 0; 1986 TB, 5, 2, 14; 1986 TC, 2, 1, 0; 1995 KC, 6, 2, 2; 1996 QD₁, 2, 1, 0; 1997 YG₂₀ *, 7, 3, 26; 1998 BT₇ *, 8, 3, 9; 1998 BU₇ *, 8, 3, 9; (1268), 3, 1, 0; (2748), 3, 1, 0; (5758), 3, 1, 0; (6499), 3, 1, 0; [52, 12, 3*, 1997/12/29–1998/01/26]

557 Ondřejov

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

Observers L. Šarounová, M. Wolf

0.65-m $f/3.6$ reflector + CCD

USNO-SA1.0, GSC

1990 SF₃, 3, 1, 0; 1992 BF, 3, 1, 0; 1993 PB, 5, 1, 0; 1994 YH₁, 3, 1, 0; 1995 OJ, 4, 2, 1; 1996 EN, 2, 1, 0; 1996 FG₃, 3, 1, 0; 1997 TT₉, 2, 1, 0; 1997 UU₂, 2, 1, 0; 1997 UX₇, 4, 1, 0; 1997 UL₉, 2, 1, 0; 1997 UN₉, 2, 1, 0; 1997 UU₁₀, 7, 3, 21; 1997 UX₁₄, 2, 1, 0; 1997 VV₁, 2, 1, 0; 1997 VU₂, 2, 1, 0; 1997 VC₅, 3, 1, 0; 1997 VH₆, 5, 2, 14; 1997 VM₆, 2, 1, 0; 1997 WX, 2, 1, 0; 1997 WS₂₂, 2, 1, 0; 1997 WT₂₂, 2, 1, 0; 1997 XF₁₁, 3, 1, 0; 1997 YZ, 6, 2, 4; 1997 YM₃, 2, 1, 0; 1998 AM₈, 2, 1, 0; 1998 AN₈, 7, 3, 17; 1998 AP₈, 10, 4, 33; 1998 AQ₈, 4, 2, 18; 1998 AW₈ *, 10, 4, 17; 1998 AX₈ *, 12, 5, 18; 1998 AB₁₀ *, 9, 3, 14; 1998 BX₇, 4, 1, 0; 1998 BY₇, 8, 3, 7; 1998 BZ₇, 14, 4, 8; 1998 BV₈, 5, 2, 1; 1998 BG₉, 7, 3, 7; 1998 BB₁₀, 10, 4, 8; 1998 BM₁₀, 3, 1, 0; 1998 BP₂₆, 3, 1, 0; 4171 T-3, 3, 1, 0; (1951), 5, 1, 0; (1980), 22, 5, 68; (4407), 3, 1, 0; (5751), 7, 2, 7; (5836), 5, 2, 91; (7753), 3, 1, 0; (7977), 15, 3, 2; (8088), 3, 1, 0; [249, 49, 3*, 1997/11/04–1998/02/04]

560 Madonna di Dossobuono

L. Lai, Via Mantovana 130e, I-37062 Dossobuono (Verona), Italy

[lastrafil@astbo1.bo.cnr.it]

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

0.40-m $f/3.5$ reflector + CCD

GSC

1982 FX₃, 3, 1, 0; 1990 BZ, 6, 2, 2; 1992 JF, 6, 2, 3; 1998 BA₂ *, 13, 5, 15; 1998 BB₂ *, 15, 5, 15; 1998 BC₂ *, 14, 5, 15; 1998 BD₄₂ *, 9, 3, 6; (7275), 3, 1, 0; [69, 8, 4*, 1998/01/17–1998/02/01]

561 Piskéztető

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

Observers K. Sárneczky, L. Kiss

0.60-m Schmidt telescope

USNO-A1.0

1992 BF, 5, 1, 0; 1998 AB₁₁, 3, 1, 0; (1604), 10, 1, 0; [18, 3, 0*, 1998/01/05–1998/01/06]

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 + CCD

1971 US, 3, 1, 0; 1972 TC, 6, 2, 4; 1975 SA₁, 3, 1, 0; 1975 SF₁, 3, 1, 0; 1975 TQ₃, 3, 1, 0; 1976 UT₁, 3, 1, 0; 1978 RX₇, 3, 1, 0; 1978 WB, 3, 1, 0; 1979 QJ₁, 6, 2, 3; 1979 QT₈, 3, 1, 0; 1979 TV₂, 3, 1, 0; 1979 UH, 3, 1, 0; 1980 GG, 6, 2, 4; 1980 RV₂, 3, 1, 0; 1980 XX, 3, 1, 0; 1981 EF₁₂, 3, 1, 0; 1981 ET₁₃, 3, 1, 0; 1981 EY₁₄, 3, 1, 0; 1981 EU₁₅, 6, 2, 4; 1981 EM₁₈, 6, 2, 4; 1981 EZ₁₈, 3, 1, 0; 1981 ES₂₀, 3, 1, 0; 1981 EC₂₁, 3, 1, 0; 1981 EY₂₈, 3, 1, 0; 1981 EY₃₅, 3, 1, 0; 1981 ES₄₂, 3, 1, 0; 1981 JE₃, 3, 1, 0; 1981 UE₂₆, 3, 1, 0; 1981 UT₂₉, 3, 1, 0; 1982 FX₃, 3, 1, 0; 1982 RW₁, 3, 1, 0; 1983 UG, 3, 1, 0; 1983 WQ, 3, 1, 0; 1984 BQ, 3, 1, 0; 1984 CF, 3, 1, 0; 1984 SY₅, 3, 1, 0; 1985 PC₂, 3, 1, 0; 1985 RG, 3, 1, 0; 1985 RJ₅, 9, 2, 1; 1985 TW, 3, 1, 0; 1986 QT, 3, 1, 0; 1986 QA₃, 3, 1, 0; 1986 RD, 3, 1, 0; 1986 RY₄, 3, 1, 0; 1986 RB₅, 3, 1, 0; 1986 TH, 3, 1, 0; 1986 VQ₂, 3, 1, 0; 1986 WB, 9, 2, 1; 1987 BB, 3, 1, 0; 1988 BL₃, 3, 1, 0; 1988 CU₃, 3, 1, 0; 1988 EA₂, 3, 1, 0; 1988 RB₁₂, 3, 1, 0; 1988 VB₁, 3, 1, 0; 1988 VS₆, 3, 1, 0; 1989 AG, 3, 1, 0; 1989 NY, 3, 1, 0; 1989 NH₁, 3, 1, 0; 1989 RF, 3, 1, 0; 1989 SG, 3, 1, 0; 1989 SC₁, 3, 1, 0; 1989 SJ₅, 3, 1, 0; 1989 TU₁₀, 3, 1, 0; 1989 VN₅, 3, 1, 0; 1989 WU₁, 3, 1, 0; 1989 YF₁, 3, 1, 0; 1990 BZ, 3, 1, 0; 1990 BH₁, 3, 1, 0; 1990 FG, 3, 1, 0; 1990 OE₅, 3, 1, 0; 1990 QJ₂, 3, 1, 0; 1990 RV, 3, 1, 0; 1990 RK₂, 3, 1, 0; 1990 RE₅, 3, 1, 0; 1990 SG₃, 3, 1, 0; 1990 SZ₇, 3, 1, 0; 1990 SL₁₀, 3, 1, 0; 1990 SV₁₂, 3, 1, 0; 1990 SA₁₅, 3, 1, 0; 1990 TJ₁, 3, 1, 0; 1990 TJ₃, 6, 2, 5; 1990 UL₂, 3, 1, 0; 1990 WX₃, 3, 1, 0; 1991 AB₂, 3, 1, 0; 1991 GY₃, 3, 1, 0; 1991 GA₇, 3, 1, 0; 1991 GH₁₀, 6, 2, 4; 1991 LM₃, 3, 1, 0; 1991 LQ, 3, 1, 0; 1991 NF₃, 3, 1, 0; 1991 RS₇, 3, 1, 0; 1991 RB₁₂, 3, 1, 0; 1991 RR₄₀, 3, 1, 0; 1991 UC, 3, 1, 0; 1991 VC₂, 6, 2, 4; 1991 VP₄, 3, 1, 0; 1991 VX₅, 3, 1, 0; 1992 CU₂, 3, 1, 0; 1992 EK₁, 3, 1, 0; 1992 EJ₄, 3, 1, 0; 1992 EY₉, 3, 1, 0; 1992 GF₄, 6, 2, 3; 1992 HY₆, 3, 1, 0; 1992 JF, 3, 1, 0; 1992 LK, 3, 1, 0; 1992 OO₁, 3, 1, 0; 1992 OY₂, 3, 1, 0; 1992 OJ₈, 3, 1, 0; 1992 RJ₃, 3, 1, 0; 1992 SD₁, 3, 1, 0; 1992 SN₁, 3, 1, 0; 1992 SM₁₂, 3, 1, 0; 1992 SO₂₄, 3, 1, 0; 1992 SQ₂₆, 3, 1, 0; 1992 UQ, 3, 1, 0; 1992 UT₁, 3, 1, 0; 1992 UA₃, 9, 3, 5; 1992 UM₃, 3, 1, 0; 1992 UP₆, 3, 1, 0; 1992 WN₁, 3, 1, 0; 1992 WG₅, 3, 1, 0; 1993 AD, 6, 2, 1; 1993 BB₆, 3, 1, 0; 1993 FT₄, 3, 1, 0; 1993 FO₃₄, 3, 1, 0; 1993 FK₈₀, 3, 1, 0; 1993 SW₃, 3, 1, 0; 1993 SQ₁₀, 9, 3, 5; 1993 TU, 3, 1, 0; 1993 TJ₁, 3, 1, 0; 1993 TE₅, 3, 1, 0; 1993 VB₂, 6, 2, 4; 1993 XO, 3, 1, 0; 1993 XY, 3, 1, 0; 1994 AD, 3, 1, 0; 1994 BA₁, 3, 1, 0; 1994 CJ₂, 6, 2, 4; 1994 ER₃, 3, 1, 0; 1994 EH₇, 3, 1, 0; 1994 JG, 3, 1, 0; 1994 JS₁, 3, 1, 0; 1994 LR, 3, 1, 0; 1994 YV₁, 3, 1, 0; 1995 AN, 3, 1, 0; 1995 EN, 3, 1, 0; 1995 KL₁, 3, 1, 0; 1995 LD, 3, 1, 0; 1995 MG₁, 3, 1, 0; 1995 OD₁, 3, 1, 0; 1995 QS₃, 3, 1, 0; 1995 UQ₅, 6, 2, 5; 1996 FG₃, 3, 1, 0; 1996 NX, 3, 1, 0; 1996 NZ₃, 3, 1, 0; 1996 PK, 3, 1, 0; 1996 QQ₁, 3, 1, 0; 1996 RQ₂, 3, 1, 0; 1996 RU₂, 3, 1, 0; 1996 SS₄, 3, 1, 0; 1996 SS₆, 3, 1, 0; 1996 SO₈, 3, 1, 0; 1996 ST₈ *, 3, 1, 0; 1996 TR₁, 3, 1, 0; 1996 TN₁₀, 3, 1, 0; 1996 TR₁₀, 3, 1, 0; 1996 TV₁₀, 6, 2, 4; 1996 TW₁₀, 3, 1, 0; 1996 TD₁₂, 3, 1, 0; 1996 TF₁₅, 3, 1, 0; 1996 UB, 3, 1, 0; 1996 UC, 3, 1, 0; 1996 VP, 3, 1, 0; 1996 VB₈, 3, 1, 0; 1996 VX₈, 3, 1, 0; 1996 VB₉, 3, 1, 0; 1996 VR₃₀, 6, 2, 5; 1996 VS₃₀, 3, 1, 0; 1996 VK₃₈, 3, 1, 0; 1996 XR₁, 3, 1, 0; 1996 XY₂₅, 3, 1, 0; 1997 RK₇, 3, 1, 0; 1997 ST, 3, 1, 0; 1997 SE₅, 3, 1, 0; 1997 TJ₁₉, 3, 1, 0; 1997 TN₂₆, 3, 1, 0; 1997 UH₁, 3, 1, 0; 1997 US₃, 3, 1, 0; 1997 UO₈, 3, 1, 0; 1997 UP₈, 9, 3, 673; 1997 US₈, 3, 1, 0; 1997 VQ₁, 3, 1, 0; 1997 VM₆, 3, 1, 0; 1997 VY₆, 6, 1, 0; 1997 WU₃, 3, 1, 0; 1997 WD₇, 3, 1, 0; 1997 WP₁₄, 3, 1, 0; 1997 WB₂₂, 3, 1, 0; 1997 WT₂₃, 3, 1, 0; 1997 WZ₃₀, 6, 2, 87; 1997 WT₃₄, 3, 1, 0; 1997 WC₃₆, 3, 1, 0; 1997 WU₃₆, 3, 1, 0; 1997 WV₄₅, 3, 1, 0; 1997 WW₄₇, 3, 1, 0; 1997 WX₄₇, 3, 1, 0; 1997 WY₄₇, 3, 1, 0; 1997 WZ₄₇, 3, 1, 0; 1997 WA₄₈, 3, 1, 0; 1997 WB₄₈, 3, 1, 0; 1997 WC₄₈, 3, 1, 0; 1997 WD₄₈, 3, 1, 0; 1997 WE₄₈, 3, 1, 0; 1997 WF₄₈ *, 3, 1, 0; 1997 WH₄₈ *, 3, 1, 0; 1997 WJ₄₈ *, 3, 1, 0; 1997 WK₄₈ *, 3, 1, 0; 1997 WL₄₈ *, 3, 1, 0; 1997 WM₄₈ *, 3, 1, 0; 1997 WN₄₈ *, 3, 1, 0; 1997 WO₄₈ *, 3, 1, 0; 1997 WP₄₈ *, 3, 1, 0; 1997 WQ₄₈ *, 3, 1, 0; 1997 WR₄₈ *, 3, 1, 0; 1997 WY₄₈ *, 3, 1, 0; 1997 WA₄₉ *, 3, 1, 0; 1997 WB₄₉, 6, 1, 0; 1997 WC₄₉, 3, 1, 0; 1997 WD₄₉, 3, 1, 0; 1997 WE₄₉, 3, 1, 0; 1997 WF₄₉, 3, 1, 0; 1997 WG₄₉, 3, 1, 0; 1997 WH₄₉, 3, 1, 0; 1997 WJ₄₉, 3, 1, 0; 1997 WK₄₉, 3, 1, 0; 1997 WL₄₉, 3, 1, 0; 1997 WM₄₉, 3, 1, 0; 1997 WN₄₉, 3, 1, 0; 1997 WO₄₉, 3, 1, 0; 1997 WP₄₉, 3, 1, 0; 1997 WV₄₉, 3, 1, 0; 1997 WG₅₀, 3, 1, 0; 1997 WH₅₀ *, 3, 1, 0; 1997 WM₅₁, 3, 1, 0; 1997 WV₅₂, 3, 1, 0; 1997 WP₅₃, 3, 1, 0; 1997 WY₅₃ *, 3, 1, 0; 1997 WZ₅₃ *, 3, 1, 0; 1997 WA₅₄ *, 3, 1, 0; 1997 WB₅₄ *, 3, 1, 0; 1997 WC₅₄ *, 3, 1, 0; 1997 WD₅₄ *, 3, 1, 0; 1997 WE₅₄ *, 3, 1, 0; 1997 WJ₅₄, 3, 1, 0; 1997 WG₅₅, 3, 1, 0; 1997 WR₅₅ *, 3, 1, 0; 1997 WS₅₅ *, 3, 1, 0; 1997 WT₅₅ *, 3, 1, 0; 1997 WU₅₅ *, 3, 1, 0; 1997 XG, 6, 1, 0; 1997 XZ, 3, 1, 0; 1997 XV₁, 3, 1, 0; 1997 XQ₂, 6, 2, 115; 1997 XD₆, 3, 1, 0; 1997 XF₈, 6, 1, 0; 1997 XN₈, 3, 1, 0; 1997 XO₈,

9, 2, 1; 1997 XV₈, 3, 1, 0; 1997 XT₁₀, 3, 1, 0; 1997 XK₁₁, 6, 2, 4; 1997 XL₁₁, 3, 1, 0; 1997 YS₁, 3, 1, 0; 1997 YU₁, 3, 1, 0; 1997 YW₂, 3, 1, 0; 1997 YL₃, 3, 1, 0; 1997 YS₃, 3, 1, 0; 1997 YZ₃, 6, 2, 1; 1997 YA₄, 3, 1, 0; 1997 YH₄, 3, 1, 0; 1997 YK₄, 3, 1, 0; 1997 YO₄, 3, 1, 0; 1997 YQ₄, 3, 1, 0; 1997 YL₅, 3, 1, 0; 1997 YN₅, 3, 1, 0; 1997 YO₅, 3, 1, 0; 1997 YX₅, 3, 1, 0; 1997 YZ₅, 3, 1, 0; 1997 YA₆, 3, 1, 0; 1997 YE₆, 3, 1, 0; 1997 YW₆, 3, 1, 0; 1997 YG₇, 3, 1, 0; 1997 YO₇, 3, 1, 0; 1997 YP₈, 3, 1, 0; 1997 YE₁₀, 6, 2, 27; 1997 YB₁₀, 3, 1, 0; 1997 YF₁₀, 3, 1, 0; 1997 YG₁₀, 3, 1, 0; 1997 YJ₁₀, 3, 1, 0; 1997 YK₁₀, 3, 1, 0; 1997 YL₁₀, 3, 1, 0; 1997 YM₁₀, 3, 1, 0; 1997 YN₁₀, 3, 1, 0; 1997 YS₁₀, 3, 1, 0; 1997 YF₁₁, 3, 1, 0; 1997 YL₁₁, 3, 1, 0; 1997 YS₁₁, 3, 1, 0; 1997 YX₁₁, 3, 1, 0; 1997 YZ₁₁, 3, 1, 0; 1997 YA₁₂, 3, 1, 0; 1997 YB₁₂, 6, 2, 27; 1997 YK₁₂, 3, 1, 0; 1997 YH₁₃, 6, 2, 5; 1997 YP₁₃, 3, 1, 0; 1997 YQ₁₃, 3, 1, 0; 1997 YW₁₃, 3, 1, 0; 1997 YB₁₄, 3, 1, 0; 1997 YD₁₄, 3, 1, 0; 1997 YE₁₄, 9, 3, 5; 1997 YF₁₄, 9, 3, 4; 1997 YG₁₄, 6, 2, 5; 1997 YJ₁₄, 3, 1, 0; 1997 YL₁₄, 3, 1, 0; 1997 YM₁₄, 6, 2, 4; 1997 YD₁₅, 3, 1, 0; 1997 YZ₁₆, 3, 1, 0; 1997 YN₁₇, 3, 1, 0; 1997 YO₁₈, 3, 1, 0; 1998 AJ, 3, 1, 0; 1998 AK, 3, 1, 0; 1998 AV, 6, 1, 0; 1998 AX, 12, 3, 5; 1998 AC₁, 3, 1, 0; 1998 AS₁, 3, 1, 0; 1998 AJ₃, 6, 2, 27; 1998 AL₄, 3, 1, 0; 1998 AH₅, 3, 1, 0; 1998 AO₆, 3, 1, 0; 1998 AP₆, 6, 2, 27; 1998 AT₆, 3, 1, 0; 1998 AU₆, 3, 1, 0; 1998 AY₆, 3, 1, 0; 1998 AK₇, 3, 1, 0; 1998 AQ₈, 3, 1, 0; 1998 AS₈, 6, 2, 5; 1998 AW₈, 3, 1, 0; 1998 AZ₉, 3, 1, 0; 1998 AL₁₀, 3, 1, 0; 1998 AM₁₀, 3, 1, 0; 1998 BA, 3, 1, 0; 1998 BB, 3, 1, 0; 1998 BC, 3, 1, 0; 1998 BK, 3, 1, 0; 1998 BO, 3, 1, 0; 1998 BS, 3, 1, 0; 1998 BV, 3, 1, 0; 1998 BW, 6, 2, 4; 1998 BC₁, 3, 1, 0; 1998 BD₁, 3, 1, 0; 1998 BF₁, 6, 2, 27; 1998 BH₁, 3, 1, 0; 1998 BJ₁, 3, 1, 0; 1998 BK₁, 3, 1, 0; 1998 BL₁, 6, 2, 5; 1998 BM₁, 6, 2, 5; 1998 BN₁, 6, 2, 5; 1998 BO₁, 6, 2, 5; 1998 BP₁, 6, 2, 5; 1998 BQ₁, 3, 1, 0; 1998 BS₁, 3, 1, 0; 1998 BT₁, 6, 2, 31; 1998 BU₁, 3, 1, 0; 1998 BW₁, 12, 4, 32; 1998 BY₁, 3, 1, 0; 1998 BZ₁, 3, 1, 0; 1998 BG₂, 3, 1, 0; 1998 BH₂, 3, 1, 0; 1998 BJ₂, 6, 2, 27; 1998 BK₂, 3, 1, 0; 1998 BN₂, 3, 1, 0; 1998 BQ₂, 3, 1, 0; 1998 BS₂, 6, 2, 27; 1998 BT₂, 6, 2, 27; 1998 BU₂, 3, 1, 0; 1998 BV₂, 6, 2, 27; 1998 BW₂, 3, 1, 0; 1998 BX₂, 3, 1, 0; 1998 BU₃, 6, 2, 4; 1998 BA₄, 3, 1, 0; 1998 BB₄, 3, 1, 0; 1998 BC₄, 3, 1, 0; 1998 BD₄, 3, 1, 0; 1998 BG₄, 3, 1, 0; 1998 BW₄, 3, 1, 0; 1998 BD₅, 6, 2, 27; 1998 BE₅, 3, 1, 0; 1998 BS₆, 3, 1, 0; 1998 BT₆, 6, 2, 3; 1998 BA₇, 3, 1, 0; 1998 BE₇ *, 12, 4, 3; 1998 BF₇ *, 6, 2, 1; 1998 BG₇ *, 9, 3, 5; 1998 BH₇ *, 12, 3, 5; 1998 BJ₇ *, 12, 4, 32; 1998 BK₇ *, 6, 2, 1; 1998 BL₇ *, 6, 2, 1; 1998 BM₇ *, 9, 3, 28; 1998 BN₇ *, 6, 2, 1; 1998 BO₇ *, 9, 3, 5; 1998 BP₇ *, 9, 3, 5; 1998 BQ₇ *, 9, 3, 5; 1998 BR₇ *, 9, 2, 1; 1998 BX₇ *, 12, 4, 5; 1998 BZ₇ *, 21, 5, 5; 1998 BA₈, 3, 1, 0; 1998 BB₈, 3, 1, 0; 1998 BC₈, 3, 1, 0; 1998 BD₈, 3, 1, 0; 1998 BE₈, 3, 1, 0; 1998 BG₈, 3, 1, 0; 1998 BH₈, 3, 1, 0; 1998 BJ₈, 3, 1, 0; 1998 BK₈, 3, 1, 0; 1998 BM₈, 6, 2, 4; 1998 BN₈, 3, 1, 0; 1998 BP₈, 3, 1, 0; 1998 BR₈, 3, 1, 0; 1998 BV₈, 3, 1, 0; 1998 BW₈, 3, 1, 0; 1998 BX₈, 3, 1, 0; 1998 BY₈, 3, 1, 0; 1998 BZ₈, 3, 1, 0; 1998 BA₉ *, 9, 3, 3; 1998 BB₉ *, 9, 3, 4; 1998 BC₉ *, 6, 2, 1; 1998 BD₉ *, 9, 3, 4; 1998 BE₉ *, 9, 2, 1; 1998 BF₉ *, 9, 2, 1; 1998 BG₉ *, 18, 4, 4; 1998 BH₉ *, 6, 2, 1; 1998 BJ₉ *, 9, 3, 5; 1998 BK₉ *, 9, 3, 5; 1998 BL₉ *, 6, 2, 1; 1998 BM₁₀ *, 15, 4, 4; 1998 BC₁₀ *, 6, 2, 2; 1998 BD₁₀ *, 6, 2, 2; 1998 BE₁₀ *, 9, 3, 6, 2, 1; 1998 BF₁₀ *, 9, 2, 1; 1998 BG₁₀ *, 9, 2, 1; 1998 BH₁₀, 6, 2, 32; 1998 BM₁₀ *, 9, 3, 3; 1998 BQ₁₀, 3, 1, 0; 1998 BU₁₀, 3, 1, 0; 1998 BW₁₀, 3, 1, 0; 1998 BD₁₁, 3, 1, 0; 1998 BS₁₁, 3, 1, 0; 1998 BW₁₁, 3, 1, 0; 1998 BX₁₁, 3, 1, 0; 1998 BF₁₂, 3, 1, 0; 1998 BH₁₂, 6, 2, 27; 1998 BK₁₂, 3, 1, 0; 1998 BO₁₂, 3, 1, 0; 1998 BR₁₂, 6, 2, 27; 1998 BS₁₂, 6, 2, 31; 1998 BO₁₃, 3, 1, 0; 1998 BQ₁₃, 3, 1, 0; 1998 BS₁₃, 6, 2, 27; 1998 BR₁₄ *, 6, 2, 2; 1998 BS₁₄ *, 6, 2, 2; 1998 BY₁₄ *, 6, 2, 4; 1998 BZ₁₄ *, 9, 3, 31; 1998 BA₁₅ *, 6, 2, 4; 1998 BB₁₅ *, 6, 2, 4; 1998 BC₁₅ *, 6, 2, 4; 1998 BD₁₅ *, 6, 2, 4; 1998 BE₁₅ *, 9, 3, 31; 1998 BF₁₅ *, 6, 2, 4; 1998 BG₁₅ *, 6, 2, 4; 1998 BH₁₅ *, 6, 2, 4; 1998 BJ₁₅ *, 6, 2, 4; 1998 BK₁₅ *, 6, 2, 4; 1998 BL₁₅ *, 6, 2, 4; 1998 BM₁₅ *, 9, 3, 5; 1998 BN₁₅ *, 6, 2, 4; 1998 BO₁₅ *, 6, 2, 4; 1998 BP₁₅ *, 6, 2, 4; 1998 BQ₁₅ *, 6, 2, 4; 1998 BR₁₅ *, 9, 3, 5; 1998 BS₁₅ *, 9, 3, 5; 1998 BT₁₅ *, 6, 2, 4; 1998 BU₁₅ *, 6, 2, 4; 1998 BV₁₅ *, 6, 2, 4; 1998 BW₁₅ *, 6, 2, 4; 1998 BX₁₅ *, 6, 2, 4; 1998 BY₁₅ *, 9, 3, 4; 1998 BZ₁₅ *, 9, 3, 4; 1998 BA₁₆ *, 9, 3, 29; 1998 BB₁₆ *, 6, 2, 2; 1998 BC₁₆ *, 6, 2, 2; 1998 BD₁₆ *, 6, 2, 2; 1998 BE₁₆ *, 6, 2, 2; 1998 BF₁₆ *, 6, 2, 2; 1998 BG₁₆ *, 6, 2, 2; 1998 BH₁₆ *, 6, 2, 2; 1998 BJ₁₆ *, 6, 2, 4; 1998 BK₁₆ *, 6, 2, 3; 1998 BL₁₆ *, 6, 2, 3; 1998 BM₁₆ *, 6, 2, 3; 1998 BN₁₆ *, 6, 2, 3; 1998 BP₁₆ *, 9, 3, 32; 1998 BQ₁₆, 3, 1, 0; 1998 BD₁₉, 3, 1, 0; 1998 BK₁₉, 3, 1, 0; 1998 BS₂₃, 3, 1, 0; 1998 BJ₂₄, 3, 1, 0; 1998 BP₂₄, 3, 1, 0; 1998 BR₂₄, 3, 1, 0; 1998 BS₂₄, 3, 1, 0; 1998 BY₂₄, 3, 1, 0; 1998 BA₂₅, 3, 1, 0; 1998 BL₂₅, 3, 1, 0; 1998 BN₂₅, 3, 1, 0; 1998 BP₂₅, 3, 1, 0; 1998 BX₂₅, 3, 1, 0; 1998 BY₂₅, 3, 1, 0; 1998 BN₂₆, 3, 1, 0; 1998 BO₂₆ *, 3, 1, 0; 1998 BP₂₆ *, 6, 2, 1; 1998 BX₂₆, 3, 1, 0; 1998 BB₃₀, 6, 2, 4; 1998 BD₃₀, 3, 1, 0; 1998 BH₃₀, 3, 1, 0; 1998 BK₃₀, 3, 1, 0; 1998 BA₃₁, 3, 1, 0; 1998 BG₃₁, 3, 1, 0; 1998 BJ₃₃, 3, 1, 0; 1998 BK₃₃, 3, 1, 0; 1998 BL₃₃, 3, 1, 0; 1998 BM₃₃, 6, 1, 0; 1998 BR₃₃, 3, 1, 0; 1998 BA₃₄, 6, 2, 1; 1998 BB₃₇, 6, 2, 4; 1998 BH₄₀ *, 6, 2, 5; 1998 BJ₄₀ *, 6, 2, 5; 1998 BK₄₀ *, 6, 2, 5; 1998 BL₄₀ *, 6, 2, 5; 1998 BM₄₀ *, 6, 2, 5; 1998 BN₄₀ *, 6, 2, 5; 1998 BO₄₀ *, 6, 2, 5; 1998 BP₄₀ *, 6, 2, 5; 1998 BQ₄₀ *, 6, 2, 5; 1998 BR₄₀ *, 6, 2, 5; 1998 BS₄₀ *, 6, 2, 5; 1998 BT₄₀ *, 6, 2, 5; 1998 BU₄₀ *, 6, 2, 5; 1998 BV₄₀ *, 6, 2, 5; 1998 BW₄₀ *, 6, 2, 5; 1998 BX₄₀ *, 6, 2, 5; 1998 BY₄₀ *, 6, 2, 5; 1998 BZ₄₀ *, 6, 2, 5; 1998 BA₄₁ *, 6, 2, 5; 1998 BB₄₁ *, 6, 2, 5; 1998 BC₄₁ *, 6, 2, 5; 1998 BD₄₁ *, 6, 2, 4; 1998 BE₄₁ *, 6, 2, 4; 1998 BF₄₁ *, 6, 2, 4; 1998 BG₄₁ *, 6, 2, 4; 1998 BH₄₁ *, 6, 2, 4; 1998 BJ₄₁ *, 6, 2, 4; 1998 BK₄₁ *, 6, 2, 4; 1998 BL₄₁ *, 6, 2, 4; 1998 BM₄₁ *, 6, 2, 4; 1998 BN₄₁ *, 6, 2, 4; 1998 BO₄₁ *, 6, 2, 3; 1998 BP₄₁ *, 6, 2, 1; 1998 BQ₄₁ *, 6, 2, 1; 1998 BR₄₁ *, 6, 2, 1; 1998 BS₄₁ *, 6, 2, 1; 1998 BT₄₁ *, 6, 2, 1; 1998 BW₄₁, 3, 1, 0; 1998 BM₄₂, 3, 1, 0; 1998 BN₄₂, 3, 1, 0; 1998 BO₄₂, 3, 1, 0; 1998 BP₄₂, 3, 1, 0; 1998 BQ₄₂, 3, 1, 0; 1998 BR₄₂, 3, 1, 0; 1998 BT₄₂, 3, 1, 0; 1998 BU₄₂, 3, 1, 0; 1998 BV₄₂, 3, 1, 0; 1998 BW₄₂, 3, 1, 0; 1998 BE₄₃, 3, 1, 0; 1998 BO₄₃, 3, 1, 0; 1998 BS₄₃ *, 3, 1, 0; 1998 BU₄₃, 3, 1, 0; 1998 CL, 3, 1, 0; 1998 CS,

3, 1, 0; 1998 CC₁, 9, 2, 28; 1998 CN₁, 3, 1, 0; 2607 P-L, 3, 1, 0; 4025 P-L, 3, 1, 0; 4031 P-L, 3, 1, 0; 4607 P-L, 6, 2, 4; 6030 P-L, 3, 1, 0; 6214 P-L, 3, 1, 0; 6533 P-L, 3, 1, 0; 6643 P-L, 3, 1, 0; 2149 T-1, 3, 1, 0; 3233 T-1, 3, 1, 0; 3297 T-1, 3, 1, 0; 1298 T-2, 3, 1, 0; 2034 T-2, 3, 1, 0; 3042 T-2, 3, 1, 0; 3155 T-2, 3, 1, 0; 3327 T-2, 6, 2, 4; 3365 T-2, 3, 1, 0; 1017 T-3, 3, 1, 0; 3019 T-3, 3, 1, 0; 3100 T-3, 3, 1, 0; 4171 T-3, 3, 1, 0; (4), 3, 1, 0; (11), 3, 1, 0; (30), 3, 1, 0; (37), 3, 1, 0; (68), 3, 1, 0; (82), 3, 1, 0; (88), 3, 1, 0; (103), 3, 1, 0; (113), 3, 1, 0; (120), 3, 1, 0; (121), 3, 1, 0; (133), 3, 1, 0; (134), 3, 1, 0; (140), 3, 1, 0; (144), 3, 1, 0; (149), 3, 1, 0; (172), 3, 1, 0; (182), 3, 1, 0; (187), 3, 1, 0; (192), 3, 1, 0; (204), 3, 1, 0; (207), 3, 1, 0; (214), 6, 2, 4; (227), 3, 1, 0; (230), 3, 1, 0; (253), 3, 1, 0; (260), 3, 1, 0; (261), 3, 1, 0; (279), 3, 1, 0; (299), 3, 1, 0; (304), 3, 1, 0; (309), 3, 1, 0; (311), 3, 1, 0; (320), 3, 1, 0; (336), 3, 1, 0; (340), 3, 1, 0; (357), 3, 1, 0; (366), 3, 1, 0; (370), 3, 1, 0; (395), 3, 1, 0; (407), 3, 1, 0; (415), 6, 2, 1; (424), 3, 1, 0; (426), 6, 2, 1; (438), 3, 1, 0; (445), 3, 1, 0; (449), 3, 1, 0; (480), 3, 1, 0; (486), 3, 1, 0; (492), 3, 1, 0; (496), 3, 1, 0; (499), 15, 4, 5; (511), 3, 1, 0; (519), 3, 1, 0; (524), 3, 1, 0; (535), 3, 1, 0; (545), 3, 1, 0; (548), 3, 1, 0; (564), 3, 1, 0; (569), 3, 1, 0; (580), 3, 1, 0; (608), 3, 1, 0; (626), 3, 1, 0; (656), 3, 1, 0; (659), 3, 1, 0; (685), 6, 1, 0; (697), 3, 1, 0; (704), 3, 1, 0; (734), 3, 1, 0; (740), 3, 1, 0; (741), 3, 1, 0; (756), 3, 1, 0; (761), 3, 1, 0; (786), 3, 1, 0; (823), 3, 1, 0; (825), 3, 1, 0; (830), 3, 1, 0; (898), 3, 1, 0; (917), 3, 1, 0; (932), 3, 1, 0; (961), 3, 1, 0; (964), 6, 1, 0; (966), 3, 1, 0; (990), 3, 1, 0; (1003), 3, 1, 0; (1019), 6, 2, 4; (1022), 6, 2, 4; (1027), 3, 1, 0; (1045), 3, 1, 0; (1046), 3, 1, 0; (1064), 3, 1, 0; (1068), 3, 1, 0; (1074), 6, 2, 1; (1077), 6, 2, 4; (1085), 3, 1, 0; (1097), 3, 1, 0; (1112), 3, 1, 0; (1125), 3, 1, 0; (1132), 6, 2, 2; (1133), 3, 1, 0; (1137), 3, 1, 0; (1138), 3, 1, 0; (1151), 3, 1, 0; (1176), 3, 1, 0; (1177), 3, 1, 0; (1200), 3, 1, 0; (1211), 6, 2, 1; (1228), 3, 1, 0; (1230), 3, 1, 0; (1246), 3, 1, 0; (1267), 3, 1, 0; (1293), 3, 1, 0; (1324), 3, 1, 0; (1336), 3, 1, 0; (1344), 3, 1, 0; (1347), 3, 1, 0; (1348), 3, 1, 0; (1351), 3, 1, 0; (1360), 3, 1, 0; (1370), 3, 1, 0; (1378), 3, 1, 0; (1381), 3, 1, 0; (1387), 3, 1, 0; (1418), 3, 1, 0; (1431), 3, 1, 0; (1432), 3, 1, 0; (1446), 3, 1, 0; (1473), 6, 2, 1; (1475), 3, 1, 0; (1486), 3, 1, 0; (1492), 9, 3, 2; (1494), 3, 1, 0; (1505), 3, 1, 0; (1532), 3, 1, 0; (1539), 3, 1, 0; (1542), 3, 1, 0; (1545), 3, 1, 0; (1563), 3, 1, 0; (1570), 6, 2, 4; (1581), 3, 1, 0; (1605), 3, 1, 0; (1614), 3, 1, 0; (1616), 3, 1, 0; (1634), 3, 1, 0; (1639), 3, 1, 0; (1649), 3, 1, 0; (1671), 6, 2, 4; (1673), 3, 1, 0; (1686), 3, 1, 0; (1692), 3, 1, 0; (1699), 3, 1, 0; (1702), 3, 1, 0; (1714), 3, 1, 0; (1730), 3, 1, 0; (1739), 3, 1, 0; (1741), 3, 1, 0; (1762), 3, 1, 0; (1773), 3, 1, 0; (1774), 3, 1, 0; (1843), 3, 1, 0; (1848), 3, 1, 0; (1878), 3, 1, 0; (1891), 6, 1, 0; (1905), 3, 1, 0; (1951), 3, 1, 0; (1960), 3, 1, 0; (1987), 3, 1, 0; (1993), 3, 1, 0; (1998), 3, 1, 0; (2007), 3, 1, 0; (2010), 3, 1, 0; (2021), 6, 2, 4; (2054), 3, 1, 0; (2082), 3, 1, 0; (2084), 6, 2, 4; (2103), 3, 1, 0; (2107), 3, 1, 0; (2114), 3, 1, 0; (2115), 3, 1, 0; (2127), 6, 2, 2; (2138), 3, 1, 0; (2157), 3, 1, 0; (2160), 3, 1, 0; (2169), 3, 1, 0; (2171), 3, 1, 0; (2183), 3, 1, 0; (2185), 3, 1, 0; (2213), 3, 1, 0; (2221), 3, 1, 0; (2239), 3, 1, 0; (2245), 3, 1, 0; (2248), 3, 1, 0; (2285), 3, 1, 0; (2312), 3, 1, 0; (2316), 3, 1, 0; (2317), 3, 1, 0; (2333), 3, 1, 0; (2348), 3, 1, 0; (2350), 3, 1, 0; (2370), 3, 1, 0; (2393), 3, 1, 0; (2407), 6, 1, 0; (2409), 3, 1, 0; (2415), 3, 1, 0; (2445), 6, 2, 31; (2493), 3, 1, 0; (2501), 3, 1, 0; (2510), 3, 1, 0; (2563), 3, 1, 0; (2572), 3, 1, 0; (2579), 3, 1, 0; (2597), 3, 1, 0; (2599), 6, 2, 1; (2600), 3, 1, 0; (2619), 9, 3, 5; (2623), 3, 1, 0; (2625), 6, 2, 4; (2629), 3, 1, 0; (2637), 3, 1, 0; (2649), 3, 1, 0; (2675), 6, 2, 1; (2703), 3, 1, 0; (2705), 3, 1, 0; (2712), 3, 1, 0; (2718), 3, 1, 0; (2722), 3, 1, 0; (2732), 3, 1, 0; (2738), 3, 1, 0; (2741), 3, 1, 0; (2766), 3, 1, 0; (2773), 3, 1, 0; (2801), 3, 1, 0; (2803), 3, 1, 0; (2816), 3, 1, 0; (2827), 3, 1, 0; (2831), 3, 1, 0; (2834), 6, 2, 5; (2855), 3, 1, 0; (2910), 3, 1, 0; (2935), 15, 4, 5; (2942), 3, 1, 0; (2945), 3, 1, 0; (2955), 3, 1, 0; (2962), 3, 1, 0; (2971), 3, 1, 0; (2989), 3, 1, 0; (2996), 3, 1, 0; (3009), 3, 1, 0; (3010), 3, 1, 0; (3027), 3, 1, 0; (3069), 3, 1, 0; (3084), 3, 1, 0; (3106), 3, 1, 0; (3110), 3, 1, 0; (3114), 3, 1, 0; (3133), 3, 1, 0; (3137), 3, 1, 0; (3139), 3, 1, 0; (3140), 3, 1, 0; (3157), 3, 1, 0; (3167), 3, 1, 0; (3232), 3, 1, 0; (3233), 3, 1, 0; (3252), 3, 1, 0; (3266), 3, 1, 0; (3280), 3, 1, 0; (3295), 3, 1, 0; (3301), 6, 2, 4; (3303), 3, 1, 0; (3322), 3, 1, 0; (3327), 3, 1, 0; (3328), 3, 1, 0; (3366), 3, 1, 0; (3389), 3, 1, 0; (3393), 3, 1, 0; (3396), 3, 1, 0; (3399), 3, 1, 0; (3450), 3, 1, 0; (3459), 3, 1, 0; (3462), 3, 1, 0; (3500), 3, 1, 0; (3508), 3, 1, 0; (3517), 3, 1, 0; (3520), 6, 2, 1; (3525), 6, 2, 5; (3545), 3, 1, 0; (3560), 3, 1, 0; (3565), 3, 1, 0; (3574), 6, 2, 4; (3576), 3, 1, 0; (3591), 6, 2, 5; (3631), 9

(5424), 3, 1, 0; (5443), 3, 1, 0; (5478), 3, 1, 0; (5520), 3, 1, 0; (5571), 6, 2, 1; (5572), 3, 1, 0; (5610), 3, 1, 0; (5644), 6, 2, 5; (5667), 3, 1, 0; (5669), 3, 1, 0; (5674), 3, 1, 0; (5698), 3, 1, 0; (5708), 6, 2, 1; (5710), 3, 1, 0; (5746), 9, 2, 1; (5751), 3, 1, 0; (5768), 3, 1, 0; (5777), 6, 2, 1; (5792), 3, 1, 0; (5793), 3, 1, 0; (5796), 3, 1, 0; (5805), 3, 1, 0; (5817), 3, 1, 0; (5848), 3, 1, 0; (5853), 3, 1, 0; (5881), 3, 1, 0; (5886), 3, 1, 0; (5942), 3, 1, 0; (5948), 3, 1, 0; (5972), 3, 1, 0; (5975), 3, 1, 0; (5994), 3, 1, 0; (5996), 3, 1, 0; (6001), 3, 1, 0; (6005), 3, 1, 0; (6019), 3, 1, 0; (6044), 3, 1, 0; (6057), 3, 1, 0; (6165), 3, 1, 0; (6244), 3, 1, 0; (6258), 3, 1, 0; (6263), 3, 1, 0; (6274), 9, 2, 1; (6333), 3, 1, 0; (6334), 3, 1, 0; (6348), 3, 1, 0; (6354), 3, 1, 0; (6363), 3, 1, 0; (6367), 3, 1, 0; (6379), 3, 1, 0; (6398), 3, 1, 0; (6406), 3, 1, 0; (6431), 3, 1, 0; (6441), 3, 1, 0; (6467), 3, 1, 0; (6471), 3, 1, 0; (6484), 3, 1, 0; (6501), 3, 1, 0; (6512), 3, 1, 0; (6538), 3, 1, 0; (6589), 3, 1, 0; (6603), 3, 1, 0; (6606), 3, 1, 0; (6639), 3, 1, 0; (6665), 3, 1, 0; (6668), 3, 1, 0; (6676), 3, 1, 0; (6739), 3, 1, 0; (6816), 3, 1, 0; (6963), 3, 1, 0; (7000), 3, 1, 0; (7012), 3, 1, 0; (7068), 3, 1, 0; (7090), 6, 2, 1; (7131), 3, 1, 0; (7136), 3, 1, 0; (7153), 3, 1, 0; (7160), 3, 1, 0; (7166), 3, 1, 0; (7168), 3, 1, 0; (7169), 3, 1, 0; (7195), 3, 1, 0; (7198), 6, 2, 5; (7228), 3, 1, 0; (7241), 6, 2, 31; (7249), 3, 1, 0; (7250), 6, 2, 4; (7263), 3, 1, 0; (7272), 3, 1, 0; (7278), 3, 1, 0; (7279), 3, 1, 0; (7282), 3, 1, 0; (7285), 3, 1, 0; (7286), 3, 1, 0; (7291), 6, 2, 5; (7293), 6, 2, 5; (7297), 3, 1, 0; (7300), 3, 1, 0; (7305), 3, 1, 0; (7319), 3, 1, 0; (7323), 3, 1, 0; (7327), 3, 1, 0; (7343), 3, 1, 0; (7356), 3, 1, 0; (7372), 3, 1, 0; (7411), 3, 1, 0; (7418), 3, 1, 0; (7422), 3, 1, 0; (7427), 3, 1, 0; (7444), 3, 1, 0; (7529), 3, 1, 0; (7544), 3, 1, 0; (7551), 3, 1, 0; (7559), 3, 1, 0; (7592), 3, 1, 0; (7615), 3, 1, 0; (7616), 3, 1, 0; (7775), 3, 1, 0; (7921), 3, 1, 0; (7952), 3, 1, 0; (7992), 3, 1, 0; (8036), 3, 1, 0; (8056), 3, 1, 0; (8087), 3, 1, 0; (8088), 3, 1, 0; (8094), 3, 1, 0; (8119), 3, 1, 0; (8146), 3, 1, 0; (8156), 3, 1, 0; (8159), 3, 1, 0; (8174), 3, 1, 0; (8211), 3, 1, 0; (8227), 3, 1, 0; (8229), 3, 1, 0; [4413, 1154, 142*, 1995/08/29–1998/01/29]

568 Mauna Kea

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

Observer D. J. Tholen

Measurer R. J. Whiteley

2.24-m telescope + CCD

USNO-A1.0

1998 BT₁₃, 4, 1, 0; 1998 BR₂₆, 10, 2, 1; [14, 2, 0*, 1998/01/30–1998/01/31]

587 Sormano

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

[sormano@tin.it]

Observers F. Manca, P. Ghezzi, P. Sicoli, M. Cavagna, A. Testa, P. Chiavenna,
G. Ventre, E. Colzani

0.5-m reflector + CCD

GSC

1981 ET₁₀, 2, 1, 0; 1996 QE, 4, 2, 20; 1996 RM, 5, 2, 24; 1996 RN, 4, 2, 3; 1996 UQ, 4, 2, 9; 1996 VC₁, 4, 2, 5; 1996 VD₁, 4, 2, 11; 1996 YP₃, 6, 3, 7; 1997 WT₂₂, 1, 1, 0; 1997 YX₃, 2, 1, 0; 1997 YK₁₆, 3, 2, 11; 1998 AX₄, 14, 5, 20; 1998 BS *, 5, 2, 2; 1998 BX₁ *, 11, 5, 9; 1998 BX₇, 2, 1, 0; 1998 BY₇, 2, 1, 0; 1998 BG₉, 5, 2, 1; 1998 BB₁₀, 5, 2, 10; 1998 BM₁₀, 2, 1, 0; 1998 BA₁₉ *, 6, 3, 8; 1998 BB₁₉ *, 12, 4, 9; 1998 BC₁₉ *, 6, 3, 8; 1998 BD₁₉ *, 7, 3, 8; 1998 BE₁₉ *, 9, 3, 2; 1998 BO₂₆, 3, 1, 0; 1998 BP₂₆, 3, 1, 0; 1998 BQ₂₆ *, 11, 4, 8; (1989), 2, 1, 0; (5155), 3, 2, 5; (7199), 3, 2, 11; [150, 30, 8*, 1997/12/27–1998/02/05]

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. Scirrii

0.50-m $f/2.8$ Ritchey-Chrétien + CCD

GSC

1981 EW₂, 3, 1, 0; 1988 RB₁₂, 3, 1, 0; 1996 QU, 4, 1, 0; 1997 VA₇, 3, 1, 0; 1997 YQ₈, 6, 2, 6; 1997 YR₈, 14, 5, 10; 1998 AT₈ *, 6, 2, 1; 1998 AU₈ *, 6, 2, 1; 1998 BW₇ *, 13, 4, 7; (8192), 3, 1, 0; (8193), 8, 3, 15; [69, 11, 3*, 1998/01/06–1998/01/29]

595 Farra d'Isonzo

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

[ccaf@tmedia.it]

Observers A. Toso, W. Boschini, L. Drigo, G. Lombardi, E. Pettarin, F. Piani

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

0.4-m $f/4.5$ reflector + CCD

GSC

1981 UE₂₆, 7, 3, 5; 1991 PT₁₆, 6, 3, 8; 1993 SG₃, 2, 1, 0; 1993 XY, 4, 2, 8; 1994 DA, 4, 2, 8; 1996 TO, 4, 2, 1; 1996 TX₇, 6, 3, 10; 1996 XJ₂₆, 7, 3, 2; 1997 VJ₆, 3, 1, 0; 1997 WT₃₄, 3, 1, 0; 1997 YK₉, 6, 4, 8; 1998 BY₇, 2, 1, 0; 1998 BF₁₉ *, 6, 3, 7; 1998 BG₁₉ *, 4, 3, 2; 1998 BH₁₉ *, 4, 2, 1; 1998 BJ₁₉ *, 7, 3, 5; 1998 BK₁₉ *, 7, 3, 5; 1998 BM₂₆ *, 6, 3, 5; 1998 BN₂₆ *, 6, 3, 5; 1998 BF₃₁, 4, 2, 2; 1998 CQ₁ *, 6, 2, 2; (6739), 2, 1, 0; (7544), 2, 1, 0; (8233), 3, 1, 0; [111, 24, 8*, 1997/11/21–1998/02/08]

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

1975 SA₁, 3, 1, 0; 1987 RO₅, 3, 1, 0; 1991 RD₁₂, 4, 1, 0; 1994 CE₁, 3, 1, 0; 1996 TS₁₅, 3, 1, 0; 1996 UC₃, 7, 2, 1; 1996 UD₃, 6, 2, 4; 1996 VM, 6, 2, 2; 1998 BA₄ *, 12, 4, 12; 1998 BB₁₀, 3, 1, 0; 1998 BM₁₀, 3, 1, 0; (99), 3, 1, 0; (519), 3, 1, 0; (1432), 3, 1, 0; (2773), 3, 1, 0; (7314), 4, 1, 0; [69, 16, 1*, 1998/01/01–1998/02/02]

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, V. D'Ambrosio, A. Di Paola, M. Carpino, A. Manara, A. La Spina, A. Di Clemente, G. De Sanctis, P. Tanga

Measurers A. Boattini, V. D'Ambrosio, G. Forti, M. Carpino, G. De Sanctis,
P. Tanga

0.60-m $f/3$ Schmidt + CCD

1997 DK, 2, 2, 1; [2, 1, 0*, 1997/01/17–1997/01/18]

610 Pianoro

V. Goretta, Via Resistenza 93, I-40065 Pianoro (BO), Italy [gorbiv@ntt.it]

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

GSC

1976 UY, 3, 1, 0; 1979 UH, 6, 2, 1; 1989 YA₂, 6, 2, 1; 1990 FD₁, 6, 2, 3; 1991 TT₁₃, 6, 2, 3; 1992 UN₄, 6, 2, 5; 1993 BE₂, 12, 4, 5; 1994 CB₁, 6, 2, 3; 1997 XK₁₀, 6, 2, 2; (2655), 6, 2, 5; (3824), 6, 2, 1; [69, 11, 0*, 1997/12/07–1998/01/29]

611 Starkenburg Sternwarte, Heppenheim

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

Observers M. Busch, P. Geffert, F. Hormuth, J. Rothermel, R. Stoss, A. Seib,
W. Ernst, K. Sonnenberg, S. Kluegl

Measurers M. Busch, R. Stoss, F. Hormuth

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

1988 VS₆, 2, 1, 0; 1991 TT₁₃, 2, 1, 0; 1997 XN₃, 2, 1, 0; 1997 XC₈, 2, 1, 0; 1997 XF₈, 2, 1, 0; 1998 BB₁₀, 3, 1, 0; 1998 BM₁₀, 4, 1, 0; 1998 BF₁₄, 4, 2, 2; 1998 BN₂₅, 7, 2, 1; 1998 CA, 2, 1, 0; (1019), 2, 1, 0; (1539), 7, 2, 1; [39, 12, 0*, 1998/01/17–1998/02/06]

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

GSC

1993 FT₃₇, 11, 3, 3; 1998 CR₁ *, 11, 3, 3; [22, 2, 1*, 1998/02/01–1998/02/04]

625 Kihei-AMOS Remote Maui Experimental Site

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

Observers G. Fricke, D. Nishimoto, J. Africano, B. Africano, J. Pye
Measurers P. Kervin, V. Soo Hoo, P. Sydney, A. Angara, B. McCarthy

0.30-m Schmidt-Cassegrain + CCD

(104), 4, 1, 0; (203), 4, 2, 1; (204), 5, 2, 1; (215), 3, 1, 0; (225), 6, 2, 1; (336), 5, 2, 1; (340), 5, 2, 1; (397), 6, 2, 1; (431), 3, 1, 0; (440), 3, 1, 0; (480), 4, 2, 1; (492), 6, 2, 1; (682), 3, 1, 0; (729), 5, 2, 1; (739), 4, 2, 1; (820), 4, 2, 1; (823), 5, 2, 1; (864), 8, 2, 1; (900), 3, 1, 0; (992), 5, 2, 1; (1074), 6, 3, 5; (1077), 5, 2, 1; (1092), 6, 2, 1; (1137), 3, 1, 0; (1184), 6, 2, 1; (1211), 5, 2, 1; (1215), 6, 2, 1; (1246), 6, 2, 1; (1272), 2, 1, 0; (1291), 3, 1, 0; (1356), 3, 1, 0; (1408), 6, 2, 1; (1542), 5, 2, 1; (1649), 6, 2, 1; (1808), 3, 1, 0; (1818), 1, 1, 0; (1834), 3, 1, 0; (1932), 5, 2, 1; (2517), 2, 1, 0; (3516), 3, 2, 8; (4609), 2, 1, 0; [178, 41, 0*, 1997/12/30–1998/01/14]

627 Blauvac

P. Antonini, 47 Rue Guillaume Puy, F-84000 Avignon, France
[Pierre.Antonini@wanadoo.fr]

Observer R. Roy

0.26-m $f/4.7$ reflector + CCD

GSC

1997 XD₁₃, 3, 1, 0; 1997 YB₁₇, 6, 2, 2; 1998 AK₃, 6, 2, 1; 1998 BW₁, 3, 1, 0; 1998 BB₄₂ *, 6, 2, 6; (5532), 3, 1, 0; (6319), 3, 1, 0; (6422), 3, 1, 0; [33, 8, 1*, 1997/12/07–1998/02/04]

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

1992 AB, 17, 4, 9; [17, 1, 0*, 1998/01/22–1998/01/31]

631 Hamburg-Georgswerder

M. Buck, Niedergeorgswerder Deich 96a, D-21109 Hamburg, Germany
[michael.buck@hamburg.netsurf.de]

0.15-m $f/8$ refractor + CCD

GSC

1991 GR, 4, 2, 1; 1992 UN₄, 4, 2, 1; 1994 AT₁, 4, 2, 1; (8131), 4, 2, 1; [16, 4, 0*, 1998/01/10–1998/01/11]

632 San Polo A Mosciano

L. Ferrini, C/O Villa Mirenda, Via San Polo A Mosciano, Firenze, Italy
[ferrini@dada.it]

Observers M. Mannucci, N. Montigiani, W. Benedetti, E. Balocchi, R. Paolinetti,
L. Ferrini, V. Cammelli

Measurers G. Forti, V. Goretti, M. Mannucci, N. Montigiani

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

GSC

1997 XK₁₀, 9, 2, 12; [9, 1, 0*, 1998/01/15–1998/01/27]

633 Romito

M. Bernazzani, via Provinciale 170, 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

(947), 3, 1, 0; (974), 3, 1, 0; (1035), 9, 3, 7; (1152), 3, 1, 0; (1291), 6, 2, 1; (1622), 3, 1, 0; (2676), 6, 2, 1; (2992), 3, 1, 0; [36, 8, 0*, 1998/01/25–1998/02/01]

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, S. Banh

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

1.82-m Plaskett telescope + CCD

GSC, USNO-A1.0

1998 AK₁₀, 3, 1, 0; [3, 1, 0*, 1998/01/09]

670 Camarillo

J. E. Rogers, 441 Rowland Avenue, Camarillo, CA 93010, U.S.A.
[72401.3174@compuserve.com]

0.25-m Schmidt-Cassegrain + CCD

GSC

1985 GP₁, 3, 1, 0; 1996 FG₃, 4, 1, 0; 1997 YX₃, 6, 2, 2; 1998 AK₈, 6, 2, 2; [19, 4, 0*, 1998/01/18–1998/01/25]

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 BG₉, 3, 1, 0; 1998 BB₁₀, 2, 1, 0; [5, 2, 0*, 1998/01/26]

675 Palomar

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

[gshoemaker@flag2.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)

B. Gladman, Canadian Institute for Theoretical Astrophysics, 60 St. George Street,
Toronto, ON M5S 1A7, Canada [gladman@cita.utoronto.ca] (8)

9 = 6 + 3

Observers J. A. Burns (8, H), D. J. Chadwick (3, S), T. Gehrels (4, L),
B. Gladman (8, H), H. E. Holt (3, S), H. R. Holt (3, S), J. J. Kavelaars
(8, H), D. H. Levy (3, S), F. J. Méndez (3, S), P. D. Nicholson (8, H),
C. M. Olmstead (3, S), T. Rodriguez (3, S), C. S. Shoemaker (3, S),
E. M. Shoemaker (3, S), D. K. Williams (3, S), L. A. Zimmerman (3, S)

Measurers B. Gladman (8), J. J. Kavelaars (8), B. A. Skiff (6),
C. S. Shoemaker (3), C. J. van Houten (4), I. van Houten-Groeneveld (4),
A. Wisse (4)

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

GSC, PPM

(3) 1981 JR₂, 4, 2, 3; 1987 UE₁, 5, 3, 26; 1987 WF₁, 4, 2, 2; 1992 UW₄, 4, 2, 3; 1993 KZ₁, 4, 2, 4; 1993 WH, 6, 3, 4; 1993 WU *, 3, 2, 1; 1994 WO₁₃ *, 6, 3, 4; 1994 WP₁₃ *, 6, 3, 4; [42, 9, 3*, 1993/11/19–1994/12/02]

(4) 2078 P-L *, 6, 6, 30; 4297 P-L *, 8, 4, 4; 4917 P-L *, 7, 6, 31; 6102 P-L *, 7, 7, 32; 6604 P-L *, 8, 8, 32; 6706 P-L *, 8, 8, 32; 1291 T-1 *, 13, 7, 50; 3216 T-1 *, 13, 9, 53; 4107 T-1 *, 12, 7, 51; 4194 T-1 *, 10, 8, 53; 4380 T-1 *, 4, 3, 3; 1171 T-2 *, 15, 8, 16; 3122 T-2 *, 15, 8, 16; 4128 T-2 *, 15, 8, 16; 5010 T-2 *, 7, 4, 6; 3834 T-3 *, 18, 6, 14; 4333 T-3 *, 13, 7, 15; [179, 17, 17*, 1960/09/24–1977/10/22]

(6) 2186 T-1, 2, 1, 0; [2, 1, 0*, 1955/03/24]

(8) 1997 SZ₁₀, 3, 1, 0; [3, 1, 0*, 1997/10/27]

(9) 1981 EW₁₈, 2, 1, 0; 1981 EE₄₅, 2, 1, 0; 1990 UB₁, 2, 1, 0; 1991 PZ₅, 2, 1, 0; 1991 PG₉, 2, 1, 0; 1993 VB₈, 2, 1, 0; 1994 AR₁, 2, 1, 0; 1994 AV₁, 2, 1, 0; 1994 EP, 2, 1, 0; 1996 TY₄, 2, 1, 0; 1996 TG₇, 2, 1, 0; 1996 UU, 2, 1, 0; 1996 XG₉, 2, 1, 0; [26, 13, 0*, 1989/11/06–1994/04/04]

676 San Clemente

J. E. Root, 1303 S. Ola Vista, San Clemente, CA 92672, U.S.A. [jhoot@exo.com]

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

GSC

(1035), 2, 2, 1; (3800), 2, 1, 0; [4, 2, 0*, 1998/01/22–1998/01/23]

681 Calgary

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

[gbillings@talisman-energy.com]

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

GSC

(95), 7, 3, 4; (945), 8, 4, 5; [15, 2, 0*, 1998/01/22–1998/02/01]

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

1997 QC₁, 13, 5, 40; 1997 XN₉, 6, 2, 2; 1997 YX₁₁, 6, 2, 4; 1997 YB₁₂, 5, 2, 4; 1998 AD, 14, 4, 8; 1998 BW₄₁ *, 6, 2, 3; 1998 BX₄₁ *, 6, 2, 7; 1998 BY₄₁ *, 6, 2, 2; 1998 BZ₄₁ *, 6, 2, 2; 1998 BA₄₂ *, 5, 2, 2; [73, 10, 5*, 1997/10/21–1998/02/02]

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

1990 OT₄, 6, 2, 1; 1995 ON, 6, 2, 1; 1996 MN, 4, 2, 1; 1996 NA, 3, 1, 0; 1996 OE, 4, 2, 1; 1996 OF, 5, 2, 1; 1996 PA₁, 5, 2, 3; 1996 RE₁, 5, 2, 1; 1996 RJ₃, 3, 2, 1; 1996 TS₁₁, 4, 2, 1; 1996 TT₁₁, 4, 2, 3; 1996 UA, 5, 2, 1; 1996 UU₁, 6, 2, 1; 1996 VM₂, 5, 2, 1; 1996 VQ₆, 6, 3, 3; 1996 WQ, 6, 2, 1; 1996 XC, 6, 2, 1; 1997 VB₄, 5, 2, 1; 1997 YT₁, 4, 2, 15; 1997 YZ₇, 4, 2, 1; 1997 YA₈, 6, 2, 1; 1997 YE₈, 6, 2, 1; 1997 YT₁₃, 7, 3, 15; 1997 YP₁₄, 5, 2, 1; 1998 BF *, 7, 3, 15; 1998 BQ, 2, 1, 0; 1998 BR *, 6, 2, 1; 1998 BZ₂ *, 5, 2, 3; 1998 BA₃ *, 10, 5, 8; 1998 BW₃ *, 8, 4, 5; 1998 BX₃ *, 4, 2, 1; 1998 BY₃ *, 4, 2, 1; 1998 BZ₃ *, 8, 4, 5; 1998 BS₇ *, 4, 2, 2; 1998 BR₁₃ *, 5, 2, 1; 1998 BF₃₀ *, 6, 3, 3; 1998 BG₃₀ *, 6, 3, 3; 1998 BF₃₃ *, 4, 2, 1; (5819), 2, 1, 0; [201, 39, 13*, 1998/01/02–1998/02/01]

688 Lowell Observatory, Anderson Mesa Station

E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff AZ 86001,

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

Observers M. W. Buie, B. A. Skiff

Measurer B. A. Skiff

1.07-m Hall reflector + CCD

USNO-A1.0

1970 JB, 4, 2, 2; 1977 RC₉, 2, 1, 0; 1979 UH, 2, 1, 0; 1981 DR₂, 3, 1, 0; 1981 ET₁₃, 2, 1, 0; 1981 ET₁₅, 2, 1, 0; 1981 EW₁₈, 4, 2, 2; 1981 ES₂₁, 2, 1, 0; 1981 ES₃₈, 2, 1, 0; 1981 ET₄₁, 2, 1, 0; 1981 EE₄₅, 4, 2, 2; 1981 QY₂, 2, 1, 0; 1981 SD₂, 2, 1, 0; 1982 HO₁, 4, 2, 12; 1982 UZ₉, 2, 1, 0; 1982 YR₁, 2, 1, 0; 1983 RV₃, 5, 2, 2; 1983 WQ, 4, 2, 2; 1985 RG, 4, 2, 2; 1985 TJ₁, 1, 1, 0; 1985 TS₁, 2, 1, 0; 1986 TQ, 2, 1, 0; 1987 UN₁, 4, 2, 2; 1988 CE₂, 2, 1, 0; 1988 DZ₄, 2, 1, 0; 1988 VC₁, 2, 1, 0; 1989 GQ₄, 2, 1, 0; 1989 KF, 3, 1, 0; 1989 RQ₁, 4, 2, 2; 1990 QA, 2, 1, 0; 1990 QJ₂, 2, 1, 0; 1990 QG₃, 2, 1, 0; 1990 SX, 7, 3, 2; 1990 UB₁, 4, 2, 2; 1990 UF₁, 2, 1, 0; 1990 UN₂, 2, 1, 0; 1990 VD₃, 2, 1, 0; 1990 VB₆, 2, 1, 0; 1990 WF, 5, 2, 1; 1990 WQ₆, 3, 1, 0; 1991 DM, 2, 1, 0; 1991 GY₃, 10, 3, 2; 1991 NL, 4, 2, 10; 1991 PB₂, 5, 2, 1; 1991 PG₉, 7, 3, 11; 1991 PW₉, 2, 1, 0; 1991 RP₁₇, 2, 1, 0; 1991 VX₂, 4, 2, 1; 1991 VH₄, 2, 1, 0; 1991 XS, 4, 2, 10; 1992 EB₁₃, 1, 1, 0; 1992 LS, 2, 1, 0; 1992 OK, 6, 3, 2; 1992 OJ₈, 2, 1, 0; 1992 RM₂, 2, 1, 0; 1992 UH₄, 2, 1, 0; 1992 UZ₅, 4, 2, 1; 1992 WF₁, 4, 2, 2; 1992 WG₅, 2, 1, 0; 1993 EM, 5, 2, 1; 1993 FF₄, 6, 2, 2; 1993 FN₈, 4, 2, 10; 1993 FR₁₈, 4, 2, 2; 1993 HG, 6, 3, 2; 1993 HH,

2, 1, 0; 1993 NU₁, 2, 1, 0; 1993 OJ₇, 2, 1, 0; 1993 QO, 4, 2, 1; 1993 SZ, 2, 1, 0; 1993 SH₁, 7, 3, 9; 1993 SN₂, 5, 2, 1; 1993 TE₃, 2, 1, 0; 1993 UN₆, 8, 2, 2; 1993 VY, 4, 2, 2; 1993 VB₈, 4, 2, 2; 1994 AR₁, 4, 2, 2; 1994 AV₁, 4, 2, 2; 1994 EP, 4, 2, 2; 1994 GY, 2, 1, 0; 1994 TF₁₅, 2, 1, 0; 1994 VW₁, 2, 1, 0; 1994 YJ₂, 2, 1, 0; 1995 BA, 2, 1, 0; 1995 BH₂, 2, 1, 0; 1995 CK, 2, 1, 0; 1995 CM, 2, 1, 0; 1995 CM₁, 2, 1, 0; 1995 DF, 5, 2, 1; 1995 DR, 2, 1, 0; 1995 DR₁, 2, 1, 0; 1996 NB₄, 2, 1, 0; 1996 NX₄, 4, 2, 1; 1996 RM, 6, 3, 9; 1996 RF₅, 4, 2, 1; 1996 SR₇, 4, 2, 1; 1996 TY₄, 4, 2, 2; 1996 TG₇, 8, 4, 11; 1996 TH₇, 12, 4, 10; 1996 TF₁₁, 2, 1, 0; 1996 TS₁₅, 4, 2, 10; 1996 TG₂₈, 4, 2, 1; 1996 UB, 2, 1, 0; 1996 UU, 4, 2, 2; 1996 UF₄, 2, 1, 0; 1996 VS, 2, 1, 0; 1996 VV, 2, 1, 0; 1996 VA₅, 2, 1, 0; 1996 VD₆, 4, 2, 2; 1996 VT₈, 4, 2, 2; 1996 VV₈, 2, 1, 0; 1996 VX₁₅, 4, 2, 2; 1996 XG₉, 4, 2, 2; 1996 XS₂₅, 4, 2, 2; 1996 YP₃, 4, 2, 2; 1997 QP, 2, 1, 0; 1997 SQ₁₇, 2, 1, 0; 1997 VQ₂, 2, 1, 0; 1997 WD₄₈, 2, 1, 0; 1997 WE₅₅ *, 2, 1, 0; 1997 YE₂, 13, 3, 2; 1997 YM₃, 2, 1, 0; 1997 YX₁₆, 2, 1, 0; 1997 YD₂₀ *, 4, 2, 2; 1997 YE₂₀ *, 4, 2, 2; 1997 YF₂₀ *, 4, 2, 2; 1998 AL, 2, 1, 0; 1998 AJ₃, 2, 1, 0; 1998 AP₆, 2, 1, 0; 1998 AY₈ *, 6, 3, 2; 1998 AZ₈ *, 4, 2, 1; 1998 AA₉ *, 8, 3, 2; 1998 AB₉ *, 4, 2, 1; 1998 AC₉ *, 10, 3, 2; 1998 AD₉ *, 4, 2, 1; 1998 AE₉ *, 4, 2, 1; 1998 AF₉ *, 6, 2, 2; 1998 AG₉ *, 4, 2, 2; 1998 AH₉ *, 4, 2, 2; 1998 AJ₉ *, 4, 2, 2; 1998 AK₉ *, 6, 2, 2; 1998 AL₉ *, 4, 2, 2; 1998 AM₉ *, 4, 2, 2; 1998 AN₉ *, 6, 3, 2; 1998 AO₉ *, 8, 4, 12; 1998 AP₉ *, 4, 2, 2; 1998 AQ₉ *, 4, 2, 2; 1998 AR₉ *, 4, 2, 2; 1998 AS₉ *, 6, 2, 2; 1998 AT₉ *, 8, 2, 2; 1998 AU₉ *, 7, 2, 2; 1998 AV₉ *, 8, 2, 2; 1998 AW₉ *, 4, 2, 1; 1998 AX₉ *, 4, 2, 1; 1998 AY₉ *, 4, 2, 1; 1998 BN₁₂, 1, 1, 0; 2827 P-L, 2, 1, 0; 4204 P-L, 7, 3, 9; 4269 P-L, 2, 1, 0; 4522 P-L, 5, 2, 1; 4607 P-L, 6, 3, 2; 4667 P-L, 4, 2, 1; 5011 P-L, 6, 3, 10; 6114 P-L, 4, 2, 2; 6673 P-L, 2, 1, 0; 9530 P-L, 2, 1, 0; 2186 T-1, 4, 2, 2; 1107 T-2, 2, 1, 0; 1279 T-2, 2, 1, 0; 2225 T-2, 5, 2, 1; 3042 T-2, 4, 2, 1; 3290 T-2, 5, 2, 1; 3365 T-2, 2, 1, 0; 4283 T-2, 4, 2, 1; 5065 T-2, 4, 2, 1; (808), 2, 1, 0; (2032), 2, 1, 0; (2837), 4, 2, 1; (3838), 6, 2, 2; (4139), 3, 2, 1; (4328), 2, 1, 0; (4917), 2, 1, 0; (5126), 4, 2, 2; (5227), 5, 2, 2; (5945), 6, 3, 2; (6412), 4, 2, 2; (7129), 4, 2, 2; (7169), 2, 1, 0; (7249), 2, 1, 0; (7576), 2, 1, 0; (7868), 2, 1, 0; (8120), 2, 1, 0; (8184), 2, 1, 0; [691, 192, 30*, 1997/11/29–1998/01/08]

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]

R. C. Stone, U. S. Naval Observatory, Flagstaff Station, P.O. Box 1149, Flagstaff

AZ 86002-1149 [rcs@nofs.navy.mil]

Observer A. K. B. Monet, R. C. Stone

0.20-m transit telescope + CCD, 1.55-m astrometric reflector + CCD

GSC, USNO-A1.0

1978 RY₆, 1, 1, 0; 1980 RP, 1, 1, 0; 1983 RG₂, 2, 2, 12; 1983 RP₂, 1, 1, 0; 1984 SH, 1, 1, 0; 1987 DO₆, 1, 1, 0; 1989 NY, 1, 1, 0; 1989 UL₁, 1, 1, 0; 1991 PC₁₈, 1, 1, 0; 1992 HM, 1, 1, 0; 1992 NP, 1, 1, 0; 1992 ST₁, 1, 1, 0; 1993 AD, 1, 1, 0; 1994 AZ₂, 1, 1, 0; 1995 GF, 1, 1, 0; 1995 KL₁, 1, 1, 0; 1045 T-2, 1, 1, 0; (1), 9, 9, 50; (2), 8, 8, 41; (4), 3, 3, 84; (5), 4, 4, 45; (10), 4, 4, 74; (11), 3, 3, 32; (15), 4, 4, 55; (17), 20, 20, 112; (19), 10, 10, 105; (20), 6, 6, 8; (23), 2, 2, 1; (26), 10, 10, 35; (34), 2, 2, 1; (39), 2, 2, 5; (40), 7, 7, 35; (41), 2, 2, 26; (45), 8, 8, 67; (52), 17, 17, 122; (60), 4, 4, 7; (65), 12, 12, 73; (67), 6, 6, 33; (69), 3, 3, 2; (70), 10, 10, 53; (77), 3, 3, 6; (78), 5, 5, 44; (79), 2, 2, 5; (80), 2, 2, 1; (82), 2, 2, 42; (87), 14, 14, 93; (89), 7, 7, 60; (90), 1, 1, 0; (94), 2, 2, 4; (101), 4, 4, 34; (105), 3, 3, 25; (107), 18, 18, 102; (109), 18, 18, 116; (113), 12, 12, 103; (129), 4, 4, 30; (132), 8, 8, 33; (133), 2, 2, 5; (138), 3, 3, 45; (140), 5, 5, 4; (142), 3, 3, 19; (144), 3, 3, 32; (146), 11, 11, 62; (147), 10, 10, 14; (152), 3, 3, 33; (156), 4, 4, 72; (165), 13, 13, 74; (170), 3, 3, 2; (176), 6, 6, 5; (181), 2, 2, 1; (187), 2, 2, 27; (191), 3, 3, 30; (192), 6, 6, 5; (196), 2, 2, 31; (203), 6, 6, 89; (204), 4, 4, 31; (229), 2, 2, 30; (231), 2, 2, 6; (233), 2, 2, 29; (240), 2, 2, 1; (246), 2, 2, 30; (255), 8, 8, 89; (258), 1, 1, 0; (269), 3, 3, 35; (288), 2, 2, 4; (294), 2, 2, 7; (304), 2, 2, 24; (305), 2, 2, 1; (308), 6, 6, 99; (309), 2, 2, 2; (314), 2, 2, 1; (319), 2, 2, 3; (333), 2, 2, 3; (339), 2, 2, 2; (343), 3, 3, 2; (347), 16, 16, 62; (349), 2, 2, 1; (351), 6, 6, 34; (355), 2, 2, 32; (356), 6, 6, 30; (367), 2, 2, 1; (369), 4, 4, 31; (376), 2, 2, 27; (385), 5, 5, 7; (389), 8, 8, 62; (404), 2, 2, 6; (407), 3, 3, 27; (415), 5, 5, 93; (444), 3, 3, 5; (459), 3, 3, 5; (465), 5, 5, 62; (476), 2, 2, 2; (486), 11, 11, 106; (489), 2, 2, 3; (498), 2, 2, 1; (510), 3, 3, 4; (520), 2, 2, 1; (540), 2, 2, 5; (553), 2, 2, 3; (556), 2, 2, 1; (558), 3, 3, 29; (564), 4, 4, 26; (589), 2, 2, 4; (590), 3, 3, 32; (593), 3, 3, 32; (639), 2, 2, 1; (652), 2, 2, 2; (654), 3, 3, 43; (658), 4, 4, 5; (670), 15, 15, 48; (691), 3, 3, 7; (712), 3, 3, 18; (721), 11, 11, 65; (727), 7, 7, 60; (729), 2, 2, 5; (739), 8, 8, 93; (763), 2, 2, 1; (768), 4, 4, 31; (776), 3, 3, 8; (778), 3, 3, 4; (784), 2, 2, 5; (790), 2, 2, 3; (798), 2, 2, 1; (800), 6, 6, 31; (804), 21, 21, 88; (836), 12, 12, 45; (839), 3, 3, 30; (842), 3, 3, 4; (845), 3, 3, 27; (851), 2, 2, 28; (856), 2, 2, 3; (856), 5, 5, 7; (859), 2, 2, 4; (866), 2, 2, 4; (874), 2, 2, 31; (876), 2, 2, 31; (881), 5, 5, 8; (891), 4, 4, 31; (894), 2, 2, 1; (905), 2, 2, 5; (906), 3, 3, 2; (914), 2, 2, 3; (918), 5, 5, 7; (932), 2, 2, 2; (943), 2, 2, 31; (949), 3, 3, 32; (974), 2, 2, 5; (994), 4, 4, 27; (1000), 2, 2, 3; (1002), 3, 3, 58; (1078), 20, 20, 78; (1100), 2, 2, 1; (1216), 1, 1, 0; (1235), 1, 1, 0; (1245), 2, 2, 1; (1284), 9, 9, 13; (1310), 2, 2, 1; (1313), 3, 3, 33; (1359), 4, 4, 18; (1461), 4, 4, 29; (1558), 8, 8, 30; (1686), 2, 2, 4; (1727), 1, 1, 0; (1747), 1, 1, 0; (1843), 1, 1, 0; (1959), 1, 1, 0; (2066), 3, 3, 17; (2377), 5, 5, 32; (2475), 4, 4, 19; (2560), 2, 2, 7; (2655), 1, 1, 0; (2918), 5, 5, 48; (2930), 3, 3, 8; (2933), 7, 7, 76; (3002), 2, 2, 1; (3071), 3, 3,

12; (3198), 2, 2, 1; (3568), 1, 1, 0; (3800), 1, 1, 0; (3840), 10, 10, 60; (3898), 9, 9, 41; (3976), 2, 2, 1; (4297), 1, 1, 0; (5184), 1, 1, 0; (5477), 1, 1, 0; (5751), 1, 1, 0; (5819), 1, 1, 0; (7041), 1, 1, 0; (7057), 2, 2, 1; (7194), 1, 1, 0; (7870), 1, 1, 0; (7992), 1, 1, 0; (7999), 1, 1, 0; (8067), 1, 1, 0; (8073), 1, 1, 0; (8079), 2, 2, 12; (8080), 2, 2, 29; (8144), 1, 1, 0; (8146), 2, 2, 12; (8147), 1, 1, 0; (8157), 1, 1, 0; (8159), 1, 1, 0; (8167), 1, 1, 0; (8174), 1, 1, 0; (8189), 1, 1, 0; (8194), 1, 1, 0; [871, 225, 0*, 1997/03/04–1998/01/18]

691 Kitt Peak, Steward Observatory

T. Gehrels, Space Sciences Building, University of Arizona, Tucson, AZ 85721,

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

Observers T. Gehrels, J. Montani, J. V. Scotti

0.91-m Spacewatch telescope + CCD

GSC

1975 TO₂, 2, 1, 0; 1978 RL₁, 3, 1, 0; 1979 QT₈, 3, 1, 0; 1981 ER₆, 3, 1, 0; 1981 EZ₇, 3, 1, 0; 1981 EF₁₈, 2, 1, 0; 1981 EZ₁₈, 3, 1, 0; 1981 UJ₂₃, 3, 1, 0; 1984 LK₃, 1, 0; 1984 SY₅, 6, 2, 12; 1984 SF₆, 6, 2, 6; 1985 PC₂, 3, 1, 0; 1985 RN₄, 3, 1, 0; 1985 TW, 6, 2, 5; 1986 QA₃, 3, 1, 0; 1986 TX₃, 3, 1, 0; 1988 BN₄, 3, 1, 0; 1988 DK, 2, 1, 0; 1988 QC, 3, 1, 0; 1990 OH₁, 2, 1, 0; 1990 QM₁, 2, 1, 0; 1990 QK₈, 6, 2, 12; 1990 RV, 3, 1, 0; 1990 RE₇, 3, 1, 0; 1991 CB₁, 2, 1, 0; 1991 GA₇, 3, 1, 0; 1991 GV₈, 2, 1, 0; 1991 PJ₁₂, 3, 1, 0; 1991 PT₁₂, 6, 2, 7; 1991 RS₇, 3, 1, 0; 1991 RK₁₁, 3, 1, 0; 1991 RR₄₀, 3, 1, 0; 1991 TJ₁₄, 3, 1, 0; 1991 TW₁₄, 3, 1, 0; 1992 CR₂, 9, 3, 28; 1992 EJ₄, 3, 1, 0; 1992 EY₉, 3, 1, 0; 1992 PN₁, 3, 1, 0; 1992 RZ₅, 3, 1, 0; 1993 FT₄, 3, 1, 0; 1993 HH₃, 3, 1, 0; 1993 OF₃, 3, 1, 0; 1993 TN₂₉, 3, 1, 0; 1993 TH₃₂, 6, 2, 4; 1994 AD, 3, 1, 0; 1994 CE₁, 3, 1, 0; 1994 CJ₂, 3, 1, 0; 1995 DB₁₄, 3, 1, 0; 1995 EH₉, 3, 1, 0; 1995 SX₁₂, 3, 1, 0; 1996 HD₁₃, 3, 1, 0; 1996 MR, 3, 1, 0; 1996 NN₄, 3, 1, 0; 1996 OS₂, 3, 1, 0; 1996 PY₇, 3, 1, 0; 1996 QQ₁, 6, 2, 6; 1996 RC₁, 5, 2, 3; 1996 RQ₂, 6, 2, 7; 1996 RU₂, 6, 2, 5; 1996 RF₅, 6, 2, 7; 1996 SK₆, 3, 1, 0; 1996 TM₆, 3, 1, 0; 1996 TJ₉, 3, 1, 0; 1996 TC₁₅, 3, 1, 0; 1996 TZ₂₀, 3, 1, 0; 1996 TY₂₇, 2, 1, 0; 1996 TK₄₈, 2, 1, 0; 1996 TZ₆₅, 3, 1, 0; 1996 UO, 3, 1, 0; 1996 UG₅, 3, 1, 0; 1996 VV, 6, 2, 1829; 1996 VG₈, 3, 1, 0; 1996 VX₈, 3, 1, 0; 1996 VT₂₁, 3, 1, 0; 1997 UK₃, 6, 2, 4; 1997 UO₃, 2, 1, 0; 1997 UP₈, 3, 1, 0; 1997 US₈, 2, 1, 0; 1997 UW₈, 5, 2, 413; 1997 UZ₈, 3, 1, 0; 1997 UT₂₀, 3, 1, 0; 1997 UA₂₂, 3, 1, 0; 1997 VE, 3, 1, 0; 1997 VR, 8, 3, 617; 1997 VA₉, 3, 1, 0; 1997 WG₇, 12, 4, 60; 1997 WQ₉, 3, 1, 0; 1997 WC₁₀, 6, 2, 4; 1997 WH₁₀, 6, 2, 4; 1997 WD₁₂, 3, 1, 0; 1997 WH₁₃, 9, 3, 61; 1997 WN₁₃, 3, 1, 0; 1997 WP₁₄, 6, 2, 7; 1997 WQ₁₅, 6, 2, 1410; 1997 WU₁₆, 3, 1, 0; 1997 WZ₁₆, 3, 1, 0; 1997 WR₂₁, 3, 1, 0; 1997 WS₂₁, 5, 2, 7; 1997 WT₂₁, 3, 1, 0; 1997 WB₂₂, 3, 1, 0; 1997 WL₂₂, 6, 2, 4; 1997 WP₂₂, 8, 3, 8; 1997 WQ₂₂, 9, 3, 8; 1997 WM₂₃, 6, 2, 5; 1997 WT₂₃, 9, 3, 1027; 1997 WT₃₄, 6, 2, 12; 1997 WB₃₇, 9, 3, 11; 1997 WO₃₇, 3, 1, 0; 1997 WO₄₄, 7, 3, 1146; 1997 WP₄₄, 3, 1, 0; 1997 WT₅₀, 3, 1, 0; 1997 WK₅₄, 3, 1, 0; 1997 WM₅₄, 3, 1, 0; 1997 WN₅₄, 5, 2, 6; 1997 WO₅₄, 3, 1, 0; 1997 WP₅₄, 3, 1, 0; 1997 WQ₅₄, 3, 1, 0; 1997 WT₅₄, 3, 1, 0; 1997 WU₅₄, 6, 2, 6; 1997 WV₅₄, 6, 2, 6; 1997 WW₅₄, 5, 2, 6; 1997 WX₅₄, 5, 2, 6; 1997 WB₅₅, 3, 1, 0; 1997 WC₅₅, 3, 1, 0; 1997 WD₅₅, 3, 1, 0; 1997 WN₅₅, 5, 2, 7; 1997 WO₅₅, 5, 2, 7; 1997 WP₅₅, 5, 2, 7; 1997 WQ₅₅, 3, 1, 0; 1997 XG, 3, 1, 0; 1997 XM, 3, 1, 0; 1997 XN₃, 3, 1, 0; 1997 XX₃, 3, 1, 0; 1997 XN₈, 9, 3, 8; 1997 XV₈, 6, 2, 8; 1997 XF₁₁, 3, 1, 0; 1997 XK₁₈, 5, 2, 1; 1997 YC₁, 3, 1, 0; 1997 YV₂, 6, 2, 7; 1997 YN₅, 3, 1, 0; 1997 YO₅, 4, 2, 7; 1997 YP₅, 3, 1, 0; 1997 YQ₅, 3, 1, 0; 1997 YR₅, 3, 1, 0; 1997 YV₆, 3, 1, 0; 1997 YG₇, 3, 1, 0; 1997 YB₁₂, 3, 1, 0; 1997 YJ₁₃, 3, 1, 0; 1997 YD₁₄, 6, 2, 89; 1997 YH₁₄, 6, 2, 5; 1997 YJ₁₄, 3, 1, 0; 1997 YF₁₅, 3, 1, 0; 1997 YX₁₅, 3, 1, 0; 1997 YQ₁₇, 6, 2, 11; 1997 YX₁₇, 5, 2, 7; 1997 YY₁₇, 3, 1, 0; 1997 YZ₁₇, 3, 1, 0; 1997 YA₁₈, 3, 1, 0; 1997 YC₁₈, 10, 4, 71; 1997 YF₂₀, 6, 2, 5; 1998 AJ, 6, 2, 1; 1998 AS₁, 3, 1, 0; 1998 AQ₄, 12, 4, 34; 1998 AR₄, 3, 1, 0; 1998 AS₄, 6, 2, 5; 1998 AU₄, 5, 2, 6; 1998 AL₆, 3, 1, 0; 1998 AW₆, 3, 1, 0; 1998 AY₆, 3, 1, 0; 1998 AJ₇, 3, 1, 0; 1998 AW₈, 3, 1, 0; 1998 AX₉, 6, 2, 12; 1998 AC₁₀, 2, 1, 0; 1998 AK₁₀, 17, 5, 27; 1998 AP₁₀, 3, 1, 0; 1998 AQ₁₀, 3, 1, 0; 1998 AR₁₀, 6, 2, 5; 1998 AS₁₀, 3, 1, 0; 1998 AT₁₀, 6, 2, 5; 1998 AU₁₀, 5, 2, 6; 1998 AC₁₁, 5, 2, 2; 1998 BG₂, 3, 1, 0; 1998 BH₂, 9, 3, 12; 1998 BN₂, 3, 1, 0; 1998 BB₃, 6, 2, 4; 1998 BC₃, 6, 2, 4; 1998 BD₃, 8, 3, 15; 1998 BE₃, 6, 2, 4; 1998 BF₃, 5, 2, 4; 1998 BG₃, 6, 2, 4; 1998 BH₃, 6, 2, 4; 1998 BJ₃, 6, 2, 4; 1998 BK₃, 6, 2, 4; 1998 BL₃, 6, 2, 4; 1998 BM₃, 6, 2, 4; 1998 BN₃, 5, 2, 4; 1998 BO₃, 12, 4, 12; 1998 BP₃, 6, 2, 4; 1998 BQ₃, 6, 2, 4; 1998 BR₃, 8, 3, 12; 1998 BS₃, 12, 4, 12; 1998 BT₃, 9, 3, 12; 1998 BU₃, 12, 4, 12; 1998 BV₃, 12, 4, 12; 1998 BR₄, 3, 1, 0; 1998 BE₅, 3, 1, 0; 1998 BF₅, 6, 2, 6; 1998 BG₅, 6, 2, 6; 1998 BH₅, 14, 5, 12; 1998 BJ₅, 9, 3, 6; 1998 BK₅, 6, 2, 1; 1998 BL₅, 6, 2, 1; 1998 BM₅, 6, 2, 1; 1998 BN₅, 6, 2, 1; 1998 BO₅, 12, 4, 12; 1998 BP₅, 12, 4, 12; 1998 BQ₅, 9, 3, 8; 1998 BR₅, 12, 4, 8; 1998 BS₅, 9, 3, 8; 1998 BT₅, 12, 4, 3; 1998 BU₅, 15, 5, 8; 1998 BV₅, 8, 3, 8; 1998 BW₅, 9, 3, 8; 1998 BX₅, 6, 2, 1; 1998 BY₅, 12, 4, 8; 1998 BZ₅, 9, 3, 8; 1998 BA₆, 5, 2, 1; 1998 BB₆, 5, 2, 1; 1998 BC₆, 5, 2, 1; 1998 BD₆, 5, 2, 1; 1998 BE₆, 5, 2, 1; 1998 BF₆, 8, 3, 6; 1998 BG₆, 5, 2, 1; 1998 BH₆, 8, 3, 6; 1998 BJ₆, 5, 2, 1; 1998 BK₆, 6, 2, 1; 1998 BL₆, 6, 2, 1; 1998 BM₆, 6, 2, 1; 1998 BN₆, 6, 2, 1; 1998 BO₆, 9, 3, 7; 1998 BY₆, 12, 4, 3; 1998 BZ₆, 3, 1, 0; 1998 BC₈, 3, 1, 0; 1998 BF₈, 3, 1, 0; 1998 BJ₈, 3, 1, 0; 1998 BQ₈, 3, 1, 0; 1998 BM₉, 9, 3, 16; 1998 BN₉, 9, 3, 13; 1998 BO₉, 9, 3, 11; 1998 BP₉, 6, 2, 4; 1998 BQ₉, 6, 2, 4; 1998 BR₉, 9, 3, 11;

1998 BS₉, 9, 3, 11; 1998 BT₉, 9, 3, 11; 1998 BU₉, 6, 2, 4; 1998 BV₉, 8, 3, 11; 1998 BW₉, 9, 3, 11; 1998 BX₉, 6, 2, 4; 1998 BY₉, 9, 3, 11; 1998 BZ₉, 5, 2, 4; 1998 BA₁₀, 6, 2, 4; 1998 BS₁₀, 3, 1, 0; 1998 BZ₁₀, 3, 1, 0; 1998 BK₁₁, 3, 1, 0; 1998 BL₁₁, 3, 1, 0; 1998 BN₁₁, 3, 1, 0; 1998 BD₁₂, 3, 1, 0; 1998 BF₁₂, 3, 1, 0; 1998 BG₁₂, 3, 1, 0; 1998 BR₁₂, 3, 1, 0; 1998 BS₁₂, 3, 1, 0; 1998 BT₁₂, 3, 1, 0; 1998 BU₁₂, 3, 1, 0; 1998 BV₁₂, 6, 2, 7; 1998 BW₁₂, 5, 2, 7; 1998 BJ₁₃, 3, 1, 0; 1998 BL₁₃, 3, 1, 0; 1998 BO₁₃, 5, 2, 17; 1998 BP₁₃, 3, 1, 0; 1998 BT₁₃, 13, 5, 4; 1998 BU₁₃, 6, 2, 3; 1998 BV₁₃, 6, 2, 1; 1998 BW₁₃, 6, 2, 1; 1998 BX₁₃, 9, 3, 7; 1998 BY₁₃, 6, 2, 1; 1998 BZ₁₃, 6, 2, 1; 1998 BA₁₄, 6, 2, 1; 1998 BB₁₄, 6, 2, 1; 1998 BC₁₄, 6, 2, 1; 1998 BD₁₄, 6, 2, 1; 1998 BE₁₄, 6, 2, 1; 1998 BE₁₅, 3, 1, 0; 1998 BA₁₆, 3, 1, 0; 1998 BO₁₆, 5, 2, 6; 1998 BP₁₆, 6, 2, 6; 1998 BQ₁₆, 6, 2, 6; 1998 BR₁₆, 6, 2, 6; 1998 BS₁₆, 6, 2, 6; 1998 BT₁₆, 6, 2, 6; 1998 BU₁₆, 6, 2, 6; 1998 BV₁₆, 6, 2, 6; 1998 BW₁₆, 6, 2, 6; 1998 BX₁₆, 6, 2, 6; 1998 BY₁₆, 6, 2, 6; 1998 BZ₁₆, 6, 2, 6; 1998 BA₁₇, 5, 2, 6; 1998 BB₁₇, 6, 2, 6; 1998 BC₁₇, 5, 2, 6; 1998 BD₁₇, 6, 2, 6; 1998 BE₁₇, 9, 3, 11; 1998 BF₁₇, 9, 3, 11; 1998 BG₁₇, 6, 2, 6; 1998 BH₁₇, 6, 2, 6; 1998 BJ₁₇, 6, 2, 6; 1998 BK₁₇, 6, 2, 6; 1998 BL₁₇, 6, 2, 6; 1998 BM₁₇, 9, 3, 11; 1998 BN₁₇, 6, 2, 6; 1998 BO₁₇, 6, 2, 6; 1998 BP₁₇, 9, 3, 11; 1998 BQ₁₇, 6, 2, 6; 1998 BR₁₇, 9, 3, 11; 1998 BS₁₇, 6, 2, 6; 1998 BT₁₇, 6, 2, 6; 1998 BU₁₇, 6, 2, 6; 1998 BV₁₇, 6, 2, 6; 1998 BW₁₇, 5, 2, 6; 1998 BX₁₇, 6, 2, 6; 1998 BY₁₇, 6, 2, 6; 1998 BZ₁₇, 6, 2, 6; 1998 BA₁₈, 6, 2, 6; 1998 BB₁₈, 6, 2, 6; 1998 BC₁₈, 6, 2, 6; 1998 BD₁₈, 6, 2, 6; 1998 BE₁₈, 6, 2, 6; 1998 BF₁₈, 9, 3, 11; 1998 BG₁₈, 6, 2, 6; 1998 BH₁₈, 6, 2, 6; 1998 BJ₁₈, 6, 2, 5; 1998 BK₁₈, 6, 2, 5; 1998 BL₁₈, 6, 2, 5; 1998 BM₁₈, 6, 2, 5; 1998 BN₁₈, 6, 2, 5; 1998 BO₁₈, 6, 2, 5; 1998 BP₁₈, 6, 2, 5; 1998 BQ₁₈, 6, 2, 5; 1998 BR₁₈, 6, 2, 5; 1998 BS₁₈, 6, 2, 5; 1998 BT₁₈, 6, 2, 5; 1998 BU₁₈, 6, 2, 5; 1998 BV₁₈, 6, 2, 5; 1998 BW₁₈, 5, 2, 2; 1998 BX₁₈, 5, 2, 2; 1998 BY₁₈, 5, 2, 2; 1998 BZ₁₈, 3, 1, 0; 1998 BK₁₉, 6, 2, 3; 1998 BL₁₉, 6, 2, 11; 1998 BM₁₉, 6, 2, 11; 1998 BN₁₉, 6, 2, 11; 1998 BO₁₉, 6, 2, 7; 1998 BP₁₉, 5, 2, 7; 1998 BQ₁₉, 9, 3, 8; 1998 BR₁₉, 6, 2, 7; 1998 BS₁₉, 9, 3, 12; 1998 BT₁₉, 6, 2, 7; 1998 BU₁₉, 9, 3, 12; 1998 BV₁₉, 8, 3, 12; 1998 BW₁₉, 9, 3, 12; 1998 BX₁₉, 9, 3, 12; 1998 BY₁₉, 6, 2, 7; 1998 BZ₁₉, 6, 2, 7; 1998 BA₂₀, 9, 3, 12; 1998 BB₂₀, 6, 2, 7; 1998 BC₂₀, 6, 2, 7; 1998 BD₂₀, 6, 2, 7; 1998 BE₂₀, 6, 2, 7; 1998 BF₂₀, 9, 3, 12; 1998 BG₂₀, 9, 3, 12; 1998 BH₂₀, 5, 2, 7; 1998 BJ₂₀, 6, 2, 7; 1998 BK₂₀, 6, 2, 7; 1998 BL₂₀, 6, 2, 7; 1998 BM₂₀, 9, 3, 12; 1998 BN₂₀, 9, 3, 12; 1998 BO₂₀, 6, 2, 7; 1998 BP₂₀, 6, 2, 7; 1998 BQ₂₀, 8, 3, 12; 1998 BR₂₀, 6, 2, 7; 1998 BS₂₀, 9, 3, 12; 1998 BT₂₀, 6, 2, 7; 1998 BU₂₀, 8, 3, 12; 1998 BV₂₀, 6, 2, 7; 1998 BW₂₀, 6, 2, 7; 1998 BX₂₀, 6, 2, 7; 1998 BY₂₀, 6, 2, 7; 1998 BZ₂₀, 6, 2, 7; 1998 BA₂₁, 9, 3, 12; 1998 BB₂₁, 9, 3, 12; 1998 BC₂₁, 6, 2, 7; 1998 BD₂₁, 5, 2, 7; 1998 BE₂₁, 6, 2, 7; 1998 BF₂₁, 6, 2, 7; 1998 BG₂₁, 9, 3, 12; 1998 BH₂₁, 9, 3, 12; 1998 BJ₂₁, 9, 3, 12; 1998 BK₂₁, 9, 3, 12; 1998 BL₂₁, 6, 2, 7; 1998 BM₂₁, 6, 2, 7; 1998 BN₂₁, 6, 2, 7; 1998 BO₂₁, 6, 2, 7; 1998 BP₂₁, 5, 2, 7; 1998 BQ₂₁, 6, 2, 7; 1998 BR₂₁, 6, 2, 7; 1998 BS₂₁, 6, 2, 6; 1998 BT₂₁, 6, 2, 6; 1998 BU₂₁, 6, 2, 6; 1998 BV₂₁, 9, 3, 11; 1998 BW₂₁, 5, 2, 6; 1998 BX₂₁, 6, 2, 6; 1998 BY₂₁, 6, 2, 6; 1998 BZ₂₁, 5, 2, 6; 1998 BA₂₂, 5, 2, 6; 1998 BB₂₂, 9, 3, 11; 1998 BC₂₂, 6, 2, 6; 1998 BD₂₂, 6, 2, 6; 1998 BE₂₂, 6, 2, 6; 1998 BF₂₂, 6, 2, 6; 1998 BG₂₂, 6, 2, 6; 1998 BH₂₂, 6, 2, 6; 1998 BJ₂₂, 6, 2, 6; 1998 BK₂₂, 6, 2, 6; 1998 BL₂₂, 6, 2, 6; 1998 BM₂₂, 5, 2, 6; 1998 BN₂₂, 6, 2, 6; 1998 BO₂₂, 6, 2, 6; 1998 BP₂₂, 6, 2, 6; 1998 BQ₂₂, 6, 2, 6; 1998 BR₂₂, 6, 2, 6; 1998 BS₂₂, 6, 2, 6; 1998 BT₂₂, 6, 2, 6; 1998 BU₂₂, 6, 2, 6; 1998 BV₂₂, 6, 2, 6; 1998 BW₂₂, 6, 2, 6; 1998 BX₂₂, 9, 3, 6; 1998 BY₂₂, 6, 2, 6; 1998 BZ₂₂, 12, 4, 22; 1998 BA₂₃, 6, 2, 6; 1998 BB₂₃, 6, 2, 6; 1998 BC₂₃, 6, 2, 6; 1998 BD₂₃, 6, 2, 6; 1998 BE₂₃, 6, 2, 6; 1998 BF₂₃, 6, 2, 4; 1998 BG₂₃, 5, 2, 4; 1998 BH₂₃, 6, 2, 4; 1998 BJ₂₃, 6, 2, 4; 1998 BK₂₃, 6, 2, 4; 1998 BL₂₃, 6, 2, 4; 1998 BM₂₃, 6, 2, 4; 1998 BN₂₃, 6, 2, 4; 1998 BO₂₃, 6, 2, 4; 1998 BP₂₃, 6, 2, 4; 1998 BQ₂₃, 6, 2, 4; 1998 BR₂₃, 6, 2, 3; 1998 BS₂₃, 9, 3, 8; 1998 BT₂₃, 6, 2, 3; 1998 BU₂₃, 6, 2, 3; 1998 BV₂₃, 6, 2, 3; 1998 BW₂₃, 6, 2, 3; 1998 BX₂₃, 6, 2, 3; 1998 BY₂₃, 9, 3, 8; 1998 BZ₂₃, 6, 2, 3; 1998 BA₂₄, 6, 2, 3; 1998 BB₂₄, 6, 2, 3; 1998 BC₂₄, 6, 2, 3; 1998 BD₂₄, 6, 2, 3; 1998 BE₂₄, 6, 2, 3; 1998 BF₂₄, 6, 2, 3; 1998 BG₂₄, 6, 2, 3; 1998 BH₂₄, 6, 2, 3; 1998 BJ₂₄, 6, 2, 3; 1998 BK₂₄, 6, 2, 3; 1998 BL₂₄, 9, 3, 8; 1998 BM₂₄, 9, 3, 8; 1998 BN₂₄, 6, 2, 3; 1998 BO₂₄, 5, 2, 3; 1998 BR₂₆, 9, 2, 1; 1998 BV₂₆, 6, 2, 12; 1998 BW₂₆, 6, 2, 12; 1998 BX₂₆, 9, 3, 12; 1998 BY₂₆, 6, 2, 12; 1998 BZ₂₆, 6, 2, 8; 1998 BA₂₇, 5, 2, 8; 1998 BB₂₇, 9, 3, 8; 1998 BC₂₇, 6, 2, 8; 1998 BD₂₇, 6, 2, 8; 1998 BE₂₇, 6, 2, 8; 1998 BF₂₇, 6, 2, 8; 1998 BG₂₇, 6, 2, 8; 1998 BH₂₇, 6, 2, 8; 1998 BJ₂₇, 9, 3, 8; 1

1998 BP₂₉ *, 6, 2, 5; 1998 BQ₂₉ *, 6, 2, 5; 1998 BR₂₉ *, 6, 2, 5; 1998 BS₂₉ *, 6, 2, 5; 1998 BT₂₉ *, 6, 2, 5; 1998 BU₂₉ *, 6, 2, 5; 1998 BV₂₉ *, 5, 2, 1; 1998 BW₂₉ *, 5, 2, 1; 1998 BX₂₉ *, 5, 2, 1; 1998 BY₂₉ *, 4, 2, 1; 1998 BZ₂₉ *, 6, 2, 1; 1998 BA₃₀ *, 6, 2, 1; 1998 BB₃₀ *, 6, 2, 1; 1998 BC₃₀ *, 6, 2, 1; 1998 BN₃₀ *, 5, 2, 13; 1998 BO₃₀ *, 5, 2, 13; 1998 BP₃₀ *, 6, 2, 13; 1998 BQ₃₀ *, 6, 2, 13; 1998 BR₃₀ *, 6, 2, 13; 1998 BS₃₀ *, 5, 2, 9; 1998 BT₃₀ *, 5, 2, 8; 1998 BU₃₀ *, 6, 2, 7; 1998 BV₃₀ *, 5, 2, 5; 1998 BW₃₀ *, 5, 2, 5; 1998 BX₃₀ *, 5, 2, 5; 1998 BY₃₀ *, 5, 2, 5; 1998 BZ₃₀ *, 5, 2, 5; 1998 BA₃₁ *, 8, 3, 7; 1998 BB₃₁ *, 6, 2, 5; 1998 BC₃₁ *, 9, 3, 8; 1998 BD₃₁ *, 6, 2, 5; 1998 BE₃₁ *, 9, 3, 8; 1998 BF₃₁ *, 6, 2, 5; 1998 BG₃₁ *, 6, 2, 5; 1998 BH₃₁ *, 6, 2, 5; 1998 BJ₃₁ *, 6, 2, 5; 1998 BK₃₁ *, 6, 2, 5; 1998 BL₃₁ *, 9, 3, 8; 1998 BM₃₁ *, 9, 3, 8; 1998 BN₃₁ *, 9, 3, 8; 1998 BO₃₁ *, 6, 2, 5; 1998 BP₃₁ *, 6, 2, 5; 1998 BQ₃₁ *, 9, 3, 8; 1998 BR₃₁ *, 6, 2, 5; 1998 BS₃₁ *, 6, 2, 4; 1998 BT₃₁ *, 6, 2, 4; 1998 BU₃₁ *, 6, 2, 4; 1998 BV₃₁ *, 6, 2, 4; 1998 BC₃₄ *, 15, 4, 11; 1998 BD₃₄ *, 6, 2, 15; 1998 BE₃₄ *, 6, 2, 15; 1998 BF₃₄ *, 6, 2, 11; 1998 BG₃₄ *, 9, 3, 11; 1998 BH₃₄ *, 6, 2, 11; 1998 BJ₃₄ *, 6, 2, 11; 1998 BK₃₄ *, 5, 2, 11; 1998 BL₃₄ *, 6, 2, 11; 1998 BM₃₄ *, 6, 2, 11; 1998 BN₃₄ *, 6, 2, 11; 1998 BO₃₄ *, 6, 2, 11; 1998 BP₃₄ *, 8, 3, 11; 1998 BQ₃₄ *, 6, 2, 10; 1998 BR₃₄ *, 6, 2, 10; 1998 BS₃₄ *, 6, 2, 9; 1998 BT₃₄ *, 5, 2, 9; 1998 BU₃₄ *, 6, 2, 9; 1998 BV₃₄ *, 6, 2, 9; 1998 BW₃₄ *, 6, 2, 9; 1998 BX₃₄ *, 6, 2, 9; 1998 BY₃₄ *, 6, 2, 9; 1998 BZ₃₄ *, 6, 2, 9; 1998 BA₃₅ *, 6, 2, 9; 1998 BB₃₅ *, 6, 2, 9; 1998 BC₃₅ *, 6, 2, 7; 1998 BD₃₅ *, 6, 2, 7; 1998 BE₃₅ *, 6, 2, 7; 1998 BF₃₅ *, 6, 2, 6; 1998 BG₃₅ *, 6, 2, 6; 1998 BH₃₅ *, 6, 2, 6; 1998 BJ₃₅ *, 6, 2, 6; 1998 BK₃₅ *, 6, 2, 6; 1998 BL₃₅ *, 6, 2, 6; 1998 BM₃₅ *, 6, 2, 5; 1998 BN₃₅ *, 6, 2, 5; 1998 BO₃₅ *, 6, 2, 5; 1998 BP₃₅ *, 6, 2, 5; 1998 BQ₃₅ *, 6, 2, 5; 1998 BR₃₅ *, 6, 2, 5; 1998 BS₃₅ *, 8, 3, 11; 1998 BT₃₅ *, 6, 2, 5; 1998 BU₃₅ *, 6, 2, 5; 1998 BV₃₅ *, 6, 2, 5; 1998 BW₃₅ *, 6, 2, 5; 1998 BX₃₅ *, 6, 2, 5; 1998 BY₃₅ *, 6, 2, 5; 1998 BZ₃₅ *, 5, 2, 2; 1998 BA₃₆ *, 5, 2, 2; 1998 BB₃₆ *, 5, 2, 2; 1998 BC₃₆ *, 6, 2, 2; 1998 BD₃₆ *, 6, 2, 2; 1998 BE₃₆ *, 6, 2, 2; 1998 BM₃₆ *, 6, 2, 16; 1998 BN₃₆ *, 6, 2, 16; 1998 BO₃₆ *, 6, 2, 16; 1998 BP₃₆ *, 6, 2, 12; 1998 BQ₃₆ *, 6, 2, 12; 1998 BR₃₆ *, 6, 2, 12; 1998 BS₃₆ *, 6, 2, 12; 1998 BT₃₆ *, 6, 2, 12; 1998 BU₃₆ *, 5, 2, 12; 1998 BV₃₆ *, 5, 2, 12; 1998 BW₃₆ *, 6, 2, 11; 1998 BX₃₆ *, 6, 2, 8; 1998 BY₃₆ *, 6, 2, 11; 1998 BZ₃₆ *, 6, 2, 8; 1998 BA₃₇ *, 6, 2, 8; 1998 BB₃₇ *, 6, 2, 8; 1998 BC₃₇ *, 6, 2, 8; 1998 BD₃₇ *, 6, 2, 8; 1998 BE₃₇ *, 5, 2, 8; 1998 BF₃₇ *, 6, 2, 8; 1998 BG₃₇ *, 6, 2, 6; 1998 BH₃₇ *, 6, 2, 5; 1998 BJ₃₇ *, 6, 2, 5; 1998 BK₃₇ *, 6, 2, 5; 1998 BL₃₇ *, 6, 2, 5; 1998 BM₃₇ *, 6, 2, 5; 1998 BN₃₇ *, 6, 2, 5; 1998 BO₃₇ *, 6, 2, 5; 1998 BP₃₇ *, 6, 2, 5; 1998 BQ₃₇ *, 6, 2, 5; 1998 BR₃₇ *, 6, 2, 5; 1998 BS₃₇ *, 6, 2, 5; 1998 BT₃₇ *, 6, 2, 5; 1998 BU₃₇ *, 6, 2, 5; 1998 BV₃₇ *, 6, 2, 5; 1998 BW₃₇ *, 5, 2, 5; 1998 BX₃₇ *, 6, 2, 5; 1998 BY₃₇ *, 6, 2, 5; 1998 BZ₃₇ *, 6, 2, 5; 1998 BA₃₈ *, 6, 2, 5; 1998 BB₃₈ *, 6, 2, 5; 1998 BC₃₈ *, 6, 2, 5; 1998 BD₃₈ *, 6, 2, 5; 1998 BE₃₈ *, 6, 2, 5; 1998 BF₃₈ *, 6, 2, 5; 1998 BG₃₈ *, 6, 2, 5; 1998 BH₃₈ *, 6, 2, 5; 1998 BJ₃₈ *, 6, 2, 5; 1998 BK₃₈ *, 6, 2, 5; 1998 BL₃₈ *, 6, 2, 5; 1998 BM₃₈ *, 6, 2, 5; 1998 BN₃₈ *, 6, 2, 5; 1998 BO₃₈ *, 6, 2, 5; 1998 BP₃₈ *, 6, 2, 5; 1998 BQ₃₈ *, 5, 2, 5; 1998 BR₃₈ *, 6, 2, 5; 1998 BS₃₈ *, 5, 2, 5; 1998 BT₃₈ *, 6, 2, 5; 1998 BU₃₈ *, 6, 2, 5; 1998 BV₃₈ *, 6, 2, 5; 1998 BW₃₈ *, 6, 2, 5; 1998 BX₃₈ *, 6, 2, 5; 1998 BY₃₈ *, 6, 2, 5; 1998 BZ₃₈ *, 6, 2, 5; 1998 BA₃₉ *, 5, 2, 5; 1998 BB₃₉ *, 6, 2, 5; 1998 BC₃₉ *, 6, 2, 5; 1998 BD₃₉ *, 6, 2, 5; 1998 BE₃₉ *, 6, 2, 5; 1998 BF₃₉ *, 6, 2, 5; 1998 BG₃₉ *, 6, 2, 5; 1998 BH₃₉ *, 6, 2, 5; 1998 BJ₃₉ *, 6, 2, 5; 1998 BK₃₉ *, 6, 2, 5; 1998 BL₃₉ *, 6, 2, 5; 1998 BM₃₉ *, 6, 2, 5; 1998 BN₃₉ *, 6, 2, 5; 1998 BO₃₉ *, 6, 2, 5; 1998 BP₃₉ *, 6, 2, 5; 1998 BQ₃₉ *, 6, 2, 5; 1998 BR₃₉ *, 6, 2, 5; 1998 BS₃₉ *, 6, 2, 5; 1998 BT₃₉ *, 6, 2, 3; 1998 BU₃₉ *, 6, 2, 3; 1998 BV₃₉ *, 6, 2, 3; 1998 BW₃₉ *, 6, 2, 3; 1998 BX₃₉ *, 6, 2, 3; 1998 BY₃₉ *, 6, 2, 3; 1998 BZ₃₉ *, 6, 2, 3; 1998 BA₄₀ *, 6, 2, 3; 1998 BB₄₀ *, 6, 2, 3; 1998 BC₄₀ *, 6, 2, 3; 1998 BD₄₀ *, 6, 2, 3; 1998 BE₄₀ *, 6, 2, 3; 1998 BF₄₀ *, 6, 2, 3; 1998 BG₄₀ *, 6, 2, 3; 1998 BP₄₁ *, 3, 1, 0; 1998 BS₄₂ *, 3, 1, 0; 1998 BX₄₂ *, 6, 2, 3; 1998 BY₄₂ *, 6, 2, 3; 1998 BZ₄₂ *, 6, 2, 3; 1998 BA₄₃ *, 6, 2, 3; 1998 BB₄₃ *, 6, 2, 3; 1998 BC₄₃ *, 6, 2, 3; 1998 BD₄₃ *, 6, 2, 3; 1998 BF₄₃ *, 3, 1, 0; 1998 BG₄₃ *, 3, 1, 0; 1998 BH₄₃ *, 3, 1, 0; 1998 BJ₄₃ *, 6, 2, 2; 1998 BK₄₃ *, 6, 2, 2; 1998 BL₄₃ *, 6, 2, 2; 1998 BM₄₃ *, 6, 2, 2; 1998 BN₄₃ *, 6, 2, 2; 1998 BO₄₃ *, 3, 1, 0; 1998 BP₄₃ *, 6, 2, 1; 1998 BQ₄₃ *, 6, 2, 1; 1998 BR₄₃ *, 6, 2, 1; 1998 BT₄₃ *, 6, 2, 1; 1998 CL₃ *, 2, 3; 2779 P-L, 3, 1, 0; 6199 P-L, 3, 1, 0; 6840 P-L, 2, 1, 0; 1306 T-2, 9, 3, 12; 3212 T-2, 3, 1, 0; 5105 T-2, 3, 1, 0; 1148 T-3, 6, 2, 2; 3464 T-3, 3, 1, 0; (56), 3, 1, 0; (182), 3, 1, 0; (214), 6, 2, 5; (608), 3, 1, 0; (917), 3, 1, 0; (1003), 6, 2, 11; (1074), 9, 3, 6; (1211), 3, 1, 0; (1350), 3, 1, 0; (1387), 3, 1, 0; (1590), 3, 1, 0; (1669), 5, 2, 7; (1888), 3, 1, 0; (2096), 6, 2, 12; (2279), 2, 1, 0; (2297), 6, 2, 11; (2470), 3, 1, 0; (2597), 3, 1, 0; (2714), 2, 1, 0; (2722), 6, 2, 11; (2738), 3, 1, 0; (2866), 6, 2, 10; (2911), 6, 2, 2; (3074), 9, 3, 6; (3132), 3, 1, 0; (3444), 3, 1, 0; (3500), 3, 1, 0; (3520), 9, 3, 8; (4176), 9, 3, 11; (4345), 3, 1, 0; (4387), 3, 1, 0; (4398), 3, 1, 0; (4592), 6, 2, 7; (4658), 3, 1, 0; (4689), 3, 1, 0; (4698), 9, 3, 12; (4797), 6, 2, 5; (4814), 3, 1, 0; (5157), 3, 1, 0; (5468), 6, 2, 2; (5698), 6, 2, 6; (5782), 3, 1, 0; (5827), 6, 2, 2; (5959), 3, 1, 0; (6001), 3, 1, 0; (6316), 6, 2, 7; (6448), 3, 1, 0; (6546), 3, 1, 0; (6606), 3, 1, 0; (6816), 6, 2, 3; (7020), 3, 1, 0; (7080), 5, 2, 3; (7146), 3, 1, 0; (7226), 9, 3, 12; (7544), 6, 2, 5; (7615), 3, 1, 0; (8136), 3, 1, 0; (8196), 3, 1, 0; (8227), 4, 2, 5; (8239), 3, 1, 0; [4750, 843, 581*, 1991/09/07–1998/02/03]

693 University of Arizona, Catalina Station

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

Observers C. W. Hergenrother, S. M. Larson

Measurer C. W. Hergenrother

1.5m reflector

USNO-A1.0

1994 GY, 3, 1, 0; 1998 BL₁₀, 3, 1, 0; [6, 2, 0*, 1998/01/03–1998/01/28]

696 F. L. Whipple Observatory, Mount Hopkins

B. G. Marsden, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [bmarsden@cfa.harvard.edu]

Observers W. R. Brown, C. W. Hergenrother, M. J. Holman

1.2-m *f*/8 reflector + CCD

USNO-A1.0

1988 QC, 3, 1, 0; 1997 CS₂₉, 1, 1, 0; 1997 VB₉ *, 4, 2, 1; 1998 BL₁₀ *, 4, 2, 2; 1998 BQ₁₁, 2, 1, 0; 1998 BS₄₂, 3, 1, 0; [17, 6, 2*, 1997/11/09–1998/01/22]

699 Lowell Observatory–LONEOS

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

Observers B. W. Koehn, M. Barboza, T. Rivkin

Measurer B. W. Koehn

0.6-m LONEOS Schmidt + CCD

USNO-A1.0

1997 VK₅, 3, 1, 0; 1997 WK₄₅, 3, 1, 0; 1997 YR₂, 3, 1, 0; (1436), 3, 1, 0; (4863), 3, 1, 0; (5399), 3, 1, 0; (5579), 3, 1, 0; (7074), 3, 1, 0; [24, 8, 0*, 1998/01/07]

700 Chinle

J. Bruton, Many Farms Observatory, P.O. Box 86, Chinle, AZ 86503, U.S.A.

[jbruton1@juno.com]

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

GSC

(1035), 3, 1, 0; (1980), 3, 1, 0; (4130), 5, 2, 2; (5870), 3, 1, 0; [14, 4, 0*, 1998/01/24–1998/01/26]

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

1969 TQ₁, 10, 3, 2; 1970 OF, 3, 1, 0; 1973 SE₁, 3, 1, 0; 1977 RC₉, 9, 2, 1; 1978 SC₅, 5, 1, 0; 1978 UG, 5, 1, 0; 1978 UV₇, 19, 4, 7; 1979 MN₃, 8, 2, 1; 1979 MK₅, 2, 1, 0; 1979 SC, 5, 1, 0; 1980 GG, 10, 2, 1; 1981 EE₁₂, 5, 1, 0; 1981 EZ₁₈, 6, 1, 0; 1984 SY₅, 5, 1, 0; 1984 SF₆, 2, 1, 0; 1985 RD, 4, 1, 0; 1985 RS₁, 19, 3, 2; 1986 QA₃, 13, 3, 3; 1987 RT₅, 4, 1, 0; 1988 CU₃, 11, 2, 2; 1989 YF₁, 6, 1, 0; 1989 YA₂, 11, 2, 2; 1990 VD₃, 7, 2, 2; 1990 WQ₆, 18, 3, 2; 1991 FL, 11, 2, 2; 1991 GV₈, 6, 1, 0; 1991 PT₁₂, 4, 1, 0; 1991 PV₁₆, 13, 3, 2; 1991 RS₇, 10, 2, 2; 1991 RZ₈, 24, 5; 1991 VD₂, 30, 5, 5; 1991 VP₄, 19, 4, 3; 1992 EJ₄, 13, 3, 2; 1992 ED₁₇, 9, 2, 1; 1992 FS₁, 8, 2, 1; 1992 FO₃, 5, 1, 0; 1992 GG₃, 10, 2, 2; 1992 LS, 9, 2, 1; 1993 VS₁, 11, 2, 2; 1993 XV, 10, 2, 2; 1994 CL₂, 13, 3, 2; 1996 NL₁, 15, 3, 2; 1996 NZ₃, 9, 2, 2; 1996 QQ₁, 10, 2, 2; 1996 RQ₂, 10, 2, 2; 1996 UC, 17, 4, 3; 1997 SE₃₀, 4, 1, 0; 1997 TT₂₆, 8, 2, 10; 1997 UF₇, 5, 1, 0; 1997 UT₂₀, 8, 2, 5; 1997 UM₂₄, 13, 3, 8; 1997 VE₂, 5, 1, 0; 1997 VF₂, 5, 1, 0; 1997 VJ₃, 5, 1, 0; 1997 VS₃, 5, 1, 0; 1997 VZ₅, 10, 2, 1; 1997 VN₈, 3, 1, 0; 1997 WD₃, 4, 1, 0; 1997 WT₇, 20, 4, 4; 1997 WG₇, 11, 2, 2; 1997 WC₁₀, 4, 1, 0; 1997 WL₂₃, 5, 1, 0; 1997 WW₃₃, 3, 1, 0; 1997 WT₃₄, 5, 1, 0; 1997 WY₃₅, 5, 1, 0; 1997 WC₃₆, 3, 1, 0; 1997 WN₃₆, 5, 1, 0; 1997 WG₃₇, 5, 1, 0; 1997 WO₃₇, 5, 1, 0; 1997 WB₃₈, 9, 2, 26; 1997 WZ₃₉, 10, 2, 1; 1997 WK₄₅, 5, 1, 0; 1997 WV₄₅, 9, 2, 27; 1997 WA₄₆, 5, 1, 0; 1997 WO₄₆, 9, 2, 1; 1997 WK₄₇, 9, 2, 1; 1997 WO₄₇, 5, 1, 0; 1997 WP₄₇, 5, 1, 0; 1997 WQ₄₇, 4, 1, 0; 1997 WR₄₇, 3, 1, 0; 1997 WS₄₇, 4, 1, 0; 1997 WT₄₇, 5, 1, 0; 1997 WU₄₇, 4, 1, 0; 1997 WV₄₇, 3, 1, 0; 1997 WW₄₇ *, 6, 1, 0; 1997 WX₄₇ *, 3, 1, 0; 1997 WY₄₇ *, 3, 1, 0; 1997 WZ₄₇ *, 3, 1, 0; 1997 WA₄₈ *, 13, 3, 9; 1997 WB₄₈ *, 3, 1, 0; 1997 WC₄₈ *, 3, 1, 0; 1997 WD₄₈ *, 3, 1, 0; 1997 WE₄₈ *, 3, 1, 0; 1997 WF₄₈ *, 3, 1, 0; 1997 WG₄₈, 4, 1, 0; 1997 WH₄₈, 5, 1, 0; 1997 WJ₄₈, 4, 1, 0; 1997 WK₄₈, 4, 1, 0; 1997 WL₄₈, 4, 1, 0; 1997 WM₄₈, 5, 1, 0; 1997 WN₄₈, 4, 1, 0; 1997 WO₄₈, 5, 1, 0; 1997 WP₄₈, 5, 1, 0; 1997 WQ₄₈, 14, 3, 31;

1997 WR₄₈ *, 5, 1, 0; 1997 WS₄₈ *, 4, 1, 0; 1997 WT₄₈ *, 4, 1, 0; 1997 WU₄₈ *, 4, 1, 0; 1997 WV₄₈ *, 4, 1, 0; 1997 WW₄₈ *, 5, 1, 0; 1997 WX₄₈ *, 4, 1, 0; 1997 WY₄₈ *, 5, 1, 0; 1997 WZ₄₈ *, 5, 1, 0; 1997 WA₄₉ *, 12, 3, 34; 1997 WB₄₉ *, 5, 1, 0; 1997 WC₄₉ *, 5, 1, 0; 1997 WD₄₉ *, 5, 1, 0; 1997 WE₄₉ *, 5, 1, 0; 1997 WF₄₉ *, 5, 1, 0; 1997 WG₄₉ *, 4, 1, 0; 1997 WH₄₉ *, 4, 1, 0; 1997 WI₄₉ *, 4, 1, 0; 1997 WJ₄₉ *, 4, 1, 0; 1997 WK₄₉ *, 5, 1, 0; 1997 WL₄₉ *, 5, 1, 0; 1997 WM₄₉ *, 5, 1, 0; 1997 WN₄₉ *, 5, 1, 0; 1997 WO₄₉ *, 4, 1, 0; 1997 WP₄₉ *, 4, 1, 0; 1997 WR₄₉ *, 13, 3, 9; 1997 WS₄₉ *, 13, 3, 8; 1997 WT₄₉ *, 8, 2, 8; 1997 WU₄₉ *, 8, 2, 8; 1997 WV₄₉ *, 3, 1, 0; 1997 WW₄₉ *, 3, 1, 0; 1997 WX₄₉ *, 12, 3, 9; 1997 WY₄₉ *, 8, 2, 8; 1997 WZ₄₉ *, 3, 1, 0; 1997 WA₅₀ *, 13, 3, 8; 1997 WB₅₀ *, 5, 1, 0; 1997 WC₅₀ *, 4, 1, 0; 1997 WD₅₀ *, 5, 1, 0; 1997 WE₅₀ *, 4, 1, 0; 1997 WF₅₀ *, 4, 1, 0; 1997 WG₅₀ *, 12, 3, 6; 1997 WH₅₀ *, 5, 1, 0; 1997 WK₅₀ *, 5, 1, 0; 1997 WL₅₀ *, 15, 3, 6; 1997 WM₅₀ *, 10, 2, 6; 1997 WN₅₀ *, 10, 2, 5; 1997 WO₅₀ *, 10, 2, 5; 1997 WP₅₀ *, 9, 2, 5; 1997 WQ₅₀ *, 9, 2, 5; 1997 WR₅₀ *, 9, 2, 5; 1997 WS₅₀ *, 9, 2, 5; 1997 WT₅₀ *, 10, 2, 5; 1997 WU₅₀ *, 10, 2, 5; 1997 WV₅₀ *, 5, 1, 0; 1997 WW₅₀ *, 9, 2, 5; 1997 WX₅₀ *, 8, 2, 5; 1997 WY₅₀ *, 9, 2, 5; 1997 WZ₅₀ *, 8, 2, 5; 1997 WA₅₁ *, 9, 2, 5; 1997 WB₅₁ *, 9, 2, 6; 1997 WC₅₁ *, 9, 2, 6; 1997 WD₅₁ *, 10, 2, 6; 1997 WE₅₁ *, 8, 2, 5; 1997 WF₅₁ *, 9, 2, 5; 1997 WG₅₁ *, 15, 3, 6; 1997 WH₅₁ *, 10, 2, 6; 1997 WI₅₁ *, 9, 2, 6; 1997 WJ₅₁ *, 10, 2, 6; 1997 WK₅₁ *, 10, 2, 6; 1997 WL₅₁ *, 9, 2, 6; 1997 WM₅₁ *, 4, 1, 0; 1997 WN₅₁ *, 13, 3, 6; 1997 WO₅₁ *, 14, 3, 6; 1997 WP₅₁ *, 10, 2, 6; 1997 WQ₅₁ *, 10, 2, 6; 1997 WR₅₁ *, 9, 2, 5; 1997 WS₅₁ *, 8, 2, 5; 1997 WT₅₁ *, 9, 2, 6; 1997 WU₅₁ *, 9, 2, 6; 1997 WV₅₁ *, 10, 2, 5; 1997 WX₅₁ *, 8, 2, 5; 1997 WY₅₁ *, 15, 2, 6; 1997 WZ₅₁ *, 10, 2, 6; 1997 WA₅₂ *, 10, 2, 6; 1997 WB₅₂ *, 14, 2, 5; 1997 WC₅₂ *, 10, 2, 6; 1997 WD₅₂ *, 15, 3, 6; 1997 WE₅₂ *, 10, 2, 6; 1997 WF₅₂ *, 9, 2, 6; 1997 WG₅₂ *, 10, 2, 6; 1997 WH₅₂ *, 10, 2, 5; 1997 WI₅₂ *, 8, 2, 5; 1997 WK₅₂ *, 15, 3, 6; 1997 WL₅₂ *, 9, 2, 5; 1997 WM₅₂ *, 4, 1, 0; 1997 WN₅₂ *, 5, 1, 0; 1997 WO₅₂ *, 10, 2, 6; 1997 WP₅₂ *, 10, 2, 5; 1997 WQ₅₂ *, 9, 2, 5; 1997 WR₅₂ *, 9, 2, 5; 1997 WS₅₂ *, 15, 3, 6; 1997 WT₅₂ *, 15, 3, 6; 1997 WU₅₂ *, 9, 2, 5; 1997 WV₅₂ *, 15, 3, 6; 1997 WW₅₂ *, 10, 2, 6; 1997 WX₅₂ *, 10, 2, 6; 1997 WY₅₂ *, 9, 2, 6; 1997 WZ₅₂ *, 10, 2, 6; 1997 WA₅₃ *, 9, 2, 6; 1997 WB₅₃ *, 10, 2, 6; 1997 WC₅₃ *, 10, 2, 5; 1997 WD₅₃ *, 10, 2, 6; 1997 WE₅₃ *, 9, 2, 6; 1997 WF₅₃ *, 8, 2, 5; 1997 WG₅₃ *, 9, 2, 6; 1997 WH₅₃ *, 9, 2, 6; 1997 WI₅₃ *, 14, 3, 6; 1997 WJ₅₃ *, 9, 2, 5; 1997 WK₅₃ *, 9, 2, 5; 1997 WL₅₃ *, 8, 2, 5; 1997 WM₅₃ *, 10, 2, 6; 1997 WN₅₃ *, 9, 2, 6; 1997 WO₅₃ *, 10, 2, 6; 1997 WP₅₃ *, 10, 2, 6; 1997 WQ₅₃ *, 9, 2, 6; 1997 WR₅₃ *, 9, 2, 6; 1997 WS₅₃ *, 4, 1, 0; 1997 WT₅₃ *, 8, 2, 5; 1997 WU₅₃ *, 9, 2, 6; 1997 WV₅₃ *, 13, 3, 6; 1997 WW₅₃ *, 13, 3, 6; 1997 WX₅₃ *, 9, 2, 5; 1997 WY₅₃ *, 5, 1, 0; 1997 WZ₅₃ *, 4, 1, 0; 1997 WA₅₄ *, 5, 1, 0; 1997 WB₅₄ *, 4, 1, 0; 1997 WC₅₄ *, 5, 1, 0; 1997 WD₅₄ *, 4, 1, 0; 1997 WE₅₄ *, 5, 1, 0; 1997 WF₅₄ *, 4, 1, 0; 1997 WG₅₄ *, 4, 1, 0; 1997 WH₅₄ *, 9, 2, 5; 1997 WI₅₄ *, 9, 2, 5; 1997 WJ₅₄ *, 10, 2, 5; 1997 WK₅₄ *, 4, 1, 0; 1997 WL₅₄ *, 4, 1, 0; 1997 WM₅₄ *, 4, 1, 0; 1997 WN₅₄ *, 5, 1, 0; 1997 WO₅₄ *, 5, 1, 0; 1997 WP₅₄ *, 4, 1, 0; 1997 WQ₅₄ *, 3, 1, 0; 1997 WR₅₄ *, 8, 2, 5; 1997 WS₅₄ *, 4, 1, 0; 1997 WT₅₄ *, 5, 1, 0; 1997 WU₅₄ *, 9, 2, 1; 1997 WV₅₄ *, 8, 2, 5; 1997 WZ₅₄ *, 4, 1, 0; 1997 WA₅₅ *, 8, 2, 5; 1997 WB₅₅ *, 4, 1, 0; 1997 WC₅₅ *, 4, 1, 0; 1997 WD₅₅ *, 4, 1, 0; 1997 WE₅₅ *, 5, 1, 0; 1997 WF₅₅ *, 8, 2, 6; 1997 WG₅₅ *, 5, 1, 0; 1997 WH₅₅ *, 9, 2, 5; 1997 WI₅₅ *, 10, 2, 6; 1997 WJ₅₅ *, 10, 2, 6; 1997 WK₅₅ *, 10, 2, 6; 1997 WL₅₅ *, 9, 2, 7; 1997 WM₅₅ *, 8, 2, 5; 1997 WN₅₅ *, 4, 1, 0; 1997 WO₅₅ *, 5, 1, 0; 1997 WP₅₅ *, 5, 1, 0; 1997 WQ₅₅ *, 5, 1, 0; 1997 XR₃ *, 14, 3, 2; 1997 XU₅ *, 10, 2, 6; 1997 XD₆ *, 9, 2, 23; 1997 XT₉ *, 5, 1, 0; 1997 XK₁₀ *, 5, 1, 0; 1997 XL₁₀ *, 5, 1, 0; 1997 XO₁₀ *, 5, 1, 0; 1997 XZ₁₀ *, 5, 1, 0; 1997 XS₁₁ *, 10, 2, 6; 1997 XT₁₁ *, 4, 1, 0; 1997 XY₁₁ *, 4, 1, 0; 1997 XA₁₂ *, 13, 3, 10; 1997 XB₁₂ *, 10, 2, 1; 1997 XC₁₂ *, 10, 2, 1; 1997 XD₁₂ *, 10, 2, 1; 1997 XE₁₂ *, 9, 2, 1; 1997 XF₁₂ *, 9, 2, 1; 1997 XG₁₂ *, 9, 2, 1; 1997 XH₁₂ *, 9, 2, 1; 1997 XJ₁₂ *, 9, 2, 1; 1997 XK₁₂ *, 10, 2, 1; 1997 XL₁₂ *, 10, 2, 1; 1997 XM₁₂ *, 10, 2, 1; 1997 XN₁₂ *, 9, 2, 1; 1997 XO₁₂ *, 9, 2, 1; 1997 XP₁₂ *, 9, 2, 1; 1997 XQ₁₂ *, 10, 2, 1; 1997 XR₁₂ *, 10, 2, 1; 1997 XS₁₂ *, 10, 2, 1; 1997 XT₁₂ *, 10, 2, 1; 1997 XU₁₂ *, 10, 2, 1; 1997 XV₁₂ *, 10, 2, 1; 1997 XW₁₂ *, 10, 2, 1; 1997 XX₁₂ *, 9, 2, 1; 1997 XY₁₂ *, 9, 2, 1; 1997 XZ₁₂ *, 9, 2, 1; 1997 XA₁₃ *, 9, 2, 1; 1997 XB₁₃ *, 10, 2, 1; 1997 XC₁₃ *, 10, 2, 1; 1997 XD₁₃ *, 5, 1, 0; 1997 XE₁₃ *, 9, 2, 1; 1997 XF₁₃ *, 10, 2, 1; 1997 XG₁₃ *, 10, 2, 1; 1997 XH₁₃ *, 9, 2, 1; 1997 XI₁₃ *, 10, 2, 1; 1997 YL₁₅ *, 15, 3, 2; 1997 YO₅ *, 5, 1, 0; 1997 YP₄ *, 4, 1, 0; 1997 YU₁₈ *, 18, 3, 2; 1997 YG₁ *, 4, 1, 0; 1997 YB₂ *, 13, 3, 2; 1997 YF₂ *, 4, 1, 0; 1997 YN₂ *, 14, 3, 2; 1997 YV₂ *, 25, 5, 5; 1997 YW₂ *, 8, 2, 1; 1997 YY₂ *, 14, 3, 2; 1997 YM₄ *, 10, 2, 1; 1997 YA₅ *, 5, 1, 0; 1997 YF₅ *, 5, 1, 0; 1997 YG₅ *, 10, 2, 7; 1997 YL₅ *, 10, 2, 2; 1997 YO₅ *, 9, 2, 2; 1997 YP₅ *, 9, 2, 2; 1997 YQ₅ *, 19, 4, 5; 1997 YR₅ *, 19, 4, 5; 1997 YT₅ *, 5, 1, 0; 1997 YE₆ *, 6, 1, 0; 1997 YU₆ *, 17, 4, 5; 1997 YV₆ *, 4, 1, 0; 1997 YX₆ *, 19, 3, 2; 1997 YY₆ *, 4, 1, 0; 1997 YG₇ *, 4, 1, 0; 1997 YP₈ *, 11, 2, 3; 1997 YZ₈ *, 9, 2, 5; 1997 YW₉ *, 14, 3, 6; 1997 YE₁₀ *, 15, 3, 2; 1997 YF₁₁ *, 15, 3, 2; 1997 YW₁₁ *, 5, 1, 0; 1997 YW₁₄ *, 8, 2, 1; 1997 YC₁₅ *, 29, 5, 5; 1997 YD₁₅ *, 23, 5, 5; 1997 YX₁₅ *, 5, 1, 0; 1997 YK₁₆ *, 5, 1, 0; 1997 YL₁₆ *, 6, 1, 0; 1997 YP₁₆ *, 6, 1, 0; 1997 YN₁₇ *, 18, 4, 5; 1997 YZ₁₇ *, 10, 2, 2; 1997 YB₁₈ *, 9, 2, 1; 1997 YD₁₈ *, 20, 4, 3; 1997 YS₁₉ *, 12, 3, 9; 1998 AJ₁₁ *, 2, 2; 1998 AK₁₁ *, 2, 2; 1998 AS₁ *, 4, 1, 0; 1998 AB₂ *, 14, 3, 2; 1998 AU₃ *, 18, 4, 5; 1998 AL₄ *, 5, 1, 0; 1998 AR₄ *, 4, 1, 0; 1998 AS₄ *, 5, 1, 0; 1998 AT₄ *, 13, 3, 2; 1998 AP₈ *, 10, 2, 4; 1998 AP₈ *, 11, 3, 2; 1998 AW₈ *, 22, 5, 15; 1998 AG₁₀ *, 14, 3, 6; 1998 AO₁₀ *, 7, 2, 1; 1998 AP₁₀ *, 5, 1, 0; 1998 AQ₁₀ *, 4, 1, 0; 1998 AS₁₀ *, 4, 1, 0; 1998 AV₁₀ *, 10, 2, 6; 1998 AW₁₀ *, 9, 2, 6; 1998 AX₁₀ *, 9, 2, 6; 1998 AY₁₀ *, 9, 2, 6; 1998 AZ₁₀ *, 9, 2, 6; 1998 AA₁₁ *, 9, 2, 6; 1998 AB₁₁ *, 4, 1, 0; 1998 BA₈ *, 8, 2, 6; 1998 BJ₂ *, 15, 3, 14; 1998 BD₂ *, 34, 7, 23; 1998 BE₂ *, 19, 4, 20; 1998 BF₂ *, 11, 2, 2; 1998 BG₂ *, 29, 6, 17; 1998 BH₂ *, 15, 3, 14; 1998 BJ₂ *, 11, 2, 2; 1998 BK₂ *, 9, 2, 2; 1998 BL₂ *, 10, 2, 2; 1998 BM₂ *,

26, 5, 5; 1998 BN₂ *, 25, 5, 5; 1998 BO₂ *, 10, 2, 2; 1998 BP₂ *, 11, 2, 2; 1998 BQ₂ *, 10, 2, 2; 1998 BR₂ *, 9, 2, 2; 1998 BJ₆ *, 14, 3, 2; 1998 BC₇ *, 5, 1, 0; 1998 BS₉ *, 5, 1, 0; 1998 BT₁₀ *, 15, 3, 2; 1998 BU₁₀ *, 17, 4, 23; 1998 BV₁₀ *, 10, 2, 1; 1998 BW₁₀ *, 20, 4, 5; 1998 BX₁₀ *, 8, 2, 1; 1998 BY₁₀ *, 9, 2, 2; 1998 BZ₁₀ *, 15, 3, 2; 1998 BA₁₁ *, 13, 3, 2; 1998 BB₁₁ *, 14, 3, 2; 1998 BC₁₁ *, 8, 2, 1; 1998 BD₁₁ *, 12, 3, 2; 1998 BE₁₁ *, 14, 3, 23; 1998 BF₁₁ *, 18, 4, 23; 1998 BG₁₁ *, 23, 5, 23; 1998 BH₁₁ *, 9, 2, 2; 1998 BJ₁₁ *, 8, 2, 2; 1998 BK₁₁ *, 17, 4, 17; 1998 BL₁₁ *, 17, 4, 17; 1998 BM₁₁ *, 9, 2, 2; 1998 BN₁₁ *, 14, 3, 2; 1998 BO₁₁ *, 19, 3, 2; 1998 BP₁₁ *, 9, 2, 2; 1998 BQ₁₁ *, 8, 2, 2; 1998 BR₁₁ *, 10, 2, 1; 1998 BS₁₁ *, 14, 3, 2; 1998 BT₁₁ *, 10, 2, 1; 1998 BU₁₁ *, 15, 3, 2; 1998 BV₁₁ *, 14, 3, 2; 1998 BW₁₁ *, 14, 3, 2; 1998 BX₁₁ *, 15, 3, 2; 1998 BY₁₁ *, 14, 3, 2; 1998 BZ₁₁ *, 18, 4, 17; 1998 BA₁₂ *, 20, 4, 23; 1998 BB₁₂ *, 8, 2, 2; 1998 BC₁₂ *, 23, 5, 23; 1998 BD₁₂ *, 30, 5, 17; 1998 BE₁₂ *, 8, 2, 2; 1998 BF₁₂ *, 12, 3, 2; 1998 BG₁₂ *, 14, 3, 2; 1998 BH₁₂ *, 15, 3, 2; 1998 BJ₁₂ *, 8, 2, 1; 1998 BK₁₂ *, 14, 3, 2; 1998 BL₁₂ *, 15, 3, 2; 1998 BM₁₂ *, 24, 5, 23; 1998 BN₁₂ *, 18, 4, 23; 1998 BO₁₂ *, 23, 5, 23; 1998 BP₁₂ *, 9, 2, 2; 1998 BQ₁₂ *, 13, 3, 2; 1998 BR₁₂ *, 33, 6, 23; 1998 BS₁₂ *, 25, 5, 17; 1998 BT₁₂ *, 14, 3, 4; 1998 BU₁₂ *, 12, 3, 3; 1998 BV₁₂ *, 19, 4, 5; 1998 BW₁₂ *, 14, 3, 2; 1998 BX₁₂ *, 18, 4, 3; 1998 BY₁₂ *, 19, 4, 3; 1998 BZ₁₂ *, 13, 3, 2; 1998 BA₁₃ *, 9, 2, 2; 1998 BB₁₃ *, 14, 2, 1; 1998 BC₁₃ *, 13, 3, 2; 1998 BD₁₃ *, 8, 2, 2; 1998 BE₁₃ *, 8, 2, 2; 1998 BF₁₃ *, 8, 2, 1; 1998 BG₁₃ *, 9, 2, 1; 1998 BH₁₃ *, 8, 2, 1; 1998 BJ₁₃ *, 10, 2, 1; 1998 BK₁₃ *, 12, 3, 1; 1998 BL₁₃ *, 12, 3, 17; 1998 BM₁₃ *, 9, 2, 1; 1998 BN₁₃ *, 8, 2, 1; 1998 BO₁₃ *, 14, 3, 5; 1998 BP₁₃ *, 8, 2, 1; 1998 BQ₁₃ *, 10, 2, 1; 1998 BU₁₄ *, 5, 1, 0; 1998 BT₄₂ *, 6, 1, 0; 1998 BU₄₂ *, 6, 1, 0; 1998 BV₄₂ *, 14, 3, 18; 1998 BW₄₂ *, 5, 1, 0; 1998 BE₄₃ *, 4, 1, 0; 1998 BF₄₃ *, 4, 1, 0; 1998 BG₄₃ *, 4, 1, 0; 1998 BH₄₃ *, 4, 1, 0; 1998 BS₄₃ *, 4, 1, 0; 4523 P-L, 5, 1, 0; 9560 P-L, 13, 3, 2; 1306 T-2, 4, 1, 0; 5105 T-2, 15, 3, 2; (140), 30, 5, 5; (222), 20, 4, 3; (228), 15, 3, 2; (231), 25, 5, 5; (311), 15, 3, 2; (559), 19, 3, 2; (628), 17, 4, 3; (707), 15, 3, 2; (740), 11, 2, 2; (748), 13, 3, 2; (820), 6, 1, 0; (946), 31, 5, 5; (1669), 10, 2, 3; (1896), 5, 1, 0; (2096), 9, 2, 2; (2138), 26, 5, 5; (2169), 30, 5, 5; (2248), 10, 2, 1; (2395), 12, 3, 2; (2580), 15, 3, 2; (2581), 6, 1, 0; (2588), 11, 2, 2; (2866), 14, 3, 2; (2945), 5, 1, 0; (2996), 15, 3, 2; (3019), 15, 3, 2; (3441), 19, 3, 2; (3598), 15, 3, 2; (3599), 11, 2, 2; (3614), 15, 3, 2; (3773), 26, 5, 5; (3855), 20, 3, 2; (4163), 6, 1, 0; (4297), 5, 1, 0; (4398), 5, 1, 0; (4442), 6, 1, 0; (4560), 15, 3, 2; (4592), 11, 2, 2; (4599), 19, 3, 2; (4641), 26, 5, 5; (4698), 11, 2, 2; (4755), 25, 5, 5; (4797), 5, 1, 0; (4944), 15, 3, 2; (5088), 25, 4, 5; (5151), 5, 1, 0; (5157), 11, 2, 2; (5320), 10, 2, 2; (5432), 26, 5, 5; (5575), 15, 3, 2; (5754), 14, 3, 2; (6055), 8, 2, 1; (6316), 10, 2, 2; (6367), 10, 2, 1; (6452), 11, 2, 2; (7226), 11, 2, 2; (7228), 26, 5, 5; (7278), 24, 5, 5; (7319), 15, 3, 2; (7458), 13, 3, 2; (8065), 2, 1, 0; (8129), 5, 1, 0; [5527, 556, 283*, 1997/01/30-1998/01/25]

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

(239), 4, 2, 1; (255), 4, 2, 1; (272), 4, 2, 1; (309), 4, 2, 1; (424), 4, 2, 1; (486), 3, 2, 1; (553), 4, 2, 1; (718), 4, 2, 1; (756), 4, 2, 1; (823), 4, 2, 1; (1068), 2, 1, 0; (2000), 4, 2, 1; (2080), 4, 2, 1; (2090), 3, 2, 1; (2122), 4, 2, 1; (2140), 4, 2, 1; (2258), 4, 2, 1; (2337), 4, 2, 1; (2360), 4, 2, 1; (2601), 4, 2, 1; (2630), 4, 2, 1; (3019), 4, 2, 1; (3032), 4, 2, 1; (3142), 4, 2, 1; (3209), 3, 2, 1; (3396), 4, 2, 1; (3515), 4, 2, 1; (3847), 3, 2, 1; (4072), 2, 2, 1; (4086), 4, 2, 1; (4482), 4, 2, 1; (4706), 4, 2, 1; (4856), 4, 2, 1; (5036), 4, 2, 1; (5713), 4, 2, 1; (5751), 3, 2, 1; (5754), 4, 2, 1; (6244), 3, 2, 1; (6290), 4, 2, 1; (6291), 4, 2, 1; (6368), 4, 2, 1; (6517), 4, 2, 1; (6565), 4, 2, 1; (6603), 4, 2, 1; (6665), 4, 2, 4; (6668), 3, 2, 4; (7090), 4, 2, 1; (7116), 4, 2, 4; (7160), 4, 2, 4; (7197), 4, 2, 1; (7241), 4, 2, 4; (7253), 4, 2, 1; (7275), 4, 2, 1; (7305), 7, 4, 6; (7307), 4, 2, 4; (7366), 4, 2, 4; (7388), 4, 2, 4; (7418), 4, 2, 4; (7605), 4, 2, 4; [228, 59, 0*, 1998/01/12-1998/01/28]

711 McDonald Observatory

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

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

Observer J. G. Reis

0.76-m *f*/3.0 reflector + CCD

GSC

1992 AB, 6, 3, 3; 1994 CN₂, 4, 2, 3; 1995 CV, 2,

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, D. Burtz, D. Feltman, B. Hays

Measurers C. Wetterer, D. Burtz, D. Feltman

0.41-m $f/8.0$ reflector + CCD

GSC

(401), 3, 1, 0; (441), 4, 1, 0; (1035), 20, 4, 7; (1843), 4, 1, 0; (2816), 9, 2, 1; (3521), 8, 2, 1; (3648), 6, 2, 1; (3725), 6, 2, 1; (3800), 16, 4, 20; (4130), 15, 4, 7; (4663), 6, 1, 0; [97, 11, 0*, 1997/11/15–1998/01/28]

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

GSC, USNO-SA1.0

1992 SW₁₀, 6, 2, 1; 4343 T-3, 6, 2, 2; (5184), 6, 2, 1; [18, 3, 0*, 1998/01/21–1998/01/30]

721 Lime Creek

R. Linderholm, R2 Box 79, Cambridge, NE 69022, U.S.A.

[lindh@csb.cambridge.ne.us]

Observers R. Linderholm, T. Houlden, E. Ross

Measurers E. Ross, T. Houlden

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

GSC

1992 SQ₂₆, 4, 2, 1; 1997 XC, 2, 1, 0; 1997 YW₁₁, 2, 1, 0; 1998 BB₁, 4, 2, 1; 1998 BK₄, 4, 2, 1; (2510), 4, 2, 1; (6381), 4, 2, 1; [24, 7, 0*, 1998/01/02–1998/01/27]

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

GSC

1979 SP₁₄, 4, 2, 5; 1982 FP₃, 2, 1, 0; 1991 JJ, 5, 2, 5; (8142), 5, 2, 5; [16, 4, 0*, 1998/01/10–1998/01/15]

727 Zeno Observatory, Edmond

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

[tstaffor@aig.vialink.com]

0.15m $f/6$ refractor + CCD

GSC

1992 SQ₂₆, 5, 2, 1; 1996 VC₁, 2, 1, 0; 1998 BB₄ *, 14, 5, 10; 1998 BV₂₅ *, 9, 3, 4; (1840), 3, 1, 0; (2054), 3, 1, 0; (3813), 3, 1, 0; (4185), 3, 1, 0; (5355), 3, 1, 0; (5528), 3, 1, 0; (6381), 3, 1, 0; (6422), 4, 2, 2; (6511), 3, 1, 0; [58, 13, 2*, 1998/01/19–1998/02/02]

734 Farpoint Observatory, Eskridge

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

0.45-m $f/4.5$ reflector + CCD, 0.30-m Schmidt-Cassegrain + CCD

GSC

1998 BX₇, 3, 1, 0; 1998 BB₁₀, 3, 1, 0; 1998 BM₁₀, 3, 1, 0; 1998 BP₂₆, 3, 1, 0; [12, 4, 0*, 1998/01/27–1998/01/30]

735 George Observatory, Needville

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

[bdillon@houston.geoquest.slb.com]

Observers C. Gustava, K. Rivich, E. Dillon, W. G. Dillon, M. Eastman, R. Pepper

Measurers K. Rivich, W. G. Dillon

0.46-m reflector + CCD

USNO-SA1.0

1992 LJ, 2, 1, 0; 1998 AA, 6, 2, 12; [8, 2, 0*, 1997/11/30–1998/01/28]

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

(1980), 2, 1, 0; (3800), 2, 1, 0; [4, 2, 0*, 1998/01/20]

757 High Point

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

[Dkchesney@aol.com]

0.25-m Schmidt-Cassegrain + CCD

USNO-A1.0

(2657), 4, 2, 3; (3198), 4, 2, 3; (3824), 4, 2, 3; (3841), 4, 2, 3; (3873), 4, 2, 2; (4324), 4, 2, 2; (4729), 4, 2, 6; [28, 7, 0*, 1998/01/25–1998/02/01]

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

1981 EY₁₄, 6, 3, 3; 1981 EM₁₈, 3, 1, 0; 1988 CW₄, 5, 2, 1; 1988 QB, 4, 2, 3; 1989 JF, 4, 2, 4; 1990 QO₃, 2, 1, 0; 1991 JJ, 2, 1, 0; 1991 PC₁₈, 5, 2, 3; 1991 SV, 6, 3, 3; 1992 AK₁, 5, 2, 1; 1992 JQ₃, 4, 2, 1; 1992 NP, 1, 1, 0; 1992 RV₁, 4, 2, 3; 1993 DO, 3, 1, 0; 1993 OP, 1, 1, 0; 1994 GH₉, 2, 1, 0; 1994 LR, 4, 2, 3; 1995 CO₁, 4, 2, 3; 1998 BU₂₅ *, 27, 8, 11; (7216), 3, 1, 0; [95, 20, 1*, 1998/01/18–1998/02/09]

809 European Southern Observatory

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

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

Observers G. Pizarro, O. Pizarro

Measurer E. W. Elst

1.0-m Schmidt

(4) 1993 BP₁₅, 3, 1, 0; 1993 TA₃₉, 3, 1, 0; [6, 2, 0*, 1993/02/17–1993/10/21]

817 Sudbury

D. di Cicco, Sky & Telescope, Cambridge, MA 02138, U.S.A.

[dicicco@skypub.com]

0.41-m Schmidt-Cassegrain + CCD

GSC

1996 TV₁, 4, 1, 0; (7116), 5, 1, 0; (7228), 5, 1, 0; [14, 3, 0*, 1998/01/11–1998/02/02]

823 Fitchburg

L. L. Amburgey, 777 Scott Road, Fitchburg, MA 01420-6680, U.S.A.

[lla@tiac.net]

0.28-m Schmidt-Cassegrain + CCD

GSC

(1035), 4, 2, 1; [4, 1, 0*, 1998/01/25–1998/01/27]

824 Lake Clear

K. A. Williams, RD #1 Box 277, Forest Home Road, Lake Clear, NY 12945,

U.S.A. [kenwill@NorthNet.org]

0.41-m $f/5.0$ reflector + CCD

GSC

1995 BA, 3, 1, 0; 1997 TZ₂₄, 3, 1, 0; [6, 2, 0*, 1997/09/28–1997/10/20]

830 Hudson

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

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

GSC

(222), 7, 3, 15; (261), 5, 2, 10; (350), 4, 2, 25; (519), 4, 2, 25; (567), 4, 2, 35; (628), 5, 2, 10; (844), 6, 3, 40; (946), 5, 2, 10; [40, 8, 0*, 1997/12/29–1998/02/07]

867 Saji Observatory

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

[KYI03040@niftyserve.or.jp]

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

1.03-m $f/4.2$ reflector + CCD

GSC

1998 BJ₂₄, 10, 3, 4; 1998 CL *, 9, 3, 4; [19, 2, 1*, 1998/02/01–1998/02/05]

886 Susono

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

0.25-m $f/6.3$ reflector + CCD

GSC

1986 WB, 2, 1, 0; 1987 BB, 4, 2, 6; 1988 DH₁, 4, 2, 5; 1990 UZ₁, 4, 2, 7; 1992 WN₃, 2, 1, 0; 1993 UN, 4, 2, 7; 1995 UQ₅, 2, 1, 0; 1996 RF₅, 4, 2, 12; 1996 TH₇, 4, 2, 7; 1996 TJ₁₂, 4, 2, 5; 1996 TL₁₂, 8, 4, 17; 1996 UT, 4, 2, 6; 1996 VJ, 4, 2, 7; 1996 VA₅, 2, 1, 0; 1997 AU₃, 2, 1, 0; 1997 XF₈, 2, 1, 0; 1997 YB₁₀, 4, 2, 12; 1997 YP₁₁, 4, 2, 6; 1997 YL₁₆, 2, 1, 0; 1997 YO₁₆, 2, 1, 0; 1997 YP₁₆, 4, 2, 11; 1998 AJ, 6, 3, 10; 1998 AK, 6, 3, 10; 1998 BJ, 4, 2, 5; 1998 BS₂, 6, 3, 13; 1998 BT₂, 8, 4, 13; 1998 BU₂, 4, 2, 1; 1998 BV₂, 6, 3, 13; 1998 BW₂, 6, 3, 13; 1998 BX₂, 6, 3, 13; 1998 BY₂, 6, 3, 13; 1998 BC₄, 2, 1, 0; 1998 BD₄, 4, 2, 11; 1998 BE₄, 8, 4, 8; 1998 BF₄, 4, 2, 10; 1998 BG₄, 8, 4, 11; 1998 BH₄, 2, 1, 0; 1998 BJ₄, 4, 2, 10; 1998 BK₄, 2, 1, 0; 1998 BL₄, 2, 1, 0; 1998 BT₁₄, 4, 2, 3; 1998 BU₁₄, 6, 3, 7; 1998 BX₂₅, 4, 2, 2; 1998 BD₃₀, 4, 2, 3; 1998 BH₃₃ *, 8, 4, 6; [192, 45, 1*, 1998/01/19–1998/02/06]

888 Gekko Observatory

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

[urata@sannet.ne.jp]

Observer T. Kagawa

Measurer T. Urata

0.50-m $f/4.0$ reflector

GSC

1998 BE₁₅, 4, 2, 3; 1998 BO₁₅, 2, 1, 0; 1998 BD₃₀ *, 4, 2, 3; 1998 BU₄₁ *, 4, 2, 3; [14, 4, 2*, 1998/01/26–1998/02/02]

897 YGCO Chiyoda Station

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

[kojita@scorpius.bekkoame.or.jp]

0.25-m $f/6.0$ reflector + CCD

GSC

1997 YX₃, 3, 1, 0; 1998 BZ₇, 3, 1, 0; 1998 BG₉, 4, 1, 0; 1998 BB₁₀, 3, 1, 0; [13, 4, 0*, 1998/01/16–1998/01/26]

900 Moriyama

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

[ikari@gold.ocn.ne.jp]

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

GSC

1996 VB₅, 2, 1, 0; 1998 AF, 10, 5, 12; 1998 BD₇ *, 7, 3, 9; 1998 BX₇, 2, 1, 0; 1998 BZ₇, 2, 1, 0; 1998 BG₉, 2, 1, 0; 1998 BP₂₆, 2, 1, 0; (190), 2, 1, 0; [29, 8, 1*, 1998/01/05–1998/01/30]

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

1992 FO₃, 2, 1, 0; 1993 FU₃₅, 2, 1, 0; 1997 XF₈, 4, 2, 2; 1997 YN₁₆, 2, 1, 0; 1998 AJ, 2, 1, 0; 1998 AK, 2, 1, 0; 1998 BJ *, 2, 1, 0; 1998 BS₂ *, 4, 2, 1; 1998 BT₂ *, 4, 2, 1; 1998 BU₂ *, 4, 2, 1; 1998 BV₂ *, 4, 2, 1; 1998 BW₂ *, 4, 2, 1; 1998 BX₂ *, 4, 2, 1; 1998 BY₂ *, 4, 2, 1; 1998 BC₄ *, 2, 1, 0; 1998 BD₄ *, 2, 1, 0; 1998 BE₄ *, 2, 1, 0; 1998 BF₄ *, 2, 1, 0; 1998 BG₄ *, 2, 1, 0; 1998 BH₄ *, 2, 1, 0; 1998 BJ₄ *, 2, 1, 0; 1998 BK₄ *, 2, 1, 0; 1998 BF₁₄, 3, 2, 1; 1998 BT₁₄ *, 4, 2, 1; 1998 BU₁₄ *, 4, 2, 1; 1998 BX₂₅ *, 4, 2, 3; 1998 BK₃₆ *, 4, 2, 2; [79, 27, 20*, 1998/01/16–1998/01/31]

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, C. Pollas

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

0.90-m Schmidt + CCD

GSC

1979 HW₆, 3, 1, 0; 1979 UH, 3, 1, 0; 1981 EY₁₄, 3, 1, 0; 1981 EC₂₁, 3, 1, 0; 1981 EM₂₆, 3, 1, 0; 1981 EQ₃₁, 6, 2, 2; 1983 RZ₄, 9, 3, 12; 1986 TH, 3, 1, 0; 1990 BH₁, 3, 1, 0; 1990 QT₉, 6, 2, 10; 1991 GP₆, 3, 1, 0; 1992 EY₁₁, 3, 1, 0; 1993 TC₂₅, 6, 2, 2; 1993 VS, 3, 1, 0; 1993 YE, 3, 1, 0; 1995 FV, 3, 1, 0; 1996 XR, 3, 1, 0; 1997 UO₁, 6, 2, 10; 1997 UT₃, 6, 2, 10; 1997 UY₃, 6, 2, 10; 1997 VE, 3, 1, 0; 1997 VZ₁, 3, 1, 0; 1997 VO₆, 6, 2, 10; 1997 WB₆, 3, 1, 0; 1997 WP₂₂, 3, 1, 0; 1997 WZ₃₀, 6, 2, 10; 1997 WQ₃₁, 3, 1, 0; 1997 WU₃₁, 6, 2, 12; 1997 WB₃₃, 9, 3, 12; 1997 WC₃₄, 6, 2, 2; 1997 WU₃₆, 3, 1, 0; 1997 WG₃₇, 3, 1, 0; 1997 WO₃₇, 6, 2, 10; 1997 WB₃₈, 3, 1, 0; 1997 WS₄₈ *, 3, 1, 0; 1997 WT₄₈ *, 3, 1, 0; 1997 WU₄₈ *, 3, 1, 0; 1997 WV₄₈ *, 3, 1, 0; 1997 WW₄₈ *, 3, 1, 0; 1997 WX₄₈ *, 3, 1, 0; 1997 WR₄₉, 3, 1, 0; 1997 WF₅₄, 3, 1, 0; 1997 WG₅₄, 3, 1, 0; 1997 WJ₅₄, 6, 2, 10; 1997 WL₅₄, 3, 1, 0; 1997 XA, 6, 2, 2; 1997 YX₃, 3, 1, 0; 1997 YF₁₄, 3, 1, 0; 1997 YG₁₄, 3, 1, 0; 1997 YL₁₄, 3, 1, 0; 1997 YD₁₅, 3, 1, 0; 1998 AM, 3, 1, 0; 1998 AV, 3, 1, 0; 1998 AY, 6, 2, 1; 1998 AC₁₀ *, 6, 2, 2; 1998 AD₁₀ *, 6, 2, 2; 1998 AE₁₀ *, 6, 2, 2; 1998 AF₁₀ *, 6, 2, 2; 1998 AG₁₀ *, 6, 2, 2; 1998 AH₁₀ *, 6, 2, 2; 1998 AJ₁₀ *, 6, 2, 2; 1998 BT₂, 3, 1, 0; 1998 BG₄, 3, 1, 0; 1998 BN₄ *, 6, 2, 6; 1998 BO₄ *, 6, 2, 6; 1998 BP₄ *, 6, 2, 6; 1998 BQ₄ *, 9, 3, 13; 1998 BR₄ *, 9, 3, 13; 1998 BS₄ *, 6, 2, 6; 1998 BT₄ *, 6, 2, 6; 1998 BU₄ *, 6, 2, 6; 1998 BV₄ *, 6, 2, 6; 1998 BW₄ *, 9, 3, 13; 1998 BX₄ *, 6, 2, 6; 1998 BY₄ *, 6, 2, 6; 1998 BZ₄ *, 6, 2, 6; 1998 BA₅ *, 6, 2, 6; 1998 BB₅ *, 6, 2, 6; 1998 BC₅ *, 7, 3, 13; 1998 BD₅ *, 6, 2, 6; 1998 BB₈, 3, 1, 0; 1998 BU₈, 3, 1, 0; 1998 BW₈, 6, 2, 1; 1998 BX₈, 6, 2, 1; 1998 BZ₁₀, 3, 1, 0; 1998 BS₁₃, 3, 1, 0; 1998 BH₁₄ *, 6, 2, 10; 1998 BJ₁₄ *, 6, 2, 10; 1998 BK₁₄ *, 6, 2, 10; 1998 BL₁₄ *, 6, 2, 10; 1998 BM₁₄ *, 6, 2, 10; 1998 BN₁₄ *, 6, 2, 10; 1998 BO₁₄ *, 6, 2, 10; 1998 BP₁₄ *, 6, 2, 10; 1998 BQ₁₄ *, 6, 2, 10; 1998 BZ₁₈, 3, 1, 0; 1998 BD₂₆ *, 9, 3, 53; 1998 BE₂₆ *, 6, 2, 2; 1998 BF₂₆ *, 6, 2, 2; 1998 BG₂₆ *, 6, 2, 2; 1998 BH₂₆ *, 6, 2, 2; 1998 BJ₂₆ *, 6, 2, 2; 1998 BK₂₆ *, 6, 2, 2; 1998 BL₂₆ *, 6, 2, 2; 1998 BL₂₇, 3, 1, 0; 1998 BW₃₁ *, 6, 2, 13; 1998 BX₃₁ *, 6, 2, 13; 1998 BY₃₁ *, 6, 2, 13; 1998 BZ₃₁ *, 6, 2, 13; 1998 BA₃₂ *, 6, 2, 13; 1998 BB₃₂ *, 6, 2, 7; 1998 BC₃₂ *, 6, 2, 7; 1998 BD₃₂ *, 6, 2, 3; 1998 BE₃₂ *, 6, 2, 3; 1998 BF₃₂ *, 6, 2, 3; 1998 BG₃₂ *, 6, 2, 3; 1998 BH₃₂ *, 6, 2, 3; 1998 BJ₃₂ *, 6, 2, 3; 1998 BK₃₂ *, 6, 2, 3; 1998 BL₃₂ *, 6, 2, 3; 1998 BM₃₂ *, 6, 2, 1; 1998 BN₃₂ *, 6, 2, 1; 1998 BO₃₂ *, 6, 2, 1; 1998 BP₃₂ *, 6, 2, 1; 1998 BQ₃₂ *, 6, 2, 1; 1998 BR₃₂ *, 6, 2, 1; 1998 BS₃₂ *, 6, 2, 1; 1998 BT₃₂ *, 6, 2, 1; 1998 BU₃₂ *, 6, 2, 1; 1998 BV₃₂ *, 6, 2, 1; 1998 BW₃₂ *, 6, 2, 1; 1998 BX₃₂ *, 6, 2, 1; 1998 BY₃₂ *, 6, 2, 1; 1998 BZ₃₂ *, 6, 2, 1; 1998 BA₃₃ *, 6, 2, 1; 1998 BB₃₃ *, 6, 2, 1; 1998 BC₃₃ *, 6, 2, 1; 1998 BD₃₃ *, 6, 2, 1; 1998 BE₃₃ *, 6, 2, 1; 1998 BF₄₂, 3, 1, 0; 1998 BM₄₂ *, 3, 1, 0; 1998 BN₄₂ *, 3, 1, 0; 1998 BO₄₂ *, 3, 1, 0; 1998 BP₄₂ *, 3, 1, 0; 1998 BQ₄₂ *, 3, 1, 0; 1998 BR₄₂ *, 3, 1, 0; 2025 P-L, 9, 3, 6; 3520 P-L, 6, 2, 10; 2202 T-1, 3, 1, 0; 3042 T-2, 3, 1, 0; 3176 T-2, 3, 1, 0; (156), 3, 1, 0; (160), 9, 3, 6; (395), 9, 3, 13; (419), 3, 1, 0; (507), 3, 1, 0; (632), 6, 2, 1; (1061), 6, 2, 1; (1211), 3, 1, 0; (1454), 6, 2, 2; (1587), 3, 1, 0; (1722), 3, 1, 0; (2385), 3, 1, 0; (2705), 3, 1, 0; (3424), 3, 1, 0; (3562), 6, 2, 2; (3624), 3, 1, 0; (4885), 6, 2, 6; (5998), 3, 1, 0; (6293), 6, 2, 2; (7198), 3, 1, 0; (7521), 3, 1, 0; (8093), 3, 1, 0; (8119), 3, 1, 0; (8183), 3, 1, 0; (8189), 3, 1, 0; [892, 184, 90*, 1997/09/30–1998/01/31]

955 Sassoieiros

R. Goncalves, Rua Augusto Jose Vieira, 10-3, P-1170 Lisbon, Portugal
[m13406@correio.cc.fc.ul.pt]

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

GSC, SA-1.0

(39), 9, 2, 6; (97), 3, 1, 0; (417), 3, 2, 6; (914), 7, 2, 6; [22, 4, 0*, 1998/01/11–1998/01/17]

958 Observatoire de Dax

P. Dupouy, Observatoire de Dax, F-40100 Dax, France
[DUPOUY_Philippe@compuserve.com]

Observers P. Dupouy, F. Marechal
Measurers J.-F. Lahitte, P. Dupouy

0.254-m $f/6.7$ reflector + CCD

GSC, USNO-SA1.0

1997 HY₁₆, 4, 1, 0; 1997 VV, 2, 1, 0; 1997 XT₅, 3, 1, 0; 1997 XU₅, 2, 1, 0; 1997 YG₅, 2, 1, 0;
1998 BW₁, 9, 3, 14; 1998 BP₆, 3, 1, 0; 1998 BH₃₀, 2, 1, 0; 1998 BK₃₀, 3, 1, 0; (2054), 2, 1, 0;
[32, 10, 0*, 1998/01/20–1998/02/07]

960 Rolvenden

M. Armstrong, Butterfly Cottage, Hastings Road, Rolvenden, Kent TN17 4PN,
England [fw040dial.pipex.com]

Observers M. Armstrong, C. Armstrong

Measurer M. Armstrong

0.26-m Schmidt-Cassegrain + CCD

GSC

1997 WQ₂₈, 5, 2, 1; [5, 1, 0*, 1998/01/19–1998/01/20]

964 Southend Bradfield

G. C. R. Sallit, Jacinth, Stanford Road, Southend Bradfield, Reading, Berkshire
RG7 6HL, England [100573.2667@compuserve.com]

0.30-m Schmidt-Cassegrain + CCD

GSC

1996 TF₁₅, 7, 3, 16; (1068), 2, 1, 0; (2718), 4, 2, 1; (2952), 2, 1, 0; (4187), 2, 1, 0; (4663), 2, 1, 0;
(5184), 1, 1, 0; [20, 7, 0*, 1998/01/19–1998/02/05]

966 Church Stretton

S. P. Laurie, Toleman, 10 Hazler Orchard, Church Stetton, Shropshire SY6 7AL,
England [100336.3635@compuserve.com]

0.25-m Schmidt Cassegrain + focal reducer + CCD

GSC

1991 VX₂, 2, 1, 0; 1998 AZ₉ *, 4, 2, 1; [6, 2, 1*, 1997/12/31–1998/01/02]

970 Chelmsford

N. D. James, 11 Tavistock Road, Chelmsford, Essex CM1 6JL, England
[ndj@astro1.demon.co.uk]

0.30-m $f/5.25$ reflector + CCD

GSC

1997 WQ₂₈, 1, 1, 0; [1, 1, 0*, 1998/01/24]

ORBITAL ELEMENTS

Orbital elements have been computed by the following contributors:

D. J. Asher, Communications Research Laboratory, Hirai 893-1, Kashima, Ibaraki-Ken, 314 Japan [david@crl.go.jp]

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

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

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

G. Forti, Osservatorio Astrofisico di Arcetri, Largo E. Fermi 5, I-50125 Florence, Italy [forti@arcetri.astro.it]

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

T. Kobayashi, 1717-2 Shimo-Koizumi, Oizumi-machi, Ora-gun, Gunma-ken, 370-05 Japan [kobataka@oaa.iiijnet.or.jp]

B. G. Marsden, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [bmarsden@cfa.harvard.edu]

S. Nakano, 3-19, 1 chome, Takenokuchi, Sumoto, Hyogo-ken 656, Japan [snakano@cfa.harvard.edu]

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

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

G. V. Williams, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [gwilliams@cfa.harvard.edu]

C/1995 O1 (Hale-Bopp)

Epoch 1997 Mar. 13.0 TT = JDT 2450520.5

T 1997 Apr. 1.1372 TT

				Marsden	
<i>q</i>	0.914144	(2000.0)	P	Q	
<i>z</i>	+0.005383	ω 130.5886	−0.1331182	−0.1703057	
		Ω 282.4707	+0.2822909	+0.9378059	
<i>e</i>	0.995079	<i>i</i> 89.4299	+0.9500481	−0.3025161	

From 2551 observations 1993 Apr. 27–1998 Feb. 8, mean residual 0''.8.

Nongravitational parameters $A_1 = +1.04$, $A_2 = +0.1759$.

C/1997 BA₆ (Spacewatch)

Epoch 1999 Dec. 8.0 TT = JDT 2451520.5

T 1999 Nov. 27.6698 TT

				Marsden	
<i>q</i>	3.436775	(2000.0)	P	Q	
<i>z</i>	+0.000366	ω 285.9375	+0.0105605	+0.7657396	
	±0.000009	Ω 317.6638	+0.0017746	−0.6431132	
<i>e</i>	0.998743	<i>i</i> 72.7148	−0.9999427	+0.0069457	

From 161 observations 1997 Jan. 11–1998 Feb. 5, mean residual 0''.6.

P/1997 C1 (Gehrels)

Epoch 1996 Feb. 7.0 TT = JDT 2450120.5

T 1996 Jan. 29.2065 TT

				Marsden	
<i>q</i>	3.565219	(2000.0)	P	Q	
<i>n</i>	0.0566805	ω 211.3428	+0.2208973	−0.9746345	
<i>a</i>	6.711920	Ω 225.9230	+0.9048511	+0.2185550	
<i>e</i>	0.468823	<i>i</i> 2.8679	+0.3639351	+0.0481799	
<i>P</i>	17.4				

From 152 observations 1997 Feb. 2–1998 Feb. 2, mean residual 0''.7.

C/1997 H3 (SOHO)

<i>T</i>	1997 Apr. 26.67 TT		Marsden	
<i>q</i>	0.0075	(2000.0)	P	Q
	ω	54.66	+0.16129	−0.91879
	Ω	327.44	−0.97144	−0.08343
<i>e</i>	1.0	<i>i</i> 137.98	+0.17403	+0.38584
From 19 observations 1997 Apr. 25–26.				

C/1997 L1 (Zhu-Balam)

Epoch 1996 Nov. 13.0 TT = JDT 2450400.5				
<i>T</i>	1996 Nov. 22.7186 TT		Nakano	
<i>q</i>	4.899331	(2000.0)	P	Q
<i>z</i>	+0.000386	ω 346.3446	−0.6361275	+0.0868743
	±0.000005	Ω 233.2992	−0.5871385	−0.6991840
<i>e</i>	0.998110	<i>i</i> 72.9863	−0.5006098	+0.7096440
From 169 observations 1997 June 3–1998 Feb. 4, mean residual 0″.7.				

C/1997 O1 (Tilbrook)

Epoch 1997 July 11.0 TT = JDT 2450640.5				
<i>T</i>	1997 July 13.4188 TT		Marsden	
<i>q</i>	1.371795	(2000.0)	P	Q
<i>z</i>	+0.011504	ω 336.1867	−0.4356355	−0.5632845
	±0.000009	Ω 231.2460	−0.6109169	−0.3878132
<i>e</i>	0.984219	<i>i</i> 115.8023	−0.6610615	+0.7295968
From 105 observations 1997 July 23–1998 Feb. 5, mean residual 0″.7.				

C/1997 P3 (SOHO)

<i>T</i>	1997 Aug. 8.36 TT		Marsden	
<i>q</i>	0.0077	(2000.0)	P	Q
	ω	35.50	+0.16283	−0.78645
	Ω	306.11	−0.98587	−0.10558
<i>e</i>	1.0	<i>i</i> 132.48	+0.03939	+0.60856
From 20 observations 1997 Aug. 7–8.				

C/1997 S2 (SOHO)

<i>T</i>	1997 Sept. 26.43 TT		Marsden	
<i>q</i>	0.0049	(2000.0)	P	Q
	ω	78.62	+0.18659	−0.98241
	Ω	359.22	−0.95966	−0.18052
<i>e</i>	1.0	<i>i</i> 144.11	+0.21032	+0.04785
From 21 observations 1997 Sept. 25–26.				

P/1997 V1 (Larsen)

Epoch 1997 Sept. 29.0 TT = JDT 2450720.5				
<i>T</i>	1997 Sept. 15.1305 TT		Marsden	
<i>q</i>	3.293373	(2000.0)	P	Q
<i>n</i>	0.0899688	ω 132.8633	+0.9776806	−0.1217419
<i>a</i>	4.932587	Ω 234.8419	+0.0705367	+0.9578991
<i>e</i>	0.332323	<i>i</i> 12.0894	+0.1979021	+0.2600157
<i>P</i>	11.0			
From 248 observations 1997 Nov. 3–1998 Feb. 3, mean residual 0″.5.				

C/1998 A1 (SOHO)

<i>T</i>	1998 Jan. 13.26 TT		Marsden	
<i>q</i>	0.0051	(2000.0)	P	Q
	ω	89.46	+0.18136	−0.97468
	Ω	12.49	−0.95206	−0.20733
<i>e</i>	1.0	<i>i</i> 142.79	+0.24634	−0.08370
From 17 observations 1998 Jan. 12–13.				

43P/Wolf-Harrington

Epoch 1997 Sept. 29.0 TT = JDT 2450720.5				
<i>T</i>	1997 Sept. 29.2167 TT		Nakano	
<i>q</i>	1.581824	(2000.0)	P	Q
<i>n</i>	0.1525615	ω 187.1328	+0.1472916	−0.9404692
<i>a</i>	3.468748	Ω 254.7561	+0.9224348	+0.2423751
<i>e</i>	0.543978	<i>i</i> 18.5103	+0.3569582	−0.2382689
<i>P</i>	6.46			
From 203 observations 1984–1998, mean residual 0″.9. Nongravitational parameters				
$A_1 = +0.36, A_2 = -0.0366.$				

78P/Gehrels 2

Epoch 1997 Aug. 20.0 TT = JDT 2450680.5				
<i>T</i>	1997 Aug. 7.0425 TT		Nakano	
<i>q</i>	2.000261	(2000.0)	P	Q
<i>n</i>	0.1368765	ω 192.7683	+0.7272985	−0.6840711
<i>a</i>	3.728922	Ω 210.6273	+0.6388820	+0.7043658
<i>e</i>	0.463582	<i>i</i> 6.2577	+0.2507325	+0.1895138
<i>P</i>	7.20			
From 327 observations 1973–1998, mean residual 0″.7. Nongravitational parameters				
$A_1 = -0.40, A_2 = -0.0491.$				

88P/Howell

Epoch 1998 Sept. 24.0 TT = JDT 2451080.5				
<i>T</i>	1998 Sept. 27.1793 TT		Nakano	
<i>q</i>	1.406147	(2000.0)	P	Q
<i>n</i>	0.1768484	ω 234.9042	+0.3818385	+0.9219548
<i>a</i>	3.143417	Ω 57.6696	−0.8210492	+0.3705666
<i>e</i>	0.552669	<i>i</i> 4.3981	−0.4243554	+0.1126046
<i>P</i>	5.57			
From 148 observations 1955–1998, mean residual 1″.0. Nongravitational parameters				
$A_1 = +0.47, A_2 = -0.0229.$				

132P/Helin-Roman-Alu 2

Epoch 1997 Nov. 8.0 TT = JDT 2450760.5				
<i>T</i>	1997 Nov. 10.0920 TT		Nakano	
<i>q</i>	1.910020	(2000.0)	P	Q
<i>n</i>	0.1196741	ω 220.9584	+0.7722228	−0.6353463
<i>a</i>	4.078207	Ω 178.4797	+0.6060133	+0.7352953
<i>e</i>	0.531652	<i>i</i> 5.7756	+0.1908398	+0.2359576
<i>P</i>	8.24			
From 111 observations 1989–1998, mean residual 0″.7.				

134P/Kowal-Vávrová

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

1998 Nov. 18.8550 TT			Nakano		
<i>T</i>			P		Q
<i>q</i>	2.575322	(2000.0)			
<i>n</i>	0.0632526	ω 18.7125	−0.7550806		+0.6550021
<i>a</i>	6.238551	Ω 202.2856	−0.6107859		−0.7186859
<i>e</i>	0.587192	<i>i</i> 4.3453	−0.2383145		−0.2333729
<i>P</i>	15.6				

From 33 observations 1983–1998, mean residual 0".7.

135P/Shoemaker-Levy 8

Epoch 1999 Dec. 8.0 TT = JDT 2451520.5

1999 Dec. 10.5994 TT			Marsden		
<i>T</i>			P		Q
<i>q</i>	2.721257	(2000.0)			
<i>n</i>	0.1315047	ω 22.5940	−0.5616495		+0.8253471
<i>a</i>	3.829792	Ω 213.3174	−0.7743006		−0.5489913
<i>e</i>	0.289451	<i>i</i> 6.0505	−0.2915619		−0.1319497
<i>P</i>	7.49				

From 76 observations 1992–1998, mean residual 0".8.

(8241)* 1973 SE₁ = 1992 GU₃

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

Id. B. G. Marsden (*MPC* 20804)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

110.33582 (2000.0)			Marsden		
<i>M</i>			P		Q
<i>n</i>	0.08525552	ω 264.35594	+0.29133167		+0.95617548
<i>a</i>	5.1127479	Ω 22.64798	−0.84489632		+0.27151555
<i>e</i>	0.0424172	<i>i</i> 4.35321	−0.44863801		+0.10957989
<i>P</i>	11.56	<i>H</i> 11.3	<i>G</i> 0.15	<i>U</i>	<i>I</i>

Residuals in seconds of arc

1973 09 19	675	0.5−	0.9−	1973 09 30	675	0.9−	0.6−	1992 04 06	809	0.8−	1.9−
1973 09 19	675	1.4−	0.6+	1973 09 30	675	1.5+	1.7+	1992 04 06	809	0.3−	0.7−
1973 09 20	675	0.7−	0.2−	1973 10 04	675	1.8+	1.6−	1992 04 06	809	0.1−	1.0−
1973 09 24	675	1.0−	0.7−	1973 10 04	675	0.6−	2.4+	1996 09 13	809	0.4+	1.1−
1973 09 24	675	0.9−	0.1−	1973 10 04	675	0.5−	0.3−	1996 09 14	809	0.4+	0.4−
1973 09 25	675	(0.0	3.1−)	1973 10 04	675	0.9+	1.6+	1997 11 03	704	0.5+	1.1+
1973 09 25	675	0.5−	0.0	1973 10 05	675	0.9+	2.0−	1997 11 03	704	0.2+	0.3+
1973 09 29	675	1.3−	0.7−	1973 10 05	675	(0.7−	3.1+)	1997 11 03	704	0.3+	1.8−
1973 09 29	675	2.3+	1.7−	1973 10 05	675	0.0	0.6−	1997 11 28	691	0.7+	1.2−
1973 09 29	675	0.2−	0.6−	1973 10 05	675	1.7−	1.7+	1997 11 28	691	0.4+	1.0−
1973 09 29	675	0.6+	1.4+	1992 04 04	809	0.1+	0.5−	1997 11 28	691	0.5+	1.0−
1973 09 30	675	(1.8+	2.8−)	1992 04 04	809	1.2−	1.5−	1997 12 05	691	0.1−	0.5−
1973 09 30	675	1.7+	1.6+	1992 04 04	809	(2.3−	1.9−)	1997 12 05	691	0.1−	1.1−

(8242)* 1975 SA₁ = 1974 OV₁ = 1974 QP₃

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

Id. S. Nakano (*MPC* 13683), B. G. Marsden (d, *ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

224.45738 (2000.0)			Asher		
<i>M</i>			P		Q
<i>n</i>	0.19041584	ω 225.14085	−0.32443396		+0.94252550
<i>a</i>	2.9922693	Ω 26.24034	−0.80888269		−0.23264042
<i>e</i>	0.0573621	<i>i</i> 10.41482	−0.49035843		−0.23984185
<i>P</i>	5.18	<i>H</i> 13.2	<i>G</i> 0.15	<i>U</i>	<i>I</i>

Residuals in seconds of arc

1952 01 31	675	0.4−	0.1−	1991 11 08	801	0.7+	0.3+	1997 12 25	566	0.6+	0.1+
1952 01 31	675	0.3+	0.3−	1991 11 08	801	0.6+	0.3+	1997 12 25	566	0.5+	0.8+
1954 09 03	675	0.6+	1.4−	1991 12 02	675	(0.9−	2.7+)	1997 12 25	566	0.0	0.6+

1954 09 03	675	0.1+	1.0+	1993 01 28	675	0.1+	1.0−	1997 12 30	566	0.5−	0.7+
1974 07 26	808	0.7+	0.5−	1993 01 28	675	0.2+	0.2+	1997 12 30	566	0.4−	0.7+
1974 07 26	808	0.3+	0.9−	1994 05 14	801	(0.7+	3.6−)	1997 12 30	566	0.5−	0.5+
1974 08 18	809	(5.0+	4.2−)	1994 05 15	801	(1.1+	3.8−)	1998 01 06	596	1.0−	0.5−
1975 09 30	675	0.6−	1.1−	1994 05 15	801	(1.5+	3.2−)	1998 01 06	596	0.1+	1.4−
1975 10 01	675	0.5+	0.3−	1995 08 14	689	0.0	0.6−	1998 01 06	596	0.1−	0.3−
1975 10 02	675	0.2−	0.4+	1996 10 13	104	0.2+	0.5+	1998 01 26	566	0.2−	1.0−
1975 10 15	675	1.5−	1.1−	1996 10 13	104	0.1+	0.5+	1998 01 26	566	0.1+	1.0−
1975 10 16	675	(4.0−	2.5−)	1996 10 13	104	0.4+	0.3+	1998 01 26	566	0.3−	0.7−

(8243)* 1975 SF₁ = 1978 GK₃ = 1979 ST₁₃

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

Id. G. V. Williams (*MPC* 18281)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

202.86243 (2000.0)			Williams		
<i>M</i>			P		Q
<i>n</i>	0.23655029	ω 246.81602	+0.11156748		+0.99102844
<i>a</i>	2.5893280	Ω 29.87940	−0.84918906		+0.13353844
<i>e</i>	0.1376934	<i>i</i> 8.49463	−0.51616919		−0.00548820
<i>P</i>	4.17	<i>H</i> 13.2	<i>G</i> 0.15	<i>U</i>	<i>I</i>

Residuals in seconds of arc

1957 04 28	675	0.3−	0.4−	1978 04 11	095	0.6+	1.6+	1996 10 12	689	(4.0+	2.3+)
1957 04 28	675	0.1−	0.7−	1979 09 20	675	0.1+	0.0	1996 10 15	801	0.6+	1.2−
1975 09 30	675	0.7−	0.9+	1979 09 21	675	0.3+	0.1+	1998 01 06	561	0.4+	0.8−
1975 10 01	675	0.3−	0.9+	1996 09 30	689	(7.3+	1.0+)	1998 01 06	561	0.0	0.7−
1975 10 02	675	1.6+	0.6+	1996 10 06	816	0.2−	0.5+	1998 01 28	566	0.3−	0.8+
1975 10 15	675	0.3+	0.9−	1996 10 06	816	0.2−	0.5+	1998 01 28	566	0.4−	0.4+
1975 10 16	675	1.7−	1.2−	1996 10 06	816	0.2−	0.6+	1998 01 28	566	0.3+	0.5+

(8244)* 1975 TO₂ = 1982 PP₁ = 1993 TG₂

Discovered 1975 Oct. 3 by L. I. Chernykh at the Crimean Astrophysical

Observatory.

Id. S. Nakano (*MPC* 22807)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

67.71072 (2000.0)			Nakano		
<i>M</i>			P		Q
<i>n</i>	0.27454286	ω 186.85504	+0.95998611		−0.27964709
<i>a</i>	2.3445668	Ω 189.42474	+0.26108454		+0.91304079
<i>e</i>	0.2086063	<i>i</i> 5.24606	+0.10129920		+0.29690742
<i>P</i>	3.59	<i>H</i> 14.3	<i>G</i> 0.15	<i>U</i>	<i>I</i>

Residuals in seconds of arc

1975 10 03	095	0.2−	2.2+	1993 10 16	400	0.1−	1.3+	1998 01 20	426	0.4+	0.3+
1975 10 13	095	0.2+	0.8+	1993 10 20	400	0.8+	1.3+	1998 01 20	426	0.1−	0.2+
1975 11 06	095	1.4−	0.3−	1993 10 20	400	0.9−	1.0−	1998 01 20	426	0.2+	0.1+
1982 08 15	095	1.4+	0.8−	1993 10 24	894	0.8+	1.0−	1998 01 24	426	0.1+	0.5+
1992 05 07	691	0.1−	0.3+	1993 10 24	894	0.5−	1.0−	1998 01 24	426	0.5−	0.1−
1992 05 07	691	0.8−	0.6−	1993 10 25	894	0.9+	0.7−	1998 01 24	426	0.5+	0.3+
1992 05 07	691	0.1−	0.3+	1993 10 25	894	0.2+	0.3+	1998 01 26	426	0.1+	0.2+
1993 10 14	675	0.5−	0.1+	1993 11 11	400	0.4+	0.9−	1998 01 26	426	0.5+	0.3+
1993 10 14	675	0.6−	2.0+	1993 11 11	400	1.0+	0.6+	1998 01 26	426	0.3+	0.4+
1993 10 15	400	0.8−	1.3−	1997 12 30	566	1.0+	1.1−	1998 01 31	691	1.4−	0.3+
1993 10 15	400	1.2−	1.8−	1997 12 30	566	0.9+	1.3−	1998 01 31	691	1.6−	0.5+
1993 10 16	400	0.4+	0.2−	1997 12 30	566	0.4+	1.1−				

(8245)* 1977 RC₉ = 1991 EV₃ = 1992 RM₃

Discovered 1977 Sept. 8 by S. J. Bus at Palomar.

Id. A. Lowe (*MPC* 21251), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

263.56323 (2000.0)			Williams		
<i>M</i>			P		Q
<i>n</i>	0.26344538	ω 254.84463	−0.82386096		+0.56655223
<i>a</i>	2.4099553	Ω 319.66171	−0.50975532		−0.75335608
<i>e</i>	0.1465372	<i>i</i> 1.45917	−0.24779556		−0.33387600
<i>P</i>	3.74	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i>	<i>I</i>

Residuals in seconds of arc

1977 09 08	675	0.5−	1.5+	1992 09 02	809	0.5+	1.1−	1997 12 27	688	0.9−	0.0
1977 09 09	675	0.7−	1.4+	1992 09 03	809	0.0	1.6−	1998 01 24	704	0.0	0.2+
1991 03 11	809	1.1−	0.1+	1992 09 22	809	0.5+	0.3−	1998 01 24	704	0.3+	0.0
1991 03 11	809	0.7−	0.5+	1992 09 22	809	0.1−	1.0−	1998 01 24	704	0.4−	0.4−
1991 03 11	809	0.6−	0.6+	1992 09 22	809	0.7−	0.1−	1998 01 24	704	0.5−	1.1+
1991 03 12	675	0.8−	1.7−	1992 09 23	809	1.4+	0.5−	1998 01 25	704	1.0−	0.8−
1991 03 13	809	0.0	1.1−	1992 09 23	809	0.4−	1.1−	1998 01 25	704	0.4+	1.3−
1991 03 13	809	0.5+	1.0−	1992 09 23	809	0.7−	1.0−	1998 01 25	704	1.6+	1.3+
1991 03 13	809	1.0+	1.0−	1997 11 29	688	0.1−	0.1+	1998 01 25	704	1.2+	1.2−
1992 09 02	809	1.4+	0.8−	1997 11 29	688	0.6+	0.1−	1998 01 25	704	0.8−	0.1−
1992 09 02	809	1.3+	0.4−	1997 12 27	688	0.2−	0.2+				

(8246)* 1979 QT₈ = 1979 QO₉ = 1979 SJ₅ = 1986 TY₁₂

Discovered 1979 Aug. 20 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. T. Furuta (d, *JAM* 2030), S. Nakano (*MPC* 14781)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	131.89624		(2000.0)	P		Q
<i>n</i>	0.28815320	ω	1.81033	+0.94080795	+0.33853442	
<i>a</i>	2.2701458	Ω	338.37935	−0.31153416	+0.84443295	
<i>e</i>	0.1611964	<i>i</i>	2.57887	−0.13351732	+0.41512340	
<i>P</i>	3.42	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>
						2

Residuals in seconds of arc

1979 08 20	095	2.2+	0.3+	1989 08 02	675	(2.1−	4.6+)	1998 01 24	426	0.7+	0.2−
1979 08 28	095	1.1+	1.8−	1991 01 16	675	0.4+	0.7−	1998 01 24	426	0.2−	0.3+
1979 09 23	095	1.0−	0.4−	1991 01 16	675	0.8−	1.5−	1998 01 24	426	0.9+	0.1−
1986 10 05	095	1.6−	0.3+	1993 11 11	801	0.1−	0.4−	1998 01 26	566	0.0	0.4+
1986 10 11	095	(3.6+	3.5−)	1993 11 11	801	0.0	0.7−	1998 01 26	566	0.3+	0.4+
1988 02 16	675	1.4−	0.8−	1993 11 13	801	0.1−	0.0	1998 01 26	566	0.7+	0.0
1988 02 16	675	0.0	0.3−	1993 11 13	801	0.1+	0.4−	1998 01 26	426	0.1+	0.2+
1988 03 18	675	0.3+	1.2−	1993 12 09	675	0.0	1.3+	1998 01 26	426	0.2+	0.3+
1988 03 18	675	0.2+	0.0	1993 12 09	675	0.1+	0.4+	1998 01 26	426	0.0	0.2−
1988 03 22	675	1.5−	0.2+	1997 11 25	327	0.7+	0.4+	1998 01 30	691	0.7−	0.1+
1988 03 22	675	(3.3+	1.6−)	1997 11 25	327	0.8+	0.3+	1998 01 30	691	0.6−	0.1+
1989 08 02	675	0.3−	0.9+	1997 11 25	327	1.1+	0.4+	1998 01 30	691	0.7−	0.2+

(8247)* 1979 SP₁₄ = 1979 SE₆ = 1979 UA₃ = 1968 US = 1985 SA₇ = 1985 UU₅

Discovered 1979 Sept. 20 by S. J. Bus at Palomar.

Id. G. V. Williams (*MPC* 18282)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	37.09352		(2000.0)	P		Q
<i>n</i>	0.17072311	ω	272.58433	+0.92328612	−0.38154390	
<i>a</i>	3.2181615	Ω	109.84794	+0.36849363	+0.84722726	
<i>e</i>	0.1035975	<i>i</i>	2.70260	+0.10842131	+0.36963525	
<i>P</i>	5.77	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>
						1

Residuals in seconds of arc

1954 05 31	675	0.4−	0.7+	1991 11 08	691	0.7−	0.6+	1997 11 28	566	0.6−	0.3−
1954 05 31	675	0.3+	0.4+	1991 11 08	691	1.0−	0.7+	1997 11 28	566	0.1−	0.4+
1968 10 22	095	(2.8+	2.4−)	1991 11 08	691	0.8−	0.7+	1997 11 28	566	0.6+	1.1+
1968 10 26	095	(3.4−	5.5−)	1991 11 10	894	0.2−	0.8+	1997 11 29	704	0.7+	0.3+
1979 09 20	675	0.8+	0.6−	1991 11 10	894	0.3−	1.0−	1997 11 29	704	0.1−	0.9−
1979 09 21	675	0.7+	0.5−	1991 11 12	894	0.1+	0.1+	1997 11 29	704	1.1+	0.1+
1979 09 23	095	1.1+	0.4−	1991 11 12	894	0.2+	1.6+	1997 11 29	704	0.2−	0.4−
1979 10 16	095	0.7−	0.1+	1994 04 03	675	0.4+	1.3−	1997 11 29	704	0.9+	0.3−
1985 09 21	675	0.5+	2.3+	1994 04 03	675	0.2+	0.9−	1997 12 05	704	0.8+	1.7−
1985 09 22	095	(2.0+	2.6−)	1995 05 28	801	0.9+	0.8−	1997 12 05	704	0.9+	1.0−
1985 10 18	095	0.7−	0.2+	1995 05 28	801	0.5+	0.7−	1997 12 05	704	0.1+	1.9−
1989 05 30	675	1.1−	1.0−	1995 05 31	801	0.5−	0.6+	1997 12 05	704	0.0	1.6−
1989 05 30	675	1.1−	2.3−	1995 05 31	801	1.2−	0.9+	1997 12 05	704	0.2−	1.5−
1989 06 01	675	1.3+	1.2−	1996 07 14	809	0.2+	1.0−	1997 12 07	610	0.4+	0.9−

1989 06 01	675	1.6−	1.6−	1996 07 14	809	0.8−	1.0−	1997 12 07	610	0.0	0.7−
1991 10 17	675	0.1−	0.9−	1996 07 14	809	0.9−	0.7−	1997 12 07	610	0.5−	0.5−
1991 11 03	691	0.8−	0.5+	1996 07 15	809	(1.6+	4.6+)	1998 01 10	725	0.3+	0.7−
1991 11 03	691	0.8−	0.9+	1996 07 15	809	(1.4+	4.9+)	1998 01 10	725	0.6−	1.8−
1991 11 03	691	0.8−	0.7+	1996 07 15	809	(0.6+	4.6+)	1998 01 15	725	0.4+	0.4−
1991 11 05	894	0.6−	0.2−	1996 07 21	809	1.3+	1.1−	1998 01 15	725	0.3+	0.6−
1991 11 05	894	0.8+	0.4−	1996 07 21	809	0.9+	0.5−	1998 01 30	327	0.7+	0.3−
1991 11 05	095	(2.4−	1.9+)	1996 07 21	809	1.0+	0.2−	1998 01 30	327	0.6+	0.0
1991 11 05	095	0.4−	1.2+	1997 11 26	704	0.4−	0.6−	1998 01 30	327	0.5+	0.3−

(8248)* 1979 TV₂ = 1979 WX₁ = 1958 VL = 1993 TB₁

Discovered 1979 Oct. 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. S. Nakano (d, *MPC* 10610), K. Kinoshita (*MPC* 24556)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	62.65837		(2000.0)	P		Q
<i>n</i>	0.28057662	ω	195.43478	+0.86542439	−0.50094323	
<i>a</i>	2.3108321	Ω	194.63983	+0.46371146	+0.80822098	
<i>e</i>	0.1418976	<i>i</i>	2.22748	+0.18976907	+0.30957185	
<i>P</i>	3.51	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>
						1

Residuals in seconds of arc

1958 11 11	760	1.0+	1.3−	1993 10 11	400	0.3+	0.3−	1996 06 23	684	0.1+	0.0
1958 11 11	760	0.4+	1.8+	1993 10 13	675	0.1+	0.2−	1996 06 23	684	0.3+	0.2−
1979 10 14	095	(3.0−	0.0)	1993 10 13	675	0.6+	0.3−	1996 06 23	684	0.1+	0.1−
1979 11 16	095	2.2−	0.2+	1993 10 15	400	0.2+	0.8−	1996 06 23	684	0.0	0.1−
1979 11 22	095	0.5−	0.7−	1993 10 15	400	2.1−	0.9+	1997 12 26	566	0.0	0.2−
1991 01 17	675	0.4−	0.4+	1993 10 19	400	0.0	0.6+	1997 12 26	566	0.1+	0.2−
1991 01 17	675	2.0−	1.1+	1993 10 19	400	1.2+	1.0+	1997 12 26	566	0.2+	0.3−
1993 10 10	675	0.4+	0.8−	1996 06 22	684	0.2+	0.1−	1998 01 26	566	0.6+	0.7−
1993 10 10	675	0.5+	0.4−	1996 06 22	684	0.0	0.2−	1998 01 26	566	0.5+	0.2−
1993 10 11	400	(2.5−	1.2−)	1996 06 22	684	0.5−	0.2−	1998 01 26	566	0.9+	1.0−

(8249)* 1980 GG = 1991 GG

Discovered 1980 Apr. 13 by A. Mrkos at Kletř.

Id. H. Kaneda (*MPC* 18105)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	302.21777		(2000.0)	P		Q
<i>n</i>	0.26844235	ω	89.04906	−0.98411624	+0.14328307	
<i>a</i>	2.3799547	Ω	99.18345	−0.17277381	−0.90871471	
<i>e</i>	0.1827396	<i>i</i>	6.09464	+0.04079755	−0.39205552	
<i>P</i>	3.67	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>
						1

Residuals in seconds of arc

1980 04 12	046	0.5+	0.3−	1995 06 28	046	0.8−	0.9+	1998 01 24	704	0.1−	0.3+
1980 04 12	046	0.9−	1.0−	1995 06 28	046	0.9+	1.2+	1998 01 24	704	0.1−	0.7+
1980 04 13	046	0.6−	0.7−	1995 06 29	046	0.5−	1.8−	1998 01 24	704	0.1−	0.1+
1980 04 13	046	0.2+	0.1+	1995 06 29	046	0.5−	0.8+	1998 01 24	704	0.1−	0.2+
1980 04 14	046	0.5+	0.6−	1995 06 29	046	0.5+	0.4−	1998 01 24	566	0.2−	0.3−
1980 04 14	046	0.7−	1.0−	1997 12 28	566	0.2+	0.3+	1998 01 24	566	0.3−	0.5−
1980 04 15	046	0.6−	0.8+	1997 12 28	566	0.5+	0.4+	1998 01 24	566	0.1−	0.3−
1980 04 15	046	1.6+	0.4−	1997 12 28	566	0.8+	0.2+	1998 01 28	566	0.9+	0.1+
1980 04 16	046	0.7−	1.5+	1997 12 30	566	0.7+	0.4+	1998 01 28	566	0.5+	0.1+
1980 04 16	046	(4.6−	0.3−)	1997 12 30	566	0.7+	0.3+	1998 01 28	566	1.0+	0.1+
1991 03 12	675	0.1+	0.6−	1997 12 30	566	0.8+	0.4+	1998 02 01	046	0.7−	0.4−
1991 03 12	675	0.6−	0.9−	1998 01 23	704	0.3−	0.0	1998 02 01	046	0.9−	0.4−
1991 04 02	400	0.2−	0.8−	1998 01 23	704	0.4+	0.2+	1998 02 01	046	0.9−	0.4−
1991 04 02	400	0.0	2.0+	1998 01 23	704	0.1−	0.2+	1998 02 02	046	0.5−	0.3−
1991 04 09	400	(3.9+	0.5+)	1998 01 23	704	0.0	0.0	1998 02 02	046	0.5−	0.3−
1991 04 09	400	1.4+	1.6+	1998 01 23	704	0.4−	0.0	1998 02 02	046	0.5−	0.3−
1995 06 28	046	0.5+	0.0	1998 01 24	704	0.2−	0.1−				

(8250)* 1980 RP = 1991 PG₁₃

Discovered 1980 Sept. 2 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. E. Bowell (*MPC* 18805)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		Williams		<i>P</i>		<i>Q</i>	
61.48966		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17895550	ω	344.00153	+0.77070141	+0.62588201		
<i>a</i>	3.1186934	Ω	335.97274	−0.54769520	+0.55480266		
<i>e</i>	0.2140791	<i>i</i>	17.07355	−0.32565211	+0.54814753		
<i>P</i>	5.51	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1950 03 21	675	1.0−	0.2−	1980 09 09	095	0.4−	1.5−	1991 10 11	675	0.6+	1.5−
1950 03 21	675	0.7+	0.4−	1980 09 11	095	0.9+	1.7+	1991 10 11	675	0.8+	1.3−
1955 02 13	675	0.4−	1.1−	1980 10 02	688	1.2+	1.4−	1994 02 10	675	0.4+	1.3−
1955 02 13	675	2.1−	1.8−	1991 08 05	675	(1.4−	2.2+)	1994 02 10	675	1.3−	0.8−
1980 08 08	688	0.6−	2.2+	1991 08 08	675	0.4−	0.1+	1997 10 28	688	0.1+	0.4+
1980 09 02	688	1.0+	1.7−	1991 09 07	399	0.0	1.4+	1997 10 28	688	0.2+	0.5+
1980 09 02	688	1.0+	0.4−	1991 09 07	399	0.0	1.0−	1997 10 29	688	0.2+	0.5+
1980 09 04	688	0.6+	1.5−	1991 09 12	675	0.4−	0.3+	1997 10 29	688	0.0	0.4+
1980 09 04	688	0.1+	0.7+	1991 09 12	675	0.7−	0.1+	1997 10 29	566	0.2−	0.4+
1980 09 04	095	(1.8−	3.7+)	1991 09 16	095	1.0−	0.4+	1997 10 29	566	0.1+	0.5+
1980 09 07	688	0.0	2.1−	1991 09 16	095	(0.3+	2.7−)	1997 10 29	566	0.2−	0.7+
1980 09 07	688	1.5+	0.2+	1991 10 10	675	0.1−	1.5+	1997 11 18	689	1.9−	0.8+
1980 09 07	095	(1.6−	3.9+)	1991 10 10	675	0.2−	1.8−				

(8251)* 1980 VA = 1980 VL = 1990 RX

Discovered 1980 Nov. 8 by T. Furuta at Tokai.

Id. B. G. Marsden (d, *MPC* 5677), E. Bowell (*MPC* 17429)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		Williams		<i>P</i>		<i>Q</i>	
22.16477		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.29132905	ω	232.72324	+0.74152903	−0.67084168		
<i>a</i>	2.2536174	Ω	169.39532	+0.63191859	+0.69318069		
<i>e</i>	0.2635152	<i>i</i>	3.20915	+0.22541870	+0.26357536		
<i>P</i>	3.38	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 10 13	095	0.3+	1.8+	1980 11 14	381	0.1−	0.1+	1990 09 14	675	1.6+	0.4−
1980 11 08	688	(2.6+	3.1−)	1980 11 14	386	1.3+	1.4−	1990 09 14	675	0.5−	0.2+
1980 11 08	688	(2.7+	3.5−)	1980 11 15	879	0.5+	0.0	1990 09 14	675	1.1+	0.5−
1980 11 08	879	0.7−	0.0	1980 11 15	879	(3.2+	1.2+)	1990 09 20	675	1.6−	0.7−
1980 11 08	879	0.7+	0.7−	1980 11 29	688	(1.6+	3.1−)	1990 09 20	675	0.1+	0.9−
1980 11 09	879	(2.6−	2.4+)	1980 11 29	688	(1.0+	3.0−)	1990 10 15	372	0.2+	0.1−
1980 11 11	879	1.1−	1.1+	1980 11 29	879	(1.4−	2.7−)	1990 10 15	372	0.1−	0.7+
1980 11 11	879	2.2−	0.6+	1980 11 29	879	(1.6−	2.7−)	1992 03 25	691	0.1−	0.7−
1980 11 11	381	0.7+	0.0	1980 11 29	879	0.8−	1.0−	1992 03 25	691	0.3−	1.0−
1980 11 11	381	0.9+	0.0	1980 12 04	688	0.1−	1.1−	1997 08 01	688	0.2+	0.4+
1980 11 13	879	0.2−	0.9+	1980 12 06	879	1.9−	0.4−	1997 08 01	688	0.7+	0.2+
1980 11 13	879	0.6+	0.6+	1980 12 06	879	(0.4−	2.7+)	1997 11 29	688	0.0	0.8−
1980 11 13	372	1.0−	1.8+	1980 12 10	381	(4.9−	2.0−)	1997 11 29	688	0.0	0.9−
1980 11 13	372	1.1−	0.7+	1980 12 10	381	1.5−	0.0	1998 02 01	046	0.1−	0.1−
1980 11 13	381	1.0+	0.4−	1980 12 30	372	(1.2+	24.8+)	1998 02 01	046	0.0	0.4+
1980 11 14	372	1.7+	0.9−	1980 12 30	372	(0.9+	24.1+)	1998 02 01	046	0.1−	0.1+
1980 11 14	386	2.2+	0.5−	1990 09 14	675	0.5−	0.5−				

(8252)* 1981 EY₁₄

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

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		Williams		<i>P</i>		<i>Q</i>	
341.26512		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28492560	ω	216.07213	−0.69756171	−0.71369469		
<i>a</i>	2.2872576	Ω	278.25604	+0.67153733	−0.62021693		
<i>e</i>	0.1163796	<i>i</i>	3.68589	+0.24989053	−0.32553163		
<i>P</i>	3.46	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 09 18	675	0.9+	1.2+	1981 04 09	413	0.3+	0.2−	1996 08 20	010	0.3−	1.0+
1979 09 19	675	0.8+	1.1+	1981 05 01	413	0.2−	0.2+	1996 08 20	010	(2.0−	1.5+)
1981 02 09	413	0.4−	0.4+	1981 05 03	413	1.2−	0.5+	1997 12 29	566	0.1−	0.2−
1981 02 12	413	0.3−	2.0+	1988 02 13	691	0.8−	0.2+	1997 12 29	566	0.1−	0.3−
1981 02 12	413	0.5+	0.1−	1988 02 13	691	0.8−	0.3−	1997 12 29	566	0.2−	0.1+
1981 02 12	413	1.9+	0.5−	1988 02 13	691	1.0−	0.1+	1998 01 17	910	1.7+	0.3−
1981 03 01	413	0.1−	0.2+	1988 04 12	413	1.4−	0.3−	1998 01 17	910	1.8+	0.2−
1981 03 01	413	1.2+	0.0	1988 04 12	413	0.9−	0.1+	1998 01 18	910	1.6+	0.3−
1981 03 06	413	0.2−	0.1−	1993 10 12	691	1.1−	0.5−	1998 01 25	566	0.1−	0.2−
1981 03 06	413	1.3+	0.7−	1993 10 12	691	1.3−	0.6−	1998 01 25	566	0.0	0.3−
1981 03 08	413	0.7−	0.1−	1993 10 12	691	0.9−	0.2−	1998 01 25	566	0.1−	0.2−
1981 03 08	413	0.8+	0.4+	1993 10 20	691	1.4−	0.3−	1998 01 26	758	0.9−	0.2+
1981 03 12	413	0.1−	0.3+	1993 10 20	691	0.4+	1.6−	1998 01 26	758	0.2+	0.4−
1981 04 06	413	0.5−	0.4+	1993 10 20	691	1.7−	0.1+	1998 01 28	758	0.5−	0.1−
1981 04 06	413	1.6+	0.4−	1996 08 18	010	(3.4+	1.3+)	1998 01 28	758	0.2+	0.1−
1981 04 08	413	1.3−	0.7+	1996 08 18	010	0.2+	0.3−	1998 01 29	758	0.4−	0.4+
1981 04 08	413	0.8+	0.9−	1996 08 18	010	1.2+	0.2+	1998 01 29	758	0.1−	0.8+
1981 04 09	413	0.7−	0.5+	1996 08 20	010	1.6+	1.4+				

(8253)* 1981 EU₁₅

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

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		Williams		<i>P</i>		<i>Q</i>	
354.41525		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28432539	ω	243.90402	−0.43860247	−0.89640016		
<i>a</i>	2.2904753	Ω	232.25930	+0.85072998	−0.39119816		
<i>e</i>	0.1126034	<i>i</i>	4.64135	+0.28963145	−0.20840047		
<i>P</i>	3.47	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 06 10	675	0.0	0.1+	1981 03 06	413	0.3+	0.0	1997 12 28	566	0.7+	0.3−
1978 06 10	675	0.0	0.0	1981 03 08	413	0.4−	0.7+	1997 12 28	566	0.2+	0.5−
1979 09 20	675	0.4+	0.3+	1981 03 12	413	1.9+	1.0−	1997 12 28	566	1.2+	0.1−
1979 09 21	675	0.6−	0.3+	1981 04 08	413	0.5−	1.0+	1998 01 24	566	0.5−	0.6+
1981 02 09	413	1.2−	0.3−	1981 04 08	413	0.5+	0.1−	1998 01 24	566	0.8−	0.7+
1981 02 12	413	1.6−	0.1−	1981 04 09	413	0.9−	0.9+	1998 01 24	566	0.7−	0.8+
1981 03 01	413	1.4−	1.1+	1981 04 09	413	1.1+	0.4−	1998 01 28	566	0.2+	0.3−
1981 03 01	413	1.2+	0.3−	1981 05 01	413	0.2+	1.3−	1998 01 28	566	0.0	0.3−
1981 03 06	413	0.5+	0.7+	1981 05 03	413	0.1+	0.5−	1998 01 28	566	0.0	0.8−

(8254)* 1981 EF₁₈ = 1979 UL₃ = 1986 TA₅

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

Id. G. V. Williams (*MPC* 22808)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		Williams		<i>P</i>		<i>Q</i>	
66.35958		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28239809	ω	206.29202	+0.86357628	−0.50417635		
<i>a</i>	2.3008848	Ω	184.00269	+0.47746195	+0.82182464		
<i>e</i>	0.0939556	<i>i</i>	5.34074	+0.16206815	+0.26534973		
<i>P</i>	3.49	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 10 16	095	0.7−	1.0−	1981 04 11	413	0.9+	1.8−	1996 07 24	599	0.3−	0.1−
1981 02 09	413	0.9+	0.7−	1981 05 02	413	0.7+	0.7−	1997 12 25	566	0.1−	1.0−
1981 02 13	413	1.3−	0.4−	1981 05 03	413	0.7+	0.2−	1997 12 25	566	0.2+	0.6−
1981 03 02	413	0.0	0.8+	1986 10 01	010	(2.9−	6.7−)	1997 12 25	566	0.3+	1.2−

1998 FEB. 11

M.P.C. 31209

1981 03 03	413	1.2−	1.4+	1986 10 01	010	(7.6+	3.2−)	1998 01 20	426	0.1+	0.0
1981 03 03	413	2.5+	1.3−	1993 10 13	675	1.9+	0.1−	1998 01 20	426	0.8+	0.4−
1981 03 07	413	0.1+	0.7+	1993 10 13	675	0.4+	0.3−	1998 01 20	426	0.1+	0.4+
1981 03 07	413	1.9+	1.7−	1993 10 14	675	0.6−	0.6−	1998 01 24	426	0.1+	0.3+
1981 03 11	413	0.9−	0.5+	1993 10 14	675	0.1−	1.0−	1998 01 24	426	0.3+	0.1+
1981 03 16	413	1.8−	0.8+	1993 10 15	675	0.1+	0.1−	1998 01 24	426	0.5−	0.3+
1981 03 16	413	(3.2+	2.2−)	1993 10 15	675	0.8+	0.0	1998 01 27	104	0.5+	1.5+
1981 03 29	413	1.6−	0.3−	1993 10 21	809	(1.1+	2.5+)	1998 01 27	104	0.4+	1.3+
1981 03 29	413	0.5−	1.2−	1993 10 21	809	(1.7+	2.8+)	1998 01 27	104	0.3+	1.4+
1981 04 08	413	1.1+	1.3−	1993 10 21	809	(1.7+	2.8+)	1998 01 31	691	1.8−	0.3−
1981 04 11	413	1.6−	0.0	1996 07 24	599	0.2−	0.1−	1998 01 31	691	2.0−	0.1+

(8255)* 1981 EZ₁₈

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

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Williams			
<i>M</i>	130.75407	(2000.0)	P	Q	
<i>n</i>	0.22344720	<i>ω</i> 50.26568	+0.90139463	+0.43211963	
<i>a</i>	2.6895902	<i>Ω</i> 284.11624	−0.40545911	+0.82000255	
<i>e</i>	0.0455258	<i>i</i> 1.62931	−0.15195603	+0.37532445	
<i>P</i>	4.41	<i>H</i> 13.4	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1955 05 23	675	1.4+	0.6+	1981 05 02	413	0.2+	1.9−	1997 12 24	369	(2.4+	1.0−)
1955 05 23	675	0.2+	0.3+	1990 04 01	675	0.7−	0.7+	1997 12 25	369	1.8+	0.0
1977 04 24	675	0.3+	2.0+	1990 04 01	675	0.4−	0.2+	1997 12 25	369	1.0+	0.5−
1977 04 25	675	0.2−	1.7+	1991 07 10	809	0.7+	0.2−	1997 12 25	369	0.9+	0.1−
1981 02 09	413	0.1+	0.2−	1991 07 10	809	1.0+	0.2−	1997 12 27	369	0.5+	0.3−
1981 02 13	413	0.8−	0.3−	1991 07 10	809	1.4+	0.1+	1997 12 27	369	0.4+	0.6−
1981 03 02	413	0.1+	0.5+	1991 07 11	809	0.3−	0.5−	1998 01 20	704	1.1+	0.0
1981 03 02	413	0.1+	1.0−	1991 07 11	809	0.2−	0.7−	1998 01 20	704	0.5+	0.7+
1981 03 03	413	2.4−	0.9+	1991 07 11	809	0.3−	0.8−	1998 01 20	704	0.3+	0.6+
1981 03 03	413	0.9+	1.0−	1991 07 12	809	0.2+	0.1+	1998 01 20	704	0.1−	1.3+
1981 03 07	413	0.2−	1.1+	1991 07 12	809	0.6+	0.1+	1998 01 20	704	0.2+	0.5+
1981 03 07	413	1.6+	0.2−	1991 07 12	809	0.9+	0.1−	1998 01 20	704	(2.3−	0.4+)
1981 03 11	413	0.4+	0.2+	1992 10 25	675	0.3+	0.1+	1998 01 22	691	0.6−	0.4+
1981 03 11	413	1.1+	0.4−	1994 02 15	675	1.6−	1.3−	1998 01 22	691	0.6−	0.2+
1981 03 16	413	1.4−	0.9+	1994 02 15	675	0.6+	1.7−	1998 01 22	691	0.8−	1.0+
1981 03 16	413	(4.1+	1.1−)	1994 03 05	560	0.8−	0.6+	1998 01 25	566	0.8+	0.3−
1981 03 29	413	0.5+	0.5−	1994 03 05	560	0.1−	0.9−	1998 01 25	566	0.6+	0.5−
1981 03 29	413	(3.5−	1.0−)	1994 03 05	560	0.4−	1.2−	1998 01 25	566	0.2−	0.3−
1981 04 08	413	1.1−	0.5+	1996 09 15	566	1.1−	0.4−	1998 01 27	104	(2.4−	0.0)
1981 04 08	413	1.2−	0.5+	1996 09 15	566	1.2−	0.6−	1998 01 27	104	1.0−	0.8−
1981 04 11	413	1.2−	0.1+	1996 09 15	566	1.3−	0.4−				
1981 04 30	413	0.1−	0.7−	1997 12 24	369	(2.0+	0.2−)				

(8256)* 1981 UZ₉ = 1994 TO₁

Discovered 1981 Oct. 25 at the Purple Mountain Observatory.
Id. G. V. Williams (*MPC* 24227)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Williams			
<i>M</i>	326.96365	(2000.0)	P	Q	
<i>n</i>	0.30259933	<i>ω</i> 21.15082	+0.44746478	−0.89067288	
<i>a</i>	2.1973070	<i>Ω</i> 42.37945	+0.80241571	+0.36012756	
<i>e</i>	0.2485699	<i>i</i> 6.85750	+0.39484718	+0.27750669	
<i>P</i>	3.26	<i>H</i> 13.9	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1981 10 22	095	0.6+	2.1+	1994 10 13	046	0.1+	0.9+	1996 05 19	809	0.4−	1.2+
1981 10 24	095	(0.3+	4.7+)	1994 10 13	046	0.2+	0.9+	1996 05 19	809	0.0	0.5+
1981 10 25	330	0.7+	1.7−	1994 10 13	046	0.2−	0.7+	1996 05 19	809	0.9+	0.3−
1981 10 28	095	(0.7−	2.9+)	1994 10 13	046	0.1−	0.8+	1996 05 22	809	1.4+	0.4−
1981 10 29	330	1.7−	2.0−	1996 03 20	566	0.4−	0.8−	1996 05 22	809	1.5+	0.9−
1981 11 17	330	0.6+	0.1+	1996 03 20	566	0.3−	0.6−	1996 05 22	809	(0.8+	2.0−)
1981 11 19	095	0.9+	0.5−	1996 03 20	566	0.2−	0.7−	1997 08 10	046	0.1−	0.0
1994 10 02	400	0.1−	0.4−	1996 04 18	809	0.1−	0.3−	1997 08 10	046	0.2−	0.0

1994 10 02	400	0.0	0.3−	1996 04 18	809	0.3+	0.3+	1997 08 10	046	0.2+	0.0
1994 10 03	400	0.4−	1.8−	1996 04 18	809	0.9+	0.2−	1997 08 10	046	0.2+	0.1−
1994 10 03	400	0.8−	1.3−	1996 04 20	809	1.8−	1.0+	1997 08 10	046	0.0	0.1−
1994 10 11	046	0.5+	0.3−	1996 04 20	809	0.2−	0.8+	1997 08 10	046	0.3−	0.0
1994 10 11	046	0.1−	0.0	1996 04 20	809	0.0	0.6+	1997 08 22	689	0.6+	0.3−
1994 10 12	046	0.1+	0.4+	1996 05 16	566	0.9−	0.3−	1998 01 19	327	0.9−	0.5−
1994 10 12	046	0.1+	0.5+	1996 05 16	566	0.7−	0.5−	1998 01 19	327	0.7−	0.2+
1994 10 12	046	0.3+	0.4+	1996 05 16	566	0.7−	0.7−	1998 01 19	327	0.4−	2.5+

(8257)* 1982 HO₁ = 1987 YO₅ = 1993 VN₈

Discovered 1982 Apr. 28 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. T. B. Spahr (*MPC* 30650), G. V. Williams (*MPC* 30650)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Williams			
<i>M</i>	246.84996	(2000.0)	P	Q	
<i>n</i>	0.29991582	<i>ω</i> 192.58796	−0.26971310	+0.95731666	
<i>a</i>	2.2103945	<i>Ω</i> 61.84453	−0.87294829	−0.19752423	
<i>e</i>	0.1753542	<i>i</i> 6.76911	−0.40646786	−0.21101891	
<i>P</i>	3.29	<i>H</i> 13.9	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1982 04 18	688	0.5+	1.2+	1987 12 24	010	0.3−	0.1+	1993 11 12	033	0.4+	0.5−
1982 04 18	688	0.4+	0.9−	1989 08 29	675	0.1+	0.5−	1997 11 29	688	0.3+	0.4+
1982 04 28	688	1.0−	0.1+	1989 08 29	675	0.0	0.2−	1997 11 29	688	0.6+	0.5+
1982 04 28	688	0.3−	1.0−	1989 09 01	675	0.1−	1.0−	1997 12 27	688	0.2+	0.2+
1982 05 20	688	1.1+	0.0	1989 09 01	675	0.3+	0.6−	1997 12 27	688	0.2+	0.0
1982 05 20	688	1.6−	1.2−	1989 09 04	675	0.2+	0.3+	1998 01 08	688	0.1+	0.0
1987 12 24	010	1.1−	1.7−	1989 09 04	675	0.2+	0.1+	1998 01 08	688	0.8−	0.1−
1987 12 24	010	0.5+	1.4−	1993 11 12	033	0.2−	0.4−				

(8258)* 1982 RW₁ = 1989 TZ₁₃

Discovered 1982 Sept. 15 by A. Mrkos at Kletř.

Id. H. Kaneda (*MPC* 16231)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Asher			
<i>M</i>	119.50549	(2000.0)	P	Q	
<i>n</i>	0.27984723	<i>ω</i> 343.37721	+0.99547163	+0.09344930	
<i>a</i>	2.3148457	<i>Ω</i> 11.30349	−0.07392429	+0.87624406	
<i>e</i>	0.1840280	<i>i</i> 5.09894	−0.05976147	+0.47271935	
<i>P</i>	3.52	<i>H</i> 14.8	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1954 11 23	675	0.1−	0.4−	1989 10 08	809	0.9−	0.1+	1996 11 04	046	0.1+	0.7−
1954 11 23	675	0.7+	0.1+	1995 04 05	691	0.3−	0.0	1996 11 04	046	0.0	0.7−
1982 08 19	675	0.5−	0.9+	1995 04 05	691	0.7−	0.0	1996 11 04	046	0.1+	0.8−
1982 08 19	675	1.6+	0.6+	1995 04 05	691	0.6−	0.1−	1996 11 09	046	0.0	0.2−
1982 09 15	046	(0.0	8.8−)	1996 07 18	689	0.2−	0.2−	1996 11 09	046	0.0	0.2−
1982 09 15	046	(1.9+	3.1−)	1996 08 08	046	0.2+	0.6+	1996 11 09	046	0.7−	0.0
1982 09 15	046	(0.6+	2.5−)	1996 08 09	046	0.2+	0.6+	1998 01 11	046	0.0	0.3−
1982 09 15	046	(1.1+	3.1−)	1996 08 09	046	0.1+	0.6+	1998 01 11	046	0.3+	0.2−
1982 09 16	046	(5.8+	0.9−)	1996 08 09	046	0.1+	0.4+	1998 01 11	046	0.3+	0.0
1982 09 16	046	(4.6+	2.0−)	1996 08 09	046	0.3+	0.8+	1998 01 11	046	0.1−	0.3+
1982 09 17	046	0.4−	1.5−	1996 08 09	046	0.1+	0.7+	1998 01 11	046	0.0	0.1−
1982 09 17	046	2.1+	1.4−	1996 08 19	046	0.6−	0.2+	1998 01 11	046	0.1+	0.1+
1982 09 20	095	0.7−	1.8−	1996 08 19	046	0.6−	0.3+	1998 01 25	566	0.5+	0.0
1989 09 09	095	1.2+	0.6−	1996 08 19	046	0.5−	0.3+	1998 01 25	566	0.3+	0.2+
1989 09 09	095	(3.5+	1.0−)	1996 08 21	046	0.0	0.3+	1998 01 25	566	0.4+	0.1+
1989 10 02	809	1.0+	2.0+	1996 08 21	046	0.0	0.4+	1998 02 03	046	0.2+	0.8+
1989 10 02	809	0.7−	1.8+	1996 08 21	046	0.1+	0.4+	1998 02 03	046	0.1−	0.5+
1989 10 02	809	0.2+	1.5+	1996 09 30	046	0.2+	0.0	1998 02 03	046	0.0	0.6+
1989 10 06	809	1.2−	0.2−	1996 09 30	046	0.2+	0.1−	1998 02 04	046	0.5+	0.8+
1989 10 07	809	0.9−	0.1−	1996 09 30	046	0.4+	0.2−	1998 02 04	046	0.5+	1.0+
1989 10 07	809	0.7−	0.0	1996 10 03	046	0.2+	0.1−	1998 02 04	046	0.5+	0.9+
1989 10 07	809	1.6−	0.4−	1996 10 03	046	0.2+	0.0				
1989 10 08	809	1.2−	0.3−	1996 10 03	046	0.3+	0.1−				

(8259)* 1983 UG = 1966 UD = 1992 HX₆ = 1993 TC₂₉

Discovered 1983 Oct. 16 by Z. Vávrová at Klet.

Id. E. Bowell (*MPC* 23236), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams					
<i>M</i>	75.74746	(2000.0)		P		Q			
<i>n</i>	0.29127727	ω	301.74183	+0.93864721		-0.33053701			
<i>a</i>	2.2538845	Ω	77.71833	+0.34057829		+0.84346844			
<i>e</i>	0.2219643	<i>i</i>	5.78100	+0.05429409		+0.42344572			
<i>P</i>	3.38	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1966 10 17	095	0.1-	0.5-	1993 09 18	675	0.1+	1.9+	1998 01 13	046	0.1+	0.5+
1983 10 16	046	2.2+	0.1-	1993 10 09	675	0.2-	0.0	1998 01 13	046	0.3+	0.4+
1983 10 16	046	1.6+	1.6-	1993 10 09	675	0.0	0.3-	1998 01 13	046	0.6+	0.8+
1983 11 06	046	0.5+	1.1-	1993 10 14	675	0.0	0.4+	1998 01 18	411	0.4-	0.2+
1983 11 06	046	0.1+	0.8-	1993 10 14	675	0.5-	0.6+	1998 01 18	411	0.2-	0.2+
1983 11 08	046	0.3-	0.4-	1995 03 02	046	0.2-	1.1-	1998 01 25	566	0.0	0.2-
1983 11 08	046	1.2-	0.9-	1995 03 02	046	0.7+	0.8-	1998 01 25	566	0.2-	0.1+
1992 04 27	691	0.3-	0.9-	1995 03 02	046	0.5-	0.6-	1998 01 25	566	0.2-	0.1-
1992 04 27	691	0.4-	0.6-	1997 12 29	566	0.6+	0.6+	1998 02 01	046	0.4-	0.0
1992 04 27	691	0.8-	1.0-	1997 12 29	566	0.7+	0.4+	1998 02 01	046	0.3-	0.1+
1993 08 17	675	0.1-	0.5+	1997 12 29	566	0.6+	0.7+	1998 02 01	046	0.4-	0.1+
1993 08 17	675	0.0	0.1+	1998 01 12	046	0.0	0.0	1998 02 02	046	0.1-	0.1+
1993 09 15	808	0.9-	1.3-	1998 01 12	046	0.2+	0.2+	1998 02 02	046	0.3-	0.2+
1993 09 18	675	0.1+	1.5+	1998 01 12	046	0.2+	0.3+	1998 02 02	046	0.4-	0.3+

(8260)* 1984 SH = 1949 OA₁ = 1978 XB₁ = 1981 SD₉ = 1987 QX₁₁

Discovered 1984 Sept. 23 at Smolyan.

Id. T. Furuta (*JAM* 1903), S. Nakano (*MPC* 22223)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano					
<i>M</i>	117.41592	(2000.0)		P		Q			
<i>n</i>	0.31146502	ω	176.30915	+0.35858151		+0.93242407			
<i>a</i>	2.1554098	Ω	114.69959	-0.85772503		+0.34802470			
<i>e</i>	0.1723641	<i>i</i>	2.82481	-0.36841155		+0.09728397			
<i>P</i>	3.16	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1949 07 28	024	(6.1-	4.5-)	1984 09 28	809	0.8+	0.5+	1997 11 22	691	1.3-	0.1+
1949 07 30	024	(3.5-	5.3-)	1984 09 28	809	0.8+	0.8+	1997 11 22	691	1.2-	0.1-
1978 12 03	675	0.9-	0.3-	1984 09 28	809	1.0+	1.0+	1997 11 29	704	0.2+	0.4-
1978 12 03	675	0.7-	0.2+	1984 09 29	809	1.2-	0.0	1997 11 29	704	0.6-	0.7-
1978 12 05	675	0.4+	0.5-	1984 09 29	809	0.6-	0.0	1997 11 29	704	1.3+	0.9-
1978 12 06	675	0.2-	0.6+	1984 09 29	809	0.0	0.1-	1997 11 29	704	0.1-	0.8-
1978 12 06	675	0.5+	0.7+	1984 09 30	809	1.4-	0.7-	1997 11 29	704	0.1+	1.3-
1981 09 25	095	0.3+	1.3+	1984 09 30	809	1.3-	0.9-	1997 12 04	704	(2.5+	1.5-)
1984 09 23	071	(6.5-	1.0-)	1984 09 30	809	1.1-	0.9-	1997 12 04	704	1.0-	0.9-
1984 09 23	071	2.1+	0.6+	1987 08 27	095	1.1+	1.9+	1997 12 04	704	0.4+	0.5+
1984 09 23	071	0.2+	0.8-	1993 05 24	691	0.6-	0.0	1997 12 04	704	0.7-	1.1+
1984 09 23	071	1.8+	1.3-	1993 05 24	691	0.6-	0.1-	1997 12 04	704	0.4-	0.6+
1984 09 24	071	1.2-	1.2-	1993 05 24	691	0.9-	0.2-	1997 12 05	704	1.9+	0.5+
1984 09 24	071	0.7+	2.0-	1994 11 04	675	0.7+	0.3-	1997 12 05	704	1.1+	0.4+
1984 09 25	071	(2.7+	0.6+)	1994 11 04	675	0.9+	1.6-	1997 12 05	704	0.5+	0.1+
1984 09 25	071	(5.6+	0.1-)	1996 04 15	552	0.1-	0.4-	1997 12 05	704	1.0+	0.2+
1984 09 28	809	0.5-	1.2+	1996 04 15	552	0.0	0.7-	1997 12 05	704	0.8+	0.2+
1984 09 28	809	0.5-	1.1+	1996 04 16	552	0.6+	0.4-	1997 12 05	691	0.9-	0.3+
1984 09 28	809	0.1-	1.5+	1996 04 16	552	0.5+	0.5-	1997 12 05	691	0.7-	0.2+
1984 09 28	688	0.4+	0.7-	1997 11 06	689	0.1+	0.6+	1997 12 05	691	0.7-	0.2+
1984 09 28	688	0.7+	2.2-	1997 11 22	691	1.2-	0.0				

(8261)* 1985 RD = 1990 OU₃

Discovered 1985 Sept. 11 at Brorfelde.

Id. R. Nagata (*MPC* 17016), K. Ichikawa (*MPC* 20012)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Asher					
<i>M</i>	144.30104	(2000.0)		P		Q			
<i>n</i>	0.18613933	ω	316.25886	+0.72256706		+0.69130083			
<i>a</i>	3.0379266	Ω	0.00798	-0.62739536		+0.65577332			
<i>e</i>	0.1789737	<i>i</i>	1.39052	-0.29029623		+0.30342135			
<i>P</i>	5.29	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1949 11 25	675	0.2+	0.6+	1989 04 01	675	0.1-	1.1+	1994 04 20	046	0.0	0.2+
1949 11 25	675	0.3+	0.6+	1989 04 01	675	0.1-	0.0	1997 12 29	691	0.5-	0.5-
1953 10 01	675	0.1+	0.1+	1990 07 27	675	0.2-	0.1-	1997 12 29	691	0.4-	0.4-
1953 10 01	675	0.2-	0.4+	1990 07 27	675	0.1-	0.5-	1997 12 29	691	0.3-	0.4-
1985 09 10	046	1.5-	1.3-	1990 07 30	675	0.9+	0.5+	1998 01 02	691	0.1-	0.4-
1985 09 10	046	(2.6-	1.7-)	1990 07 30	675	0.4+	0.9-	1998 01 02	691	0.1-	0.5-
1985 09 11	054	1.1-	0.5-	1990 09 18	675	0.2-	1.4+	1998 01 02	691	0.0	0.3-
1985 09 14	688	1.7-	0.4+	1990 09 18	675	0.4+	0.4+	1998 01 24	704	0.1+	0.2-
1985 09 14	688	0.5-	1.3-	1991 12 10	033	0.1-	0.8+	1998 01 24	704	1.2+	0.5-
1985 09 15	054	1.2+	0.5+	1991 12 10	033	(2.7+	1.0+)	1998 01 24	704	0.5+	1.4+
1985 09 17	054	1.6+	0.1-	1991 12 11	033	0.1-	0.3+	1998 01 24	704	0.4-	0.4-
1985 09 18	688	1.1+	0.7+	1994 04 20	046	0.3-	0.3-				
1985 09 18	688	0.2+	0.2-	1994 04 20	046	0.0	0.1-				

(8262)* 1985 RG = 1989 UB₂

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

Id. T. Kobayashi (*MPC* 15555)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Asher					
<i>M</i>	74.88641	(2000.0)		P		Q			
<i>n</i>	0.26204167	ω	10.39293	+0.93174523		-0.36309780			
<i>a</i>	2.4185541	Ω	10.89937	+0.33188847		+0.84791354			
<i>e</i>	0.2094623	<i>i</i>	0.99690	+0.14731217		+0.38626755			
<i>P</i>	3.76	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1985 08 23	095	0.0	0.2-	1989 11 03	399	(3.0-	1.3-)	1996 07 14	566	0.1-	1.2-
1985 09 14	688	0.8+	1.8+	1989 11 03	399	(2.9-	0.8-)	1996 07 15	566	0.1+	0.1+
1985 09 14	688	(0.5-	2.6+)	1989 11 03	399	2.0-	1.0-	1996 07 15	566	0.0	0.1-
1985 09 15	095	1.7-	0.3+	1989 11 04	675	0.9+	0.9-	1996 07 15	566	0.5+	0.0
1985 09 18	688	1.8-	1.0+	1989 11 04	888	0.5-	0.5+	1997 12 27	688	0.2-	0.1+
1985 09 18	688	1.6+	0.3+	1989 11 04	888	0.2+	0.2+	1997 12 27	688	0.2+	0.4+
1985 09 20	095	0.6-	0.5+	1989 11 20	888	0.1+	0.8+	1997 12 28	566	0.4+	0.0
1989 10 29	888	0.7+	1.6-	1989 11 20	888	0.2+	0.6+	1997 12 28	566	0.4+	0.3-
1989 10 29	888	1.3+	1.4-	1989 11 26	888	0.1+	0.8+	1997 12 28	566	0.4+	0.1-
1989 11 01	888	0.6+	0.5-	1989 11 26	888	0.3-	0.5+	1997 12 29	688	0.3+	0.2+
1989 11 01	888	0.3+	0.7+	1989 12 02	888	0.9-	0.9+	1997 12 29	688	0.0	0.3+
1989 11 02	399	0.6+	0.8-	1989 12 02	888	1.3-	0.2+	1998 01 29	566	0.5-	0.0
1989 11 02	399	0.8+	1.5-	1996 07 14	566	0.3+	0.6-	1998 01 29	566	0.4-	0.0
1989 11 02	399	0.2-	0.8-	1996 07 14	566	0.2-	0.8-	1998 01 29	566	0.3-	0.0

(8263)* 1986 QT = 1989 LD

Discovered 1986 Aug. 26 by H. Debehogne at the European Southern Observatory.

Id. C. M. Bardwell (*MPC* 14787)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	184.83750		(2000.0)	P	Q
n	0.29732067	ω	162.73499	+0.26110555	+0.96440937
a	2.2232381	Ω	122.38254	-0.89138159	+0.25746137
e	0.1587473	i	2.83000	-0.37048988	+0.06023462
P	3.31	H	14.2	G 0.15	U 1

1998 FEB. 11

1986 08 27	809	0.2−	0.4+	1986 09 07	809	0.0	0.4−	1992 04 30	801	1.3+	0.6+
1986 08 27	809	0.3−	0.7+	1986 09 07	809	0.5+	0.4−	1995 01 29	691	0.9−	0.1−
1986 08 27	809	0.3−	0.5+	1986 09 08	095	1.5+	1.1−	1995 01 29	691	0.7−	0.4−
1986 08 29	809	0.3+	0.8+	1986 09 09	809	0.2+	0.7−	1995 01 29	691	0.7−	0.3−
1986 08 29	809	0.6+	0.6+	1986 09 09	809	0.1+	0.7−	1995 01 30	411	0.1−	0.6−
1986 08 29	809	0.6+	0.4+	1986 09 09	809	0.2−	0.8−	1995 01 30	411	1.6+	0.1+
1986 09 01	809	0.7+	0.1+	1986 09 11	809	0.3+	0.1−	1996 09 13	566	0.0	1.1+
1986 09 01	809	0.8+	0.3+	1986 09 11	809	0.2+	0.1−	1996 09 13	566	0.0	1.2+
1986 09 01	809	0.6+	0.2+	1986 09 11	809	0.1+	0.3−	1996 09 13	566	0.1+	1.2+
1986 09 02	809	0.3−	0.0	1989 06 03	675	(6.5+	5.3−)	1996 09 17	691	0.7−	0.8+
1986 09 02	809	0.0	0.1−	1989 06 03	675	(5.2+	5.2−)	1996 09 17	691	0.9−	0.7+
1986 09 02	809	0.1+	0.1−	1989 06 05	675	(4.5+	4.6−)	1998 01 08	704	0.7+	0.5−
1986 09 04	809	0.3+	0.5−	1989 06 05	675	(4.0+	6.8−)	1998 01 08	704	0.6+	0.4−
1986 09 04	809	0.1+	0.1−	1989 06 30	675	1.1+	1.0−	1998 01 08	704	1.4−	0.6−
1986 09 04	809	0.3+	0.4−	1989 06 30	675	2.0−	0.5−	1998 01 08	704	0.3−	1.0−
1986 09 05	809	0.7−	0.8−	1989 07 03	675	1.4−	0.6−	1998 01 25	566	0.5−	0.3−
1986 09 05	809	0.5−	0.8−	1989 07 03	675	0.5+	0.9−	1998 01 25	566	0.5−	0.6−
1986 09 05	809	0.2−	0.9−	1990 11 16	675	0.3+	0.1+	1998 01 25	566	0.2−	0.4−
1986 09 06	809	0.0	0.6−	1992 04 26	691	0.4+	0.1+				

(8264)* 1986 QA₃ = 1973 UW₅

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

Id. S. Nakano (*MPC* 12134)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	182.20214		(2000.0)	P	Q		
n	0.29679158	ω	191.58795	+0.31871776	+0.94746918		
a	2.2258796	Ω	97.00186	−0.86745894	+0.30298753		
e	0.1316400	i	1.55038	−0.38201305	+0.10247296		
P	3.32	H	14.0	G	0.15	U	2

Residuals in seconds of arc

1973 10 28	033	0.7−	0.6+	1986 09 07	809	0.2+	1.0−	1997 12 25	369	0.6−	0.3+
1973 11 02	033	1.0−	1.3+	1986 09 08	095	1.9+	0.4−	1997 12 27	369	0.2−	1.3−
1983 10 30	675	(3.5−	1.3−)	1986 09 09	809	0.5+	0.8−	1997 12 27	369	0.3−	0.0
1983 11 04	675	0.8−	1.2+	1986 09 09	809	0.6+	0.9−	1998 01 22	704	0.3+	1.3−
1986 08 29	809	2.2−	1.2+	1986 09 09	809	0.9+	1.0−	1998 01 22	704	0.4+	0.4−
1986 08 29	809	1.9−	1.2+	1986 09 09	809	0.5+	0.7−	1998 01 22	704	1.2+	0.2+
1986 08 29	809	1.6−	1.2+	1986 09 09	809	0.4+	0.9−	1998 01 22	704	0.6−	0.4+
1986 09 01	809	0.5−	0.7+	1986 09 09	809	0.6+	1.0−	1998 01 24	704	1.2+	0.3+
1986 09 01	809	0.4−	0.6+	1986 09 11	809	1.0+	0.3−	1998 01 24	704	0.3+	0.3+
1986 09 01	809	0.4−	0.6+	1986 09 11	809	1.4+	0.6−	1998 01 24	704	0.3+	0.1−
1986 09 02	809	0.2+	0.6−	1986 09 11	809	1.7+	0.3−	1998 01 24	704	0.6+	0.4−
1986 09 02	809	0.1+	0.7−	1986 09 11	809	1.2+	0.2−	1998 01 25	704	0.1+	0.0
1986 09 02	809	0.3+	0.4−	1986 09 11	809	1.3+	0.3−	1998 01 25	704	1.0−	1.3+
1986 09 04	809	0.7−	0.4+	1986 09 11	809	1.5+	0.5−	1998 01 25	704	0.7+	0.1−
1986 09 04	809	0.7−	0.2+	1995 02 04	691	0.8−	0.9−	1998 01 25	704	0.4+	0.3+
1986 09 04	809	0.5−	0.2+	1995 02 04	691	0.8−	0.6−	1998 01 25	704	0.3+	0.1−
1986 09 05	809	0.0	0.9−	1995 02 04	691	1.1−	0.9−	1998 01 26	566	0.8+	0.9−
1986 09 05	809	0.1+	1.0−	1995 02 22	033	0.4−	0.7−	1998 01 26	566	0.7+	0.4−
1986 09 05	809	0.1+	1.0−	1995 02 23	033	0.4+	1.0−	1998 01 26	566	0.5+	0.8−
1986 09 06	809	0.1−	0.9−	1995 02 24	033	0.6−	0.9−	1998 01 30	691	1.4−	0.2−
1986 09 06	809	0.2+	0.9−	1996 09 11	691	0.8−	1.1+	1998 01 30	691	1.6−	0.2−
1986 09 06	809	0.5+	1.1−	1996 09 11	691	0.8−	1.3+	1998 01 30	691	1.6−	0.1−
1986 09 07	809	0.2+	0.9−	1996 09 11	691	1.1−	0.9+				
1986 09 07	809	0.3+	0.9−	1997 12 25	369	0.3+	0.7−				

(8265)* 1986 RB₅ = 1949 OQ

Discovered 1986 Sept. 1 by H. Debehogne at the European Southern Observatory.

Id. H. Kaneda (*MPC* 16427)

M.P.C. 31211

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	130.66071		(2000.0)	P	Q
n	0.29340914	ω	209.90826	+0.88688462	+0.45447239
a	2.2429536	Ω	122.83134	−0.40185893	+0.84753449
e	0.1788023	i	5.66942	−0.22791461	+0.27411700
P	3.36	H	13.6	G 0.15	U 1

Residuals in seconds of arc

1949 07 28	024	0.6−	2.6+	1986 09 10	809	0.0	0.1−	1993 11 17	801	0.3−	0.6+
1949 07 30	024	(1.0+	8.0−)	1986 09 10	809	0.1−	0.0	1993 11 17	801	0.3−	0.5+
1986 08 11	095	(3.2−	1.3+)	1986 09 10	809	0.2−	0.0	1995 04 01	801	0.3−	0.4−
1986 09 01	809	0.0	0.6−	1986 09 12	809	0.0	0.6+	1995 04 03	801	0.3+	0.4+
1986 09 01	809	0.3+	0.6−	1986 09 12	809	0.2+	0.5+	1995 04 03	801	0.1+	0.1−
1986 09 01	809	0.9+	0.5−	1986 09 12	809	0.4+	0.5+	1996 07 18	816	0.4−	0.1−
1986 09 03	809	0.4−	0.3+	1990 12 20	801	0.2−	0.0	1996 07 18	816	0.4−	0.1−
1986 09 03	809	0.1−	0.2+	1990 12 20	801	0.4−	0.3−	1996 07 18	816	0.4−	0.1−
1986 09 03	809	0.1+	0.2+	1991 02 10	801	(0.5−	9.2+)	1996 07 18	816	0.3−	0.1−
1986 09 05	809	0.7+	0.2+	1991 02 10	801	0.7−	0.1−	1996 07 19	670	0.2+	0.6−
1986 09 05	809	0.6+	0.3+	1991 02 11	801	0.9−	0.5−	1996 07 19	670	0.1−	0.4+
1986 09 05	809	1.0+	0.6+	1991 02 11	801	0.8−	2.0−	1996 07 19	670	0.5+	0.2−
1986 09 06	809	0.2−	0.9−	1992 04 03	675	0.1+	1.6+	1997 11 05	327	1.0+	0.8+
1986 09 06	809	0.1−	1.0−	1992 04 03	675	0.3−	0.8+	1997 11 05	327	0.1+	0.4+
1986 09 06	809	0.1−	0.8−	1993 10 11	596	0.1+	0.6+	1997 11 05	327	0.5+	0.7+
1986 09 08	809	0.4−	0.6−	1993 10 11	596	0.6−	1.3+	1998 01 26	566	0.8+	0.9−
1986 09 08	809	0.0	0.7−	1993 10 11	596	0.2−	0.5−	1998 01 26	566	0.9+	0.6−
1986 09 08	809	0.2+	0.7−	1993 11 16	801	0.4−	0.5+	1998 01 26	566	1.0+	0.8−
1986 09 09	095	(0.9+	10.7+)	1993 11 16	801	0.2−	0.5+				

(8266)* 1986 TC = 1993 SK₅

Discovered 1986 Oct. 1 at the Osservatorio S. Vittore, Bologna.

Id. G. V. Williams (*MPC* 22950)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	76.00665		(2000.0)	P	Q
n	0.27894180	ω	357.99838	+0.97753711	+0.21004591
a	2.3198522	Ω	349.82640	−0.19197918	+0.85336205
e	0.1525178	i	5.64538	−0.08697807	+0.47713094
P	3.53	H	14.7	G 0.15	U 1

Residuals in seconds of arc

1954 08 04	675	0.3−	0.5−	1986 10 24	552	0.9−	0.5+	1993 09 20	010	0.0	0.5+
1954 08 04	675	0.4+	0.1−	1986 10 24	552	1.7−	0.4+	1993 09 20	010	0.2−	0.8+
1986 09 30	552	0.1+	0.5+	1986 10 24	552	1.1−	0.3−	1996 05 24	552	0.2+	0.3−
1986 10 01	552	1.3+	0.2+	1986 10 30	552	(4.2+	1.2+)	1996 05 25	552	0.9+	0.7−
1986 10 01	552	0.1+	0.3−	1986 10 30	552	(6.3+	0.4+)	1996 05 26	552	1.0−	1.0+
1986 10 02	552	0.9+	0.0	1993 07 26	675	0.6−	0.6+	1996 05 26	552	0.2+	0.1+
1986 10 02	552	0.2+	1.7−	1993 07 26	675	0.5+	0.2−	1997 12 06	704	0.3−	1.1+
1986 10 03	552	0.1−	0.6+	1993 08 15	809	(4.8+	0.5+)	1997 12 06	704	0.7−	0.5−
1986 10 03	552	0.4+	0.6+	1993 08 15	809	(3.5+	0.8+)	1997 12 06	704	0.7+	0.3−
1986 10 04	552	1.0−	0.3−	1993 08 15	809	(3.2+	0.2+)	1997 12 06	704	(2.3−	0.5−)
1986 10 04	552	0.9−	0.2+	1993 08 20	809	1.0−	1.6−	1997 12 06	704	0.7−	1.1−
1986 10 05	095	0.8+	0.8−	1993 08 20	809	1.4−	1.4−	1997 12 29	552	0.0	0.1+
1986 10 10	552	1.0+	2.2+	1993 08 20	809	1.7−	1.2−	1997 12 29	552	0.2+	0.2−
1986 10 10	552	0.0	0.8+	1993 09 19	010	0.9+	1.0+	1997 12 29	552	0.4+	0.0
1986 10 11	552	1.6+	0.8−	1993 09 19	010	1.0+	1.0+	1998 01 17	552	0.2−	0.9+
1986 10 11	552	0.4+	1.5−	1993 09 20	010	1.1+	0.6+	1998 01 17	552	0.2+	0.3−

(8267)* 1986 TX₃ = 1993 RN

Discovered 1986 Oct. 4 by A. Mrkos at Kleť.

Id. T. Kobayashi (*MPC* 23971)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	48.25722	(2000.0)	P	Q
<i>n</i>	0.27930250	ω 311.27517	+0.81516612	-0.57657567
<i>a</i>	2.3178545	Ω 84.00624	+0.54668346	+0.73425907
<i>e</i>	0.1513268	<i>i</i> 3.19096	+0.19141942	+0.35836310
<i>P</i>	3.53	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1986 10 04	046	1.3+	1.5+	1993 09 21	675	0.1+	0.0	1998 01 13	046	0.1+	0.0
1986 10 05	046	0.5-	1.6+	1993 10 13	675	0.7+	0.6+	1998 01 13	046	0.1-	0.0
1986 10 05	046	(3.1-	1.2+)	1993 10 13	675	0.9+	0.3-	1998 01 13	046	0.1-	0.1+
1986 10 05	046	0.6+	0.9+	1993 10 15	675	0.5+	0.0	1998 01 15	046	0.2-	0.3-
1986 10 09	046	0.5-	2.1-	1993 10 15	675	0.1+	0.4-	1998 01 15	046	0.1-	0.0
1986 10 09	046	0.0	1.3-	1997 12 21	411	0.7+	0.7-	1998 02 01	046	0.0	0.2+
1986 10 10	046	0.5+	1.4-	1997 12 21	411	0.5-	0.5-	1998 02 01	046	0.1-	0.2+
1986 10 10	046	0.3-	1.8-	1997 12 24	411	0.1-	0.1+	1998 02 01	046	0.4-	0.3+
1992 04 25	691	0.4-	0.7-	1997 12 24	411	0.1-	0.0	1998 02 02	046	0.1+	0.1+
1992 04 25	691	0.2-	1.0-	1997 12 26	046	0.1+	0.1+	1998 02 02	046	0.2+	0.2+
1992 04 25	691	0.2-	1.0-	1997 12 26	046	0.1-	0.1-	1998 02 02	046	0.3+	0.2+
1993 09 14	376	(2.6-	0.0)	1997 12 26	046	0.1-	0.0	1998 02 03	046	0.2+	0.0
1993 09 14	376	1.0-	0.3-	1997 12 27	046	0.3-	0.0	1998 02 03	046	0.4+	0.2-
1993 09 16	376	(0.7-	2.1+)	1997 12 27	046	0.0	0.0	1998 02 03	046	0.2+	0.1+
1993 09 16	376	1.8-	1.5+	1997 12 27	046	0.0	0.1-	1998 02 03	046	0.1-	0.0

(8268)* 1987 SQ₁₀ = 1980 BQ₄ = 1991 RY₁₁ = 1994 CR₁₁

Discovered 1987 Sept. 29 at Tautenburg.

Id. K. Kinoshita (*MPC* 23971)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	315.46345	(2000.0)	P	Q
<i>n</i>	0.21543178	ω 15.02013	-0.77176214	-0.63155739
<i>a</i>	2.7558963	Ω 125.57170	+0.57361804	-0.74181948
<i>e</i>	0.0478938	<i>i</i> 5.24010	+0.27449144	-0.22547533
<i>P</i>	4.58	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1980 01 22	095	(8.0-	0.6-)	1991 09 07	809	1.1+	1.5-	1995 06 20	033	1.2-	0.3+
1987 09 29	033	0.1-	0.9-	1992 10 21	675	0.4+	1.0-	1995 06 25	033	1.4-	0.4-
1987 09 29	033	0.0	0.8-	1992 10 21	675	0.1+	0.0	1995 06 25	033	1.4-	0.3+
1987 09 30	033	1.4-	1.2-	1992 11 28	675	0.2+	0.7+	1996 09 19	113	0.5+	0.3+
1987 09 30	033	0.7-	1.0-	1992 11 28	675	0.6+	1.5+	1996 09 19	113	1.3-	0.2+
1987 10 01	033	0.8-	0.9-	1994 02 07	809	0.9-	1.6-	1996 09 19	113	0.2-	0.7+
1991 08 03	809	0.1-	0.6-	1994 02 07	809	1.3-	1.9-	1997 12 30	113	0.7-	0.3+
1991 08 03	809	0.7-	0.4+	1994 02 07	809	(2.6-	1.2-)	1997 12 30	113	0.0	0.1-
1991 08 03	809	0.3-	0.3-	1994 02 09	809	0.9+	0.4+	1997 12 30	113	0.4-	0.1+
1991 09 04	809	1.7+	2.0+	1994 02 09	809	0.8+	0.4+	1998 01 26	113	0.4+	0.1-
1991 09 04	809	1.9+	0.4+	1994 02 09	809	0.2+	0.2+	1998 01 26	113	0.7+	0.5+
1991 09 04	809	1.7+	1.4+	1994 02 11	400	(3.5-	1.2+)	1998 01 27	113	0.9-	0.4-
1991 09 06	809	(2.1+	0.5+)	1994 02 11	400	1.5-	0.6-	1998 01 27	113	0.3+	0.3+
1991 09 06	809	0.2+	1.1+	1994 02 12	809	1.6+	1.1+	1998 01 27	113	0.0	0.1+
1991 09 06	809	0.6+	1.4+	1994 02 12	809	0.7+	0.0				
1991 09 07	809	0.7+	1.5-	1994 02 12	809	0.5+	1.0+				

(8269)* 1988 QB = 1964 VM₂ = 1980 TJ₂ = 1982 DX₅ = 1990 DB₅

Discovered 1988 Aug. 17 at the Osservatorio S. Vittore, Bologna.

Id. G. V. Williams (*MPC* 27555)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	55.44047	(2000.0)	P	Q
<i>n</i>	0.24111508	ω 240.22479	+0.83032775	-0.55257038
<i>a</i>	2.5565432	Ω 153.12055	+0.55037743	+0.79278730
<i>e</i>	0.2092168	<i>i</i> 9.19710	+0.08741006	+0.25720473
<i>P</i>	4.09	<i>H</i> 13.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1964 11 11	330	0.4+	1.9+	1988 09 03	552	0.4+	1.4+	1996 09 08	552	0.3+	0.2+
1980 10 05	809	1.1+	1.1-	1988 09 03	552	0.8+	1.5+	1996 09 08	552	0.7+	0.9+
1982 02 26	010	0.1-	0.3+	1988 09 07	552	(0.7-	3.4-)	1996 09 10	552	0.4-	0.0
1988 08 17	552	0.1-	0.7+	1988 09 07	552	0.4-	2.3-	1996 09 10	552	1.3+	0.5+
1988 08 17	552	0.8+	0.9+	1988 09 10	675	0.0	0.4-	1996 09 13	552	0.7+	0.2+
1988 08 18	046	(2.8-	1.7-)	1988 09 10	675	1.1-	0.4+	1996 09 13	552	0.6+	0.1+
1988 08 18	046	1.2-	2.3-	1988 09 10	552	0.9-	0.3-	1997 12 28	566	0.3+	0.0
1988 08 18	552	1.0-	1.1-	1988 09 10	552	0.5-	0.4+	1997 12 28	566	0.6+	0.2+
1988 08 18	552	1.3-	1.0-	1990 02 22	033	1.2-	0.2-	1997 12 28	566	0.7+	0.0
1988 08 22	552	(2.6+	0.1-)	1996 08 19	801	0.3+	0.1-	1998 01 18	758	0.9-	0.0
1988 08 22	552	0.7+	0.9-	1996 08 19	801	0.3-	0.6+	1998 01 18	758	0.6-	0.3-
1988 08 23	552	0.0	0.1+	1996 09 06	552	(0.8+	2.1+)	1998 01 21	758	0.4-	0.7-
1988 08 23	552	0.6-	0.1+	1996 09 06	552	1.4+	0.7+	1998 01 21	758	0.9+	0.3-

(8270)* 1989 JF = 1992 FM

Discovered 1989 May 2 by E. F. Helin at Palomar.

Id. H. Kaneda (*MPC* 20017)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	203.80749	(2000.0)	P	Q
<i>n</i>	0.30579355	ω 281.15786	+0.20514573	+0.97873101
<i>a</i>	2.1819787	Ω 0.68222	-0.86506630	+0.18176131
<i>e</i>	0.1697505	<i>i</i> 4.43781	-0.45779420	+0.09512331
<i>P</i>	3.22	<i>H</i> 13.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1989 05 02	675	(0.8-	3.4-)	1992 03 28	400	0.9-	2.0+	1996 10 18	552	0.2+	0.0
1989 05 02	675	(0.8-	2.7-)	1993 10 14	801	0.1+	0.4+	1997 11 25	327	0.6-	0.2+
1989 05 04	675	0.6-	0.6-	1993 10 14	801	0.4+	0.1+	1997 11 25	327	0.5-	0.0
1989 05 04	675	0.3+	0.8-	1993 10 20	675	0.2-	1.4-	1997 11 25	327	0.3-	0.0
1989 06 03	675	0.8-	0.7-	1993 10 20	675	2.0+	1.4+	1997 12 01	327	0.2-	0.3-
1989 06 05	675	0.5-	0.0	1993 11 10	675	0.2+	0.2+	1997 12 01	327	0.1-	0.2+
1989 06 05	675	0.8-	0.5-	1993 11 10	675	0.8-	0.4-	1997 12 01	327	0.6-	0.3+
1992 03 23	400	1.4+	0.7+	1993 11 11	801	0.1-	0.9-	1998 02 01	758	0.2+	0.4+
1992 03 23	400	0.3+	1.1-	1993 11 11	801	0.3+	0.9-	1998 02 01	758	0.4-	0.2+
1992 03 24	400	1.7+	2.1-	1993 11 17	801	0.2+	1.0-	1998 02 05	758	0.1-	0.3-
1992 03 24	400	1.0-	2.1-	1993 11 17	801	0.1+	0.9-	1998 02 05	758	0.6-	0.3-
1992 03 28	400	1.3+	0.6+	1996 10 18	552	0.2+	0.1-				

(8271)* 1989 NY = 1952 UB = 1978 PA₅ = 1978 SV = 1993 SU₃

Discovered 1989 July 2 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 23237)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	61.75120	(2000.0)	P	Q
<i>n</i>	0.26359936	ω 202.10399	+0.95112087	+0.28682219
<i>a</i>	2.4090167	Ω 140.65005	-0.24937478	+0.93196479
<i>e</i>	0.2082368	<i>i</i> 10.40050	-0.18215741	+0.22175360
<i>P</i>	3.74	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1952 10 21	760	0.8+	0.3-	1989 07 31	675	0.6-	0.0	1993 10 15	675	0.5+	1.1-
1952 10 21	760	0.3-	0.1-	1991 01 17	675	1.0+	0.1+	1993 10 15	675	0.1-	1.0-
1978 08 09	323	1.8-	0.7-	1991 01 17	675	0.4+	0.4+	1995 02 07	691	1.2-	0.7-
1978 08 09	323	1.6-	0.9+	1993 09 18	675	(2.3-	0.7-)	1995 02 07	691	1.2-	0.8-
1978 09 27	095	(0.7+	3.4+)	1993 09 18	675	0.4-	0.8+	1995 02 07	691	0.6-	0.9-
1978 10 07	095	1.4+	1.2+	1993 09 21	675	0.5-	0.3+	1997 11 06	689	0.0	0.2-
1989 07 02	675	0.3+	0.8-	1993 09 21	675	0.4-	0.5+	1998 01 25	566	0.5+	0.1+
1989 07 02	675	0.2+	0.0	1993 09 22	675	(1.3-	2.6-)	1998 01 25	566	0.7+	0.0
1989 07 04	675	0.6+	1.9-	1993 09 22	675	0.0	0.5+	1998 01 25	566	0.3+	0.1-
1989 07 04	675	1.2+	2.1-	1993 10 13	675	0.5+	1.1-				
1989 07 31	675	0.0	1.8+	1993 10 13	675	0.4+	1.1-				

(8272)* 1989 SG = 1989 TV₁₀ = 1934 UC = 1978 RV₄ = 1978 TF₃
= 1978 UB₂

Discovered 1989 Sept. 24 by Y. Mizuno and T. Furuta at Kani.
Id. S. Nakano (d, *MPC* 16208), K. Ichikawa (*MPC* 16434)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	22.07311		(2000.0)	P	Q
<i>n</i>	0.26749744	ω	81.82250	+0.19313422	-0.98115380
<i>a</i>	2.3855561	Ω	357.02144	+0.84830426	+0.17006664
<i>e</i>	0.1505296	<i>i</i>	6.66655	+0.49303048	+0.09173087
<i>P</i>	3.68	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1934 10 16	754	1.3+	0.5-	1989 09 30	809	1.7+	0.1-	1998 01 09	732	1.1+	0.1+
1934 10 16	754	0.1-	0.6-	1989 10 01	809	0.5-	0.3-	1998 01 25	355	0.1+	0.2-
1954 02 10	675	1.2-	0.3+	1989 10 01	809	0.2-	0.3-	1998 01 25	355	0.1-	0.6+
1954 02 10	675	0.2-	0.4+	1989 10 01	809	0.3+	0.3-	1998 01 25	127	0.0	0.0
1978 09 06	095	0.5+	1.5-	1989 10 07	403	1.1+	0.4-	1998 01 25	127	0.1+	0.0
1978 10 04	095	1.1+	0.8-	1989 10 07	403	(2.5-	1.4+)Y	1998 01 26	127	0.2-	0.2+
1978 10 24	095	(3.3+	0.8+)	1989 11 01	675	0.6-	1.5+	1998 01 26	127	0.2-	0.2+
1989 09 04	675	1.5-	0.6+	1989 11 01	675	0.1+	1.3+	1998 01 28	566	0.3-	0.0
1989 09 04	675	1.7-	0.3+	1991 03 12	675	0.0	1.7-	1998 01 28	566	0.2-	0.0
1989 09 24	403	1.9-	1.8-	1991 03 12	675	0.2-	1.4-	1998 01 28	566	0.4-	0.0
1989 09 24	403	0.4-	0.3-	1997 12 27	403	0.1-	0.0	1998 01 28	403	0.1+	0.0
1989 09 27	675	0.3+	0.5+	1997 12 27	403	0.1+	0.1+	1998 01 28	403	0.1-	0.1-
1989 09 29	403	0.8-	1.1+	Y 1998 01 08	732	0.2-	0.2-	1998 01 28	403	0.2+	0.2-
1989 09 29	403	(3.2-	2.3-)Y	1998 01 08	732	0.1-	0.2-	1998 01 29	403	0.1+	0.0
1989 09 30	809	0.7+	0.0	1998 01 08	732	0.2-	0.3+	1998 01 29	403	0.2+	0.1+
1989 09 30	809	1.3+	0.0	1998 01 09	732	0.6+	0.2-	1998 01 29	403	0.3-	0.6+

(8273)* 1989 WB₂ = 1965 AM₁ = 1986 AM₁

Discovered 1989 Nov. 29 by M. Akiyama and T. Furuta at Mishima.
Id. K. Ichikawa (*MPC* 15725)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	310.00737		(2000.0)	P	Q
<i>n</i>	0.23457340	ω	173.98811	-0.28593033	-0.95478302
<i>a</i>	2.6038554	Ω	292.60381	+0.87546129	-0.22572315
<i>e</i>	0.2409119	<i>i</i>	5.06130	+0.38962980	-0.19349018
<i>P</i>	4.20	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1951 11 30	675	0.2-	0.2+	1989 11 29	886	(3.9-	1.0+)Y	1993 12 13	801	0.3+	0.3-
1951 11 30	675	0.2+	1.1+	1989 12 03	403	0.1+	1.1-	1993 12 13	801	0.0	1.0-
1965 01 12	330	(10.4+	0.6+)	1989 12 03	403	0.2-	1.2-	1993 12 17	801	0.3+	0.3-
1986 01 11	688	2.2+	0.2+	1989 12 04	886	0.6+	1.0-	Y 1993 12 17	801	0.7+	0.2-
1986 01 11	688	0.2-	0.4-	1989 12 04	886	0.4-	0.0	Y 1997 10 01	566	0.3-	0.5-
1986 01 17	688	0.2+	0.2-	1989 12 06	886	0.1+	0.7+	1997 10 01	566	0.4+	0.3-
1986 01 17	688	0.8-	0.2-	1989 12 06	886	0.1+	1.8+	1997 10 01	566	0.3+	0.2-
1988 08 16	675	0.0	1.6+	1989 12 18	403	0.4-	0.5+	Y 1998 01 16	360	0.3+	1.3+
1988 08 16	675	1.4-	1.6-	1989 12 18	403	(2.6-	1.3+)Y	1998 01 16	360	0.8+	1.6+
1989 11 29	886	2.1-	0.5-	Y 1989 12 20	886	0.9-	0.5+	Y 1998 01 16	360	1.1+	1.5+

(8274)* 1990 TJ₁ = 1942 VC = 1973 YS₁ = 1997 XJ₁₀

Discovered 1990 Oct. 15 by K. Endate and K. Watanabe at Kitami.
Id. G. V. Williams (*MPC* 31099)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	32.18736		(2000.0)	P	Q
<i>n</i>	0.28742344	ω	314.23588	+0.85486044	-0.51498004
<i>a</i>	2.2739868	Ω	76.85638	+0.49265113	+0.76732261
<i>e</i>	0.2008068	<i>i</i>	3.72809	+0.16281428	+0.38211459
<i>P</i>	3.43	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1942 11 05	062	0.9-	0.4-	1996 06 21	566	0.1+	1.0+	1997 12 07	098	0.7-	1.2+
1942 11 05	062	0.5+	0.0	1996 06 21	566	0.5+	0.7+	1997 12 08	098	0.1-	0.1-
1973 12 20	095	1.8+	2.5-	1997 11 29	704	(2.5-	0.2-)Y	1997 12 08	098	0.2+	1.1+
1990 10 15	400	(1.8-	2.2-)Y	1997 11 29	704	(3.2-	0.6-)Y	1997 12 31	704	0.0	0.4-
1990 10 15	400	(3.2-	0.5+)Y	1997 11 29	704	(2.4-	1.2-)Y	1997 12 31	704	0.1-	0.3-
1990 10 19	400	0.2+	0.8+	1997 11 29	704	1.7+	0.7+	1997 12 31	704	0.2-	0.2-
1990 10 19	400	0.1-	1.0+	1997 11 29	704	(2.7-	1.9-)Y	1997 12 31	704	0.8-	0.3-
1990 11 11	400	1.3+	0.7+	1997 12 04	704	0.2+	0.8+	1998 01 02	704	0.9+	0.2-
1990 11 11	400	0.8+	0.7-	1997 12 04	704	0.0	0.5+	1998 01 02	704	0.3-	0.1+
1990 11 12	809	0.6-	1.3-	1997 12 04	704	0.1+	0.9+	1998 01 02	704	0.6-	0.6-
1990 11 12	809	0.5-	0.6-	1997 12 04	704	0.5-	0.9+	1998 01 02	704	1.0-	0.1+
1990 11 12	809	0.5-	0.8-	1997 12 04	704	0.6+	0.6+				
1996 06 21	566	0.1+	0.6+	1997 12 07	098	1.7-	0.5+				

(8275)* 1990 VR_s = 1992 JO

Discovered 1990 Nov. 11 by E. W. Elst at the European Southern

Observatory.

Id. H. Kaneda (*MPC* 20336)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	324.64279		(2000.0)	P	Q
<i>n</i>	0.31267974	ω	87.67468	-0.99360662	-0.09123375
<i>a</i>	2.1498239	Ω	87.08555	+0.05721962	-0.91472699
<i>e</i>	0.0950795	<i>i</i>	3.81795	+0.09732322	-0.39363807
<i>P</i>	3.15	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1949 11 23	675	0.8-	0.2-	1992 04 08	675	0.2+	1.1+	1995 04 26	801	0.1+	0.0
1949 11 23	675	0.9+	0.2-	1992 04 08	675	0.0	1.1+	1995 04 26	801	0.1+	0.3-
1990 11 11	809	0.1-	0.7-	1992 04 27	399	1.6-	0.2-	1995 05 02	801	0.1-	0.5-
1990 11 11	809	0.6-	0.3-	1992 04 27	399	2.2-	1.2-	1995 05 02	801	0.1-	0.6-
1990 11 11	809	0.3-	0.4-	1992 05 02	399	2.1+	0.9-	1997 11 28	327	0.8-	0.2+
1990 11 12	809	1.4-	1.0+	1992 05 02	399	0.9+	0.4-	1997 11 28	327	0.2-	0.1+
1990 11 12	809	1.9+	0.1+	1993 09 21	675	1.2-	1.0-	1997 11 28	327	0.6-	0.2+
1990 11 12	809	(2.6+	0.8-)Y	1993 09 21	675	0.7-	0.0	1998 01 22	012	0.4+	0.6-
1990 11 17	809	0.4+	0.6+	1993 09 23	675	0.7-	0.9-	1998 01 22	012	0.3+	0.0
1990 11 17	809	1.5+	0.4-	1993 10 13	675	1.3+	0.2-	1998 01 22	012	0.5-	0.1-
1990 11 17	809	0.5-	0.1+	1993 10 13	675	1.3+	0.2+				

(8276)* 1991 FL = 1987 BJ₂

Discovered 1991 Mar. 17 by S. Otomo and O. Muramatsu at Kiyosato.

Id. S. Nakano (*MPC* 18130)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	297.35303		(2000.0)	P	Q
<i>n</i>	0.26701405	ω	283.47603	-0.99544759	+0.09241076
<i>a</i>	2.3884344	Ω	261.82997	-0.07576157	-0.91572715
<i>e</i>	0.1433718	<i>i</i>	1.35062	-0.05782977	-0.39102945
<i>P</i>	3.69	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1987 01 30	046	0.4+	1.7-	1991 04 15	675	0.9-	1.2+	1997 12 25	566	0.2-	0.0
1987 01 30	046	0.0	0.9-	1991 04 15	894	0.5+	1.2-	1998 01 08	704	0.3+	0.3-
1987 02 01	046	2.0+	0.1+	1991 04 15	894	0.6+	0.0	1998 01 08	704	0.4+	0.1-
1987 02 01	046	1.1-	0.3-	1991 04 17	675	1.3-	0.2+	1998 01 08	704	0.2+	0.7-
1991 03 14	809	0.4-	0.3-	1991 04 17	675	0.4-	0.8+	1998 01 08	704	0.2+	0.3-
1991 03 14	809	0.3-	0.2-	1994 01 04	691	1.1-	0.3-	1998 01 20	704	0.4+	0.3+
1991 03 14	809	0.5-	0.4-	1994 01 04	691	0.2-	0.9+	1998 01 20	704	0.0	0.1-
1991 03 16	809	1.1-	0.1-	1994 01 04	691	1.0-	0.0	1998 01 20	704	0.2+	0.1+
1991 03 16	809	0.3-	0.2-	1995 05 23	894	0.0	0.4+	1998 01 20	704	0.0	0.2+
1991 03 16	809	0.5+	0.5-	1995 05 23	894	0.3+	0.5+	1998 01 20	704	0.2-	0.1+
1991 03 17	894	0.1-	0.3-	1995 05 31	894	1.1-	0.5-	1998 01 20	704	0.2-	0.3+
1991 03 17	894	1.0+	1.4+	1995 05 31	894	0.7+	0.6-	1998 01 22	704	0.1-	0.1-
1991 03 19	894	(1.1+	3.8+)Y	1995 06 20	896	0.5+	0.6-	1998 01 22	704	0.1+	0.1-
1991 03 19	894	(2.8-	2.2+)Y	1995 06 20	896	0.9+	0.6-	1998 01 22	704	0.2+	0.2+

M.P.C. 31214

1998 FEB. 11

1991 03 20 894 0.7+ 1.2+ 1997 12 25 566 0.3- 0.0 1998 01 22 704 0.1- 0.2+
 1991 03 23 894 0.1+ 0.6+ Y 1997 12 25 566 0.3- 0.1- 1998 01 22 704 0.5+ 0.7+

(8277)* 1991 GV₈ = 1977 RX₁₆

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

Id. H. Kaneda (*MPC* 18637)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	303.35373		(2000.0)	P	Q
<i>n</i>	0.25938408	ω	233.93430	-0.99039836	-0.13456235
<i>a</i>	2.4350460	Ω	298.31297	+0.13556774	-0.90050111
<i>e</i>	0.0794674	<i>i</i>	2.06269	+0.02706447	-0.41351025
<i>P</i>	3.80	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1977 09 09	675	0.3+	0.4-	1996 09 17	566	0.4-	0.0	1997 12 30	566	1.5+	0.9-
1977 09 10	675	0.1+	0.4-	1996 09 17	566	0.7+	0.5+	1998 01 08	704	0.2-	0.0
1991 04 08	809	(3.0+	0.5-)	1997 11 28	910	1.1-	1.6-	1998 01 08	704	0.5+	0.6+
1991 04 08	809	2.2+	0.7-	1997 11 28	910	1.0-	1.5-	1998 01 08	704	0.4+	0.6-
1991 04 08	809	1.2+	1.2-	1997 11 28	910	1.0-	1.6-	1998 01 08	704	0.7+	0.1+
1991 04 10	809	0.1+	0.6+	1997 12 25	411	0.2-	1.1+	1998 01 20	704	1.0+	0.5+
1991 04 10	809	0.0	0.3+	1997 12 25	566	0.7-	0.6+	1998 01 20	704	0.6+	0.0
1991 04 10	809	0.9-	0.2+	1997 12 25	566	0.8-	0.8+	1998 01 20	704	1.1+	0.2+
1991 04 15	675	0.2+	0.9-	1997 12 25	411	0.3-	0.6+	1998 01 20	704	0.3+	0.7+
1991 04 15	675	0.6+	1.7-	1997 12 25	566	0.4-	0.9+	1998 01 20	704	0.4+	0.5+
1991 04 19	809	2.0-	1.5+	1997 12 27	411	0.0	0.0	1998 01 20	704	0.4+	1.8+
1991 04 19	809	(3.4-	1.6+)	1997 12 27	411	0.8-	0.4-	1998 01 29	691	2.0-	0.8-
1991 04 19	809	1.6-	1.3+	1997 12 30	566	1.2+	0.9-	1998 01 29	691	1.6-	0.4-
1996 09 17	566	0.7-	0.4+	1997 12 30	566	1.1+	0.6-				

(8278)* 1991 JJ = 1976 UG₄ = 1976 YZ₃

Discovered 1991 May 4 by Y. Mizuno and T. Furuta at Kani.

Id. S. Nakano (*MPC* 18442)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	211.44775		(2000.0)	P	Q
<i>n</i>	0.23595597	ω	165.60409	-0.65797463	+0.72108406
<i>a</i>	2.5936741	Ω	62.73940	-0.71279871	-0.50342567
<i>e</i>	0.1266835	<i>i</i>	14.13220	-0.24287317	-0.47602560
<i>P</i>	4.18	<i>H</i>	11.8	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1976 10 28	095	0.4+	1.0-	1991 05 12	675	0.4-	0.7-	1997 11 29	704	(3.5-	0.1-)
1976 12 18	095	(1.0-	10.3+)	1991 05 18	675	0.1-	0.6+	1997 12 04	704	0.2+	0.0
1988 11 04	675	0.5+	0.6-	1991 05 18	675	0.3-	1.3+	1997 12 04	704	(3.7+	0.4+)
1988 11 04	675	0.4+	0.2+	1991 05 18	403	(3.2-	5.3+)	Y 1997 12 04	704	0.6-	0.2+
1991 05 04	403	0.8+	0.1-	Y 1991 05 18	403	(1.9-	3.0+)	1997 12 04	704	0.5+	0.7-
1991 05 04	403	0.1+	0.8-	Y 1995 04 23	113	1.1+	0.2+	1997 12 04	704	0.4-	0.6+
1991 05 05	403	1.0-	0.4+	1995 04 23	113	1.1+	1.1-	1998 01 10	725	0.2-	0.6-
1991 05 05	403	1.0-	0.8+	1995 05 02	113	(2.3-	1.4-)	1998 01 10	725	0.2-	0.4-
1991 05 08	675	0.8-	0.1+	1995 05 02	113	1.6-	0.3+	1998 01 10	725	0.2+	0.4-
1991 05 08	675	0.4-	0.5-	1995 05 03	113	0.6+	1.4+	1998 01 10	725	0.1-	0.3-
1991 05 10	675	0.3-	0.4-	1997 11 29	704	(2.5-	1.0-)	1998 01 15	725	0.2-	0.1-
1991 05 10	675	0.5+	0.9-	1997 11 29	704	(2.7-	0.9-)	1998 02 01	758	0.8+	0.2-
1991 05 10	894	0.2+	1.5-	1997 11 29	704	(3.0-	0.3-)	1998 02 01	758	0.5+	0.1-
1991 05 10	894	0.6+	1.1-	1997 11 29	704	(3.9-	0.2-)				

(8279)* 1991 PN₇ = 1991 RT₁₂ = 1987 UT₆ = 1994 DT

Discovered 1991 Aug. 6 by E. W. Elst at the European Southern Observatory.

Id. A. Lowe (d, *MPC* 19471), G. V. Williams (*MPC* 23672)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	11.37683		(2000.0)	P	Q
<i>n</i>	0.20708222	ω	21.75937	+0.24421825	-0.96890504
<i>a</i>	2.8294858	Ω	54.12637	+0.88230986	+0.20500756
<i>e</i>	0.0321376	<i>i</i>	2.81215	+0.40235153	+0.13854577
<i>P</i>	4.76	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1951 02 04	675	(3.0-	1.0-)	1991 09 04	809	0.7-	0.3-	1997 12 21	327	0.4-	0.4-
1951 02 04	675	0.5-	1.3-	1991 09 06	809	0.5-	0.8-	1997 12 21	327	0.2+	0.1-
1987 10 27	095	0.8-	1.4-	1991 09 06	809	0.9-	0.7-	1997 12 24	327	0.0	0.1-
1989 02 02	675	0.8+	0.2-	1991 09 06	809	1.4-	0.2-	1997 12 24	327	0.1-	0.0
1989 02 02	675	0.3+	0.1-	1991 09 07	809	1.3+	1.6+	1997 12 24	327	0.1-	0.2-
1991 08 06	809	0.7+	1.5-	1991 09 07	809	1.0+	0.1+	1997 12 29	104	0.8-	0.7+
1991 08 06	809	0.9+	1.7-	1991 09 07	809	0.0	0.1-	1997 12 29	104	1.0+	0.4+
1991 08 06	809	0.5+	1.6-	1994 02 16	010	0.1-	0.2-	1997 12 29	104	0.9+	0.2+
1991 08 14	809	1.2+	0.6-	1994 02 16	010	0.0	0.6-	1998 01 05	327	0.2+	0.6-
1991 08 14	809	0.3+	0.8-	1994 03 05	691	1.2-	1.4-	1998 01 05	327	0.1+	0.6-
1991 08 14	809	0.2+	0.0	1994 03 05	691	1.4-	1.5-	1998 01 05	327	0.1+	0.5-
1991 09 04	809	0.1-	0.0	1994 03 05	691	0.9-	1.4-	1998 01 05	327	0.0	0.5-
1991 09 04	809	0.7+	0.4-	1997 12 21	327	0.3-	0.1-				

(8280)* 1991 PG₁₆ = 1980 TL₁₁ = 1982 BF₁₃

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

Id. S. J. Bus (*MPC* 20025), G. V. Williams (*MPC* 30977)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	36.50944		(2000.0)	P	Q
<i>n</i>	0.17532142	ω	252.91245	+0.99652100	-0.07180696
<i>a</i>	3.1616423	Ω	111.18912	+0.08254748	+0.92033493
<i>e</i>	0.2913491	<i>i</i>	2.60050	-0.01148080	+0.38448327
<i>P</i>	5.62	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 10 08	095	0.7-	2.0+	1991 09 16	675	0.2-	0.4-	1997 12 04	704	0.3+	0.5-
1982 01 30	675	0.4-	0.7-	1997 11 29	704	0.7+	0.2-	1997 12 04	704	1.7-	0.6+
1982 01 31	675	0.1+	0.6-	1997 11 29	704	1.4+	1.4-	1997 12 04	704	0.1+	0.0
1991 08 07	675	0.8+	0.3-	1997 11 29	704	1.0-	0.7+	1998 01 30	327	0.3+	0.2-
1991 08 08	675	0.0	1.4-	1997 11 29	704	0.2+	0.6+	1998 01 30	327	0.2+	0.1-
1991 09 14	675	0.7+	0.2-	1997 11 29	704	1.0+	0.5+	1998 01 30	327	0.0	0.2-
1991 09 14	675	0.1-	0.1-	1997 12 04	704	1.0-	0.4+				
1991 09 16	675	0.2-	0.1-	1997 12 04	704	0.2-	1.1-				

(8281)* 1991 PC₁₈ = 1993 BX

Discovered 1991 Aug. 8 by H. E. Holt at Palomar.

Id. B. G. Marsden (*MPC* 21795)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	49.68330		(2000.0)	P	Q
<i>n</i>	0.20967421	ω	124.58254	+0.48530888	-0.86895458
<i>a</i>	2.8061187	Ω	296.10137	+0.76269578	+0.47492945
<i>e</i>	0.0794279	<i>i</i>	6.19573	+0.42751658	+0.13914007
<i>P</i>	4.70	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1953 08 15	675	0.2+	0.3+	1993 01 17	010	0.5-	0.6-	1996 09 22	825	0.1-	0.4+
1953 08 15	675	0.1+	0.1+	1993 01 17	010	0.1-	0.5-	1996 11 04	691	0.6-	0.6+
1991 08 08	675	(1.8-	2.4-)	1996 09 21	825	(1.5+	3.1+)	1996 11 04	691	0.8-	0.7+
1991 08 08	675	(1.8-	2.4-)	1996 09 21	825	0.0	1.1+	1996 11 04	691	0.7-	0.8+
1991 09 12	675	0.8-	0.7+	1996 09 21	825	0.4-	1.0-	1996 11 11	689	2.0+	0.3+
1991 09 12	675	0.3-	0.5+	1996 09 21	825	0.2+	1.0-	1996 11 13	691	0.8-	1.1+
1991 09 14	675	0.0	0.9-	1996 09 22	825	1.1+	0.3-	1996 11 13	691	0.7-	0.9+
1991 09 14	675	0.6-	0.5-	1996 09 22	825	0.4-	0.5-	1996 11 13	691	0.9-	0.7+
1992 11 28	675	(2.1+	1.8-)	1996 09 22	825	0.5+	0.8-	1997 12 31	689	1.0-	1.1+
1992 11 28	675	(3.0+	2.7-)	1996 09 22	825	0.0	0.6-	1998 01 26	758	1.8+	0.8+
1993 01 16	010	0.5-	0.8-	1996 09 22	825	0.9+	0.7-	1998 01 26	758	0.5-	0.0

1993 01 16	010	0.1+	0.6-	1996 09 22	825	1.6+	0.4+	1998 01 29	758	0.4+	0.5+
1993 01 16	010	0.3-	1.0-	1996 09 22	825	0.0	0.2-	1998 01 29	758	0.0	0.9+
1993 01 17	010	0.5-	0.9-	1996 09 22	825	0.3-	0.4+	1998 01 29	758	1.7+	0.8+

(8282)* 1991 RR₄₀ = 1975 VA₄ = 1997 WL₄₁

Discovered 1991 Sept. 10 by F. Börngen at Tautenburg.

Id. G. V. Williams (*MPC* 31101)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	19.54528		(2000.0)	P		Q	
<i>n</i>	0.18114273	ω	263.19490	+0.68930032		-0.72445824	
<i>a</i>	3.0935380	Ω	143.22869	+0.66797024		+0.63283317	
<i>e</i>	0.1637691	<i>i</i>	0.48174	+0.28050103		+0.27328088	
<i>P</i>	5.44	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 11 02	095	1.6+	0.6-	1991 10 30	033	0.7-	0.3-	1997 12 04	704	0.9+	0.6-
1975 11 07	095	(3.8+	3.9+)	1991 10 30	033	1.2-	1.1-	1997 12 04	704	1.2+	0.2-
1991 09 10	033	0.4-	0.3+	1993 01 21	691	0.5-	0.2+	1997 12 04	704	0.6+	0.4-
1991 09 10	033	0.5-	0.0	1993 01 21	691	0.6-	0.1+	1997 12 04	704	0.1-	1.0-
1991 09 13	033	1.2-	0.0	1993 01 21	691	0.4-	0.1+	1997 12 04	704	0.3+	1.9-
1991 09 15	691	(2.3-	0.0)	1996 08 12	566	0.8+	0.6-	1997 12 31	704	1.3+	0.6+
1991 09 15	691	(2.7-	0.1+)	1996 08 12	566	0.8+	0.0	1997 12 31	704	0.2+	0.4+
1991 09 15	691	(2.8-	0.6+)	1996 08 12	566	0.9+	0.2+	1997 12 31	704	0.6+	0.0
1991 09 17	675	0.1-	1.0+	1997 11 29	704	1.8-	0.8+	1997 12 31	704	0.2+	0.8+
1991 09 17	675	0.7+	0.5+	1997 11 29	704	1.7-	1.0+	1998 01 02	704	1.0+	0.3+
1991 10 04	033	0.7-	0.2-	1997 11 29	704	(3.2-	0.4+)	1998 01 02	704	0.4+	0.3+
1991 10 04	033	0.8-	0.0	1997 11 29	704	(2.5-	1.4+)	1998 01 02	704	0.3+	0.6+
1991 10 05	033	0.2-	0.4-	1997 11 29	704	(3.3-	2.7+)	1998 01 02	704	0.8-	0.2-

(8283)* 1991 SV = 1992 YV

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

Id. S. Nakano (*MPC* 21579)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	84.91707		(2000.0)	P		Q	
<i>n</i>	0.20912503	ω	313.44455	+0.89608350		-0.41050918	
<i>a</i>	2.8110293	Ω	71.44906	+0.44103159		+0.78030719	
<i>e</i>	0.0864924	<i>i</i>	10.26048	+0.05025428		+0.47180812	
<i>P</i>	4.71	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 08 18	413	0.4-	1.1-	1992 12 22	896	1.1-	0.2+	1997 12 26	566	0.0	0.7+
1991 08 18	413	1.1+	1.2+	1994 02 20	413	0.3-	0.0	1997 12 26	566	0.1+	0.6+
1991 09 30	413	0.1+	0.3-	1994 02 20	413	0.2-	0.1-	1998 01 26	758	0.0	0.1+
1991 10 01	413	0.8-	0.1+	1994 02 21	413	0.1-	0.1+	1998 01 26	758	0.6+	0.6-
1991 10 12	413	0.3-	0.7+	1994 02 21	413	0.0	0.0	1998 01 28	758	1.6-	0.8-
1992 12 20	896	0.1-	1.3-	Y 1994 03 20	413	0.4+	0.1+	1998 01 28	758	(5.7+	5.1-)
1992 12 20	896	0.5-	0.1-	Y 1994 03 20	413	0.3+	0.1+	1998 01 29	758	0.7+	0.2+
1992 12 22	896	1.8+	0.3+	1997 12 26	566	0.1-	0.7+	1998 01 29	758	0.5+	0.2+

(8284)* 1991 TT₁₃ = 1993 BH₃

Discovered 1991 Oct. 8 by F. Börngen at Tautenburg.

Id. G. V. Williams (*MPC* 22594)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	311.30523		(2000.0)	P		Q	
<i>n</i>	0.18014014	ω	245.39969	-0.94919422		-0.24452582	
<i>a</i>	3.1050056	Ω	279.95094	+0.30771529		-0.85300613	
<i>e</i>	0.1376834	<i>i</i>	11.60187	-0.06589104		-0.46107230	
<i>P</i>	5.47	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 10 08	033	0.5-	0.5+	1995 08 21	033	1.8+	1.1+	1998 01 17	610	0.8+	0.0
1991 10 08	033	0.5+	1.3+	1995 08 21	033	0.7-	0.6-	1998 01 17	610	0.7+	0.1-
1991 10 09	033	0.7+	0.7+	1995 08 22	033	0.2-	0.4-	1998 01 17	610	0.6+	0.3-
1991 10 10	033	0.4+	0.7+	1996 10 14	113	1.2-	0.7-	1998 01 17	611	0.3+	0.6-

1991 10 30	033	1.2+	0.1-	1996 10 14	113	0.5-	0.2-	1998 01 17	611	0.1+	0.2-
1991 10 30	033	1.6+	0.2-	1997 12 30	611	0.4+	0.6+	1998 01 20	610	0.7+	0.0
1991 11 01	033	1.2+	0.4-	1997 12 30	611	0.9+	0.3+	1998 01 20	610	0.2-	0.3-
1991 12 11	033	1.0-	0.7+	1997 12 30	611	0.4+	0.6+	1998 01 20	610	0.7-	0.4-
1991 12 11	033	1.2-	0.8-	1997 12 30	113	0.9-	0.2+	1998 01 26	113	0.2-	0.5+
1991 12 12	033	0.5-	0.4+	1997 12 31	113	0.9-	0.4+	1998 01 26	113	0.1+	0.2+
1992 01 07	033	1.0-	0.4+	1997 12 31	113	0.8-	0.3+	1998 01 26	113	0.5-	0.8+
1992 01 07	033	0.4-	0.4+	1998 01 09	611	0.9+	0.1-	1998 01 27	113	0.8+	1.1-
1993 01 25	372	0.3+	0.2+	1998 01 09	611	1.3+	0.2+	1998 01 27	113	0.5-	0.4+
1993 01 25	372	1.8-	0.1+	1998 01 09	611	0.9+	0.1+	1998 01 27	113	1.1-	2.0-
1993 01 28	372	1.4+	0.7+	1998 01 10	113	0.4+	0.3-	1998 01 31	113	0.2-	0.1-
1993 01 30	372	0.5+	0.6+	1998 01 10	113	0.3+	0.3-	1998 01 31	113	0.2-	0.0
1993 01 30	372	0.5+	0.7+	1998 01 10	113	0.3-	0.0	1998 01 31	113	0.7-	0.2+
1993 02 02	372	0.4-	0.4-	1998 01 11	113	0.5+	0.8+	1998 01 31	134	0.1-	0.2+
1993 02 02	372	0.2-	0.4+	1998 01 11	113	1.4+	0.4-	1998 01 31	134	0.9+	0.1-
1995 07 24	033	0.2+	0.7-	1998 01 11	113	1.4-	2.6-	1998 02 04	113	0.1-	0.6+
1995 07 24	033	(2.1-	0.2+)	1998 01 17	113	1.7-	0.8-	1998 02 04	113	0.4-	0.5+
1995 07 25	033	0.9+	0.2+	1998 01 17	113	1.4-	1.0-				
1995 07 26	033	0.4-	0.7-	1998 01 17	113	1.2-	1.3-				

(8285)* 1991 UK₃ = 1993 FK₁

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

Id. S. Nakano (*MPC* 22056)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	350.65612		(2000.0)	P		Q	
<i>n</i>	0.18039569	ω	268.76374	-0.64628612		-0.74649146	
<i>a</i>	3.1020725	Ω	222.91422	+0.75931731		-0.60847517	
<i>e</i>	0.2558005	<i>i</i>	13.44505	+0.07583851		-0.26927397	
<i>P</i>	5.46	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 05 10	675	0.6+	0.2+	1993 03 25	399	1.2-	0.7+	1997 12 31	423	0.6-	0.9+
1988 05 10	675	0.5+	0.0	1993 04 16	399	0.5+	0.6-	1998 01 02	423	0.0	0.2+
1991 10 31	399	(3.1-	0.7-)	1993 04 16	399	1.7+	0.2-	1998 01 02	423	0.3+	0.5+
1991 10 31	399	0.6-	1.4+	1995 07 28	691	0.6-	0.2+	1998 01 02	399	1.8-	0.4+
1991 11 04	399	0.4-	0.3+	1995 07 28	691	0.5-	0.1+	1998 01 02	399	0.1-	0.2-
1991 11 04	399	0.8-	1.2-	1995 07 28	691	0.5-	0.1+	1998 01 17	423	0.6+	1.0-
1991 12 04	399	0.1-	0.1-	1996 09 18	327	0.6+	0.1-	1998 01 17	423	0.3+	0.3-
1991 12 04	399	0.1+	0.3-	1996 09 18	327	0.8+	0.1+	1998 01 25	423	0.5+	0.3-
1991 12 05	399	0.3+	0.1+	1996 09 18	327	0.1+	0.2-	1998 01 25	423	1.3+	0.2-
1991 12 05	399	0.9+	0.3-	1997 12 30	423	0.1-	0.4+	1998 01 25	423	0.4+	0.2-
1991 12 09	399	(1.0-	2.9+)	1997 12 30	423	0.6-	0.6+	1998 01 29	423	0.7+	0.6-
1991 12 09	399	(1.4-	2.8+)	1997 12 30	423	0.1-	0.7+	1998 01 29	423	0.2+	0.7-
1993 03 22	399	0.1+	0.4-	1997 12 30	423	0.5-	0.9+	1998 01 29	423	0.2+	0.7-
1993 03 25	399	1.8-	0.4+	1997 12 31	423	0.6-	0.6+				

(8286)* 1992 EK₁ = 1995 BF₃

Discovered 1992 Mar. 8 by K. Endate and K. Watanabe at Kitami.

Id. K. Watanabe (*MPC* 24742)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	215.55275		(2000.0)	P		Q	
<i>n</i>	0.30660793	ω	282.27447	-0.23066084		+0.97192144	
<i>a</i>	2.1781133	Ω	334.24580	-0.84595100		-0.22393035	
<i>e</i>	0.1017123	<i>i</i>	6.14627	-0.48079360		-0.07227658	
<i>P</i>	3.21	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 10 22	675	0.3-	0.6-	1995 01 14	411	0.1+	0.4+	1996 09 05	072	0.8+	0.2+
1990 10 22	675	0.1+	0.8-	1995 01 27	411	2.0-	1.8+	1996 09 05	072	0.3+	0.1+
1992 03 04	400	0.5-	1.4-	1995 01 27	411	0.9-	1.0+	1998 01 09	589	0.7+	0.1+
1992 03 04	400	(1.6+	3.3-)	1995 01 28	400	(2.4-	1.2+)	1998 01 09	589	0.0	0.7+
1992 03 08	400	0.5+	0.5-	1995 01 28	400	(2.4+	1.1-)	1998 01 09	589	0.1-	0.3+
1992 03 08	400	0.4-	1.2-	1995 01 30	400	0.1-	0.1-	1998 01 24	566	0.2+	0.2+
1992 03 22	400	(3.5-	2.5-)	1995 01 30	400	0.6+	1.0-	1998 01 24	566	0.3+	0.4+
1992 03 22	400	0.2-	1.1-	1995 02 02	691	1.1-	0.2+	1998 01 24	566	0.4+	0.2+

1992 03 31	400	(1.2+ 3.1-)	1995 02 02	691	1.0- 0.2+	1998 01 27	104	1.0+ 0.4-
1992 03 31	400	0.4+ 1.5-	1995 02 02	691	1.2- 1.2-	1998 01 27	104	0.6+ 0.4-
1993 10 14	675	1.0+ 0.1-	1996 08 17	566	0.1- 0.6-	1998 01 27	104	0.8+ 0.6-
1993 10 14	675	0.9+ 1.1-	1996 08 17	566	0.2- 0.5-	1998 02 01	327	0.1+ 0.1-
1995 01 12	411	0.0 0.3+	1996 08 17	566	0.1- 0.6-	1998 02 01	327	0.2+ 0.1-
1995 01 12	411	0.1- 0.8-	1996 09 03	072	0.1+ 0.8-	1998 02 01	327	0.1+ 0.0
1995 01 14	411	0.5- 0.7+	1996 09 03	072	0.2- 1.0-			

(8287)* 1992 EJ₄ = 1992 DJ₅ = 1990 TH₁₆

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* 24742), T. Kobayashi (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.31445244	ω	150.97582	-0.24715093	+0.96819020		
<i>a</i>	2.1417366	Ω	104.69259	-0.89662671	-0.21323497		
<i>e</i>	0.1125384	<i>i</i>	2.31310	-0.36739211	-0.13091444		
<i>P</i>	3.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 10 12	413	0.0 0.1+	1995 01 29	691	0.6- 0.6-	1998 01 23	704	0.0 0.6+
1992 02 26	399	0.6+ 0.9-	1995 01 29	691	0.7- 0.3-	1998 01 23	704	0.4+ 0.1-
1992 02 26	399	(2.3+ 0.0)	1995 02 05	691	0.8- 0.2-	1998 01 24	704	0.2- 0.2+
1992 02 27	675	1.1+ 1.4+	1995 02 05	691	0.7- 0.4-	1998 01 24	704	0.6+ 0.4+
1992 02 27	675	0.6- 0.3+	1995 02 05	691	0.7- 0.6-	1998 01 24	704	0.5- 0.0
1992 02 28	675	0.9+ 1.0-	1997 12 25	566	0.8+ 0.7+	1998 01 24	704	0.5- 0.4-
1992 02 28	675	0.6+ 0.2+	1997 12 25	566	0.1+ 0.8+	1998 01 25	704	0.3+ 0.1+
1992 03 01	809	0.2- 0.1-	1997 12 25	566	0.1+ 1.2+	1998 01 25	704	0.1- 0.3+
1992 03 04	809	0.2- 0.3+	1997 12 30	566	0.9+ 0.4+	1998 01 25	566	0.0 1.5-
1992 03 06	809	1.1- 0.7+	1997 12 30	566	0.8+ 0.5+	1998 01 25	566	0.1+ 0.2-
1992 04 04	809	0.1+ 0.5-	1997 12 30	566	1.2+ 0.0	1998 01 25	704	0.3- 0.9+
1993 09 21	675	0.7- 0.3+	1998 01 23	704	0.1- 0.3-	1998 01 25	566	0.8+ 0.7-
1993 09 21	675	1.1+ 1.5-	1998 01 23	691	1.1- 0.1-	1998 01 25	704	0.4+ 0.1+
1995 01 23	411	0.4+ 0.6-	1998 01 23	704	0.2- 0.1-	1998 01 25	704	0.1- 0.0
1995 01 23	411	1.0+ 0.7-	1998 01 23	691	0.9- 0.0			
1995 01 29	691	0.6- 0.3-	1998 01 23	691	1.0- 0.1-			

(8288)* 1992 ED₁₇ = 1970 PX = 1980 TQ₃ = 1993 RJ₁₁

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

Id. K. Ichikawa (*MPC* 28299)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30186399	ω	261.96806	+0.77328124	+0.63398956		
<i>a</i>	2.2008740	Ω	58.68629	-0.57719627	+0.71015415		
<i>e</i>	0.1650364	<i>i</i>	0.64801	-0.26245112	+0.30616714		
<i>P</i>	3.27	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1970 08 11	095	0.2+ 0.1-	1993 09 14	691	1.7- 0.8-	1998 01 08	704	0.6+ 0.4+
1980 10 07	675	0.8+ 0.0	1993 09 19	809	1.7+ 1.7+	1998 01 08	704	0.5+ 0.4+
1980 10 08	675	0.5- 0.2-	1993 09 19	809	0.8+ 1.2+	1998 01 08	704	0.2+ 0.6+
1980 10 09	675	0.1- 0.1+	1993 09 19	809	0.5+ 1.7+	1998 01 23	704	0.2- 0.2+
1980 10 10	675	0.1- 1.0-	1995 01 28	691	0.6+ 1.1-	1998 01 23	704	0.7+ 0.1+
1992 03 01	809	1.2- 0.5+	1995 01 28	691	0.6+ 0.8-	1998 01 23	704	0.3- 1.0-
1992 03 03	809	0.7- 0.6-	1995 01 28	691	0.3+ 0.3-	1998 01 23	704	0.6+ 1.0-
1992 03 06	809	0.8+ 0.0	1997 12 28	691	0.3- 0.0	1998 01 23	704	0.7+ 0.2+
1992 04 07	809	0.2- 0.5+	1997 12 28	691	1.1- 0.8-	1998 01 24	704	0.3- 0.4+
1993 09 14	809	1.9+ 0.5-	1997 12 28	691	0.4- 0.1+	1998 01 24	704	0.2+ 0.5-
1993 09 14	809	0.8+ 1.3-	1998 01 08	691	0.8- 0.2+	1998 01 24	704	0.4+ 0.3-
1993 09 14	809	0.2- 0.6-	1998 01 08	691	0.9- 0.1+	1998 01 24	704	0.3+ 0.8+
1993 09 14	691	1.8- 0.6-	1998 01 08	704	0.5+ 1.3+			
1993 09 14	691	1.8- 0.5-	1998 01 08	691	0.9- 0.2+			

(8289)* 1992 JQ₃ = 1979 HZ = 1986 RT₄ = 1989 MR

Discovered 1992 May 3 by H. Debehogne at the European Southern Observatory.

Id. K. Ichikawa (*MPC* 22057)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30370613	ω	345.48424	-0.28500959	+0.95751435		
<i>a</i>	2.1919653	Ω	267.94182	-0.87498143	-0.27863670		
<i>e</i>	0.1551246	<i>i</i>	2.52333	-0.39137838	-0.07434961		
<i>P</i>	3.25	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 04 28	688	0.4- 1.5-	1992 05 04	809	0.1+ 0.5+	1995 04 03	801	0.0 0.3-
1979 04 28	688	1.0- 2.3-	1992 05 04	809	0.6+ 0.6+	1995 04 03	801	0.1+ 0.3-
1986 09 06	071	(5.8- 1.3-)	1992 05 08	809	0.8- 0.1-	1997 12 24	426	0.0 0.7-
1986 09 06	071	(1.4- 4.3-)	1992 05 08	809	0.6- 0.2+	1997 12 24	426	0.3+ 0.1-
1986 09 08	095	(1.8- 4.2+)	1992 05 08	809	0.3- 0.2+	1997 12 26	426	0.0 0.5-
1989 06 29	808	0.1+ 0.6-	1992 05 09	809	1.2- 0.8+	1997 12 26	426	0.1+ 0.9-
1989 06 29	808	(37.0+ 2.7-)	1992 05 10	809	1.3- 0.4+	1997 12 26	426	0.1+ 0.7-
1989 07 01	808	0.2+ 1.1-	1992 05 10	809	1.7- 0.8+	1998 02 05	758	0.2- 0.3+
1992 05 03	809	1.3+ 0.7+	1992 05 11	809	0.9+ 0.6+	1998 02 05	758	0.6- 0.3+
1992 05 03	809	1.8+ 0.8+	1992 05 11	809	1.3+ 0.3+	1998 02 06	758	0.1- 1.1+
1992 05 03	809	(2.6+ 1.1+)	1992 05 11	809	1.5+ 0.2+	1998 02 06	758	(3.3- 3.6-)
1992 05 03	095	0.2+ 1.7-	1995 04 01	801	0.2+ 0.1-			
1992 05 04	809	0.3- 0.5+	1995 04 01	801	0.2- 0.1+			

(8290)* 1992 NP = 1950 NY = 1988 PB₄

Discovered 1992 July 2 by E. F. Helin and L. Lee at Palomar.

Id. G. V. Williams (*MPC* 22956)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23414379	ω	51.43040	+0.96874603	+0.16860882		
<i>a</i>	2.6070396	Ω	298.17408	-0.23703402	+0.84542124		
<i>e</i>	0.1981013	<i>i</i>	11.91113	+0.07311632	+0.50678792		
<i>P</i>	4.21	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 07 15	760	(0.1- 10.1-)	1992 07 28	675	0.8+ 0.7+	1995 04 12	608	0.3- 1.1-
1950 07 15	760	0.6- 0.7+	1992 09 25	801	1.0- 0.0	1996 04 19	689	0.2- 0.1-
1988 08 13	046	1.7+ 0.6+	1993 12 14	675	(2.5- 1.9-)	1997 11 18	689	1.4+ 0.7+
1988 08 13	046	0.4+ 0.1-	1993 12 14	675	1.7- 0.4+	1997 12 06	704	0.3+ 0.1+
1992 07 02	675	0.7- 1.5-	1993 12 16	675	1.5+ 0.4-	1997 12 06	704	0.8+ 0.1+
1992 07 02	675	(2.7- 0.7-)	1993 12 16	675	1.4- 1.8+	1997 12 06	704	(2.6- 1.5-)
1992 07 05	675	0.9- 0.7-	1994 01 16	675	0.1- 1.2-	1997 12 06	704	0.8- 0.2-
1992 07 05	675	1.1- 0.5+	1994 01 16	675	0.2- 0.5-	1997 12 06	704	1.3- 0.5-
1992 07 26	675	0.7- 0.6-	1995 03 30	608	0.9+ 0.3-	1998 02 01	758	0.2+ 0.3+
1992 07 26	675	0.6+ 0.3-	1995 03 30	608	0.8+ 0.1-			
1992 07 28	675	0.6+ 1.0+	1995 04 12	608	0.7+ 0.9+			

(8291)* 1992 RV₁ = 1976 YZ₅

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

Id. B. G. Marsden (*MPC* 21585)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23586963	ω	147.91751	-0.26035264	-0.96438208		
<i>a</i>	2.5943070	Ω	317.12285	+0.87069915	-0.21359460		
<i>e</i>	0.2275973	<i>i</i>	3.93802	+0.41725231	-0.15602738		
<i>P</i>	4.18	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1976 12 16	095	1.7- 1.1+	1992 09 22	809	0.2- 0.2+	1994 02 11	691	0.4- 0.6+
1976 12 18	095	1.2+ 0.1-	1992 09 22	809	0.7- 0.3-	1994 02 11	675	0.5+ 0.6-
1976 12 20	095	0.5+ 1.1+	1992 09 23	809	0.3+ 0.1-	1997 12 21	411	0.6- 0.1-

1992 09 02	809	0.9+	0.8+	1992 09 23	809	0.0	1.1-	1997 12 21	411	0.2-	0.1-
1992 09 02	809	0.5+	0.7+	1992 09 23	809	0.8-	0.7-	1998 01 18	758	0.5-	0.4-
1992 09 02	809	0.3-	0.1-	1994 02 11	675	1.1+	0.2+	1998 01 18	758	0.1-	0.4-
1992 09 03	809	0.7+	0.4-	1994 02 11	691	0.6-	0.2+	1998 01 21	758	0.8+	0.7-
1992 09 22	809	0.2+	0.0	1994 02 11	691	0.6-	0.3-	1998 01 21	758	0.3+	0.7-

(8292)* 1992 SU₁₄ = 1996 TP

Discovered 1992 Sept. 30 by H. E. Holt at Palomar.

Id. P. Sicoli (*MPC* 28073), G. V. Williams (*MPC* 28073)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	24.81986		(2000.0)	P	Q		
n	0.21908678	ω	80.41064	+0.26225226	-0.96466590		
a	2.7251595	Ω	354.19624	+0.75740333	+0.22205252		
e	0.1486790	i	14.52787	+0.59796651	+0.14181812		
P	4.50	H	12.2	G	0.15	U	1

Residuals in seconds of arc

1989 03 07	675	0.1+	0.6-	1992 11 28	675	0.5-	0.7-	1996 10 19	587	0.9-	0.4-
1989 03 07	675	0.5-	0.0	1996 10 01	372	1.4-	0.1+	1996 10 19	587	0.1-	0.9-
1992 09 30	675	1.1+	0.6-	1996 10 02	587	0.3+	0.2+	1997 12 26	566	0.5-	1.1+
1992 09 30	675	0.6+	0.7-	1996 10 02	587	0.3+	0.2+	1997 12 26	566	0.1-	0.9+
1992 10 01	675	1.1-	1.4-	1996 10 02	587	0.4+	0.1-	1997 12 26	566	0.2-	1.2+
1992 10 01	675	0.7+	1.5-	1996 10 04	372	0.8-	1.6+	1998 01 25	127	0.4+	0.1+
1992 10 21	896	1.7+	1.1+	1996 10 04	372	0.0	1.3+	1998 01 25	127	0.6+	0.1+
1992 10 21	896	(2.4+	2.4+)	1996 10 04	587	0.1-	1.2+	1998 01 26	127	0.7+	0.2-
1992 11 25	675	0.6-	0.2+	1996 10 04	587	0.1+	0.1-	1998 01 26	127	0.5+	0.1+
1992 11 25	675	0.4-	0.9+	1996 10 18	587	0.7-	0.4-				
1992 11 28	675	0.3+	0.4-	1996 10 18	587	0.0	0.5+				

(8293)* 1992 UQ = 1980 TB₁₃ = 1987 KN₅

Discovered 1992 Oct. 19 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 21271), K. Ichikawa (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	186.17084		(2000.0)	P	Q
n	0.24476466	ω	111.91350	+0.28263850	+0.95919578
a	2.5310666	Ω	174.48722	-0.90692977	+0.26982695
e	0.1515250	i	4.58327	-0.31240017	+0.08447999
P	4.03	H	12.7	G 0.15	U 1

Residuals in seconds of arc

1980 10 10	095	0.1-	1.9-	1992 11 16	399	0.2+	0.7+	1996 10 09	399	0.3-	0.7-
1980 10 17	095	0.5+	2.1-	1992 11 16	399	1.0+	1.7+	1996 10 09	399	1.0-	0.1+
1987 05 18	399	1.5+	0.9-	1992 11 18	399	1.4-	2.0+	1996 10 10	399	1.5-	1.1-
1987 05 18	399	0.1+	1.3+	1992 11 18	399	1.2-	0.2+	1996 10 10	399	0.7+	0.9-
1987 05 18	399	(0.7+	2.8+)	1995 04 27	399	1.8-	0.6-	1996 10 11	566	0.9+	0.3+
1988 10 07	675	0.2+	0.2+	1995 04 27	399	0.8-	0.3+	1996 10 11	566	0.6+	0.2+
1988 10 07	675	0.2-	0.2+	1995 05 03	046	1.1-	0.2+	1996 10 11	566	0.1+	0.2+
1988 11 04	327	2.3-	0.3-	1995 05 03	046	0.0	0.1-	1996 10 16	399	1.1-	0.0
1988 11 04	327	0.4+	1.3+	1995 05 04	801	0.4+	0.6-	1996 10 16	399	1.2-	0.8-
1991 05 18	675	0.2+	0.0	1995 05 04	801	0.3+	0.5-	1996 11 06	399	0.6-	0.1+
1991 05 18	675	0.0	0.6+	1995 05 05	399	1.9-	0.9+	1996 11 06	399	0.7-	0.3+
1992 10 19	399	0.7-	0.8-	1995 05 05	399	0.6+	0.7-	1996 11 17	816	0.9+	0.1+
1992 10 19	399	0.7+	1.1+	1995 05 26	399	0.6+	0.2-	1996 11 17	816	0.9+	0.2+
1992 10 22	399	1.3+	1.1-	1995 05 26	399	0.4+	0.7+	1996 11 17	816	0.9+	0.2+
1992 10 22	399	0.2+	2.3+	1995 05 28	399	0.9+	0.4-	1996 11 17	816	1.0+	0.1+
1992 10 27	894	1.6-	1.3-	1995 05 28	399	0.2+	0.7-	1997 12 30	566	0.2-	0.6+
1992 10 27	894	2.2+	0.7+	1996 09 21	816	0.9+	0.5+	1997 12 30	566	0.1-	0.6+
1992 10 30	894	0.9+	1.7-	1996 09 21	816	0.8+	0.8+	1997 12 30	566	0.4-	0.7+
1992 10 30	894	0.1-	0.4-	1996 09 21	816	0.8+	0.6+	1998 01 26	566	0.5+	0.9-
1992 10 31	894	1.2-	1.5-	1996 09 21	816	0.8+	0.7+	1998 01 26	566	0.1-	0.3-
1992 10 31	894	0.2+	0.5-	1996 09 30	689	1.9-	0.2-	1998 01 26	566	0.8+	0.7-

(8294)* 1992 UM₃ = 1986 RG₁₂ = 1994 AW₂

Discovered 1992 Oct. 26 by K. Endate and K. Watanabe at Kitami.

Id. K. Watanabe (*MPC* 22957), S. Nakano (*ibid.*), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	289.00922		(2000.0)	P	Q
n	0.18796284	ω	232.56288	-0.36860090	-0.91958229
a	3.0182466	Ω	239.59569	+0.89491784	-0.31144510
e	0.0645928	i	9.07402	+0.25150633	-0.23952113
P	5.24	H	12.0	G 0.15	U 1

Residuals in seconds of arc

1986 09 09	095	(1.1+	4.8+)	1992 11 16	400	1.2-	0.2-	1995 05 18	400	0.8+	0.1+
1992 09 23	033	0.7+	0.1-	1992 11 27	675	0.1-	0.8+	1995 05 18	400	0.2+	0.6+
1992 09 25	033	0.4+	0.6-	1992 11 27	675	0.7+	0.4-	1995 05 31	801	0.3-	0.3-
1992 09 25	033	0.4+	0.6-	1994 01 10	400	1.2-	0.8-	1995 05 31	801	0.3-	0.1+
1992 09 27	033	0.0	0.2-	1994 01 10	400	0.4-	0.1-	1995 06 03	400	0.6+	0.4-
1992 09 28	033	0.1-	0.1-	1994 01 13	400	1.2-	1.3-	1995 06 03	400	0.0	0.6-
1992 09 29	033	0.1-	0.1+	1994 01 13	400	1.3+	0.3-	1997 10 10	886	0.2-	0.2-
1992 10 21	675	0.3-	0.3-	1994 02 11	675	0.6+	0.8+	1997 10 10	886	0.2-	0.0
1992 10 26	400	1.6+	0.7+	1994 02 11	675	0.8+	1.4+	1997 10 11	886	0.5+	0.1-
1992 10 26	400	0.1+	0.5+	1995 03 29	801	0.1+	0.2-	1997 10 11	886	0.1-	0.4+
1992 10 28	400	1.0-	0.4+	1995 03 29	801	0.3-	0.2-	1998 01 29	566	0.2-	1.1-
1992 10 28	400	0.7-	0.3+	1995 04 03	801	0.6-	1.4-	1998 01 29	566	0.4+	1.1-
1992 10 31	033	0.6+	0.2-	1995 04 03	801	0.3-	0.6-	1998 01 29	566	0.6+	0.8-
1992 10 31	033	0.2+	0.0	1995 05 08	400	0.1-	1.2+				
1992 11 16	400	1.3-	0.3+	1995 05 08	400	0.0	0.3-				

(8295)* 1992 UN₄ = 1978 TV₆

Discovered 1992 Oct. 26 by K. Endate and K. Watanabe at Kitami.

Id. G. V. Williams (*MPC* 21590)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	35.13989		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21215431	ω	324.02273	+0.73303748	-0.65711651
a	2.7842067	Ω	78.04296	+0.65846821	+0.62082106
e	0.1567093	i	10.34346	+0.17051588	+0.42752673
P	4.65	H	12.5	G 0.15	U 2

Residuals in seconds of arc

1978 10 02	095	0.5-	1.0+	1992 11 21	675	1.4+	2.0-	1998 01 10	631	0.1+	0.5+
1978 10 08	095	0.6+	1.0-	1992 11 24	675	0.3+	1.6-	1998 01 11	631	0.1+	0.0
1992 10 26	400	0.2+	1.3+	1992 11 24	675	0.8+	0.2-	1998 01 11	631	0.2-	0.2-
1992 10 26	400	0.4+	0.6+	1995 05 29	691	0.1+	0.2+	1998 01 15	610	0.2+	0.5-
1992 10 28	400	0.1-	1.1+	1995 05 29	691	0.4-	0.1+	1998 01 15	610	0.6-	0.3-
1992 10 28	400	0.3-	0.2+	1995 05 29	691	0.4+	0.0	1998 01 15	610	1.0-	0.2-
1992 11 16	400	1.4-	0.3+	1997 12 27	952	0.5+	0.5+	1998 01 20	610	0.7+	0.1-
1992 11 16	400	0.4-	0.0	1997 12 28	952	0.1+	0.4+	1998 01 20	610	0.2+	0.0
1992 11 21	675	(1.8+	2.5-)	1998 01 10	631	0.2+	0.3+	1998 01 20	610	0.4-	0.3+

(8296)* 1993 AD = 1986 OT = 1991 RW₃₄

Discovered 1993 Jan. 13 by K. Endate and K. Watanabe at Kitami.

Id. S. Nakano (*MPC* 21802)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	13.18255		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.20052550	ω	119.55735	-0.06383950	-0.99578189		
a	2.8908328	Ω	333.85540	+0.85604853	-0.02070045		
e	0.2635135	i	8.60131	+0.51293804	-0.08938630		
P	4.92	H	12.7	G	0.15	U	2

Residuals in seconds of arc

1986 07 27	413	0.9+	0.4-	1996 08 15	824	0.1-	0.3-	1996 08 19	824	0.2+	0.2-
1986 07 27	413	(3.3+	1.2+)	1996 08 15	824	0.0	0.1-	1996 08 19	824	0.4+	0.2-
1986 08 01	413	0.6-	1.1-	1996 08 15	824	0.1+	0.0	1996 09 10	566	0.2-	0.6+
1986 08 01	413	1.9+	0.1+	1996 08 15	816	0.3-	0.3+	1996 09 10	566	0.2-	0.4+
1991 09 12	675	1.0-	0.7-	1996 08 15	816	0.0	0.3+	1996 09 10	566	0.2-	0.4+
1991 09 12	675	0.4+	1.6-	1996 08 15	816	0.1-	0.1+	1997 12 05	689	0.4-	0.1+
1993 01 13	400	(2.8-	0.2-)	1996 08 15	816	0.3-	0.3+	1998 01 28	566	0.0	0.2-
1993 01 13	400	0.9+	0.4-	1996 08 18	816	0.2-	0.2+	1998 01 28	566	0.1+	0.3-

1993 01 14	400	1.8−	0.1+	1996 08 18	816	0.2−	0.4+	1998 01 28	566	0.0	0.1−
1993 01 14	400	0.2−	0.3−	1996 08 18	816	0.0	0.5+	1998 01 29	566	0.3−	0.9−
1993 02 13	400	1.1+	1.6+	1996 08 18	816	0.3−	0.4+	1998 01 29	566	0.4−	0.9−
1993 02 13	400	0.7+	1.7+	1996 08 19	824	0.1+	0.0	1998 01 29	566	0.5−	0.9−
1996 08 15	824	0.1+	0.3−	1996 08 19	824	0.2+	0.2−				

(8297)* 1993 QJ₄ = 1982 HP₁ = 1995 CS₁₀ = 3334 T-2

Discovered 1993 Aug. 18 by E. W. Elst at Caussols.

Id. K. Ichikawa (*MPC* 27916)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	320.84203		(2000.0)	P		Q	
<i>n</i>	0.29448539	ω	325.91284	−0.65716428		−0.75357694	
<i>a</i>	2.2374854	Ω	165.14975	+0.70474355		−0.62184290	
<i>e</i>	0.0620078	<i>i</i>	3.58550	+0.26734181		−0.21315065	
<i>P</i>	3.35	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.5+	0.6+	1993 08 19	010	1.4−	0.1+	1997 12 28	104	0.1+	0.4+
1973 09 19	675	0.9+	0.2+	1993 08 19	010	0.5−	0.2−	1997 12 28	104	0.9+	0.0
1973 09 20	675	(2.3+	1.8−)	1993 09 19	010	1.1+	1.3+	1997 12 28	104	0.3−	0.0
1973 09 24	675	1.4−	0.6+	1993 09 19	010	2.0+	1.1+	1998 01 20	426	0.6−	0.7−
1973 09 24	675	(2.4−	0.2−)	1993 09 20	010	0.8−	1.7−	1998 01 20	426	0.1−	0.3−
1973 09 25	675	0.7+	1.5−	1993 09 20	010	0.4−	0.2+	1998 01 20	426	0.4+	0.0
1973 09 25	675	0.0	1.8−	1993 09 20	010	0.6−	1.8+	1998 01 21	426	0.4+	0.3−
1982 04 28	688	(8.5+	2.8−)	1995 02 03	399	0.4+	0.9+	1998 01 21	426	0.7−	0.0
1982 04 28	688	(4.5+	7.2−)	1995 02 03	399	1.2+	0.4+	1998 01 21	426	0.2−	0.5+
1993 08 18	010	0.4−	0.9+	1995 02 06	399	0.8−	1.0+				
1993 08 19	010	0.3−	0.2+	1995 02 06	399	0.2−	0.4−				

(8298)* 1993 SQ₁₀ = 1982 EH = 1995 EG₁

Discovered 1993 Sept. 22 by H. Debehogne and E. W. Elst at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 25068)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	321.23314		(2000.0)	P		Q	
<i>n</i>	0.30446571	ω	160.54986	−0.95504613		−0.29644603	
<i>a</i>	2.1883181	Ω	2.21074	+0.26238266		−0.84928668	
<i>e</i>	0.1138930	<i>i</i>	3.82905	+0.13799356		−0.43684309	
<i>P</i>	3.24	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 03 15	046	0.1−	0.1+	1993 09 24	809	1.3+	1.2−	1998 01 05	411	0.1−	0.1+
1982 03 15	046	1.0+	0.4−	1993 09 24	809	1.5+	1.2−	1998 01 05	411	1.0−	0.8+
1990 10 22	675	0.1+	1.2−	1995 03 07	411	0.8+	0.5+	1998 01 24	566	0.4+	0.5−
1990 10 22	675	1.1−	0.3+	1995 03 07	411	0.1−	0.8−	1998 01 24	566	0.5+	0.4−
1990 11 13	675	0.7−	0.2−	1995 03 11	411	0.6−	0.3−	1998 01 24	566	0.6+	0.4−
1990 11 13	675	1.6−	0.8−	1995 03 11	411	0.3+	0.3+	1998 01 28	566	0.2+	0.1+
1993 09 18	809	1.0+	0.7+	1995 03 13	411	0.3−	0.1−	1998 01 28	566	0.3+	0.0
1993 09 18	809	0.4−	0.7+	1995 03 13	411	0.8+	0.3−	1998 01 28	566	0.2+	0.1+
1993 09 18	809	1.0−	0.1+	1995 04 04	905	0.4−	0.9−	1998 01 29	566	0.3+	0.1−
1993 09 22	809	2.1+	0.2+	1995 04 04	905	1.2−	0.4+	1998 01 29	566	0.1+	0.1−
1993 09 22	809	1.4+	0.3−	1995 04 04	905	1.5−	0.2−	1998 01 29	566	0.1+	0.0
1993 09 22	809	1.0−	1.6−	1995 04 07	905	1.6−	1.3−				
1993 09 24	809	(3.6+	0.4−)	1995 04 07	905	0.0	0.3−				

(8299)* 1993 TP₂₄ = 1983 RR₃Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.
Id. K. Ichikawa (*MPC* 24232)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	228.84137		(2000.0)	P		Q	
<i>n</i>	0.30505554	ω	81.12005	−0.37128682		+0.92835443	
<i>a</i>	2.1854965	Ω	167.04353	−0.87954545		−0.34562272	
<i>e</i>	0.1136823	<i>i</i>	4.46117	−0.29756662		−0.13675888	
<i>P</i>	3.23	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1983 09 02	809	0.8+	1.3−	1993 10 09	809	0.6+	0.0	1996 09 08	566	0.9+	0.5−
1983 09 02	809	1.1+	1.3−	1993 10 09	809	0.9+	0.2+	1996 09 08	566	0.6+	0.5−
1983 09 02	809	1.4+	1.2−	1993 10 11	809	0.6−	0.3−	1996 09 11	691	0.8−	0.1+
1983 09 03	809	0.4−	1.1−	1993 10 11	809	0.2−	0.4+	1996 09 11	691	0.7−	0.1+
1983 09 03	809	0.3−	1.1−	1993 10 11	809	1.4−	0.2−	1996 09 11	691	0.7−	0.2+
1983 09 03	809	0.1+	1.0−	1993 10 20	809	(0.9+	2.7+)	1996 09 14	566	0.2+	0.3−
1983 09 04	809	0.7−	0.2+	1993 10 20	809	1.1+	2.1+	1996 09 14	566	0.1+	0.3−
1983 09 04	809	0.5−	0.0	1993 10 20	809	0.4+	2.2+	1996 09 14	566	0.2+	0.0
1983 09 04	809	0.2−	0.1+	1995 01 31	411	0.4−	1.4−	1997 12 30	566	0.3−	0.7−
1992 04 26	691	0.0	0.2−	1995 01 31	411	0.2−	1.5−	1997 12 30	566	0.6−	0.7−
1992 04 26	691	0.2−	0.5−	1995 02 01	411	0.2+	1.6−	1997 12 30	566	0.7−	0.5−
1992 04 26	691	0.0	0.4−	1995 02 01	411	0.2+	0.5−	1998 01 26	012	0.6−	0.0
1993 10 09	809	0.1−	0.8−	1996 09 08	566	0.2+	0.7−	1998 01 26	012	(3.3+	1.2−)

(8300)* 1994 AO₂ = 1992 OG₆

Discovered 1994 Jan. 9 by T. Kobayashi and H. Fujii at Oizumi.

Id. K. Ichikawa (*MPC* 23128)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	17.66041		(2000.0)	P		Q	
<i>n</i>	0.23283183	ω	112.35330	+0.48517529		−0.86059298	
<i>a</i>	2.6168238	Ω	307.69113	+0.71288598		+0.49185778	
<i>e</i>	0.1679222	<i>i</i>	11.28627	+0.50635808		+0.13211982	
<i>P</i>	4.23	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 09 11	675	1.3+	1.4−	1994 01 14	411	0.4−	0.2+	1996 07 15	566	0.3−	0.7−
1988 09 11	675	1.0+	1.3−	1994 01 14	411	0.7−	0.8−	1996 07 15	566	0.9+	0.3−
1992 07 30	809	0.7+	0.1−	1994 01 15	411	0.3−	0.1+	1996 07 15	566	0.5+	0.4−
1992 07 30	809	0.5+	1.0+	1994 01 15	411	0.4−	0.0	1997 12 06	704	0.3+	0.2−
1992 07 30	809	1.2−	0.8+	1994 01 15	411	1.0−	0.1−	1997 12 06	704	1.3+	1.7+
1992 07 31	809	0.5−	0.4+	1994 01 19	411	0.4−	0.5−	1997 12 06	704	1.1+	0.7+
1992 07 31	809	0.6−	0.3+	1994 01 19	411	0.3−	0.8−	1997 12 06	704	0.3+	0.7+
1992 07 31	809	1.0−	0.5−	1994 01 19	411	0.3−	0.4−	1998 01 16	411	0.6−	0.0
1994 01 09	411	1.2+	0.2+	1994 02 13	411	0.7+	0.2−	1998 01 16	411	0.3−	1.0−
1994 01 09	411	0.5+	0.4+	1994 02 13	411	0.4−	0.7−	1998 01 24	411	0.9−	0.2−
1994 01 14	411	0.1+	0.6+	1994 02 13	411	0.5+	0.5−	1998 01 24	411	1.0−	0.0

(8301)* 1995 BG₂ = 1990 WY₄

Discovered 1995 Jan. 30 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24904)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	298.46489		(2000.0)	P		Q	
<i>n</i>	0.27785150	ω	7.82453	−0.71147039		−0.70083718	
<i>a</i>	2.3259170	Ω	127.54863	+0.64117106		−0.67733072	
<i>e</i>	0.0986241	<i>i</i>	3.71372	+0.28759270		−0.22371933	
<i>P</i>	3.55	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 11 14	675	0.3+	1.7+	1995 01 29	372	(4.3+	0.8−)	1997 10 30	566	0.2+	0.1+
1990 11 14	675	0.3+	0.6+	1995 01 30	411	0.5+	0.2−	1997 10 30	566	0.1−	0.1+
1990 11 16	809	0.3−	0.1+	1995 01 30	411	0.1−	0.6+	1997 11 02	367	0.1+	0.2+
1990 11 17	809	1.4+	0.6+	1995 01 31	411	1.0+	0.7−	1997 11 02	367	0.0	0.1+
1990 11 22	809	0.7−	0.2−	1995 01 31	411	0.8+	0.2+	1997 11 24	367	0.4−	0.2−
1990 11 22	809	0.6−	0.3−	1995 01 31	372	0.1−	1.1+	1997 11 24	367	0.3−	0.4+
1990 11 22	809	0.6−	0.4−	1995 01 31	372	(0.3−	6.7−)	1997 11 29	704	0.9−	0.3−
1992 05 03	809	(3.4+	2.2+)	1995 02 06	411	0.8+	0.1−	1997 11 29	704	0.5−	0.4−

1992 05 03	809	(4.2+ 2.8+)	1995 02 06	411	0.9+ 0.4-	1997 11 29	704	0.6+ 0.5-
1992 05 03	809	(4.1+ 2.7+)	1995 02 07	411	0.1- 0.0	1997 11 29	704	0.1+ 0.3-
1993 09 21	675	0.2+ 0.0	1995 02 07	411	0.4+ 0.7+	1997 11 29	704	1.2+ 0.9-
1993 09 21	675	0.5- 0.7+	1995 02 07	372	0.5+ 0.9+	1998 01 16	411	0.7+ 0.1+
1995 01 29	691	0.8- 0.0	1995 02 07	372	1.5- 0.2+	1998 01 16	411	0.5+ 0.1-
1995 01 29	691	0.5- 0.0	1995 02 10	411	0.2- 0.7-	1998 01 16	411	0.1+ 0.4-
1995 01 29	691	0.8- 0.1+	1995 02 10	411	0.5- 0.8-	1998 01 25	411	0.7- 0.2-
1995 01 29	372	(2.4+ 2.0+)	1997 10 30	566	0.0 0.1+	1998 01 25	411	0.3+ 0.7-

(8302)* 1995 CY = 1976 YZ₁

Discovered 1995 Feb. 3 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24907)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

M	60.80626		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.28169329	ω	285.37515	+0.98522246	-0.14399225		
a	2.3047211	Ω	82.97046	+0.16948435	+0.89777989		
e	0.1614180	i	5.36237	-0.02473379	+0.41624212		
P	3.50	H	13.8	G	0.15	U	2

Residuals in seconds of arc

1976 12 16	095	0.7- 1.7-	1995 02 03	411	2.1- 0.1+	1997 12 28	104	0.1+ 0.7+
1976 12 18	095	0.4- 1.0-	1995 02 07	411	0.6+ 0.1-	1997 12 28	104	0.4- 0.7+
1976 12 20	095	1.5+ 1.0-	1995 02 07	411	0.2+ 0.1+	1998 01 16	411	0.6+ 0.6+
1993 08 14	675	0.1+ 0.2+	1995 03 01	411	0.1+ 1.4-	1998 01 16	411	0.6- 0.2-
1993 08 14	675	0.3+ 0.9-	1995 03 01	411	0.9+ 1.4-	1998 01 24	411	0.5- 0.4+
1995 02 01	411	0.1+ 0.3-	1995 03 05	411	1.4+ 0.0	1998 01 24	411	0.2+ 0.6+
1995 02 01	411	0.9- 1.1+	1995 03 05	411	0.2- 0.0			
1995 02 03	411	0.5- 0.7+	1997 12 28	104	0.1- 1.0+			

(8303)* 1995 CO₁ = 1980 TM₄ = 1985 DM₄ = 1990 VC₃

Discovered 1995 Feb. 9 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 24908)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	340.32585		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29915407	ω	64.81657	-0.47329995	-0.87977213
a	2.2141452	Ω	53.50501	+0.78693250	-0.44501718
e	0.0707222	i	3.17954	+0.39588432	-0.16721457
P	3.29	H	13.5	G 0.15	U 1

Residuals in seconds of arc

1980 10 08	675	1.5- 0.3+	1995 02 09	411	0.4+ 0.2-	1997 12 27	411	0.4- 0.1-
1980 10 09	675	1.4+ 0.3+	1995 02 10	411	0.1- 0.6+	1997 12 27	411	0.2- 0.2-
1980 10 10	675	0.7- 0.5+	1995 02 10	411	0.6- 0.6+	1998 01 16	411	0.9+ 0.2+
1985 02 20	675	0.6- 0.6-	1995 02 20	411	0.7+ 0.3-	1998 01 16	411	0.5+ 0.1-
1985 02 23	675	0.6+ 0.6-	1995 02 20	411	0.2- 0.1+	1998 01 18	758	0.4+ 0.1+
1990 11 11	372	(2.2+ 2.8-)	1995 02 21	411	0.6+ 0.0	1998 01 18	758	0.3- 0.7+
1993 09 21	675	0.5- 0.8-	1995 02 21	411	0.5- 0.0	1998 01 21	758	0.3- 0.0
1993 09 21	675	1.0+ 0.3+	1997 12 03	411	0.4- 0.2-	1998 01 21	758	0.3- 0.4-
1995 02 09	411	0.0 0.7+	1997 12 03	411	0.2+ 0.4-			

(8304)* 1995 DJ₁ = 1991 EE₅

Discovered 1995 Feb. 22 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 25072)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

M	187.01839		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.25583408	ω	302.70164	-0.27345872	+0.96154360
a	2.4575203	Ω	311.40631	-0.87070324	-0.25874974
e	0.1430537	i	1.95430	-0.40877402	-0.09210038
P	3.85	H	13.7	G 0.15	U 2

Residuals in seconds of arc

1991 03 14	809	1.9- 0.2-	1995 02 26	411	0.3- 1.1+	1997 11 29	704	0.5- 0.6+
1991 03 14	809	1.0- 0.0	1995 03 05	399	1.2- 2.0-	1997 11 29	704	0.9+ 0.3+
1991 03 14	809	0.4- 0.1-	1995 03 05	399	1.0+ 0.9+	1997 11 29	704	(2.7- 2.4-)

1991 03 16	809	1.5+ 0.9-	1995 03 06	399	1.8- 1.4-	1997 11 29	704	1.8- 0.3-
1991 03 16	809	1.5+ 0.8-	1995 03 06	399	(2.5- 1.6-)	1997 12 04	704	1.0+ 0.8-
1991 03 16	809	1.5+ 0.5-	1995 03 07	411	0.1- 0.5+	1997 12 04	704	1.1+ 0.3+
1993 12 09	675	1.3- 0.3+	1995 03 07	411	0.9+ 0.0	1997 12 04	704	0.1- 2.2-
1993 12 09	675	1.7- 1.6+	1995 03 11	411	0.1- 0.1-	1997 12 04	704	0.8+ 0.2-
1995 02 21	411	0.2+ 0.7+	1995 03 11	411	0.8- 0.2+	1997 12 04	704	0.6+ 0.3-
1995 02 21	411	0.6+ 0.4+	1996 08 14	566	0.1+ 0.8-	1998 01 16	411	0.4- 0.0
1995 02 22	411	0.7+ 0.3-	1996 08 14	566	0.0 0.8-	1998 01 16	411	0.5+ 0.1+
1995 02 22	411	1.0- 0.3-	1996 08 14	566	0.2+ 0.8-			
1995 02 26	411	0.4+ 1.0+	1996 09 15	801	1.0+ 0.7+			

(8305)* 1995 DQ₁ = 1991 BS₂ = 1992 LH₁

Discovered 1995 Feb. 22 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 25072)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

M	37.55463		(2000.0)	P	Q
n	0.26272902	ω	278.48624	+0.85974179	-0.50246842
a	2.4143340	Ω	111.72137	+0.49872802	+0.78735814
e	0.1057413	i	5.65152	+0.11006552	+0.35720112
P	3.75	H	14.2	G 0.15	U 2

Residuals in seconds of arc

1991 01 17	033	0.4+ 1.2-	1995 02 22	411	0.2+ 0.5+	1997 11 29	704	0.4- 1.5-
1991 01 17	033	0.8- 1.4-	1995 02 26	411	0.2- 0.2+	1997 11 29	704	0.5- 1.9+
1991 01 18	033	0.6- 0.9-	1995 02 26	411	0.2- 1.1+	1997 11 29	704	0.3- 0.3-
1992 06 01	809	1.9- 0.7+	1995 03 05	411	0.0 0.5+	1998 01 16	411	0.6+ 0.5-
1992 06 01	809	1.4- 0.3+	1995 03 05	411	0.7+ 1.2+	1998 01 16	411	0.6+ 0.2-
1992 06 01	809	1.2- 0.1-	1995 03 27	675	0.5+ 0.2+	1998 01 16	411	0.6+ 0.5-
1992 06 03	809	1.4+ 1.3-	1995 03 30	327	0.6+ 0.5-	1998 01 24	411	1.3+ 0.2-
1992 06 03	809	1.1+ 2.1-	1995 03 30	327	0.7- 0.5+	1998 01 24	411	1.1+ 0.7-
1992 06 03	809	1.0+ 1.9-	1997 11 29	704	0.2- 0.1-			
1995 02 22	411	0.4+ 0.5+	1997 11 29	704	1.2- 0.3-			

(8306)* 1995 DY₁ = 1986 QA₆

Discovered 1995 Feb. 24 by A. Nakamura at Kuma.

Id. S. Nakano (*MPC* 27559)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	114.12193		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29360861	ω	142.99552	+0.98898993	+0.14241982
a	2.2419376	Ω	208.89399	-0.14768030	+0.93250617
e	0.2204491	i	4.77158	-0.00945796	+0.33188679
P	3.36	H	15.0	G 0.15	U 2

Residuals in seconds of arc

1986 08 26	413	0.1- 1.3-	1995 04 07	360	0.2+ 1.3+	1996 09 10	360	0.4- 0.1-
1986 08 26	413	0.5+ 0.0	1995 04 07	360	0.3+ 0.0	1996 09 10	360	0.3- 0.2-
1995 02 24	360	0.9- 0.7-	1995 04 07	360	0.6+ 0.3+	1996 10 09	360	0.0 0.8-
1995 02 24	360	0.7- 0.8-	1996 07 10	360	0.1+ 0.4+	1996 10 09	360	0.0 1.0-
1995 02 24	360	0.1+ 0.5-	1996 07 10	360	0.2+ 0.6+	1997 12 24	360	0.3+ 0.3+
1995 02 27	360	0.0 0.6-	1996 07 10	360	0.2+ 0.6+	1997 12 24	360	0.0 0.1+
1995 02 27	360	0.1- 0.7-	1996 07 11	360	0.0 0.6+	1997 12 27	360	0.2+ 0.7+
1995 02 27	360	0.0 0.7-	1996 07 11	360	0.1+ 0.8+	1997 12 27	360	0.1+ 0.5+
1995 03 06	360	0.0 0.5-	1996 07 15	360	0.3+ 0.9+	1998 01 29	360	0.4+ 0.5+
1995 03 06	360	0.2+ 0.5-	1996 07 15	360	0.3+ 0.9+	1998 01 29	360	0.1+ 0.3+
1995 03 06	360	0.2+ 0.2-	1996 08 05	360	0.2- 0.6-	1998 01 31	360	0.1+ 0.7+
1995 04 03	360	0.5- 0.4-	1996 08 05	360	0.3- 0.5-	1998 01 31	360	0.1+ 0.7+
1995 04 03	360	0.5- 0.1-	1996 08 10	360	0.3- 0.3-			
1995 04 03	360	0.8- 0.3-	1996 08 10	360	0.4- 0.3-			

(8307)* 1995 EN

Discovered 1995 Mar. 5 by J. Tichá at Kleť.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	226.44516		(2000.0)		P		Q				
<i>n</i>	0.30955744	ω	254.71517		-0.05978430		+0.99803562				
<i>a</i>	2.1642556	Ω	11.90456		-0.87747315		-0.04359947				
<i>e</i>	0.1079286	<i>i</i>	5.20899		-0.47588519		-0.04498878				
<i>P</i>	3.18	<i>H</i>	15.4		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1992 04 09	691	0.5-	0.3-	1995 05 02	046	0.3-	0.7-	1996 09 20	824	0.3-	0.1+
1992 04 09	691	0.3-	0.0	1995 05 02	046	0.5-	0.4-	1996 09 20	824	0.3-	0.2+
1992 04 09	691	0.6-	0.0	1995 05 03	046	0.5-	0.0	1996 09 20	824	0.2-	0.2+
1995 03 05	046	0.2-	0.6+	1995 05 03	046	0.3-	0.9+	1996 09 21	816	0.0	0.2+
1995 03 05	046	0.9-	0.4+	1995 05 03	046	0.3+	0.6+	1996 09 21	824	0.0	0.2+
1995 03 05	046	0.2-	0.4+	1995 05 28	046	1.3+	0.3-	1996 09 21	816	0.3+	0.2+
1995 03 05	046	0.4+	1.0-	1995 05 28	046	(2.5+ 0.2-)		1996 09 21	824	0.2-	0.3+
1995 03 06	046	0.7+	0.4-	1996 07 23	046	0.4-	0.5-	1996 09 21	824	0.2+	0.4-
1995 03 06	046	0.1-	0.3-	1996 07 23	046	0.2-	0.6-	1996 09 21	816	0.2+	0.5+
1995 03 06	046	0.1-	0.2-	1996 07 23	046	0.6-	0.2+	1996 09 21	816	0.0	0.2+
1995 03 07	046	0.1+	0.2+	1996 07 23	046	0.0	0.5-	1996 09 30	046	0.3+	0.4-
1995 03 07	046	0.1+	0.4+	1996 08 06	046	0.5-	0.4-	1996 09 30	046	0.3+	0.5-
1995 03 07	046	0.3+	0.6+	1996 08 07	046	0.3-	0.4-	1996 09 30	046	0.2+	0.3-
1995 03 08	046	1.9+	0.4+	1996 08 07	046	0.3-	0.2-	1998 01 11	046	0.2-	0.6-
1995 03 08	046	0.5+	0.4-	1996 08 09	046	0.2+	0.0	1998 01 11	046	0.4-	0.5-
1995 03 08	046	0.5+	0.8+	1996 08 09	046	0.1+	0.6+	1998 01 11	046	0.3-	0.1-
1995 03 08	046	0.1-	0.1+	1996 08 09	046	0.2+	0.1-	1998 01 11	046	0.8-	0.2-
1995 03 10	046	0.6+	0.8+	1996 08 09	046	0.3-	0.4+	1998 01 11	046	0.1-	0.5-
1995 03 10	046	0.3-	0.6+	1996 09 15	566	0.0	0.0	1998 01 11	046	0.2-	0.4-
1995 03 10	046	0.1-	0.5+	1996 09 15	566	0.0	0.0	1998 01 28	566	0.3-	0.0
1995 03 12	046	1.1+	0.3+	1996 09 15	566	0.2-	0.2+	1998 01 28	566	0.0	0.3-
1995 03 12	046	0.9+	1.0+	1996 09 19	824	0.3+	0.4+	1998 01 28	566	0.4-	0.2-
1995 03 12	046	(2.4+ 0.8+)		1996 09 19	824	0.1-	0.5+	1998 01 31	046	0.2-	0.2+
1995 04 03	046	1.1+	0.3-	1996 09 19	824	0.3+	0.5+	1998 01 31	046	0.2-	0.0
1995 04 03	046	0.6+	0.0	1996 09 20	046	0.2+	0.2+	1998 02 01	046	0.1-	0.1+
1995 04 03	046	0.9-	0.7-	1996 09 20	046	0.3-	0.3+	1998 02 01	046	0.2+	0.0
1995 04 03	046	1.7-	0.2-	1996 09 20	046	0.3+	0.1-	1998 02 01	046	0.2+	0.3+
1995 05 02	046	0.1-	1.4-	1996 09 20	824	0.4-	0.3+	1998 02 01	046	0.1+	0.4+

(8308)* 1996 HD₁₃ = 1990 XC₂ = 1992 EJ₃₂

Discovered 1996 Apr. 17 by E. W. Elst at the European Southern

Observatory.

Id. G. V. Williams (*MPC* 29630)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	95.45374		(2000.0)		P		Q				
n	0.28176094	ω	127.36039		+0.66513726		+0.74671282				
a	2.3043522	Ω	184.33746		-0.69897493		+0.62094241				
e	0.1660462	i	2.66719		-0.26272891		+0.23843339				
P	3.50	H	14.7		G	0.15	U	2			
Residuals in seconds of arc											
1989 05 07	675	1.4-	2.2-	1996 04 18	809	0.4+	0.1+	1997 11 29	691	0.4+	0.4-
1989 05 07	675	0.7-	1.1-	1996 05 13	566	0.1-	0.5-	1997 11 29	691	0.4+	0.7-
1990 12 10	372	(3.2-	0.3-)	1996 05 13	566	0.3+	0.0	1997 12 04	704	0.5-	0.4-
1990 12 10	372	1.3+	0.8+	1996 05 13	566	0.5-	0.3-	1997 12 04	704	1.4+	0.8-
1992 03 02	809	0.0	0.3+	1996 05 23	691	0.8+	1.1-	1997 12 04	704	0.2+	0.3-
1992 03 05	809	(0.4+	3.2-)	1996 05 23	691	0.7+	0.5-	1997 12 04	704	(0.1-	2.1-
1996 03 23	566	0.7-	0.4-	1996 05 23	691	0.4+	0.1+	1997 12 04	704	(2.0+	2.2-
1996 03 23	566	1.1-	0.0	1996 06 08	809	1.8-	0.0	1997 12 06	691	0.6-	0.5-
1996 03 23	566	1.1-	0.3+	1996 06 08	809	1.1-	0.5-	1997 12 06	691	1.0-	0.3-
1996 04 17	809	1.7+	1.7+	1996 06 08	809	0.4-	1.0-	1997 12 06	691	0.6-	0.4-
1996 04 17	809	(2.0+	2.3+)	1996 06 10	809	(0.4-	2.4-)	1998 02 02	691	0.5-	0.3-
1996 04 17	809	1.8+	1.6+	1996 06 10	809	1.0-	0.9-	1998 02 02	691	0.5-	0.3-
1996 04 18	809	0.3+	0.9+	1996 06 10	809	0.1+	1.4-	1998 02 02	691	0.2-	0.6-
1996 04 18	809	1.4+	0.9+	1997 11 29	691	0.5+	0.7-				

(8309)* 1996 NL₁ = 1979 QA₈ = 1993 TB₁₃

Discovered 1996 July 14 at Haleakala by the JPL Near-Earth Asteroid

Tracking program.

Id. G. V. Williams (*MPC* 27564)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	86.97333		(2000.0)		P		Q				
<i>n</i>	0.28668296	ω	74.64453		+0.98987474		-0.13227734				
<i>a</i>	2.2779007	Ω	292.93463		+0.09902939		+0.90342985				
<i>e</i>	0.0802410	<i>i</i>	3.20475		+0.10169163		+0.40782007				
<i>P</i>	3.44	<i>H</i>	13.8		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1979 08 26	095	0.1+	1.3+	1996 07 22	566	0.0	0.4-	1998 01 23	704	0.1+	0.3+
1989 06 29	675	0.1+	1.1-	1996 07 23	566	0.3+	0.2-	1998 01 23	704	0.1+	0.5+
1989 06 29	675	0.9-	0.7+	1996 07 23	566	0.2+	0.3-	1998 01 23	704	0.5+	0.3+
1989 07 01	675	(0.0 2.7+)		1996 07 23	566	0.1+	0.3-	1998 01 24	704	0.3+	0.1+
1989 07 01	675	0.8-	2.4+	1996 08 10	566	0.4+	1.2+	1998 01 24	704	0.0	0.3+
1993 10 13	675	0.1-	0.6-	1996 08 10	566	0.4+	1.2+	1998 01 24	704	0.3-	0.4+
1993 10 13	675	0.1-	0.4-	1996 08 10	566	0.7+	1.3+	1998 01 24	704	0.5-	0.5+
1993 10 15	675	0.3-	0.0	1998 01 08	704	0.9+	1.2+	1998 01 24	704	0.3-	0.0
1996 07 14	566	0.5-	0.0	1998 01 08	704	0.1+	0.2+	1998 01 25	704	0.1+	0.3+
1996 07 14	566	0.5-	0.2+	1998 01 08	704	1.0+	0.2+	1998 01 25	704	0.2-	0.7+
1996 07 14	566	0.4-	0.5+	1998 01 08	704	0.2-	0.2-	1998 01 25	704	0.0	0.4+
1996 07 22	566	0.1-	0.2-	1998 01 23	704	0.1-	0.2+	1998 01 25	704	0.2-	0.3+
1996 07 22	566	0.0	0.2-	1998 01 23	704	0.1+	0.1+	1998 01 25	704	0.1+	0.4+

(8310)* 1996 PL₂ = 1975 TX₆ = 1993 US₃

Discovered 1996 Aug. 9 at Haleakala by the JPL Near-Earth Asteroid

Tracking program.

Id. G. V. Williams (*MPC* 27723)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	33.96917		(2000.0)		P		Q				
n	0.27756204	ω	311.91786		+0.21269883		-0.97440735				
a	2.3275338	Ω	125.65923		+0.92089747		+0.17502126				
e	0.0694227	i	5.13559		+0.32666047		+0.14105983				
P	3.55	H	14.5		G	0.15	U	2			
Residuals in seconds of arc											
1975 10 10	033	0.1+	0.3-	1996 08 09	566	0.6-	0.4-	1996 08 17	566	0.0	0.6-
1993 10 16	033	0.6+	0.7+	1996 08 09	566	0.5-	0.5-	1996 09 13	566	0.7+	0.1-
1993 10 16	033	0.9-	0.1+	1996 08 09	566	0.5-	0.6-	1996 09 13	566	0.6+	0.1-
1993 10 18	033	0.2-	1.4+	1996 08 14	608	0.9-	0.9-	1996 09 13	566	0.0	0.2-
1996 07 14	809	(3.1+ 0.2+)		1996 08 14	608	0.7-	0.8-	1997 12 31	411	0.4+	0.4-
1996 07 14	809	1.9+	0.1+	1996 08 15	566	0.3+	0.3-	1997 12 31	411	0.1-	0.1+
1996 07 14	809	1.8+	0.8+	1996 08 15	566	0.0	0.0	1998 01 24	411	0.5-	1.5-
1996 07 15	809	0.5-	1.8-	1996 08 15	566	0.2+	0.1-	1998 01 24	411	0.4-	1.4-
1996 07 15	809	0.7+	0.8+	1996 08 17	566	0.1+	0.3-	1998 01 25	411	0.1-	1.1-
1996 07 15	809	0.1-	0.2+	1996 08 17	566	0.3-	0.3-	1998 01 25	411	0.3-	1.2-

(8311)* 1996 TV₁ = 1994 AE₁₇ = 1995 FH₂₁

Discovered 1996 Oct. 3 by the Beijing Schmidt CCD Asteroid Program at

Xinglong.

Id. G. V. Williams (*MPC* 28306)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	263.19821		(2000.0)		P		Q		
<i>n</i>	0.28191694	ω	66.15737		-0.68722170		+0.72607437		
<i>a</i>	2.3035020	Ω	160.37371		-0.68918411		-0.64149961		
<i>e</i>	0.0803504	<i>i</i>	3.97574		-0.22967714		-0.24757678		
<i>P</i>	3.50	<i>H</i>	14.8		<i>G</i>	0.15	<i>U</i>	1	

1998 FEB. 11

M.P.C. 31221

Residuals in seconds of arc

1989 09 30	675	1.2+	0.1+	1996 10 03	327	0.2+	0.1-	1997 12 01	327	0.0	0.8-
1989 09 30	675	1.4+	0.2-	1996 10 03	327	0.1+	0.4-	1997 12 15	327	0.9+	0.6+
1994 01 08	691	1.5-	0.4-	1996 10 05	327	0.1-	0.2+	1997 12 15	327	1.4+	1.3+
1994 01 08	691	1.2-	0.2-	1996 10 05	327	0.1-	0.2+	1997 12 24	327	0.5+	0.6-
1994 01 08	691	1.5-	0.2-	1996 10 05	327	0.2-	0.1+	1997 12 24	327	0.4+	0.5-
1995 03 31	691	0.7-	0.8-	1996 10 14	327	0.4-	0.5+	1997 12 24	327	0.2-	0.1+
1995 03 31	691	0.6-	0.3-	1996 10 14	327	0.1-	0.2+	1998 02 02	817	0.1-	0.4-
1995 03 31	691	0.5-	0.2-	1996 10 14	327	0.0	0.2-	1998 02 02	817	0.2+	0.2-
1996 09 23	327	0.8-	0.3-	1997 11 25	327	0.5-	0.1-	1998 02 02	817	0.1-	0.2-
1996 09 23	327	0.1-	0.5-	1997 11 25	327	0.8-	0.1+	1998 02 02	817	0.4+	0.0
1996 09 23	327	1.2+	0.3-	1997 11 25	327	0.2+	0.4-	1998 02 06	327	0.2+	0.4+
1996 09 23	327	0.5+	0.2-	1997 12 01	327	0.1-	0.2-	1998 02 06	327	0.2+	0.1+
1996 10 03	327	0.1-	0.0	1997 12 01	327	0.2+	1.1-	1998 02 06	327	0.1+	0.1+

(8312)* 1996 TJ₁₂ = 1990 RP₁₁ = 1994 GH₁₀

Discovered 1996 Oct. 15 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Id. T. Urata (*MPC* 28308)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
142.62438							
<i>n</i>	0.18382062	ω	281.95719		+0.77164160		+0.62624208
<i>a</i>	3.0634202	Ω	39.41895		-0.49374409		+0.70007229
<i>e</i>	0.0888647	<i>i</i>	10.09591		-0.40098131		+0.34310298
<i>P</i>	5.36	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 09 14	675	0.1+	0.2-	1996 10 16	905	1.4-	0.0	1996 11 15	385	0.2+	0.7-
1990 09 14	675	0.1+	0.2-	1996 10 16	905	0.3+	0.1-	1996 11 15	385	0.5-	0.3-
1994 03 14	691	0.4+	0.4-	1996 10 17	385	0.5+	0.7-	1996 11 15	385	0.1-	0.1-
1994 03 14	691	0.4+	0.3-	1996 10 17	385	0.1+	0.9-	1998 01 03	886	(2.8+	0.3+)
1994 03 14	691	0.1-	0.1-	1996 10 17	385	0.7+	0.4-	1998 01 03	886	1.1+	1.3-
1994 04 14	675	1.9-	0.1+	1996 10 22	385	0.7+	0.1-	1998 01 07	886	0.4+	0.3+
1994 04 14	675	0.0	0.2+	1996 10 22	385	0.0	0.1-	1998 01 07	886	0.2-	0.8+
1994 04 15	675	0.2+	0.4+	1996 10 22	385	0.5+	0.2-	1998 01 20	886	(2.5-	1.0+)
1994 04 15	675	1.1+	0.1-	1996 11 03	385	0.4-	1.1+	1998 01 20	886	1.9-	1.1-
1996 10 15	905	(2.7+	0.5-)	1996 11 03	385	1.0-	1.1+	1998 01 25	886	0.2+	1.0-
1996 10 15	905	1.0+	1.3+	1996 11 03	385	0.7-	0.6+	1998 01 25	886	0.4+	1.9+

(8313)* 1996 YU₁ = 1990 KK₁ = 1993 BW₁₁ = 1995 OB₂

Discovered 1996 Dec. 19 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 28877)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
175.51471							
<i>n</i>	0.23360737	ω	251.72352		+0.96789235		-0.09464542
<i>a</i>	2.6110289	Ω	113.16651		+0.16270347		+0.94204781
<i>e</i>	0.1695425	<i>i</i>	14.67229		-0.19160370		+0.32185116
<i>P</i>	4.22	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 05 26	413	(0.9-	2.4-)	1996 12 19	327	0.0	0.2-	1997 04 28	327	0.0	0.1+
1990 05 26	413	0.8+	1.2-	1996 12 19	327	0.0	0.0	1997 04 28	327	0.2+	0.1+
1990 05 29	413	(3.2-	0.1+)	1996 12 22	327	0.2-	0.6-	1997 04 28	327	0.0	0.1-
1993 01 22	691	0.9-	0.4-	1996 12 22	327	0.6+	0.2-	1997 05 02	327	0.5-	0.8-
1993 01 22	691	0.1-	0.4-	1996 12 22	327	1.3+	0.5-	1997 05 02	327	0.4-	1.2-
1993 01 22	691	0.3-	0.0	1996 12 24	327	0.2-	1.0+	1997 05 02	327	1.4-	0.5-
1993 01 23	691	0.2-	0.3-	1996 12 24	327	0.1-	0.5-	1997 12 29	327	0.9+	0.1-
1993 01 23	691	0.4-	0.2-	1996 12 24	327	0.5+	0.4+	1997 12 29	327	0.7-	0.3+
1993 01 23	691	0.4-	0.2+	1997 01 06	691	0.3-	0.2+	1997 12 29	327	0.0	0.1-
1995 07 30	327	0.1+	0.1+	1997 01 06	691	0.2-	0.1-	1998 01 22	327	0.5-	1.2+
1995 07 30	327	0.4+	0.3-	1997 01 06	691	0.5-	0.3+	1998 01 22	327	0.6+	1.7+
1995 07 30	327	0.2-	1.0+	1997 01 26	327	0.2+	0.2+	1998 01 22	327	0.6-	0.1-
1995 07 30	327	0.6-	0.3-	1997 01 26	327	0.7+	0.1+	1998 02 06	327	0.2+	0.3-

1995 08 04	327	0.2-	0.4+	1997 01 26	327	0.5-	0.3+	1998 02 06	327	0.2-	0.0
1995 08 04	327	0.2-	0.8-	1997 03 28	327	1.3+	0.5-	1998 02 06	327	0.1+	0.5-
1995 08 04	327	0.5+	0.2-	1997 03 28	327	1.2+	0.1+				
1996 12 19	327	0.1+	0.2+	1997 03 28	327	0.3+	1.2+				

(8314)* 1997 US₈ = 1988 BB₂

Discovered 1997 Oct. 25 by K. Endate and K. Watanabe at Kitami.

Id. G. V. Williams (*MPC* 30886)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
206.01266							
<i>n</i>	0.17383393	ω	44.79412		-0.86371835		+0.50393320
<i>a</i>	3.1796526	Ω	165.46251		-0.46931872		+0.79957425
<i>e</i>	0.1248881	<i>i</i>	1.47863		-0.18365881		-0.32669918
<i>P</i>	5.67	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 01 22	303	0.9+	0.7-	1996 09 13	566	0.1-	0.6+	1997 10 05	910	0.1+	0.2+
1988 01 22	303	0.5+	1.1+	1996 09 13	566	0.6+	0.3-	1997 10 25	400	1.0+	0.8+
1988 01 22	303	0.7+	1.5+	1996 09 13	566	0.0	0.5+	1997 10 25	400	0.9+	1.3+
1988 01 23	303	2.0+	0.3+	1996 11 27	327	0.8+	0.4+	1997 10 26	400	0.4-	2.0-
1988 01 23	303	(7.4+	8.2-)	1996 11 27	327	0.2+	0.2+	1997 10 26	400	(3.1-	3.1-)
1988 01 23	303	(7.5+	7.5-)	1996 11 27	327	1.8+	0.7+	1997 10 28	400	0.7+	0.6+
1991 10 01	691	1.4-	0.3+	1997 09 07	910	0.7-	0.2-	1997 10 28	400	0.9-	0.0
1991 10 01	691	1.4-	0.5+	1997 09 07	910	0.6-	0.2-	1997 11 09	400	(2.6+	2.1-)
1991 10 01	691	1.2-	0.4+	1997 09 07	910	0.7-	0.0	1997 11 09	400	1.1+	1.9-
1991 10 13	691	1.2-	0.7+	1997 10 04	910	0.9+	0.4-	1997 11 25	400	1.6+	1.6-
1991 10 13	691	1.0-	0.2+	1997 10 04	910	0.5+	0.3-	1997 11 25	400	(2.2+	1.3-)
1991 10 13	691	0.6-	0.1+	1997 10 04	910	0.8+	0.5-	1997 11 28	400	0.5-	0.7-
1994 03 10	691	1.3-	0.1-	1997 10 05	910	0.3+	0.0	1997 11 28	400	1.0-	0.1+
1994 03 10	691	1.7-	0.2-	1997 10 05	910	0.2+	0.1+				

(8315)* 1997 WA₂₂ = 1979 MU = 1989 NT = 1992 JP₄

Discovered 1997 Nov. 25 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 31120)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
222.88846							
<i>n</i>	0.29911855	ω	182.24667		-0.03603778		+0.98995096
<i>a</i>	2.2143205	Ω	85.70924		-0.91473454		+0.02242654
<i>e</i>	0.1706653	<i>i</i>	7.88160		-0.40244503		-0.13962147
<i>P</i>	3.30	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 06 22	805	0.4-	0.7+	1997 12 09	327	0.1-	0.1+	1998 01 07	327	0.1+	0.0
1979 06 22	805	0.3+	0.4+	1997 12 09	327	0.8-	0.5+	1998 01 07	327	0.2+	0.5-
1979 06 25	805	0.2+	0.5+	1997 12 11	327	0.4-	0.1+	1998 01 19	327	0.2+	0.1-
1989 07 02	675	1.2+	0.7-	1997 12 11	327	0.2-	0.1-	1998 01 19	327	0.1+	0.1-
1989 07 02	675	0.8+	0.9-	1997 12 11	327	0.4-	0.3+	1998 01 19	327	0.1+	0.0
1989 07 04	675	0.4-	1.4-	1997 12 22	327	0.1+	0.5-	1998 01 22	132	0.3-	1.1-
1989 07 04	675	0.6-	2.3-	1997 12 22	327	0.8-	0.4-	1998 01 22	132	0.5+	0.4-
1992 05 01	095	0.3+	0.3+	1997 12 22	327	0.6+	0.1+	1998 01 24	132	1.3-	1.5-
1997 11 25	327	0.2+	0.2-	1997 12 24	327	0.0	0.0	1998 01 24	132	(3.4-	1.3-)
1997 11 25	327	0.1-	0.4+	1997 12 24	327	0.7-	0.0	1998 02 01	327	0.2+	0.3-
1997 11 25	327	0.3-	0.4-	1997 12 24	327	0.2-	0.5+	1998 02 01	327	0.4+	0.4-
1997 12 01	327	0.6+	0.7+	1998 01 04	327	0.4+	0.2-	1998 02 01	327	0.2+	0.3-
1997 12 01	327	0.4-	0.8+	1998 01 04	327	0.3+	0.3-	1998 02 06	327	0.1-	0.5-
1997 12 01	327	0.3+	0.0	1998 01 04	327	0.2-	0.3-	1998 02 06	327	0.1+	0.2-
1997 12 09	327	0.2-	0.0	1998 01 07	327	0.1+	0.2-	1998 02 06	327	0.3+	0.1-

(8316)* 3002 P-L = 1986 UK₁ = 199

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	82.88548		(2000.0)	P	Q
<i>n</i>	0.19022918	ω	48.67834	+0.95046568	+0.27195857
<i>a</i>	2.9942264	Ω	295.04526	-0.31082709	+0.83351239
<i>e</i>	0.1211110	<i>i</i>	9.56298	+0.00122875	+0.48093205
<i>P</i>	5.18	<i>H</i>	11.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1960 09 24	675	0.4+	0.3+	1993 01 16	010	0.2-	1.3+	1997 12 04	411	0.6+	0.8-
1960 09 24	675	0.1+	0.0	1993 01 17	010	0.5-	0.3+	1997 12 10	411	0.1+	1.2-
1960 09 25	675	0.6-	0.4-	1993 01 17	010	0.5-	0.6+	1997 12 10	411	0.1+	0.4-
1960 09 26	675	0.6+	0.5+	1993 01 17	010	0.1+	0.7+	1998 01 20	426	0.1-	0.2-
1960 09 26	675	0.6+	0.1-	1996 08 24	399	0.1-	0.0	1998 01 20	426	0.3+	0.3-
1960 09 27	675	0.4-	0.8-	1996 08 24	399	0.3-	0.2+	1998 01 20	426	0.2+	0.0
1960 09 28	675	0.1-	0.4-	1996 08 25	399	0.5+	0.2-	1998 01 21	426	0.1+	0.4-
1960 09 29	675	0.4-	1.2+	1996 08 25	399	0.3-	0.8+	1998 01 21	426	0.4+	0.2-
1986 10 31	054	1.1-	0.1+	1997 12 03	411	0.4-	0.5-	1998 01 21	426	0.0	0.9-
1993 01 16	010	0.9+	1.2+	1997 12 03	411	0.2-	0.2-				
1993 01 16	010	0.2+	1.4+	1997 12 04	411	0.0	0.2-				

(8317)* 4523 P-L = 1977 CE₁

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* 14206), T. Kobayashi (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	97.89140		(2000.0)	P	Q
<i>n</i>	0.08224858	ω	114.95010	+0.80137630	+0.59810894
<i>a</i>	5.2366124	Ω	208.31729	-0.55460211	+0.73803494
<i>e</i>	0.0474369	<i>i</i>	0.94903	-0.22408152	+0.31236217
<i>P</i>	11.98	<i>H</i>	10.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1960 09 24	675	0.7+	0.1+	1977 02 13	675	0.4-	0.4+	1997 12 04	704	1.0+	0.9+
1960 09 26	675	0.3+	0.9-	1977 02 14	675	0.6+	0.0	1997 12 04	704	0.8+	0.8+
1960 09 27	675	0.3+	1.1+	1978 03 15	675	0.3-	0.1-	1997 12 04	704	1.2-	1.0+
1960 09 28	675	1.0+	0.2+	1978 03 16	675	0.4+	0.3+	1997 12 31	704	0.4+	0.8-
1960 10 17	675	(2.6-	0.5-)	1997 11 26	704	0.2-	0.9-	1997 12 31	704	0.1+	0.5-
1960 10 17	675	1.6-	0.1+	1997 11 26	704	0.6-	1.2+	1997 12 31	704	0.1+	0.1-
1960 10 22	675	0.8-	0.3-	1997 11 26	704	1.1-	0.0	1997 12 31	704	0.4-	0.4-
1960 10 24	675	0.1-	0.6+	1997 12 04	704	0.4+	1.7-				
1960 10 26	675	0.1-	0.4-	1997 12 04	704	0.8+	0.2+				

(8318)* 1306 T-2 = 1990 QC₇

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 17652), R. Nagata (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	49.90237		(2000.0)	P	Q
<i>n</i>	0.17263352	ω	296.32219	+0.66614435	-0.74577648
<i>a</i>	3.1943755	Ω	111.90507	+0.68743474	+0.60963145
<i>e</i>	0.1470886	<i>i</i>	0.51351	+0.28928391	+0.26863905
<i>P</i>	5.71	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1953 04 15	675	0.0	0.2+	1973 09 30	675	0.7-	0.5-	1990 09 25	809	0.2+	1.6+
1953 04 15	675	0.2+	0.5-	1973 10 04	675	0.1-	1.0-	1990 09 26	809	1.2+	0.2+
1973 09 19	675	1.0-	0.7-	1973 10 04	675	0.6+	0.5+	1990 09 26	809	1.2+	0.1-
1973 09 19	675	2.0+	0.1+	1973 10 05	675	0.9-	0.1+	1990 09 26	809	0.9+	0.2-
1973 09 19	675	0.9-	0.9+	1973 10 05	675	0.9-	0.7+	1994 05 15	413	0.4-	0.6-
1973 09 19	675	(2.8-	1.8-)	1990 08 16	809	(0.4+	2.7+)	1997 12 03	910	1.7+	0.9-
1973 09 19	675	1.1+	0.6+	1990 08 16	809	(0.4-	2.2+)	1997 12 03	910	1.6+	0.9-
1973 09 20	675	0.8-	0.3+	1990 08 16	809	1.9-	0.6+	1997 12 04	910	1.6+	1.1-
1973 09 20	675	0.9-	1.7+	1990 08 20	809	0.8+	0.8+	1997 12 06	910	1.6+	0.5-
1973 09 24	675	0.2-	1.8-	1990 08 20	809	0.2+	1.2+	1997 12 06	910	1.6+	0.4-

1973 09 24	675	1.1+	0.7-	1990 08 20	809	0.5+	0.7+	1997 12 06	910	1.5+	0.5-
1973 09 24	675	0.6+	0.4+	1990 08 26	809	0.2+	0.3-	1998 01 22	704	0.7-	1.2+
1973 09 24	675	0.4+	0.6-	1990 08 26	809	0.6+	0.3-	1998 01 22	704	0.4-	0.7+
1973 09 24	675	1.4+	0.4-	1990 08 26	809	0.4-	0.9-	1998 01 22	704	0.3+	0.6+
1973 09 24	675	0.6-	0.4-	1990 09 14	809	0.7-	0.4+	1998 01 22	691	1.1-	0.7+
1973 09 25	675	(0.0	3.1-)	1990 09 14	809	0.2-	0.4+	1998 01 22	704	0.8-	0.7+
1973 09 25	675	1.8+	1.5-	1990 09 14	809	0.0	0.5+	1998 01 22	691	0.9-	0.0
1973 09 25	675	0.9-	0.2+	1990 09 14	675	0.8-	1.6-	1998 01 22	691	0.9-	0.1-
1973 09 25	675	(3.1+	0.8-)	1990 09 14	675	0.9-	1.6-	1998 01 29	691	0.4-	0.0
1973 09 25	675	1.2+	1.2-	1990 09 16	809	0.6-	0.7+	1998 01 29	691	0.5-	0.2+
1973 09 25	675	0.3-	0.5+	1990 09 16	809	0.6-	0.3+	1998 01 29	691	0.4-	0.2+
1973 09 29	675	0.7+	0.2-	1990 09 16	809	0.3-	0.2+	1998 02 03	691	0.8-	0.2+
1973 09 29	675	0.2+	0.7-	1990 09 25	809	0.8-	1.6+	1998 02 03	691	0.8-	0.1+
1973 09 30	675	1.1-	1.1-	1990 09 25	809	0.2-	1.5+	1998 02 03	691	0.8-	0.1+

(8319)* 3365 T-2 = 1990 QJ₈

Discovered 1973 Sept. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 18303)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	31.45127		(2000.0)	P	Q
<i>n</i>	0.17247081	ω	10.31776	+0.45191919	-0.89145878
<i>a</i>	3.1963843	Ω	52.82308	+0.81549492	+0.39798883
<i>e</i>	0.1660709	<i>i</i>	2.35321	+0.36157584	+0.21657825
<i>P</i>	5.71	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1973 09 19	675	1.3+	0.8-	1990 08 26	809	(2.2-	1.5-)	1996 10 08	809	(1.5+	4.6+)
1973 09 19	675	1.4+	0.5-	1990 08 26	809	1.4-	1.1-	1996 10 08	809	(1.8+	3.8+)
1973 09 20	675	1.7+	0.9-	1990 08 26	809	(2.6-	1.7-)	1996 10 08	809	(2.8+	4.0+)
1973 09 24	675	1.5-	0.2-	1990 09 16	675	(2.3-	1.7-)	1996 10 10	809	(2.5+	4.1+)
1973 09 24	675	1.0-	0.1-	1990 09 16	675	0.5+	0.8-	1996 10 10	809	(2.0+	3.2+)
1973 09 25	675	(0.9+	3.3-)	1996 09 21	292	0.7+	0.3-	1996 10 10	809	(1.9+	3.5+)
1973 09 25	675	0.2+	2.0-	1996 09 21	292	0.9+	1.0+	1997 11 29	688	0.3-	0.2+
1990 08 16	809	0.2-	1.5+	1996 10 04	292	0.8-	0.2+	1997 11 29	688	0.4-	0.4+
1990 08 16	809	0.2+	1.0+	1996 10 04	292	1.1-	1.2+	1997 12 27	688	0.4-	0.4-
1990 08 16	809	0.1+	0.6+	1996 10 06	292	1.8-	0.9+	1997 12 27	688	0.2-	0.3-
1990 08 18	809	1.6+	0.9+	1996 10 06	292	0.8-	0.5-	1997 12 28	566	0.8+	0.6-
1990 08 18	809	0.4+	0.8+	1996 10 06	763	0.4+	0.6-	1997 12 28	566	0.7+	0.5-
1990 08 18	809	0.1-	0.8+	1996 10 06	763	0.3+	0.7-	1997 12 28	566	0.8+	0.3-
1990 08 24	809	0.3-	1.1-	1996 10 07	763	0.2+	0.7+	1998 01 24	566	0.5-	0.5+
1990 08 24	809	0.6-	1.1-	1996 10 07	763	0.0	1.1+	1998 01 24	566	0.5-	0.6+
1990 08 24	809	0.5-	0.5-	1996 10 07	763	0.1+	1.0+	1998 01 24	566	0.1-	0.6+

1977 DP₂ = 1998 BF₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	328.34064		(2000.0)	P	Q
<i>n</i>	0.18601657	ω	109.91231	-0.92402633	-0.38206943
<i>a</i>	3.0392631	Ω	47.62859	+0.34326573	-0.84527287
<i>e</i>	0.2298541	<i>i</i>	1.09215	+0.16835670	-0.37354616
<i>P</i>	5.30	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1977 02 18	381	0.1+	0.6+	1998 01 08	691	0.1-	0.2-	1998 01 24	704	0.7-	0.1-
1977 02 18	381	0.4-	0.1-	1998 01 23	704	0.5+	0.4+	1998 01 25	704	0.2+	0.1+
1977 02 19	381	0.2+	0.6+	1998 01 23	704	0.7+	0.1-	1998 01 25	704	0.1-	0.2-
1977 02 19	381	0.6+	0.2-	1998 01 23	704	0.3+	0.2-	1998 01 25	704	0.8+	1.6+
1977 03 12	381	0.0	0.2-	1998 01 23	704	0.4+	0.1-	1998 01 25	704	0.3-	0.3+
1977 03 12	381	0.5-	0.6-	1998 01 24	704	0.0	0.3+	1998 01 26	566	0.5-	0.7-
1998 01 08	691	0.1-	0.0	1998 01 24	704	0.4-	0.3-	1998 01 26	566	0.4-	0.3-
1998 01 08	691	0.2-	0.0	1998 01 24	704	0.1-	0.2-	1998 01 26	566	0.0	0.6-

1998 FEB. 11

M.P.C. 31223

1978 SU₄ = 1998 BZ₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	121.01014		(2000.0)		P		Q		
<i>n</i>	0.26966132	ω	127.33848		+0.94353109		+0.32600527		
<i>a</i>	2.3727771	Ω	213.75009		−0.32747381		+0.89092855		
<i>e</i>	0.1277166	<i>i</i>	6.08615		−0.05009985		+0.31617539		
<i>P</i>	3.65	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1978 09 27	095	0.9−	0.6+	1978 10 29	675	0.3−	0.4−	1998 01 24	566	0.7−	0.2−
1978 10 03	095	0.7+	0.9−	1997 12 28	566	0.4+	0.7+	1998 01 24	566	0.8−	0.1−
1978 10 07	095	0.9+	0.7+	1997 12 28	566	0.8+	0.8+	1998 01 28	566	0.1+	0.1−
1978 10 27	675	0.9−	0.3+	1997 12 28	566	0.4+	0.4+	1998 01 28	566	0.0	0.4−
1978 10 28	675	0.4+	0.6−	1998 01 24	566	0.5−	0.2−	1998 01 28	566	0.4+	0.7−

1978 VA₅ = 1996 AM₁₁

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	145.36335		(2000.0)		P		Q		
<i>n</i>	0.17396200	ω	293.59692		+0.87788371		−0.47618569		
<i>a</i>	3.1780920	Ω	94.87329		+0.45580970		+0.79846948		
<i>e</i>	0.2956504	<i>i</i>	2.91492		+0.14682544		+0.36836622		
<i>P</i>	5.67	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1978 11 05	675	0.6−	0.1+	1978 11 29	675	0.2+	0.2−	1996 01 14	691	0.1−	0.3+
1978 11 06	675	0.1−	0.5+	1978 11 30	675	0.1+	0.9−	1996 01 24	691	0.0	0.4−
1978 11 07	675	0.9+	0.7−	1996 01 14	691	0.2+	0.5+	1996 01 24	691	0.0	0.0
1978 11 08	675	0.4−	0.3+	1996 01 14	691	0.1−	0.6+	1996 01 24	691	0.3−	0.0

1978 VR₁₀ = 1994 JG₁ = 1998 BX₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	309.16153		(2000.0)			P		Q	
<i>n</i>	0.21288954	ω	109.93464			−0.98552414		−0.02388664	
<i>a</i>	2.7777927	Ω	68.99386			−0.05511359		−0.89111065	
<i>e</i>	0.1361903	<i>i</i>	10.35768			+0.16032672		−0.45315697	
<i>P</i>	4.63	<i>H</i>	14.0		<i>G</i>	0.15		<i>U</i>	3

Residuals in seconds of arc

1978 11 05	675	0.7−	0.6+	1994 05 04	675	0.6−	0.5−	1998 01 20	587	0.0	0.3+
1978 11 06	675	1.6+	0.1+	1994 05 05	675	1.2+	0.5−	1998 01 22	587	0.7+	0.5+
1978 11 07	675	1.4+	0.8−	1994 05 05	675	2.2−	0.1+	1998 01 22	587	0.1−	0.6+
1978 11 08	675	1.1−	0.2+	1998 01 19	587	0.6+	0.6−	1998 01 26	587	0.2−	0.0
1978 11 29	675	1.1+	0.5−	1998 01 19	587	0.1−	0.2−	1998 01 26	587	0.6−	0.1−
1978 11 30	675	2.3−	0.4+	1998 01 19	587	0.1−	0.7−	1998 01 28	587	0.1+	0.2+
1994 05 04	675	1.6+	0.9+	1998 01 20	587	0.4−	0.6−	1998 01 28	587	0.1+	0.6+

1979 MQ₅ = 1995 MN₂

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	115.55130		(2000.0)			P		Q		
<i>n</i>	0.18612635	ω	98.63262			+0.98574719		−0.07204471		
<i>a</i>	3.0380679	Ω	265.59934			+0.00855473		+0.92396064		
<i>e</i>	0.0614058	<i>i</i>	8.77044			+0.16801575		+0.37564119		
<i>P</i>	5.30	<i>H</i>	15.0		<i>G</i>	0.15		<i>U</i>	5	

Residuals in seconds of arc

1979 06 24	413	(5.2+	0.2+)	1979 07 27	675	0.0	1.0+	1995 06 24	691	0.4−	0.0
1979 06 25	413	1.7+	0.0	1979 07 28	413	2.3−	0.3−	1995 07 04	691	0.6+	0.1−
1979 06 29	413	0.3−	0.6+	1995 06 24	691	0.2−	0.1+	1995 07 04	691	0.1+	0.2−
1979 07 24	413	1.0+	1.0−	1995 06 24	691	0.1+	0.1−	1995 07 04	691	0.1−	0.1+

1979 QJ₁ = 1988 CC₁Id. T. Kobayashi (*MPC* 13598)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	306.66548		(2000.0)			P		Q		
n	0.29373478	ω	31.83779			−0.99748924		+0.00902205		
a	2.2412956	Ω	148.44861			−0.02902076		−0.95682153		
e	0.1028602	i	7.71449			+0.06459886		−0.29053598		
P	3.36	H	14.5			G	0.15	U	4	

Residuals in seconds of arc

1979 08 22	809	0.2+	0.0	1979 08 26	809	1.0−	1.0−	1998 01 26	566	0.3+	0.6−
1979 08 22	809	0.6+	0.2−	1979 08 30	809	1.5+	1.1+	1998 01 26	566	0.0	0.5−
1979 08 22	809	0.1−	0.1−	1979 08 30	809	(1.1+	9.0−)	1998 01 26	566	0.2−	0.8−
1979 08 23	809	1.0−	0.7−	1988 02 11	675	(15.3−	0.5−)	1998 01 29	566	0.1+	0.6+
1979 08 23	809	0.1−	0.6−	1988 02 14	675	(30.3−	4.3−)	1998 01 29	566	0.1+	0.5+
1979 08 26	809	0.5+	1.4+	1988 03 13	675	0.2+	0.6−	1998 01 29	566	0.3−	0.6+
1979 08 26	809	0.4−	0.4−	1988 03 13	675	0.3−	0.3+				

1981 ED₈ = 1998 BF₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	324.89869		(2000.0)		P		Q	
n	0.28098679	ω	177.60068		−0.56807902		−0.82085299	
a	2.3085828	Ω	307.00933		+0.75382719		−0.49022011	
e	0.0662648	i	4.24058		+0.33019810		−0.29306078	
P	3.51	H	15.5	G	0.15	U	5	

Residuals in seconds of arc

1981 02 09	413	1.5+	0.7+	1981 03 15	413	1.0+	0.4−	1998 01 24	595	0.2+	0.2+
1981 02 13	413	0.2+	0.6+	1981 04 05	413	0.7−	0.5−	1998 01 24	595	0.0	0.1+
1981 03 01	413	1.0−	0.0	1981 04 06	413	1.7−	0.2+	1998 01 25	595	0.6+	0.0
1981 03 01	413	1.0+	1.1−	1981 04 06	413	0.3+	1.2−	1998 01 25	595	0.1+	0.9−
1981 03 07	413	0.9+	0.9+	1981 04 12	413	2.1−	1.5+	1998 01 31	595	0.3−	0.1−
1981 03 07	413	(2.8+	0.3−)	1981 04 12	413	(3.0+	1.3−)	1998 01 31	595	0.7−	0.2+
1981 03 11	413	1.0−	0.6+	1981 04 30	413	1.4+	0.4+				
1981 03 11	413	0.6+	1.0−	1981 05 02	413	0.1−	0.5−				

1981 EG₁₀ = 1997 WL₅₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	24.33055		(2000.0)			P		Q			
<i>n</i>	0.21679474	ω	114.89550			+0.80695569		−0.58663963			
<i>a</i>	2.7443335	Ω	281.09449			+0.51361933		+0.75420256			
<i>e</i>	0.0590015	<i>i</i>	3.99601			+0.29157796		+0.29501261			
<i>P</i>	4.55	<i>H</i>	14.0		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1981 02 13	413	2.3+	1.0+	1981 04 07	413	0.4+	0.3−	1997 12 04	704	0.2+	1.4+
1981 02 14	413	0.8−	1.6−	1981 04 12	413	1.3−	0.2+	1997 12 04	704	1.6+	0.1+
1981 03 01	413	1.8−	1.2+	1981 04 12	413	0.3−	0.6+	1997 12 04	704	0.5−	0.6+
1981 03 07	413	1.3+	0.4−	1981 04 29	413	1.4−	2.2−	1997 12 04	704	0.9+	1.0−
1981 03 07	413	0.0	1.1+	1981 05 03	413	0.1+	2.1−	1997 12 05	704	0.2+	0.5−
1981 03 11	413	0.9+	0.5−	1997 11 29	704	0.1−	0.5+	1997 12 05	704	1.8−	0.8−
1981 03 15	413	0.2−	1.1+	1997 11 29	704	0.4−	1.5+	1997 12 05	704	0.5+	2.4−
1981 03 15	413	0.5+	1.1+	1997 11 29	704	0.1−	0.5−	1997 12 05	704	0.7+	0.0
1981 04 06	413	1.1−	0.8+	1997 11 29	704	0.2−	0.4−	1997 12 05	704	0.6−	0.7+
1981 04 06	413	0.9+	0.9−	1997 11 29	704	0.2+	1.2+				
1981 04 07	413	0.0	0.2+	1997 12 04	704	0.4−	1.0−				

1981 EY₁₁

Id. T. Kobayashi (1998 observations)

M.P.C. 31224

1998 FEB. 11

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Nakano					
M	12.92228		(2000.0)			P		Q			
n	0.28424847		ω	122.78499		-0.02311019		-0.99808619			
a	2.2908885		Ω	328.38759		+0.87675197		+0.00733460			
e	0.1262259		i	6.28219		+0.48038724		-0.06140169			
P	3.47		H	15.0		G	0.15		U	5	
Residuals in seconds of arc											
1981 02 12	413	0.5-	0.1+	1981 03 08	413	2.0+	1.0-	1981 04 12	413	0.8-	0.0
1981 02 13	413	0.2+	0.6+	1981 03 11	413	1.9+	0.0	1981 04 12	413	1.0-	0.4+
1981 03 01	413	0.6-	0.3+	1981 03 15	413	0.3-	0.4-	1981 04 29	413	0.8-	0.5-
1981 03 01	413	1.9-	0.6-	1981 03 15	413	1.4+	0.4+	1981 05 03	413	0.7+	0.9+
1981 03 06	413	0.2-	1.2+	1981 04 05	413	1.9-	0.3+	1998 01 19	411	0.3-	0.3-
1981 03 06	413	2.1+	0.1-	1981 04 05	413	0.9+	0.6-	1998 01 19	411	0.0	0.5+
1981 03 07	413	2.1+	1.3-	1981 04 06	413	1.6-	0.4-	1998 01 20	411	0.6+	0.4-
1981 03 07	413	1.7+	0.8+	1981 04 06	413	0.1+	0.6-	1998 01 20	411	0.3-	0.2-
1981 03 08	413	1.4-	0.7+	1981 04 07	413	2.3-	0.3+				

1981 EB₁₄ = 1995 YC₂₁

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Williams					
<i>M</i>	133.96648			(2000.0)		P			Q		
<i>n</i>	0.18182430			ω	174.46497	+0.42301310			−0.90133851		
<i>a</i>	3.0858023			Ω	250.48201	+0.82752060			+0.42609033		
<i>e</i>	0.1495532			<i>i</i>	5.66252	+0.36914708			+0.07769118		
<i>P</i>	5.42			<i>H</i>	14.0	<i>G</i>	0.15		<i>U</i>	5	
Residuals in seconds of arc											
1981 02 09	413	0.4−	1.1+	1981 03 12	413	2.2−	0.9−	1995 12 19	566	0.3+	0.1+
1981 03 01	413	0.1+	0.7−	1981 04 09	413	1.2−	2.2+	1995 12 19	566	0.0	0.0
1981 03 01	413	1.1+	1.4−	1981 04 09	413	1.8+	0.1−	1995 12 20	566	0.1−	0.4−
1981 03 08	413	0.1+	0.1−	1981 05 01	413	0.2+	0.2+	1995 12 20	566	0.2−	0.2−
1981 03 08	413	1.5+	0.5+	1981 05 03	413	0.5−	2.3−	1995 12 20	566	0.2+	0.2+
1981 03 12	413	0.7−	1.3+	1995 12 19	566	0.0	0.2+				

1981 EQ₁₆ = 1992 DO₃

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5				Williams							
<i>M</i>	74.19639		(2000.0)	P		Q					
<i>n</i>	0.17175520	ω	87.07926	+0.37881607		−0.92213091					
<i>a</i>	3.2052565	Ω	340.09113	+0.73070521		+0.35011320					
<i>e</i>	0.1121484	<i>i</i>	13.33986	+0.56795095		+0.16460659					
<i>P</i>	5.74	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1981 02 12	413	0.5+	0.6+	1981 03 12	413	0.4−	0.7+	1992 02 26	691	0.7−	0.8−
1981 02 12	413	0.7+	1.1−	1981 04 09	413	0.1−	0.6+	1992 02 26	691	0.7−	0.8−
1981 03 06	413	(3.8−	1.3+)	1981 04 09	413	(3.4+	0.0)	1992 03 07	691	0.0	0.6+
1981 03 06	413	0.5+	0.5−	1981 05 01	413	0.4−	1.1−	1992 03 07	691	0.4+	0.6+
1981 03 08	413	2.2−	0.3+	1981 05 03	413	0.1−	0.5+	1992 03 07	691	0.3+	0.4+
1981 03 08	413	1.6+	0.0	1992 02 26	691	0.6+	0.1−				

1981 EW₁₈

Id. E. Bowell (1993 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5				Williams							
<i>M</i>	91.87174			(2000.0)		P		Q			
<i>n</i>	0.27526353			ω	344.77395	+0.89787169		+0.43971190			
<i>a</i>	2.3404728			Ω	349.06242	−0.39090789		+0.77335048			
<i>e</i>	0.1342379			<i>i</i>	6.62977	−0.20252764		+0.45670831			
<i>P</i>	3.58			<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1981 02 02	413	0.3−	1.6−	1981 03 16	413	(3.6−	2.5+)	1993 10 14	675	0.6+	0.7−
1981 02 13	413	1.3−	0.4−	1981 04 08	413	1.4+	0.1−	1997 12 27	688	0.1−	0.2+

1981 03 02	413	1.9-	1.0+	1981 04 11	413	0.2-	0.7-	1997 12 27	688	0.4+	0.2+
1981 03 03	413	(2.7+	0.9-)	1981 04 30	413	0.8+	0.8+	1997 12 29	688	0.4-	0.1+
1981 03 11	413	0.8+	0.3-	1993 10 14	675	0.0	0.3-	1997 12 29	688	0.1-	0.4+

1981 EC₁₉

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5					Nakano						
<i>M</i>	94.18348		(2000.0)		P		Q				
<i>n</i>	0.28579436	ω	32.10747		+0.91848764		-0.39516459				
<i>a</i>	2.2826200	Ω	351.13007		+0.33911226		+0.80659821				
<i>e</i>	0.1178838	<i>i</i>	5.58755		+0.20342892		+0.43959557				
<i>P</i>	3.45	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1981 02 13	413	0.1-	0.5-	1981 03 11	413	0.3+	0.4+	1998 01 28	411	0.3+	0.3+
1981 03 02	413	(5.3-	0.9+)	1981 03 29	413	0.6+	0.3-	1998 01 28	411	0.0	0.0
1981 03 03	413	1.5-	0.2+	1981 04 08	413	(3.0-	1.2+)	1998 01 29	411	0.2-	0.3+
1981 03 07	413	1.0-	0.7+	1981 04 08	413	1.6+	0.8-	1998 01 29	411	0.0	0.4-
1981 03 07	413	(3.5+	1.3-)	1981 04 11	413	(4.6+	0.7+)				

1981 EN₂₂ = 1993 FU₅₇ = 1997 ED₅₁

Id. A. Gnädig, G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5				Williams							
<i>M</i>	76.78590		(2000.0)	P		Q					
<i>n</i>	0.24738745	ω	192.28814	−0.99362733		−0.10998339					
<i>a</i>	2.5131453	Ω	341.34385	+0.10884004		−0.87932397					
<i>e</i>	0.0614873	<i>i</i>	4.42228	+0.02930151		−0.46334978					
<i>P</i>	3.98	<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+	1.2−	1981 03 16	413	1.7+	0.9+	1981 05 03	413	0.2+	0.2−
1981 02 13	413	0.5−	0.6−	1981 03 29	413	(4.7+	1.2+)	1993 03 19	809	1.4+	1.8+
1981 03 02	413	(3.1−	1.5+)	1981 04 05	413	1.5−	0.6+	1993 03 20	809	(1.8+	2.6+)
1981 03 02	413	0.2−	0.1+	1981 04 06	413	1.5+	0.1+	1993 04 17	413	1.7−	0.5−
1981 03 03	413	1.6−	0.1+	1981 04 07	413	0.2−	0.1+	1997 03 05	809	1.0+	0.8−
1981 03 03	413	0.2+	0.8−	1981 04 07	413	(4.4+	1.7−)	1997 03 05	809	0.9−	0.6−
1981 03 07	413	0.1+	1.4+	1981 04 12	413	0.3−	0.5+	1997 03 05	809	0.8−	1.4−
1981 03 11	413	0.4−	0.9+	1981 04 12	413	0.5−	0.0	1997 03 06	809	(0.4−	2.7−)
1981 03 11	413	2.1+	0.7+	1981 04 30	413	0.0	1.2−	1997 03 06	809	(1.5−	3.9−)
1981 03 16	413	0.7−	0.6−	1981 05 02	413	1.0+	0.0	1997 03 06	809	(1.0−	3.8−)

1981 EC₂₄ = 1996 CT₅

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5				Williams								
<i>M</i>	26.85745		(2000.0)		P				Q			
<i>n</i>	0.12672304		ω	18.79204	−0.83166353				+0.55517460			
<i>a</i>	3.9255362		Ω	194.94550	−0.51468161				−0.77802156			
<i>e</i>	0.1358656		<i>i</i>	2.40321	−0.20841933				−0.29404697			
<i>P</i>	7.78		<i>H</i>	14.5	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc												
1981 03 07	413	1.8+	0.4−	1981 03 29	413	0.8+	0.4−	1996 02 16	691	0.3+	0.1−	
1981 03 11	413	0.4−	0.6+	1981 04 26	413	0.3−	1.6−	1996 02 16	691	0.5+	0.0	
1981 03 11	413	(3.0−	2.4+)	1996 02 10	691	0.4−	0.1−	1996 02 16	691	0.4+	0.0	
1981 03 16	413	(4.2+	1.8−)	1996 02 10	691	0.5−	0.0					
1981 03 29	413	1.9−	1.9+	1996 02 10	691	0.3−	0.0					

1981 EJ₂₈ = 1982 PM = 1982 QK₁ = 1982 RL₃

Id. A. Gnädig

1998 FEB. 11

M.P.C. 31225

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	209.13148	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.29745521	ω	186.58234	+0.99713277
<i>a</i>	2.2225677	Ω	169.08658	-0.06785529
<i>e</i>	0.1838167	<i>i</i>	1.86954	-0.03349491
<i>P</i>	3.31	<i>H</i>	15.0	<i>U</i>

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

1981 02 12	413	0.8-	0.7+	1981 04 05	413	2.2+	1.3-	1982 08 14	095	(2.5-	5.2+)
1981 02 13	413	0.7+	0.4-	1981 04 05	413	1.7+	0.2-	1982 08 19	675	1.4+	0.5+
1981 03 02	413	0.5-	0.3+	1981 04 06	413	(5.8-	2.1+)	1982 08 19	675	1.1-	0.2-
1981 03 06	413	0.3+	1.3-	1981 04 06	413	1.2-	0.1-	1982 09 10	808	0.2-	0.5-
1981 03 11	413	1.9-	0.5-	1981 04 10	413	(4.4-	2.9+)	1982 09 10	808	0.1+	0.5-
1981 03 15	413	0.6-	0.4-	1981 04 26	413	0.6-	0.4+				
1981 03 15	413	1.1+	0.5-	1981 05 01	413	1.0-	2.6+				

1981 EX₃₄ = 1995 FL₁₅

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	165.52417	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21439366	ω	81.02444	-0.45708074
<i>a</i>	2.7647854	Ω	161.59734	-0.85940701
<i>e</i>	0.0221828	<i>i</i>	7.65855	-0.22912177
<i>P</i>	4.60	<i>H</i>	15.0	<i>U</i>

Residuals in seconds of arc

1981 02 02	413	0.1-	0.7-	1981 03 03	413	0.9+	0.2+	1995 03 27	691	0.4-	0.0
1981 02 13	413	0.6+	1.2-	1981 03 07	413	1.6+	0.3-	1995 03 27	691	0.2-	0.3-
1981 03 02	413	0.3-	0.2+	1981 05 02	413	0.2-	0.7+	1995 04 01	691	0.3+	0.3-
1981 03 02	413	1.1-	1.5+	1981 05 03	413	0.3-	0.1-	1995 04 01	691	0.4+	0.0
1981 03 03	413	0.9-	0.2+	1995 03 27	691	0.4-	0.2-	1995 04 01	691	0.2+	0.1+

1981 EO₄₄ = 1998 BP₂₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	60.88267	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28514929	ω	85.86377	+0.57731365
<i>a</i>	2.2860612	Ω	328.85717	+0.73636668
<i>e</i>	0.0448628	<i>i</i>	1.76872	+0.35280739
<i>P</i>	3.46	<i>H</i>	16.5	<i>U</i>

Residuals in seconds of arc

1981 02 13	413	0.3+	0.8+	1981 03 16	413	(2.9-	0.2-)	1998 01 22	691	0.3+	0.3-
1981 03 07	413	(3.4+	0.3-)	1981 04 30	413	0.2+	0.1+	1998 01 22	691	0.3+	0.0
1981 03 07	413	0.1-	1.4-	1981 05 02	413	0.2-	0.2-	1998 01 29	691	0.3-	0.0
1981 03 11	413	0.1-	0.9+	1998 01 22	691	0.2+	0.0	1998 01 29	691	0.5-	0.1+

1981 EE₄₅

Id. E. Bowell (1992 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	182.82958	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21875399	ω	249.01067	-0.16818684
<i>a</i>	2.7279227	Ω	11.48888	-0.82289322
<i>e</i>	0.0382600	<i>i</i>	10.52975	-0.54273377
<i>P</i>	4.51	<i>H</i>	13.5	<i>U</i>

Residuals in seconds of arc

1981 02 12	413	0.1+	0.0	1981 04 06	413	0.5-	0.7+	1992 10 22	675	0.2-	0.4-
1981 02 13	413	1.9+	0.3+	1981 04 06	413	(3.0+	0.4+)	1992 10 22	675	0.7+	0.4-
1981 03 11	413	1.4-	1.3-	1981 04 07	413	0.1-	0.1-	1997 12 27	688	1.1+	0.1-
1981 03 11	413	0.3-	0.4-	1981 04 07	413	1.8+	0.1+	1997 12 27	688	0.2-	0.4+
1981 03 15	413	0.7-	0.4-	1981 04 10	413	0.6-	0.0	1997 12 29	688	0.7-	0.4+
1981 03 15	413	0.3-	0.8+	1981 05 01	413	0.7+	0.7+	1997 12 29	688	0.3-	0.1-
1981 04 05	413	0.6-	0.2+	1981 05 01	413	(4.0-	2.3-)				
1981 04 05	413	(3.7+	0.0)	1981 05 03	413	0.0	1.2-				

1981 EP₄₇ = 1994 RB₈

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Doppler

<i>M</i>	197.79334	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18452040	ω	199.77848	+0.90308852
<i>a</i>	3.0556700	Ω	185.74710	+0.41614701
<i>e</i>	0.1310515	<i>i</i>	11.62876	+0.10607914
<i>P</i>	5.34	<i>H</i>	14.5	<i>U</i>

Residuals in seconds of arc

1981 02 12	413	1.9+	2.2-	1981 05 01	413	1.3-	0.1-	1994 09 14	691	0.4-	0.1-
1981 02 12	413	0.2+	0.3+	1981 05 01	413	4.0+	0.3-	1994 09 14	691	1.0+	0.1-
1981 03 02	413	0.2-	1.7+	1994 09 12	691	0.1-	0.5-	1994 09 14	691	0.2-	0.1-
1981 03 02	413	2.5-	1.8+	1994 09 12	691	0.5+	0.1-	1994 09 14	691	0.0	0.2+
1981 03 11	413	0.8-	0.0	1994 09 12	691	0.6-	0.0				
1981 03 15	413	1.0-	1.5-	1994 09 14	691	0.2-	0.6+				

1981 QD = 1981 SR = 1998 BP₁₃Id. B. G. Marsden (d, *MPC* 6630), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	119.23628	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26058290	ω	7.93826	+0.91720636
<i>a</i>	2.4275720	Ω	328.59420	-0.36806857
<i>e</i>	0.2103290	<i>i</i>	2.69263	-0.15250580
<i>P</i>	3.78	<i>H</i>	14.5	<i>U</i>

Residuals in seconds of arc

1981 08 30	688	0.9-	0.8-	1981 09 25	046	0.1-	0.3+	1998 01 25	704	0.4+	0.8+
1981 08 30	688	0.0	0.1-	1981 09 25	095	(0.8+	2.5+)	1998 01 25	704	0.3-	0.0
1981 09 02	095	1.3+	0.4+	1981 10 05	688	0.6-	0.8-	1998 01 25	704	0.7-	0.2-
1981 09 03	688	(5.7+	0.1+)	1981 10 05	688	0.4+	0.1+	1998 01 25	704	0.2+	0.8-
1981 09 03	688	(3.7+	0.8+)	1998 01 24	704	1.3+	0.6-	1998 01 30	691	0.0	0.5+
1981 09 25	688	0.3+	0.3-	1998 01 24	704	0.5+	0.3+	1998 01 30	691	0.0	0.3+
1981 09 25	688	(3.3-	3.0-)	1998 01 24	704	0.9+	0.4+	1998 01 30	691	0.2-	0.4+
1981 09 25	046	0.4-	1.2+	1998 01 24	704	2.0-	1.1-				

1984 SF₆ = 1979 YU₅ = 1992 AF₃ = 1994 LV₈Id. B. G. Marsden (*MPC* 20923), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	63.83422	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17188029	ω	310.31406	+0.50759300
<i>a</i>	3.2037012	Ω	109.12906	+0.80410661
<i>e</i>	0.1512843	<i>i</i>	2.70131	+0.30945419
<i>P</i>	5.73	<i>H</i>	13.5	<i>U</i>

Residuals in seconds of arc

1979 12 18	095	(4.8+	3.2+)	1984 09 28	809	1.4+	0.2+	1992 02 09	691	1.1+	0.6+
1984 09 22	809	1.6-	0.3+	1984 09 28	809	1.3+	0.3+	1994 06 08	809	(2.2+	2.2+)
1984 09 22	809	1.0-	0.2+	1984 09 28	809	1.0+	0.1+	1994 06 08	809	0.4+	0.7+
1984 09 22	809	0.8-	0.7+	1984 09 29	809	0.5+	0.3-	1994 06 08	809	0.9+	1.0+
1984 09 23	809	0.5-	0.4+	1984 09 29	809	0.7+	0.3-	1994 06 09	809	1.2+	1.3+
1984 09 23	809	0.4-	0.3+	1984 09 29	809	0.7+	0.6-	1994 06 09	809	0.4-	1.1+
1984 09 23	809	0.1-	0.3+	1984 09 30	809	0.3+	0.4-	1994 06 09	809	0.3-	0.5+
1984 09 24	809	0.7-	0.2+	1984 09 30	809	0.5+	0.2-	1997 01 30	704	0.2+	0.9+
1984 09 24	809	0.5-	0.5+	1984 09 30	809	0.9+	0.1-	1997 01 30	704	0.3+	1.0+
1984 09 24	809	0.8-	0.5+	1984 10 01	809	0.0	0.1-	1998 01 22	691	0.5-	0.9+
1984 09 26	809	0.6-	0.3+	1984 10 01	809	0.2+	0.0	1998 01 22	691	0.7-	0.6+
1984 09 26	809	0.6-	0.2+	1984 10 01	809	0.0	0.0	1998 01 22	691	0.4-	0.6+
1984 09 26	809	0.5-	0.2+	1992 01 11	303	(3.3+	0.9+)	1998 01 28	691	0.1-	0.7+
1984 09 27	809	1.0-	0.1+	1992 01 12	303	0.3+	0.2-	1998 01 28	691	0.0	0.6+
1984 09 27	809	0.8-	0.3+	1992 02 09	691	0.6+	0.5+	1998 01 28	691	0.0	0.8+
1984 09 27	809	0.4-	0.5+	1992 02 09	691	0.8+	0.5+				

1986 QC₁ = 1997 WL₂₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	224.87696		(2000.0)			P			Q		
n	0.21674790	ω	176.72872			+0.18603840			+0.97988144		
a	2.7447288	Ω	103.98399			-0.90314705			+0.19950577		
e	0.0776861	i	4.27083			-0.38693038			+0.00545971		
P	4.55	H	13.5			G	0.15		U	5	
Residuals in seconds of arc											
1986 08 26	809	2.0-	0.8-	1986 09 03	809	1.0+	0.2+	1986 09 09	809	0.3-	0.5+
1986 08 26	809	2.0-	0.8-	1986 09 03	809	0.9+	0.2+	1986 09 11	809	1.1-	0.3+
1986 08 26	809	1.7-	0.5-	1986 09 04	809	1.0+	0.5-	1986 09 11	809	1.1-	0.3+
1986 08 27	809	1.3-	1.0-	1986 09 04	809	0.8+	0.7-	1986 09 11	809	1.4-	0.4+
1986 08 27	809	1.4-	0.5-	1986 09 04	809	0.8+	0.4-	1997 11 28	327	0.6+	0.0
1986 08 27	809	1.3-	0.4-	1986 09 05	809	0.6+	0.2+	1997 11 28	327	0.2-	0.4+
1986 08 29	809	0.2-	0.2-	1986 09 05	809	0.9+	0.1+	1997 11 28	327	0.1+	0.9+
1986 08 29	809	0.2-	0.1-	1986 09 05	809	0.8+	0.3+	1997 12 01	327	0.9-	0.1+
1986 08 29	809	0.3-	0.4-	1986 09 06	809	0.6+	0.5+	1997 12 01	327	0.2-	0.6+
1986 09 01	809	0.9+	0.3+	1986 09 06	809	0.6+	0.2+	1997 12 01	327	0.1+	0.3+
1986 09 01	809	0.9+	0.1-	1986 09 06	809	0.6+	0.2+	1998 01 25	691	0.1+	0.4-
1986 09 01	809	0.9+	0.2-	1986 09 07	809	0.0	0.1-	1998 01 25	691	0.1+	0.6-
1986 09 02	809	0.7+	0.4-	1986 09 07	809	0.2+	0.0	1998 01 25	691	0.1+	0.5-
1986 09 02	809	1.1+	0.0	1986 09 07	809	0.4+	0.1-	1998 01 29	691	0.3-	0.7-
1986 09 02	809	1.3+	0.1+	1986 09 09	809	0.5-	0.4+	1998 01 29	691	0.2-	0.7-
1986 09 03	809	0.9+	0.3+	1986 09 09	809	0.4-	0.5+	1998 01 29	691	0.2-	1.0-

$$1986 \text{ RP}_2 = 1980 \text{ DG}_3 = 1990 \text{ RB}_{12}$$

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

$\dot{M}$	248.16965		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.23648153	ϖ	208.69172		+0.98672781		+0.10466579
a	2.5898299	Ω	144.61934		-0.07427223		+0.97079365
e	0.2034612	i	12.38148		-0.14440172		+0.21588135
P	4.17 <th>H</th> <td>13.0</td> <th>G</th> <td>0.15<th>U</th><td>4</td></td>	H	13.0	G	0.15 <th>U</th> <td>4</td>	U	4
Residuals in seconds of arc							
1980 02 20	095 0.2-	1.5-	1986 09 02 809	1.0-	0.8-	1986 09 13 809	0.8+ 1.7+
1986 08 29	809 0.7-	1.9-	1986 09 02 809	1.0-	0.9-	1986 10 04 688	0.4- 0.8-
1986 08 29	809 0.8-	1.6-	1986 09 02 809	0.8-	0.8-	1986 10 04 688	1.1+ 0.2-
1986 08 29	809 1.2-	2.1-	1986 09 06 688	1.1+	1.5+	1990 09 15 675	0.1- 0.3+
1986 08 31	809 0.6+	0.1+	1986 09 06 688	0.6+	0.5+	1990 09 15 675	0.1+ 0.1+
1986 08 31	809 0.6+	0.0	1986 09 13 809	0.3+	1.9+		
1986 08 31	809 0.6+	0.0	1986 09 13 809	0.5+	1.8+		

1986 RV₅ = 1998 BX₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	86.53644		(2000.0)			P		Q		
n	0.28560837	ω	130.24755			+0.97005086		-0.23243535		
a	2.2836108	Ω	243.29911			+0.19191973		+0.91141692		
e	0.1788688	i	4.52844			+0.14888969		+0.33954824		
P	3.45	H	15.0			G	0.15	U	4	
Residuals in seconds of arc										
1986 09 07	095	0.1+	0.5+	1998 01 26	691	0.3-	0.0	1998 01 28	691	0.2+ 0.1-
1986 09 11	095	0.1-	0.6-	1998 01 26	691	0.5-	0.1+	1998 01 28	691	0.2+ 0.0
1986 10 05	095	0.0	0.1+	1998 01 26	691	0.4+	0.0			

$$1987 \text{ DN} = 1996 \text{ VZ}_{30} = 1998 \text{ BF}_4$$

Id. D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	319.54781		(2000.0)		P		Q				
n	0.17771781	ω	217.79272		-0.98900004		-0.12977991				
a	3.1331564	Ω	314.58851		+0.14789519		-0.87552667				
e	0.0321902	i	5.71886		-0.00243620		-0.46541404				
P	5.55	H	12.0		G	0.15	U	4			
Residuals in seconds of arc											
1987 02 23	809	0.4-	1.2+	1987 02 28	809	0.2+	0.0	1987 03 04	809	0.6+	1.1-
1987 02 23	809	0.8-	1.1+	1987 02 28	809	0.1-	0.5+	1996 11 02	327	0.1-	0.2-
1987 02 23	809	0.4-	1.2+	1987 02 28	809	0.0	0.4+	1996 11 02	327	0.1+	0.0
1987 02 24	809	0.0	0.6+	1987 03 01	887	0.1+	1.8-	1996 11 02	327	0.8+	0.1-
1987 02 24	809	0.1+	0.5+	1987 03 01	887	(2.8-	0.1+)	1996 11 13	327	0.3-	0.0
1987 02 24	809	0.2+	0.6+	1987 03 02	809	0.7-	0.3-	1996 11 13	327	0.5-	0.1+
1987 02 25	809	0.7+	0.0	1987 03 02	809	0.6-	0.3-	1996 11 13	327	0.1-	0.2+
1987 02 25	809	0.8+	0.1+	1987 03 02	809	0.6-	0.1-	1998 01 21	905	0.5-	0.3-
1987 02 25	809	1.0+	0.2-	1987 03 02	887	0.8-	0.5+	1998 01 21	905	0.3+	1.3+
1987 02 25	887	2.1-	0.7- Y	1987 03 02	887	1.1-	0.1+	1998 01 24	385	0.1+	0.5-
1987 02 25	887	1.3+	0.0 Y	1987 03 03	809	0.0	0.4-	1998 01 24	385	0.0	0.3-
1987 02 25	887	(2.9-	2.1-) Y	1987 03 03	809	0.1+	0.3-	1998 01 26	886	0.1-	0.5-
1987 02 27	809	0.4+	0.3+	1987 03 03	809	0.4+	0.4-	1998 01 26	886	0.3-	1.3-
1987 02 27	809	0.4+	0.1+	1987 03 04	809	0.6+	0.6-	1998 02 05	886	0.6+	0.5+
1987 02 27	809	0.4+	0.0	1987 03 04	809	0.7+	0.7-	1998 02 05	886	0.4-	0.6+

1987 DQ₆ = 1932 CM

Id. T. Kobayashi (1998 observations), D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

$\dot{M}$	139.75727		(2000.0)		P		Q
n	0.17968113	ω	14.70600	+0.99003376	-0.13660367		
a	3.1102913	Ω	352.87575	+0.08418807	+0.76899993		
e	0.0741986	i	16.02793	+0.11289606	+0.62448262		
P	5.49	H	11.0	G	0.15	U	3
Residuals in seconds of arc							
1932 02 05	024 0.0	0.0	1987 03 01	809 0.2+	0.1-	1987 03 05	809 0.2+ 0.0
1987 02 24	809 0.8-	0.7+	1987 03 03	809 0.5+	0.5-	1987 03 06	809 0.3+ 0.4+
1987 02 24	809 0.7-	0.6+	1987 03 03	809 0.5+	0.5-	1987 03 06	809 0.4+ 0.1+
1987 02 24	809 0.8-	0.6+	1987 03 03	809 0.7+	0.2-	1987 03 06	809 0.2+ 0.2+
1987 02 25	809 0.8-	0.5+	1987 03 04	809 0.4+	0.3-	1987 03 08	809 0.0 0.3+
1987 02 25	809 0.7-	0.5+	1987 03 04	809 0.6+	0.1+	1987 03 08	809 0.4+ 0.1-
1987 02 25	809 0.4-	0.4+	1987 03 04	809 0.7+	0.1+	1987 03 08	809 0.6+ 0.0
1987 02 27	809 0.7-	0.4+	1987 03 04	399 0.3+	1.8-	1998 01 31	411 0.2+ 0.4+
1987 02 27	809 0.5-	0.1+	1987 03 04	399 1.5-	1.2-	1998 01 31	411 0.4- 1.0+
1987 02 27	809 0.5-	0.1+	1987 03 04	399 0.6+	0.4-	1998 02 01	411 0.2+ 0.5-
1987 03 01	809 0.1+	0.4-	1987 03 05	809 0.1+	0.0	1998 02 01	411 0.4+ 0.3-
1987 03 01	809 0.2+	0.2-	1987 03 05	809 0.2+	0.0		

$$\mathbf{1987\ QG_{10} = 1986\ EO_4 = 1998\ BD_3}$$

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	63.79609		(2000.0)		P		Q	
n	0.30448844	ω	221.16775		+0.94860151		+0.30980077	
a	2.1882092	Ω	120.67464		-0.26710846		+0.89330311	
e	0.1899142	i	4.31035		-0.16972992		+0.32562714	
P	3.24	H	14.0		G	0.15	U	4
Residuals in seconds of arc								
1986 03 12	809	0.1-	0.2-	1998 01 18 691	0.0	0.2-	1998 01 22 691	0.0 0.1+
1987 08 26	095	0.4-	0.7-	1998 01 18 691	0.2+	0.0	1998 02 02 691	0.2- 0.4+
1987 09 01	095	0.4+	1.9+	1998 01 18 691	0.4+	0.2-	1998 02 02 691	0.3- 0.3+
1987 09 22	095	0.2+	0.4-	1998 01 22 691	0.3-	0.1+		
1987 09 25	095	0.2-	1.0-	1998 01 22 691	0.0	0.1-		

1998 FEB. 11

M.P.C. 31227

1987 RN₃ = 1998 BL₁₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	62.20274	ω	114.88143	+0.71888670	-0.68259422		
<i>a</i>	2.7364753	Ω	288.46773	+0.57726382	+0.69154354		
<i>e</i>	0.1363052	<i>i</i>	7.96329	+0.38725754	+0.23628937		
<i>P</i>	4.53	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1987 09 02	095	0.5-	1.6-	1987 11 23	675	0.2+	0.4-	1998 01 28	566	0.0	0.6+
1987 09 17	095	0.0	1.0+	1987 11 23	675	0.3-	1.9-	1998 01 28	566	0.2-	0.6+
1987 09 26	095	0.1-	1.5+	1998 01 24	566	0.2+	0.7-	1998 01 28	566	0.0	0.7+
1987 10 17	675	0.4+	0.4+	1998 01 24	566	0.2+	0.4-				
1987 10 17	675	0.2+	0.6+	1998 01 24	566	0.0	0.5-				

1987 UN₁

Id. E. Bowell (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	105.74239	ω	170.73145	+0.77326512	-0.61210640		
<i>a</i>	2.6866797	Ω	228.34970	+0.56664912	+0.78420193		
<i>e</i>	0.1628038	<i>i</i>	12.79570	+0.28455199	+0.10175011		
<i>P</i>	4.40	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1987 10 25	399	0.5-	1.4-	1987 10 31	399	(4.3+	1.8+)Y	1987 11 14	400	0.1+	0.9-	Y
1987 10 25	399	0.9-	1.1+	1987 10 31	399	(2.9+	3.7+)Y	1997 12 27	688	0.3+	0.2-	
1987 10 25	399	0.6+	0.2-	1987 11 13	400	1.0+	0.0	1997 12 27	688	0.5+	0.3-	
1987 10 28	399	(5.1+	2.1+)	1987 11 13	400	0.2-	0.3+	1997 12 29	688	0.6-	0.4+	
1987 10 28	399	(4.3+	2.0+)	1987 11 13	400	0.7+	0.1-	1997 12 29	688	0.2-	0.0	
1987 10 28	399	(4.1+	0.3+)	1987 11 14	400	0.8-	1.3+	Y				

1988 FM₁ = 1981 YE₂

Id. T. Kobayashi (1998 observations), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	52.20550	ω	83.22797	+0.62549194	-0.77466996		
<i>a</i>	3.0341845	Ω	327.46070	+0.63001975	+0.57177392		
<i>e</i>	0.1011757	<i>i</i>	9.95500	+0.46025531	+0.27011301		
<i>P</i>	5.29	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 12 23	095	0.3+	0.7+	1988 03 17	033	0.9+	0.1-	1988 03 23	809	0.3-	0.1-
1988 02 18	413	0.3+	0.0	1988 03 18	809	0.2-	0.2-	1998 01 19	411	0.0	0.6-
1988 02 18	413	0.9+	1.1+	1988 03 18	809	0.4-	0.3-	1998 01 19	411	0.4-	0.3-
1988 03 17	809	0.9-	0.9-	1988 03 20	809	0.1-	0.6+	1998 01 20	411	0.0	0.2+
1988 03 17	809	0.2+	0.7-	1988 03 20	809	0.1+	1.1+	1998 01 20	411	0.0	0.2-
1988 03 17	033	0.3+	0.0	1988 03 23	809	0.6-	0.1-				

1988 QC

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	51.50438	ω	212.80346	+0.99408464	-0.08441610		
<i>a</i>	2.6435074	Ω	151.79898	+0.10017789	+0.95572801		
<i>e</i>	0.4406028	<i>i</i>	8.31434	-0.04195386	+0.28188277		
<i>P</i>	4.30	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 08 18	675	0.4-	0.1-	1988 09 10	675	0.0	0.4-	1988 10 09	675	0.5+	0.1-
1988 08 18	675	0.2+	0.9-	1988 09 10	675	0.4-	0.0	1988 11 07	675	0.4-	0.9-
1988 08 19	675	0.7+	1.4-	1988 09 12	675	0.1+	0.5+	1988 11 07	675	1.0-	1.0-
1988 08 19	675	0.2+	1.7-	1988 09 12	675	0.0	0.3+	1998 01 18	691	0.9-	0.2+
1988 08 21	675	0.5-	0.8+	1988 09 15	675	0.1+	0.5-	1998 01 18	691	1.1-	0.3-
1988 08 21	675	0.3-	0.8+	1988 09 15	675	0.2-	0.5+	1998 01 18	691	0.7-	0.0

1988 08 21	675	0.5-	0.8+	1988 10 05	807	0.2-	0.8+	1998 01 20	696	0.9+	0.3+
1988 08 22	675	0.1-	0.4+	1988 10 06	807	1.4+	0.7+	1998 01 20	696	0.9+	0.2+
1988 08 22	675	0.1-	0.4+	1988 10 07	675	0.4-	0.1+	1998 01 20	696	1.0+	0.2+
1988 08 22	675	0.2-	0.4+	1988 10 08	807	0.9+	0.0				

1988 SX₂ = 1997 WH₅₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	8.75664	ω	54.18667	+0.41250041	-0.91092241		
<i>a</i>	0.12329297	Ω	11.45951	+0.82228569	+0.36856094		
<i>e</i>	3.9980096	<i>i</i>	2.30372	+0.39203273	+0.18542707		
<i>P</i>	0.1973061	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 09 16	807	0.1-	0.2+	1988 11 04	807	0.9-	0.9+	1997 11 29	704	1.3-	0.2-
1988 09 18	807	0.5-	0.3-	1988 11 06	807	0.2+	0.0	1997 11 29	704	1.0-	1.0-
1988 10 04	807	0.2+	0.4+	1997 11 28	566	0.3+	0.4+	1997 11 29	704	0.2-	0.8-
1988 10 05	807	0.5+	0.2+	1997 11 28	566	1.4+	0.6+	1997 11 29	704	(0.9-	2.4-)
1988 10 08	807	0.6+	1.2-	1997 11 28	566	0.9+	0.9+	1997 11 29	704	(3.7-	1.3-)

1989 CH₃ = 1997 WA₄₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	352.24851	ω	186.64396	-0.01535294	-0.99230482		
<i>a</i>	0.21026706	Ω	264.28621	+0.92296300	+0.03319778		
<i>e</i>	2.8008416	<i>i</i>	7.09281	+0.38458234	-0.11928555		
<i>P</i>	0.1919798	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 02 04	809	(3.2+	0.1-)	1989 03 02	809	1.0-	2.0-	1997 11 29	704	0.3-	0.1-
1989 02 04	809	1.8+	0.2-	1989 03 03	809	0.7+	0.1+	1997 11 29	704	0.2+	0.5-
1989 02 04	809	(3.7+	0.3-)	1989 03 03	809	1.2+	0.5-	1997 11 29	704	0.7-	0.7+
1989 02 07	809	0.2+	1.1+	1989 03 03	809	0.9+	0.5-	1997 12 31	704	0.4+	0.7-
1989 02 07	809	0.1+	1.2+	1989 03 03	809	0.5-	0.2+	1997 12 31	704	0.7+	0.1-
1989 02 07	809	0.1+	0.8+	1989 03 03	809	0.2-	0.5+	1997 12 31	704	0.2-	1.5+
1989 03 02	809	0.2-	0.4-	1989 03 03	809	0.4-	0.0	1997 12 31	704	1.3-	0.2-
1989 03 02	809	0.0	0.2-	1997 11 28	566	0.1+	0.2-	1998 01 02	704	0.4+	0.4+
1989 03 02	809	0.2-	0.1-	1997 11 28	566	0.3+	0.8-	1998 01 02	704	0.4+	0.2-
1989 03 02	809	1.5-	0.4+	1997 11 28	566	0.6+	0.3-	1998 01 02	704	0.9+	0.1-
1989 03 02	809	1.2-	0.4-	1997 11 29	704	1.3-	0.4+	1998 01 02	704	(3.4-	0.2-)

1989 EF₆ = 1998 BK₃₆

Id. T. Urata

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	9.49992	ω	147.03471	-0.47195514	-0.87839865		
<i>a</i>	0.21946850	Ω	330.91911	+0.77161980	-0.37022833		
<i>e</i>	2.7219987	<i>i</i>	8.91562	+0.42645191	-0.30223632		
<i>P</i>	0.0354014	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 02 02	675	0.6+	0.5+	1989 03 02	809	0.4+	0.4+	1989 03 10	033	1.1+	0.5+
1989 02 02	675	0.7+	0.6-	1989 03 02	809	0.1+	0.5+	1989 03 10	033	0.4-	0.2+
1989 03 01	809	0.8-	0.7-	1989 03 03	809	0.9-	0.3-	1998 01 29	905	0.2-	0.5+
1989 03 01	809	0.5-	0.6-	1989 03 03	809	0.8-	0.2-	1998 01 29	905	0.5-	0.1-
1989 03 01	809	0.3-	0.6-	1989 03 03	809	0.8-	0.2-	1998 01 31	905	0.6+	0.2+
1989 03 02	809	0.1+	0.5+	1989 03 07	033	1.6+	0.6+	1998 01 31	905	0.1+	0.7-

1989 SR₃

Id. T. Kobayashi (1998 observations)

M.P.C. 31228

1998 FEB. 11

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	54.93591	(2000.0)	P	Q
<i>n</i>	0.15666909	ω 336.20338	+0.17995112	-0.98181555
<i>a</i>	3.4078503	Ω 103.38551	+0.91218669	+0.14355314
<i>e</i>	0.0541180	<i>i</i> 3.56334	+0.36814812	+0.12422049
<i>P</i>	6.29	<i>H</i> 12.9	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1989 09 26	809	0.8+	0.1-	1989 10 03	809	0.7-	0.0	1989 10 08	809	0.1+	0.8+
1989 09 26	809	0.3+	0.5-	1989 10 03	809	1.2-	0.0	1988 01 25	411	0.2+	0.1-
1989 09 26	809	1.0+	1.5-	1989 10 07	809	0.2+	0.8+	1988 01 25	411	0.4-	0.1+
1989 09 28	809	0.7+	0.8-	1989 10 07	809	0.3-	2.1+	1988 01 26	411	0.7-	0.1-
1989 09 28	809	0.0	1.4-	1989 10 07	809	0.1-	1.0+	1988 01 26	411	0.8+	0.1-
1989 09 28	809	1.1-	1.8-	1989 10 08	809	0.6+	0.1+				
1989 10 03	809	0.3-	0.8+	1989 10 08	809	0.1+	0.1+				

1989 UF₁ = 1998 BO₁₅

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	61.34289	(2000.0)	P	Q
<i>n</i>	0.26319355	ω 122.80499	+0.83997915	-0.54172180
<i>a</i>	2.4114924	Ω 270.01390	+0.48683525	+0.77776162
<i>e</i>	0.2157325	<i>i</i> 1.78707	+0.23963821	+0.31878575
<i>P</i>	3.74	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1989 09 25	809	0.6-	0.2+	1989 11 01	888	0.2+	1.1-	1989 11 24	675	0.2-	1.1-
1989 09 25	809	0.3-	0.3-	1989 11 01	888	1.5+	0.4-	1989 11 26	888	0.4-	0.3-
1989 09 25	809	0.4-	0.4-	1989 11 02	877	0.4+	0.1-	1989 11 26	888	0.2+	0.4+
1989 09 26	809	0.8-	0.6+	1989 11 02	877	1.0+	0.4-	1989 12 03	888	0.5-	0.8+
1989 09 26	809	0.0	0.7+	1989 11 04	888	0.6-	0.4-	1989 12 03	888	0.6-	0.7+
1989 09 26	809	0.7+	0.9+	1989 11 04	877	(2.1+	4.8-)	1988 01 24	566	0.4-	0.4-
1989 10 25	888	(2.9-	2.8-)	1989 11 04	877	1.7+	0.6-	1988 01 24	566	0.5-	0.4-
1989 10 25	888	(2.7-	3.6-)	1989 11 04	888	0.8-	0.4-	1988 01 24	566	0.5-	0.2-
1989 10 29	385	(3.6-	3.4+)	1989 11 19	888	0.1-	0.1-	1988 01 28	566	0.1+	0.5+
1989 10 29	385	(11.0-	1.6+)	1989 11 19	888	0.2+	0.8-	1988 01 28	566	0.0	0.7+
1989 10 29	888	0.1+	0.5-	1989 11 21	888	0.1-	0.1+	1988 01 28	566	0.1+	0.7+
1989 10 29	888	0.2+	1.1+	1989 11 21	888	0.8+	0.5+	1988 01 29	888	0.2-	0.1-
1989 11 01	877	1.6-	1.5+	1989 11 24	675	0.2-	0.4-	1988 01 29	888	1.5+	0.1-

1990 HW₁

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	56.34609	(2000.0)	P	Q
<i>n</i>	0.24077201	ω 306.80913	+0.10906202	-0.97696628
<i>a</i>	2.5589711	Ω 135.79499	+0.97508214	+0.06928540
<i>e</i>	0.0578532	<i>i</i> 15.25221	+0.19318461	+0.20183268
<i>P</i>	4.09	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1990 04 27	413	0.8-	0.3-	1990 05 26	413	(1.9+	5.0-)	1998 01 31	411	0.2-	0.2-
1990 04 27	413	0.5+	0.4+	1990 05 26	413	0.0	0.0	1998 02 01	411	0.4+	0.3-
1990 04 29	413	0.4+	0.2-	1998 01 31	411	0.7-	0.3+	1998 02 01	411	0.6+	0.2+

1990 QV₅ = 1987 SY₂Id. S. Nakano (*MPC* 17448)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	107.00479	(2000.0)	P	Q
<i>n</i>	0.31221734	ω 165.64003	+0.96326228	+0.26856151
<i>a</i>	2.1519460	Ω 178.78062	-0.24954945	+0.89603332
<i>e</i>	0.0933991	<i>i</i> 1.89554	-0.09925145	+0.35355197
<i>P</i>	3.16	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1987 09 20	071	(1.9-	3.0-)	1990 08 29	675	0.1+	0.2-	1998 01 19	426	0.2-	0.1+
1987 09 20	071	(5.6-	3.1+)	1990 08 29	675	0.2+	0.6-	1998 01 19	426	0.2-	0.4-
1987 09 21	071	0.5-	0.3-	1990 09 13	675	(0.8+	2.3+)	1998 01 19	426	0.0	0.3+
1987 09 21	071	0.3+	0.7+	1990 09 13	675	0.9+	1.2+	1998 01 24	426	0.1-	0.0
1990 08 22	675	0.5-	0.4-	1990 09 14	675	1.0-	1.5+	1998 01 24	426	0.4+	0.7-
1990 08 22	675	0.0	0.7-	1990 09 14	675	0.7+	1.4-	1998 01 24	426	0.1+	0.1+

1990 RN₁₇ = 1998 BJ₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	126.12689	(2000.0)	P	Q
<i>n</i>	0.17031032	ω 29.35762	+0.81134972	+0.57470752
<i>a</i>	3.2233594	Ω 295.17585	-0.55671760	+0.70392376
<i>e</i>	0.1800115	<i>i</i> 6.78225	-0.17826147	+0.41737585
<i>P</i>	5.79	<i>H</i> 11.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1990 09 15	095	0.2-	0.2+	1998 01 23	704	0.2-	0.6-	1998 01 25	704	1.2+	0.1+
1990 09 23	095	0.4-	0.6+	1998 01 23	704	0.1-	0.2-	1998 01 25	704	0.3+	1.4-
1990 10 23	095	0.7+	0.8-	1998 01 23	704	2.0-	0.8+	1998 01 25	704	0.3-	0.5+
1998 01 23	704	0.3+	0.2+	1998 01 25	704	0.9+	0.8+				

1990 SH₈ = 1997 WE₄₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	334.49701	(2000.0)	P	Q
<i>n</i>	0.29711704	ω 322.42944	-0.17243459	-0.98243354
<i>a</i>	2.2242538	Ω 137.36633	+0.92736520	-0.18633282
<i>e</i>	0.0794614	<i>i</i> 6.04685	+0.33205435	+0.01021834
<i>P</i>	3.32	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1990 09 14	809	0.0	0.2-	1990 09 22	809	0.6-	0.2-	1997 11 26	704	0.6-	1.2+
1990 09 14	809	0.0	0.6-	1990 09 25	809	0.6+	0.3+	1997 11 26	704	1.6-	0.6+
1990 09 14	809	0.5-	0.4-	1990 09 25	809	0.1-	0.0	1997 11 28	566	0.6+	0.5-
1990 09 22	809	0.5+	1.0+	1990 09 25	809	0.4+	0.0	1997 11 28	566	0.3+	0.8-
1990 09 22	809	0.2-	0.1+	1997 11 26	704	0.3+	0.7+	1997 11 28	566	0.9+	1.1-

1990 TX₄ = 1998 BO₁₀

Id. B. G. Marsden

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	183.26418	(2000.0)	P	Q
<i>n</i>	0.19174233	ω 88.29564	+0.51684680	+0.85248899
<i>a</i>	2.9784527	Ω 213.20258	-0.83126732	+0.47790165
<i>e</i>	0.1448287	<i>i</i> 8.22143	-0.20460701	+0.21183137
<i>P</i>	5.14	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1990 09 18	675	0.2-	0.1-	1990 10 11	413	0.3-	0.2-	1998 01 27	046	0.2-	0.0
1990 09 18	675	0.4+	0.1+	1998 01 26	046	0.4+	0.1+	1998 01 27	046	0.3-	0.1+
1990 09 20	675	0.8+	0.2+	1998 01 26	046	0.1-	0.2-	1998 01 27	046	0.1-	0.1-
1990 09 20	675	1.1-	0.3-	1998 01 26	046	0.3+	0.1+	1998 01 27	046	0.3-	0.1+
1990 10 09	413	0.5+	1.0-	1998 01 27	046	0.3+	0.1-				
1990 10 09	413	0.1-	1.2+	1998 01 27	046	0.1+	0.0				

1990 UB₁

Id. E. Bowell (1993 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	96.47285	(2000.0)	P	Q
<i>n</i>	0.17640644	ω 15.46781	+0.66901534	-0.73024524
<i>a</i>	3.1486648	Ω 32.90862	+0.65203327	+0.48725013
<i>e</i>	0.1498851	<i>i</i> 14.76042	+0.35675075	+0.47888328
<i>P</i>	5.59	<i>H</i> 11.5	<i>G</i> 0.15	<i>U</i> 4

1998 FEB. 11

M.P.C. 31229

Residuals in seconds of arc

1990 10 16	095	0.6−	1.6+	1990 10 21	402	1.6+	0.4−	1993 03 24	675	1.5+	0.8+
1990 10 16	095	(2.3+)	1.0−	1990 10 28	402	(2.2+)	0.3−	1993 03 24	675	0.0	1.2+
1990 10 19	402	1.2−	0.1−	1990 10 28	402	0.6+	0.3−	1997 12 27	688	0.1−	0.1−
1990 10 19	402	0.5+	0.3+	1990 11 14	095	(1.0−)	2.7+	1997 12 27	688	0.2−	0.1−
1990 10 20	402	0.8−	1.1−	1990 11 14	095	1.1−	1.1+	1997 12 29	688	0.2−	0.3−
1990 10 20	402	0.6+	0.3+	1990 11 24	402	0.2−	0.4+	1997 12 29	688	0.2−	0.5−
1990 10 21	402	0.4−	0.4−	1990 11 24	402	0.1+	0.1+				

1990 UQ₂ = 1998 BV₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	358.66099		(2000.0)	P	Q			Williams			
<i>n</i>	0.26657880	ω	325.54837	+0.98248919	−0.15594062						
<i>a</i>	2.3910334	Ω	43.78451	+0.18603991	+0.85103736						
<i>e</i>	0.2256064	<i>i</i>	8.47419	−0.01020497	+0.50141593						
<i>P</i>	3.70	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1990 10 17	095	1.5+	1.1−	1990 11 13	399	0.9+	0.5−	1998 01 18	327	1.6−	0.2+	
1990 10 17	095	(1.3+	3.5+)	1990 11 13	399	(2.1+	0.9+)	1998 01 18	327	1.3+	1.1+	
1990 10 28	374	0.9−	1.1−	1990 11 15	403	(2.8−	1.5+)	Y	1998 01 18	327	0.9+	0.5+
1990 10 28	374	0.9−	0.9+	1990 11 15	403	0.0	0.2−	Y	1998 01 19	327	0.6+	0.4+
1990 10 30	374	1.3+	1.2+	1990 11 15	374	0.9+	0.6+		1998 01 19	327	0.2+	0.4−
1990 11 07	896	1.8−	0.5+	1990 11 15	374	0.5−	1.6−		1998 01 19	327	0.1−	0.4+
1990 11 07	896	(1.5−	2.5−)	1990 11 16	403	0.9−	1.4+	Y	1998 01 23	327	0.4−	0.2−
1990 11 11	374	(0.4−	3.4−)	1990 11 16	403	0.9−	0.5−	Y	1998 01 23	327	0.1+	0.3+
1990 11 11	374	0.9+	0.3+	1990 11 16	875	(1.9−	2.7+)		1998 01 23	327	1.0−	1.0−
1990 11 12	399	(3.9+	2.3−)	1990 11 16	875	1.0−	0.3+		1998 01 23	327	0.4−	0.6−
1990 11 12	399	(2.8+	2.1−)	1990 11 24	410	0.7+	0.7+					
1990 11 12	399	1.0+	1.2−	1990 12 21	374	(2.1−	2.7+)					

1990 UQ₄ = 1998 BJ₃₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	64.85696		(2000.0)	P	Q			Nakano			
<i>n</i>	0.29815224	ω	260.83335	+0.88941830	−0.45428966						
<i>a</i>	2.2191023	Ω	126.16966	+0.44011499	+0.82125989						
<i>e</i>	0.1718046	<i>i</i>	3.59059	+0.12342564	+0.34518558						
<i>P</i>	3.31	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1990 10 16	809	0.7+	0.6+	1990 10 24	809	0.9+	1.2+	1998 01 24	376	0.4−	0.1+
1990 10 16	809	0.2−	0.9−	1990 10 24	809	1.3−	0.0	1998 01 26	376	0.1+	0.4−
1990 10 16	809	0.9−	1.0−	1990 10 24	809	0.2−	0.6−	1998 01 26	376	0.2−	0.1−
1990 10 19	809	0.5+	0.2−	1998 01 19	376	0.4+	0.1−	1998 01 29	376	0.1−	0.4+
1990 10 19	809	0.9+	0.5+	1998 01 19	376	0.1−	0.2−	1998 01 29	376	0.3+	0.4+
1990 10 19	809	0.4−	0.4+	1998 01 24	376	0.0	0.2−				

1991 GK₅ = 1982 YV₄ = 1998 BF₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	34.34384		(2000.0)	P	Q			Asher			
<i>n</i>	0.26611802	ω	56.95270	+0.17868130	−0.98374377						
<i>a</i>	2.3937927	Ω	22.77460	+0.88657819	−0.15308035						
<i>e</i>	0.1672888	<i>i</i>	2.65354	+0.42667565	+0.09388609						
<i>P</i>	3.70	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1982 12 24	095	0.2−	0.9−	1991 04 10	809	1.2−	0.5+	1998 01 28	411	0.1−	0.3+
1991 04 08	809	0.7+	0.9−	1991 04 19	809	1.2+	0.5+	1998 01 28	411	0.1−	0.2+
1991 04 08	809	1.7+	2.0−	1991 04 19	809	0.0	0.4+	1998 01 29	411	0.3+	0.4+
1991 04 08	809	0.3−	1.2−	1991 04 19	809	0.1−	0.5−	1998 01 29	411	0.3−	0.2−
1991 04 10	809	0.2−	0.3+	1991 04 19	675	1.2−	0.8+	1998 02 02	411	0.4+	0.3+
1991 04 10	809	0.2+	0.2+	1991 04 19	675	1.3−	1.3+	1998 02 02	411	0.3+	0.1+

1991 GA₇ = 1993 VF₈Id. G. V. Williams (*MPC* 25064)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	332.06321		(2000.0)	P	Q			Williams			
<i>n</i>	0.26370571	ω	307.53153	−0.78560565	−0.61851019						
<i>a</i>	2.4083690	Ω	194.28527	+0.58657182	−0.73608271						
<i>e</i>	0.1412058	<i>i</i>	3.81050	+0.19686863	−0.27500434						
<i>P</i>	3.74	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1991 04 08	809	1.3−	1.1+	1991 04 19	675	0.6+	1.1−	1993 11 13	033	0.3+	0.6+
1991 04 08	809	0.7−	1.0+	1991 04 19	675	0.6−	0.8−	1997 12 29	566	0.5+	0.5−
1991 04 08	809	1.1−	0.5+	1991 05 15	675	0.4−	0.3+	1997 12 29	566	0.4+	1.0−
1991 04 10	809	0.7+	0.3+	1991 05 15	675	0.0	1.3+	1997 12 29	566	0.2+	0.8−
1991 04 10	809	0.1−	0.4−	1991 05 17	675	1.0−	0.5−	1998 01 27	691	0.5−	0.3+
1991 04 10	809	0.6+	0.6−	1991 05 17	675	0.5−	0.1+	1998 01 27	691	0.4−	0.4+
1991 04 19	809	1.6+	0.2+	1993 11 11	033	0.1+	0.1+	1998 01 27	691	0.4−	0.2+
1991 04 19	809	0.6+	0.4+	1993 11 12	033	0.8−	1.4+				
1991 04 19	809	1.9+	0.3−	1993 11 12	033	0.2+	0.1+				

1991 LM

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	181.18570		(2000.0)	P	Q			Williams			
<i>n</i>	0.23933339	ω	191.07683	+0.40848130	+0.86974389						
<i>a</i>	2.5692154	Ω	103.51924	−0.81417407	+0.48433871						
<i>e</i>	0.0873240	<i>i</i>	16.54803	−0.41263011	−0.09466567						
<i>P</i>	4.12	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1991 06 13	675	0.6−	1.3−	1991 07 07	675	0.3+	0.7−	1998 01 20	411	0.2+	0.4−
1991 06 13	675	0.8+	0.2−	1991 07 09	675	0.9+	0.1+	1998 01 20	411	0.3+	0.9−
1991 06 15	675	0.4+	0.6+	1991 07 09	675	0.8−	0.5+	1998 01 24	566	0.1−	0.1+
1991 06 15	675	0.4−	1.0+	1998 01 19	411	0.1+	0.2+	1998 01 24	566	0.2+	0.1+
1991 07 07	675	0.5−	0.1−	1998 01 19	411	0.7−	0.7+	1998 01 24	566	0.1−	0.2+

1991 NL = 1987 QB₁₁

Id. M. W. Buie (1997–98 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	192.49898		(2000.0)	P	Q			Williams			
<i>n</i>	0.24095920	ω	53.42686	+0.66001625	+0.70576254						
<i>a</i>	2.5576457	Ω	260.00710	−0.74530799	+0.57212597						
<i>e</i>	0.1930406	<i>i</i>	15.15377	−0.09431087	+0.41781708						
<i>P</i>	4.09	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1987 08 28	095	1.1−	2.1+	1991 08 15	675	0.3−	1.1−	1991 10 10	801	1.5−	0.2−
1991 07 08	675	1.2+	0.6+	1991 08 16	675	0.5−	0.4−	1997 12 29	688	0.1+	0.6+
1991 07 08	675	1.3+	0.5+	1991 08 16	675	1.0−	1.2+	1997 12 29	688	0.5+	0.1−
1991 07 10	675	0.5+	0.0	1991 10 03	801	0.6+	0.3−	1998 01 08	688	0.1−	0.4+
1991 07 10	675	1.6−	0.7−	1991 10 03	801	0.0	0.3−	1998 01 08	688	0.0	0.5+
1991 08 15	675	0.8+	0.1−	1991 10 10	801	0.9+	1.0−				

1991 PZ₅ = 1998 BF₉

Id. G. V. Williams, E. Bowell (1994 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	260.59175		(2000.0)	P	Q			Williams			
<i>n</i>	0.23366977	ω	260.76185	−0.60464124	+0.79397410						
<i>a</i>	2.6105641	Ω	331.73226	−0.66813630	−0.54889355						
<i>e</i>	0.0955343	<i>i</i>	7.68806	−0.43359297	−0.26138287						
<i>P</i>	4.22	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1991 08 05	675	0.7+	0.4+	1991 08 14	809	1.2+	1.4−	1998 01 25	566	0.3−	0.8−
1991 08 05	675	0.9+	1.4+	1991 08 14	809	1.6+	0.3−	1998 01 25	566	0.1−	0.7−
1991 08 06	809	0.6−	0.2−	1991 08 16	809	0.8+	0.4−	1998 01 25	566	0.1−	0.8−

M.P.C. 31230

1998 FEB. 11

1991 08 06	809	0.6−	0.4+	1991 08 16	809	0.8+	0.7−	1998 01 26	566	0.0	0.4+
1991 08 06	809	1.6−	0.2+	1991 08 16	809	1.2+	0.5−	1998 01 26	566	0.1−	0.2+
1991 08 10	675	0.1−	0.0	1991 09 06	809	0.5+	1.2−	1998 01 26	566	0.4+	0.6+
1991 08 10	675	0.9−	0.4−	1991 09 06	809	0.3+	0.8−	1998 01 26	566	0.1−	0.1−
1991 08 14	809	0.6−	0.1−	1991 09 06	809	0.6+	0.4−	1998 01 26	566	0.1−	0.1+
1991 08 14	809	1.2−	0.3+	1994 02 15	675	0.6−	0.9−	1998 01 26	566	0.0	0.2+
1991 08 14	809	1.6−	0.7+	1994 02 15	675	0.6−	1.2−				

1991 PG₉

Id. E. Bowell (1990 observations), M. W. Buie (1997–98 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	132.05737	(2000.0)	
<i>n</i>	0.21113750	ω	131.87784
<i>a</i>	2.7931385	Ω	183.32029
<i>e</i>	0.1514890	<i>i</i>	8.92117
<i>P</i>	4.67	<i>H</i>	13.5

Residuals in seconds of arc

1990 03 27	675	1.6−	1.1+	1991 08 15	675	0.5−	0.5+	1997 12 27	688	0.1+	0.1+
1990 03 27	675	1.5+	1.6−	1991 08 16	675	0.6−	0.1+	1997 12 27	688	0.2−	0.1−
1991 08 05	675	0.4+	0.6−	1991 08 16	675	0.5−	0.5+	1997 12 27	688	0.2+	0.2−
1991 08 05	675	0.0	0.2+	1991 09 13	675	0.3+	0.1+	1998 01 06	688	0.4−	0.2+
1991 08 09	675	0.6+	0.3−	1991 09 13	675	0.1−	0.7−	1998 01 06	688	0.1+	0.1−
1991 08 09	675	1.1+	0.5−	1991 09 14	675	0.2−	0.4−	1998 01 07	688	0.1+	0.2−
1991 08 15	675	0.6−	1.1+	1991 09 14	675	0.3+	0.6−	1998 01 07	688	0.1+	0.1−

1991 PF₁₁ = 1998 BN₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	191.72864	(2000.0)	
<i>n</i>	0.21583758	ω	346.25029
<i>a</i>	2.7524409	Ω	288.45566
<i>e</i>	0.1338547	<i>i</i>	8.40160
<i>P</i>	4.57	<i>H</i>	13.0

Residuals in seconds of arc

1991 08 07	675	0.3+	0.5+	1998 01 02	704	0.2+	0.1−	1998 01 24	704	0.1+	0.1+
1991 08 07	675	0.2+	0.8−	1998 01 02	704	0.1+	0.4−	1998 01 24	704	0.0	0.4+
1991 08 08	675	(2.7−	3.1−)	1998 01 02	704	0.3−	0.0	1998 01 24	704	1.0+	0.2+
1991 08 08	675	0.7−	1.1−	1998 01 02	704	0.1−	0.3+	1998 01 24	704	0.9−	0.6−
1991 08 10	675	0.1+	0.5+	1998 01 02	704	0.1−	0.2+	1998 01 25	704	0.5−	0.0
1991 08 10	675	0.2+	1.1+	1998 01 23	704	0.1−	0.3−	1998 01 25	704	0.4+	0.3+
1991 09 10	675	0.2−	0.1+	1998 01 23	704	0.2+	0.4+	1998 01 25	704	1.0+	0.1+
1991 09 10	675	0.1+	0.3−	1998 01 23	704	0.4−	0.0	1998 01 25	704	0.2+	0.5+
1997 11 29	688	0.0	0.2+	1998 01 23	704	0.6−	0.7−	1998 01 25	704	0.1−	0.6−

1991 RZ₁₀ = 1997 WJ₅₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	66.43974	(2000.0)	
<i>n</i>	0.17394561	ω	241.96400
<i>a</i>	3.1782916	Ω	82.20736
<i>e</i>	0.2573361	<i>i</i>	2.49084
<i>P</i>	5.67	<i>H</i>	14.0

Residuals in seconds of arc

1991 09 10	675	(2.6−	1.4+)	1997 10 30	566	0.4+	0.3−	1997 12 04	704	1.1+	0.4+
1991 09 10	675	1.4−	1.1+	1997 10 30	566	0.6+	0.1−	1997 12 04	704	0.5−	1.2+
1991 09 13	675	0.7−	0.2−	1997 10 30	566	0.6+	0.2+	1998 01 17	910	0.5−	0.5+
1991 09 13	675	0.6+	0.8−	1997 11 29	704	0.2+	1.7−	1998 01 17	910	0.4−	0.4+
1991 09 15	675	0.7+	1.1−	1997 11 29	704	(0.2−	2.2−)	1998 01 17	910	0.5−	0.5+
1991 09 15	675	(0.3+	2.6−)	1997 11 29	704	(1.3−	3.1−)	1998 01 27	910	0.0	0.1+
1991 09 16	675	(2.7−	0.2+)	1997 11 29	704	0.6+	1.5−	1998 01 27	910	0.6−	0.5+
1991 09 16	675	1.7−	0.8+	1997 11 29	704	0.6−	1.8−	1998 01 27	910	0.2−	0.1+
1991 10 08	675	1.2+	0.6+	1997 12 04	704	0.9−	0.8+				
1991 10 08	675	0.8+	0.2+	1997 12 04	704	0.1+	0.6+				

1991 RG₂₅ = 1998 BE₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	160.25893	(2000.0)	
<i>n</i>	0.21037345	ω	222.97751
<i>a</i>	2.7998973	Ω	92.11425
<i>e</i>	0.2172412	<i>i</i>	9.12921
<i>P</i>	4.69	<i>H</i>	13.0

Residuals in seconds of arc

1991 09 11	675	0.0	0.3+	1991 10 07	691	0.1+	0.1−	1998 01 28	587	0.5+	0.1−
1991 09 11	675	0.1−	0.1−	1998 01 27	587	1.6−	0.2+	1998 01 28	587	0.2−	0.3−
1991 09 13	675	0.1+	0.2−	1998 01 27	587	1.2+	0.0	1998 01 29	587	0.1−	0.4+
1991 10 07	691	0.0	0.2+	1998 01 27	587	0.0	0.1+	1998 01 29	587	0.4+	0.0
1991 10 07	691	0.1−	0.2−	1998 01 28	587	0.4−	0.0	1998 01 29	587	0.2+	0.3−

1991 RS₄₀ = 1998 BN₂₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	127.49941	(2000.0)	
<i>n</i>	0.21256433	ω	326.94968
<i>a</i>	2.7806253	Ω	31.03490
<i>e</i>	0.0811029	<i>i</i>	2.10648
<i>P</i>	4.64	<i>H</i>	14.0

Residuals in seconds of arc

1991 09 10	033	0.8−	0.0	1991 10 03	691	0.7−	0.0	1998 01 29	595	0.2+	0.3−
1991 09 10	033	0.1+	0.0	1991 10 04	033	0.3+	0.0	1998 01 29	595	0.7−	0.8+
1991 09 13	033	0.9−	0.0	1991 10 04	033	0.2+	0.2+	1998 01 30	595	0.0	0.4−
1991 09 17	675	0.6+	0.8−	1991 10 05	033	0.3+	0.5−	1998 01 30	595	0.2+	0.6−
1991 09 17	675	0.7+	0.9+	1998 01 25	566	0.6+	0.3−	1998 02 02	595	0.7−	0.7+
1991 10 03	691	0.5−	0.3+	1998 01 25	566	0.7+	0.1+	1998 02 02	595	0.6−	0.1+
1991 10 03	691	0.4−	0.2−	1998 01 25	566	0.3+	0.0				

1991 VN₄

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano			
<i>M</i>	90.21385	(2000.0)	
<i>n</i>	0.18892865	ω	279.05949
<i>a</i>	3.0079516	Ω	93.38346
<i>e</i>	0.1037351	<i>i</i>	11.64769
<i>P</i>	5.22	<i>H</i>	11.6

Residuals in seconds of arc

1991 11 04	894	0.5−	1.0+	1991 11 13	894	0.2−	0.2+	1998 01 19	411	0.2+	0.3−
1991 11 04	894	1.1−	0.3−	1991 11 13	894	0.8−	0.4−	1998 01 20	411	0.1−	0.1+
1991 11 10	894	2.1+	0.1+	1991 12 09	894	0.8−	0.2+	1998 01 20	411	0.0	0.0
1991 11 10	894	1.2+	0.8−	1998 01 19	411	0.1−	0.1+				

1991 VD₆

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano			
<i>M</i>	85.54806	(2000.0)	
<i>n</i>	0.19420360	ω	278.61615
<i>a</i>	2.9532341	Ω	118.78056
<i>e</i>	0.1366731	<i>i</i>	7.94649
<i>P</i>	5.08	<i>H</i>	14.1

Residuals in seconds of arc

1991 11 02	809	1.4+	0.1−	1991 11 06	809	1.3−	0.1−	1998 01 25	411	0.2−	0.6−
1991 11 02	809	0.0	0.4+	1991 11 12	809	0.3+	0.3−	1998 01 26	411	0.1+	0.3−
1991 11 02	809	1.5−	0.1+	1991 11 12	809	0.5−	0.4+	1998 01 26	411	0.6−	0.1+
1991 11 06	809	2.2+	0.6−	1991 11 12	809	0.1+	0.1−				
1991 11 06	809	0.6−	0.2+	1998 01 25	411	0.7+	0.8+				

1998 FEB. 11

M.P.C. 31231

1992 BD₂ = 1998 BQ₁₀

Id. B. G. Marsden

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	87.22686		(2000.0)		P		Q
<i>n</i>	0.17476939	ω	234.99274		+0.92776074		-0.35759257
<i>a</i>	3.1682964	Ω	145.60215		+0.37311234		+0.89413299
<i>e</i>	0.2193988	<i>i</i>	10.88820		-0.00686979		+0.26954359
<i>P</i>	5.64	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 01 30	809	0.3-	0.1-	1992 02 06	809	0.4-	0.5+	1998 01 27	046	0.1-	0.3+
1992 01 30	809	1.1-	0.8-	1992 02 06	809	0.0	0.2-	1998 01 27	046	0.2-	0.4+
1992 01 30	809	0.5-	0.9-	1992 02 11	809	0.1+	0.0	1998 01 27	046	0.2-	0.4+
1992 02 02	809	1.7+	0.5+	1992 02 11	809	0.1-	0.9-	1998 01 29	566	0.3-	0.3-
1992 02 02	809	0.1+	0.6+	1998 01 27	046	0.5+	0.0	1998 01 29	566	0.3-	0.5-
1992 02 02	809	0.2+	1.1+	1998 01 27	046	0.5+	0.1-	1998 01 29	566	0.5-	0.2-
1992 02 06	809	0.5+	0.1+	1998 01 27	046	0.5+	0.1+				

1992 DY

Id. N. Kawasato (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	224.18372		(2000.0)		P		Q
<i>n</i>	0.29985650	ω	110.44747		-0.72635671		+0.68073181
<i>a</i>	2.2106860	Ω	112.58721		-0.66269552		-0.65699093
<i>e</i>	0.1059275	<i>i</i>	5.90086		-0.18231997		-0.32398630
<i>P</i>	3.29	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 27	376	0.4-	0.1+	1992 03 04	809	0.8-	0.5+	1997 12 24	376	0.0	0.5-
1992 02 27	376	1.1+	0.7-	1992 03 09	809	0.7-	0.3+	1997 12 24	376	0.2-	0.4+
1992 03 03	376	0.6+	0.7+	1992 04 04	809	0.0	0.4-	1997 12 31	376	0.4-	0.5-
1992 03 03	376	0.2+	0.6-	1997 12 24	376	0.8+	0.6+	1997 12 31	376	0.2-	0.2-

1992 DG₁₀ = 1998 BV₄₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	52.28228		(2000.0)		P		Q
<i>n</i>	0.31405321	ω	117.82141		+0.80536428		-0.59093527
<i>a</i>	2.1435514	Ω	278.43862		+0.52589235		+0.74864442
<i>e</i>	0.1497876	<i>i</i>	2.70787		+0.27354271		+0.30054457
<i>P</i>	3.14	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 29	809	1.0-	0.6-	1998 01 02	704	0.3+	1.0-	1998 01 20	704	0.0	0.6-
1992 03 03	809	0.7+	0.2-	1998 01 02	704	0.0	0.7-	1998 01 20	704	0.1-	0.6+
1992 03 05	809	0.4+	1.1+	1998 01 08	704	0.3+	0.3+	1998 01 20	704	0.2-	0.0
1992 03 08	809	0.7-	0.1+	1998 01 08	704	0.3-	1.4+	1998 01 24	566	0.2-	0.1-
1992 04 07	809	0.6+	0.5-	1998 01 08	704	0.5+	0.7+	1998 01 24	566	0.2-	0.1-
1998 01 02	704	0.1+	0.6-	1998 01 08	704	0.3+	0.4+	1998 01 24	566	0.4-	0.0
1998 01 02	704	0.0	0.0	1998 01 20	704	0.0	0.2-				
1998 01 02	704	0.4+	0.3-	1998 01 20	704	0.5-	0.1+				

1992 EP₄ = 1998 BE₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	193.08448		(2000.0)		P		Q
<i>n</i>	0.31295737	ω	167.21118		-0.02033026		+0.99879996
<i>a</i>	2.1485523	Ω	101.61104		-0.92125117		-0.00139985
<i>e</i>	0.0228119	<i>i</i>	2.60715		-0.38843657		-0.04895586
<i>P</i>	3.15	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 04	675	1.1+	0.8-	1992 03 06	809	0.8-	0.5+	1998 01 23	704	0.1+	0.3-
1992 02 04	675	0.2+	1.7-	1992 04 04	809	0.2+	0.9-	1998 01 23	704	0.8-	0.3+
1992 02 27	675	1.6+	0.7+	1998 01 02	704	0.0	0.3+	1998 01 23	704	0.2-	0.2-
1992 02 27	675	0.6-	0.9+	1998 01 02	704	0.3+	0.2+	1998 01 25	704	0.6-	0.0

1992 02 28	675	1.3-	0.8-	1998 01 02	704	0.5+	0.3+	1998 01 25	704	0.1-	0.1+
1992 02 28	675	0.3+	1.2+	1998 01 02	704	0.3+	0.2+	1998 01 25	704	0.2+	0.6+
1992 03 01	809	0.2+	0.1-	1998 01 02	704	0.3+	0.0	1998 01 25	704	0.1+	0.3-
1992 03 04	809	0.9-	0.8+	1998 01 23	704	0.1-	0.1+	1998 01 25	704	0.0	1.4-

1992 EG₂₂ = 1998 BJ₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	139.59113		(2000.0)		P		Q
<i>n</i>	0.30835929	ω	225.27369		+0.78647320		+0.61114350
<i>a</i>	2.1698582	Ω	96.84909		-0.53822129		+0.74904246
<i>e</i>	0.1746796	<i>i</i>	5.15670		-0.30294843		+0.25581049
<i>P</i>	3.20	<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-	1.2+	1998 01 24	704	0.5+	0.1+	1998 01 25	704	0.6+	0.4+
1992 03 04	809	0.4-	0.0	1998 01 24	704	0.1+	0.4+	1998 01 25	704	0.7+	0.9+
1992 03 07	809	1.0+	1.2-	1998 01 24	704	0.3-	0.4-	1998 01 25	704	0.9+	0.2-
1998 01 06	691	0.3-	0.1-	1998 01 24	704	0.0	0.8+	1998 01 25	704	(3.4+	2.0+)
1998 01 06	691	0.3-	0.0	1998 01 24	704	0.2-	0.1-				
1998 01 06	691	0.2-	0.1-	1998 01 25	704	1.4-	1.5-				

1992 GF₂ = 1988 DS₃ = 1995 EH₉ = 1998 BL₄₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	143.97343		(2000.0)		P		Q
<i>n</i>	0.30067862	ω	300.28992		+0.91887647		+0.39392274
<i>a</i>	2.2066546	Ω	36.52425		-0.34799808		+0.83565280
<i>e</i>	0.1173763	<i>i</i>	2.13348		-0.18591226		+0.38276531
<i>P</i>	3.28	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 02 16	809	0.2-	2.5-	1992 04 06	809	0.8+	1.1-	1995 03 08	691	0.5+	0.9+
1988 02 16	809	0.6-	3.2-	1992 04 25	809	(1.8+	0.7-)	1995 03 08	691	0.5+	1.2+
1988 02 16	809	0.6-	1.8-	1992 04 25	809	(2.6+	0.6-)	1998 01 25	566	0.7+	0.3-
1992 04 04	809	0.1+	1.3-	1992 04 25	809	(1.4+	1.5-)	1998 01 25	566	0.3+	0.1-
1992 04 04	809	0.2+	0.6-	1992 05 01	691	1.0-	1.0+	1998 01 25	566	0.8+	0.5-
1992 04 04	809	1.2+	2.3-	1992 05 01	691	2.1-	1.2+	1998 01 29	566	0.2-	2.3+
1992 04 06	809	1.8+	0.6-	1992 05 01	691	3.0-	1.2+	1998 01 29	566	0.1+	2.0+
1992 04 06	809	0.6+	0.6-	1995 03 08	691	0.7+	1.1+	1998 01 29	566	0.2+	2.0+

1992 JF₃ = 1997 WG₅₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	180.41707		(2000.0)		P		Q
<i>n</i>	0.27277710	ω	266.06295		-0.20517939		+0.97871146
<i>a</i>	2.3546740	Ω	352.09168		-0.88283361		-0.18729260
<i>e</i>	0.1971765	<i>i</i>	2.09471		-0.42249998		-0.08393662
<i>P</i>	3.61	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 05 08	809	0.7-	0.1+	1992 05 11	809	1.3+	0.0	1997 11 29	704	3.5-	0.7+
1992 05 08	809	0.2-	0.1-	1992 05 12	809	0.5-	0.2-	1997 12 05	704	0.2-	0.0
1992 05 08	809	0.0	0.5-	1992 05 12	809	0.2+	0.2-	1997 12 05	704	1.3+	0.0
1992 05 10	809	0.6-	0.1-	1992 05 13	809	0.1-	0.4+	1997 12 05	704	0.9+	0.3+
1992 05 10	809	0.1-	0.1-	1992 05 13	809	0.3+	0.7+	1997 12 05	704	1.1-	1.0+
1992 05 10	809	0.0	0.1-	1997 11 29	704	1.4+	0.1+	1997 12 05	704	0.4-	0.9-
1992 05 11	809	0.0	0.0	1997 11 29	704	0.6+	1.9-				
1992 05 11	809	0.4+	0.1+	1997 11 29	704	1.1+	0.8+				

1992 OO₁ = 1970 CR = 1991 LUId. A. Lowe (*MPC* 21582), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	228.90695		(2000.0)	P	Q
<i>n</i>	0.24143766	ω	60.60006	-0.92715527	+0.33369833
<i>a</i>	2.5542655	Ω	138.23353	-0.36499127	-0.90713210
<i>e</i>	0.0130478	<i>i</i>	14.82012	+0.08464320	-0.25643084
<i>P</i>	4.08	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1970 02 11	805	0.4+	1.2-	1992 07 25	010	(0.6-	3.8-)	1992 07 30	809	0.9-	0.4+
1970 02 11	805	0.0	0.6-	1992 07 25	033	0.0	0.2-	1992 07 30	809	1.5-	0.4+
1970 02 11	805	0.4-	0.7-	1992 07 26	033	0.9-	1.0-	1992 07 30	809	1.5-	0.6+
1991 06 14	675	0.9-	1.1+	1992 07 26	010	(1.4-	3.8-)	1992 07 30	033	0.8+	1.2-
1991 06 14	675	0.2-	0.4-	1992 07 26	010	(2.0-	4.1-)	1992 08 04	809	1.3+	1.1+
1991 06 16	675	0.1+	0.4-	1992 07 26	010	(2.7-	4.2-)	1992 08 04	809	1.6+	0.9+
1991 06 16	675	0.7+	1.3-	1992 07 26	809	0.1-	0.7-	1992 08 04	809	1.7+	1.2+
1992 06 28	675	0.1+	0.0	1992 07 26	809	0.5-	0.6-	1992 08 05	809	(2.1+	1.2+)
1992 07 24	809	0.3-	1.6+	1992 07 26	809	0.2-	0.3-	1992 08 05	809	(2.3+	1.1+)
1992 07 24	809	0.5-	0.3-	1992 07 26	033	0.5+	1.0-	1992 08 05	809	(2.5+	1.3+)
1992 07 24	809	1.4-	0.2-	1992 07 27	033	0.7+	1.1-	1998 01 25	566	0.1+	0.3-
1992 07 25	010	(0.5-	4.2-)	1992 07 28	033	0.9+	1.7-	1998 01 25	566	0.1+	0.5-
1992 07 25	010	(1.2-	3.8-)	1992 07 29	033	0.5+	1.1-	1998 01 25	566	0.1+	0.4-

1992 UW₄

Id. C. S. Shoemaker (1994 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	52.53684		(2000.0)	P	Q
<i>n</i>	0.38119321	ω	95.23177	+0.75189336	+0.59287314
<i>a</i>	1.8838195	Ω	228.77906	-0.64500344	+0.75205378
<i>e</i>	0.1206682	<i>i</i>	22.54341	+0.13648054	+0.28795234
<i>P</i>	2.59	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 10 20	675	0.1-	0.1+	1992 11 26	675	0.7-	0.1-	1994 05 10	675	(1.1+	2.3+)
1992 10 20	675	0.2+	0.1+	1992 11 26	675	0.4+	0.4+	1994 05 10	675	0.2-	1.3+
1992 10 21	675	0.4-	0.3-	1992 11 27	675	0.1+	0.7-	1994 05 13	675	0.7-	0.1-
1992 10 21	675	0.4+	0.4+	1992 11 30	675	0.0	0.7+	1994 05 13	675	0.9+	0.7-

1992 UZ₅

Id. M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	303.92037		(2000.0)	P	Q
<i>n</i>	0.17828992	ω	14.76713	+0.16374346	-0.95972354
<i>a</i>	3.1264503	Ω	66.23665	+0.87792587	+0.03621954
<i>e</i>	0.0988483	<i>i</i>	14.44461	+0.44992693	+0.27860164
<i>P</i>	5.53	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 10 21	675	1.0+	0.6+	1992 11 21	400	0.6-	0.6-	1997 12 28	688	0.8-	0.0
1992 10 21	675	1.0+	0.9+	1992 11 21	400	(0.1-	2.2+)	1997 12 28	688	0.3+	0.1-
1992 10 28	400	0.8+	0.6-	1992 11 28	675	0.3+	0.7+	1997 12 29	688	0.1+	0.0
1992 10 28	400	(0.3+	2.2-)	1992 11 28	675	0.8-	0.8+	1997 12 29	688	0.4+	0.1+
1992 11 02	400	1.6-	0.1-	1992 11 30	675	0.6-	1.2-				
1992 11 02	400	0.1+	0.3-	1992 11 30	675	0.4+	0.3-				

1992 UL₆ = 1980 DA₂ = 1998 BS

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	22.45329		(2000.0)	P	Q
<i>n</i>	0.21775994	ω	5.84266	+0.16065368	-0.98128303
<i>a</i>	2.7362181	Ω	74.94709	+0.90105427	+0.10190361
<i>e</i>	0.1816525	<i>i</i>	6.31255	+0.40285431	+0.16339913
<i>P</i>	4.53	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1980 02 20	095	0.2-	0.7-	1992 11 02	400	0.4+	1.2-	1998 01 18	587	0.1-	0.0
1992 10 21	675	1.3+	0.3-	1992 11 21	400	(0.4+	3.0-)	1998 01 19	587	0.6+	0.6+
1992 10 21	675	1.6+	1.0+	1992 11 21	400	0.6-	0.4-	1998 01 19	587	0.4+	0.2+
1992 10 22	675	0.3-	0.2-	1992 11 27	675	1.2-	0.5+	1998 01 25	566	0.4-	0.1-
1992 10 22	675	0.3-	1.0-	1992 11 27	675	1.0-	0.0	1998 01 25	566	0.4-	0.0
1992 10 28	400	0.6+	1.2+	1992 11 28	675	0.5-	0.3+	1998 01 25	566	0.3-	0.0
1992 10 28	400	(2.6+	0.5-)	1998 01 17	587	0.4+	0.1-				
1992 11 02	400	(0.2+	2.5+)	1998 01 17	587	0.0	0.2-				

1992 UK₉ = 1977 DO₂ = 1998 BN₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	138.71259		(2000.0)	P	Q
<i>n</i>	0.23115745	ω	233.00142	+0.85663357	+0.51130520
<i>a</i>	2.6294452	Ω	96.15186	-0.44860915	+0.80414128
<i>e</i>	0.0326447	<i>i</i>	3.97319	-0.25481123	+0.30318937
<i>P</i>	4.26	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1977 02 18	381	0.7-	1.7+	1992 10 30	372	(5.3-	1.0-)	1998 01 24	704	0.5+	0.0
1977 02 18	381	0.9+	0.8-	1992 10 30	372	1.2-	0.7-	1998 01 24	704	1.3+	0.1-
1977 02 19	381	0.1-	0.7-	1998 01 06	691	1.2-	0.1+	1998 01 24	704	0.6+	0.1-
1977 02 19	381	(3.8+	1.4-)	1998 01 06	691	1.2-	0.1+	1998 01 24	704	0.3-	0.0
1992 10 21	372	0.7+	0.4-	1998 01 06	691	1.0-	0.6+	1998 01 25	704	0.1+	0.1+
1992 10 21	372	1.9+	1.3+	1998 01 23	704	0.7+	0.1-	1998 01 25	704	0.5+	0.0
1992 10 24	372	(1.6+	2.7-)	1998 01 23	704	0.2+	0.3+	1998 01 25	704	0.0	1.0-
1992 10 24	372	1.4-	0.1-	1998 01 23	704	0.0	0.4-	1998 01 25	704	0.2-	0.7-
1992 10 25	372	(3.4+	0.2-)	1998 01 23	704	0.6+	0.5+	1998 01 25	704	0.5-	0.5+
1992 10 25	372	(5.8+	2.4+)	1998 01 23	704	(2.4-	0.1+)				

1992 WF₁

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	27.16454		(2000.0)	P	Q
<i>n</i>	0.18705558	ω	262.19058	+0.97955812	-0.07177634
<i>a</i>	3.0279981	Ω	101.78334	+0.13578287	+0.92517829
<i>e</i>	0.1013426	<i>i</i>	11.06752	-0.14842139	+0.37268390
<i>P</i>	5.27	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 10 26	675	0.1-	0.5+	1992 11 27	675	0.7-	0.7+	1998 01 06	688	0.3+	0.1-
1992 10 26	675	0.2-	0.1+	1992 11 27	675	0.3+	0.4+	1998 01 06	688	0.5-	0.1+
1992 11 16	400	1.4-	1.1-	1992 11 27	400	0.0	0.5+	1998 01 08	688	0.1+	0.0
1992 11 16	400	0.9-	0.7-	1992 11 27	400	0.1+	0.0	1998 01 08	688	0.1+	0.1-
1992 11 17	400	0.6+	0.8-	1992 12 15	400	0.9+	0.0				
1992 11 17	400	1.4+	0.6+	1992 12 15	400	(3.3-	3.5+)				

1992 WH₂ = 1997 WQ₄₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	212.61173		(2000.0)	P	Q
<i>n</i>	0.19200028	ω	327.29575	-0.87292113	+0.45041325
<i>a</i>	2.9757845	Ω	240.58195	-0.38845660	-0.87415130
<i>e</i>	0.1015072	<i>i</i>	12.42697	-0.29514430	-0.18162438
<i>P</i>	5.13	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 11 18	399	1.4-	0.7-	1992 11 28	675	0.6+	0.1+	1997 10 30	704	0.4+	0.7-
1992 11 18	399	1.0-	0.9+	1997 10 29	704	0.1-	0.5+	1997 11 26	566	0.0	0.1+
1992 11 21	399	0.5-	1.0+	1997 10 29	704	0.5-	0.2-	1997 11 26	566	0.1+	0.1-
1992 11 21	399	0.2+	0.6+	1997 10 29	704	0.5+	0.4+	1997 11 26	566	0.4+	0.1+
1992 11 25	675	0.3+	0.6-	1997 10 29	704	1.4-	1.0+	1997 11 29	704	0.4-	1.1-
1992 11 25	675	0.8+	0.6-	1997 10 29	704	1.0-	0.2+	1997 11 29	704	0.2-	1.0+
1992 11 27	399	(2.5-	0.5+)	1997 10 30	704	1.1+	0.5-	1997 11 29	704	0.4-	0.6+
1992 11 27	399	(2.4-	1.8+)	1997 10 30	704	1.1+	0.3-	1997 11 29	704	0.6-	0.3-
1992 11 28	675	1.0+	0.6-	1997 10 30	704	0.5+	0.6-	1997 11 29	704	0.6+	0.1-

1998 FEB. 11

M.P.C. 31233

1992 WN₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	51.03515	(2000.0)	P	Q
<i>n</i>	0.21456755	ω 339.57808	+0.62382508	-0.76536481
<i>a</i>	2.7632914	Ω 71.48472	+0.73824744	+0.51054491
<i>e</i>	0.2193660	<i>i</i> 9.61003	+0.25657942	+0.39186809
<i>P</i>	4.59	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 11 23	385	0.5-	0.2+	1992 12 14	385	0.3+	0.3+	1993 02 11	385	1.0-	0.6+
1992 11 23	385	0.7+	0.6+	1992 12 14	385	0.2-	0.6-	1998 01 23	385	0.1+	0.1-
1992 11 24	885	0.5+	0.2-	1992 12 26	885	1.3-	0.5-	1998 01 23	385	0.1+	0.2-
1992 11 24	885	0.7-	0.0	1992 12 26	885	0.1-	0.6-	1998 01 25	886	0.4-	0.3-
1992 11 26	885	0.6+	0.7+	1993 01 17	385	0.7+	0.7+	1998 01 25	886	0.2-	0.2+
1992 11 26	885	0.2-	0.0	1993 01 17	385	0.2+	0.0	1998 01 26	385	0.1+	0.2+
1992 12 03	885	0.6-	1.1-	1993 02 08	385	1.4+	0.9-	1998 01 26	385	0.3+	0.3+
1992 12 03	885	0.7+	0.4+	1993 02 11	385	0.3-	0.5+				

1992 YU₁ = 1982 PF₁ = 1987 VZ₁ = 1991 PJ₂₁

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	111.87939	(2000.0)	P	Q
<i>n</i>	0.21923282	ω 85.28624	+0.97481350	-0.20594616
<i>a</i>	2.7239492	Ω 286.58023	+0.15222020	+0.89487003
<i>e</i>	0.0829011	<i>i</i> 5.12323	+0.16299588	+0.39597198
<i>P</i>	4.50	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 08 15	095	0.9-	1.7+	1992 12 19	010	0.5+	0.1+	1993 01 16	010	1.0-	1.4-
1987 11 15	327	0.6-	1.3+	1992 12 19	010	0.0	0.7-	1993 01 16	010	1.1-	1.3-
1987 11 15	327	0.1-	1.0+	1992 12 19	010	0.3+	1.0+	1993 01 17	010	0.2+	1.0-
1991 08 09	675	1.4+	2.2-	1992 12 19	010	0.3-	0.9+	1993 01 17	010	0.2-	1.1-
1991 08 09	675	0.8+	2.4-	1992 12 20	010	0.6-	0.8+	1993 01 17	010	0.5+	0.2-
1992 12 18	010	1.2+	0.5+	1993 01 16	010	0.0	1.3-				

1993 BU₅ = 5010 T-2 = 1996 TJ₅₅

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	326.04630	(2000.0)	P	Q
<i>n</i>	0.17065447	ω 152.85615	-0.39638270	-0.90591112
<i>a</i>	3.2190244	Ω 319.99844	+0.79464909	-0.25725032
<i>e</i>	0.0496802	<i>i</i> 13.40427	+0.45979732	-0.33637379
<i>P</i>	5.78	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1973 09 19	675	(5.3+	0.8+)	1993 01 27	010	1.0-	0.2-	1993 02 22	010	0.2+	0.8-
1973 09 20	675	0.4-	0.2+	1993 01 27	010	0.4-	0.4-	1993 02 23	010	0.5+	0.6-
1973 09 20	675	0.8+	0.5+	1993 01 28	010	0.3-	0.9+	1996 10 02	809	0.0	1.0-
1973 09 24	675	0.7-	0.3+	1993 01 28	010	0.1-	0.0	1996 10 02	809	0.3-	1.5-
1973 09 24	675	1.3+	0.3-	1993 01 28	010	1.0+	1.2+	1996 10 02	809	0.8-	0.3+
1973 09 25	675	0.0	0.0	1993 02 20	010	0.2+	0.2+	1996 10 03	809	1.2+	0.7+
1973 09 25	675	1.3-	0.2-	1993 02 20	010	0.5-	0.8+	1996 10 03	809	0.2+	0.3+
1993 01 27	010	0.4-	0.8-	1993 02 20	010	0.8+	0.2-	1996 10 03	809	0.1+	0.7+

1993 BV₅ = 1997 EG₂₁

Id. A. Doppler

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	250.41732	(2000.0)	P	Q
<i>n</i>	0.25651433	ω 13.45268	+0.94839944	+0.31172742
<i>a</i>	2.4531737	Ω 328.19609	-0.30014850	+0.82363665
<i>e</i>	0.0257055	<i>i</i> 6.31892	-0.10222222	+0.47376016
<i>P</i>	3.84	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 01 27	010	0.0	0.8+	1993 01 29	691	0.7-	0.5-	1997 03 04	691	0.0	0.0
1993 01 27	010	0.5-	1.3+	1993 01 29	691	0.6-	0.2-	1997 03 04	691	0.2+	0.0
1993 01 27	010	0.1-	0.2+	1993 02 20	010	0.7+	0.5+	1997 03 04	691	0.2-	0.5-
1993 01 28	010	0.3+	0.3-	1993 02 20	010	1.0+	0.0	1997 03 11	691	0.0	0.2+
1993 01 28	010	0.6+	0.9-	1993 02 20	010	1.0+	0.3-	1997 03 11	691	0.1+	0.4+
1993 01 28	010	1.6+	0.5-	1993 02 22	010	2.0-	0.1-	1997 03 11	691	0.1-	0.0
1993 01 29	691	0.5-	0.0	1993 02 23	010	0.9-	0.2-				

1993 BH₁₃ = 1997 WO₃₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Gnädig

<i>M</i>	326.94367	(2000.0)	P	Q
<i>n</i>	0.17855785	ω 352.06730	-0.45967413	-0.88751322
<i>a</i>	3.1233220	Ω 125.29322	+0.81693750	-0.43667717
<i>e</i>	0.1974103	<i>i</i> 2.24249	+0.34829990	-0.14708277
<i>P</i>	5.52	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i>

Residuals in seconds of arc

1993 01 22	809	0.0	2.4-	1993 02 17	809	0.7+	0.1-	1997 11 29	704	1.0+	1.1-
1993 01 22	809	0.5-	1.1-	1993 02 17	809	0.0	0.1-	1997 11 29	704	1.4+	0.6-
1993 01 22	809	0.0	1.0-	1993 02 17	809	1.4+	0.8+	1997 11 29	704	1.0-	1.3-
1993 01 28	809	1.3+	0.1-	1997 11 26	704	3.2-	1.4+	1997 12 04	704	1.3+	0.0
1993 01 28	809	0.5+	0.1+	1997 11 26	704	2.5-	2.2+	1997 12 04	704	2.3+	0.3+
1993 01 28	809	0.0	0.2-	1997 11 26	704	3.3-	1.5+	1997 12 04	704	0.6-	1.5-
1993 02 10	399	0.1-	1.6+	1997 11 29	704	1.1+	0.4-	1997 12 04	704	2.6+	0.5-
1993 02 10	399	3.2-	2.4+	1997 11 29	704	0.7+	0.4-	1997 12 04	704	0.1+	0.9+

1993 EM

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	264.29721	(2000.0)	P	Q
<i>n</i>	0.35667355	ω 285.96748	-0.93479418	+0.16992170
<i>a</i>	1.9691952	Ω 264.61841	-0.05290375	-0.93495709
<i>e</i>	0.0579982	<i>i</i> 18.25754	-0.35122790	-0.31141909
<i>P</i>	2.76	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 03 02	413	0.0	0.8+	1993 05 10	413	0.0	0.0	1998 01 07	688	0.2+	0.3-
1993 03 03	413	0.2+	0.3-	1993 05 10	413	0.0	0.0	1998 01 07	688	0.7+	0.3-
1993 03 03	413	0.3+	0.2-	1993 05 10	413	0.0	0.1-	1998 01 07	688	0.4-	0.4+
1993 03 03	413	0.6-	0.5-	1998 01 06	688	0.4-	0.0				
1993 03 24	413	0.1+	0.1+	1998 01 06	688	0.1-	0.3+				

1993 FA₂ = 1998 BZ₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	300.54748	(2000.0)	P	Q
<i>n</i>	0.17287877	ω 84.63272	-0.99295835	+0.05238891
<i>a</i>	3.1913537	Ω 98.33961	-0.08933708	-0.92017139
<i>e</i>	0.1098068	<i>i</i> 6.16464	+0.07779852	-0.38799486
<i>P</i>	5.70	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 02 26	691	0.7-	0.3+	1997 12 31	691	0.9-	0.2-	1998 01 24	704	0.1+	0.3+
1993 02 26	691	0.6-	0.1+	1997 12 31	691	0.7-	0.4-	1998 01 24	704	0.3+	0.3-
1993 02 26	691	0.4-	0.1+	1997 12 31	691	0.6-	0.5-	1998 01 24	704	0.5+	0.3-
1993 03 23	010	1.1+	0.4+	1998 01 23	704	0.0	0.1-	1998 01 25	704	0.4-	1.4+
1993 03 23	010	0.3+	0.4-	1998 01 23	704	0.1+	0.1+	1998 01 25	704	0.3+	0.1-
1993 03 23	010	0.1+	0.4-	1998 01 23	704	0.0	0.2+	1998 01 25	704	0.5+	0.3-
1993 03 25	010	0.1+	0.0	1998 01 23	704	0.1+	0.3+	1998 01 25	704	0.7+	0.2+
1997 11 28	910	0.4-	0.3+	1998 01 23	704	0.4-	0.1+	1998 01 25	704	0.1+	0.6-
1997 11 28	910	0.3-	0.0	1998 01 24	704	0.3+	0.5-				
1997 11 28	910	0.0	0.3+	1998 01 24	704	0.5+	0.1+				

1993 FN₈

Id. M. W. Buie (1997-98 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	322.26058		(2000.0)	P	Q
<i>n</i>	0.17838619	ω	27.53096	-0.97487100	-0.21063421
<i>a</i>	3.1253253	Ω	140.09568	+0.17789851	-0.93204707
<i>e</i>	0.1069602	<i>i</i>	6.49133	+0.13408450	-0.29482451
<i>P</i>	5.53	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	0.5-	0.8-	1993 04 16	413	1.1-	0.2+	1998 01 08	688	0.2-	0.5+
1993 03 18	809	0.6+	0.1-	1997 12 29	688	0.3+	0.1-	1998 01 08	688	0.0	0.1+
1993 03 23	809	1.0+	0.6+	1997 12 29	688	0.1-	0.5-				

1993 FR₁₈

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	186.37895		(2000.0)	P	Q
<i>n</i>	0.17808913	ω	283.75790	+0.80717770	+0.57882999
<i>a</i>	3.1287998	Ω	41.04573	-0.45011721	+0.73047954
<i>e</i>	0.1396478	<i>i</i>	10.16100	-0.38191446	+0.36242997
<i>P</i>	5.53	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	0.3-	0.4+	1993 04 16	413	0.0	0.1-	1998 01 08	688	0.2+	0.3-
1993 03 18	809	0.3-	0.1+	1998 01 06	688	0.1+	0.7+	1998 01 08	688	0.4-	0.3-
1993 03 23	809	0.6+	0.4-	1998 01 06	688	0.1+	0.1-				

1993 FK₃₃ = 1976 GP₄ = 1998 BH₂

Id. G. V. Williams, T. B. Spahr

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	353.23289		(2000.0)	P	Q
<i>n</i>	0.17633419	ω	353.34916	-0.48181207	-0.87483544
<i>a</i>	3.1495248	Ω	125.44293	+0.80677831	-0.46523080
<i>e</i>	0.2405108	<i>i</i>	3.53273	+0.34200276	-0.13499351
<i>P</i>	5.59	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1976 04 02	095	0.8+	2.1+	1998 01 20	704	0.5+	0.1-	1998 01 22	691	0.4-	0.1-
1993 03 19	809	1.8+	0.9-	1998 01 20	704	0.3+	0.5-	1998 01 22	691	0.9-	0.2-
1993 03 20	809	1.2+	0.1-	1998 01 20	704	0.3+	0.6+	1998 01 26	566	0.7-	0.4-
1993 03 24	809	0.3+	0.5+	1998 01 20	704	0.6+	0.9+	1998 01 26	566	0.4-	0.2-
1993 04 18	413	0.1-	0.0	1998 01 20	704	0.3+	1.5-	1998 01 26	566	0.6-	0.1-
1993 04 20	691	1.9-	0.6+	1998 01 20	704	0.4-	0.6-	1998 01 29	691	0.5-	0.8+
1993 04 20	691	1.1-	1.2-	1998 01 22	704	1.0+	0.1-	1998 01 29	691	0.7-	0.6+
1993 04 20	691	1.0-	0.9-	1998 01 22	704	0.2+	0.2+	1998 01 29	691	0.7-	0.5+
1998 01 08	704	1.4+	0.2-	1998 01 22	704	0.1+	0.2+	1998 02 03	691	1.0-	0.2+
1998 01 08	704	1.5+	1.2-	1998 01 22	704	0.1+	0.2+	1998 02 03	691	1.2-	0.9+
1998 01 08	704	1.8+	0.4+	1998 01 22	691	0.9-	0.4-	1998 02 03	691	0.9-	0.7+
1998 01 08	704	0.9+	0.8-	1998 01 22	704	0.1+	0.3-				

1993 HG = 1993 FO₄₂Id. G. V. Williams (d. *MPC* 23676), M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	279.14458		(2000.0)	P	Q
<i>n</i>	0.17705976	ω	183.58391	-0.70008150	+0.71388207
<i>a</i>	3.1409146	Ω	41.98351	-0.65454109	-0.63256640
<i>e</i>	0.1456345	<i>i</i>	1.37671	-0.28541524	-0.30038666
<i>P</i>	5.57	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 19	809	0.4+	0.3+	1993 04 24	786	(3.0+	1.3+)	1993 04 29	786	1.8+	0.5-
1993 03 20	809	0.8+	0.0	1993 04 24	786	(3.0+	1.4+)	1993 04 29	786	1.8+	0.5-
1993 03 24	809	1.4+	0.0	1993 04 24	786	(2.9+	1.0+)	1993 04 29	786	1.9+	0.2-
1993 04 19	786	0.5-	0.3+	1993 04 24	786	(3.1+	1.0+)	1993 04 29	786	1.6+	0.3-
1993 04 19	786	0.7-	0.2+	1993 04 24	786	(2.7+	1.3+)	1993 04 29	786	1.8+	0.6-

1993 04 19	786	0.8-	0.4+	1993 04 24	786	(2.9+	1.3+)	1993 04 29	786	1.8+	0.5-
1993 04 19	786	0.7-	0.4+	1993 04 24	786	(2.8+	1.3+)	1993 05 15	786	0.9-	0.3+
1993 04 19	786	0.8-	0.4+	1993 04 24	786	(3.3+	1.1+)	1993 05 15	786	0.9-	0.0
1993 04 19	786	0.7-	0.5+	1993 04 24	786	(3.2+	0.7+)	1993 05 15	786	0.9-	0.7+
1993 04 19	786	0.7-	0.1+	1993 04 24	786	(3.7+	0.8+)	1993 05 15	786	0.7-	0.4+
1993 04 19	786	0.5-	0.2+	1993 04 24	786	(3.7+	1.0+)	1993 05 16	786	0.6-	0.8-
1993 04 19	786	0.4-	0.3+	1993 04 24	786	(3.9+	1.0+)	1993 05 16	786	1.0-	0.7-
1993 04 19	786	0.7-	0.4+	1993 04 24	786	(3.6+	0.9+)	1993 05 16	786	1.1-	0.0
1993 04 19	786	0.9-	0.6+	1993 04 24	786	(4.4+	0.7+)	1993 05 16	786	1.0-	1.2-
1993 04 19	786	0.9-	0.4+	1993 04 24	786	(4.2+	0.6+)	1993 05 16	786	1.6-	0.3-
1993 04 19	786	0.8-	0.4+	1993 04 24	786	(4.3+	0.7+)	1993 05 16	786	1.5-	0.8-
1993 04 19	786	0.7-	0.2+	1993 04 28	786	(2.9+	0.1+)	1993 06 02	786	1.3+	0.3-
1993 04 19	786	0.9-	0.5+	1993 04 29	786	(2.2+	0.3-)	1993 06 17	786	(0.0	3.4-)
1993 04 19	786	0.8-	0.3+	1993 04 29	786	1.7+	0.8-	1998 01 06	688	0.2-	0.2+
1993 04 19	786	0.7-	0.3+	1993 04 29	786	1.7+	0.4-	1998 01 06	688	0.5-	0.1+
1993 04 19	786	0.9-	0.3+	1993 04 29	786	1.8+	0.2-	1998 01 07	688	0.0	0.3-
1993 04 19	786	0.8-	0.3+	1993 04 29	786	1.6+	0.7-	1998 01 07	688	0.2+	0.2-
1993 04 19	786	0.9-	0.4+	1993 04 29	786	1.9+	0.8-	1998 01 08	688	0.3+	0.2-
1993 04 21	413	0.1-	1.2+	1993 04 29	786	1.6+	0.7-	1998 01 08	688	0.1-	0.3-

1993 KZ₁

Id. C. S. Shoemaker (1994 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	88.15980		(2000.0)	P	Q
<i>n</i>	0.27405501	ω	169.45806	-0.16575107	+0.88672481
<i>a</i>	2.3473484	Ω	89.95860	-0.93329357	+0.00032209
<i>e</i>	0.2008840	<i>i</i>	25.56673	-0.31857446	-0.46229754
<i>P</i>	3.60	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 05 24	675	0.5-	0.0	1993 06 18	675	0.4+	1.0-	1994 11 28	675	0.4+	0.8+
1993 05 24	675	0.2+	0.4-	1993 06 18	675	0.0	0.7-	1994 11 28	675	0.1+	0.5-
1993 05 25	675	0.3-	0.1+	1993 06 22	675	0.4+	1.0+	1994 12 02	675	0.5-	0.3-
1993 05 27	675	0.6+	0.4+	1993 06 22	675	0.9-	1.4+	1994 12 02	675	(1.1+	4.8+)
1993 06 16	675	0.8+	0.4+	1993 06 26	675	0.6+	0.3+				
1993 06 16	675	0.1-	0.2-	1993 06 26	675	1.1-	1.2-				

1993 RZ₆ = 1986 XR₂ = 1997 YK₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	15.93512		(2000.0)	P	Q
<i>n</i>	0.27294744	ω	65.35585	+0.50050717	-0.86569740
<i>a</i>	2.3536942	Ω	354.59123	+0.76145186	+0.44447908
<i>e</i>	0.1030471	<i>i</i>	4.73619	+0.41192673	+0.23023110
<i>P</i>	3.61	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1986 12 03	010	2.0-	2.0+	1993 09 18	691	1.1-	0.3-	1997 12 29	587	0.6-	0.7-
1986 12 03	010	0.3+	1.9+	1993 09 19	400	0.1+	1.3+	1997 12 29	587	0.1-	0.3-
1993 09 15	809	(4.0+	0.8+)	1993 09 19	400	1.2-	0.0	1998 01 03	587	0.1-	0.2+
1993 09 15	809	(3.1+	0.5+)	1993 09 22	675	0.5+	0.2-	1998 01 03	587	0.5+	0.0
1993 09 15	809	(3.0+	0.3+)	1993 09 22	675	0.1-	0.8-	1998 01 05	587	0.1-	0.1+
1993 09 17	809	1.5+	1.0-	1997 12 06	704	0.1-	0.7-	1998 01 05	587	0.1+	0.1-
1993 09 17	809	1.8+	0.8-	1997 12 06	704	0.5-	0.6-	1998 01 05	587	0.6-	0.0
1993 09 17	809	1.6+	0.9-	1997 12 06	704	0.8-	0.0	1998 01 06	587	0.1+	0.3-
1993 09 18	675	0.7+	0.4-	1997 12 06	704	1.0+	1.0+	1998 01 06	587	0.3+	0.1+
1993 09 18	675	0.5-	0.3-	1997 12 06	704	0.7-	0.3+	1998 01 17	587	2.0+	1.3-
1993 09 18	691	0.9-	0.9+	1997 12 29	587	0.2+	1.0-				
1993 09 18	691	1.3-	0.5+	1997 12 29	587	0.2+	0.0				

1993 SH₁

Id. M. W. Buie (1997-98 observations)

1998 FEB. 11

M.P.C. 31235

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	96.35816		(2000.0)		P		Q		Williams
<i>n</i>	0.28167306	ω	163.10493		+0.92766918		+0.37325957		
<i>a</i>	2.3048314	Ω	174.94223		−0.35473251		+0.88960348		
<i>e</i>	0.1478928	<i>i</i>	6.74416		−0.11659649		+0.26321653		
<i>P</i>	3.50	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	4	
Residuals in seconds of arc									
1993 09 16	400	0.1+	0.0	1993 09 25	901	(1.9+	4.2+)	1994 02 10	691 0.1+ 0.6+
1993 09 16	400	0.8+	1.5−	1993 09 25	901	1.6−	0.2+	1997 12 29	688 0.3+ 0.2−
1993 09 17	809	1.1+	0.5−	1993 10 11	400	0.2+	0.3−	1997 12 29	688 0.2+ 0.6+
1993 09 17	809	0.5−	0.2+	1993 10 11	400	1.0+	0.8−	1997 12 29	688 0.1+ 0.5−
1993 09 17	809	0.8−	0.4−	1993 10 13	675	0.2−	0.5−	1998 01 06	688 0.3− 0.3−
1993 09 18	809	0.3+	0.2+	1993 10 13	675	0.1+	0.6−	1998 01 06	688 0.4− 0.4−
1993 09 18	809	0.4+	1.4+	1993 10 15	400	(0.1−	2.8+)	1998 01 07	688 0.3− 0.1−
1993 09 18	809	1.0−	0.5+	1993 10 15	400	1.2−	0.7+	1998 01 07	688 0.3+ 0.3+
1993 09 18	400	1.4+	0.8+	1994 02 10	691	0.2−	0.5+		
1993 09 18	400	(2.1−	1.2−)	1994 02 10	691	0.3−	0.6+		

1993 SA₄ = 1962 XL = 1976 UT₅ = 1984 SL₈ = 1989 YL₉

Id. A. Gnädig, G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	351.76568		(2000.0)		P		Q		Williams
<i>n</i>	0.21979627	ω	172.35232		+0.98666997		+0.16267105		
<i>a</i>	2.7192919	Ω	178.26611		−0.15610358		+0.95396215		
<i>e</i>	0.1840291	<i>i</i>	8.60416		−0.04597860		+0.25198086		
<i>P</i>	4.48	<i>H</i>	12.5		<i>G</i>	0.15	<i>U</i>	3	
Residuals in seconds of arc									
1962 12 01	760	0.0	2.1+	1989 12 28	511	1.2+	1.5−	1993 09 18	400 0.5+ 0.7−
1962 12 01	760	0.7−	2.0+	1993 09 17	809	0.3+	0.6+	1993 09 18	400 1.8− 0.1+
1976 10 24	809	0.2−	0.7+	1993 09 17	809	0.8−	0.1+	1993 10 11	400 0.3+ 0.2−
1976 10 24	809	0.1+	0.6+	1993 09 17	809	1.0−	0.2+	1993 10 11	400 0.8+ 1.1+
1984 09 21	010	0.9+	1.6−	1993 09 18	809	1.9+	0.6+	1993 10 12	675 0.2+ 1.1−
1989 12 28	511	0.8−	1.8−	1993 09 18	809	0.7+	0.2+	1993 10 15	400 1.0− 0.0
1989 12 28	511	0.5+	1.5−	1993 09 18	809	0.0	0.0	1993 10 15	400 1.0− 0.1+

1993 SF₄ = 1998 BU₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	84.06328		(2000.0)		P		Q		Williams
<i>n</i>	0.28776385	ω	255.99520		+0.99301543		−0.03266299		
<i>a</i>	2.2721931	Ω	105.78361		+0.07226451		+0.92796062		
<i>e</i>	0.1320658	<i>i</i>	6.76604		−0.09326413		+0.37124415		
<i>P</i>	3.43	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	4	
Residuals in seconds of arc									
1993 09 18	033	0.7+	0.5−	1997 12 25	566	1.2+	0.2+	1998 01 23	704 0.0 0.5+
1993 09 18	033	0.4−	0.3−	1997 12 25	566	0.3+	0.0	1998 01 24	704 0.4+ 0.3−
1993 09 19	675	0.1−	0.1+	1997 12 25	566	0.9+	0.0	1998 01 24	704 0.7− 1.5+
1993 09 19	675	0.1−	0.6−	1998 01 02	704	0.5−	0.6−	1998 01 24	704 0.5+ 0.9+
1993 09 21	033	0.7+	0.5+	1998 01 02	704	0.5−	0.2−	1998 01 24	704 0.5− 0.1−
1993 09 23	675	0.5−	0.1+	1998 01 02	704	0.0	0.3−	1998 01 25	704 0.2+ 0.0
1993 09 23	675	0.4−	0.4+	1998 01 02	704	0.0	0.6−	1998 01 25	704 0.0 0.3+
1993 10 10	675	0.4−	0.6+	1998 01 02	704	0.0	0.3−	1998 01 25	704 0.3− 0.1−
1993 10 10	675	0.6−	0.5+	1998 01 23	704	0.1+	0.8+	1998 01 25	704 1.3− 1.1−
1993 10 17	033	0.9+	0.7−	1998 01 23	704	0.1+	0.2−		
1993 10 17	033	0.1+	0.1+	1998 01 23	704	0.1+	0.2−		

1993 SX₄ = 1973 GZ = 1977 KH = 1984 CJ = 1990 WQ₁₅

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	202.89387		(2000.0)		P		Q		Williams
<i>n</i>	0.26182455	ω	22.08607		−0.99069471		+0.13563474		
<i>a</i>	2.4198910	Ω	165.69546		−0.13070217		−0.92499967		
<i>e</i>	0.1319821	<i>i</i>	2.61628		−0.03795951		−0.35493495		
<i>P</i>	3.76	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	2	
Residuals in seconds of arc									
1973 04 01	095	0.6+	0.4−	1990 11 21	372	1.1−	0.9−	1993 09 19	010 1.2− 2.2+
1973 04 04	095	0.2+	1.6+	1993 08 19	010	0.5+	0.4+	1993 09 20	010 0.1+ 0.9+
1977 05 23	095	0.1−	1.6+	1993 08 19	010	0.3+	0.3+	1993 09 20	010 1.0− 0.3+
1984 02 02	801	1.4+	4.3+	1993 08 19	010	0.3+	0.2−	1993 09 20	010 0.3− 1.1+
1990 11 21	372	0.6+	0.1−	1993 09 19	010	0.6−	1.4+		

1993 TK₂₂ = 1997 XT₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	344.76303		(2000.0)		P		Q		Williams
<i>n</i>	0.26138054	ω	52.55062		−0.05177408		−0.99806168		
<i>a</i>	2.4226307	Ω	40.45902		+0.89862711		−0.06164366		
<i>e</i>	0.1761169	<i>i</i>	3.05033		+0.43564752		+0.00854117		
<i>P</i>	3.77	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	5	
Residuals in seconds of arc									
1993 10 09	809	1.7−	1.3+	1997 11 26	704	(2.7−	0.3−)	1997 12 05	704 0.2+ 0.7+
1993 10 09	809	1.6−	0.8+	1997 11 26	704	(5.5−	0.6+)	1997 12 05	704 1.0− 0.6−
1993 10 09	809	2.0−	1.2+	1997 11 29	704	(2.8−	0.6−)	1997 12 08	327 0.1− 0.5+
1993 10 09	809	0.2+	1.2−	1997 11 29	704	0.4−	0.9+	1997 12 08	327 0.5− 0.2−
1993 10 09	809	1.5+	0.9−	1997 11 29	704	0.2+	0.5+	1997 12 08	327 0.3− 0.2+
1993 10 09	809	1.4+	1.9−	1997 11 29	704	1.6+	1.0+	1997 12 17	327 0.1+ 0.4−
1993 10 11	809	1.8+	0.7+	1997 11 29	704	0.7+	0.8+	1997 12 17	327 0.1− 0.0
1993 10 11	809	0.6+	0.8+	1997 12 04	327	0.7+	0.2+	1997 12 17	327 0.0 0.5−
1993 10 11	809	0.5+	0.1+	1997 12 04	327	0.7+	0.3+	1998 01 30	327 0.3+ 0.1−
1993 10 20	809	0.3−	0.5−	1997 12 04	327	0.5+	0.3−	1998 01 30	327 0.1+ 0.4−
1993 10 20	809	0.7+	0.3−	1997 12 05	704	1.6−	1.3−	1998 01 30	327 0.0 0.3−
1993 10 20	809	0.7−	0.9−	1997 12 05	704	0.2−	0.6−		
1997 11 26	704	0.7−	0.3−	1997 12 05	704	0.2−	0.2−		

1993 TE₃₄ = 1998 CJ₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	143.13225		(2000.0)		P		Q		Williams
<i>n</i>	0.30216846	ω	177.49597		+0.85416260		+0.51892312		
<i>a</i>	2.1993953	Ω	151.16576		−0.47829671		+0.80932619		
<i>e</i>	0.1633995	<i>i</i>	3.98807		−0.20405516		+0.27515435		
<i>P</i>	3.26	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	7	
Residuals in seconds of arc									
1993 10 09	809	1.0+	1.5+	1993 10 11	809	1.2−	1.6−	1998 02 05	327 0.3− 0.3+
1993 10 09	809	0.3+	1.1+	1993 10 11	809	2.5−	0.9−	1998 02 05	327 0.0 0.1−
1993 10 09	809	0.1+	1.0+	1993 10 11	809	1.8−	1.2−	1998 02 05	327 0.4− 0.0
1993 10 11	809	1.4+	0.8−	1993 10 21	809	0.2+	0.5+	1998 02 06	327 0.6+ 0.2−
1993 10 11	809	1.3+	0.5−	1993 10 21	809	0.3−	0.5+	1998 02 06	327 0.0 0.0
1993 10 11	809	1.1+	0.0	1993 10 21	809	0.3+	0.5+	1998 02 06	327 0.1+ 0.2−

1993 UD₁ = 1998 BG₁₉

Id. E. Pettarin

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	121.56707		(2000.0)		P		Q		Williams
<i>n</i>	0.27636059	ω	238.31036		+0.62201678		+0.77656278		
<i>a</i>	2.3342747	Ω	70.48671		−0.67758861		+0.59799340		
<i>e</i>	0.1727165	<i>i</i>	6.10403		−0.39238859		+0.19837879		
<i>P</i>	3.57	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 09	809	1.2+	0.6-	1993 10 26	595	2.0-	0.9-	1993 11 16	595	0.2+	0.5+
1993 10 09	809	0.4-	0.4+	1993 10 27	595	2.1-	0.3-	1993 12 03	595	0.0	1.0+
1993 10 09	809	0.1+	0.1-	1993 10 27	595	0.2+	0.9-	1993 12 03	595	0.2+	0.4-
1993 10 11	809	0.9+	1.4+	1993 10 27	595	2.0+	0.6-	1993 12 04	595	0.9+	0.0
1993 10 11	809	0.5+	1.7+	1993 11 15	595	0.1-	0.1-	1993 12 04	595	0.1-	0.6-
1993 10 11	809	0.1-	1.7+	1993 11 15	595	1.4+	0.9+	1998 01 25	595	1.1-	1.4+
1993 10 26	595	2.7-	0.2+	1993 11 15	595	1.3+	0.9+	1998 01 25	595	0.4+	0.1+
1993 10 26	595	0.5-	1.0-	1993 11 16	595	0.3+	0.8-	1998 01 26	595	0.1+	1.5-
1993 10 26	595	0.6-	1.0-	1993 11 16	595	0.2-	1.4-	1998 01 27	595	0.5+	0.7+

1993 UN₆

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	44.11315		(2000.0)				
<i>n</i>	0.27753628	ω	320.59545	+0.57596329	-0.80952022		
<i>a</i>	2.3276778	Ω	93.94735	+0.77586813	+0.49749426		
<i>e</i>	0.1459519	<i>i</i>	6.54821	+0.25747803	+0.31173142		
<i>P</i>	3.55	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 10	809	0.7-	0.5+	1993 10 21	809	1.5+	0.9-	1998 01 08	688	0.1+	0.2-
1993 10 10	809	0.6-	1.3-	1993 10 21	809	0.6-	1.0+	1998 01 08	688	0.1-	0.1+
1993 10 10	809	1.2+	0.7+	1993 10 21	809	1.2-	1.3-	1998 01 08	688	0.5+	0.4-
1993 10 20	809	0.8+	0.1+	1998 01 06	688	0.2-	0.6+	1998 01 08	688	0.4+	0.2-
1993 10 20	809	0.8+	0.9+	1998 01 06	688	0.1+	0.1-	1998 01 08	688	0.0	0.3-
1993 10 20	809	1.3-	0.3+	1998 01 08	688	0.7-	0.5+				

1993 VY = 1969 UB₁

Id. C. M. Bardwell, M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	51.73576		(2000.0)				
<i>n</i>	0.28695638	ω	30.22731	+0.57309946	-0.79771009		
<i>a</i>	2.2764536	Ω	26.26323	+0.64097282	+0.29366643		
<i>e</i>	0.1925958	<i>i</i>	25.09311	+0.51059852	+0.52670546		
<i>P</i>	3.43	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1969 10 16	095	1.8-	1.7+	1993 11 09	675	0.6+	2.3-	1993 12 18	801	0.3+	0.2+
1993 10 09	675	1.1-	0.1-	1993 11 10	675	1.3+	0.4+	1997 12 27	688	0.3+	0.0
1993 10 13	675	0.5+	0.1-	1993 11 10	675	1.2-	0.3-	1997 12 27	688	0.4+	0.3+
1993 10 13	675	0.2+	0.2+	1993 12 12	801	1.6+	0.5+	1997 12 29	688	0.2+	0.1+
1993 10 15	675	1.1+	0.4-	1993 12 12	801	1.0+	0.1-	1997 12 29	688	0.3-	0.0
1993 11 09	675	1.9-	0.5+	1993 12 17	801	0.5+	0.3+				

1993 VS₄ = 1989 VX₃ = 1989 WN₅ = 1998 BT₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
				P	Q		
<i>M</i>	61.35932		(2000.0)				
<i>n</i>	0.25452328	ω	293.97044	+0.97260591	-0.14136561		
<i>a</i>	2.4659506	Ω	74.57585	+0.21004860	+0.87452529		
<i>e</i>	0.1477140	<i>i</i>	11.03628	-0.09958579	+0.46391947		
<i>P</i>	3.87	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 11 03	809	1.5+	0.0	1993 11 10	010	0.9-	0.0	1998 01 17	552	0.7+	0.2-
1989 11 03	809	0.3+	0.0	1993 11 10	010	0.2-	0.2-	1998 01 17	552	0.9+	0.7+
1989 11 03	809	0.1-	0.3+	1993 12 09	408	0.9+	1.1+	1998 01 24	552	0.2-	0.6+
1989 11 21	095	(0.7+	6.2-)	1993 12 09	408	1.7+	1.0+	1998 01 24	552	0.4-	0.5-
1989 11 21	095	2.0-	0.3-	1993 12 09	408	(1.8+	2.4+)	1998 01 24	552	0.2-	0.2+
1993 11 09	010	0.1+	0.3-	1993 12 18	408	0.5-	0.0	1998 01 26	552	0.6-	0.3-
1993 11 09	010	1.2-	0.2+	1993 12 18	408	0.4+	1.0-	1998 01 26	552	0.8-	0.3-
1993 11 10	010	0.1+	0.8-	1998 01 17	552	0.2+	0.2-				

1993 VB₈ = 1995 KT₂

Id. E. Bowell (1989 observations), M. W. Buie (1997 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	68.48685		(2000.0)				
<i>n</i>	0.28071382	ω	334.02901	+0.20019068	-0.97250801		
<i>a</i>	2.3100791	Ω	104.23515	+0.91893464	+0.14425962		
<i>e</i>	0.0708781	<i>i</i>	7.04969	+0.33982763	+0.18280408		
<i>P</i>	3.51	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1989 11 06	675	0.0	0.0	1994 01 14	033	0.4+	0.1-	1995 05 23	010	(6.0+	3.5+)
1989 11 06	675	0.2-	0.3+	1994 01 15	033	0.6-	0.5+	1995 05 23	010	(3.9+	3.3+)
1993 11 12	033	0.2+	0.4+	1994 01 18	033	0.8-	0.5+	1997 12 27	688	0.1+	0.0
1993 11 12	033	0.8-	0.1+	1995 05 22	010	(0.0	5.1+)	1997 12 27	688	0.1+	0.0
1993 11 13	033	0.4+	0.2-	1995 05 22	010	(2.8-	4.4+)	1997 12 29	688	0.0	0.7+
1994 01 07	675	0.3+	1.0-	1995 05 22	010	(2.7-	3.9+)	1997 12 29	688	0.1+	0.0
1994 01 07	675	0.8+	0.6-	1995 05 23	010	(2.3+	3.6+)				

1993 XK = 1998 BS₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	85.16765		(2000.0)				
<i>n</i>	0.26500656	ω	258.65106	+0.98217834	-0.16603450		
<i>a</i>	2.4004812	Ω	110.85871	+0.18691726	+0.91196548		
<i>e</i>	0.1125505	<i>i</i>	5.40865	-0.01968875	+0.37516863		
<i>P</i>	3.72	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 12 08	411	0.8+	0.9+	1997 12 25	566	0.2+	0.4+	1998 01 23	704	0.1+	0.7+
1993 12 08	411	0.7+	0.9-	1997 12 25	566	1.1+	0.4+	1998 01 23	704	0.9+	0.3+
1993 12 09	411	0.1-	0.0	1997 12 25	566	0.9+	0.1+	1998 01 24	704	0.3+	0.3-
1993 12 09	411	0.1-	0.1-	1998 01 01	691	1.4-	0.1+	1998 01 24	704	0.7-	0.3-
1993 12 09	411	0.6+	0.3-	1998 01 01	691	1.7-	0.5-	1998 01 24	704	0.6+	0.7+
1993 12 12	411	0.0	1.2-	1998 01 01	691	1.5-	0.3-	1998 01 24	704	0.0	0.3-
1993 12 12	411	0.1-	0.1+	1998 01 08	704	1.0+	0.2-	1998 01 24	704	0.3-	0.4-
1993 12 12	411	0.3+	0.1+	1998 01 08	704	0.1-	0.6+	1998 01 24	704	0.9+	1.8+
1993 12 15	411	0.3-	1.0+	1998 01 08	704	1.1+	0.1-	1998 01 24	704	0.5-	0.5-
1993 12 15	411	0.5-	1.3+	1998 01 08	704	0.5+	0.8-	1998 01 24	704	0.0	0.2+
1993 12 15	411	0.3-	0.3+	1998 01 20	704	0.1-	0.1-	1998 01 25	704	1.2-	0.3-
1993 12 17	411	0.6-	0.4-	1998 01 20	704	0.0	0.4-	1998 01 25	566	0.7+	0.6-
1993 12 17	411	0.5-	0.2+	1998 01 20	704	0.1+	0.3-	1998 01 25	704	0.6+	0.1+
1993 12 17	411	0.3-	0.4-	1998 01 20	704	1.3-	1.2-	1998 01 25	566	1.3+	0.2-
1994 01 01	411	0.0	1.0+	1998 01 20	704	1.0-	0.6-	1998 01 25	566	0.5+	0.5+
1994 01 01	411	0.9+	0.3-	1998 01 23	704	0.2+	0.1-	1998 01 25	704	0.9-	0.6+
1994 01 01	411	0.6-	1.0-	1998 01 23	704	0.4-	0.5+	1998 01 25	704	0.2+	0.7+

1993 YL = 1998 BX₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	288.19939		(2000.0)				
<i>n</i>	0.26693639	ω	122.69433	-0.92275697	+0.38134769		
<i>a</i>	2.3888976	Ω	79.77552	-0.36979759	-0.83554354		
<i>e</i>	0.1589665	<i>i</i>	3.23991	-0.10848651	-0.39552614		
<i>P</i>	3.69	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 12 18	411	0.1+	0.1+	1994 01 19	411	0.1-	0.9+	1998 01 24	704	0.5+	0.2-
1993 12 18	411	0.3-	0.0	1994 01 19	411	0.0	0.1+	1998 01 24	704	0.3-	0.4+
1993 12 18	411	0.3+	0.4+	1994 01 19	411	0.3-	0.6-	1998 01 25	704	0.2-	0.4+
1993 12 19	411	0.3-	0.6-	1998 01 23	704	0.1+	0.3+	1998 01 25	704	0.3+	0.0
1993 12 19	411	0.3-	0.2+	1998 01 23	704	0.3+	0.5+	1998 01 25	704	0.4+	0.0
1993 12 21	411	0.3+	0.3+	1998 01 23	704	0.1-	0.3+	1998 01 25	704	0.4+	0.2+
1993 12 21	411	0.4-	1.4-	1998 01 23	704	0.1+	0.3+	1998 01 25	704	0.3-	0.1+
1993 12 21	411	1.1+	0.4-	1998 01 23	704	0.3-	0.2+	1998 01 29	566	0.7-	0.8-
1994 01 01	411	0.2+	1.0+	1998 01 24	704	0.1+	0.2+	1998 01 29	566	0.0	0.7-
1994 01 01	411	0.3-	0.1-	1998 01 24	704	0.2-	0.1-	1998 01 29	566	0.1-	1.3-
1994 01 01	411	0.1-	0.1+	1998 01 24	704	0.1+	0.3+				

1994 AF

Id. J. Broughton (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25619331	ω	165.39705	+0.69453309	−0.71753070		
<i>a</i>	2.4552225	Ω	240.58092	+0.65388080	+0.66006519		
<i>e</i>	0.1869666	<i>i</i>	3.46622	+0.30010612	+0.22240421		
<i>P</i>	3.85	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 01 02	411	0.2−	0.0	1994 01 08	411	1.1−	1.7+	1998 01 02	428	0.5−	0.7−
1994 01 02	411	0.4+	0.1−	1994 01 15	411	0.2−	0.1+	1998 01 03	428	0.1−	0.8−
1994 01 03	411	0.2+	0.2−	1994 01 15	411	0.1−	0.5−	1998 01 05	428	0.1−	0.5−
1994 01 03	411	0.3+	0.2+	1994 01 15	411	0.6+	0.6−	1998 01 19	428	0.8+	0.4+
1994 01 03	411	0.1−	0.8−	1994 01 30	411	1.2+	0.5+	1998 01 19	428	0.4−	0.4+
1994 01 08	411	1.0−	0.2−	1994 01 30	411	0.7−	1.3+				
1994 01 08	411	0.6+	0.1−	1994 01 30	411	0.3+	0.0				

1994 AS = 1981 UB₂ = 1997 TX₂₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17982158	ω	202.27282	−0.58712154	+0.80932810		
<i>a</i>	3.1086716	Ω	31.78121	−0.73786113	−0.52660483		
<i>e</i>	0.1630878	<i>i</i>	1.80866	−0.33294030	−0.26014492		
<i>P</i>	5.48	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 10 30	381	0.2+	0.2−	1994 01 07	411	0.5+	1.1+	1997 10 05	358	(2.6+	1.1+)
1981 10 30	381	0.0	0.5−	1994 01 14	411	0.1+	0.9−	1997 10 08	376	0.4−	0.2+
1994 01 04	411	0.0	1.4−	1994 01 14	411	0.1−	0.8−	1997 10 08	376	0.3−	0.1+
1994 01 04	411	0.2+	0.9+	1994 01 14	411	0.4+	0.2−	1997 10 10	376	0.5+	0.8−
1994 01 04	411	0.6−	0.3−	1997 10 04	358	1.3−	1.0+	1997 10 10	376	0.0	0.6−
1994 01 07	411	0.8−	1.7+	1997 10 04	358	(0.4−	2.3−)				
1994 01 07	411	0.3+	0.4+	1997 10 05	358	1.3+	0.7+				

1994 AR₁

Id. E. Bowell (1989 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27057677	ω	212.37075	−0.52173129	−0.83342652		
<i>a</i>	2.3674222	Ω	269.68155	+0.81638242	−0.42576022		
<i>e</i>	0.1304447	<i>i</i>	10.49807	+0.24762107	−0.35231871		
<i>P</i>	3.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 11 22	675	0.4+	1.8−	1994 01 15	402	0.9+	0.7+	1994 02 18	900	0.7−	1.2−
1989 11 22	675	0.3−	0.2+	1994 01 21	898	(2.7−	0.1+)	1994 02 18	900	0.5−	1.1−
1994 01 08	402	1.5+	0.3+	1994 01 21	898	0.7−	0.3+	1997 12 27	688	0.1+	0.7−
1994 01 08	402	0.7+	1.3+	1994 01 22	898	0.4+	1.5−	1997 12 27	688	0.3−	0.6−
1994 01 09	402	(3.0+	1.0+)	1994 01 22	898	1.0−	0.5+	1997 12 29	688	0.3−	0.3−
1994 01 09	402	0.3+	0.9+	1994 02 07	900	0.4−	0.5+	1997 12 29	688	0.5−	0.4−
1994 01 15	402	0.6−	0.6+	1994 02 07	900	0.8+	0.2+				

1994 AV₁

Id. E. Bowell (1989 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26434326	ω	207.46857	−0.86012035	−0.50231919		
<i>a</i>	2.4044951	Ω	302.10368	+0.48510991	−0.75177941		
<i>e</i>	0.1803553	<i>i</i>	6.01084	+0.15767488	−0.42720388		
<i>P</i>	3.73	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 11 28	675	0.2−	1.0+	1994 01 15	365	0.2+	0.9−	1994 02 07	385	0.3+	0.2+
1989 11 28	675	0.2+	0.7−	1994 01 15	365	1.0−	0.4−	1994 02 07	385	0.1−	0.6+
1994 01 09	898	0.7−	0.9−	1994 01 16	898	0.6−	0.9−	1994 02 07	385	0.2−	0.2+
1994 01 09	898	0.1−	0.6−	1994 01 16	898	(2.4+	2.1−)	1994 02 11	675	0.2−	0.2+
1994 01 11	385	0.1−	0.1+	1994 01 16	365	0.1+	0.9+	1994 02 11	675	1.0−	1.7−
1994 01 11	385	0.2+	0.1+	1994 01 16	365	0.4+	1.7+	1997 12 27	688	0.1+	0.2+
1994 01 11	385	0.3−	0.2−	1994 01 19	385	0.2+	0.1+	1997 12 27	688	0.2+	0.4+
1994 01 14	385	0.1+	0.0	1994 01 19	385	1.0+	0.2+	1997 12 29	688	0.1+	0.1+
1994 01 14	385	0.2+	0.0	1994 01 21	898	1.1+	0.4+	1997 12 29	688	0.1−	0.0
1994 01 14	385	0.1+	0.1−	1994 01 21	898	0.2+	0.5+				

1994 AR₂ = 1980 GY₁ = 1997 CQ₁₄Id. K. Ichikawa (*MPC* 23242), T. Kobayashi

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27054951	ω	199.36482	−0.22961520	+0.97318137		
<i>a</i>	2.3675812	Ω	57.36302	−0.89076760	−0.20434747		
<i>e</i>	0.1740116	<i>i</i>	0.94985	−0.39218611	−0.10564150		
<i>P</i>	3.64	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 04 08	675	0.2−	0.1−	1994 01 15	411	1.1−	0.8+	1997 02 04	691	0.2+	0.4−
1980 04 09	675	0.1+	0.2−	1994 01 15	411	0.2−	0.0	1997 02 04	691	0.0	0.0
1994 01 14	411	0.2−	0.7−	1994 01 19	411	0.7+	0.8−	1997 02 10	691	0.0	0.1−
1994 01 14	411	0.2+	1.0+	1994 01 19	411	0.4−	0.0	1997 02 10	691	0.1−	0.2+
1994 01 14	411	0.8+	1.0+	1994 01 19	411	0.1−	0.0				
1994 01 15	411	0.5+	0.8−	1997 02 04	691	0.0	0.3−				

1994 AY₅ = 1998 BZ₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24627676	ω	97.78841	+0.79244595	−0.58361603		
<i>a</i>	2.5206958	Ω	298.08909	+0.44977831	+0.75543475		
<i>e</i>	0.1266027	<i>i</i>	11.59122	+0.41198165	+0.29784335		
<i>P</i>	4.00	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 01 06	691	0.6+	0.6−	1994 01 11	691	0.0	0.0	1998 01 22	691	0.0	0.4+
1994 01 06	691	0.2+	0.4+	1994 01 12	691	0.1−	0.3+	1998 01 22	691	0.1−	0.3+
1994 01 06	691	0.5−	0.3−	1994 01 12	691	1.0−	0.2−	1998 01 29	691	0.2+	0.3−
1994 01 11	691	0.7+	0.1−	1994 01 12	691	0.4+	0.1+	1998 01 29	691	0.0	0.5−
1994 01 11	691	0.4−	0.0	1998 01 22	691	0.2−	0.3+	1998 01 29	691	0.3+	0.0

1994 BA₁ = 1992 SW₁₉Id. G. V. Williams (*MPC* 23343)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23814462	ω	75.65192	+0.12096863	−0.99254303		
<i>a</i>	2.5777583	Ω	7.44874	+0.86033908	+0.09729564		
<i>e</i>	0.1361707	<i>i</i>	6.64316	+0.49515982	+0.07342949		
<i>P</i>	4.14	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 09 22	809	0.4−	0.4+	1994 01 19	098	0.1−	1.4−	1998 01 29	566	0.1−	0.7−
1992 09 22	809	0.2−	0.8+	1994 02 09	104	0.1+	1.7+	1998 01 29	566	0.1−	0.8−
1992 09 22	809	1.4−	0.1+	1994 02 09	104	0.5−	1.4+	1998 01 29	566	0.2−	0.7−
1992 09 23	809	0.2+	0.7+	1994 02 09	104	0.3−	1.1+	1998 02 05	108	0.7+	0.4−
1992 09 23	809	0.0	0.3−	1994 02 09	104	0.2−	0.9+	1998 02 05	108	0.6−	1.8−
1992 09 23	809	1.0+	0.4−	1998 01 24	104	(2.6+	0.3−)	1998 02 05	108	0.4+	1.7−
1994 01 17	098	1.5+	0.3+	1998 01 24	104	0.3+	0.3+	1998 02 06	108	0.1+	1.7+
1994 01 17	098	0.1−	0.0	1998 01 24	104	0.0	0.1+	1998 02 06	108	0.0	0.1+
1994 01 18	098	1.2+	0.9−	1998 01 24	104	0.6−	0.3+	1998 02 06	108	0.5−	1.4+

1994 CS₂

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	18.25039		(2000.0)		P		Q
n	0.23761541	ω	337.90883		-0.36294953		-0.91261150
a	2.5815843	Ω	132.80618		+0.88869383		-0.39974064
e	0.0886885	i	14.86143		+0.28016230		+0.08571862
P	4.15	H	12.7	G	0.15	U	5

Residuals in seconds of arc

1994 02 14	411	0.6-	0.2+	1994 03 04	411	0.2-	0.4+	1994 03 15	411	0.4-	0.7-
1994 02 14	411	0.2-	0.5-	1994 03 04	411	0.0	0.3+	1994 03 15	411	0.2+	0.1-
1994 02 16	411	0.1+	0.4-	1994 03 06	411	0.0	0.1+	1998 01 25	411	0.4-	0.2-
1994 02 16	411	0.1+	0.7+	1994 03 06	411	0.3-	0.0	1998 01 25	411	0.1-	0.4-
1994 02 16	411	0.0	0.3-	1994 03 06	411	0.1-	0.4-	1998 01 26	411	0.1+	0.2+
1994 03 04	411	1.3+	1.4+	1994 03 15	411	0.2+	0.9-	1998 01 26	411	0.5+	0.2+

1994 CT₁₁ = 1998 BU₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	95.32325		(2000.0)		P		Q
n	0.22565197	ω	278.58887		+0.98137467		-0.18435775
a	2.6720421	Ω	92.04753		+0.19055018		+0.89851537
e	0.0872060	i	3.09744		+0.02438000		+0.39834953
P	4.37	H	14.0	G	0.15	U	4

Residuals in seconds of arc

1994 02 07	809	0.1-	0.1+	1994 03 05	691	(4.6-	0.3-)	1998 01 17	327	0.9-	0.3+
1994 02 07	809	1.2-	0.0	1994 03 05	691	(4.5-	0.3-)	1998 01 17	327	0.3-	0.3+
1994 02 07	809	1.5-	0.4-	1994 03 05	691	(3.8-	0.6-)	1998 01 17	327	0.2+	0.0
1994 02 09	809	0.5+	0.9+	1997 12 03	910	0.0	0.1+	1998 01 19	327	0.3-	0.2+
1994 02 09	809	0.2+	0.6-	1997 12 04	910	0.0	0.1+	1998 01 19	327	0.1+	0.3-
1994 02 09	809	0.3+	1.2-	1997 12 04	910	0.1+	0.1-	1998 01 19	327	0.3-	0.0
1994 02 12	809	1.0+	0.8+	1998 01 04	327	0.2+	0.3-	1998 02 06	327	0.4+	0.3+
1994 02 12	809	0.6+	0.1+	1998 01 04	327	0.4-	0.5-	1998 02 06	327	0.6+	0.2+
1994 02 12	809	0.0	0.1+	1998 01 04	327	0.1+	0.7-	1998 02 06	327	0.5+	0.7+

1994 CT₁₂ = 1998 BO₈

Id. D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	61.06295		(2000.0)		P		Q
n	0.24176485	ω	292.60668		+0.51634019		-0.84958826
a	2.5519605	Ω	125.86149		+0.82640283		+0.46133487
e	0.1306741	i	7.63450		+0.22461336		+0.25567544
P	4.08	H	13.5	G	0.15	U	5

Residuals in seconds of arc

1994 02 07	809	1.1+	0.9-	1994 02 12	809	1.3+	0.2+	1998 01 26	411	1.1+	0.1-
1994 02 07	809	0.1+	0.7-	1994 02 12	809	1.0+	0.2+	1998 01 31	411	0.6-	0.1-
1994 02 07	809	0.3-	0.3-	1994 02 12	809	0.5+	0.2-	1998 01 31	411	0.3+	0.4-
1994 02 09	809	1.1-	0.6+	1998 01 25	411	0.0	0.2+	1998 02 02	411	0.2-	0.4+
1994 02 09	809	1.2-	0.8+	1998 01 25	411	0.2-	0.1+	1998 02 02	411	0.4-	0.1-
1994 02 09	809	1.6-	0.3+	1998 01 26	411	0.1+	0.0				

1994 EP

Id. E. Bowell (1992 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	351.77633		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.26001231	ω	120.89147		-0.99240025		+0.09554612
a	2.4311221	Ω	64.68975		-0.11975113		-0.89487299
e	0.0969953	i	4.92061		+0.02830916		-0.43597394
P	3.79	H	14.0	G	0.15	U	4

Residuals in seconds of arc

1992 10 22	675	1.0-	0.2+	1994 03 10	411	0.4-	0.3+	1994 04 03	411	0.0	0.1-
1992 10 22	675	1.2+	0.6-	1994 03 10	411	0.1+	0.1+	1994 04 03	411	0.1+	1.2-
1994 03 04	411	0.2+	0.1+	1994 03 10	411	0.1+	0.1+	1997 12 27	688	0.1+	0.5+
1994 03 04	411	0.4-	1.1+	1994 04 02	411	0.3+	0.7-	1997 12 27	688	0.2+	0.0
1994 03 06	411	0.7+	0.1-	1994 04 02	411	0.6-	0.6-	1997 12 29	688	0.4+	0.5+
1994 03 06	411	0.7-	0.2+	1994 04 02	411	0.0	0.4-	1997 12 29	688	0.0	0.3+
1994 03 06	411	0.6-	0.1+	1994 04 03	411	0.8+	0.1+				

1994 EY₅ = 1997 YC₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	45.13113		(2000.0)		P		Q
n	0.21739479	ω	296.84920		+0.58715556		-0.80357676
a	2.7392813	Ω	116.85696		+0.77606568		+0.52456336
e	0.0494880	i	6.27643		+0.23015301		+0.28124306
P	4.53	H	13.1	G	0.15	U	5

Residuals in seconds of arc

1994 02 08	809	0.0	0.7-	1994 02 16	010	1.1-	2.1+	1997 12 25	411	0.1-	1.2+
1994 02 08	809	0.6+	0.9-	1994 03 09	010	0.3+	0.4+	1997 12 25	411	0.5-	1.1+
1994 02 08	809	0.4+	1.0-	1994 03 09	010	0.2-	0.4+	1997 12 31	411	0.5-	0.2-
1994 02 10	809	1.0+	0.4-	1994 03 09	010	0.1+	0.1-	1997 12 31	411	1.6-	0.2-
1994 02 10	809	1.2+	0.8-	1994 03 10	010	0.9-	0.2-	1998 01 08	704	0.5+	0.2+
1994 02 10	809	0.4-	0.7-	1994 03 10	010	1.4-	0.8-	1998 01 08	704	0.6+	0.8-
1994 02 13	809	1.7+	0.0	1994 03 10	010	1.4-	0.2+	1998 01 08	704	0.2+	0.2-
1994 02 13	809	1.2+	0.0	1997 12 24	411	(4.7-	2.0-)	1998 01 08	704	0.2+	0.2-
1994 02 13	809	0.3+	0.5+	1997 12 24	411	(5.1-	1.0-)	1998 01 16	411	0.4+	0.7-
1994 02 16	010	1.2-	2.2+	1997 12 25	411	0.1-	0.7+	1998 01 16	411	1.0+	1.1-

1994 GY

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	297.93270		(2000.0)		P		Q
n	0.22569424	ω	189.99341		-0.72045866		+0.68287157
a	2.6717084	Ω	34.10313		-0.62045535		-0.55679817
e	0.5311679	i	12.45632		-0.30979748		-0.47292940
P	4.37	H	17.0	G	0.15	U	1

Residuals in seconds of arc

1994 04 14	675	1.3+	1.3+	1994 04 17	871	(1.1-	2.2-)	1994 05 04	675	0.8+	1.8+
1994 04 14	675	0.1-	0.9+	1994 04 17	871	0.8+	1.9-	1994 05 04	675	(0.5+	3.3+)
1994 04 14	402	0.3+	0.6+	1994 04 17	900	1.1-	0.6+	1994 05 04	413	0.7-	0.6+
1994 04 14	402	(0.8-	2.3-)	1994 04 17	900	0.7-	0.4-	1994 05 04	413	0.6-	0.6+
1994 04 15	675	1.0+	1.2+	1994 04 19	817	(2.7+	1.5-)	1994 05 05	474	1.0+	1.0-
1994 04 15	675	1.1+	0.8+	1994 04 19	817	(2.2+	0.2-)	1994 05 05	474	0.8+	0.9-
1994 04 15	897	0.2+	0.2-	1994 04 19	817	0.1-	0.2-	1994 05 06	411	0.4-	0.1-
1994 04 15	897	0.4-	0.4-	1994 04 19	817	0.0	0.9+	1994 05 06	411	0.2-	0.0
1994 04 15	897	0.2+	0.2-	1994 04 19	557	0.5-	0.7-	1994 05 06	411	0.2+	0.0
1994 04 15	896	(0.3+	3.1+)	1994 04 19	557	0.2-	1.3-	1994 05 06	360	0.3-	0.2+
1994 04 15	893	0.2+	0.3-	1994 04 19	557	0.3+	0.3-	1994 05 06	360	0.3-	0.1+
1994 04 15	402	0.3+	1.7-	1994 04 19	557	0.3+	0.2-	1994 05 07	801	0.2-	0.1-
1994 04 15	893	0.2+	0.1-	1994 04 19	557	0.2-	0.2-	1994 05 07	801	0.3-	0.5-
1994 04 15	402	0.2-	1.1+	1994 04 19	557	0.1+	0.3-	1994 05 11	801	0.6+	0.8-
1994 04 15	893	0.0	0.2-	1994 04 20	557	0.2+	0.3-	1994 05 11	801	0.2+	0.0
1994 04 15	893	0.1+	0.2-	1994 04 20	557	0.1+	0.2-	1994 05 12	360	0.5+	0.4-
1994 04 15	402	0.9+	1.5+	1994 04 20	557	0.3+	0.4+	1994 05 12	360	0.6+	0.4-
1994 04 15	896	(0.4+	2.1+)	1994 04 20	557	0.1-	0.3+	1994 05 16	323	(1.3+	2.2-)
1994 04 15	402	0.4+	1.5+	1994 04 20	557	0.2-	0.2+	1994 06 07	474	0.5+	0.1-
1994 04 15	900	0.8+	0.4+	1994 04 20	557	0.1-	0.4+	1994 06 07	474	1.0+	0.1-
1994 04 15	900	1.3+	1.1+	1994 04 21	557	0.4-	0.3+	1994 06 12	474	0.7-	0.7+
1994 04 15	900	0.1+	0.3-	1994 04 21	557	0.4-	0.4+	1994 06 12	474	0.9-	0.3-
1994 04 16	411	0.4-	1.2-	1994 04 21	900	0.5+	1.0+	1994 06 17	413	0.6+	0.8-
1994 04 16	411	0.5-	0.4-	1994 04 21	900	0.8+	0.7+	1994 06 18	413	0.4+	0.7-
1994 04 16	411	1.2-	1.4-	1994 04 21	391	(2.4+	7.7+)	1994 06 18	413	0.5+	0.9-
1994 04 16	391	1.9-	0.7-	1994 04 23	816	0.1-	0.1-	1994 06 20	413	0.2-	1.1-
1994 04 16	402	(1.2-	2.8-)	1994 04 23	816	0.4-	0.3+	1994 06 20	413	0.1-	0.6-
1994 04 16	897	0.0	0.5-	1994 04 23	816	0.2+	0.8+	1994 07 25	413	0.8-	0.2+

1998 FEB. 11

M.P.C. 31239

1994 04 16	897	0.0	0.3−	1994 04 23	817	0.8−	0.4+	1994 07 25	413	0.9−	0.2+
1994 04 16	402	1.2−	0.7+	1994 04 29	111	0.5−	0.7+	1994 07 26	413	0.1+	0.1+
1994 04 16	897	0.2−	0.3−	1994 04 29	111	1.3−	1.0+	1994 07 26	413	0.0	0.2+
1994 04 16	896	(2.0+	6.7+)	1994 04 29	111	(2.3−	1.5+)	1994 08 15	413	0.3−	0.3+
1994 04 16	893	0.4−	0.5−	1994 04 29	111	1.5+	0.1+	1994 08 15	413	0.5+	0.2+
1994 04 16	893	0.4−	0.4−	1994 04 29	111	1.2−	1.1−	1994 08 16	413	0.7−	0.3+
1994 04 16	893	0.5−	0.2−	1994 04 29	111	0.5−	1.2−	1994 08 27	413	0.6+	0.1−
1994 04 16	893	0.1−	0.5−	1994 04 29	111	0.6−	0.9−	1994 08 27	413	0.3+	0.1−
1994 04 16	896	(1.4−	5.9+)	1994 04 29	111	0.0	1.0+	1994 08 28	413	0.4+	0.1+
1994 04 16	893	1.5+	0.6+	1994 04 30	111	0.7+	0.8+	1994 08 28	413	0.3+	0.2+
1994 04 17	411	0.4−	0.9−	1994 04 30	111	1.0+	1.7+	1994 09 17	413	1.3−	0.2+
1994 04 17	411	0.4−	0.9−	1994 05 01	413	0.3−	0.7+	1994 09 17	413	0.4−	0.6−
1994 04 17	411	0.3−	0.6−	1994 05 01	413	0.4−	0.7+	1994 09 18	413	0.5−	0.3+
1994 04 17	893	0.2−	0.8−	1994 05 02	413	0.2−	0.7+	1994 09 18	413	0.3−	1.0+
1994 04 17	893	0.5−	0.6−	1994 05 02	413	0.2−	0.6+	1997 12 27	688	0.2−	0.5+
1994 04 17	893	0.0	1.0−	1994 05 03	413	0.3−	0.5+	1997 12 27	688	0.5+	0.0
1994 04 17	372	1.2+	0.8+	1994 05 03	413	0.3−	0.6+	1998 01 03	693	0.2−	0.1−
1994 04 17	893	0.1−	0.9−	1994 05 03	474	0.1+	0.2+	1998 01 03	693	0.1−	0.4+
1994 04 17	871	0.8+	1.6−	1994 05 03	474	0.1+	0.1+	1998 01 03	693	0.0	0.1−

1994 PA₄ = 1997 EG₁₀

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	248.74300		(2000.0) <th>$\mathbf{P}$</th> <th>$\mathbf{Q}$</th>	$\mathbf{P}$	$\mathbf{Q}$
n	0.21938800	ω	173.19564	+0.99208893	+0.12553619
a	2.7226646	Ω	179.59176	−0.11804430	+0.93413402
e	0.0832243	i	3.75510	−0.04272114	+0.33411720
P	4.49	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1994 08 10	809	0.7−	0.2+	1994 09 03	809	0.0	0.1+	1997 03 07	691	0.3−	0.4−
1994 08 10	809	1.3−	0.3+	1994 09 03	809	1.3−	0.1+	1997 03 07	691	0.3+	0.4+
1994 08 10	809	1.1−	0.0	1994 09 03	809	0.5−	1.2−	1997 03 07	691	0.1+	0.0
1994 08 11	809	0.4+	0.2−	1994 09 04	809	0.9+	0.7+	1997 03 09	691	0.1−	0.0
1994 08 11	809	1.6+	0.7−	1994 09 04	809	0.9+	0.8+	1997 03 09	691	0.1−	0.2+
1994 08 11	809	1.3+	0.3+	1994 09 04	809	0.2−	0.3−	1997 03 09	691	0.1+	0.1−

1994 PV₇ = 1997 GO₂₅

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	292.99783		(2000.0)	P		Q	
n	0.23939025	ω	222.20700	+0.85606111		+0.51670121	
a	2.5688086	Ω	106.67713	−0.47041026		+0.78957710	
e	0.1583369	i	0.80076	−0.21418113		+0.33104056	
P	4.12	H	16.5	G	0.15	U	5

Residuals in seconds of arc

1994 08 10	809	0.4+	0.2−	1994 08 12	809	1.8−	0.5−	1994 09 04	809	1.2−	1.2−
1994 08 10	809	0.4−	1.1−	1994 08 13	809	0.7−	1.5+	1994 09 04	809	0.0	0.8−
1994 08 10	809	0.2−	0.5+	1994 08 13	809	0.2−	1.5+	1997 04 08	691	0.4−	0.7−
1994 08 11	809	1.1+	0.0	1994 08 13	809	0.1−	0.6+	1997 04 08	691	0.4−	0.2+
1994 08 11	809	1.1+	0.5−	1994 09 03	809	1.1+	0.6−	1997 04 08	691	0.8−	0.4+
1994 08 11	809	1.4+	0.3+	1994 09 03	809	0.0	0.4−	1997 04 12	691	0.5+	0.0
1994 08 12	809	0.1+	1.0+	1994 09 03	809	1.7+	0.2+	1997 04 12	691	0.6+	0.5−
1994 08 12	809	1.7−	0.1+	1994 09 04	809	0.6−	0.9−	1997 04 12	691	0.0	0.2−

1994 PX₉ = 1997 GU₈

Id. G. V. Williams, A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

			Williams				
M	296.58727	(2000.0)	P	Q			
n	0.24355383	ω	313.98456	+0.87693733	+0.48055887		
a	2.5394485	Ω	17.29690	−0.43430789	+0.79830233		
e	0.1333171	i	1.27966	−0.20580956	+0.36301042		
P	4.05	H	15.5	G	0.15	U	6

Residuals in seconds of arc

1994 08 10	809	0.3−	0.2+	1994 08 13	809	1.3+	0.4−	1994 09 05	809	0.4+	1.1+
1994 08 10	809	0.3−	1.0+	1994 08 13	809	0.7+	1.0+	1994 09 06	809	(0.5+	4.6+)
1994 08 10	809	1.0−	0.8+	1994 09 03	809	0.2−	1.1−	1994 09 06	809	(1.0+	4.4+)
1994 08 11	809	0.2−	0.8+	1994 09 03	809	0.6+	1.4−	1994 09 06	809	(0.7+	4.1+)
1994 08 11	809	0.3+	1.1+	1994 09 03	809	1.0+	1.2−	1997 04 03	704	0.8+	1.7−
1994 08 11	809	0.3+	0.0	1994 09 04	809	1.3−	0.9−	1997 04 03	704	1.2+	0.4−
1994 08 12	809	0.8−	0.6+	1994 09 04	809	0.2−	1.6−	1997 04 07	704	1.4−	0.8+
1994 08 12	809	0.7−	0.3−	1994 09 04	809	0.1+	0.9−	1997 04 07	704	1.0−	0.5+
1994 08 12	809	1.3−	1.2−	1994 09 05	809	1.6+	1.0+				
1994 08 13	809	0.6+	0.1−	1994 09 05	809	0.4−	1.1+				

1994 PN₁₄ = 1997 GG₂₆

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	335.94784		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.24031691	ω	306.36297	+0.08537261	+0.99472178
a	2.5622008	Ω	328.39093	−0.87581572	+0.04768369
e	0.1760296	i	6.23487	−0.47503509	+0.09085618
P	4.10	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1994 08 10	809	1.0+	0.3+	1994 09 03	809	1.0+	0.4+	1997 04 07	691	0.3−	0.2+
1994 08 10	809	0.6+	0.4+	1994 09 03	809	0.1+	0.2−	1997 04 07	691	0.5−	0.1−
1994 08 10	809	0.1+	0.9+	1994 09 03	809	0.2+	0.5+	1997 04 07	691	0.2+	0.0
1994 08 11	809	1.0−	0.4−	1994 09 04	809	0.2−	0.1+	1997 04 13	691	0.3+	0.0
1994 08 11	809	0.2−	1.0−	1994 09 04	809	0.7−	0.4−	1997 04 13	691	0.1+	0.1+
1994 08 11	809	0.5−	0.4−	1994 09 04	809	0.4−	0.3−	1997 04 13	691	0.2+	0.1−

1994 PW₁₅ = 1997 MZ₁

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams					
<i>M</i>				(2000.0)		P		Q	
<i>n</i>	0.25637411	ω	230.88431	+0.79176611		−0.61063740			
<i>a</i>	2.4540681	Ω	166.72856	+0.57877541		+0.74208465			
<i>e</i>	0.2165446	<i>i</i>	3.77471	+0.19525741		+0.27646399			
<i>P</i>	3.84	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1994 08 10	809	0.4+	0.5+	1994 09 03	809	0.1+	0.3+	1997 06 26	691	0.3+	0.0
1994 08 10	809	0.8−	0.9−	1994 09 03	809	1.0−	0.2−	1997 06 26	691	1.0+	0.3−
1994 08 10	809	1.5−	0.3+	1994 09 03	809	0.7−	0.2+	1997 06 26	691	0.2+	0.7−
1994 08 11	809	1.7+	1.3+	1994 09 04	809	0.3+	1.0−	1997 07 02	691	0.5−	0.0
1994 08 11	809	1.2+	1.0+	1994 09 04	809	0.3+	0.5−	1997 07 02	691	0.3−	0.3+
1994 08 11	809	0.5+	1.5+	1994 09 04	809	0.4−	2.2−	1997 07 02	691	0.8−	0.2+

1994 PO₁₈ = 1995 YW₂₃

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	171.52500		(2000.0)	P	Q
n	0.19886864	ω	258.58539	+0.57683384	-0.81669605
a	2.9068671	Ω	156.16345	+0.76442414	+0.53260061
e	0.0578064	i	2.33149	+0.28795564	+0.22213545
P	4.96	H	14.0	G 0.15	U 5

1994 PO₂₅ = 1997 ET₃₇

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19813815	ω	222.62220	+0.06991879	+0.99686320		
<i>a</i>	2.9140074	Ω	51.42135	−0.90198498	+0.07905408		
<i>e</i>	0.0516846	<i>i</i>	2.71886	−0.42606860	−0.00376963		
<i>P</i>	4.97	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.8+	0.2+	1994 09 05	809	0.1−	1.1+	1997 03 05	704	1.6−	2.1+
1994 08 12	809	0.0	0.7+	1994 09 05	809	0.3+	0.7+	1997 03 05	704	1.4+	0.7−
1994 08 12	809	0.2+	0.0	1994 09 05	809	0.3+	1.7+	1997 03 06	704	0.6−	1.5−
1994 08 13	809	0.5+	0.3−	1994 09 06	809	0.1−	1.3−	1997 03 06	704	0.8+	0.0
1994 08 13	809	1.3−	0.2−	1994 09 06	809	0.5−	1.0−				
1994 08 13	809	0.2−	0.6−	1994 09 06	809	0.1+	1.2−				

1994 PP₃₉ = 1997 DK

Id. G. V. Williams, A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18576247	ω	100.84996	+0.38170081	−0.92009163		
<i>a</i>	3.0420340	Ω	326.28337	+0.77400851	+0.37020155		
<i>e</i>	0.0826207	<i>i</i>	9.11699	+0.50518840	+0.12799298		
<i>P</i>	5.31	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 10	809	1.3+	0.5+	1994 09 03	809	(3.4+	0.2−)	1997 02 27	369	0.2−	0.6+
1994 08 10	809	1.0+	1.8+	1994 09 03	809	(4.4+	0.8−)	1997 02 27	369	0.4+	0.3+
1994 08 10	809	1.0+	0.7+	1994 09 04	809	(5.0+	1.0+)	1997 03 01	369	0.2+	0.3−
1994 08 10	809	(4.9+	0.8−)	1994 09 04	809	(5.5+	0.8+)	1997 03 01	369	0.3+	0.5+
1994 08 10	809	(3.3+	0.6−)	1994 09 04	809	(5.2+	0.7+)	1997 03 04	369	0.5+	0.1+
1994 08 10	809	(3.6+	0.1+)	1994 09 09	691	0.2−	0.4−	1997 03 04	369	0.3−	0.3−
1994 08 11	809	0.5−	1.0−	1994 09 09	691	0.1+	0.1+	1997 03 04	369	0.0	0.2−
1994 08 11	809	1.4−	1.2−	1994 09 09	691	0.0	0.3−	1997 03 09	369	0.1−	0.1+
1994 08 11	809	1.3−	0.7−	1997 01 17	599	0.3−	0.6−	1997 03 09	369	0.2−	0.4−
1994 09 03	809	(5.0+	0.2−)	1997 01 18	599	(5.7−	5.1+)	1997 03 09	369	0.5−	0.4−

1995 BA

Id. K. Williams (1997 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26090821	ω	57.35167	−0.58993262	−0.80695140		
<i>a</i>	2.4255537	Ω	68.82648	+0.73023273	−0.54821625		
<i>e</i>	0.1661973	<i>i</i>	1.74785	+0.34458621	−0.21974619		
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 01 19	411	0.2+	0.6+	1995 01 29	411	0.0	0.4−	1995 02 19	411	0.0	0.2+
1995 01 19	411	0.2−	0.4+	1995 01 29	411	0.1+	0.2+	1997 09 28	824	0.1+	0.1−
1995 01 20	411	0.0	0.0	1995 02 01	411	0.0	0.1−	1997 09 28	824	0.1+	0.2−
1995 01 20	411	0.1−	0.3+	1995 02 07	411	0.2−	0.9−	1997 09 28	824	0.1+	0.2−
1995 01 24	411	0.0	0.3−	1995 02 07	411	0.4+	0.4−	1997 12 29	688	0.1−	0.0
1995 01 24	411	0.3−	0.1+	1995 02 17	411	0.1−	0.0	1997 12 29	688	0.1−	0.4+

1995 CJ₁ = 1997 WA₅₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27842614	ω	281.13062	−0.99701355	+0.02582174		
<i>a</i>	2.3227156	Ω	260.37878	+0.00423376	−0.92275157		
<i>e</i>	0.1902802	<i>i</i>	4.23345	−0.07711072	−0.38452930		
<i>P</i>	3.54	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 02 03	400	1.4+	1.3−	1997 10 22	327	1.0−	0.1−	1997 11 29	704	(1.9+	2.2−)
1995 02 03	400	(5.0+	3.8−)	1997 10 22	327	0.8−	0.4−	1997 11 29	704	(1.9+	2.3−)
1995 02 04	400	0.8−	0.8+	1997 11 26	704	0.8−	0.5−	1997 12 04	704	1.5+	0.6−
1995 02 04	400	1.3−	0.4−	1997 11 26	704	(3.2−	2.2−)	1997 12 04	704	0.0	0.9+
1995 02 08	400	0.9−	0.8+	1997 11 26	704	(3.8−	1.5−)	1997 12 04	704	1.4−	0.6+
1995 02 25	400	1.2+	0.3−	1997 11 29	704	1.2+	1.0+	1997 12 04	704	1.2−	1.0+
1995 02 25	400	0.2+	0.2+	1997 11 29	704	1.5+	0.7−	1997 12 04	704	0.1−	0.5+
1997 10 22	327	0.4−	0.3−	1997 11 29	704	1.2+	1.3−				

1995 GA

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29581132	ω	109.19770	−0.39631876	+0.91303678		
<i>a</i>	2.2307943	Ω	137.04940	−0.88653678	−0.35326920		
<i>e</i>	0.1157780	<i>i</i>	8.13453	−0.23871316	−0.20387424		
<i>P</i>	3.33	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 12 09	691	0.4−	0.0	1995 04 03	411	0.8+	0.1+	1995 04 26	411	0.4−	0.2−
1994 12 09	691	0.0	0.5+	1995 04 03	411	0.1−	0.6+	1995 04 26	411	0.7−	1.1−
1994 12 09	691	0.2+	0.3−	1995 04 07	411	0.0	0.7−	1998 01 24	426	0.1−	0.1+
1995 03 28	411	0.3+	0.8−	1995 04 07	411	0.5+	0.8+	1998 01 24	426	0.1+	0.4+
1995 03 28	411	0.3−	0.1+	1995 04 19	411	1.2−	0.2+	1998 01 26	426	0.4+	0.4−
1995 04 01	411	1.0+	0.1−	1995 04 19	411	0.5−	1.0−	1998 01 26	426	0.7−	0.6−
1995 04 01	411	0.6+	1.6+	1995 04 26	411	0.1−	0.4+	1998 01 26	426	0.2+	0.2+

1995 OJ = 1980 FK₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27454166	ω	72.44660	−0.95003827	+0.30904746		
<i>a</i>	2.3445736	Ω	125.53382	−0.30288785	−0.87889574		
<i>e</i>	0.1739891	<i>i</i>	3.08414	−0.07540711	−0.36336201		
<i>P</i>	3.59	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 03 16	095	0.1−	0.2−	1995 07 26	557	0.0	0.1+	1995 09 17	557	0.6−	0.7−
1995 07 22	557	0.1−	0.1−	1995 07 26	557	0.2+	0.2−	1995 09 17	557	0.3−	0.1−
1995 07 22	557	0.1−	0.4+	1995 07 29	557	0.4+	0.4−	1995 09 17	557	0.2−	0.6+
1995 07 22	557	0.2−	0.6+	1995 07 29	557	0.1+	0.0	1995 09 17	557	0.1+	0.1−
1995 07 23	557	0.3−	0.6+	1995 08 05	557	0.6+	0.4−	1998 01 26	557	0.4+	0.0
1995 07 23	557	0.3−	0.1+	1995 08 05	557	0.1−	0.2−	1998 01 26	557	0.5−	0.0
1995 07 24	557	0.3−	0.2+	1995 08 23	557	0.6+	0.0	1998 01 27	557	0.3−	0.2+
1995 07 24	557	0.1−	0.1−	1995 08 23	557	0.4+	0.2+	1998 01 27	557	0.3+	0.1−
1995 07 24	557	0.2−	0.1+	1995 08 28	557	0.3+	0.3−				
1995 07 24	557	0.2−	0.3−	1995 08 28	557	0.1+	0.3−				

1995 SR₉ = 1998 BD₂₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17603003	ω	94.78509	−0.01265709	−0.99978720		
<i>a</i>	3.1531517	Ω	355.83448	+0.80530896	−0.00053557		
<i>e</i>	0.1252479	<i>i</i>	12.95927	+0.59272024	−0.02062203		
<i>P</i>	5.60	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 08 25	809	0.0	0.1+	1995 09 22	691	1.3−	0.1+	1995 09 29	327	0.0	0.1−
1995 08 26	809	0.7+	0.1+	1995 09 22	691	1.0−	0.1+	1995 09 29	327	0.2+	0.2−
1995 09 17	691	1.4−	0.3+	1995 09 23	809	1.1+	0.7−	1997 12 08	910	0.3+	0.1+
1995 09 17	691	1.8−	0.0	1995 09 24	809	0.9+	0.3−	1997 12 08	910	0.1−	0.2+
1995 09 17	691	1.3−	0.1−	1995 09 27	691	0.6−	0.3+	1997 12 08	910	0.3−	0.2−
1995 09 18	809	1.3+	0.4−	1995 09 27	691	1.1−	0.2+	1998 01 28	910	0.5−	0.1+
1995 09 19	809	1.9+	0.1+	1995 09 27	691	0.9−	0.7+	1998 01 28	910	0.2+	0.3−
1995 09 19	809	1.1+	0.1+	1995 09 28	327	0.2+	0.4+	1998 01 28	910	0.2−	0.5−
1995 09 20	809	0.8+	0.1−	1995 09 28	327	0.4+	0.4+	1998 01 30	910	0.0	0.8+

1998 FEB. 11

M.P.C. 31241

1995 09 22 809 1.2+ 1.0- 1995 09 28 327 0.5+ 0.0 1998 01 30 910 0.1- 0.4-
 1995 09 22 691 1.8- 0.2+ 1995 09 29 327 1.2+ 0.7- 1998 01 30 910 0.2+ 0.4-

1995 SO₃₃ = 1977 FL₂ = 1998 BN₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	278.81339	(2000.0)	P	Q
<i>n</i>	0.18188732	ω	195.29401	-0.89347043 +0.44910927
<i>a</i>	3.0850895	Ω	11.39434	-0.41024236 -0.81303293
<i>e</i>	0.1150291	<i>i</i>	0.98199	-0.18278896 -0.37051088
<i>P</i>	5.42	<i>H</i>	12.5	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1977 03 26	095	0.9+	2.0+	1998 01 20	704	0.2+	0.0	1998 01 23	691	0.9-	0.3-
1995 09 21	691	0.5-	0.6+	1998 01 20	704	0.1+	0.2-	1998 01 23	704	0.3+	0.4+
1995 09 21	691	0.1+	0.6+	1998 01 20	704	0.1+	0.1+	1998 01 23	704	0.3+	0.2+
1995 09 21	691	0.1+	0.5+	1998 01 20	704	0.1+	0.3+	1998 01 24	704	0.3+	0.5-
1995 09 26	691	0.1-	0.0	1998 01 20	704	0.1+	0.2+	1998 01 24	704	1.1+	0.4+
1995 09 26	691	0.2-	0.2+	1998 01 22	704	0.4+	0.1-	1998 01 24	704	1.8+	1.4+
1995 09 26	691	0.2-	0.1+	1998 01 22	704	0.1-	0.2-	1998 01 24	704	1.3-	0.5+
1995 10 02	691	0.3-	0.4+	1998 01 22	704	0.0	0.7+	1998 01 24	704	0.3+	0.2-
1995 10 02	691	0.1-	0.0	1998 01 22	704	1.7-	0.1+	1998 01 25	704	0.3+	0.3-
1995 10 02	691	0.1-	0.3+	1998 01 23	704	0.3+	0.1-	1998 01 25	704	0.1+	0.1-
1997 12 26	566	0.4-	0.4+	1998 01 23	691	1.0-	0.3-	1998 01 25	704	0.2+	0.8-
1997 12 26	566	0.2-	0.3+	1998 01 23	704	0.1+	0.1+	1998 01 25	704	0.5-	0.7-
1997 12 26	566	0.2-	0.3+	1998 01 23	691	0.9-	0.3-	1998 01 25	704	0.9+	1.0-
1998 01 20	704	0.2+	0.0	1998 01 23	704	0.1+	0.5+				

1995 SV₅₀ = 1997 EW₂₉

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	207.75771	(2000.0)	P	Q
<i>n</i>	0.27128463	ω	41.15362	+0.84684218 -0.53181397
<i>a</i>	2.3633022	Ω	350.96925	+0.47800311 +0.76574795
<i>e</i>	0.2024302	<i>i</i>	2.07231	+0.23317664 +0.36166832
<i>P</i>	3.63	<i>H</i>	16.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1995 09 26	691	0.4+	0.3-	1995 10 20	010	0.8+	0.9+	1997 03 07	691	0.4-	0.3-
1995 09 26	691	0.4+	0.2-	1995 10 20	010	0.6+	0.7+	1997 03 07	691	0.2-	0.1-
1995 09 26	691	0.5+	0.3-	1995 10 20	010	0.8+	1.0+	1997 03 07	691	0.6-	0.0
1995 10 01	691	0.2-	0.7-	1995 10 23	010	1.1-	0.4-	1997 03 14	691	0.4+	0.3-
1995 10 01	691	0.1-	0.6-	1995 10 23	010	0.3-	0.2-	1997 03 14	691	0.1+	0.6-
1995 10 01	691	0.2-	0.7-	1995 10 23	010	1.3-	0.3-				

1996 AW₄ = 1942 GL = 1971 FX = 1989 FG₁

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	136.11630	(2000.0)	P	Q
<i>n</i>	0.27187162	ω	116.42962	-0.97661833 +0.20772892
<i>a</i>	2.3598993	Ω	75.60096	-0.21192924 -0.88704452
<i>e</i>	0.1650078	<i>i</i>	3.27687	-0.03609215 -0.41231143
<i>P</i>	3.63	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1942 04 13	024	0.3+	0.7+	1996 01 12	691	0.1+	0.0	1996 02 15	098	0.6+	1.0+
1971 03 19	095	1.2+	2.6+	1996 01 18	691	0.1+	0.2+	1996 02 15	098	0.2+	0.1+
1989 03 29	372	1.0+	1.6-	Y 1996 01 18	691	0.1-	0.1+	1996 02 23	098	0.8+	0.3-
1989 03 29	372	2.6-	2.4-	Y 1996 01 18	691	0.2-	0.4-	1996 02 23	098	0.3-	0.5-
1996 01 12	691	0.4+	0.1-	1996 02 14	098	1.0-	0.4+				
1996 01 12	691	0.1+	0.0	1996 02 14	098	0.4-	0.8+				

1996 AP₁₅ = 1950 MD = 1989 EZ₉

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	65.80943	(2000.0)	P	Q
<i>n</i>	0.27476955	ω	140.94484	+0.12029289 +0.99171834
<i>a</i>	2.3432771	Ω	135.91121	-0.92625929 +0.12842829
<i>e</i>	0.1775818	<i>i</i>	3.70767	-0.35717413 +0.00094846
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1950 06 20	839	0.2-	0.4-	1996 01 14	327	0.2-	0.8-	1996 02 16	010	1.5-	1.2-
1950 06 20	839	0.2+	0.3+	1996 01 18	327	0.2-	0.4-	1996 02 17	010	2.3+	2.3+
1989 03 05	033	0.2+	0.0	1996 01 18	327	0.6-	0.6-	1996 02 17	010	1.7+	2.6+
1989 03 05	033	0.5-	0.4-	1996 01 18	327	0.4-	0.3-	1996 02 17	010	1.6+	1.3+
1996 01 14	327	0.2-	0.3-	1996 02 16	010	0.6-	1.0-				
1996 01 14	327	0.2-	0.5-	1996 02 16	010	1.5-	0.9-				

1996 HY₁₂ = 1997 WS₅₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	126.08881	(2000.0)	P	Q
<i>n</i>	0.31911535	ω	101.04925	+0.47484546 +0.88002844
<i>a</i>	2.1208222	Ω	197.30775	-0.81815468 +0.43787299
<i>e</i>	0.1263026	<i>i</i>	1.63132	-0.32426025 +0.18389450
<i>P</i>	3.09	<i>H</i>	15.0	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1996 04 17	809	0.4+	0.8-	1996 05 19	809	(1.1-	6.1+)	1997 12 04	704	1.3+	1.8+
1996 04 17	809	0.5-	0.1+	1996 05 19	809	(1.0-	6.3+)	1997 12 04	704	0.2-	0.8+
1996 04 17	809	0.4+	1.3-	1996 05 22	809	0.4+	0.4-	1997 12 04	704	0.5+	1.2-
1996 04 18	809	0.1-	0.6+	1996 05 22	809	0.0	0.3+	1997 12 04	704	1.9-	1.6-
1996 04 18	809	0.0	0.6+	1996 05 22	809	0.4-	0.2+	1997 12 04	704	(1.5-	2.8-)
1996 04 18	809	0.1-	0.8+	1997 11 29	704	0.9+	0.0	1997 12 05	704	0.7-	0.4+
1996 05 14	566	(5.5-	4.8+)	1997 11 29	704	0.8+	0.5-	1997 12 05	704	0.3+	0.1-
1996 05 14	566	(6.1-	4.8+)	1997 11 29	704	0.3-	0.7-	1997 12 05	704	0.5+	1.2+
1996 05 14	566	(5.5-	4.7+)	1997 11 29	704	0.6-	0.5-	1997 12 05	704	1.2+	0.1-
1996 05 19	809	(0.8-	7.2+)	1997 11 29	704	0.6-	0.0	1997 12 05	704	1.1-	0.4+

1996 HM₂₂ = 1997 WV₅₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	130.16839	(2000.0)	P	Q
<i>n</i>	0.28697602	ω	228.82963	+0.00378850 +0.99948702
<i>a</i>	2.2763497	Ω	41.42042	-0.90248135 +0.01711486
<i>e</i>	0.1660477	<i>i</i>	2.75522	-0.43071228 -0.02706978
<i>P</i>	3.43	<i>H</i>	15.0	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1996 03 24	809	0.2+	0.5+	1996 04 23	566	0.6-	0.4-	1997 10 31	704	1.2-	0.4-
1996 03 24	809	0.1-	0.2+	1996 04 23	566	0.1-	0.1-	1997 10 31	704	0.0	1.1-
1996 03 24	809	0.9-	0.2-	1996 04 23	566	0.1-	0.5-	1997 10 31	704	0.9+	0.5+
1996 03 26	809	1.6+	0.3+	1996 04 23	566	0.4+	0.3+	1997 10 31	704	1.5-	0.0
1996 03 26	809	0.1-	0.6+	1996 04 23	566	0.4-	0.5-	1997 11 29	691	0.4-	0.1-
1996 03 26	809	0.0	0.2-	1997 10 30	704	0.4+	1.7-	1997 11 29	691	0.3-	0.4+
1996 04 22	566	0.2+	0.1-	1997 10 30	704	1.6+	0.4+	1997 11 29	691	0.3-	0.1+
1996 04 22	566	0.3+	0.3-	1997 10 30	704	0.5-	0.7+	1997 12 05	691	0.8+	0.1-
1996 04 22	566	0.7-	0.2-	1997 10 30	704	0.7+	0.1+	1997 12 05	691	(0.6+	2.3-)
1996 04 23	566	0.1-	0.3-	1997 10 31	704	0.3-	0.2+	1997 12 05	691	0.7+	0.4-

1996 KN₁ = 1997 WG₄₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	143.16999	(2000.0)	P	Q
<i>n</i>	0.28634525	ω	186.94470	-0.01465419 +0.99134617
<i>a</i>	2.2796914	Ω	82.27540	-0.91093559 +0.04055951
<i>e</i>	0.0909858	<i>i</i>	7.56482	-0.41228826 -0.12485071
<i>P</i>	3.44	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1996 05 24	120	1.0+	0.0	1996 06 05	120	0.2−	0.2−	1997 11 26	566	0.7−	0.4−
1996 05 24	120	0.6+	0.1−	1996 06 05	120	0.3+	0.2+	1997 11 29	704	1.2+	0.5−
1996 05 28	120	1.2−	0.2+	1996 06 05	120	0.3+	0.1−	1997 11 29	704	0.7+	0.0
1996 05 28	120	0.2−	0.0	1997 11 26	566	0.5−	0.6−	1997 11 29	704	1.0+	1.2+
1996 05 28	120	0.5−	0.1+	1997 11 26	566	0.4−	0.4−	1997 11 29	704	1.2−	0.7+

1996 LP₁ = 1998 BJ₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	72.36857		(2000.0)	P	Q
<i>n</i>	0.30337851	ω	246.62679	+0.90416036	−0.41902079
<i>a</i>	2.1935431	Ω	138.01615	+0.42309222	+0.85144079
<i>e</i>	0.1825952	<i>i</i>	7.14148	+0.05905094	+0.31538890
<i>P</i>	3.25	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 06 14	595	(2.4+ 0.4+)	1996 06 24	595	0.6−	0.2−	1998 01 24	566	0.3−	0.3−
1996 06 14	595	(2.9+ 1.0−)	1996 06 24	595	0.5−	0.0	1998 01 24	566	0.0	0.2−
1996 06 15	595	0.5+ 0.1−	1996 06 24	595	0.4−	1.2+	1998 01 25	566	0.6−	0.5+
1996 06 15	595	0.4+ 0.5+	1996 06 25	595	0.2+	0.1+	1998 01 25	566	0.3−	0.3+
1996 06 16	595	0.2+ 1.2−	1997 12 28	566	1.1+ 0.8−		1998 01 25	566	0.2−	0.3+
1996 06 16	595	0.3− 0.3−	1997 12 28	566	1.0+ 0.5−		1998 01 29	566	0.9−	0.3+
1996 06 16	595	0.7+ 0.6+	1997 12 28	566	1.2+ 0.1−		1998 01 29	566	0.4−	0.4+
1996 06 23	595	0.0 0.8−	1998 01 24	566	0.3+ 0.4−		1998 01 29	566	0.7−	0.2+

1996 OB = 1998 BH₁₉

Id. E. Pettarin

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	143.11049		(2000.0)	P	Q
<i>n</i>	0.28513299	ω	62.49935	+0.54450969	+0.83747006
<i>a</i>	2.2861483	Ω	240.56680	−0.78711795	+0.49109425
<i>e</i>	0.0381534	<i>i</i>	3.05406	−0.28974908	+0.23972970
<i>P</i>	3.46	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 07 16	595	0.8− 0.4+	1996 07 26	595	0.3+ 0.5−	1996 09 13	595	0.4− 0.1−
1996 07 16	595	0.4+ 0.2−	1996 07 26	595	0.4− 0.3+	1996 09 13	595	0.5+ 0.1−
1996 07 16	595	0.4− 0.1−	1996 07 26	595	0.1− 0.2−	1996 09 15	595	0.4− 0.2+
1996 07 17	595	0.7+ 0.8+	1996 08 06	595	0.2+ 0.2−	1996 09 15	595	0.1+ 0.4−
1996 07 17	595	0.1− 0.3+	1996 08 06	595	0.0 0.2+	1998 01 25	595	0.5+ 0.5+
1996 07 23	595	0.7+ 0.6+	1996 08 08	595	0.2+ 0.1+	1998 01 25	595	0.6+ 0.3+
1996 07 23	595	0.6− 0.1+	1996 08 08	595	0.0 0.3−	1998 01 27	595	0.5− 0.1+
1996 07 26	595	0.2+ 0.4−	1996 08 08	595	0.2− 0.2−	1998 01 27	595	0.7− 0.3−

1996 OF

Id. P. Comba (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	74.88478		(2000.0)	P	Q
<i>n</i>	0.28827050	ω	287.39938	+0.82760434	−0.54924884
<i>a</i>	2.2695299	Ω	106.05967	+0.54980014	+0.75166295
<i>e</i>	0.1102043	<i>i</i>	6.91778	+0.11309668	+0.36514179
<i>P</i>	3.42	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 07 18	684	0.4− 0.5+	1996 08 08	684	0.1− 0.5−	1996 09 04	684	0.2− 0.0
1996 07 18	684	0.6− 0.1−	1996 08 08	684	0.1+ 0.0	1996 09 07	684	0.2− 0.1−
1996 07 19	684	0.1− 0.1+	1996 08 08	684	0.2+ 0.2−	1996 09 07	684	0.1+ 0.2−
1996 07 19	684	0.1+ 0.1−	1996 08 10	684	0.1− 0.1+	1998 01 22	684	0.5+ 0.2−
1996 07 20	684	0.1+ 0.0	1996 08 10	684	0.4+ 0.5+	1998 01 22	684	0.6+ 0.5−
1996 07 20	684	0.2+ 0.2−	1996 08 10	684	0.1+ 0.2+	1998 01 23	684	0.7− 0.4+
1996 07 22	684	0.6+ 0.3−	1996 09 04	684	0.0 0.1+	1998 01 23	684	0.4− 0.1+
1996 07 22	684	0.2+ 0.0	1996 09 04	684	0.2− 0.0	1998 01 23	684	0.1− 0.1−

1996 OK

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	137.21807		(2000.0)	P	Q
<i>n</i>	0.30237456	ω	209.93429	+0.91192072	+0.39704321
<i>a</i>	2.1983958	Ω	126.30914	−0.34631627	+0.88019096
<i>e</i>	0.2239961	<i>i</i>	7.39495	−0.22014915	+0.26003955
<i>P</i>	3.26	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1996 07 19	046	0.0 0.3+	1996 07 25	046	0.0 0.1−	1996 08 18	046	0.1− 0.6+
1996 07 20	046	0.1− 0.4+	1996 07 25	657	1.8+ 0.1−	1996 08 18	046	0.2− 0.2+
1996 07 20	046	0.2+ 0.2+	1996 07 25	657	0.1− 1.0−	1996 08 18	046	0.2− 0.3+
1996 07 20	046	0.3− 0.2+	1996 07 25	657	0.2− 0.6−	1996 08 20	046	0.0 0.2+
1996 07 20	046	0.0 0.5+	1996 07 26	046	0.1− 0.2−	1996 08 20	046	0.1− 0.2+
1996 07 20	046	0.1− 0.1+	1996 07 26	046	0.1− 0.1−	1996 08 20	046	0.0 0.3+
1996 07 20	046	0.1− 0.3+	1996 07 26	046	0.1− 0.0	1996 08 30	046	0.0 0.1+
1996 07 20	046	0.0 0.3+	1996 08 01	046	0.7+ 0.6−	1996 08 30	046	0.4− 0.2−
1996 07 20	046	0.1− 0.1+	1996 08 01	046	0.7+ 0.6−	1996 08 30	046	1.0− 0.1−
1996 07 20	046	0.1+ 0.2+	1996 08 01	046	0.5+ 0.6−	1996 09 19	046	0.4− 0.5−
1996 07 21	046	0.5− 0.2+	1996 08 06	046	0.7+ 0.0	1996 09 19	046	0.2− 0.9−
1996 07 21	046	0.1− 0.2−	1996 08 06	046	0.5+ 0.4−	1996 09 19	046	0.5− 0.6−
1996 07 21	046	0.1− 0.0	1996 08 06	046	0.4+ 0.1−	1996 10 11	046	0.1+ 0.2+
1996 07 22	046	0.3− 0.1+	1996 08 09	046	0.7+ 0.0	1996 10 11	046	0.4− 0.3−
1996 07 22	046	0.1− 0.1+	1996 08 13	327	0.1+ 0.1−	1996 10 11	046	0.4+ 0.1+
1996 07 22	046	0.1− 0.3+	1996 08 13	327	0.2+ 0.4−	1996 10 14	046	0.2+ 0.8+
1996 07 23	046	0.1+ 0.0	1996 08 13	327	0.1− 0.1+	1996 10 14	046	0.0 0.2+
1996 07 23	046	0.2+ 0.1−	1996 08 13	327	0.3+ 0.0	1996 10 14	046	0.5+ 0.3+
1996 07 23	046	0.0 0.1−	1996 08 15	566	0.2− 0.3+	1998 01 27	046	0.4+ 0.6+
1996 07 24	657	1.8− 0.8−	1996 08 15	566	0.1+ 0.3+	1998 01 27	046	0.9+ 0.0
1996 07 24	657	0.1− 1.2+	1996 08 15	566	0.1− 0.6+	1998 01 27	046	0.3− 0.3+
1996 07 24	657	(2.2+ 0.1+)	1996 08 15	046	0.1− 0.3+	1998 01 28	046	0.1− 0.8+
1996 07 25	046	0.1− 0.0	1996 08 15	046	0.2− 0.1+	1998 01 28	046	0.2− 0.3+
1996 07 25	046	0.2− 0.1+	1996 08 15	046	0.1− 0.2+	1998 01 28	046	0.2− 0.0

1996 OC₁ = 1998 BD₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	23.96891		(2000.0)	P	Q
<i>n</i>	0.26462598	ω	319.68617	+0.26122850	−0.95986344
<i>a</i>	2.4027821	Ω	114.94933	+0.91207522	+0.21082031
<i>e</i>	0.1135871	<i>i</i>	6.46490	+0.31603554	+0.18497828
<i>P</i>	3.72	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1996 07 20	327	0.2− 0.2−	1998 01 02	704	0.0 0.7−	1998 01 22	704	0.3+ 0.2−
1996 07 20	327	0.4+ 0.1−	1998 01 08	704	0.5+ 0.4+	1998 01 23	704	0.0 0.1+
1996 07 20	327	0.4− 0.4−	1998 01 08	704	0.0 0.7+	1998 01 23	704	0.1+ 0.1−
1996 07 20	327	0.1− 0.7−	1998 01 08	704	0.8− 0.4+	1998 01 23	704	0.2− 0.1+
1996 07 21	327	0.2+ 0.5+	1998 01 08	704	0.2+ 0.3+	1998 01 23	704	0.1− 0.3−
1996 07 21	327	0.1− 0.7+	1998 01 20	704	0.1− 0.1−	1998 01 23	704	0.1− 0.2−
1996 07 21	327	0.2+ 0.9+	1998 01 20	704	0.1− 0.3−	1998 01 24	704	0.1+ 0.0
1996 08 13	327	0.2− 0.1+	1998 01 20	704	0.5+ 0.4−	1998 01 24	704	0.1+ 0.0
1996 08 13	327	0.0 0.4−	1998 01 20	704	0.2+ 0.4−	1998 01 24	704	0.0 0.2−
1996 08 13	327	0.3+ 0.1−	1998 01 20	704	0.4+ 0.7−	1998 01 24	704	1.1− 1.1−
1996 08 13	327	0.2− 0.1−	1998 01 20	704	0.2− 0.3−	1998 01 25	704	0.1+ 0.3+
1998 01 02	704	0.0 0.2−	1998 01 22	704	0.1+ 0.1−	1998 01 25	704	0.2+ 0.4+
1998 01 02	704	0.2− 0.0	1998 01 22	704	0.2− 0.6+	1998 01 25	704	0.0 0.6+
1998 01 02	704	0.1+ 0.2−	1998 01 22	704	0.1− 0.2+	1998 01 25	704	0.4+ 0.3+
1998 01 02	704	0.2− 0.4+	1998 01 22	704	0.1− 0.4+	1998 01 25	704	0.2+ 0.5+

1996 OJ₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	90.17812		(2000.0)	P		Q	
<i>n</i>	0.26012615	ω	78.78445	+0.95451470		-0.25416243	
<i>a</i>	2.4304128	Ω	295.78288	+0.15729972		+0.87342067	
<i>e</i>	0.2557698	<i>i</i>	9.96985	+0.25329526		+0.41537669	
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 01 31	010	0.6+	0.0	1996 08 09	104	0.7+	1.0+	1996 10 10	104	1.2+	0.1+
1994 01 31	010	0.3-	0.3+	1996 08 18	104	0.4+	0.9-	1996 10 18	104	0.7-	0.1-
1994 01 31	010	0.0	0.4+	1996 08 18	104	0.0	0.6-	1996 10 18	104	0.4-	0.1-
1996 07 23	104	0.4-	0.0	1996 08 18	104	0.3-	0.0	1996 10 18	104	0.2-	0.1-
1996 07 23	104	1.0-	0.1-	1996 08 18	104	0.5-	0.1+	1996 10 27	104	0.7+	0.5-
1996 07 23	104	0.2-	0.5-	1996 08 25	104	0.4+	0.3+	1996 10 27	104	1.4-	0.1+
1996 07 24	104	0.7-	0.2-	1996 08 25	104	0.4+	0.4+	1996 10 27	104	(2.8-	0.6+)
1996 07 24	104	0.7-	0.5-	1996 08 25	104	0.9+	0.2+	1996 11 03	104	0.6-	0.7-
1996 07 24	104	0.6-	0.6-	1996 08 25	104	1.7+	0.0	1996 11 03	104	0.5-	0.6-
1996 07 24	104	0.8-	0.8-	1996 09 08	104	0.8+	0.1-	1998 01 25	104	0.1-	0.2+
1996 07 25	104	0.3-	0.7+	1996 09 08	104	0.6+	0.3-	1998 01 25	104	0.2-	0.1+
1996 07 25	104	0.5-	0.5+	1996 09 08	104	0.4+	0.0	1998 01 25	104	0.1-	0.1+
1996 08 01	104	0.1+	0.4+	1996 09 30	104	0.8+	0.7+	1998 01 25	104	0.0	0.0
1996 08 01	104	0.0	0.3+	1996 09 30	104	0.0	0.7+	1998 01 27	104	0.5+	0.6+
1996 08 01	104	0.1-	0.5+	1996 09 30	104	0.2+	0.5+	1998 01 27	104	0.2+	0.7+
1996 08 04	104	0.1-	0.4-	1996 09 30	104	0.2+	1.0+	1998 01 27	104	0.2+	1.1+
1996 08 04	104	0.1-	0.3-	1996 10 02	104	0.3-	0.3+	1998 02 06	104	0.1+	0.1-
1996 08 04	104	0.0	0.4-	1996 10 02	104	0.4-	0.2+	1998 02 06	104	0.2+	0.1-
1996 08 09	104	0.2-	0.9+	1996 10 02	104	0.3-	0.1+	1998 02 06	104	0.4+	0.0
1996 08 09	104	0.1+	1.0+	1996 10 10	104	0.1-	0.5+	1998 02 06	104	0.1+	0.0

1996 PW₆ = 1981 WC₇

Id. T. Urata (1998 observations), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	107.90516		(2000.0)	P		Q	
<i>n</i>	0.25980829	ω	18.87100	+0.99994423		+0.00388666	
<i>a</i>	2.4323947	Ω	340.89832	-0.00768074		+0.90581069	
<i>e</i>	0.1979226	<i>i</i>	1.71953	+0.00724831		+0.42366484	
<i>P</i>	3.79	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 11 25	095	2.0+	4.4-	1996 09 12	385	0.3+	0.0	1996 11 26	327	0.6-	0.5+
1996 08 08	905	(1.6+	2.3-)	1996 09 12	385	0.6+	0.1+	1996 11 26	327	(0.5-	2.3+)
1996 08 08	905	0.9-	2.0-	1996 10 15	385	0.0	1.8+	1996 11 26	327	0.8-	1.2-
1996 08 18	905	1.5-	0.3-	1996 10 15	385	0.5+	0.1+	1996 11 30	327	0.7-	0.9+
1996 08 18	905	0.9+	1.6-	1996 10 15	385	0.1+	0.8+	1996 11 30	327	0.8-	1.9+
1996 08 22	905	0.3-	0.8-	1996 10 15	385	1.5-	0.9+	1996 11 30	327	1.0-	1.0+
1996 08 22	905	0.3-	0.5-	1996 10 30	385	0.5-	0.0	1998 01 24	385	0.5-	0.1+
1996 09 03	905	0.0	0.4+	1996 10 30	385	1.2+	0.5+	1998 01 24	385	0.1+	0.3+
1996 09 03	905	1.2+	1.0+	1996 10 30	385	0.9+	0.4+	1998 01 26	385	(3.1+	1.6+)
1996 09 12	385	0.8+	0.4+	1996 11 26	327	0.3-	0.6+	1998 01 26	385	0.6+	0.1-

1996 QE

Id. P. Chiavenna (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	119.03527		(2000.0)	P		Q	
<i>n</i>	0.23830892	ω	167.77191	+0.95529258		+0.29483969	
<i>a</i>	2.5765734	Ω	174.91693	-0.28787945		+0.94454829	
<i>e</i>	0.1478914	<i>i</i>	14.40238	-0.06739077		+0.14456168	
<i>P</i>	4.14	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 08 16	587	0.3-	1.8-	1996 09 05	587	0.2-	0.1-	1996 10 04	587	0.4-	0.2+
1996 08 17	587	0.3-	0.3+	1996 09 05	587	0.8-	0.4+	1996 10 04	587	0.5-	0.2-
1996 08 17	587	0.4-	1.1+	1996 09 07	358	0.3-	0.4+	1996 10 06	809	(2.2+	0.1-)
1996 08 17	587	0.5+	0.4+	1996 09 07	358	0.4+	0.3-	1996 10 06	809	(2.0+	0.0)

1996 08 17	587	0.9+	0.5-	1996 09 09	587	0.9+	1.0+	1996 10 06	809	1.6+	0.3-
1996 08 20	587	0.7+	0.2+	1996 09 09	587	0.1+	0.2+	1996 10 07	809	(0.2+	2.8-)
1996 08 20	587	0.1+	0.2+	1996 09 09	587	0.2-	0.2-	1996 10 07	809	(0.1-	3.6-)
1996 08 22	587	0.1+	0.2-	1996 09 10	358	0.5-	0.9-	1996 10 07	809	(0.3-	3.5-)
1996 08 22	587	0.1-	0.2-	1996 09 10	358	0.1+	0.4+	1996 10 18	587	0.3-	0.3+
1996 08 22	587	0.1+	0.6+	1996 09 15	587	0.6-	0.7-	1996 10 18	587	0.6-	0.5-
1996 08 23	587	0.5+	0.6-	1996 09 15	587	0.6-	0.9-	1996 11 01	587	0.9+	0.6+
1996 08 23	587	0.1+	0.1-	1996 09 19	691	(2.2-	0.0)	1996 11 01	587	0.7+	0.5-
1996 08 23	587	0.3+	0.3+	1996 09 19	691	(2.2-	0.0)	1996 10 07	809	0.2+	0.7-
1996 09 04	587	0.1+	0.1+	1996 09 19	691	(2.1-	0.1+)	1998 01 06	587	1.2-	0.3-
1996 09 04	587	0.2-	0.1-	1996 10 04	587	1.0-	0.7+	1998 01 26	587	0.8+	0.3+
1996 09 04	587	0.6-	0.2+	1996 10 04	587	0.3+	0.4+	1998 01 26	587	0.1+	0.7+

1996 QU = 1982 QF₁ = 1987 AH

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	75.18014		(2000.0)	P		Q	
<i>n</i>	0.27948147	ω	82.85278	+0.60582157		-0.76751564	
<i>a</i>	2.3168649	Ω	326.81710	+0.49028852		+0.56756170	
<i>e</i>	0.2581530	<i>i</i>	22.50855	+0.62657592		+0.29798232	
<i>P</i>	3.53	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 08 19	675	2.1+	2.2-	1996 09 04	589	0.1+	0.6-	1996 10 17	589	0.2+	0.1-
1982 08 19	675	1.3+	1.4-	1996 09 06	589	1.1+	0.7+	1996 10 30	589	0.0	0.2-
1987 01 03	675(26.8+	2.9+)		1996 09 06	589	0.0	0.2+	1996 10 30	589	0.1-	0.1-
1987 01 03	675(25.5+	3.9+)		1996 09 10	589	0.1-	1.1-	1996 10 30	589	0.3+	0.2+
1996 08 19	589	0.4+	0.3+	1996 09 10	589	0.6-	0.8-	1996 10 31	589	0.1+	0.2-
1996 08 19	589	0.0	0.3-	1996 09 14	589	0.9-	0.2+	1996 10 31	589	0.3+	1.1-
1996 08 19	589	0.1-	0.3-	1996 09 14	589	0.6-	0.3-	1996 10 31	589	0.5-	1.2-
1996 08 19	589	0.3+	0.4-	1996 09 15	327	0.4-	0.0	1996 11 06	589	0.6-	1.3+
1996 08 20	589	0.1-	1.0-	1996 09 15	327	0.4+	0.6+	1996 11 06	589	0.2-	0.6-
1996 08 20	589	0.4+	0.2-	1996 09 15	327	0.4-	0.2+	1996 11 06	589	1.1-	0.2+
1996 08 20	589	0.2+	0.2-	1996 09 15	327	0.3-	0.1+	1998 01 28	589	0.9-	0.8-
1996 08 23	596	0.4-	1.7+	1996 09 18	327	0.5-	0.1+	1998 01 28	589	0.6-	0.1-
1996 08 23	596	0.4-	1.8+	1996 09 18	327	0.3-	0.1+	1998 01 28	589	0.1+	0.2-
1996 08 23	596	1.1-	1.2+	1996 09 18	327	1.5+	1.6+	1998 01 29	589	0.3-	0.5-
1996 09 04	589	0.3-	0.0	1996 10 17	589	0.3+	0.6+				

1996 QP₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Urata

<i>M</i>	123.14128		(2000.0)	P		Q	
<i>n</i>	0.26224055	ω	176.18996	+0.93434631		+0.35609995	
<i>a</i>	2.4173312	Ω	162.92938	-0.32818774		+0.87488939	
<i>e</i>	0.2390584	<i>i</i>	2.69003	-0.13888769		+0.32827028	
<i>P</i>	3.76	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 08 18	905	0.4-	0.8+	1996 09 12	385	0.3+	0.4-	1998 01 24	385	0.5-	0.1-
1996 08 18	905	0.5-	0.4+	1996 09 12	385	0.5+	0.7-	1998 01 24	385	0.0	0.1+
1996 08 22	905	1.7-	0.7-	1996 09 12	385	0.6+	0.1-	1998 01 26	385	0.8-	0.6+
1996 08 22	905	2.1+	0.9+	1996 10 16	385	0.2-	0.0	1998 01 26	385	1.5+	0.4+
1996 09 03	905	1.3-	0.5+	1996 10 16	385	0.2-	0.4-				
1996 09 03	905	0.4+	0.3+	1996 10 16	385	0.0	0.2-				

1996 QX₁ = 1979 YR₂ = 1998 BU₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	59.95280		(2000.0)	P		Q	
n	0.22265555	ω	84.93027	+0.77793659		-0.60877328	
a	2.6959616	Ω	312.46474	+0.45974116		+0.72026418	
e	0.1748655	i	12.17632	+0.42831381		+0.33258774	
P	4.43	H	13.3	G	0.15	U	3

M.P.C. 31244

1996 08 09	010	1.2+	0.7+	1996 09 07	399	1.3-	0.4-	1998 01 29	886	0.1-	0.4+
1996 08 09	010	0.5-	1.0+	1996 09 07	399	0.9+	0.2-	1998 01 29	886	0.6-	0.7+
1996 08 18	010	(0.7+	3.0-)	1998 01 19	905	1.2+	0.4-	1998 01 30	886	0.1+	0.3-
1996 08 18	010	(0.1-	2.9-)	1998 01 19	905	0.2-	0.4-	1998 01 30	886	0.6-	0.3+
1996 08 18	010	(0.4+	3.0-)	1998 01 20	905	1.0+	0.6-	1998 01 30	385	0.4+	0.3+
1996 08 24	399	0.7+	0.4+	1998 01 20	905	0.2-	0.4+	1998 01 30	385	0.1+	0.3+
1996 08 24	399	(2.4+	0.9-)	1998 01 26	566	0.2-	0.3+				

1996 RN = 1989 SH_s

Id. M. Cavagna (1998 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27904839	ω	341.05466	+0.81682195	+0.57629033		
<i>a</i>	2.3192614	Ω	343.67353	-0.51647265	+0.71021065		
<i>e</i>	0.1736530	<i>i</i>	5.36703	-0.25701733	+0.40433932		
<i>P</i>	3.53	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 09 28	675	0.1+	0.4-	1996 09 13	587	0.1-	0.3+	1996 10 21	587	0.1+	0.4+
1989 09 28	675	0.3+	0.5-	1996 09 15	587	0.1+	0.6-	1996 10 21	587	0.5+	0.2+
1996 09 08	587	0.5-	0.8-	1996 09 15	587	0.7-	0.1+	1996 10 21	587	0.4+	0.2+
1996 09 08	587	1.3-	1.3+	1996 10 02	587	0.0	0.4-	1996 11 03	587	0.3+	0.3+
1996 09 08	587	1.2-	1.0+	1996 10 02	587	0.0	0.4-	1996 11 03	587	0.1-	0.7+
1996 09 08	587	0.4-	1.6+	1996 10 18	587	0.4+	0.4-	1998 01 26	587	0.3-	0.2-
1996 09 08	587	1.1-	0.0	1996 10 18	587	0.4+	0.9-	1998 01 26	587	0.4-	0.1+
1996 09 10	587	0.3+	0.0	1996 10 18	587	0.9+	0.1+	1998 01 29	587	0.6+	0.7+
1996 09 10	587	0.1-	0.5+	1996 10 19	587	0.5+	0.5-	1998 01 29	587	0.7+	0.8+
1996 09 12	587	0.1-	0.3-	1996 10 19	587	0.8+	0.4-				

1996 RE₁

Id. T. Kobayashi (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23643036	ω	330.37181	+0.67910298	-0.72979351		
<i>a</i>	2.5902035	Ω	76.73096	+0.68840283	+0.59589565		
<i>e</i>	0.2677245	<i>i</i>	4.64800	+0.25479538	+0.33512655		
<i>P</i>	4.17	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 09 09	684	0.1-	0.0	1996 09 15	684	0.1-	0.0	1998 01 29	411	0.1+	0.4-
1996 09 09	684	0.0	0.1-	1996 09 15	684	0.0	0.1+	1998 01 29	411	0.5+	0.6-
1996 09 09	684	0.0	0.3+	1996 09 16	684	0.4+	0.1-	1998 01 31	684	0.5+	0.0
1996 09 12	684	0.3-	0.0	1996 09 16	684	0.4+	0.2-	1998 01 31	684	0.2+	0.2-
1996 09 12	684	0.4-	0.2-	1996 09 16	684	0.2+	0.2+	1998 01 31	684	0.2+	0.1-
1996 09 12	684	0.2-	0.1+	1998 01 28	411	1.0-	1.5+	1998 02 01	684	0.5+	0.1-
1996 09 15	684	0.0	0.1-	1998 01 28	411	1.3-	0.4+	1998 02 01	684	0.3+	0.2-

1996 RK₁ = 1998 BS₃₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21584046	ω	11.99891	+0.64605355	-0.76295185		
<i>a</i>	2.7524165	Ω	37.76300	+0.69719370	+0.57769221		
<i>e</i>	0.2099897	<i>i</i>	2.13250	+0.31070202	+0.29013131		
<i>P</i>	4.57	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 09 09	684	0.4+	0.2+	1996 09 16	684	1.0-	0.1-	1998 01 28	691	0.3+	0.1-
1996 09 09	684	0.7+	0.3+	1996 09 16	684	1.0-	0.2-	1998 01 28	691	0.1+	0.1-
1996 09 09	684	1.0+	0.6+	1996 10 07	809	0.0	0.5+	1998 01 28	691	0.2-	0.3+
1996 09 13	684	0.1+	0.5-	1996 10 07	809	0.7+	0.6-	1998 02 02	691	0.1+	0.1+
1996 09 13	684	0.4+	0.1-	1996 10 07	809	0.3+	0.2+	1998 02 02	691	0.3-	0.1-
1996 09 13	684	0.4-	0.1-	1998 01 22	691	0.1+	0.1-	1998 02 02	691	0.1-	0.3+
1996 09 16	684	1.2-	0.1-	1998 01 22	691	0.1-	0.1-				

1998 FEB. 11

1996 RD₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22009754	ω	252.45903	+0.50131320	+0.84755146		
<i>a</i>	2.7168100	Ω	48.92456	-0.68005985	+0.51041099		
<i>e</i>	0.1618162	<i>i</i>	13.35987	-0.53498007	+0.14538619		
<i>P</i>	4.48	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 09 09	104	0.6-	0.1-	1996 10 18	104	0.2+	0.1-	1996 12 04	104	0.4+	0.1+
1996 09 09	104	0.3-	0.1+	1996 10 18	104	0.4+	0.1-	1996 12 04	104	0.4+	0.1+
1996 09 09	104	0.1-	0.1+	1996 10 18	104	0.2+	1.0-	1996 12 04	104	0.5+	0.1+
1996 09 09	104	1.1-	1.1+	1996 10 30	104	0.4+	0.4-	1996 12 05	610	1.0-	0.1+
1996 09 15	108	1.4+	1.0-	1996 10 30	104	0.3+	0.3-	1996 12 05	610	0.3-	0.1+
1996 09 15	108	1.0+	0.7+	1996 10 30	104	0.5+	0.4-	1996 12 05	610	0.3+	0.0
1996 09 15	108	1.2+	0.4-	1996 11 07	104	0.3+	0.3+	1996 12 15	104	0.2-	0.6+
1996 09 18	360	0.5-	0.1+	1996 11 07	104	1.0+	0.2+	1996 12 15	104	0.0	0.6+
1996 09 18	360	0.6-	0.4+	1996 12 01	108	0.2+	1.7+	1996 12 15	104	0.0	0.8+
1996 09 18	360	0.6-	0.2+	1996 12 01	610	0.3-	0.1+	1997 01 14	104	0.4-	0.4+
1996 10 02	104	0.8-	0.5+	1996 12 01	108	0.6+	0.9-	1997 01 14	104	0.0	0.5+
1996 10 02	104	0.8-	0.5+	1996 12 01	610	0.4-	0.1+	1997 01 14	104	0.1+	0.5+
1996 10 02	104	0.9-	0.6+	1996 12 01	108	0.7-	0.7-	1998 01 19	104	0.4-	0.5-
1996 10 02	104	(3.3-	2.3+)	1996 12 01	610	0.8-	0.2+	1998 01 19	104	0.5-	0.5-
1996 10 04	104	0.6+	0.1+	1996 12 02	104	0.1+	0.3-	1998 01 19	104	0.2-	0.4-
1996 10 04	104	0.6+	0.0	1996 12 02	104	0.1+	0.4-	1998 01 28	104	0.4+	0.5+
1996 10 11	104	0.0	0.3-	1996 12 02	104	0.1-	0.4-	1998 01 28	104	0.4+	0.4+
1996 10 11	104	0.2-	0.1-	1996 12 03	108	0.1-	1.2-	1998 01 28	104	0.4+	0.4+
1996 10 11	104	0.0	0.0	1996 12 03	108	1.2-	0.9-				
1996 10 18	104	0.3-	0.1-	1996 12 03	108	1.3+	0.8-				

1996 RA₅ = 1998 AZ₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19120241	ω	85.51571	+0.61485557	-0.78425248		
<i>a</i>	2.9840572	Ω	326.09100	+0.65157890	+0.56451300		
<i>e</i>	0.1429897	<i>i</i>	8.56347	+0.44429446	+0.25743567		
<i>P</i>	5.15	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 09 13	966	0.4+	0.4-	1996 10 03	966	0.4+	1.4+	1997 12 26	566	0.4-	0.1+
1996 09 14	966	0.3+	1.5-	1996 10 04	691	1.1-	0.1-	1997 12 26	566	0.1+	0.0
1996 09 15	966	0.4-	1.5+	1996 10 04	691	1.2-	0.2-	1998 01 01	966	0.0	0.3+
1996 09 15	966	0.6-	0.7+	1996 10 04	691	1.1-	0.1-	1998 01 01	966	0.1-	0.4-
1996 10 01	966	0.4+	0.3-	1996 10 18	691	0.2-	0.0	1998 01 02	966	0.1+	0.5-
1996 10 02	966	1.5+	0.5-	1996 10 18	691	0.2-	0.2+	1998 01 02	966	0.0	0.4+
1996 10 02	966	1.3+	1.4-	1996 10 18	691	0.0	0.2+				
1996 10 03	966	0.5+	0.4+	1997 12 26	566	0.2+	0.0				

1996 TY₄

Id. E. Bowell (1994 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23324708	ω	121.35202	-0.73730380	-0.67197670		
<i>a</i>	2.6137171	Ω	16.76925	+0.50854949	-0.61980546		
<i>e</i>	0.1312094	<i>i</i>	13.93911	+0.44470274	-0.40532518		
<i>P</i>	4.23	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 04 04	675	1.6-	1.6-	1996 10 08	684	0.2+	0.2-	1996 10 18	816	0.1-	0.5-
1994 04 04	675	0.5-	1.1-	1996 10 09	684	0.8-	0.2+	1996 11 17	816	0.2+	0.5+
1996 10 06	816	0.7-	0.1-	1996 10 09	684	0.5-	0.1-	1996 11 17	816	0.5+	0.4+
1996 10 06	816	0.6-	0.0	1996 10 09	684	0.5-	0.0	1996 11 17	816	0.3+	1.0+
1996 10 07	816	1.1+	0.0	1996 10 11	566	0.1+	0.4-	1996 11 17	816	0.1-	0.3-
1996 10 07	816	0.8+	0.3+	1996 10 11	566	0.4+	0.3-	1997 12 27	688	0.1+	0.2+
1996 10 07	816	0.6+	0.1-	1996 10 11	566	0.5+	0.6-	1997 12 27	688	0.1+	0.0

1998 FEB. 11

M.P.C. 31245

1996 10 07	816	0.9+	0.1+	1996 10 18	816	0.2−	0.6−	1997 12 29	688	0.2+	0.2+
1996 10 08	684	0.2+	0.2−	1996 10 18	816	0.2−	0.7−	1997 12 29	688	0.1+	0.3+
1996 10 08	684	0.1+	0.2−	1996 10 18	816	0.0	0.6−				

1996 TG₇

Id. M. W. Buie (1997–1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	143.95932		(2000.0)	P	Q	Asher	
<i>n</i>	0.26010437	ω	298.29730	+0.82182764	+0.56936488		
<i>a</i>	2.4305485	Ω	27.01214	−0.50558154	+0.74545243		
<i>e</i>	0.1968917	<i>i</i>	2.59535	−0.26265308	+0.34658954		
<i>P</i>	3.79	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 03 09	675	0.6+	0.5−	1996 10 15	385	1.3−	0.5+	1997 12 27	688	1.5+	0.9−
1991 03 09	675	0.5−	0.6+	1996 10 15	385	0.2+	0.2+	1997 12 29	688	0.4+	0.5−
1996 09 17	566	0.6+	0.2−	1996 10 15	385	0.3−	0.2+	1997 12 29	688	0.2−	0.8−
1996 09 17	566	0.0	0.1−	1996 10 21	385	0.2+	0.6+	1998 01 06	688	0.0	0.8+
1996 09 17	566	0.2+	0.0	1996 10 21	385	0.6+	1.0−	1998 01 06	688	0.8+	0.6+
1996 10 05	905	0.9−	0.0	1996 10 21	385	0.5+	0.6−	1998 01 07	688	1.0−	1.2+
1996 10 05	905	1.0−	0.0	1996 12 01	385	0.3−	0.4−	1998 01 07	688	0.1+	0.7+
1996 10 11	385	0.6+	0.6+	1996 12 01	385	1.4+	0.8−	1998 01 26	385	1.3−	0.5−
1996 10 11	385	0.2+	0.3+	1996 12 01	385	0.4−	0.2−	1998 01 26	385	0.7−	0.2−
1996 10 11	385	0.1−	0.6+	1997 12 27	688	0.5+	0.0				

1996 TH₇ = 1987 SL₂₈

Id. M. W. Buie (1997–1998 observations), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	80.46506		(2000.0)	P	Q	Asher	
<i>n</i>	0.21996351	ω	6.82104	+0.88046803	−0.47377878		
<i>a</i>	2.7179134	Ω	21.48616	+0.43268190	+0.78781187		
<i>e</i>	0.0805846	<i>i</i>	2.75394	+0.19381025	+0.39355574		
<i>P</i>	4.48	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1987 09 24	095	1.4−	2.8+	1996 10 15	385	0.4−	0.0	1998 01 07	688	0.1+	0.1+
1996 09 17	566	0.2−	0.8+	1996 10 15	385	0.0	0.4−	1998 01 08	688	0.1−	0.0
1996 09 17	566	0.2−	0.3−	1996 10 21	385	0.4+	0.4−	1998 01 08	688	0.4−	0.3+
1996 09 17	566	0.2−	0.3+	1996 10 21	385	0.8+	0.1−	1998 01 08	688	0.1+	0.1−
1996 09 17	566	0.2−	0.4−	1996 10 21	385	0.2+	0.9+	1998 01 08	688	0.1−	0.1−
1996 09 17	566	0.3+	0.4+	1996 12 08	385	0.9+	0.4−	1998 01 08	688	0.0	0.2+
1996 09 17	566	0.6−	0.2−	1996 12 08	385	0.5+	0.8−	1998 01 08	688	0.0	0.0
1996 10 05	905	0.3−	1.5−	1996 12 08	385	0.1−	0.5−	1998 01 24	886	0.3−	0.2−
1996 10 05	905	0.3+	0.6−	1997 12 29	688	0.3+	0.6+	1998 01 24	886	0.8+	0.4+
1996 10 11	385	0.2−	0.2−	1997 12 29	688	0.0	0.7+	1998 01 31	886	0.3−	0.6−
1996 10 11	385	0.6+	0.4+	1998 01 06	688	0.1−	0.1−	1998 01 31	886	0.1+	0.6+
1996 10 11	385	0.3−	0.0	1998 01 06	688	0.5+	0.6−				
1996 10 15	385	0.4+	0.1−	1998 01 07	688	0.2−	0.0				

1996 TK₇

Id. A. Nakamura (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	106.60912		(2000.0)	P	Q	Williams	
<i>n</i>	0.19161239	ω	215.27464	+0.99179281	−0.12740425		
<i>a</i>	2.9797992	Ω	152.03918	+0.12193445	+0.91727692		
<i>e</i>	0.0452574	<i>i</i>	1.31156	+0.03845787	+0.37732111		
<i>P</i>	5.14	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 10	360	0.4+	0.4−	1996 11 06	360	0.1+	0.7+	1998 01 29	360	0.1+	0.1−
1996 10 10	360	0.0	0.5−	1996 11 06	360	0.3+	1.3+	1998 01 29	360	0.2−	0.2+
1996 10 10	360	0.5+	0.2−	1996 11 06	360	0.8−	0.0	1998 01 31	360	0.1+	0.1−
1996 10 11	360	0.1+	0.3−	1996 11 16	360	0.1−	0.2−	1998 01 31	360	0.5−	0.1+
1996 10 11	360	0.2−	0.7−	1996 11 16	360	0.0	0.2−	1998 02 02	360	0.2−	0.3−

1996 10 11	360	0.1−	0.1+	1996 11 16	360	0.1+	0.4−	1998 02 02	360	0.3+	0.2+
1996 10 19	360	0.6−	0.0	1996 12 06	360	0.4−	0.7+	1998 02 02	360	0.3+	0.2−
1996 10 19	360	0.7+	0.1−	1996 12 06	360	0.0	0.7+				
1996 10 19	360	0.1−	0.5−	1998 01 29	360	0.0	0.2−				

1996 TX₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	216.65211		(2000.0)	P	Q	Williams	
<i>n</i>	0.29286435	ω	128.31816	+0.10844089	+0.99335377		
<i>a</i>	2.2457343	Ω	147.84396	−0.93320326	+0.11509761		
<i>e</i>	0.1404341	<i>i</i>	4.15751	−0.34259634	+0.00090690		
<i>P</i>	3.37	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 10 04	595	1.0−	0.4−	1996 10 30	595	0.7−	0.3−	1998 01 18	595	0.4+	0.2−
1996 10 04	595	0.5+	0.3+	1996 10 30	595	(2.8−	0.2+)	1998 01 18	595	0.1+	1.6−
1996 10 09	595	(0.9+	5.3−)	1996 11 01	595	0.2+	0.2−	1998 01 26	595	0.9+	0.0
1996 10 09	595	1.5+	0.5−	1996 11 01	595	1.3+	0.0	1998 01 26	595	0.1+	1.2+
1996 10 11	595	1.8−	0.3+	1996 12 04	595	0.3−	1.3+	1998 01 27	595	0.6−	0.3+
1996 10 11	595	0.4+	0.1−	1996 12 04	595	0.1−	0.3−	1998 01 27	595	0.8−	0.1+

1996 TT₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	100.07311		(2000.0)	P	Q	Williams	
<i>n</i>	0.18151294	ω	355.38419	+0.99907894	−0.03927854		
<i>a</i>	3.0893301	Ω	6.93786	+0.04250485	+0.85068843		
<i>e</i>	0.0372893	<i>i</i>	8.22288	+0.00588321	+0.52420072		
<i>P</i>	5.43	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 05	691	1.1−	0.3+	1996 10 18	566	0.1+	0.3−	1996 11 16	046	0.7−	0.1+
1996 10 05	691	0.8−	0.2+	1996 10 18	566	0.3+	0.1−	1996 11 16	046	0.4−	0.4−
1996 10 05	691	1.0−	0.1−	1996 10 18	566	0.0	0.3−	1996 11 16	046	0.4+	0.1−
1996 10 14	046	0.4+	0.1−	1996 10 18	046	0.0	0.0	1996 11 16	046	0.1+	0.2−
1996 10 14	046	0.4+	0.0	1996 10 19	046	0.5+	0.0	1998 01 27	046	0.2−	0.3−
1996 10 14	046	0.1+	0.2−	1996 10 19	046	0.3+	0.1−	1998 01 27	046	0.0	0.1−
1996 10 14	046	0.2+	0.4−	1996 11 02	046	1.7−	0.4+	1998 01 27	046	0.3+	0.3−
1996 10 14	046	0.4+	0.2−	1996 11 02	046	0.5−	1.0+	1998 01 29	046	0.0	0.3+
1996 10 15	046	0.5+	0.1−	1996 11 02	046	0.3+	1.9+	1998 01 29	046	0.1−	0.3+
1996 10 15	046	0.6+	0.2−	1996 11 03	046	0.3+	0.1−	1998 01 29	046	0.1+	0.1−
1996 10 15	046	0.6+	0.3+	1996 11 03	046	0.0	0.1−				
1996 10 15	046	0.4+	0.3−	1996 11 03	046	0.1+	1.0−				

1996 TU₉

Id. M. Tichý (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	101.19793		(2000.0)	P	Q	Marsden	
<i>n</i>	0.18602632	ω	177.47140	+0.99848256	−0.05254733		
<i>a</i>	3.0391569	Ω	185.62070	+0.04711235	+0.96998899		
<i>e</i>	0.1764783	<i>i</i>	9.68262	+0.02851330	+0.23740291		
<i>P</i>	5.30	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 15	046	0.2−	0.4−	1996 10 19	046	0.6+	0.0	1996 11 17	046	0.3−	0.2−
1996 10 15	046	0.1−	0.1+	1996 10 19	046	0.5+	0.2−	1996 11 17	046	0.3+	0.1+
1996 10 15	046	0.4−	0.5−	1996 10 19	046	0.2+	0.0	1998 01 26	046	1.0+	0.4−
1996 10 15	046	0.2−	0.2−	1996 11 04	046	0.5−	0.1+	1998 01 26	046	0.4−	0.2+
1996 10 15	046	0.5−	0.0	1996 11 04	046	0.2−	0.3−	1998 01 26	046	0.9+	0.4−
1996 10 15	046	0.2−	0.1−	1996 11 04	046	0.4+	0.3−	1998 01 27	046	0.3−	0.1+
1996 10 15	046	0.2−	0.8+	1996 11 05	046	0.1+	0.0	1998 01 27	046	0.7−	0.3+
1996 10 15	046	0.2+	0.9+	1996 11 05	046	0.0	0.4+	1998 01 27	046	0.4−	0.2+
1996 10 15	046	0.0	0.3+	1996 11 05	046	0.3+	0.1+				
1996 10 15	046	0.4+	0.6−	1996 11 17	046	0.3−	0.0				

1996 TS₁₁

Id. P. Comba (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	157.50531		(2000.0)		P		Q
<i>n</i>	0.27305808	ω	306.99952	+0.72732272			+0.68626459
<i>a</i>	2.3530584	Ω	9.67135	-0.61668193			+0.65769017
<i>e</i>	0.2344956	<i>i</i>	2.22589	-0.30117279			+0.31061964
<i>P</i>	3.61	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 11	566	0.1-	0.3-	1996 10 15	684	0.3+	0.1+	1996 12 02	684	0.6+	0.8-
1996 10 11	566	0.3-	0.2-	1996 10 15	684	0.1+	0.1+	1996 12 02	684	0.3-	0.3+
1996 10 11	566	0.4+	0.2-	1996 10 31	684	0.0	0.1+	1998 01 22	684	0.9+	0.5-
1996 10 13	684	0.1-	0.1-	1996 10 31	684	0.0	0.0	1998 01 22	684	0.2+	0.2-
1996 10 13	684	0.1+	0.2+	1996 10 31	684	0.2+	0.1+	1998 01 23	684	1.2-	0.6+
1996 10 14	684	0.3-	0.1+	1996 11 09	684	0.2-	0.2+	1998 01 23	684	0.0	0.1+
1996 10 14	684	0.1-	0.2+	1996 11 09	684	0.2-	0.0				

1996 TJ₁₄ = 1998 BP₁

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	92.65907		(2000.0)		P		Q
<i>n</i>	0.19098637	ω	32.62797	+0.97586424			-0.21079482
<i>a</i>	2.9863071	Ω	339.31219	+0.14910956			+0.83404638
<i>e</i>	0.0959763	<i>i</i>	9.29306	+0.15954725			+0.50983545
<i>P</i>	5.16	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 10 09	399	0.4+	0.9+	1998 01 19	411	0.3-	0.4+	1998 01 24	566	0.1+	0.2+
1996 10 09	399	0.6-	0.1+	1998 01 19	411	0.0	0.2-	1998 01 26	411	0.8+	0.0
1996 10 10	399	1.8+	0.6+	1998 01 20	411	1.0-	0.3+	1998 01 26	411	0.4+	0.4+
1996 10 10	399	0.1+	0.1-	1998 01 20	411	0.1-	0.2+	1998 01 29	566	0.2-	0.5-
1996 10 16	399	0.8-	0.6+	1998 01 24	566	0.3-	0.1-	1998 01 29	566	0.3+	0.5-
1996 10 16	399	0.9-	1.0-	1998 01 24	566	0.0	0.1+	1998 01 29	566	0.3+	0.4-

1996 TV₁₄ = 1998 BE₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	150.29421		(2000.0)		P		Q
<i>n</i>	0.20279404	ω	334.35249	+0.71384711			+0.70025096
<i>a</i>	2.8692337	Ω	341.19241	-0.63793340			+0.64526507
<i>e</i>	0.0658451	<i>i</i>	1.49670	-0.28890014			+0.30542035
<i>P</i>	4.86	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 10 09	358	0.3+	1.3+	1996 10 29	327	1.5-	0.1+	1998 01 23	704	0.0	1.3+
1996 10 09	358	1.6-	2.1+	1996 10 29	327	0.1+	0.7+	1998 01 23	704	0.1+	0.5-
1996 10 10	358	1.1+	0.6-	1996 10 29	327	0.9+	0.5-	1998 01 25	704	0.1-	0.9-
1996 10 10	358	0.5+	1.6-	1996 10 29	327	1.1+	1.0+	1998 01 25	704	0.6+	0.3-
1996 10 21	358	1.2-	2.6-	1998 01 23	704	0.7+	0.1+	1998 01 25	704	0.3-	0.3-
1996 10 21	358	0.2+	0.1+	1998 01 23	704	0.3-	0.2-	1998 01 25	704	0.6-	0.8+

1996 TF₁₅

Id. G. C. R. Sallit (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	55.54683		(2000.0)		P		Q
<i>n</i>	0.16994932	ω	3.70546	+0.73597501			-0.67685400
<i>a</i>	3.2279225	Ω	38.90579	+0.62054946			+0.66589784
<i>e</i>	0.1653236	<i>i</i>	1.32040	+0.27066429			+0.31376540
<i>P</i>	5.80	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 05	964	0.1-	0.4+	1996 11 04	964	0.1-	0.7+	1998 01 29	566	0.5+	0.3+
1996 10 06	964	0.1-	0.1+	1996 11 06	964	0.5+	0.0	1998 01 29	566	0.5+	0.3+

1996 10 15	964	0.6-	0.1-	1996 11 07	964	0.1+	0.5+	1998 01 29	566	0.4+	0.4+
1996 10 15	964	1.5+	0.4-	1996 11 07	964	0.9-	0.0	1998 02 03	964	0.1+	0.8+
1996 10 17	964	0.0	0.2-	1996 11 13	964	0.4-	0.9+	1998 02 03	964	(3.8-	0.2-)
1996 10 17	964	0.1-	0.4-	1996 11 13	964	0.2-	0.1-	1998 02 04	964	0.4-	0.6-
1996 10 17	964	0.3-	0.3-	1998 01 19	964	1.0-	0.2-	1998 02 04	964	0.3-	0.6-
1996 10 17	964	0.3+	0.1-	1998 01 19	964	0.1-	0.4-				
1996 11 04	964	0.4+	1.0-	1998 01 19	964	0.3+	0.2-				

1996 TD₁₈ = 1998 BO₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	57.93795		(2000.0)		P		Q
<i>n</i>	0.17029364	ω	180.91265	+0.59346311			-0.80359845
<i>a</i>	3.2235700	Ω	232.68565	+0.73880427			+0.56611698
<i>e</i>	0.0284130	<i>i</i>	3.24844	+0.31932710			+0.18368750
<i>P</i>	5.79	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 04	691	0.3+	0.1+	1996 10 11	691	0.4-	0.1-	1998 01 17	910	0.3+	0.1-
1996 10 04	691	0.1+	0.3+	1996 10 17	691	0.1+	0.1+	1998 01 17	910	0.1-	0.0
1996 10 04	691	0.3+	0.1+	1996 10 17	691	0.1-	0.0	1998 01 17	910	0.6+	0.1-
1996 10 10	691	0.2-	0.1+	1996 10 17	691	0.3-	0.3+	1998 01 23	910	0.3-	0.3+
1996 10 10	691	0.4-	0.1+	1996 10 21	691	0.6+	0.1+	1998 01 23	910	0.2-	0.3-
1996 10 11	691	0.4-	0.1-	1996 10 21	691	0.2+	0.6-	1998 01 23	910	0.3-	0.3+
1996 10 11	691	0.3-	0.2-	1996 10 21	691	0.5+	0.3-				

1996 TP₃₆ = 1998 BS₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	174.71661		(2000.0)		P		Q
<i>n</i>	0.29162122	ω	342.47547	+0.55393340			+0.83090366
<i>a</i>	2.2521119	Ω	321.11624	-0.75349173			+0.47350266
<i>e</i>	0.1596959	<i>i</i>	4.79799	-0.35412993			+0.29222311
<i>P</i>	3.38	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 10 03	809	0.4+	0.7-	1998 01 27	046	0.0	0.8-	1998 02 02	046	0.3-	0.1+
1996 10 03	809	1.6+	0.4-	1998 01 27	046	0.1-	0.5-	1998 02 02	046	0.3-	0.2+
1996 10 03	809	1.1+	0.7-	1998 01 27	046	0.1+	0.5-	1998 02 03	046	0.5-	0.3+
1996 10 04	809	1.1+	0.8-	1998 01 27	046	0.1-	0.6-	1998 02 03	046	0.4-	0.7+
1996 10 04	809	1.0+	1.2-	1998 01 27	046	0.0	0.4-	1998 02 03	046	0.9+	0.1-
1996 10 04	809	0.3+	1.5-	1998 01 29	046	0.1-	0.2-	1998 02 03	046	0.0	0.6+
1996 10 12	691	1.7-	0.1+	1998 01 29	046	0.1+	0.1+	1998 02 04	046	0.1+	0.2+
1996 10 12	691	1.6-	0.2-	1998 01 29	046	0.1-	0.1-	1998 02 04	046	0.0	0.2+
1996 10 18	691	1.1-	0.6+	1998 01 30	046	0.5+	0.1-	1998 02 04	046	0.2+	0.4-
1996 10 18	691	1.1-	0.7+	1998 01 30	046	0.3-	0.0	1998 02 05	046	0.1-	0.2+
1996 10 18	691	1.1-	0.8+	1998 01 30	046	0.2-	0.1-	1998 02 05	046	0.6+	0.2-
1996 10 21	691	0.6+	1.0+	1998 01 30	046	0.2+	0.4+	1998 02 05	046	0.1+	0.1+
1996 10 21	691	0.5+	1.2+	1998 02 02	046	0.1-	0.2-	1998 02 05	046	0.1+	0.3+
1996 10 21	691	0.2-	1.1+	1998 02 02	046	0.4-	0.0				

1996 TH₄₂ = 1989 TK₁₄ = 1998 BO₂₅

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	141.16597		(2000.0)		P		Q
<i>n</i>	0.28226937	ω	277.61773	+0.95974124			+0.27597300
<i>a</i>	2.3015843	Ω	66.37407	-0.22991609			+0.87881436
<i>e</i>	0.1263489	<i>i</i>	3.27271	-0.16135469			+0.38926113
<i>P</i>	3.49	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 10 02	809	1.6-	0.3-	1989 10 04	809	0.7+	0.1-	1996 10 10	809	0.8+	0.2+
1989 10 02	809	0.6-	0.2-	1996 10 07	809	(2.6-	0.5-)	1996 10 10	809	1.0+	0.5+
1989 10 02	809	0.2+	0.0	1996 10 07	809	1.7-	1.5-	1998 01 28	411	0.1-	0.1-
1989 10 03	809	0.5-	1.0+	1996 10 07	809	1.5-	0.9-	1998 01 28	411	0.4+	0.4+
1989 10 03	809	0.1+	0.9+	1996 10 08	809	0.8+	0.1+	1998 01 29	411	0.1+	0.1-
1989 10 03	809	0.3+	0.9+	1996 10 08	809	0.6-	0.5-	1998 01 29	411	0.3-	0.5-

1998 FEB. 11

M.P.C. 31247

1989 10 04	809	0.1−	0.1−	1996 10 08	809	0.7+	0.2+	1998 02 04	411	0.6−	0.5+
1989 10 04	809	0.4+	0.0	1996 10 10	809	1.4+	0.2−	1998 02 04	411	0.6+	0.1+

1996 US

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	129.14080		(2000.0)	P	Q		
<i>n</i>	0.23466215	ω	321.03754	+0.94814752	+0.31622088		
<i>a</i>	2.6031989	Ω	20.59618	−0.26414254	+0.83989824		
<i>e</i>	0.2596686	<i>i</i>	5.21060	−0.17676256	+0.44110691		
<i>P</i>	4.20	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 09 18	327	0.0	0.3−	1996 10 21	385	0.8+	0.3+	1996 12 10	801	0.5+	0.5−
1996 09 18	327	0.4+	0.2−	1996 10 21	385	0.8+	0.5+	1996 12 12	385	0.0	0.2−
1996 09 18	327	0.6+	0.4−	1996 10 21	385	1.2+	0.1+	1996 12 12	385	0.4+	0.4+
1996 10 16	905	1.9−	1.0−	1996 10 30	385	0.3+	0.2−	1996 12 12	385	0.2+	0.3−
1996 10 16	905	1.7−	0.5−	1996 10 30	385	0.4+	0.2−	1998 01 30	385	0.8−	0.4−
1996 10 17	905	0.1+	0.9+	1996 10 30	385	0.3+	0.3+	1998 01 30	385	0.1−	1.5+
1996 10 17	905	1.0−	0.9+	1996 11 09	385	0.5−	0.0	1998 02 06	385	0.6+	1.4−
1996 10 19	385	0.1−	0.0	1996 11 09	385	0.1−	0.1+	1998 02 06	385	0.3+	0.4+
1996 10 19	385	0.2+	0.1−	1996 11 09	385	0.3−	0.2+				
1996 10 19	385	0.3+	0.2+	1996 12 10	801	0.7−	0.5−				

1996 UU

Id. E. Bowell (1992 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	91.40031		(2000.0)	P	Q		
<i>n</i>	0.24079136	ω	199.97398	+0.64670438	−0.75466512		
<i>a</i>	2.5588340	Ω	210.04960	+0.72640066	+0.65363542		
<i>e</i>	0.1527003	<i>i</i>	12.77155	+0.23262745	+0.05693239		
<i>P</i>	4.09	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 11 27	675	0.6−	0.3−	1996 10 19	385	0.5+	0.2−	1996 11 03	385	0.1−	0.3+
1992 11 27	675	0.6+	0.7−	1996 10 19	385	0.5+	0.0	1997 01 06	385	1.2+	0.2−
1996 10 04	691	0.6−	0.2+	1996 10 19	385	0.6+	0.1+	1997 01 06	385	1.3−	1.3+
1996 10 04	691	0.6−	0.0	1996 10 22	385	0.7+	0.2−	1997 01 09	385	0.2+	0.1+
1996 10 04	691	0.8−	0.1+	1996 10 22	385	0.5+	0.0	1997 01 09	385	0.5−	0.5−
1996 10 05	691	1.0−	0.3+	1996 10 22	385	0.5+	0.2−	1997 01 09	385	1.1−	0.0
1996 10 05	691	1.2−	0.4+	1996 10 23	327	0.7−	0.4−	1997 12 27	688	0.1−	0.3+
1996 10 05	691	1.2−	0.4+	1996 10 23	327	0.7+	0.3−	1997 12 27	688	0.3−	0.2+
1996 10 16	905	0.3−	0.0	1996 10 23	327	0.7+	0.3−	1997 12 29	688	0.1+	0.4+
1996 10 16	905	0.4+	0.7+	1996 10 23	327	0.5+	0.2−	1997 12 29	688	0.4+	0.3−
1996 10 17	905	0.0	0.7+	1996 11 03	385	0.4+	0.2+				
1996 10 17	905	0.6+	1.0−	1996 11 03	385	0.1+	0.0				

1996 UL₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	118.32818		(2000.0)	P	Q		
<i>n</i>	0.18602203	ω	140.82081	+0.96810923	+0.23425479		
<i>a</i>	3.0392037	Ω	206.04584	−0.24853610	+0.94264832		
<i>e</i>	0.0702478	<i>i</i>	11.67061	+0.03153311	+0.23777898		
<i>P</i>	5.30	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 20	104	0.6−	0.7+	1996 11 06	104	1.4+	0.7−	1997 01 14	104	0.3+	0.1−
1996 10 20	104	0.8−	0.1−	1996 11 24	104	1.3+	1.4+	1997 01 14	104	0.2+	0.0
1996 10 20	104	1.2−	1.0−	1996 11 24	104	1.1+	1.3+	1997 01 14	104	0.2+	0.0
1996 10 22	104	0.0	0.5−	1996 11 24	104	0.6+	1.2+	1997 01 30	104	0.0	0.3+
1996 10 22	104	0.0	0.8−	1996 12 02	104	0.9−	0.4−	1997 01 30	104	0.4−	0.4+
1996 10 22	104	0.2−	0.9−	1996 12 02	104	0.9−	0.5−	1997 01 30	104	0.2−	0.5+
1996 10 23	104	(2.3+	0.1+)	1996 12 02	104	0.5−	0.2−	1998 01 19	104	0.0	0.1−
1996 10 23	104	1.4+	0.0	1996 12 04	104	0.5−	1.1−	1998 01 19	104	0.1+	0.1+
1996 10 23	104	1.6+	0.2+	1996 12 04	104	0.7−	1.0−	1998 01 19	104	0.1+	0.2+
1996 10 30	104	0.6−	1.7+	1996 12 04	104	1.0−	1.1−	1998 01 25	104	0.0	0.3−

1996 10 30	104	0.4−	0.5+	1996 12 04	104	1.0−	1.3−	1998 01 25	104	0.3+	0.6−
1996 10 30	104	0.4−	0.4−	1996 12 15	104	0.7−	0.2+	1998 01 25	104	(2.6−	0.7−)
1996 10 31	104	0.8−	0.4+	1996 12 15	104	0.5−	0.5+	1998 01 28	104	0.2−	0.2+
1996 10 31	104	0.4−	0.5+	1996 12 15	104	0.0	0.8+	1998 01 28	104	0.0	0.1+
1996 10 31	104	0.2−	0.5+	1997 01 01	104	0.5+	0.3+	1998 01 28	104	0.4−	0.0
1996 11 06	104	1.1+	0.8−	1997 01 01	104	0.9+	0.4+				
1996 11 06	104	1.1+	0.7−	1997 01 01	104	1.0+	0.4+				

1996 UD₃

Id. V. S. Casulli (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	215.53657		(2000.0)	P	Q		
<i>n</i>	0.21618865	ω	287.37919	+0.09825261	+0.99501435		
<i>a</i>	2.7494603	Ω	348.21989	−0.87826623	+0.07861203		
<i>e</i>	0.0067977	<i>i</i>	4.80849	−0.46796887	+0.06137261		
<i>P</i>	4.56	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 10 30	596	0.7−	0.6−	1996 11 05	596	0.1−	0.1+	1996 12 04	596	0.5+	0.6+
1996 10 30	596	0.1+	1.2−	1996 11 05	596	0.1−	0.1+	1996 12 04	596	0.6−	1.5+
1996 10 30	596	0.5+	0.7−	1996 11 05	596	0.4+	0.7+	1996 12 04	596	0.5−	0.6−
1996 10 31	596	0.2−	0.0	1996 11 05	596	0.0	1.0+	1998 01 29	596	0.5+	0.4+
1996 10 31	596	0.4+	1.9−	1996 11 07	596	0.3+	0.6−	1998 01 29	596	0.2−	0.7+
1996 10 31	596	0.1−	0.6−	1996 11 07	596	0.2+	0.4−	1998 01 29	596	0.3+	0.1+
1996 10 31	596	0.3+	0.2−	1996 11 12	596	1.0+	1.6+	1998 02 02	596	0.1−	0.3−
1996 11 03	596	0.1+	1.3+	1996 11 12	596	0.8−	0.0	1998 02 02	596	0.6−	0.7−
1996 11 03	596	0.3−	0.5+	1996 11 12	596	0.4−	0.4+	1998 02 02	596	0.0	0.4−
1996 11 03	596	0.5−	1.0+	1996 11 20	596	0.2+	1.4−				
1996 11 03	596	0.2+	1.4+	1996 11 20	596	0.2+	1.7−				

1996 VM

Id. V. S. Casulli (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	264.32446		(2000.0)	P	Q		
<i>n</i>	0.24076152	ω	168.11218	−0.48830510	+0.83794116		
<i>a</i>	2.5590454	Ω	72.22862	−0.82017264	−0.34524627		
<i>e</i>	0.1139466	<i>i</i>	14.83055	−0.29811905	−0.42268148		
<i>P</i>	4.09	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 11 01	596	0.7+	1.3+	1996 11 05	596	1.2−	1.0−	1996 12 03	596	0.3−	0.5+
1996 11 01	596	0.4−	0.0	1996 11 05	596	1.7−	1.0−	1998 01 26	596	0.1+	0.1+
1996 11 01	596	0.8+	0.3+	1996 11 08	596	0.6−	0.1+	1998 01 26	596	0.1+	0.2+
1996 11 02	596	1.8+	0.7+	1996 11 08	596	1.0−	1.0+	1998 01 26	596	0.4−	0.7+
1996 11 02	596	1.6+	0.6−	1996 11 08	596	1.0−	0.7+	1998 01 28	596	0.1+	0.5+
1996 11 02	596	0.8+	0.2−	1996 12 03	596	0.4+	0.5−	1998 01 28	596	0.1+	0.7−
1996 11 05	596	0.6−	1.2−	1996 12 03	596	1.0+	0.1−	1998 01 28	596	0.0	0.8−

1996 VS

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	194.78988		(2000.0)	P	Q		
<i>n</i>	0.17149275	ω	58.94050	−0.29756685	+0.95386965		
<i>a</i>	3.2085258	Ω	193.91863	−0.92262434	−0.29804296		
<i>e</i>	0.0763715	<i>i</i>	9.53181	−0.24539416	−0.03609825		
<i>P</i>	5.75	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 11 02	104	0.1−	0.6−	1996 12 02	104	0.2−	0.1−	1997 01 30	104	(0.9+	2.6+)
1996 11 02	104	0.5+	0.6−	1996 12 02	104	0.0	1.1+	1997 01 30	104	(1.1+	2.2+)
1996 11 03	104	0.2+	0.1+	1996 12 03	104	0.2−	0.4−	1997 12 29	688	0.3+	0.4−
1996 11 03	104	0.1+	0.2+	1996 12 03	104	0.6+	0.1−	1997 12 29	688	0.4+	0.4−
1996 11 03	104	0.2+	0.1−	1996 12 15	104	1.5−	0.3−	1998 01 19	104	1.2−	0.3+
1996 11 06	104	0.5+	0.8+	1996 12 15	104	0.5−	0.4+	1998 01 19	104	1.1−	0.2+
1996 11 06	104	0.4+	0.8+	1997 01 01	104	1.1+	0.3−	1998 01 19	104	0.7−	0.2+
1996 11 06	104	0.1−	0.4+	1997 01 01	104	1.2+	0.4−	1998 01 19	104	0.5−	0.3+

M.P.C. 31248

1996 11 08	104	0.8−	0.5+	1997 01 01	104	1.1+	0.5−	1998 01 25	104	0.6+	0.0
1996 11 08	104	0.5−	0.5+	1997 01 14	104	0.6−	1.6−	1998 01 25	104	0.9+	0.0
1996 11 08	104	0.5−	0.4+	1997 01 14	104	0.4−	1.5−	1998 01 25	104	1.4+	0.3+
1996 11 08	104	0.3−	0.2+	1997 01 30	104	(1.4+	2.7+)				

1996 VP₁

Id. T. Urata (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	132.01483		(2000.0)		P		Q
<i>n</i>	0.22859471	ω	82.94020		+0.96379175		+0.13285224
<i>a</i>	2.6490608	Ω	269.23279		−0.21589372		+0.89767112
<i>e</i>	0.2879886	<i>i</i>	13.36925		+0.15650994		+0.42016288
<i>P</i>	4.31	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 11 06	905	0.4−	0.2+	1996 12 01	385	0.4+	0.1+	1997 02 04	385	0.2−	0.2+
1996 11 06	905	0.7+	0.8+	1996 12 01	385	0.3+	0.3+	1997 02 04	385	0.2−	0.7−
1996 11 09	385	0.3+	0.2−	1996 12 01	385	0.5+	0.3+	1998 01 30	385	0.4−	0.4+
1996 11 09	385	0.2−	0.3+	1996 12 14	905	0.9−	0.3−	1998 01 30	385	0.3+	1.6−
1996 11 09	385	0.1+	0.2+	1996 12 14	905	0.0	0.8+	1998 02 06	385	0.7−	1.6+
1996 11 14	385	0.5−	0.8−	1997 01 03	385	0.5+	0.0	1998 02 06	385	0.8+	0.4−
1996 11 14	385	0.3−	0.5−	1997 01 03	385	0.2+	0.1+				
1996 11 14	385	0.3−	0.6−	1997 01 03	385	0.2−	0.2−				

1996 VR₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	154.79797		(2000.0)		P		Q
<i>n</i>	0.22547344	ω	271.11959		+0.83331383		+0.50425976
<i>a</i>	2.6734524	Ω	58.63783		−0.33949608		+0.79021741
<i>e</i>	0.0527120	<i>i</i>	15.38333		−0.43626881		+0.34825068
<i>P</i>	4.37	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 11 05	046	0.2+	0.4+	1996 11 09	046	0.1+	0.7−	1997 01 12	046	0.0	0.4−
1996 11 05	046	0.1+	0.0	1996 11 17	046	0.9−	0.2+	1997 01 12	046	0.1+	0.8+
1996 11 05	046	0.5+	0.0	1996 11 17	046	1.0−	0.5+	1997 01 12	046	0.7+	0.3−
1996 11 05	046	0.3+	0.1−	1996 12 04	046	0.0	0.4−	1998 01 28	046	0.3−	0.3−
1996 11 09	046	0.0	0.8+	1996 12 04	046	0.4+	0.2+	1998 01 28	046	0.1+	0.0
1996 11 09	046	0.6+	0.6+	1996 12 04	046	0.3−	0.2−	1998 01 28	046	0.1+	0.2+
1996 11 09	046	0.5−	0.2+	1996 12 05	046	0.2+	0.5−	1998 01 29	046	0.1+	0.1+
1996 11 09	046	0.1−	0.1−	1996 12 05	046	0.3+	0.7−	1998 01 29	046	0.0	0.1+
1996 11 09	046	0.4−	0.4−	1996 12 29	046	0.0	0.0	1998 01 29	046	0.1+	0.1+

1996 VJ₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	208.18378		(2000.0)		P		Q
<i>n</i>	0.29294825	ω	83.86896		+0.27858830		+0.95986188
<i>a</i>	2.2453055	Ω	202.38922		−0.91142907		+0.25357292
<i>e</i>	0.1510742	<i>i</i>	4.88884		−0.30279633		+0.11985799
<i>P</i>	3.36	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 09 15	566	0.5+	0.2+	1996 11 10	046	0.3+	0.1+	1996 12 09	046	0.2−	0.0
1996 09 15	566	0.3+	0.5+	1996 11 10	046	0.5+	0.3+	1996 12 09	046	1.1−	0.7−
1996 09 15	566	0.1−	0.1−	1996 11 12	046	0.5−	0.0	1998 01 10	046	0.2+	0.3−
1996 10 12	566	0.5−	0.1−	1996 11 12	046	0.5−	0.3+	1998 01 10	046	0.4+	0.1−
1996 10 12	566	0.7−	0.3−	1996 11 12	046	0.2−	0.3+	1998 01 10	046	0.1+	0.0
1996 10 12	566	0.5−	0.4−	1996 11 16	046	0.4−	1.2−	1998 01 11	046	0.6−	0.6+
1996 11 09	327	0.1+	0.3+	1996 11 16	046	0.2+	1.1−	1998 01 11	046	0.6+	0.3+
1996 11 09	327	0.1−	0.4+	1996 11 16	046	0.6+	0.7−	1998 01 11	046	0.1+	1.0+
1996 11 09	327	0.3−	0.4+	1996 11 17	046	0.2−	0.2+	1998 01 28	046	0.4−	0.0
1996 11 09	046	0.0	0.5+	1996 11 17	046	0.5+	0.5−	1998 01 28	046	0.2−	0.0
1996 11 09	046	0.4−	0.4+	1996 11 17	046	0.3+	0.2−	1998 01 28	046	0.2−	0.0
1996 11 09	046	0.1+	0.7+	1996 11 30	046	0.1+	0.3−	1998 01 29	046	0.0	0.3−
1996 11 09	046	0.4+	0.3+	1996 11 30	046	0.1+	0.3−	1998 01 29	046	0.0	0.5−

1998 FEB. 11

1996 11 09	046	0.2+	0.8+	1996 11 30	046	0.3+	0.4−	1998 01 29	046	0.2+	0.2−
1996 11 09	046	0.3+	0.7+	1996 12 04	046	0.5+	0.7−				
1996 11 10	046	0.0	0.3+	1996 12 04	046	0.3+	0.0				

1996 VM₂

Id. P. Comba (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	139.03902		(2000.0)		P		Q
<i>n</i>	0.22604109	ω	274.52821		+0.93824943		+0.28303692
<i>a</i>	2.6689747	Ω	69.13127		−0.16623298		+0.87314385
<i>e</i>	0.2157112	<i>i</i>	12.29291		−0.30340500		+0.39687519
<i>P</i>	4.36	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 11 10	684	0.2+	0.1−	1996 11 17	684	0.2−	0.1−	1996 12 30	684	0.2−	0.3+
1996 11 10	684	0.0	0.1−	1996 12 03	684	0.2+	0.3+	1996 12 30	684	0.3−	0.3+
1996 11 11	684	0.0	0.0	1996 12 03	684	0.2+	0.2+	1996 12 30	684	0.4−	0.1+
1996 11 11	684	0.0	0.0	1996 12 03	684	0.2+	0.3+	1998 01 24	684	0.0	0.3−
1996 11 11	684	0.1−	0.0	1996 12 04	684	0.3+	0.3−	1998 01 24	684	0.1−	0.0
1996 11 12	684	0.0	0.1+	1996 12 04	684	0.1+	0.2−	1998 01 24	684	0.1+	0.3−
1996 11 12	684	0.1−	0.1+	1996 12 05	684	0.1+	0.4−	1998 01 25	684	0.1−	0.2+
1996 11 12	684	0.2−	0.1+	1996 12 05	684	0.2+	0.3−	1998 01 25	684	0.0	0.3+
1996 11 17	684	0.2−	0.0	1996 12 05	684	0.2+	0.3−				

1996 VU₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	63.37485		(2000.0)		P		Q
<i>n</i>	0.17986974	ω	234.22263		+0.72750777		−0.68605530
<i>a</i>	3.1081167	Ω	169.08866		+0.64200819		+0.67671078
<i>e</i>	0.2242433	<i>i</i>	2.35642		+0.24198748		+0.26719026
<i>P</i>	5.48	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 21	610	1.7−	0.8+	1996 11 08	104	0.1−	0.7−	1997 01 01	104	0.2−	0.1−
1996 10 21	610	1.2−	0.3+	1996 11 08	104	0.4−	0.2+	1997 01 01	104	0.1+	1.0+
1996 10 21	610	0.7−	0.2−	1996 11 08	104	0.3−	0.7+	1997 01 14	104	0.3−	0.7−
1996 10 30	610	1.4−	0.2−	1996 11 09	104	(2.4−	0.0)	1997 01 14	104	0.4+	0.3−
1996 10 30	610	0.3−	0.1−	1996 11 09	104	(2.7−	0.2−)	1997 01 14	104	0.5+	0.2−
1996 10 30	610	0.8+	0.0	1996 11 09	104	(2.8−	0.3−)	1997 01 14	104	1.2+	0.4+
1996 11 01	610	0.5+	0.5+	1996 12 15	104	0.3−	0.6−	1998 01 19	104	1.0+	0.9+
1996 11 01	610	(4.0+	1.7+)	1996 12 15	104	0.4−	0.5−	1998 01 19	104	1.1+	0.7+
1996 11 01	610	(7.0+	2.7+)	1996 12 15	104	0.5−	0.3−	1998 01 19	104	1.2+	0.3+
1996 11 06	104	1.4+	0.9+	1996 12 15	104	0.4−	0.2−	1998 02 05	104	0.7−	0.1+
1996 11 06	104	1.6+	0.6+	1996 12 16	104	0.6−	0.8−	1998 02 05	104	1.0−	0.4−
1996 11 06	104	1.5+	0.2+	1996 12 16	104	0.3−	0.8−	1998 02 05	104	1.2−	0.7−
1996 11 06	104	1.4+	0.1−	1996 12 16	104	0.2−	0.4−				

1996 VN₅ = 1990 RN₁₆

Id. T. Urata (1998 observations), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	112.90821		(2000.0)		P		Q
<i>n</i>	0.17160732	ω	215.90397		+0.92872830		+0.36769678
<i>a</i>	3.2070976	Ω	122.45541		−0.32566131		+0.87034312
<i>e</i>	0.1863397	<i>i</i>	3.23172		−0.17722431		+0.32756974
<i>P</i>	5.74	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 09 15	809	0.3−	0.1−	1996 11 16	385	0.2−	0.1−	1997 01 09	385	0.3+	0.7+
1990 09 15	809	0.3+	0.1+	1996 11 16	385	0.4−	0.3−	1997 01 09	385	0.8−	0.1−
1990 09 15	809	0.1+	0.0	1996 11 16	385	0.1−	0.6−	1998 01 19	385	1.5+	1.2+
1996 11 14	385	0.1−	0.6−	1996 11 30	385	0.3+	0.1−	1998 01 19	385	0.7+	1.0−
1996 11 14	385	0.3−	0.0	1996 11 30	385	0.2+	0.6+	1998 01 20	385	0.7−	0.2−
1996 11 14	385	0.1−	0.2+	1996 11 30	385	0.4+	0.2+	1998 01 20	385	0.9−	0.6+
1996 11 15	385	0.1+	0.5+	1996 12 08	385	0.1+	0.2−	1998 01 24	385	0.3−	0.2−

1998 FEB. 11

M.P.C. 31249

1996 11 15	385	0.1−	0.4+	1996 12 08	385	0.1+	0.3−	1998 01 24	385	0.4−	0.5−
1996 11 15	385	0.3+	0.1−	1996 12 08	385	0.2+	0.0				

1996 VD₆

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	82.39362		(2000.0)	P	Q
<i>n</i>	0.17093324	ω	207.47312	+0.56566926	−0.82400707
<i>a</i>	3.2155236	Ω	208.11319	+0.76853773	+0.54090383
<i>e</i>	0.1308185	<i>i</i>	3.90654	+0.29894489	+0.16862797
<i>P</i>	5.77	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 11 15	411	0.2+	0.8−	1996 11 19	411	0.5−	0.5+	1996 12 19	411	0.2−	0.2−
1996 11 15	411	1.0−	0.7+	1996 11 30	411	0.6+	0.4+	1998 01 06	688	0.2+	0.1−
1996 11 16	411	0.1+	0.5−	1996 12 08	411	0.3+	0.2+	1998 01 06	688	0.4+	0.0
1996 11 16	411	0.8+	0.6−	1996 12 08	411	0.3+	0.1−	1998 01 08	688	0.2+	0.0
1996 11 19	411	0.2−	0.4+	1996 12 19	411	0.4−	0.0	1998 01 08	688	0.4−	0.0

1996 VT_s

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	134.42371		(2000.0)	P	Q
<i>n</i>	0.22335413	ω	281.33573	+0.93835095	+0.27653119
<i>a</i>	2.6903372	Ω	62.89796	−0.14713049	+0.86248407
<i>e</i>	0.1881914	<i>i</i>	13.47482	−0.31281002	+0.42385343
<i>P</i>	4.41	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 11 07	400	1.5−	1.3−	1996 11 16	400	0.6+	0.0	1997 01 15	566	0.1−	0.4+
1996 11 07	400	0.1−	0.7−	1996 11 16	400	0.4+	0.2+	1998 01 06	688	0.3+	0.1−
1996 11 08	400	1.7−	0.2−	1996 12 30	400	1.1−	0.4−	1998 01 06	688	0.3−	0.0
1996 11 08	400	0.6+	1.6+	1996 12 30	400	0.6+	0.2+	1998 01 08	688	0.1−	0.1−
1996 11 15	400	1.2+	0.4+	1997 01 15	566	0.3−	0.2+	1998 01 08	688	0.0	0.1−
1996 11 15	400	1.4+	0.4−	1997 01 15	566	0.4−	0.3+				

1996 WV₁ = 1998 BR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	31.64002		(2000.0)	P	Q
<i>n</i>	0.12491727	ω	209.66018	+0.43012438	−0.89881688
<i>a</i>	3.9632767	Ω	215.05994	+0.85450226	+0.43550054
<i>e</i>	0.1487344	<i>i</i>	8.44764	+0.29123685	+0.04967386
<i>P</i>	7.89	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 11 20	327	0.3−	0.0	1996 11 27	327	0.2+	0.5−	1998 01 18	684	0.2+	0.2−
1996 11 20	327	0.0	0.1+	1996 11 27	327	0.1+	0.1+	1998 01 18	684	0.4+	0.2−
1996 11 20	327	0.2+	0.3−	1996 11 27	327	0.2+	0.4+	1998 01 18	684	0.5+	0.1−
1996 11 26	327	0.0	0.3−	1996 11 27	327	0.2+	0.7+	1998 01 19	684	0.2−	0.4+
1996 11 26	327	0.1+	0.2+	1996 11 28	327	0.1−	0.6+	1998 01 19	684	0.5−	0.2+
1996 11 26	327	0.5+	0.4−	1996 11 28	327	0.5+	0.2−	1998 01 19	684	0.5−	0.0
1996 11 26	327	0.6−	0.5+	1996 11 28	327	0.9−	0.9−				

1996 XO₂

Id. M. Tichý (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	184.15233		(2000.0)	P	Q
<i>n</i>	0.19824387	ω	126.41054	+0.59619705	+0.80283813
<i>a</i>	2.9129713	Ω	180.18758	−0.74665812	+0.55442812
<i>e</i>	0.0204855	<i>i</i>	1.87318	−0.29504361	+0.21922682
<i>P</i>	4.97	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 12 04	046	0.4−	0.7+	1996 12 11	046	1.0+	0.1+	1998 01 11	046	0.4−	0.0
1996 12 04	046	0.5−	0.8+	1996 12 11	046	0.7+	0.8−	1998 01 12	046	0.2−	0.6−
1996 12 04	046	0.0	0.3+	1996 12 11	046	0.2+	0.6+	1998 01 12	046	0.2+	0.2+
1996 12 04	046	0.2+	0.2+	1996 12 29	046	0.1+	0.2−	1998 01 13	046	0.0	0.2−
1996 12 04	046	0.1−	0.4+	1996 12 29	046	0.1+	0.8−	1998 01 27	046	0.4−	0.3+
1996 12 05	046	0.4−	0.2+	1996 12 29	046	0.4−	0.5−	1998 01 27	046	0.1+	0.7+
1996 12 05	046	0.3−	0.3+	1997 01 14	046	0.5+	0.3−	1998 01 27	046	0.5+	0.4+
1996 12 05	046	0.2−	0.5+	1997 01 14	046	0.1−	1.2−	1998 01 31	046	0.2−	0.3−
1996 12 09	046	0.7−	0.1+	1997 01 14	046	0.4+	0.8−	1998 01 31	046	0.0	0.4+
1996 12 09	046	0.0	0.4−	1998 01 10	046	0.1+	0.2−	1998 01 31	046	0.1+	0.3+
1996 12 09	046	0.1+	0.2+	1998 01 10	046	0.4+	0.5−				

1996 XG₉

Id. E. Bowell (1993 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	298.24465		(2000.0)	P	Q
<i>n</i>	0.21135721	ω	168.78138	−0.64607978	+0.75064951
<i>a</i>	2.7912024	Ω	60.81092	−0.71196894	−0.52741903
<i>e</i>	0.1635577	<i>i</i>	9.11003	−0.27510205	−0.39793779
<i>P</i>	4.66	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1993 01 28	675	0.1−	0.6−	1996 12 10	709	0.0	0.3−	1997 02 10	012	0.1+	0.3+
1993 01 28	675	0.5−	1.7−	1996 12 10	709	0.0	0.3−	1997 02 10	012	0.2−	0.4−
1996 12 02	012	0.3−	0.2+	1996 12 10	709	0.2+	0.3−	1997 02 10	012	0.6+	0.4+
1996 12 02	012	0.5−	0.6+	1996 12 10	709	0.2+	0.3−	1997 12 27	688	0.0	0.5+
1996 12 03	012	0.3−	0.5+	1997 01 13	012	1.1−	1.3+	1997 12 27	688	0.1−	0.2+
1996 12 10	709	0.1+	0.3−	1997 01 13	012	0.0	0.6−	1997 12 29	688	0.4+	0.2+
1996 12 10	709	0.1−	1.4+	1997 01 13	012	0.6+	0.5−	1997 12 29	688	0.0	0.3−
1996 12 10	709	0.2+	0.3−	1997 01 14	012	0.2−	0.1+	1998 01 22	012	0.7+	0.8+
1996 12 10	709	0.2+	0.1−	1997 01 14	012	0.0	0.1+	1998 01 22	012	0.1+	0.7+
1996 12 10	709	0.2+	0.3−	1997 01 14	012	0.0	0.1−	1998 01 22	012	0.1+	0.2−

1996 XQ₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	178.62912		(2000.0)	P	Q
<i>n</i>	0.23086265	ω	90.51833	+0.86285024	+0.47409564
<i>a</i>	2.6316831	Ω	241.19161	−0.50545840	+0.80853662
<i>e</i>	0.1162220	<i>i</i>	11.53909	−0.00112432	+0.34857115
<i>P</i>	4.27	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 12 09	046	0.2+	0.0	1996 12 12	046	0.2−	0.0	1996 12 27	046	0.2+	0.1−
1996 12 09	046	0.3+	0.1+	1996 12 12	046	0.1−	0.1+	1997 01 08	046	0.7−	1.3+
1996 12 09	046	0.0	0.2−	1996 12 13	684	0.0	0.1+	1997 01 08	046	0.6−	0.4+
1996 12 09	046	0.2−	0.1+	1996 12 13	684	0.1+	0.0	1997 02 08	046	0.3+	0.2−
1996 12 10	046	0.8−	0.3+	1996 12 13	684	0.1+	0.1+	1997 02 08	046	0.3+	0.5−
1996 12 11	046	0.7+	0.8−	1996 12 14	684	0.1−	0.0	1997 02 08	046	0.1−	0.0
1996 12 11	046	0.2−	0.2−	1996 12 14	684	0.2−	0.0	1997 02 09	046	0.3−	1.0−
1996 12 11	046	0.3+	0.5−	1996 12 14	684	0.0	0.0	1997 02 09	046	0.0	0.4−
1996 12 11	046	0.0	0.4+	1996 12 16	046	0.2−	0.1+	1997 02 09	046	0.4−	0.4−
1996 12 11	046	0.0	0.2+	1996 12 16	046	0.0	0.0	1998 02 06	046	0.2−	0.4+
1996 12 11	046	0.1−	0.1+	1996 12 16	046	0.1−	0.1−	1998 02 06	046	0.4−	0.0
1996 12 12	046	0.0	0.2+	1996 12 21	046	0.1−	0.2+	1998 02 06	046	0.1−	0.1+
1996 12 12	684	0.1−	0.1+	1996 12 21	046	0.1+	0.2−	1998 02 07	046	0.5+	0.3−
1996 12 12	684	0.0	0.1+	1996 12 21	046	0.7+	0.2−	1998 02 07	046	0.2+	0.1−
1996 12 12	684	0.1−	0.1+	1996 12 27	046	0.7+	0.1+	1998 02 07	046	0.1+	0.3+
1996 12 12	046	0.2−	0.1+	1996 12 27	046	0.6+	0.0				

1996 XS₂₅

Id. M. W. Buie (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	275.47871	(2000.0)		P		Q	
<i>n</i>	0.17938641	ω	155.76624	-0.19153970	+0.92098189		
<i>a</i>	3.1136971	Ω	101.73384	-0.94756521	-0.08343078		
<i>e</i>	0.1861238	<i>i</i>	20.27414	-0.25579819	-0.38056756		
<i>P</i>	5.49	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 11	867	0.3+	0.1+	1996 12 15	867	0.4+	0.2+	1997 02 09	867	0.5-	0.9-
1996 12 11	867	0.0	0.0	1996 12 29	867	0.4-	0.3-	1997 02 09	867	0.7+	1.3+
1996 12 13	867	0.0	0.1+	1996 12 29	867	0.3-	0.2-	1997 02 09	867	0.0	0.4+
1996 12 13	867	0.1-	0.1+	1996 12 29	867	0.7-	0.0	1998 01 06	688	0.1-	0.2+
1996 12 13	867	0.0	0.3+	1997 01 12	867	0.4+	0.3-	1998 01 06	688	0.1-	0.3+
1996 12 13	867	0.1+	0.0	1997 01 12	867	0.0	0.5-	1998 01 08	688	0.1+	0.2-
1996 12 15	867	0.2+	0.2+	1997 01 12	867	0.0	0.3-	1998 01 08	688	0.2+	0.2-

1996 YG₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	297.28602	(2000.0)		P		Q	
<i>n</i>	0.25161200	ω	188.98336	-0.06996860	+0.97367820		
<i>a</i>	2.4849357	Ω	77.22354	-0.90086307	+0.03171762		
<i>e</i>	0.1194223	<i>i</i>	12.85176	-0.42842750	-0.22570943		
<i>P</i>	3.92	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 27	118	0.5-	0.0	1997 01 14	118	0.2+	0.0	1997 03 10	118	0.3+	0.7+
1996 12 27	118	0.0	1.0+	1997 01 14	118	0.3+	0.1-	1997 03 10	118	0.2+	0.2+
1996 12 27	118	0.8-	0.3+	1997 01 14	118	0.2+	0.2-	1998 01 24	118	0.8-	1.1+
1996 12 28	118	0.2+	0.4-	1997 01 24	118	1.4-	0.7+	1998 01 24	118	1.1-	0.5+
1996 12 28	118	0.1+	0.3-	1997 01 24	118	1.1-	1.0+	1998 01 24	118	0.7-	0.9+
1996 12 29	118	0.2-	0.5-	1997 01 26	118	0.8-	0.7+	1998 01 26	118	0.9-	0.5+
1996 12 30	118	0.2+	0.3-	1997 01 26	118	0.6-	0.7+	1998 01 26	118	0.6-	0.9+
1996 12 30	118	0.3+	0.5-	1997 02 03	118	0.6-	0.3+	1998 01 30	118	0.4+	0.4-
1996 12 30	118	0.1+	0.6-	1997 02 03	118	0.7-	0.0	1998 01 30	118	0.6+	0.4-
1997 01 08	118	0.3+	0.6-	1997 02 20	118	0.0	0.4+	1998 02 05	118	0.7+	0.4-
1997 01 08	118	0.0	0.5-	1997 02 20	118	0.7+	0.3+	1998 02 05	118	0.5+	0.3-
1997 01 11	118	0.8+	0.8-	1997 02 22	118	0.7+	0.2+	1998 02 06	118	0.2+	1.1-
1997 01 11	118	0.0	0.6-	1997 02 22	118	0.7+	0.5-	1998 02 06	118	0.3+	1.3-
1997 01 12	118	0.0	0.2-	1997 02 22	118	1.1+	0.0	1998 02 07	118	0.5+	0.1-
1997 01 12	118	0.0	0.3-	1997 03 10	118	0.6+	0.2+	1998 02 07	118	0.5+	0.1-

1997 AU₃

Id. T. Urata (1998 observations), M. Akiyama (1998 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	125.95487	(2000.0)		P		Q	
<i>n</i>	0.19604550	ω	23.87988	+0.99737254	-0.01636808		
<i>a</i>	2.9347073	Ω	336.72513	-0.02455606	+0.84008182		
<i>e</i>	0.1451172	<i>i</i>	10.28784	+0.06815437	+0.54221271		
<i>P</i>	5.03	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 03	385	0.3-	0.2+	1997 01 09	385	0.3-	0.3+	1997 03 04	385	0.0	0.2-
1997 01 03	385	0.4+	0.1-	1997 01 28	385	0.4-	0.3-	1997 03 04	385	0.1-	0.6+
1997 01 03	385	0.4+	0.4+	1997 01 28	385	0.8+	0.6+	1998 01 30	385	0.7+	0.0
1997 01 06	385	0.7+	0.4-	1997 02 06	369	0.3-	0.6+	1998 01 30	385	1.0-	0.2-
1997 01 06	385	0.7-	0.4-	1997 02 06	369	0.0	0.3-	1998 01 31	886	0.6+	0.7-
1997 01 09	385	0.3-	0.1+	1997 02 06	369	0.2+	0.9-	1998 01 31	886	0.3-	0.9+

1997 CT₁ = 1979 TS₁ = 1979 WS₅

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	127.51975	(2000.0)		P		Q	
<i>n</i>	0.12564319	ω	102.26098	+0.99868534	+0.01479056		
<i>a</i>	3.9479964	Ω	256.90661	-0.03265771	+0.92158579		
<i>e</i>	0.3081254	<i>i</i>	2.88835	+0.03951031	+0.38789286		
<i>P</i>	7.84	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 10 14	095	0.2+	0.6+	1997 02 15	118	0.1-	0.3+	1998 02 04	046	0.4-	0.4+
1979 11 17	095	0.2-	0.4-	1997 02 15	118	0.2-	0.1+	1998 02 04	046	0.3-	0.2+
1997 02 01	118	0.2+	0.2-	1997 02 23	118	0.0	0.4+	1998 02 04	046	0.3-	0.3-
1997 02 01	118	0.1-	0.5-	1997 02 23	118	0.3+	0.2-	1998 02 05	046	0.3-	0.1+
1997 02 03	118	0.0	0.0	1997 02 23	118	1.4+	0.4+	1998 02 05	046	0.1-	0.1+
1997 02 03	118	0.2-	0.0	1997 02 27	118	0.7-	0.3-	1998 02 05	046	0.3-	0.1-
1997 02 03	118	0.2-	0.1+	1997 02 27	118	0.3-	0.0	1998 02 07	118	0.7+	0.2+
1997 02 06	118	0.1-	0.3+	1997 02 27	118	0.1+	0.4-	1998 02 07	118	0.7+	0.1+
1997 02 06	118	0.2-	0.2+	1997 03 04	118	0.1-	0.5-	1998 02 07	118	0.5+	0.4+
1997 02 06	118	0.4-	0.2+	1997 03 04	118	0.4+	0.2-	1998 02 09	118	0.5-	0.5-
1997 02 15	118	0.2+	0.2-	1998 02 04	046	0.0	0.2+	1998 02 09	118	0.5+	0.4-

1997 PE₆ = 1980 JB = 1982 UX₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	345.31501	(2000.0)		P		Q	
<i>n</i>	0.18503623	ω	232.83995	+0.97985690	+0.08066622		
<i>a</i>	3.0499885	Ω	121.84271	-0.02587804	+0.95836372		
<i>e</i>	0.1312105	<i>i</i>	12.41839	-0.19801714	+0.27391958		
<i>P</i>	5.33	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 05 10	046	0.9+	0.9+	1982 10 26	695	1.2+	0.1+	1997 08 26	428	0.8+	0.7-
1980 05 10	046	0.7-	0.9-	1982 10 27	807(10.7-	2.0+)		1997 09 05	428	0.5-	1.1+
1982 10 18	807	(2.5+ 1.2+)		1997 08 10	428	0.4-	0.1-	1997 10 21	428	0.3+	0.2-
1982 10 19	695	(3.2- 3.2-)		1997 08 10	428	0.1-	0.3-	1997 10 22	428	0.4+	0.5+
1982 10 20	695	0.5+ 0.3-		1997 08 11	428	0.7-	0.9-	1997 10 22	428	0.3+	0.2+
1982 10 21	807	0.2+ 0.7+		1997 08 11	428	0.7-	0.0	1997 12 01	428	0.5+	0.7+
1982 10 22	695	0.7+ 0.3+		1997 08 13	428	0.2+	0.3+	1997 12 30	428	0.4+	0.0
1982 10 25	807	2.2- 1.0-		1997 08 25	428	0.3+	0.2-				

1997 QA = 1980 BH₆ = 1981 KQ

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	54.97103	(2000.0)		P		Q	
<i>n</i>	0.26318293	ω	25.67936	+0.95698787	+0.27901434		
<i>a</i>	2.4115572	Ω	317.86470	-0.28241536	+0.83307833		
<i>e</i>	0.0833201	<i>i</i>	6.80825	-0.06645133	+0.47763112		
<i>P</i>	3.74	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 01 23	095	0.3-	0.7-	1997 08 27	118	0.2-	0.2-	1997 09 28	118	0.7-	0.3+
1981 05 28	809	0.1+	0.1+	1997 09 01	118	0.0	0.4+	1997 09 28	118	0.7-	0.3+
1997 08 16	118	0.2-	0.5-	1997 09 01	118	0.0	0.3+	1997 10 19	118	0.4-	0.4+
1997 08 16	118	0.2-	0.3-	1997 09 01	118	0.1-	0.3+	1997 10 19	118	1.1-	0.3+
1997 08 16	118	0.7-	0.4-	1997 09 06	118	0.9+	1.5+	1997 11 18	118	0.2+	0.2-
1997 08 16	118	0.1-	0.4-	1997 09 06	118	0.9+	1.6+	1997 11 18	118	0.1+	0.5-
1997 08 16	118	0.4-	0.4-	1997 09 11	118	0.1+	0.1+	1997 11 18	118	0.1+	0.7-
1997 08 18	118	1.2+	0.4-	1997 09 11	118	0.2+	0.0	1997 11 19	118	0.1-	0.1+
1997 08 18	118	1.6+	0.6-	1997 09 11	118	0.2+	0.2+	1997 11 19	118	0.3-	0.1+
1997 08 18	118	1.6+	0.3-	1997 09 11	118	0.4+	0.2+	1997 12 25	118	0.3+	0.3+
1997 08 20	118	0.1+	0.6-	1997 09 11	118	0.4+	0.2+	1997 12 25	118	0.2+	0.0
1997 08 20	118	0.2+	0.4-	1997 09 12	118	0.4+	0.2+	1997 12 25	118	0.4+	0.1+
1997 08 20	118	0.4+	0.3-	1997 09 16	118	0.5+	0.4+	1998 01 18	118	0.0	0.3-
1997 08 21	118	0.2+	0.5-	1997 09 16	118	0.4+	0.4+	1998 01 18	118	0.0	0.4-
1997 08 21	118	0.1-	0.5-	1997 09 25	118	0.7-	0.2-	1998 01 18	118	0.0	0.3-
1997 08 26	118	0.8-	0.6-	1997 09 25	118	0.6-	0.2-	1998 01 29	118	0.1+	0.8+
1997 08 26	118	0.7-	0.5-	1997 09 25	118	0.8-	0.3-	1998 01 29	118	0.3+	0.6+
1997 08 27	118	0.2-	0.2-	1997 09 28	118	0.7-	0.3+				

1998 FEB. 11

M.P.C. 31251

1997 SX₂ = 1975 ER = 1990 QE₁₃ = 1991 XN₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Gnädig

<i>M</i>	262.47505		(2000.0)	P	Q
<i>n</i>	0.29041378	ω	161.34432	-0.79660278	-0.60419355
<i>a</i>	2.2583499	Ω	341.44475	+0.54659921	-0.70626304
<i>e</i>	0.1493576	<i>i</i>	3.48497	+0.25817304	-0.36897517
<i>P</i>	3.39	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i>

Residuals in seconds of arc

1975 03 06	095	0.3+	1.1+	1991 12 13	372	0.2-	0.9-	1997 10 18	595	0.2+	1.0+
1990 08 16	809	0.8-	2.0-	1997 09 23	595	0.4-	0.4-	1997 10 18	595	0.0	0.6-
1990 08 16	809	0.5+	0.2-	1997 09 23	595	0.4+	0.2-	1997 10 19	595	0.1+	0.7+
1990 08 16	809	1.5+	0.5+	1997 09 24	595	0.3-	0.0	1997 10 19	595	0.3-	0.4+
1991 12 13	372	0.8-	1.3-	1997 09 25	595	0.2-	0.1+	1997 10 19	595	0.5-	0.6+

1997 SE₃₀ = 1972 EJ = 1981 UW₇

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	298.78894		(2000.0)	P	Q
<i>n</i>	0.18315992	ω	246.92425	-0.61144041	-0.79072707
<i>a</i>	3.0707827	Ω	240.80350	+0.73793625	-0.55618719
<i>e</i>	0.2154798	<i>i</i>	1.95991	+0.28564090	-0.25574697
<i>P</i>	5.38	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1972 03 14	095	0.2+	0.3+	1997 10 06	691	0.5-	0.4+	1997 10 31	910	0.8+	0.2-
1981 10 30	381	0.0	0.2-	1997 10 06	691	0.7-	0.4+	1997 11 03	704	1.1-	0.1+
1981 10 30	381	0.0	0.0	1997 10 11	691	0.0	0.1-	1997 11 03	704	0.9+	0.0
1997 09 30	691	0.3-	0.2+	1997 10 11	691	0.2-	0.2+	1997 11 03	704	0.1-	0.3-
1997 09 30	691	0.4-	0.1+	1997 10 11	691	0.0	0.2+	1997 11 03	704	0.6+	0.5-
1997 09 30	691	0.1-	0.3+	1997 10 31	910	0.8+	0.2-				
1997 10 06	691	0.7-	0.3+	1997 10 31	910	0.7+	0.3-				

1997 WK = 1989 YJ₁

Id. S. Nakano, A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	166.37087		(2000.0)	P	Q
<i>n</i>	0.23127245	ω	8.95661	-0.08055322	+0.99626953
<i>a</i>	2.6285734	Ω	256.42744	-0.91646127	-0.08624024
<i>e</i>	0.0088445	<i>i</i>	1.82484	-0.39193101	-0.00310483
<i>P</i>	4.26	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1989 12 30	413	0.6-	0.1+	1997 11 24	411	1.0-	0.1-	1997 12 31	704	0.1-	0.5-
1989 12 30	413	(5.7-	1.4+)	1997 11 24	411	0.2+	0.2-	1997 12 31	704	0.3-	0.2-
1989 12 31	413	1.0+	0.0	1997 12 04	411	1.5+	1.1+	1998 01 02	704	0.7+	1.0-
1989 12 31	413	0.3-	0.1+	1997 12 04	411	1.8+	0.5+	1998 01 02	704	0.7-	0.3+
1997 11 18	411	1.3-	0.3+	1997 12 21	411	0.0	0.3+	1998 01 02	704	0.3+	0.7-
1997 11 18	411	0.9-	0.0	1997 12 21	411	0.2+	0.1+	1998 01 02	704	0.4-	0.4+
1997 11 19	411	0.4-	0.1+	1997 12 31	704	0.5+	0.3-				
1997 11 19	411	0.3-	0.3-	1997 12 31	704	0.2+	0.2-				

1997 WD₃ = 1991 PC₈

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	197.30238		(2000.0)	P	Q
<i>n</i>	0.20645647	ω	161.93750	-0.43072762	+0.90078655
<i>a</i>	2.8352001	Ω	82.51838	-0.83473701	-0.37435713
<i>e</i>	0.0163611	<i>i</i>	3.19691	-0.34305662	-0.22009164
<i>P</i>	4.77	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1991 08 06	809	0.5+	0.6-	1997 11 23	411	0.1-	0.4-	1997 12 04	704	0.7+	0.4-
1991 08 06	809	0.3-	1.1-	1997 11 24	411	0.9-	0.1+	1997 12 04	704	1.3+	0.8-
1991 08 06	809	0.4+	0.6-	1997 11 24	411	0.8-	0.1+	1997 12 05	411	0.6-	0.2+
1991 08 14	809	0.7+	0.6+	1997 11 30	411	0.9-	0.6+	1997 12 05	411	0.2-	0.2+
1991 08 14	809	0.6-	0.7+	1997 11 30	411	0.9-	0.5+	1997 12 21	411	0.1-	0.5-
1991 08 14	809	0.6-	0.9+	1997 12 04	704	2.1+	0.5+	1997 12 21	411	0.1-	0.6-
1997 11 23	411	0.2-	0.4-	1997 12 04	704	0.8+	0.8+				

1997 WG₇ = 1987 WO₂ = 1990 SF₂₈ = 1996 NH₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	11.18879		(2000.0)	P	Q
<i>n</i>	0.29903583	ω	147.47904	+0.00987058	-0.99640910
<i>a</i>	2.2147289	Ω	301.82690	+0.89497237	+0.04631279
<i>e</i>	0.1681705	<i>i</i>	5.68004	+0.44601236	-0.07088039
<i>P</i>	3.30	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1987 11 26	033	0.2-	0.4+	1997 11 25	691	0.7-	0.1+	1998 01 22	704	2.0+	0.2-
1987 11 26	033	0.0	0.0	1997 12 05	691	1.1-	0.2-	1998 01 22	704	1.7+	0.5-
1990 09 23	095	0.4+	0.7+	1997 12 05	691	1.0-	0.1+	1998 01 22	691	0.2-	0.1-
1996 07 14	566	0.4-	0.0	1997 12 05	691	1.1-	0.0	1998 01 22	691	0.5-	0.1+
1996 07 14	566	0.5+	0.4-	1998 01 20	704	0.5+	0.0	1998 01 22	691	0.5-	0.3+
1996 07 14	566	0.1+	0.1-	1998 01 20	704	0.2-	0.8+	1998 01 29	691	0.2-	0.0
1996 07 22	566	1.4-	0.6+	1998 01 20	704	0.8+	0.1+	1998 01 29	691	0.0	0.2+
1996 07 22	566	0.3+	0.3+	1998 01 20	704	0.7+	0.1+	1998 01 29	691	0.3-	0.1+
1996 07 22	566	0.0	0.6+	1998 01 20	704	0.7+	0.4+	1998 02 03	691	1.6-	0.4+
1997 11 24	691	0.6-	0.1-	1998 01 20	704	0.6+	0.2+	1998 02 03	691	1.1-	0.2-
1997 11 24	691	0.5-	0.1-	1998 01 22	704	0.6+	0.3+	1998 02 03	691	1.2-	0.3-
1997 11 24	691	0.7-	0.2-	1998 01 22	704	1.4+	0.3-				
1997 11 25	691	0.6-	0.0	1998 01 22	704	1.7+	0.3-				

1997 WP₂₂ = 1984 SM₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	131.70282		(2000.0)	P	Q
<i>n</i>	0.17439139	ω	228.39287	+0.95648386	+0.28942541
<i>a</i>	3.1728731	Ω	114.75354	-0.25411239	+0.88863457
<i>e</i>	0.1694864	<i>i</i>	2.33727	-0.14340683	+0.35575487
<i>P</i>	5.65	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1984 09 25	688	0.1+	0.2-	1997 12 03	910	0.2+	0.4+	1998 01 22	691	0.1+	0.3-
1984 09 25	688	0.7-	0.8-	1997 12 03	910	0.1+	0.6+	1998 01 22	691	0.3+	0.4-
1984 09 28	688	0.1-	0.4+	1997 12 03	910	0.3-	0.1-	1998 01 24	691	0.0	0.2-
1984 09 28	688	0.8+	0.4+	1997 12 04	910	0.2+	0.1+	1998 01 24	691	0.0	0.2-
1997 11 28	910	0.4-	0.1+	1997 12 04	910	0.5+	0.1+	1998 01 24	691	0.1-	0.2-
1997 11 28	910	0.2-	0.1+	1997 12 04	910	0.5+	0.0	1998 01 30	691	0.4-	0.1+
1997 11 28	910	0.2-	0.3+	1998 01 22	691	0.2+	0.1-	1998 01 30	691	0.5-	0.1-

1997 WB₃₃ = 1996 NG₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	22.50705		(2000.0)	P	Q
<i>n</i>	0.15851824	ω	168.46573	+0.83401350	-0.55019004
<i>a</i>	3.3812962	Ω	224.99584	+0.50144638	+0.78713528
<i>e</i>	0.1421833	<i>i</i>	3.35521	+0.23015866	+0.27876327
<i>P</i>	6.22	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 07 14	809	0.3+	0.4+	1997 11 29	704	0.2-	0.7+	1998 01 15	910	0.0	0.1+
1996 07 14	809	0.9-	0.0	1997 11 29	704	0.5+	0.5-	1998 01 17	910	0.1+	0.4-
1996 07 14	809	0.7-	0.1+	1997 12 04	704	1.8+	0.8+	1998 01 17	910	0.1+	0.3-
1996 07 16	809	0.2+	0.7-	1997 12 04	704	0.4+	0.3-	1998 01 17	910	0.1+	0.3-
1996 07 16	809	1.1+	0.3+	1997 12 04	704	0.6-	1.4-	1998 01 27	910	0.1-	0.3+
1996 07 16	809	0.1+	0.1-	1997 12 04	704	1.3-	0.6+	1998 01 27	910	0.1-	0.2+

M.P.C. 31252

1997 11 29	704	0.1−	0.1−	1998 01 15	910	0.3−	0.1−	1998 01 27	910	0.1+	0.2+
1997 11 29	704	0.4−	0.5+	1998 01 15	910	0.1+	0.1+				

1997 WC₃₄ = 4380 T-1

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	50.88532		(2000.0)	P		Q		Williams			
<i>n</i>	0.16955539	ω	228.33090	+0.99954561		−0.00843698					
<i>a</i>	3.2329201	Ω	132.13099	+0.01864051		+0.92745963					
<i>e</i>	0.1360820	<i>i</i>	2.23626	−0.02368784		+0.37382810					
<i>P</i>	5.81	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1971 03 24	675	(5.8+ 0.2+)	1997 11 29	704	0.4+	0.2−	1998 01 15	910	0.4+	0.1+	
1971 03 26	675	0.4− 0.3+	1997 11 29	704	1.0−	1.1−	1998 01 15	910	0.1+	0.0	
1971 03 26	675	0.1+ 1.9−	1997 12 04	704	1.1+	0.9−	1998 01 15	910	0.3+	0.3+	
1971 03 27	675	0.2+ 1.2+	1997 12 04	704	0.5−	0.1−	1998 01 17	910	0.4−	0.4+	
1997 11 29	704	0.2− 0.9−	1997 12 04	704	1.1+	2.4+	1998 01 17	910	0.5−	0.3+	
1997 11 29	704	1.1− 1.9−	1997 12 04	704	0.8−	0.3+	1998 01 17	910	0.6−	0.4+	
1997 11 29	704	1.9+ 0.3+	1997 12 04	704	0.4−	0.6+					

1997 WT₃₄ = 1986 TM₂ = 1986 VB₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	73.61615		(2000.0)	P		Q		Williams			
<i>n</i>	0.27327405	ω	182.78833	+0.81883283		+0.57281121					
<i>a</i>	2.3518184	Ω	142.18534	−0.52547611		+0.77421360					
<i>e</i>	0.2365391	<i>i</i>	3.49894	−0.23105769		+0.26922225					
<i>P</i>	3.61	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1986 10 07	688	0.9+ 1.2+	1997 11 29	704	0.2−	0.1+	1997 12 05	704	0.2+	1.1−	
1986 10 07	688	0.1− 0.7+	1997 11 29	704	0.1−	1.0−	1997 12 05	704	(3.1+ 2.6−)		
1986 11 04	095	1.2− 1.4−	1997 11 29	704	0.5−	0.5−	1997 12 05	704	0.6−	0.6−	
1986 11 05	688	1.1+ 0.2−	1997 11 29	704	0.4−	0.1−	1997 12 05	704	0.6−	0.8−	
1986 11 05	688	0.8− 0.3−	1997 11 29	704	0.0	0.2+	1998 01 18	691	0.2+	0.3+	
1997 11 21	595	0.1+ 0.1+	1997 12 04	704	0.6−	0.5+	1998 01 18	691	0.3+	0.4+	
1997 11 21	595	0.3+ 0.0	1997 12 04	704	1.0−	0.2+	1998 01 18	691	0.3+	0.2+	
1997 11 22	595	0.4+ 0.3+	1997 12 04	704	(2.1− 0.0)		1998 01 30	691	0.2−	0.3+	
1997 11 26	566	0.6− 0.5+	1997 12 04	704	1.3+	1.0+	1998 01 30	691	0.4−	0.2+	
1997 11 26	566	0.5+ 0.1−	1997 12 04	704	(2.8− 0.4−)		1998 01 30	691	0.2−	0.6+	
1997 11 26	566	0.3+ 0.3−	1997 12 05	704	1.2+	0.1+					

1997 WN₄₃ = 1980 RP₃ = 1990 BX₃

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	58.21133		(2000.0)	P		Q		Williams			
<i>n</i>	0.23681283	ω	82.85276	+0.96800290		+0.18931591					
<i>a</i>	2.5874138	Ω	266.13497	−0.23957226		+0.89252304					
<i>e</i>	0.2759572	<i>i</i>	9.50229	+0.07466936		+0.40934350					
<i>P</i>	4.16	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1980 09 04	095	0.2− 0.5+	1997 11 29	704	1.3−	1.0+	1997 12 31	704	0.2+	0.8+	
1990 01 24	033	0.3− 0.2−	1997 12 04	704	0.3+	1.2−	1997 12 31	704	0.2+	1.1+	
1990 01 24	033	0.4+ 0.6+	1997 12 04	704	0.8+	0.3+	1997 12 31	704	0.6+	0.1+	
1997 11 29	704	0.5− 0.8+	1997 12 04	704	0.6−	1.4−	1998 01 02	704	1.3+	1.0+	
1997 11 29	704	(1.5− 2.3−)	1997 12 04	704	0.9+	0.3+	1998 01 02	704	0.9+	0.1+	
1997 11 29	704	1.5− 0.4−	1997 12 04	704	1.1−	1.4−	1998 01 02	704	0.4−	0.1−	
1997 11 29	704	1.3− 0.6−	1997 12 31	704	1.1+	0.1+	1998 01 02	704	0.6+	0.7−	

1998 FEB. 11

1997 WT₅₀ = 1995 BJ₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	73.28965		(2000.0)	P		Q		Williams			
<i>n</i>	0.26409839	ω	235.63370	+0.88873025		+0.45588970					
<i>a</i>	2.4059811	Ω	97.20153	−0.40303781		+0.82711314					
<i>e</i>	0.1642183	<i>i</i>	2.78465	−0.21844696		+0.32870722					
<i>P</i>	3.73	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1995 01 31	691	0.4+ 0.3+	1997 11 29	704	0.2+	1.2−	1997 12 04	704	(4.1− 1.6+)		
1995 01 31	691	0.1+ 0.5−	1997 11 29	704	(2.4− 0.4+)		1998 01 17	910	0.0	0.0	
1995 01 31	691	0.2+ 0.1−	1997 11 30	691	0.6−	0.0	1998 01 17	910	0.4+	0.0	
1995 02 05	691	0.2− 0.0	1997 11 30	691	0.8−	0.0	1998 01 17	910	0.1+	0.1+	
1995 02 05	691	0.3− 0.1−	1997 11 30	691	0.6−	0.1−	1998 01 27	910	0.0	0.7+	
1995 02 05	691	0.3− 0.0	1997 12 04	704	0.5−	1.4+	1998 01 27	910	0.1−	0.5+	
1997 11 29	704	1.1− 0.4−	1997 12 04	704	1.5+	0.6−	1998 01 27	910	1.0−	0.3+	
1997 11 29	704	0.6+ 1.2−	1997 12 04	704	0.6+	0.5+					
1997 11 29	704	1.1+ 0.5+	1997 12 04	704	(0.7+ 2.6+)						

1997 XB₂ = 1977 XR

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	97.30409		(2000.0)	P		Q		Williams			
<i>n</i>	0.19728984	ω	71.83612	+0.80016605		+0.56595080					
<i>a</i>	2.9223545	Ω	253.24330	−0.59812223		+0.72836262					
<i>e</i>	0.1049951	<i>i</i>	11.96921	−0.04454323		+0.38624810					
<i>P</i>	5.00	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1977 12 07	675	0.1+ 0.1−	1997 12 05	369	0.3−	0.2+	1997 12 31	704	0.6+	0.6−	
1977 12 08	675	0.1− 0.1+	1997 12 05	369	0.9−	0.5+	1997 12 31	704	0.5−	0.7+	
1997 12 03	369	0.6− 0.0	1997 12 21	369	0.4+	0.1−	1997 12 31	704	0.4−	0.7+	
1997 12 03	369	1.5+ 0.3−	1997 12 21	369	0.2+	0.5−	1997 12 31	704	0.0	0.5−	

1997 XN₈ = 1995 GP

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	41.02745		(2000.0)	P		Q		Williams			
<i>n</i>	0.29600063	ω	117.04101	+0.36191213		−0.93102755					
<i>a</i>	2.2298430	Ω	311.66035	+0.83146266		+0.34517741					
<i>e</i>	0.0852931	<i>i</i>	3.60549	+0.42153228		+0.11849159					
<i>P</i>	3.33	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1995 04 01	408	0.2+ 0.2+	1997 12 08	910	0.0	0.1−	1998 01 25	691	0.0	0.0	
1995 04 01	408	(3.0+ 0.0)	1997 12 08	910	0.2−	0.2−	1998 01 25	691	0.2+	0.3−	
1995 04 03	408	1.1− 0.5+	1998 01 22	691	0.4−	0.0	1998 01 25	691	0.1−	0.3−	
1995 04 03	408	0.9+ 0.7−	1998 01 22	691	0.5−	0.0	1998 01 30	691	0.2−	0.3−	
1997 12 07	910	0.1+ 0.2+	1998 01 22	691	0.5−	0.0	1998 01 30	691	0.4−	0.1−	
1997 12 07	910	0.0 0.1+	1998 01 24	566	0.8+	0.4+	1998 01 30	691	0.4−	0.3+	
1997 12 07	910	0.0 0.2+	1998 01 24	566	0.7+	0.1+					
1997 12 08	910	0.1+ 0.2−	1998 01 24	566	0.9+	0.3+					

1997 XO₈ = 1981 UZ₂₁ = 1991 JX₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	311.20850		(2000.0)	P		Q		Williams			
<i>n</i>	0.25756896	ω	81.38050	−0.99759642		−0.01775976					
<i>a</i>	2.4464726	Ω	97.58243	−0.00969423		−0.92131843					
<i>e</i>	0.1197372	<i>i</i>	3.87433	+0.06861054		−0.38840307					
<i>P</i>	3.83	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1981 10 24	675	0.4+ 0.4+	1991 05 17	809	1.2−	0.4+	1998 01 25	566	0.8+	0.2−	
1981 10 25	675	1.8+ 0.5+	1997 12 07	910	0.1+	0.2−	1998 01 25	566	0.8+	0.4−	
1981 10 26	675	2.5− 0.1−	1997 12 07	910	0.2−	0.2−	1998 01 26	566	0.2−	0.1+	

1998 FEB. 11

1991 05 12	809	1.0+	0.2-	1997 12 07	910	0.1-	0.1-	1998 01 26	566	0.1-	0.4+
1991 05 12	809	0.5+	0.8-	1997 12 08	910	0.4-	0.4+	1998 01 26	566	0.6-	0.2+
1991 05 12	809	1.3+	1.6-	1997 12 08	910	0.0	0.3+	1998 01 26	566	0.4-	0.0
1991 05 17	809	0.5-	1.4+	1997 12 08	910	0.0	0.3+	1998 01 26	566	0.3-	0.1+
1991 05 17	809	1.0-	1.6+	1998 01 25	566	0.9+	0.5-	1998 01 26	566	0.4-	0.2+

1997 XV₈ = 1991 EW₈ = 1996 TZ₅₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	309.11073		(2000.0)	P	Q
<i>n</i>	0.27260907	ω	225.01222	-0.99199279	-0.08888287
<i>a</i>	2.3556414	Ω	309.67500	+0.12057162	-0.87793623
<i>e</i>	0.0480219	<i>i</i>	6.69428	-0.03758709	-0.47045490
<i>P</i>	3.62	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1991 03 13	675	0.2+	0.2+	1997 12 07	910	0.6+	0.5+	1998 01 18	691	0.3-	0.1-
1991 03 13	675	0.2-	0.1-	1997 12 07	910	0.4+	0.5+	1998 01 25	566	0.4+	0.3-
1996 10 03	809	0.9-	0.8-	1997 12 07	910	0.4+	0.4+	1998 01 25	566	0.4+	0.1-
1996 10 03	809	0.3-	0.1-	1997 12 08	910	0.2+	0.2+	1998 01 25	566	0.4+	0.0
1996 10 03	809	0.6-	0.6-	1997 12 08	910	0.3+	0.2+	1998 01 26	691	1.0-	0.3-
1996 10 04	809	0.9+	0.4+	1997 12 08	910	0.2+	0.2+	1998 01 26	691	0.4-	0.3-
1996 10 04	809	0.8+	0.4+	1998 01 18	691	0.4-	0.1-	1998 01 26	691	0.3-	0.6-
1996 10 04	809	0.4+	0.2+	1998 01 18	691	0.3-	0.1+				

1997 XY₉ = 1974 TK = 1985 RV₁

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Doppler

<i>M</i>	136.32960		(2000.0)	P	Q
<i>n</i>	0.26450640	ω	11.56301	+0.32374705	+0.94573811
<i>a</i>	2.4035062	Ω	277.33137	-0.87028142	+0.28617487
<i>e</i>	0.2026202	<i>i</i>	1.60036	-0.37121165	+0.15389402
<i>P</i>	3.73	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1974 10 09	095	0.2+	0.3-	1997 12 05	411	0.1+	0.5+	1997 12 31	704	0.6+	0.8-
1985 09 12	688	0.4+	0.8+	1997 12 05	411	0.4-	1.1+	1997 12 31	704	0.0	0.2-
1985 09 12	688	0.4-	0.6-	1997 12 10	411	0.7-	0.8-	1997 12 31	411	0.8-	0.2+
1997 12 04	704	0.3+	0.3+	1997 12 10	411	0.2+	0.1-	1997 12 31	411	1.1-	0.1-
1997 12 04	704	0.5+	1.4+	1997 12 21	411	0.1+	1.0-	1998 01 02	704	0.5-	0.2-
1997 12 04	704	0.1-	2.0+	1997 12 21	411	0.7+	0.1+	1998 01 02	704	0.1+	0.1+
1997 12 04	704	1.3+	2.6-	1997 12 31	704	0.1+	0.6-	1998 01 02	704	0.2+	0.8+
1997 12 04	704	2.3+	0.5+	1997 12 31	704	0.4-	0.1+	1998 01 02	704	1.4-	0.6-

1997 XK₁₀ = 1951 XR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	23.31278		(2000.0)	P	Q
<i>n</i>	0.23611737	ω	152.32638	+0.62487766	-0.73889031
<i>a</i>	2.5924920	Ω	257.86415	+0.66017608	+0.67247641
<i>e</i>	0.1814674	<i>i</i>	14.94504	+0.41676786	+0.04262136
<i>P</i>	4.17	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1951 12 05	711	(2.4-	9.5+)	Y	1997 12 12	610	0.3-	0.7+	1997 12 29	632	0.5-	0.8+
1951 12 22	711	0.0	0.2-	Y	1997 12 12	610	0.3-	0.6+	1998 01 05	632	1.1-	0.4+
1951 12 22	711	(8.5-	2.2-)	Y	1997 12 12	610	0.2-	0.6+	1998 01 05	632	0.1-	0.6+
1997 12 04	704	0.2+	0.0		1997 12 12	610	0.2-	0.6+	1998 01 05	632	0.2-	0.6+
1997 12 04	704	(1.0-	3.2+)		1997 12 14	632	0.7-	0.4-	1998 01 05	632	0.4-	0.1+
1997 12 04	704	1.1-	1.0-		1997 12 14	632	0.5-	0.4-	1998 01 05	632	0.2+	0.0
1997 12 04	704	0.0	0.8+		1997 12 14	632	0.3-	0.7-	1998 01 05	632	0.1+	0.5-
1997 12 05	704	1.7+	0.9-		1997 12 14	632	(2.7-	2.3-)	1998 01 15	632	0.1-	0.4+
1997 12 05	704	1.4+	0.3+		1997 12 15	632	0.2-	0.3-	1998 01 15	632	0.3-	0.1+
1997 12 05	704	0.6+	0.8-		1997 12 15	632	0.2-	0.2-	1998 01 15	632	0.3+	0.2+
1997 12 05	704	(2.4+	0.3-)		1997 12 15	632	0.3-	0.2-	1998 01 15	632	0.1+	0.0
1997 12 05	704	1.4+	1.4-		1997 12 27	108	0.7+	0.6+	1998 01 15	632	0.4-	0.3+
1997 12 08	632	0.8-	0.6-		1997 12 27	108	0.7+	0.2+	1998 01 15	632	0.3-	0.3+

M.P.C. 31253

1997 12 08	632	0.5+	0.3+	1997 12 27	632	0.3-	0.3+	1998 01 27	610	0.4+	0.4-
1997 12 08	632	1.6+	1.1+	1997 12 27	632	0.3-	0.3+	1998 01 27	610	0.4+	0.3-
1997 12 08	632	(2.8+	2.0+)	1997 12 28	632	0.4-	0.4+	1998 01 27	610	0.6+	0.1-
1997 12 08	632	(3.3+	2.4+)	1997 12 28	632	0.3-	0.4+	1998 01 27	632	0.2+	0.8-
1997 12 08	632	0.5-	0.8-	1997 12 29	108	0.0	0.6-	1998 01 27	632	0.5+	0.7-
1997 12 08	632	0.3-	0.4-	1997 12 29	632	0.1-	0.5+	1998 01 27	632	0.4+	1.2-
1997 12 08	632	0.4-	0.3-	1997 12 29	632	0.0	0.6+	1998 01 29	610	0.4-	0.1+
1997 12 08	632	0.0	0.2+	1997 12 29	108	0.1+	1.0-	1998 01 29	610	0.1-	0.0
1997 12 12	610	0.2-	0.8+	1997 12 29	632	0.2-	0.6+	1998 01 29	610	0.2+	0.1-

1997 XT₁₀ = 1987 BG

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	352.58778		(2000.0)	P	Q
<i>n</i>	0.18415595	ω	216.72665	-0.93424924	-0.30207540
<i>a</i>	3.0597002	Ω	304.62188	+0.35659271	-0.78462746
<i>e</i>	0.2687228	<i>i</i>	13.31693	+0.00447228	-0.54139653
<i>P</i>	5.35	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1987 01 26	054	1.2+	1.1+	1997 12 11	327	0.6+	0.2-	1997 12 19	327	1.1-	1.0+
1987 01 29	054	0.0	0.5+	1997 12 11	327	0.7+	0.6-	1997 12 19	327	0.9-	0.4+
1987 02 02	054	1.3-	1.7-	1997 12 13	327	0.3+	0.2+	1998 01 26	566	0.1+	0.1-
1997 12 10	327	0.4+	0.1+	1997 12 13	327	0.3+	0.0	1998 01 26	566	0.5+	0.1-
1997 12 10	327	0.2+	0.7-	1997 12 13	327	0.1+	0.5-	1998 01 26	566	0.2-	0.1-
1997 12 10	327	0.5+	0.1+	1997 12 19	327	0.5-	0.5+				
1997 12 11	327	0.3+	0.1+	1997 12 19	327	1.0-	0.1+				

1997 XA₁₂ = 1990 QC₁₂ = 1990 SC₁₉ = 1992 DQ₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	54.87898		(2000.0)	P	Q
<i>n</i>	0.29571352	ω	331.42647	+0.99906323	+0.02684806
<i>a</i>	2.2312861	Ω	27.09879	-0.00835217	+0.88915794
<i>e</i>	0.1801022	<i>i</i>	4.27276	-0.04246059	+0.45681216
<i>P</i>	3.33	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1990 08 26	675	0.4+	1.6-	1997 11 07	327	0.2-	0.8+	1997 12 05	704	1.2+	0.1-
1990 08 26	675	0.3-	0.9+	1997 11 20	327	0.1+	0.6+	1997 12 05	704	0.3+	0.2-
1990 09 16	675	0.2-	0.6+	1997 11 20	327	0.0	0.5+	1997 12 06	704	1.7+	0.3-
1990 09 16	675	0.1+	0.1-	1997 11 20	327	0.2-	0.6+	1997 12 06	704	0.5+	0.6-
1992 02 27	691	0.4-	0.0	1997 11 26	704	1.2-	1.1+	1997 12 06	704	1.4+	1.2-
1992 02 27	691	0.4-	0.1-	1997 11 26	704	1.8-	1.5+	1997 12 06	704	0.3-	0.9-
1992 02 27	691	0.5-	0.3-	1997 11 26	704	1.2-	0.8+	1997 12 06	704	0.5+	1.4-
1992 03 04	809	1.7+	1.1+	1997 12 05	704	0.4-	0.5-	1997 12 09	327	0.6-	0.4-
1997 11 07	327	0.3-	0.5+	1997 12 05	704	0.4+	0.2-	1997 12 09	327	0.1+	0.9-
1997 11 07	327	0.4-	0.7+	1997 12 05	704	0.7+	0.1-	1997 12 09	327	0.1-	0.4-

1997 YA = 1992 WK₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	2.88122		(2000.0)	P	Q
<i>n</i>	0.18655376	ω	329.71533	+0.76176622	-0.61597191
<i>a</i>	3.0334258	Ω	69.68532	+0.62902034	+0.62906725
<i>e</i>	0.1098186	<i>i</i>	12.35915	+0.15506658	+0.47418667
<i>P</i>	5.28	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1992 11 21	399	1.2-	0.6-	1992 11 28	675	0.7+	0.7-	1997 12 26	566	0.0	0.7+
1992 11 21	399	2.0-	0.4-	1992 11 28	675	0.2+	0.6-	1997 12 26	566	0.0	0.8+
1992 11 21	372	1.9+	2.3+	1997 12 18	426	0.1+	0.4-	1997 12 27	426	0.1-	0.5-
1992 11 21	372	0.2-	0.6+	1997 12 18	426	1.0+	0.1-	1997 12 27	426	0.2-	0.5-
1992 11 23	372	0.3-	0.7+	1997 12 18	426	0.9+	0.5-	1997 12 27	426	0.4-	0.7-
1992 11 23	372	0.9+	0.2-	1997 12 19	426	0.2-	0.1-	1998 01 15	426	0.3+	0.1-
1992 11 25	675	1.0+	0.3-	1997 12 19	426	0.4-	0.3-	1998 01 15	426	0.3+	0.2-
1992 11 25	675	0.8+	0.7-	1997 12 19	426	0.5+	0.0	1998 01 15	426	0.3+	1.0+
1992 11 25	372	0.7-	0.2+	1997 12 22	426	0.3-	0.3+	1998 01 19	426	0.9-	0.1-

1992 11 25	372	0.5+	0.7-	1997 12 22	426	0.4-	0.1-	1998 01 19	426	0.0	0.1+
1992 11 27	399	0.6-	0.2-	1997 12 22	426	0.5-	0.5+				
1992 11 27	399	1.0-	0.6+	1997 12 26	566	0.2-	0.0				

1997 YG₁ = 1978 WQ₁₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	305.80263	(2000.0)		P		Q	
<i>n</i>	0.25726518	ω	53.31301	-0.43010632		-0.90163064	
<i>a</i>	2.4483981	Ω	62.22091	+0.81101179		-0.40803752	
<i>e</i>	0.1441348	<i>i</i>	2.94819	+0.39657084		-0.14341396	
<i>P</i>	3.83	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 30	675	0.2-	0.1+	1997 12 19	426	0.5-	0.3+	1997 12 22	426	0.2+	0.4+
1978 12 01	675	0.1+	0.1-	1997 12 19	426	0.5+	0.0	1997 12 25	426	0.5+	0.1+
1997 11 03	704	0.2-	0.0	1997 12 21	426	0.2-	0.2+	1997 12 25	426	0.1-	0.3-
1997 11 03	704	0.4-	0.0	1997 12 21	426	0.2+	0.0	1997 12 25	426	1.3+	0.1-
1997 11 03	704	0.1+	0.3-	1997 12 21	426	0.0	0.0	1998 01 15	426	0.3+	0.1+
1997 11 03	704	0.9+	0.1-	1997 12 22	426	0.0	0.2+	1998 01 15	426	0.5-	1.2-
1997 12 19	426	1.6-	0.0	1997 12 22	426	0.8-	0.7+	1998 01 15	426	0.5+	0.1-

1997 YL₁ = 1990 SB₃ = 1996 HF₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	339.74811	(2000.0)		P		Q	
<i>n</i>	0.27181603	ω	227.70380	+0.83043689		-0.55644284	
<i>a</i>	2.3602210	Ω	166.03443	+0.53863532		+0.78940785	
<i>e</i>	0.1269324	<i>i</i>	6.49799	+0.14229043		+0.25924237	
<i>P</i>	3.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 09 18	675	0.6-	2.0-	1996 04 21	120	0.4-	0.6+	1997 12 22	327	0.3-	0.5+
1990 09 18	675	0.2-	0.1-	1996 04 21	120	0.4-	0.5-	1997 12 22	327	0.1-	1.0+
1990 09 20	675	0.6+	1.1-	1997 12 18	327	0.4-	1.4+	1998 01 26	327	0.2-	0.3-
1990 09 20	675	1.4+	1.0-	1997 12 18	327	0.5-	1.6+	1998 01 26	327	0.2+	1.3-
1996 04 18	120	0.5+	0.6+	1997 12 18	327	0.5-	0.8+	1998 01 26	327	0.5+	0.2+
1996 04 18	120	0.3+	0.2-	1997 12 18	327	0.5-	1.4+	1998 02 03	327	0.5+	0.4+
1996 04 18	120	0.3-	0.0	1997 12 22	327	0.6-	0.3+	1998 02 03	327	0.2+	1.0+
1996 04 20	120	0.3+	0.6-	1997 12 22	327	0.1+	1.3+	1998 02 03	327	0.4-	0.2-

1997 YB₂ = 1992 GQ₆ = 1996 PT₆

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	194.62755	(2000.0)		P		Q	
<i>n</i>	0.29570053	ω	349.82152	+0.02140541		+0.99927030	
<i>a</i>	2.2313514	Ω	281.39984	-0.91498856		+0.00682910	
<i>e</i>	0.1076677	<i>i</i>	1.84926	-0.40291157		+0.03757958	
<i>P</i>	3.33	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 04 05	675	1.0-	0.5-	1996 08 20	566	0.2+	0.6-	1998 01 23	704	0.0	0.9-
1992 04 05	675	0.9+	0.2+	1997 12 21	411	0.8-	1.3+	1998 01 23	704	1.0+	0.6+
1996 08 12	566	0.5-	0.6+	1997 12 21	411	0.1-	0.3-	1998 01 23	704	0.2-	0.3+
1996 08 12	566	0.4-	0.2+	1997 12 24	411	0.6-	0.2+	1998 01 23	704	0.1-	0.2-
1996 08 12	566	0.6-	0.6+	1997 12 24	411	0.2-	0.1+	1998 01 24	704	0.4+	0.2+
1996 08 18	010	0.3-	0.1-	1997 12 31	411	0.1+	1.2-	1998 01 24	704	0.1+	0.1-
1996 08 18	010	0.1-	1.0+	1997 12 31	411	0.3+	0.3-	1998 01 24	704	0.3-	0.5-
1996 08 18	010	0.4-	0.9+	1998 01 02	704	0.5+	0.1+	1998 01 24	704	1.9-	0.5+
1996 08 20	010	0.8+	1.5-	1998 01 02	704	0.4+	0.8-	1998 01 25	704	0.0	0.7+
1996 08 20	010	0.9+	0.3+	1998 01 02	704	0.3+	0.1+	1998 01 25	704	0.6-	0.2-
1996 08 20	010	0.1-	0.4-	1998 01 02	704	0.3+	0.7-	1998 01 25	704	0.1-	1.3+
1996 08 20	566	0.2+	0.5-	1998 01 19	411	0.7+	0.8-	1998 01 25	704	1.1+	0.0
1996 08 20	566	0.4+	0.7-	1998 01 19	411	1.0-	0.6+	1998 01 25	704	0.5+	0.2+

1997 YF₂ = 1991 VC₇ = 1991 VA₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	116.95513	(2000.0)		P		Q	
<i>n</i>	0.18328408	ω	232.73596	+0.92730939		+0.33147571	
<i>a</i>	3.0693957	Ω	107.31768	-0.25897718		+0.90353775	
<i>e</i>	0.0915742	<i>i</i>	10.49192	-0.27023714		+0.27155734	
<i>P</i>	5.38	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 11 09	809	0.5-	0.0	1997 12 21	411	0.1+	0.7-	1998 01 16	411	0.9+	1.1+
1991 11 09	809	0.5-	1.9-	1997 12 24	411	0.3+	0.5-	1998 01 23	704	0.1+	0.2-
1991 11 12	809	0.2+	0.2+	1997 12 24	411	0.8-	0.8+	1998 01 23	704	0.0-	0.2-
1991 11 12	809	0.4-	1.0+	1997 12 31	411	0.4+	0.2-	1998 01 23	704	0.0	0.5-
1991 11 12	809	1.1+	0.7+	1997 12 31	411	0.8-	0.5+	1998 01 23	704	(2.7-	0.9+)
1997 12 21	411	0.0	0.0	1998 01 16	411	0.2-	0.3-				

1997 YK₂ = 1989 ES₅ = 1993 PP₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	179.48995	(2000.0)		P		Q	
<i>n</i>	0.31435202	ω	343.83612	+0.23065105		+0.97115077	
<i>a</i>	2.1421927	Ω	299.46473	-0.88486577		+0.18346055	
<i>e</i>	0.1033912	<i>i</i>	3.98784	-0.40473777		+0.15234304	
<i>P</i>	3.14	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 03 02	413	0.8+	1.1-	1993 08 17	010	0.9-	1.8-	1997 12 24	411	2.0-	0.7+
1989 03 02	413	0.8-	1.1+	1993 08 17	010	2.2-	1.1+	1997 12 25	411	0.8+	0.7-
1989 03 04	413	(4.2+	2.5-)	1993 08 17	010	0.9-	1.0-	1997 12 25	411	0.8+	0.7+
1993 08 15	010	1.3+	0.4-	1993 08 19	010	0.5+	1.9+	1997 12 31	411	0.7+	0.6+
1993 08 15	010	0.8+	0.3+	1993 08 19	010	0.6+	2.1+	1997 12 31	411	1.4+	0.9-
1993 08 15	010	1.1+	0.2-	1993 08 19	010	0.3-	1.7+	1998 01 16	411	0.1+	0.2-
1993 08 16	010	1.0+	0.7-	1997 12 21	411	1.5-	0.8-	1998 01 16	411	0.4+	0.1+
1993 08 17	010	0.2-	1.7-	1997 12 21	411	0.3-	0.2-				
1993 08 17	010	0.8-	1.5-	1997 12 24	411	0.6-	0.6+				

1997 YX₂ = 4297 P-L

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	342.98847	(2000.0)		P		Q	
<i>n</i>	0.19217954	ω	127.98629	-0.55627153		-0.83099911	
<i>a</i>	2.9739337	Ω	355.81114	+0.75554182		-0.50497310	
<i>e</i>	0.0617905	<i>i</i>	1.22974	+0.34600368		-0.23332948	
<i>P</i>	5.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.5+	0.7-	1960 09 28	675	0.2-	0.4+	1998 01 07	327	1.0+	0.1+
1960 09 24	675	0.4-	0.8-	1997 12 21	411	0.6+	0.1-	1998 01 07	327	0.2-	0.9+
1960 09 25	675	0.2-	0.1-	1997 12 21	411	0.1-	0.4+	1998 01 07	327	0.4-	0.3+
1960 09 25	675	0.3+	0.2+	1997 12 24	411	0.5-	1.3-	1998 01 24	411	1.0-	1.2-
1960 09 26	675	0.1-	0.4+	1997 12 24	411	0.7-	0.0	1998 01 24	411	1.0+	0.6+
1960 09 26	675	0.0	0.0	1997 12 31	411	0.4-	0.1-				
1960 09 28	675	0.2+	0.8+	1997 12 31	411	0.6+	0.3+				

1997 YZ₂ = 1983 NC₁ = 1983 OP = 1984 WE

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	21.21608	(2000.0)		P		Q	
<i>n</i>	0.23471238	ω	164.66396	+0.25383703		-0.94392985	
<i>a</i>	2.6028275	Ω	270.27800	+0.86374329		+0.31943772	
<i>e</i>	0.1202268	<i>i</i>	12.18697	+0.43533239		-0.08340256	
<i>P</i>	4.20	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 07 14	808	1.0-	0.6-	1997 12 24	411	0.2-	0.6-	1997 12 26	566	0.2+	0.1+
1983 07 14	808	0.1+	0.1-	1997 12 24	411	1.0-	0.3-	1997 12 31	411	0.4+	0.7-

1998 FEB. 11

M.P.C. 31255

1983 07 16	808	0.3−	1.1−	1997 12 25	411	0.3−	0.4+	1997 12 31	411	0.4+	0.5−
1983 07 16	808	1.4+	1.3+	1997 12 25	411	0.1−	0.1−	1998 01 16	411	0.3+	0.5+
1984 11 25	054	(6.8−	8.6−)	1997 12 26	566	0.2+	0.2+	1998 01 16	411	0.1−	0.4+
1984 11 30	054	0.0	0.2+	1997 12 26	566	0.0	0.0				

1997 YB₃ = 1991 EE₉ = 1993 WT

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	337.42461		(2000.0)	P		Q	
<i>n</i>	0.26670869	ω	280.48324	−0.65897423		−0.75205967	
<i>a</i>	2.3902570	Ω	210.75012	+0.69939216		−0.60648000	
<i>e</i>	0.1637521	<i>i</i>	1.41417	+0.27677350		−0.25804702	
<i>P</i>	3.70	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 03 09	675	0.4−	0.6+	1997 12 24	411	0.2+	0.6−	1997 12 31	411	0.0	0.7−
1991 03 09	675	0.5+	0.4−	1997 12 24	411	0.5+	0.4+	1997 12 31	411	0.2+	0.3+
1993 11 16	399	1.1−	1.2−	1997 12 25	411	0.3+	0.3+	1998 01 16	411	0.0	0.1−
1993 11 16	399	1.1+	1.4+	1997 12 25	411	1.1−	0.3+	1998 01 16	411	0.2−	0.1−

1997 YD₃ = 1991 LX₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	313.69873		(2000.0)	P		Q	
<i>n</i>	0.25347981	ω	33.73567	−0.96380689		−0.25279163	
<i>a</i>	2.4727135	Ω	131.38528	+0.21280721		−0.92083505	
<i>e</i>	0.1765736	<i>i</i>	6.48136	+0.16059072		−0.29691614	
<i>P</i>	3.89	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 06 06	809	1.2−	0.3+	1991 06 08	809	0.4+	0.3+	1997 12 31	411	0.9+	0.6−
1991 06 06	809	0.0	0.9−	1997 12 24	411	0.5+	0.0	1997 12 31	411	0.4−	1.1+
1991 06 06	809	0.2−	0.7−	1997 12 24	411	0.6−	0.0	1998 01 25	411	0.1+	0.1+
1991 06 08	809	0.6+	0.7+	1997 12 25	411	0.0	0.1+	1998 01 25	411	0.3−	0.1−
1991 06 08	809	0.2+	0.3+	1997 12 25	411	0.2−	0.5−				

1997 YF₃ = 1977 RG₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	312.98214		(2000.0)	P		Q	
<i>n</i>	0.25887051	ω	295.90095	−0.95806357		−0.28588361	
<i>a</i>	2.4382655	Ω	227.49419	+0.27151181		−0.88374891	
<i>e</i>	0.1444043	<i>i</i>	1.52469	+0.09162716		−0.37048404	
<i>P</i>	3.81	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 09 09	675	0.1+	0.2−	1997 12 25	411	0.3−	0.4+	1998 01 16	411	0.6−	0.2+
1977 09 10	675	0.1−	0.3+	1997 12 25	411	0.3+	0.1+	1998 01 16	411	0.5+	0.2+
1997 12 24	411	0.1−	0.2−	1997 12 31	411	0.4+	0.1−				
1997 12 24	411	0.3−	0.1−	1997 12 31	411	0.1+	0.5−				

1997 YS₃ = 1989 WF₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	15.38312		(2000.0)	P		Q	
<i>n</i>	0.24199687	ω	133.36151	+0.78754245		−0.60742053	
<i>a</i>	2.5503290	Ω	264.31211	+0.53086581		+0.75439559	
<i>e</i>	0.2069179	<i>i</i>	5.99953	+0.31298303		+0.24885257	
<i>P</i>	4.07	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1989 11 29	675	0.7−	0.1−	1997 11 30	566	0.0	0.3−	1997 12 25	327	0.7−	0.1−
1989 12 01	675	0.2+	0.3+	1997 12 22	327	0.3−	0.2+	1997 12 25	327	0.2−	0.4+
1989 12 01	675	0.5+	0.5−	1997 12 22	327	0.3−	0.3+	1998 01 04	327	0.6+	0.6−
1997 11 30	566	0.2+	0.3−	1997 12 22	327	0.2−	0.0	1998 01 04	327	0.2+	0.1−
1997 11 30	566	0.2+	0.0	1997 12 25	327	0.3+	0.7+	1998 01 04	327	0.1+	0.1+

1997 YB₅ = 1978 WW₇ = 1980 FJ₁₀ = 1994 CB₂₀ = 1996 TX₄₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	268.81502		(2000.0)	P		Q	
<i>n</i>	0.20950706	ω	107.69823	−0.99127439		+0.11588179	
<i>a</i>	2.8076110	Ω	78.99155	−0.13147530		−0.90338705	
<i>e</i>	0.1024192	<i>i</i>	3.66937	+0.00945192		−0.41287195	
<i>P</i>	4.70	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 11 29	675	0.3−	1.5+	1996 10 07	809	0.3+	0.0	1997 12 26	426	0.1+	0.2+
1978 11 30	675	0.4+	1.3+	1996 10 07	809	0.1+	1.0−	1998 01 03	426	0.2+	0.2−
1980 03 16	095	1.8−	2.1−	1996 10 08	809	0.6−	0.9+	1998 01 03	426	0.1+	0.2−
1994 02 09	809	(3.6−	0.2+)	1996 10 08	809	1.5−	0.5−	1998 01 03	426	0.4+	0.0
1994 02 09	809	(4.1−	0.9+)	1996 10 08	809	1.2+	0.1−	1998 01 06	426	0.2−	0.2+
1994 02 09	809	(4.3−	0.3+)	1996 10 10	809	0.6+	0.0	1998 01 06	426	0.0	0.4−
1994 02 10	809	1.8+	0.4+	1996 10 10	809	0.4+	0.4−	1998 01 06	426	0.6+	0.4−
1994 02 10	809	0.8+	0.4−	1996 10 10	809	0.3−	0.3−	1998 01 16	426	0.8−	0.5−
1994 02 10	809	0.0	0.3−	1997 12 25	426	0.5−	0.5−	1998 01 16	426	0.5+	0.8−
1994 02 13	809	0.4+	0.6+	1997 12 25	426	0.0	0.8−	1998 01 19	426	0.1+	0.4−
1994 02 13	809	0.4−	0.8+	1997 12 25	426	1.0+	0.1−	1998 01 19	426	0.9−	0.2−
1994 02 13	809	0.7−	0.8+	1997 12 26	426	0.9−	0.2+	1998 01 19	426	0.3+	0.1−
1996 10 07	809	0.5+	0.1+	1997 12 26	426	0.5−	0.4+				

1997 YH₅ = 1974 SY₂ = 1987 SM₂₅ = 1987 UH₆

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	51.97611		(2000.0)	P		Q	
<i>n</i>	0.30439271	ω	60.56792	+0.91135574		−0.40993864	
<i>a</i>	2.1886680	Ω	323.59712	+0.35263016		+0.82413118	
<i>e</i>	0.2394836	<i>i</i>	3.59019	+0.21232682		+0.39084283	
<i>P</i>	3.24	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1974 09 20	095	1.0+	0.2+	1997 12 25	411	1.6−	0.6+	1998 01 03	411	0.6+	0.6+
1974 09 22	095	0.1−	2.2−	1997 12 25	411	0.9−	0.2+	1998 01 03	411	0.7−	0.2−
1987 09 24	095	2.4−	1.9+	1997 12 27	411	0.1+	0.1−	1998 01 16	411	0.8+	0.2−
1987 10 25	095	1.4+	0.3+	1997 12 27	411	0.5−	0.1+	1998 01 16	411	1.7+	0.3−
1997 12 25	735	0.1−	0.0	1997 12 28	735	0.2+	0.0	1998 01 28	411	0.7+	0.1−
1997 12 25	735	0.8−	0.1−	1997 12 28	735	0.2+	0.2−	1998 01 28	411	0.4+	0.0
1997 12 25	735	0.4−	0.4−	1997 12 28	735	0.2+	0.2−				

1997 YJ₅ = 1977 PK₁

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	99.01893		(2000.0)	P		Q	
<i>n</i>	0.16153221	ω	54.38708	+0.98031580		+0.00798361	
<i>a</i>	3.3391042	Ω	304.35742	−0.10957544		+0.85317519	
<i>e</i>	0.0858639	<i>i</i>	13.82553	+0.16423811		+0.52156338	
<i>P</i>	6.10	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 08 14	095	0.8−	0.2+	1997 12 27	411	0.2+	0.3−	1998 01 16	411	0.9−	1.3+
1977 08 21	095	0.8+	0.2−	1997 12 28	411	0.4+	0.4−	1998 01 16	411	1.1−	1.2+
1997 12 25	411	0.2−	0.6−	1997 12 28	411	0.6+	0.8−	1998 01 28	411	0.0	0.8−
1997 12 25	411	0.2−	0.5−	1998 01 03	411	0.5+	0.2−	1998 01 28	411	0.0	0.0
1997 12 27	411	0.3+	0.5+	1998 01 03	411	0.3+	0.5+				

1997 YQ₅ = 1979 ON₃

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	34.85943		(2000.0)	P	Q
<i>n</i>	0.23172252	ω	295.52661	+0.62739021	-0.77159889
<i>a</i>	2.6251687	Ω	115.20878	+0.74960367	+0.56192827
<i>e</i>	0.2483235	<i>i</i>	6.66182	+0.21089300	+0.29811368
<i>P</i>	4.25	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1979 07 24	675	0.4-	1.6+	1998 01 08	704	0.8+	1.3-	1998 01 23	691	1.9-	0.1+
1979 07 24	413	1.0-	2.0-	1998 01 08	704	0.5+	0.7-	1998 01 23	691	1.6-	0.1-
1979 07 25	675	1.5+	0.9+	1998 01 16	411	0.0	0.1-	1998 01 24	704	0.3+	0.5-
1997 12 25	411	0.5-	0.3+	1998 01 16	411	0.0	0.1+	1998 01 24	704	0.2+	0.1-
1997 12 25	411	0.1+	0.4-	1998 01 20	704	0.3+	0.7+	1998 01 24	704	0.6+	0.2-
1997 12 27	411	0.0	0.2+	1998 01 20	704	1.2+	0.5+	1998 01 24	704	0.2+	0.1+
1997 12 27	411	0.1-	0.4+	1998 01 20	704	0.2+	0.4+	1998 01 24	704	0.4+	0.1+
1997 12 30	566	0.3-	0.1-	1998 01 20	704	0.1+	0.3-	1998 01 25	704	0.1+	0.5-
1997 12 30	566	0.1-	0.2-	1998 01 20	704	0.8+	1.4+	1998 01 25	704	0.2+	0.6-
1997 12 30	566	0.2-	0.4-	1998 01 22	704	0.2+	0.3+	1998 01 25	704	0.2-	0.8-
1998 01 03	411	0.4+	0.1-	1998 01 22	704	0.0	0.6+	1998 01 25	704	0.7+	0.2+
1998 01 03	411	0.7-	1.2+	1998 01 22	704	0.5+	0.0	1998 01 25	704	0.3-	0.4-
1998 01 08	704	0.3+	0.1-	1998 01 22	704	0.5+	0.2+	1998 01 28	411	0.0	0.2+
1998 01 08	704	0.4+	0.0	1998 01 23	691	1.7-	0.7+	1998 01 28	411	1.7-	0.3-

1997 YR₅ = 1993 TG₃₅ = 1996 OJ₁

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	133.21743		(2000.0)	P	Q
<i>n</i>	0.29274257	ω	219.76375	+0.86301752	+0.50154127
<i>a</i>	2.2463571	Ω	110.03499	-0.44556880	+0.81212743
<i>e</i>	0.0637439	<i>i</i>	3.69065	-0.23805294	+0.29817008
<i>P</i>	3.37	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 10 09	809	0.3+	1.2-	1997 12 30	566	0.2+	0.7+	1998 01 23	691	0.9-	0.3-
1993 10 09	809	0.1-	1.4-	1998 01 03	411	1.0-	0.7+	1998 01 23	704	0.0	0.5-
1993 10 09	809	0.6-	1.5-	1998 01 03	411	0.9-	1.1+	1998 01 23	691	0.9-	0.3-
1993 10 20	809	0.0	1.4+	1998 01 06	691	0.6-	0.4-	1998 01 23	691	1.5-	0.1+
1993 10 20	809	0.2+	1.0+	1998 01 06	691	0.7-	0.2-	1998 01 23	704	0.2+	0.6-
1993 10 20	809	0.3+	1.4+	1998 01 06	691	0.7-	0.6-	1998 01 23	704	0.4-	0.3-
1996 07 20	327	0.0	0.2+	1998 01 08	704	1.0+	1.5-	1998 01 24	704	0.0	0.3-
1996 07 20	327	0.6+	0.1+	1998 01 08	704	1.1-	0.7+	1998 01 24	704	0.6-	0.7-
1996 07 20	327	0.1-	0.4+	1998 01 08	704	0.5+	0.1-	1998 01 24	704	0.2-	0.2-
1996 07 21	327	0.2-	0.1+	1998 01 08	704	0.8+	0.6-	1998 01 24	704	0.3+	1.1-
1996 07 21	327	0.2-	0.1-	1998 01 16	411	0.5+	0.4-	1998 01 25	704	0.2-	0.0
1996 07 21	327	0.3-	0.6+	1998 01 16	411	0.9+	0.4-	1998 01 25	704	0.3-	0.6+
1996 07 21	327	0.0	0.2+	1998 01 20	704	0.9+	1.2+	1998 01 25	704	0.4+	0.1-
1997 12 25	411	0.2+	0.4-	1998 01 20	704	0.5+	0.6+	1998 01 25	704	0.2+	0.4+
1997 12 25	411	0.3-	0.7-	1998 01 20	704	1.1+	0.5+	1998 01 25	704	0.0	0.2+
1997 12 27	411	1.0+	0.0	1998 01 20	704	1.6+	0.2+	1998 01 28	411	0.5+	0.0
1997 12 27	411	0.5+	0.3-	1998 01 20	704	1.0+	0.4+	1998 01 28	411	0.5-	0.3+
1997 12 30	566	0.0	0.7+	1998 01 20	704	0.8-	2.1+				
1997 12 30	566	0.0	1.0+	1998 01 23	704	0.2-	0.2-				

1997 YS₅ = 1991 RR₂₃

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	7.70315		(2000.0)	P	Q
<i>n</i>	0.18694596	ω	143.17789	-0.01675597	-0.99127632
<i>a</i>	3.0291817	Ω	307.41021	+0.87364105	+0.04907477
<i>e</i>	0.2430915	<i>i</i>	9.47310	+0.48628238	-0.12232301
<i>P</i>	5.27	<i>H</i>	12.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 09 10	675	0.3-	0.1+	1997 12 25	411	0.4-	0.8-	1998 01 16	411	0.2-	0.4+
1991 09 10	675	0.7+	0.5-	1997 12 27	411	0.3-	0.2+	1998 01 16	411	0.4+	0.4+

1991 09 17	675	0.4-	0.7+	1997 12 27	411	0.1-	0.1-	1998 01 28	411	0.0	0.2-
1991 09 17	675	0.0	0.3-	1998 01 03	411	0.5+	0.5+	1998 01 28	411	0.2+	0.3-
1997 12 25	411	0.3-	0.2-	1998 01 03	411	0.2+	0.2+				

1997 YY₅ = 1978 EN = 1993 BP₁₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	142.66036		(2000.0)	P	Q
<i>n</i>	0.18871338	ω	8.99124	+0.77411497	+0.62130300
<i>a</i>	3.0102386	Ω	311.87467	-0.59046935	+0.63953970
<i>e</i>	0.0824255	<i>i</i>	9.38033	-0.22823662	+0.45273785
<i>P</i>	5.22	<i>H</i>	11.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1978 03 05	414	0.3+	0.5+	1993 02 17	809	0.4+	1.2-	1998 01 03	411	0.5+	0.2-
1978 03 05	414	0.5+	0.9+	1997 12 25	411	0.7+	0.8+	1998 01 16	411	0.3+	0.5+
1993 01 24	400	1.5-	2.2-	1997 12 25	411	0.8-	0.6-	1998 01 16	411	0.3+	0.7+
1993 01 24	400	0.4-	0.8+	1997 12 27	411	0.5-	0.1-	1998 01 28	411	0.5+	1.2+
1993 02 17	809	0.8+	0.8-	1997 12 27	411	0.2-	0.1-	1998 01 28	411	0.6+	1.5+
1993 02 17	809	1.5-	1.3-	1998 01 03	411	0.1+	0.1+				

1997 YL₇ = 1975 XF₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	357.18163		(2000.0)	P	Q
<i>n</i>	0.22754858	ω	17.30041	-0.25435624	-0.93136813
<i>a</i>	2.6571738	Ω	88.04452	+0.85362019	-0.34281356
<i>e</i>	0.2325497	<i>i</i>	15.10829	+0.45457175	+0.12260613
<i>P</i>	4.33	<i>H</i>	12.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1975 12 06	809	0.2-	0.4+	1997 12 26	566	0.5-	0.1+	1997 12 28	411	0.1-	0.4-
1975 12 06	809	0.6+	0.5-	1997 12 26	566	0.6-	0.2+	1998 01 05	411	0.2+	0.1+
1975 12 07	809	0.1+	0.3-	1997 12 27	411	0.6+	0.2+	1998 01 05	411	0.4+	0.3+
1975 12 07	809	0.6-	0.4+	1997 12 27	411	0.4+	0.6+	1998 01 19	411	0.0	0.1-
1997 12 26	566	0.6-	0.1+	1997 12 28	411	0.2+	0.9-	1998 01 19	411	0.0	0.1-

1997 YP₇ = 1979 VM₂ = 1990 WS₁₄ = 1997 AD₂₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	165.27688		(2000.0)	P	Q
<i>n</i>	0.17613485	ω	278.27757	+0.79807442	+0.59837445
<i>a</i>	3.1519006	Ω	45.00553	-0.50583516	+0.72924195
<i>e</i>	0.1460249	<i>i</i>	5.75313	-0.32742635	+0.33189485
<i>P</i>	5.60	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1979 11 14	095	0.0	0.1+	1997 01 14	012	0.2+	0.5-	1997 12 28	411	0.7+	0.3+
1990 11 23	095	0.2-	0.8+	1997 01 14	012	0.2+	0.5-	1998 01 05	411	0.4-	0.5+
1990 11 23	095	0.4-	0.5+	1997 12 27	411	0.3+	0.3-	1998 01 05	411	0.3+	0.2-
1997 01 13	012	0.1+	0.5-	1997 12 27	411	0.6-	0.3-	1998 01 28	411	0.1+	0.6+
1997 01 13	012	0.1+	0.6-	1997 12 28	411	0.2-	0.3-	1998 01 28	411	0.1+	0.2+

1997 YB₈ = 1993 BH

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	132.37121		(2000.0)	P	Q
<i>n</i>	0.19074662	ω	189.75391	+0.78453308	+0.60507919
<i>a</i>	2.9888089	Ω	132.11970	-0.55588898	+0.78318490
<i>e</i>	0.0667638	<i>i</i>	10.53350	-0.27476406	+0.14318024
<i>P</i>	5.17	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 01 16	372	0.2-	1.5-	1997 12 28	046	0.0	0.0	1998 01 02	046	0.4-	0.2-
1993 01 16	372	1.3-	2.2-	1997 12 28	046	0.2+	0.3+	1998 01 02	046	0.3-	0.3-
1993 01 18	372	0.1-	2.0+	1997 12 28	046	0.2+	0.2+	1998 01 13	046	0.2-	0.2-
1993 01 18	372	2.0+	0.1+	1997 12 28	046	0.4+	0.2+	1998 01 13	046	0.0	0.3-
1993 01 25	372	0.8+	0.6-	1997 12 28	046	0.0	0.2+	1998 01 13	046	0.4-	0.2-

1998 FEB. 11

M.P.C. 31257

1993 01 25	372	1.1−	2.3+	1997 12 30	046	0.2−	0.2−	1998 01 15	046	0.1−	0.0
1997 12 27	046	0.5+	0.4+	1997 12 30	046	0.3−	0.1−	1998 01 15	046	0.8−	0.3+
1997 12 27	046	0.2+	0.3+	1997 12 30	046	0.2−	0.1−	1998 01 15	046	0.6−	0.1−
1997 12 27	046	0.2+	0.3+	1997 12 31	046	0.2−	0.3−	1998 01 26	046	0.0	0.2−
1997 12 27	046	0.4+	0.4+	1997 12 31	046	0.4−	0.3−	1998 01 26	046	0.5+	0.3+
1997 12 27	046	0.4+	0.2+	1997 12 31	046	0.3−	0.2−	1998 01 26	046	1.1+	0.0
1997 12 28	046	0.2+	0.2+	1998 01 01	046	0.3−	0.2−	1998 01 26	046	0.7+	0.5−

1997 YZ₈ = 1993 US₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	339.98717	(2000.0)		P	Q		
<i>n</i>	0.25959643	ω	358.57949	−0.20211857	−0.97466938		
<i>a</i>	2.4337179	Ω	103.07454	+0.89951271	−0.22341602		
<i>e</i>	0.1516850	<i>i</i>	5.64107	+0.38733056	+0.01024130		
<i>P</i>	3.80	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 10	809	0.1−	0.1−	1993 10 21	809	0.5+	0.3+	1997 12 04	704	1.4+	1.5+
1993 10 10	809	0.9−	0.5−	1997 11 29	704	1.0−	0.2+	1997 12 04	704	(3.9−	0.9+)
1993 10 10	809	0.7−	0.3+	1997 11 29	704	1.4−	0.3−	1997 12 25	566	0.3+	0.3−
1993 10 20	809	(4.7+	2.0+)	1997 11 29	704	1.4−	0.0	1997 12 25	566	0.2+	0.4−
1993 10 20	809	(4.5+	2.2+)	1997 11 29	704	1.0−	0.5−	1997 12 25	566	0.2+	0.5−
1993 10 20	809	(4.4+	2.7+)	1997 11 29	704	0.2−	0.1−	1997 12 30	566	0.5−	0.3+
1993 10 21	809	0.7+	0.3−	1997 12 04	704	1.8+	0.0	1997 12 30	566	0.5−	0.4+
1993 10 21	809	0.6+	0.3+	1997 12 04	704	2.5+	0.1−	1997 12 30	566	0.4−	0.1+

1997 YO₉ = 1996 RC₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	273.35713	(2000.0)		P	Q		
<i>n</i>	0.25891687	ω	27.35683	−0.90364643	+0.42826115		
<i>a</i>	2.4379744	Ω	177.98794	−0.41059189	−0.86367392		
<i>e</i>	0.0916430	<i>i</i>	6.44305	−0.12180900	−0.26581900		
<i>P</i>	3.81	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 09 14	566	0.7−	0.4+	1997 12 25	566	0.1+	0.0	1997 12 31	376	0.4−	0.4+
1996 09 14	566	0.3−	0.2−	1997 12 25	566	0.2+	0.2+	1997 12 31	376	0.9+	0.7−
1996 09 14	566	0.1−	0.2+	1997 12 25	566	0.1+	0.3+	1998 01 04	376	0.0	0.1−
1996 09 15	566	0.2+	0.1−	1997 12 30	566	0.4−	0.0	1998 01 04	376	0.1+	0.4−
1996 09 15	566	0.5+	0.1−	1997 12 30	566	0.4−	0.1+				
1996 09 15	566	0.4+	0.2−	1997 12 30	566	0.3−	0.2+				

1997 YG₁₀ = 1976 YX₇ = 1994 EZ₂

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Asher			
<i>M</i>	355.75087	(2000.0)		P	Q		
<i>n</i>	0.23808732	ω	78.41539	−0.38647647	−0.92160044		
<i>a</i>	2.5781719	Ω	34.38955	+0.81949720	−0.36099561		
<i>e</i>	0.1363339	<i>i</i>	3.64387	+0.42315516	−0.14260016		
<i>P</i>	4.14	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 12 20	095	0.6−	2.5+	1997 12 28	411	1.3−	0.6+	1998 01 16	411	0.6+	0.2+
1994 03 11	098	(5.6−	1.3−)	1997 12 30	566	1.3−	0.0	1998 01 16	411	0.6+	0.1−
1994 03 12	098	0.9+	1.6+	1997 12 30	566	1.1−	0.0	1998 01 26	566	0.7+	0.1+
1994 03 12	098	0.4−	0.3+	1997 12 30	411	0.6−	0.4−	1998 01 26	566	0.7+	0.0
1997 12 25	566	0.3+	0.6−	1997 12 30	566	1.2−	0.0	1998 01 26	566	0.6+	0.2+
1997 12 25	566	0.0	0.4−	1997 12 30	411	0.2−	0.3−	1998 01 29	411	0.9+	0.2+
1997 12 25	566	0.5+	0.7−	1998 01 04	411	0.1+	1.4−	1998 01 29	411	1.1+	0.8+
1997 12 28	411	0.7−	0.3−	1998 01 04	411	0.4−	1.1−				

1997 YT₁₀ = 1976 KU₂ = 1994 HU₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	252.58757	(2000.0)		P	Q		
<i>n</i>	0.21271061	ω	136.28488	−0.45968905	+0.87645651		
<i>a</i>	2.7793503	Ω	105.86903	−0.85023838	−0.38776901		
<i>e</i>	0.0490392	<i>i</i>	8.56245	−0.25647742	−0.28541057		
<i>P</i>	4.63	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 05 29	413	0.6+	1.2+	1997 12 22	327	0.2+	0.4+	1998 01 19	327	0.2−	0.1+
1976 05 30	413	1.0−	0.3+	1997 12 29	327	0.0	0.2+	1998 01 19	327	0.1−	0.1+
1976 05 30	413	0.5+	0.6−	1997 12 29	327	0.1−	0.1+	1998 01 19	327	0.0	0.1+
1994 04 17	896	1.2−	0.0	1997 12 29	327	0.2+	0.3−	1998 02 01	327	0.1+	0.2+
1994 04 17	896	0.9+	0.8−	1998 01 18	327	0.3+	0.0	1998 02 01	327	0.2+	0.2+
1997 12 22	327	0.3+	0.5+	1998 01 18	327	0.1+	0.1−	1998 02 01	327	0.2−	0.3+
1997 12 22	327	0.1−	0.5−	1998 01 18	327	0.2−	0.5−				

1997 YR₁₁ = 1980 VW₃ = 1996 TC₅₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Asher			
<i>M</i>	109.42594	(2000.0)		P	Q		
<i>n</i>	0.30243894	ω	10.83936	+0.91862916	−0.39436715		
<i>a</i>	2.1980838	Ω	12.47181	+0.35354276	+0.79282871		
<i>e</i>	0.0231789	<i>i</i>	6.48550	+0.17643124	+0.46464738		
<i>P</i>	3.26	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 11 01	675	0.3+	0.3−	1996 10 06	809	0.1−	0.5+	1998 01 09	411	0.2−	0.3−
1980 11 02	675	0.1+	0.6−	1996 10 06	809	0.9−	0.4+	1998 01 09	411	0.4+	0.3−
1996 10 05	809	0.1−	0.2+	1997 12 30	411	1.5+	0.0	1998 01 09	411	0.2+	0.2+
1996 10 05	809	0.4+	0.3−	1997 12 30	411	0.5+	0.2+	1998 01 30	411	0.5−	0.0
1996 10 05	809	0.3−	0.3+	1997 12 31	411	0.4−	0.7+	1998 01 30	411	0.3−	0.5+
1996 10 06	809	0.2+	0.3+	1997 12 31	411	0.2−	0.0				

1997 YS₁₁ = 1950 HO₁ = 1989 VN₃ = 1992 PA₆

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Asher			
<i>M</i>	233.28566	(2000.0)		P	Q		
<i>n</i>	0.28542229	ω	171.56400	+0.18075037	+0.97806443		
<i>a</i>	2.2846033	Ω	108.80094	−0.90863246	+0.20635024		
<i>e</i>	0.1599118	<i>i</i>	6.27897	−0.37645232	−0.02845252		
<i>P</i>	3.45	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1950 04 20	675	0.8+	0.5−	1992 08 06	675	0.1−	0.1+	1998 01 09	411	0.1+	0.0
1950 04 20	675	0.6−	1.1+	1992 08 06	675	0.0	0.3−	1998 01 28	566	0.7+	0.6+
1989 11 03	809	0.2+	0.2+	1997 12 30	411	0.5+	0.5−	1998 01 28	566	0.4−	0.1+
1989 11 03	809	0.2−	0.3+	1997 12 30	411	2.1+	2.0−	1998 01 28	566	0.1−	0.1+
1989 11 03	809	0.4−	0.3+	1997 12 31	411	0.8−	0.1−	1998 01 30	411	0.3−	1.0+
1992 08 03	675	0.0	0.3+	1997 12 31	411	0.2+	1.1−	1998 01 30	411	0.8−	0.7+
1992 08 03	675	0.4+	0.7−	1998 01 09	411	1.2−	0.3−				

1997 YT₁₁ = 1994 GA₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Asher			
<i>M</i>	8.42963	(2000.0)		P	Q		
<i>n</i>	0.23202231	ω	7.68564	−0.62508885	−0.75044171		
<i>a</i>	2.6229069	Ω	121.27265	+0.70211638	−0.66076342		
<i>e</i>	0.0815811	<i>i</i>	14.54919	+0.34102276	−0.01513077		
<i>P</i>	4.25	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 04 11	399	1.2−	0.6−	1997 12 30	411	0.6+	0.2+	1998 01 30	411	0.0	0.0
1994 04 11	399	(2.5−	0.1+)	1997 12 30	411	0.2−	0.2−	1998 01 30	411	0.0	0.0
1994 04 13	399	(2.4+	1.0−)	1997 12 31	411	0.4−	0.4−				
1994 04 13	399	1.2+	0.5+	1997 12 31	411	0.0	0.4+				

1997 YQ₁₃ = 1975 EG₅ = 1981 NH₁ = 1982 VG₆ = 1989 ER = 1991 ST₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	13.68506		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.20961263	ω	218.29513	-0.26246474	-0.96460005
<i>a</i>	2.8066682	Ω	246.93442	+0.89205239	-0.23240968
<i>e</i>	0.0500386	<i>i</i>	1.59885	+0.36790596	-0.12462938
<i>P</i>	4.70	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1975 03 15	095	1.0-	2.2-	1991 09 14	675	0.1+	1.2-	1998 01 01	411	0.2-	0.7+
1981 07 02	805	(1.8+	3.5+)	1991 09 16	675	(1.5-	3.8-)	1998 01 06	411	0.6+	0.8+
1981 07 02	805	0.6+	0.2+	1991 09 16	675	(0.5-	3.7-)	1998 01 06	411	0.2-	0.5+
1982 11 08	095	0.6+	1.3-	1991 09 17	675	0.5-	0.5+	1998 01 09	411	0.1-	0.5+
1989 03 01	675	1.0-	0.8-	1991 09 17	675	0.7+	1.4+	1998 01 09	411	0.3-	0.6+
1991 09 11	675	0.8+	1.1-	1997 12 31	411	0.1-	0.9-	1998 01 25	566	0.6+	0.3-
1991 09 11	675	1.2-	1.4-	1997 12 31	411	0.5-	0.6-	1998 01 25	566	0.5+	0.3-
1991 09 14	675	0.1+	0.2-	1998 01 01	411	0.3-	0.2+	1998 01 25	566	0.9+	0.5-

1997 YW₁₃ = 1967 EX = 1990 YN = 1993 UN₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	315.94543		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28454857	ω	266.04227	-0.96088933	-0.26093905
<i>a</i>	2.2892775	Ω	258.81394	+0.27640826	-0.88308018
<i>e</i>	0.1161911	<i>i</i>	5.42518	+0.01703417	-0.38997463
<i>P</i>	3.46	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1967 03 11	095	0.6+	1.4+	1993 10 21	691	0.2-	0.4+	1998 01 06	411	0.4+	0.3+
1990 12 19	402	1.2+	2.2-	1993 10 21	691	0.0	0.4+	1998 01 16	411	0.3+	0.5+
1990 12 19	402	1.3+	0.7+	1997 12 31	411	0.1-	0.0	1998 01 16	411	0.0	0.1+
1990 12 21	402	2.2-	0.1+	1997 12 31	411	0.4+	0.4+	1998 01 29	566	0.5+	0.8-
1990 12 21	402	0.7-	0.5+	1998 01 01	411	0.7-	0.7-	1998 01 29	566	0.5+	0.6-
1993 10 16	691	0.2+	0.0	1998 01 01	411	0.2-	0.0	1998 01 29	566	0.7+	0.8-
1993 10 16	691	0.1+	0.1+	1998 01 02	399	0.9-	0.5+	1998 01 30	411	0.1+	0.2+
1993 10 16	691	0.0	0.1+	1998 01 02	399	1.4-	0.4+	1998 01 30	411	0.2+	0.0
1993 10 21	691	0.3-	0.3+	1998 01 06	411	0.1-	0.2+				

1997 YC₁₄ = 1971 DA₂ = 1994 TL₁₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	205.06979		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28879912	ω	329.45539	+0.20570505	+0.97531393
<i>a</i>	2.2667597	Ω	312.28536	-0.87449086	+0.14636697
<i>e</i>	0.1716750	<i>i</i>	6.23134	-0.43926208	+0.16534645
<i>P</i>	3.41	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1971 02 23	095	0.1-	0.1-	1998 01 01	411	0.1+	0.3+	1998 01 08	691	0.7-	0.1+
1994 10 14	381	0.7+	0.6-	1998 01 01	411	0.3-	0.2-	1998 01 24	411	0.6-	0.5-
1994 10 14	381	0.2-	0.5+	1998 01 06	411	0.5+	0.2-	1998 01 24	411	0.4-	0.4-
1994 10 14	381	0.1+	1.1+	1998 01 06	411	0.9+	0.3-	1998 01 30	411	0.6+	0.1+
1997 12 31	411	0.6+	0.4+	1998 01 08	691	0.9-	0.1+	1998 01 30	411	0.5+	0.1+
1997 12 31	411	0.7+	0.1-	1998 01 08	691	0.9-	0.2+				

1997 YE₁₄ = 1986 RX₉ = 1989 AW₇ = 1990 MS₁

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	214.45853		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21120954	ω	338.10523	+0.11792400	+0.98510297
<i>a</i>	2.7925033	Ω	298.47441	-0.88865620	+0.04843956
<i>e</i>	0.1320452	<i>i</i>	8.18611	-0.44315245	+0.16500229
<i>P</i>	4.67	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1986 09 08	095	1.3+	1.0-	1998 01 01	411	0.4-	0.4+	1998 01 25	566	0.5+	0.3+
1986 09 11	095	0.6-	0.5-	1998 01 06	411	0.3+	0.4+	1998 01 25	566	0.5+	0.3+
1989 01 11	033	0.3-	0.8-	1998 01 06	411	0.4-	0.8+	1998 01 29	566	0.1-	0.4-
1989 01 11	033	1.0-	1.6-	1998 01 24	566	0.3-	1.4-	1998 01 29	566	0.0	0.2-
1990 06 25	808	0.5-	0.3-	1998 01 24	566	0.0	1.7-	1998 01 29	566	0.1+	0.0
1990 06 25	808	0.5+	0.2-	1998 01 24	566	0.3-	0.9-	1998 01 30	411	0.5+	0.3+
1997 12 31	411	0.3-	0.4+	1998 01 24	411	0.4+	0.6+	1998 01 30	411	0.1-	0.8+
1997 12 31	411	0.4-	0.6+	1998 01 24	411	0.1+	0.1+				
1998 01 01	411	0.4-	0.2+	1998 01 25	566	0.5+	0.4+				

1997 YM₁₄ = 1995 MM₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	350.53723		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.25954635	ω	355.44068	-0.54829126	-0.82863470
<i>a</i>	2.4340310	Ω	127.76508	+0.77172295	-0.55333504
<i>e</i>	0.1013789	<i>i</i>	8.20914	+0.32221171	-0.08476356
<i>P</i>	3.80	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 06 25	691	0.2-	0.2-	1997 12 31	411	0.3-	1.3+	1998 01 25	566	0.9+	0.8-
1995 06 25	691	0.1+	0.1+	1997 12 31	411	1.5-	0.5-	1998 01 25	566	1.4+	1.1-
1995 06 25	691	0.0	0.2+	1998 01 01	411	0.6-	0.1+	1998 01 29	566	0.6-	0.4-
1995 07 02	691	0.4+	0.0	1998 01 01	411	0.5-	0.3+	1998 01 29	566	1.0-	0.7-
1995 07 02	691	0.0	0.1+	1998 01 06	411	0.6-	0.4+	1998 01 29	566	0.8-	0.5-
1995 07 02	691	0.2-	0.0	1998 01 06	411	0.4-	0.0	1998 01 30	411	0.6+	1.4+
1997 12 29	566	(2.0+	2.6-)	1998 01 16	411	0.7+	0.4+	1998 01 30	411	0.1+	0.9+
1997 12 29	566	(1.9+	2.5-)	1998 01 16	411	0.9+	0.6+				
1997 12 29	566	(2.4+	2.7-)	1998 01 25	566	1.5+	1.0-				

1997 YO₁₆ = 1989 YW₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	355.72812		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.24451101	ω	184.73569	-0.31423439	-0.94776102
<i>a</i>	2.5328167	Ω	283.58662	+0.87284923	-0.26572024
<i>e</i>	0.2152027	<i>i</i>	3.23340	+0.37335100	-0.17647040
<i>P</i>	4.03	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1989 12 30	413	0.8+	0.0	1998 01 02	704	0.1+	0.1-	1998 01 06	886	(2.7+	0.6-)
1989 12 30	413	1.6+	1.0+	1998 01 02	704	0.0	0.1-	1998 01 06	886	0.3-	0.3-
1989 12 31	413	0.8-	1.1-	1998 01 02	704	0.0	0.6-	1998 01 08	704	1.6+	0.2-
1989 12 31	413	1.9-	0.7-	1998 01 02	905	0.2-	0.2-	1998 01 08	704	1.2+	0.4-
1997 12 31	905	0.4+	0.1+	1998 01 02	905	0.0	1.1+	1998 01 08	704	1.5+	0.2-
1997 12 31	905	1.2-	0.9+	1998 01 06	691	1.6-	0.3-	1998 01 08	704	0.6+	0.0
1998 01 02	704	0.1+	0.1+	1998 01 06	691	2.0-	0.3-	1998 01 20	886	0.5-	1.2+
1998 01 02	704	0.2-	0.1-	1998 01 06	691	(2.4-	0.1-)	1998 01 20	886	0.8+	0.3+

1997 YB₁₇ = 1976 SE₂ = 1996 UG₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	224.54185		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.20113474	ω	309.77390	-0.23214877	+0.97259010
<i>a</i>	2.8849923	Ω	306.79753	-0.88728331	-0.21732727
<i>e</i>	0.0217172	<i>i</i>	0.94782	-0.39854143	-0.08268835
<i>P</i>	4.90	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1976 09 24	095	0.2-	0.4+	1996 11 28	327	0.7+	0.4-	1998 01 05	369	0.1-	0.5+
1996 10 04	691	0.2-	0.1-	1996 11 28	327	0.9+	0.1-	1998 01 24	627	0.3+	0.6-
1996 10 04	691	0.2-	0.1-	1996 11 28	327	0.2+	0.5-	1998 01 24	627	0.1+	0.1-
1996 10 04	691	0.1-	0.2-	1997 12 31	369	0.5-	0.7+	1998 01 24	627	0.2-	0.0
1996 10 17	691	0.4-	0.6+	1997 12 31	369	0.0	0.2+	1998 01 26	627	0.1+	0.3-
1996 10 17	691	0.4-	0.2+	1997 12 31	369	0.4-	0.3+	1998 01 26	627	0.0	0.4-
1996 10 17	691	0.2-	0.0	1998 01 05	369	0.2+	0.3-	1998 01 26	627	0.5+	0.5+

1998 FEB. 11

M.P.C. 31259

1997 YZ₁₇ = 1995 EY₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	219.05031		(2000.0)	P		Q	
<i>n</i>	0.31104605	ω	291.90040	−0.28016035	+0.95900977		
<i>a</i>	2.1573449	Ω	321.74874	−0.85342968	−0.26912048		
<i>e</i>	0.0414649	<i>i</i>	3.94083	−0.43950877	−0.08873794		
<i>P</i>	3.17	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 03 02	691	0.0	0.2−	1998 01 06	691	1.3+	1.1+	1998 01 23	704	0.5+	0.3−
1995 03 02	691	0.1−	0.2−	1998 01 06	691	0.1+	0.0	1998 01 23	691	1.1−	0.6−
1995 03 02	691	0.0	0.1−	1998 01 06	691	0.1+	0.2−	1998 01 25	704	0.7+	1.2+
1995 03 08	691	0.1+	0.4+	1998 01 23	704	0.4−	0.2+	1998 01 25	704	1.8+	0.0
1995 03 08	691	0.1−	0.2+	1998 01 23	704	0.0	0.8−	1998 01 25	704	1.5−	1.2+
1995 03 08	691	0.1+	0.1−	1998 01 23	704	0.6+	0.1−	1998 01 25	704	0.5+	0.2+
1997 12 31	691	0.5−	0.3−	1998 01 23	704	0.1+	0.4−	1998 01 25	704	0.6+	0.1+
1997 12 31	691	0.3−	0.1−	1998 01 23	691	1.2−	0.5−				
1997 12 31	691	0.2−	0.0	1998 01 23	691	1.2−	0.5−				

**1997 YD₁₈ = 1976 GV₅ = 1981 AQ₁ = 1987 CD = 1993 FL₃₆
= 1994 NX₉**

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	319.87607		(2000.0)	P		Q	
<i>n</i>	0.17442635	ω	81.33303	−0.97634787	−0.21229351		
<i>a</i>	3.1724490	Ω	86.40275	+0.17871185	−0.89901000		
<i>e</i>	0.1654025	<i>i</i>	2.35114	+0.12168368	−0.38303067		
<i>P</i>	5.65	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 04 02	095	(3.6+	5.0+)	1997 12 27	360	0.1+	0.2+	1998 01 23	704	0.0	0.0
1981 01 08	381	(4.0+	0.9+)	1997 12 27	360	0.0	0.2+	1998 01 23	704	0.2−	0.1+
1981 01 08	381	0.3−	0.2+	1997 12 27	360	0.1+	0.2+	1998 01 23	704	0.2−	0.1+
1981 01 08	381	0.2+	1.8−	1998 01 06	360	0.4−	0.1−	1998 01 24	704	0.2+	0.6−
1981 01 08	381	1.5−	1.0+	1998 01 06	360	0.3−	0.2−	1998 01 24	704	0.2+	0.6−
1987 02 02	033	2.0+	0.6−	1998 01 06	360	0.1−	0.2−	1998 01 24	704	0.1−	0.1−
1987 02 02	033	0.8+	0.3−	1998 01 16	360	0.2+	0.1+	1998 01 24	704	0.2+	0.2+
1993 03 19	809	1.3−	1.6+	1998 01 16	360	0.1+	0.2+	1998 01 24	704	0.5−	0.3−
1993 03 20	809	0.9−	0.3−	1998 01 16	360	0.4+	0.1−	1998 01 25	704	0.1+	0.2−
1993 03 24	809	0.6+	0.2−	1998 01 22	704	0.2−	1.0−	1998 01 25	704	0.1+	0.3−
1994 07 08	809	0.1−	1.1−	1998 01 22	704	0.3+	0.4+	1998 01 25	704	0.3+	0.0
1994 07 08	809	0.1−	0.8−	1998 01 22	704	0.3+	0.0	1998 01 25	704	0.1+	0.2−
1994 07 08	809	0.6−	1.3−	1998 01 22	704	0.1+	0.2+	1998 01 25	704	0.4+	0.2−
1994 07 09	809	1.6+	0.8+	1998 01 22	704	0.6−	0.0	1998 01 27	360	0.4−	0.1−
1994 07 09	809	0.3+	0.4+	1998 01 23	704	0.2+	0.2+	1998 01 27	360	0.4−	0.1+
1994 07 09	809	0.4−	0.1+	1998 01 23	704	0.2−	0.7+				

1997 YQ₁₉ = 1991 RK₁₀ = 1995 HZ₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	53.15939		(2000.0)	P		Q	
<i>n</i>	0.17865167	ω	174.86324	+0.99897384	−0.02700075		
<i>a</i>	3.1222283	Ω	187.00086	+0.02293266	+0.99388803		
<i>e</i>	0.1807000	<i>i</i>	17.35774	+0.03905598	+0.10703993		
<i>P</i>	5.52	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 09 10	675	0.3−	0.2+	1995 04 29	691	0.6−	0.3−	1997 12 30	327	0.3−	0.0
1991 09 10	675	0.2−	0.0	1995 04 29	691	0.1−	0.6−	1997 12 30	327	0.2+	0.4+
1991 09 16	675	0.5+	0.1−	1995 04 29	691	0.2+	0.4−	1997 12 30	327	0.4+	0.1+
1991 09 16	675	0.0	0.6−	1995 04 29	691	0.1−	0.4−	1998 01 26	327	0.3−	0.3−
1995 04 24	691	0.2+	0.1+	1997 12 27	327	0.0	0.2+	1998 01 26	327	0.2−	0.6−
1995 04 24	691	0.1+	0.8+	1997 12 27	327	0.3+	0.1+	1998 01 26	327	0.5−	0.4−
1995 04 24	691	0.2+	0.0	1997 12 27	327	0.3+	0.0				

1997 YG₂₀ = 1988 BC₂ = 1991 RS₂₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	14.00493		(2000.0)	P		Q	
<i>n</i>	0.18567494	ω	116.19373	+0.43487492	−0.89186303		
<i>a</i>	3.0429900	Ω	307.46795	+0.76012999	+0.43761246		
<i>e</i>	0.0779458	<i>i</i>	9.01417	+0.48279001	+0.11434891		
<i>P</i>	5.31	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 01 22	303	0.4−	0.3+	1991 09 10	675	0.8−	0.3+	1998 01 17	552	0.3−	0.0
1988 01 22	303	0.0	0.4−	1991 09 17	675	0.7+	0.6+	1998 01 17	552	0.4−	0.3−
1988 01 23	303	0.5+	0.2+	1991 09 17	675	0.5+	0.0	1998 01 24	552	0.5−	0.1−
1988 01 23	303	(6.8+	8.9−)	1997 12 29	552	0.2+	0.1−	1998 01 24	552	0.2−	0.2−
1988 01 23	303	(6.4+	7.9−)	1997 12 29	552	0.6+	0.1+				
1991 09 10	675	0.6−	0.7−	1997 12 29	552	0.5+	0.3+				

1998 AJ = 1969 VQ₂ = 1980 VU₂

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	30.77211		(2000.0)	P		Q	
<i>n</i>	0.17946235	ω	305.75572	+0.42975796	−0.90075397		
<i>a</i>	3.1128186	Ω	118.67594	+0.84984129	+0.37998336		
<i>e</i>	0.1720248	<i>i</i>	4.10811	+0.30508669	+0.21036855		
<i>P</i>	5.49	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1969 11 15	095	0.1+	0.4−	1998 01 09	385	0.1+	0.6+	1998 01 22	704	0.2+	0.1+
1980 11 13	330	0.1−	0.2+	1998 01 09	385	0.0	0.1−	1998 01 22	691	1.1−	0.1−
1998 01 02	704	0.5−	0.0	1998 01 16	905	0.3−	1.4+	1998 01 22	691	0.6−	0.0
1998 01 02	704	0.2−	0.1−	1998 01 16	905	0.1−	0.1+	1998 01 22	691	1.2−	0.1−
1998 01 02	704	0.5−	0.1−	1998 01 19	886	1.8+	0.9+	1998 01 23	691	1.2−	1.6−
1998 01 02	704	0.3−	0.3+	1998 01 19	886	0.2−	0.6+	1998 01 23	691	1.6−	0.4−
1998 01 02	704	0.3−	0.0	1998 01 20	704	0.6+	0.2+	1998 01 23	691	1.6−	0.1−
1998 01 02	905	0.2+	0.9+	1998 01 20	704	0.5+	0.5+	1998 01 25	566	0.1+	0.9−
1998 01 02	905	0.4−	0.8−	1998 01 20	704	0.5+	0.2+	1998 01 25	566	0.2+	1.0−
1998 01 03	905	0.0	0.5−	1998 01 20	704	0.4+	0.6+	1998 01 25	566	0.3+	1.0−
1998 01 03	905	0.9+	0.4−	1998 01 20	704	0.2+	0.8+	1998 01 25	886	0.5−	0.2−
1998 01 08	704	0.9+	0.3+	1998 01 20	704	0.2+	0.4+	1998 01 25	886	0.2−	0.8−
1998 01 08	704	0.5+	0.2+	1998 01 22	704	0.4+	0.4−	1998 01 29	886	0.2+	0.3−
1998 01 08	704	1.4+	0.7−	1998 01 22	704	0.1+	0.6+	1998 01 29	886	0.9+	0.4+
1998 01 08	704	0.1−	0.2+	1998 01 22	704	0.5+	0.5−				
1998 01 09	385	0.2+	0.8+	1998 01 22	704	0.1+	0.3−				

1998 AQ = 1966 PW

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	294.19876		(2000.0)	P		Q	
<i>n</i>	0.17456164	ω	79.19636	−0.80882744	+0.50948350		
<i>a</i>	3.1708097	Ω	130.69730	−0.56273060	−0.81553826		
<i>e</i>	0.1413409	<i>i</i>	22.78686	+0.17068230	−0.27445200		
<i>P</i>	5.65	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1966 08 08	074	1.9+	0.8−	1998 01 06	411	0.3+	0.2−	1998 01 24	411	0.5−	0.5+
1966 08 08	074	1.6−	1.7+	1998 01 09	411	0.8+	0.1+	1998 01 24	411	0.1+	0.3+
1966 08 09	074	0.3−	0.4−	1998 01 09	411	0.4+	0.9−	1998 02 04	411	0.1−	0.2+
1998 01 05	411	0.7−	1.2+	1998 01 10	658	0.4−	0.5−	1998 02 04	411	0.3−	0.1+
1998 01 05	411	0.2−	0.8+	1998 01 10	658	0.4−	0.4−				
1998 01 06	411	1.2+	0.1−	1998 01 10	658	0.4−	0.6−				

1998 AR = 1985 SM₄ = 1989 UK

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26672670	ω	134.02564	-0.43210611	-0.90154803		
<i>a</i>	2.3901495	Ω	341.53987	+0.80600021	-0.37500367		
<i>e</i>	0.0990751	<i>i</i>	4.03096	+0.40453426	-0.21583185		
<i>P</i>	3.70	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1985 09 20	095	0.1-	0.3+	1998 01 05	411	0.3-	0.3+	1998 01 10	658	0.2-	0.0
1989 10 21	400	(3.6-	2.7-)	1998 01 06	411	0.4+	0.1-	1998 01 24	411	0.0	0.3-
1989 10 21	400	(4.5-	1.1-)	1998 01 06	411	0.1-	0.0	1998 01 24	411	0.1+	0.2-
1989 10 21	400	0.0	1.6-	1998 01 09	411	0.2+	0.1-	1998 02 04	411	0.0	0.3+
1989 10 25	400	0.2-	0.2-	1998 01 09	411	0.1+	0.1+	1998 02 04	411	0.1+	0.1+
1989 10 25	400	0.2+	1.6+	1998 01 10	658	0.3-	0.2-				
1998 01 05	411	0.2+	0.3+	1998 01 10	658	0.2-	0.0				

1998 AX = 1982 YM₃ = 1983 BG = 1983 CD₆ = 1996 QG

Id. S. Nakano. D. W. E. Green (d), L. G. Karachkina (d)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26542117	ω	101.12736	+0.03830108	-0.99897224		
<i>a</i>	2.3979807	Ω	346.60607	+0.87111805	+0.04526334		
<i>e</i>	0.1065003	<i>i</i>	6.00614	+0.48957776	-0.00238572		
<i>P</i>	3.71	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1982 12 22	095	0.4+	1.3+	1998 01 06	411	0.3+	0.3-	1998 01 28	566	0.1-	0.1-
1983 01 16	688	1.8-	1.1-	1998 01 06	411	0.0	0.2-	1998 01 28	566	0.1-	0.1-
1983 01 16	688	0.4+	0.1-	1998 01 09	411	0.5+	0.1+	1998 01 29	566	0.4-	0.2+
1983 02 02	095	1.1+	0.4-	1998 01 09	411	0.0	0.5+	1998 01 29	566	0.5-	0.2+
1996 08 16	566	0.2+	0.0	1998 01 24	566	0.2+	0.2-	1998 01 29	566	0.3-	0.3+
1996 08 16	566	0.1+	0.3+	1998 01 24	566	0.0	0.1+	1998 01 29	566	0.0	0.4-
1996 08 16	566	0.1+	0.1+	1998 01 24	566	0.5+	0.0	1998 01 29	566	0.3-	0.5-
1996 08 19	566	0.2-	0.3-	1998 01 25	411	1.0-	0.4-	1998 01 29	566	0.3-	0.3-
1996 08 19	566	0.0	0.3-	1998 01 25	411	0.4-	0.5+	1998 02 04	411	0.6+	0.0
1996 08 19	566	0.0	0.2-	1998 01 26	411	0.1-	0.4-	1998 02 04	411	0.9+	0.3+
1998 01 05	411	0.4-	0.3+	1998 01 26	411	0.1+	0.0				
1998 01 05	411	1.1+	0.6+	1998 01 28	566	0.1-	0.1-				

1998 AS₁ = 1993 FE = 1994 LN₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17968684	ω	18.76803	-0.68837740	-0.72388175		
<i>a</i>	3.1102254	Ω	114.76363	+0.65882146	-0.65060022		
<i>e</i>	0.1437387	<i>i</i>	2.91456	+0.30346473	-0.22959654		
<i>P</i>	5.49	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 16	372	(0.1+	3.8-)	1998 01 02	704	0.9+	0.1-	1998 01 22	704	0.0	1.0+
1993 03 16	372	1.2-	0.9-	1998 01 02	704	0.3+	0.0	1998 01 22	704	0.7+	0.4-
1993 03 17	372	1.1+	0.6+	1998 01 02	704	0.5+	0.5-	1998 01 22	704	1.0+	0.6+
1994 06 08	809	1.2-	0.1-	1998 01 02	704	0.3+	0.4-	1998 01 22	704	0.2+	0.7+
1994 06 08	809	0.2+	0.1-	1998 01 02	704	0.1-	0.8-	1998 01 23	691	0.9-	1.1-
1994 06 08	809	0.5+	0.1-	1998 01 06	691	0.9-	1.2-	1998 01 23	691	1.2-	0.1+
1994 06 09	809	0.2+	0.1+	1998 01 06	691	0.9-	0.2-	1998 01 23	691	1.1-	0.0
1994 06 09	809	0.2-	0.5+	1998 01 06	691	0.4-	0.1-	1998 01 25	566	0.5+	0.0
1994 06 09	809	0.6+	0.2+	1998 01 08	704	1.8+	0.9+	1998 01 25	566	0.6+	0.1+
1998 01 01	691	1.4-	0.2+	1998 01 08	704	0.9+	0.7+	1998 01 25	566	0.2+	0.6-
1998 01 01	691	1.2-	0.1-	1998 01 08	704	1.4+	1.8+				
1998 01 01	691	1.2-	0.1-	1998 01 08	704	0.1-	0.1-				

1998 AU₃ = 1979 SF₁₃ = 1996 TG₆₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17380179	ω	288.47867	+0.87453791	-0.48242717		
<i>a</i>	3.1800446	Ω	100.39119	+0.46175703	+0.79718132		
<i>e</i>	0.1876634	<i>i</i>	2.88301	+0.14820219	+0.36299582		
<i>P</i>	5.67	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 09 20	675	0.0	0.8+	1998 01 08	691	0.6-	0.2+	1998 01 23	704	0.7+	0.6+
1979 09 21	675	0.6-	0.7+	1998 01 08	691	0.9-	1.2+	1998 01 24	704	0.5+	0.5-
1996 10 06	809	0.6+	0.5-	1998 01 20	704	0.2+	0.3+	1998 01 24	704	1.0+	0.7-
1996 10 06	809	0.2-	0.1-	1998 01 20	704	0.4+	0.0	1998 01 24	704	0.7+	0.2-
1996 10 06	809	0.3-	0.3+	1998 01 20	704	0.1-	0.7-	1998 01 24	704	0.5-	0.6-
1996 10 07	809	0.5+	0.5-	1998 01 20	704	0.6+	0.5-	1998 01 25	704	1.1+	0.0
1996 10 07	809	0.0	0.8-	1998 01 20	704	2.0-	0.4-	1998 01 25	704	0.2-	0.3-
1998 01 02	691	1.7-	0.7+	1998 01 23	704	0.5+	0.2+	1998 01 25	704	1.8+	0.2-
1998 01 02	691	1.4-	0.4+	1998 01 23	704	0.6+	0.2+	1998 01 25	704	0.5+	0.1+
1998 01 02	691	1.4-	0.2+	1998 01 23	704	0.6+	0.4+				
1998 01 08	691	0.3-	0.1+	1998 01 23	704	0.2+	0.3-				

1998 AL₄ = 1996 TR₂₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19769717	ω	156.44001	-0.76524534	-0.64370541		
<i>a</i>	2.9183391	Ω	343.48613	+0.58689445	-0.69345490		
<i>e</i>	0.0566839	<i>i</i>	1.32042	+0.26448908	-0.32367211		
<i>P</i>	4.99	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 10 06	691	0.2+	0.2-	1998 01 06	691	0.5+	0.1+	1998 01 20	704	1.0+	0.1+
1996 10 06	691	0.3+	0.1-	1998 01 06	691	0.8+	0.4+	1998 01 20	704	0.5-	1.4+
1996 10 06	691	0.3+	0.2-	1998 01 08	691	0.7-	0.1-	1998 01 20	704	0.8+	0.5+
1996 10 10	691	0.1-	0.3+	1998 01 08	691	0.9-	0.1-	1998 01 26	566	0.2+	0.2-
1996 10 10	691	0.3-	0.1+	1998 01 08	691	1.0-	0.3-	1998 01 26	566	1.0-	0.4-
1996 10 10	691	0.4-	0.1+	1998 01 20	704	1.1+	0.3+	1998 01 26	566	0.4-	0.8-
1998 01 06	691	0.4+	0.0	1998 01 20	704	0.1-	0.9-				

1998 AL₇ = 1976 JK₄ = 1994 BP₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26252646	ω	267.96209	-0.87421020	-0.48514815		
<i>a</i>	2.4155758	Ω	243.01523	+0.45380501	-0.80196273		
<i>e</i>	0.1412757	<i>i</i>	1.26626	+0.17267756	-0.34854992		
<i>P</i>	3.75	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1976 05 03	809	0.3+	1.2+	1998 01 06	411	0.4+	0.1-	1998 01 24	411	0.2+	0.4-
1994 01 17	010	0.2-	0.8+	1998 01 06	411	0.0	1.1-	1998 01 24	411	1.3-	0.7+
1994 01 17	010	0.3+	1.2+	1998 01 09	411	0.1-	0.3-				
1994 01 17	010	0.3-	1.0+	1998 01 09	411	0.2+	0.9-				

1998 AP₇ = 1996 TK₄₂

Id. B. G. Marsden

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22366817	ω	242.36988	+0.94465874	+0.31957365		
<i>a</i>	2.6878184	Ω	98.91490	-0.26830511	+0.88262329		
<i>e</i>	0.0931327	<i>i</i>	4.30225	-0.18876500	+0.34474455		
<i>P</i>	4.41	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 10 08	809	0.3-	1.4+	1998 01 08	118	0.1-	0.2-	1998 01 26	118	0.2+	0.0
1996 10 08	809	0.8-	0.2-	1998 01 10	118	0.4+	0.1+	1998 01 26	118	0.4-	0.4+

1998 FEB. 11

1996 10 08	809	0.0	1.2+	1998 01 10	118	0.2+	0.2-	1998 01 26	118	0.2-	0.5+
1996 10 10	809	0.7+	1.3-	1998 01 17	118	0.1-	0.2+	1998 01 31	118	0.2+	0.0
1996 10 10	809	0.3+	0.6-	1998 01 17	118	0.3-	0.2+	1998 01 31	118	0.1-	0.2-
1996 10 10	809	0.0	0.5-	1998 01 17	118	0.2+	0.2-	1998 02 05	118	0.0	0.9-
1998 01 08	118	0.4+	0.5-	1998 01 23	118	0.1-	0.4+	1998 02 05	118	0.1+	0.2-
1998 01 08	118	0.7-	0.3+	1998 01 23	118	0.1+	0.4+				

1998 AS₈ = 1991 UY₂ = 1993 BN₁₃ = 1996 VN₃₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	55.07300		(2000.0)	P	Q		
<i>n</i>	0.20051719	ω	253.77614	+0.27212774	-0.96226111		
<i>a</i>	2.8909127	Ω	180.43317	+0.89481925	+0.25314916		
<i>e</i>	0.0060995	<i>i</i>	1.86460	+0.35389972	+0.09984522		
<i>P</i>	4.92	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 10 31	399	0.4+	0.4+	1998 01 12	046	0.0	0.3+	1998 01 27	098	0.6-	0.4-
1991 10 31	399	0.5+	1.7-	1998 01 12	046	0.2+	0.3+	1998 01 27	046	0.0	0.1+
1991 11 04	399	0.1+	1.1+	1998 01 13	046	0.0	0.1+	1998 01 27	046	0.2+	0.1+
1991 11 04	399	1.5-	0.6-	1998 01 13	046	0.1+	0.2+	1998 01 27	046	0.1+	0.2+
1991 11 09	399	(1.8- 2.4-)		1998 01 13	046	0.1+	0.1+	1998 01 27	098	0.4+	0.3+
1991 11 09	399	1.0+	1.0-	1998 01 13	046	0.1+	0.0	1998 01 27	046	0.1+	0.4+
1993 01 22	809	1.2+	1.3-	1998 01 13	046	0.2-	0.0	1998 01 27	046	0.0	0.4+
1993 01 22	809	0.1+	1.0-	1998 01 13	046	0.0	0.1-	1998 01 27	046	0.1-	0.4+
1993 01 22	809	0.2+	1.4-	1998 01 13	046	0.2+	0.2-	1998 01 29	566	0.2+	0.1+
1993 01 28	809	0.1-	0.9-	1998 01 17	046	0.1+	0.3-	1998 01 29	566	0.1+	0.5+
1993 01 28	809	2.0-	1.5-	1998 01 17	046	0.7+	0.2+	1998 01 29	566	0.1+	0.1-
1993 01 28	809	1.5-	1.3-	1998 01 17	046	0.4+	0.1-	1998 02 01	046	0.3-	0.1+
1996 11 12	399	0.8-	0.1+	1998 01 24	566	0.2+	0.4+	1998 02 01	046	0.1+	0.0
1996 11 12	399	0.3+	0.4+	1998 01 24	566	0.4+	0.4+	1998 02 01	046	0.1+	0.1+
1996 11 15	399	0.6+	1.4+	1998 01 24	566	0.2+	0.4+	1998 02 05	046	0.2+	0.4+
1996 11 15	399	0.8-	0.7+	1998 01 25	098	(3.3- 1.0+)		1998 02 05	046	0.4+	0.4+
1998 01 12	046	0.2+	0.3+	1998 01 25	098	1.3-	1.6+	1998 02 06	046	0.2+	0.4+

1998 AV₈ = 1980 TT₇ = 1990 US₂ = 1995 DB₁₄

Id. B. G. Marsden

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	37.78381		(2000.0)	P	Q		
<i>n</i>	0.29729310	ω	208.26779	+0.62863180	-0.77717453		
<i>a</i>	2.2233756	Ω	202.81997	+0.72673001	+0.60015559		
<i>e</i>	0.1146873	<i>i</i>	4.23893	+0.27692158	+0.18924327		
<i>P</i>	3.32	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 10 10	095(17.9+ 2.6+)			1998 01 15	118	0.2-	0.4+	1998 01 26	118	0.2+	0.6-
1990 10 19	399 (2.9- 3.3-)			1998 01 15	118	0.4-	0.4+	1998 01 26	118	0.2+	0.6-
1990 10 19	399 (4.6- 4.9-)			1998 01 15	118	0.5-	0.4+	1998 01 26	118	0.2+	0.5-
1990 10 22	400 0.1-	0.6-		1998 01 17	118	0.3+	0.5+	1998 01 29	118	0.3+	0.0
1990 10 22	400 0.5+	0.4-		1998 01 17	118	0.3+	0.1+	1998 01 29	118	0.1+	0.0
1995 02 25	691 0.1-	0.4-		1998 01 17	118	0.4+	0.2+	1998 02 01	118	0.4+	0.2-
1995 02 25	691 0.2-	0.5-		1998 01 18	118	0.1-	0.5+	1998 02 01	118	0.2+	0.2-
1995 02 25	691 0.2-	0.6-		1998 01 18	118	0.5-	0.7+	1998 02 05	118	0.8+	0.3+
1998 01 10	118 0.8-	0.1+		1998 01 18	118	0.4-	0.2+	1998 02 05	118	0.7+	0.2+
1998 01 10	118 0.7-	0.2-		1998 01 23	118	0.4+	0.3-				
1998 01 10	118 0.5-	0.2-		1998 01 23	118	0.1+	0.1-				

1998 AO₉ = 1976 UR₁₀ = 1994 HE₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	98.58197		(2000.0)	P	Q		
<i>n</i>	0.19726065	ω	329.89411	+0.97388120	-0.22485225		
<i>a</i>	2.9226428	Ω	43.13718	+0.21644847	+0.87734613		
<i>e</i>	0.0812313	<i>i</i>	2.64668	+0.06859641	+0.42391653		
<i>P</i>	5.00	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

M.P.C. 31261

Residuals in seconds of arc

1976 10 22	381	0.6-	0.1+	1994 04 19	691	0.1-	0.1-	1997 12 29	688	0.3+	0.5-
1976 10 22	381	0.7-	0.1-	1994 04 19	691	0.0	0.2-	1997 12 29	688	0.4+	0.8-
1976 10 24	381	1.2+	0.4+	1994 04 20	691	0.2+	0.3+	1998 01 06	688	0.1-	0.4+
1994 04 19	691	0.1+	0.2+	1994 04 20	691	0.1-	0.1+	1998 01 06	688	0.1+	0.5+
1994 04 19	691	0.0	0.4+	1994 04 20	691	0.1-	0.2-	1998 01 08	688	0.6-	0.5+
1994 04 19	691	0.2+	0.2+	1997 12 27	688	0.2+	0.2-	1998 01 08	688	0.2+	0.6+
1994 04 19	691	0.1-	0.4-	1997 12 27	688	0.6-	0.6-				

1998 BE = 1983 VR₄ = 1987 SW₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	141.87487		(2000.0)	P	Q		
<i>n</i>	0.22073038	ω	286.02074	+0.82448683	+0.56114994		
<i>a</i>	2.7116147	Ω	39.92349	-0.46589498	+0.74637497		
<i>e</i>	0.0677358	<i>i</i>	6.53345	-0.32119051	+0.35781999		
<i>P</i>	4.47	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 11 08	381	0.0	0.0	1987 09 30	033	0.4-	0.2-	1998 01 18	411	0.3+	0.1+
1987 09 29	033	0.5-	0.1+	1987 10 01	033	0.6+	0.4+	1998 01 18	411	0.8+	0.3+
1987 09 29	033	0.2+	0.3-	1998 01 16	411	1.1-	0.5+	1998 01 26	411	0.4-	0.1-
1987 09 30	033	0.0	0.0	1998 01 16	411	0.3+	0.1+	1998 01 26	411	0.0	0.8-

1998 BL = 1991 SS₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	289.21588		(2000.0)	P	Q		
<i>n</i>	0.21797413	ω	130.76224	-0.90030495	+0.42329880		
<i>a</i>	2.7344254	Ω	74.50162	-0.42428288	-0.80152715		
<i>e</i>	0.1001440	<i>i</i>	6.03641	-0.09713408	-0.42234151		
<i>P</i>	4.52	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 29	691	0.5+	0.4-	1998 01 18	411	0.2+	0.8-	1998 01 20	411	0.3+	0.3+
1991 09 29	691	0.8+	0.5-	1998 01 18	411	0.2-	0.7-	1998 01 25	411	0.1+	0.6+
1991 09 29	691	0.9+	0.1-	1998 01 19	411	0.2+	0.4-	1998 01 25	411	0.2-	0.2-
1991 10 02	691	0.3-	0.6+	1998 01 19	411	0.2+	0.6+	1998 02 02	411	0.6+	0.3+
1991 10 02	691	0.9-	0.2+	1998 01 20	411	0.5-	0.5+	1998 02 02	411	0.1-	0.5-
1991 10 02	691	1.0-	0.2+	1998 01 20	411	0.5-	0.2+				

1998 BU = 1994 CQ₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	304.61181		(2000.0)	P	Q		
<i>n</i>	0.23680099	ω	187.41719	-0.99564045	+0.09323202		
<i>a</i>	2.5875001	Ω	357.92616	-0.08110072	-0.88016637		
<i>e</i>	0.1793875	<i>i</i>	4.44790	-0.04607340	-0.46541911		
<i>P</i>	4.16	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 02 13	411	0.1+	0.9+	1994 02 16	411	0.0	0.5-	1998 01 26	411	0.7-	0.3-
1994 02 13	411	0.2-	0.4+	1998 01 19	411	1.2-	2.1-	1998 01 26	411	0.1+	0.3+
1994 02 13	411	0.5+	0.8+	1998 01 19	411	0.1+	0.6-	1998 01 31	411	0.8+	1.0+
1994 02 16	411	0.0	1.2-	1998 01 20	411	0.9+	1.4+	1998 01 31	411	0.0	0.1+
1994 02 16	411	0.5-	0.5-	1998 01 20	411	0.0	0.2+				

1998 BC₁ = 1979 WN₇ = 1985 YH₁ = 1992 BD₅ = 1993 HN₆

Id. D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	17.65751		(2000.0)	P	Q		
<i>n</i>	0.17334652	ω	282.60532	-0.25453577	-0.96706334		
<i>a</i>	3.1856102	Ω	182.14079	+0.88922767	-0.23397174		
<i>e</i>	0.1426814	<i>i</i>	0.29167	+0.38011273	-0.10022832		
<i>P</i>	5.69	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 11 17	095	1.2−	1.4+	1993 04 25	809	0.2−	0.7+	1998 01 25	411	0.1−	0.3+
1985 12 17	010	(4.7+	4.2−)	1993 04 25	809	0.1−	0.9+	1998 01 25	411	0.4−	0.2+
1985 12 17	010	(6.2+	3.6−)	1993 04 25	809	0.2−	1.0+	1998 01 25	098	(2.5−	0.2+)
1985 12 19	010	1.0+	1.4+	1998 01 19	411	0.0	0.2−	1998 01 25	098	0.8−	0.4−
1992 01 23	372	0.8−	1.3−	1998 01 19	411	0.2+	0.4−	1998 01 27	098	0.0	0.5+
1992 01 23	372	0.5+	1.3+	1998 01 20	411	0.0	0.1−	1998 01 27	098	0.4−	0.1+
1993 04 24	809	0.1+	0.2+	1998 01 20	411	0.0	0.3−	1998 02 02	411	0.8+	0.5−
1993 04 24	809	0.2+	0.3+	1998 01 24	566	0.0	0.1−	1998 02 02	411	0.1+	0.7−
1993 04 24	809	0.7+	0.3+	1998 01 24	566	0.1−	0.1+				
1993 04 24	809	0.9+	0.5−	1998 01 24	566	0.1+	0.1+				

1998 BE₁ = 1991 AH₃ = 1993 TA₃₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	5.85329	(2000.0)	P	Q
<i>n</i>	0.28647322	ω 12.70640	−0.24388539	−0.96383499
<i>a</i>	2.2790124	Ω 91.48482	+0.88011059	−0.26649671
<i>e</i>	0.0501542	<i>i</i> 6.16949	+0.40733925	−0.00127338
<i>P</i>	3.44	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 01 09	033	0.1−	0.1−	1993 10 11	809	0.6+	0.9+	1998 01 19	411	0.8+	0.3+
1991 01 15	033	0.3+	0.6−	1993 10 11	809	0.1−	0.9+	1998 01 20	411	0.1−	0.5+
1991 01 15	033	0.0	0.4+	1993 10 11	809	0.1+	1.6+	1998 01 20	411	0.2−	0.3+
1991 01 16	033	0.2−	0.1+	1993 10 21	809	(4.7+	1.3−)	1998 01 26	411	0.2+	0.2−
1993 10 09	809	0.1+	0.6−	1993 10 21	809	1.9+	0.7−	1998 01 26	411	0.2−	0.0
1993 10 09	809	2.0−	0.3−	1993 10 21	809	1.1+	0.5−	1998 01 31	411	0.1+	0.2−
1993 10 09	809	1.8−	1.2−	1998 01 19	411	0.9−	0.3+	1998 01 31	411	0.3+	0.7−

1998 BH₁ = 1975 UC₁

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	92.78284	(2000.0)	P	Q
<i>n</i>	0.27632535	ω 286.78987	+0.99350039	+0.07116953
<i>a</i>	2.3344732	Ω 69.19916	−0.02657445	+0.90388967
<i>e</i>	0.2301220	<i>i</i> 5.45306	−0.11068320	+0.42180370
<i>P</i>	3.57	<i>H</i> 14.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1975 10 29	033	0.6+	0.5−	1997 12 28	566	0.3+	0.4+	1998 01 26	411	0.7+	0.4−
1975 10 30	033	0.0	0.1−	1998 01 19	411	0.2+	1.3−	1998 01 26	411	0.1−	0.5+
1975 10 31	033	0.6−	0.6+	1998 01 19	411	0.6+	0.0	1998 01 31	411	1.0−	0.2+
1997 12 28	566	0.4−	0.2+	1998 01 20	411	1.2+	0.3−	1998 01 31	411	1.8−	1.4+
1997 12 28	566	0.5−	0.1+	1998 01 20	411	0.5+	0.8−				

1998 BO₁ = 1950 XE₁ = 1986 XJ₂ = 1989 RO₅ = 1991 ES₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	32.52974	(2000.0)	P	Q
<i>n</i>	0.27486040	ω 84.40347	+0.31139981	−0.95006483
<i>a</i>	2.3427607	Ω 347.39683	+0.83116521	+0.28259653
<i>e</i>	0.0966085	<i>i</i> 5.30494	+0.46064579	+0.13234813
<i>P</i>	3.59	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1950 12 09	675	0.2+	0.0	1991 03 17	809	0.2−	0.8−	1998 01 24	566	0.2+	0.5+
1950 12 09	675	0.1+	0.6−	1991 03 17	809	0.1−	0.7−	1998 01 26	411	0.0	0.4+
1986 12 01	010	(5.3−	3.3−)	1991 03 17	809	0.2+	0.6−	1998 01 26	411	0.5+	0.4+
1986 12 02	010	(8.6+	4.4−)	1998 01 19	411	0.3+	0.5−	1998 01 29	566	0.4−	0.2−
1989 09 01	808	(9.0+	1.3+)	1998 01 19	411	0.7−	0.4+	1998 01 29	566	0.2−	0.4−
1989 09 01	808	0.2+	0.3−	1998 01 20	411	0.5+	0.3+	1998 01 29	566	0.4−	0.3−
1991 03 15	809	1.0−	0.5+	1998 01 20	411	0.6+	0.1+	1998 01 31	411	0.0	0.3−
1991 03 15	809	0.2−	0.3+	1998 01 24	566	0.3+	0.4+	1998 01 31	411	0.3−	0.5−
1991 03 15	809	0.7+	0.1+	1998 01 24	566	0.1+	0.3+				

1998 BS₁ = 1981 UL₂₇ = 1983 GE₁ = 1996 RP₂₄

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	352.13546	(2000.0)	P	Q
<i>n</i>	0.25643021	ω 127.96083	−0.51715016	−0.85584552
<i>a</i>	2.4537101	Ω 353.16178	+0.75912403	−0.45370218
<i>e</i>	0.1220117	<i>i</i> 4.41888	+0.39533076	−0.24836019
<i>P</i>	3.84	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1981 10 24	675	0.4+	0.6+	1996 09 10	566	0.6+	0.2−	1998 01 26	411	0.1+	0.7+
1981 10 25	675	0.1−	0.3−	1996 09 10	566	0.7+	0.2−	1998 01 26	411	0.0	0.3+
1981 10 26	675	0.3−	0.5−	1996 09 10	566	0.6+	0.2−	1998 01 29	566	0.1+	0.0
1983 04 09	095	0.2−	0.3−	1998 01 19	411	0.2−	0.9−	1998 01 29	566	0.3+	0.0
1996 09 07	691	0.6−	0.2+	1998 01 19	411	0.1−	0.5−	1998 01 29	566	0.1+	0.0
1996 09 07	691	0.6−	0.3+	1998 01 20	411	0.2−	0.0	1998 01 31	411	0.0	0.0
1996 09 07	691	0.6−	0.1−	1998 01 20	411	0.2−	0.1+	1998 01 31	411	0.1+	0.2+

1998 BT₁ = 1984 WE₂ = 1987 RE₅ = 1987 SZ₁₂ = 1987 UM₇

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	49.22131	(2000.0)	P	Q
<i>n</i>	0.31075571	ω 50.74809	+0.66087265	−0.75049304
<i>a</i>	2.1586884	Ω 357.87943	+0.66370786	+0.58614989
<i>e</i>	0.1295753	<i>i</i> 4.25273	+0.35034157	+0.30526792
<i>P</i>	3.17	<i>H</i> 14.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1984 11 20	675	0.3−	1.0+	1997 12 29	566	0.9−	0.2−	1998 01 26	411	0.1−	0.2+
1984 11 21	675	0.2−	0.4+	1997 12 29	566	0.6−	0.2−	1998 01 26	411	0.4+	0.7+
1987 09 03	095	0.4−	0.9−	1997 12 29	566	0.7−	0.1−	1998 01 29	566	0.4+	0.5+
1987 09 19	809	0.1+	1.0+	1998 01 19	411	0.2+	1.0−	1998 01 29	566	0.7+	0.7+
1987 09 19	809	0.3−	0.4+	1998 01 19	411	0.5+	0.3+	1998 01 29	566	0.3+	0.7+
1987 09 19	809	0.3−	0.2−	1998 01 20	411	0.4−	0.8−	1998 01 31	411	0.2−	0.0
1987 10 23	095	1.5+	1.4−	1998 01 20	411	0.5−	0.9−	1998 01 31	411	0.5+	0.6−

1998 BU₁ = 1995 NN

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	35.26896	(2000.0)	P	Q
<i>n</i>	0.23560164	ω 324.56849	+0.36948731	−0.89723343
<i>a</i>	2.5962739	Ω 102.65564	+0.89944895	+0.27997914
<i>e</i>	0.1393905	<i>i</i> 14.34660	+0.23338960	+0.34144376
<i>P</i>	4.18	<i>H</i> 14.3	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 07 02	691	0.1−	0.6+	1998 01 19	411	0.8−	1.4+	1998 01 29	566	0.2+	0.1−
1995 07 02	691	0.1+	0.5+	1998 01 20	411	0.1+	0.3−	1998 01 29	566	0.2−	0.1+
1995 07 02	691	0.1+	0.2−	1998 01 20	411	0.4+	0.4−	1998 01 31	411	0.5+	0.2+
1995 07 03	691	0.1−	0.5−	1998 01 26	411	0.1+	0.0	1998 01 31	411	0.0	0.4+
1995 07 03	691	0.0	0.3−	1998 01 26	411	0.4−	1.1−				
1998 01 19	411	0.1−	0.2−	1998 01 29	566	0.2+	0.1+				

1998 BW₁ = 1986 WR₃ = 1991 TW₁₄ = 1996 ST₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	23.84777	(2000.0)	P	Q
<i>n</i>	0.18859343	ω 277.86561	+0.26352474	−0.96453417
<i>a</i>	3.0115149	Ω 156.83797	+0.89950668	+0.24003641
<i>e</i>	0.2246949	<i>i</i> 2.20272	+0.34848592	+0.10980146
<i>P</i>	5.23	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 2

1998 FEB. 11

M.P.C. 31263

Residuals in seconds of arc

1986 11 25	010	(9.8− 1.0−)	1998 01 19	133	0.4+ 0.5−	1998 01 26	133	0.1+ 0.6+
1986 11 25	010	(3.0− 1.0−)	1998 01 20	133	0.7+ 1.5+	1998 01 26	133	0.3− 0.4−
1986 11 25	010	0.0 0.5−	1998 01 20	133	0.4+ 0.0	1998 01 26	627	0.5− 0.2+
1986 11 25	010	0.2+ 0.7−	1998 01 20	133	1.0+ 0.4+	1998 01 26	133	0.7+ 0.1−
1991 10 06	691	0.3− 0.7+	1998 01 23	958	0.2+ 0.2+	1998 01 26	627	0.3− 0.1−
1991 10 06	691	0.0 0.6+	1998 01 23	133	0.2+ 0.5−	1998 01 26	627	0.3− 0.3+
1991 10 06	691	0.2− 0.8+	1998 01 23	958	0.1+ 0.1+	1998 01 27	958	0.3− 0.0
1996 09 17	566	0.1− 0.6−	1998 01 23	133	0.3+ 0.2+	1998 01 27	958	0.3− 0.1−
1996 09 17	566	0.1+ 0.4−	1998 01 23	958	0.3+ 0.1+	1998 01 27	958	0.9+ 0.2+
1996 09 17	566	0.1+ 0.0	1998 01 24	566	0.1− 0.0	1998 01 29	566	0.6− 0.0
1997 12 28	566	0.8− 0.3+	1998 01 24	566	0.1+ 0.1+	1998 01 29	566	0.5− 0.0
1997 12 28	566	1.7− 0.8−	1998 01 24	566	0.2− 0.1−	1998 01 29	566	0.7− 0.1+
1997 12 28	566	1.2− 0.9−	1998 01 24	133	1.8+ 0.1+	1998 02 01	133	0.8+ 0.8−
1998 01 19	327	0.4− 0.3+	1998 01 24	133	1.5+ 0.1−	1998 02 01	133	1.7+ 0.8−
1998 01 19	327	0.0 0.3+	1998 01 24	133	0.4+ 0.6−	1998 02 06	958	(2.7− 2.5+)
1998 01 19	327	0.9− 0.2+	1998 01 25	566	0.6− 0.1+	1998 02 06	958	(2.9− 0.8+)
1998 01 19	133	0.6− 0.9+	1998 01 25	566	1.0− 0.2+	1998 02 06	958	(2.7− 2.5+)
1998 01 19	133	0.5+ 0.1−	1998 01 25	566	0.8− 0.0			

1998 BY₁ = 1994 CV₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	9.62725		(2000.0)	P	Q
<i>n</i>	0.23280562	ω	333.09691	−0.08172498	−0.98941690
<i>a</i>	2.6170202	Ω	121.37078	+0.93782745	−0.11706103
<i>e</i>	0.2124287	<i>i</i>	8.07241	+0.33734359	+0.08573744
<i>P</i>	4.23	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1994 02 08	809	1.9+ 2.1−	1994 02 13	809	0.1− 0.5+	1998 01 24	566	0.3− 0.4−
1994 02 08	809	1.0+ 2.0−	1994 02 13	809	0.2+ 0.3+	1998 01 24	566	0.7− 0.1−
1994 02 08	809	0.3+ 0.6−	1998 01 19	376	0.3+ 0.1−	1998 01 24	376	0.1− 0.1−
1994 02 08	809	1.5− 1.0+	1998 01 19	376	0.3+ 0.5+	1998 01 26	376	0.2− 0.2−
1994 02 08	809	0.7− 1.0+	1998 01 20	376	0.4+ 0.0	1998 01 26	376	0.2+ 0.2+
1994 02 08	809	0.8− 0.6+	1998 01 20	376	0.4+ 0.1+			
1994 02 13	809	0.3− 1.4+	1998 01 24	566	0.2− 0.2+			

1998 BZ₁ = 1996 TB₃₉

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	7.83247		(2000.0)	P	Q
<i>n</i>	0.18716118	ω	319.12552	−0.17974047	−0.98326774
<i>a</i>	3.0268591	Ω	141.20241	+0.91440281	−0.17810618
<i>e</i>	0.2009966	<i>i</i>	2.71043	+0.36271321	−0.03824568
<i>P</i>	5.27	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 10 08	809	0.1− 1.0+	1998 01 19	376	0.2+ 0.1−	1998 01 26	376	0.3− 0.7+
1996 10 08	809	(1.0− 2.1+)	1998 01 19	376	0.4+ 0.3−	1998 01 26	376	0.5+ 0.5−
1996 10 08	809	0.6+ 0.6+	1998 01 20	376	0.4− 0.5−	1998 01 29	566	0.0 0.0
1996 10 10	809	1.1+ 0.5−	1998 01 20	376	0.3− 1.3+	1998 01 29	566	0.1+ 0.2−
1996 10 10	809	(1.7− 2.2−)	1998 01 24	376	0.2− 0.3+	1998 01 29	566	0.1+ 0.1−
1996 10 10	809	1.6− 1.1−	1998 01 24	376	0.1− 0.5−			

1998 BJ₂ = 1977 RW₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	310.26529		(2000.0)	P	Q
<i>n</i>	0.26033557	ω	3.74974	−0.99263086	−0.12096331
<i>a</i>	2.4291092	Ω	169.29451	+0.11014535	−0.92544064
<i>e</i>	0.1595105	<i>i</i>	2.22172	+0.05051716	−0.35906475
<i>P</i>	3.79	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1977 09 09	675	0.2− 0.1−	1998 01 20	704	0.8+ 0.5−	1998 01 22	704	1.8+ 0.8−
1977 09 10	675	0.2+ 0.1+	1998 01 20	704	0.2− 0.6−	1998 01 22	704	0.5+ 0.8−

1997 12 30	566	0.1− 0.1−	1998 01 20	704	0.3− 0.6+	1998 01 26	566	0.2− 0.4+
1997 12 30	566	0.1+ 0.2+	1998 01 20	704	1.1− 0.8+	1998 01 26	566	0.0 0.3+
1997 12 30	566	0.1+ 0.0	1998 01 22	704	0.6+ 0.0	1998 01 26	566	0.3− 0.5+
1998 01 20	704	0.4− 0.6+	1998 01 22	704	0.9− 0.8−			
1998 01 20	704	0.4− 0.1+	1998 01 22	704	0.1+ 0.4+			

1998 BT₂ = 1993 UR₃

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	20.59118		(2000.0)	P	Q
<i>n</i>	0.27096372	ω	353.30176	+0.08524060	−0.99254194
<i>a</i>	2.3651678	Ω	91.78285	+0.91814046	+0.04427702
<i>e</i>	0.1363697	<i>i</i>	5.00190	+0.38697821	+0.11357834
<i>P</i>	3.64	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1993 10 16	033	0.7+ 0.5−	1998 01 19	905	0.4− 0.5+	1998 01 26	566	0.8+ 0.1+
1993 10 16	033	0.8− 0.0	1998 01 20	905	(1.2+ 2.4+)	1998 01 26	566	0.6+ 0.0
1993 10 18	033	0.1+ 0.6+	1998 01 20	905	0.2− 0.3+	1998 01 26	385	0.1− 0.2+
1997 12 03	910	0.0 0.3−	1998 01 23	385	0.0 0.2−	1998 01 26	385	0.4+ 0.4+
1997 12 04	910	0.2+ 0.1+	1998 01 23	385	0.5− 0.1−	1998 01 26	886	0.3− 0.1−
1997 12 04	910	0.3+ 0.3−	1998 01 24	886	(1.5+ 2.6−)	1998 01 26	886	1.3+ 0.5+
1997 12 30	566	0.3− 0.3−	1998 01 24	886	0.6+ 0.9+	1998 01 29	886	1.1− 0.8−
1997 12 30	566	0.5− 0.3+	1998 01 24	385	0.4+ 0.1+	1998 01 29	886	0.2− 1.1−
1997 12 30	566	0.0 0.7−	1998 01 24	385	0.2+ 0.2−	1998 02 06	886	0.3+ 0.2+
1998 01 19	905	1.7− 0.6+	1998 01 26	566	0.3+ 0.0	1998 02 06	886	0.0 0.2−

1998 BW₂ = 1977 CN₂ = 1982 BE₁₀ = 1991 VO₅

Id. T. Urata

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	90.92029		(2000.0)	P	Q
<i>n</i>	0.18610325	ω	267.38449	+0.94909486	−0.28160457
<i>a</i>	3.0383193	Ω	108.94265	+0.31388411	+0.88303837
<i>e</i>	0.1073996	<i>i</i>	8.58122	−0.02637632	+0.37542258
<i>P</i>	5.30	<i>H</i>	12.6	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1977 02 11	675	0.4− 0.3+	1998 01 19	905	0.5+ 2.1+	1998 01 26	566	0.1− 0.1−
1977 02 12	675	0.5+ 0.1−	1998 01 20	905	0.0 0.5−	1998 01 26	566	0.2− 0.0
1982 01 19	095	0.1− 0.0	1998 01 20	905	0.5− 1.7+	1998 01 29	886	0.3+ 0.9−
1991 11 13	894	0.4+ 0.3−	1998 01 23	385	0.8+ 0.2−	1998 01 29	886	0.3+ 0.2+
1991 11 13	894	0.1+ 1.4+	1998 01 24	886	0.7+ 2.1−	1998 02 06	886	1.5− 0.7+
1991 11 14	894	0.5− 1.1−	1998 01 24	886	0.3+ 0.1−	1998 02 06	886	1.3− 1.2−
1998 01 19	905	0.8+ 0.4+	1998 01 26	566	0.0 0.2−			

1998 BD₄ = 1990 EC₂

Id. T. Urata, S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	52.64295		(2000.0)	P	Q
<i>n</i>	0.23499393	ω	93.79294	+0.62444504	−0.76730630
<i>a</i>	2.6007481	Ω	316.41214	+0.60587052	+0.59379448
<i>e</i>	0.1598150	<i>i</i>	12.22348	+0.49293945	+0.24217589
<i>P</i>	4.19	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1990 03 02	809	1.4+ 0.1+	1998 01 20	905	0.4+ 1.1+	1998 01 26	886	0.3− 0.1−
1990 03 02	809	1.0− 1.2+	1998 01 24	566	0.1+ 1.1−	1998 02 06	385	0.8+ 0.5+
1990 03 02	809	1.1− 1.1+	1998 01 24	566	0.2+ 0.8−	1998 02 06	886	1.4− 0.3−
1990 03 04	809	0.4− 0.1−	1998 01 24	566	0.1+ 1.1−	1998 02 06	886	0.2− 0.4+
1990 03 04	809	0.3+ 1.0−	1998 01 24	385	0.1− 0.1+	1998 02 06	385	0.4+ 0.3+
1990 03 04	809	0.8+ 1.3−	1998 01 24	385	0.2+ 0.0			
1998 01 20	905	0.2− 0.8+	1998 01 26	886	0.1+ 0.2+			

1998 BJ₄ = 1996 QL₂

Id. D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	13.26951		(2000.0)		P		Q
<i>n</i>	0.21743375	ω	140.47071		−0.10011732		−0.98644354
<i>a</i>	2.7389541	Ω	314.83477		+0.86015207		−0.02012458
<i>e</i>	0.2821322	<i>i</i>	10.56498		+0.50011493		−0.16286234
<i>P</i>	4.53	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 08 18	010	0.2−	0.9−	1996 08 20	010	0.2−	1.6+	1998 01 26	886	1.4+	0.8−
1996 08 18	010	0.2−	1.5−	1998 01 21	905	0.1−	0.7+	1998 01 26	886	0.6+	0.4−
1996 08 18	010	0.3−	0.9−	1998 01 21	905	0.7−	0.1−	1998 02 05	886	0.4−	0.0
1996 08 20	010	1.2+	0.4+	1998 01 24	385	0.4−	0.1+	1998 02 05	886	0.2−	0.3+
1996 08 20	010	0.3−	1.2+	1998 01 24	385	0.3−	0.2+				

1998 BR₄ = 1996 TN₄₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	48.67341		(2000.0)		P		Q
<i>n</i>	0.17113640	ω	139.23640		+0.68806381		−0.72276837
<i>a</i>	3.2129782	Ω	267.17863		+0.64784195		+0.65195613
<i>e</i>	0.2099705	<i>i</i>	3.70879		+0.32690823		+0.22925770
<i>P</i>	5.76	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 04	809	0.2+	0.2−	1997 10 08	691	0.5−	1.6−	1998 01 23	910	0.6+	0.2+
1996 10 04	809	0.3+	0.9+	1997 10 08	691	0.8−	1.8−	1998 01 23	910	0.5+	0.2+
1996 10 04	809	0.4+	1.4−	1997 10 08	691	0.9−	1.5−	1998 01 23	910	0.5+	0.0
1996 10 05	809	0.5+	1.0+	1998 01 17	910	0.3−	0.2+	1998 01 30	910	0.3−	0.8+
1996 10 05	809	0.4−	0.8+	1998 01 17	910	0.1−	0.1+	1998 01 30	910	0.5−	0.8+
1996 10 05	809	0.8−	0.3+	1998 01 18	910	1.3+	0.6+	1998 01 30	910	0.4−	0.8+

1998 BP₅ = 1989 RO

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	106.08236		(2000.0)		P		Q
<i>n</i>	0.27375878	ω	47.14076		+0.98591399		+0.14405419
<i>a</i>	2.3490414	Ω	304.40386		−0.16695949		+0.87776592
<i>e</i>	0.1294681	<i>i</i>	5.91192		+0.00990614		+0.45691945
<i>P</i>	3.60	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1989 09 03	511	0.9+	0.2−	1998 01 22	691	0.3−	0.1+	1998 01 29	691	0.0	0.2−
1989 09 03	511	0.1+	0.0	1998 01 22	691	0.0	0.1+	1998 01 29	691	0.1−	0.2−
1989 09 04	511	0.1−	0.7−	1998 01 23	691	0.2+	0.3+	1998 02 03	691	0.4−	0.4−
1989 09 04	511	1.2−	1.1+	1998 01 23	691	0.2−	0.0	1998 02 03	691	0.2−	0.4−
1989 09 05	511	0.3+	0.2−	1998 01 23	691	0.2+	0.1−	1998 02 03	691	1.3+	1.4+
1998 01 22	691	0.4−	0.0	1998 01 29	691	0.1−	0.6−				

1998 BU₆ = 1974 CC

Id. D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	38.97745		(2000.0)		P		Q
<i>n</i>	0.28791245	ω	309.62096		+0.29706190		−0.94999956
<i>a</i>	2.2714111	Ω	122.84223		+0.90740413		+0.24949548
<i>e</i>	0.1053940	<i>i</i>	6.57507		+0.29727422		+0.18775742
<i>P</i>	3.42	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1974 02 14	801	0.5+	0.1+	1998 01 24	411	0.1−	0.2+	1998 01 31	411	0.0	0.4−
1974 02 16	801	0.3−	0.2+	1998 01 25	411	0.1−	0.2−	1998 02 04	411	0.0	0.1+
1974 02 16	801	0.2−	0.2−	1998 01 25	411	0.0	0.0	1998 02 04	411	0.1+	0.2+
1998 01 24	411	0.2+	0.1+	1998 01 31	411	0.1−	0.0				

1998 BV₆ = 1993 FK₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	233.27188		(2000.0)		P		Q
<i>n</i>	0.17468384	ω	132.68807		−0.16930674		+0.97498365
<i>a</i>	3.1693308	Ω	127.00440		−0.94875051		−0.12166732
<i>e</i>	0.0490148	<i>i</i>	10.38983		−0.26684772		−0.18602134
<i>P</i>	5.64	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 03 23	010	0.8+	0.0	1998 01 24	411	0.3−	0.1+	1998 01 31	411	0.1+	0.3+
1993 03 23	010	0.5−	0.0	1998 01 24	411	0.4−	0.3+	1998 01 31	411	0.0	0.2−
1993 03 23	010	0.3+	0.4−	1998 01 25	411	0.5+	0.2−	1998 02 04	411	0.3+	0.1+
1993 03 25	010	0.7−	0.4+	1998 01 25	411	0.4−	0.3−	1998 02 04	411	0.1+	0.0

1998 BM₇ = 1987 BV₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	233.01487		(2000.0)		P		Q
<i>n</i>	0.17925298	ω	121.13273		−0.34759045		+0.92104451
<i>a</i>	3.1152420	Ω	127.49384		−0.91790323		−0.29600384
<i>e</i>	0.0669551	<i>i</i>	12.79137		−0.19140151		−0.25309828
<i>P</i>	5.50	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1987 01 30	809	0.0	0.5−	1997 12 28	566	0.3+	0.2−	1998 01 24	566	0.1+	0.3+
1987 01 30	809	1.2+	0.3−	1998 01 19	327	0.1+	0.5+	1998 01 25	566	0.4−	0.6−
1987 01 31	809	1.1−	0.5+	1998 01 19	327	0.5+	0.2+	1998 01 25	566	0.6−	0.5−
1987 01 31	809	0.1−	0.2+	1998 01 19	327	0.1+	0.3+	1998 01 25	566	0.5−	0.6−
1997 12 28	566	0.2−	0.1−	1998 01 24	566	0.1+	0.5+				
1997 12 28	566	0.1−	0.1+	1998 01 24	566	0.4+	0.4+				

1998 BA₈ = 1982 VN₈ = 1989 SW₆ = 1996 TJ₄₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	328.62284		(2000.0)		P		Q
<i>n</i>	0.27506073	ω	78.78898		−0.92150626		−0.38488507
<i>a</i>	2.3416231	Ω	78.55784		+0.33247361		−0.85084299
<i>e</i>	0.0135181	<i>i</i>	3.03317		+0.20071750		−0.35767261
<i>P</i>	3.58	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 11 09	095	0.2+	0.9−	1996 10 07	809	0.2+	0.2−	1998 01 24	566	0.3−	0.6−
1989 09 28	809	0.4−	1.2−	1996 10 08	809	0.8+	0.1+	1998 01 25	411	0.0	0.7+
1989 09 28	809	0.6+	1.4−	1996 10 08	809	0.1−	1.2−	1998 01 25	411	0.4−	2.0+
1989 09 28	809	0.4+	2.2−	1996 10 08	809	0.7+	0.2+	1998 01 26	411	0.8+	0.3−
1989 10 03	809	0.1+	1.9+	1996 10 10	809	0.3−	0.7+	1998 01 26	411	0.1+	0.1+
1989 10 03	809	0.3−	2.0+	1996 10 10	809	0.5−	0.5+	1998 01 31	411	0.0	0.2+
1989 10 03	809	0.7−	2.3+	1996 10 10	809	0.7−	0.2+	1998 01 31	411	0.2+	0.2+
1996 10 07	809	0.1−	0.8−	1998 01 24	566	0.4−	0.7−	1998 02 04	411	0.5+	0.7−
1996 10 07	809	0.0	0.1−	1998 01 24	566	0.2−	0.7−	1998 02 04	411	0.2−	0.1+

1998 BG₈ = 1988 RT₁₃ = 1990 DK₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Asher

<i>M</i>	79.41225		(2000.0)		P		Q
<i>n</i>	0.24564110	ω	306.47941		+0.85251937		−0.51907455
<i>a</i>	2.5250425	Ω	84.86637		+0.49712474		+0.76889305
<i>e</i>	0.1536502	<i>i</i>	3.53549		+0.16148596		+0.37331633
<i>P</i>	4.01	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1988 09 15	095	0.5−	0.7−	1998 01 25	411	0.4+	0.4+	1998 01 29	566	0.1+	0.4−
1988 09 15	095	0.6+	0.6+	1998 01 25	411	1.0−	0.3+	1998 01 31	411	0.2−	0.6+
1990 02 20	046	(4.2−	0.4+)	1998 01 26	411	0.9−	0.3−	1998 01 31	411	0.1+	0.0
1990 02 20	046	1.8−	1.8−	1998 01 26	411	0.1+	0.4−	1998 02 04	411	0.4+	0.2+
1990 02 22	046	0.9+	1.0+	1998 01 29	566	0.2+	0.1−	1998 02 04	411	0.4+	0.4+
1990 02 22	046	0.7+	0.4+	1998 01 29	566	0.5+	0.2−				

1998 BH₈ = 1982 OL₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22539705	ω	163.78664	+0.28709855	+0.94420471		
<i>a</i>	2.6740564	Ω	122.63711	−0.89877224	+0.32380856		
<i>e</i>	0.1281081	<i>i</i>	11.05026	−0.33133499	−0.06021199		
<i>P</i>	4.37	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1982 07 27	675	(6.0−	4.9−)	1982 07 28	675	1.0+	1.3−	1998 01 29	566	0.3+	0.6−
1982 07 27	675	0.7−	0.5+	1998 01 25	411	0.3−	0.9−	1998 01 31	411	0.8−	0.1+
1982 07 27	675	0.1+	0.9−	1998 01 25	411	0.7−	0.6+	1998 01 31	411	0.4+	0.2+
1982 07 27	675	0.5−	0.3−	1998 01 26	411	0.2+	0.1+	1998 02 04	411	0.3−	0.3+
1982 07 28	675	1.7−	2.5+	1998 01 26	411	0.7+	0.6+	1998 02 04	411	0.1−	0.0
1982 07 28	675	0.5+	0.2+	1998 01 29	566	0.0	0.2−				
1982 07 28	675	1.1+	0.8−	1998 01 29	566	0.6+	0.2−				

1998 BK₈ = 1995 JR₁

Id. D. J. Asher

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28634904	ω	99.70686	−0.99545505	+0.07250250		
<i>a</i>	2.2796713	Ω	84.46944	−0.09130711	−0.91085654		
<i>e</i>	0.0997727	<i>i</i>	3.55664	+0.02706022	−0.40630499		
<i>P</i>	3.44	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 05 05	010	0.0	0.0	1998 01 25	411	0.7+	0.1−	1998 01 29	566	1.0−	0.5+
1995 05 05	010	0.4−	0.9+	1998 01 25	411	0.2+	0.6−	1998 01 31	411	0.1−	0.0
1995 05 05	010	(0.6+	3.0−)	1998 01 26	411	0.2−	0.3+	1998 01 31	411	0.3−	0.1−
1995 05 08	010	0.7−	0.7−	1998 01 26	411	0.0	0.6+	1998 02 04	411	0.6+	0.5−
1995 05 08	010	0.5+	0.2−	1998 01 29	566	0.6−	0.3+	1998 02 04	411	0.9+	0.9−
1995 05 08	010	0.6+	0.0	1998 01 29	566	0.2−	0.6+				

1998 BA₉ = 1987 DJ₄ = 1996 XM₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17438008	ω	105.54963	+0.84943889	−0.51001626		
<i>a</i>	3.1730102	Ω	285.28600	+0.41417623	+0.80339934		
<i>e</i>	0.0805606	<i>i</i>	8.06987	+0.32697342	+0.30729939		
<i>P</i>	5.65	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 02 23	010	1.6−	0.1−	1998 01 25	566	0.3−	0.2−	1998 01 28	566	0.2−	0.1+
1987 02 24	010	1.3+	0.4−	1998 01 25	566	0.5+	0.2−	1998 02 04	327	0.1−	0.0
1996 12 01	691	0.6−	0.5−	1998 01 25	566	0.1+	0.3−	1998 02 04	327	0.1+	0.2+
1996 12 01	691	0.7−	0.4−	1998 01 26	566	0.4+	0.2−	1998 02 04	327	0.3−	0.6−
1996 12 01	691	0.7−	0.1−	1998 01 26	566	0.6+	0.3−	1998 02 06	327	0.0	0.9+
1996 12 09	691	0.5+	0.6+	1998 01 26	566	0.1+	0.0	1998 02 06	327	0.1−	0.5+
1996 12 09	691	0.7+	0.2+	1998 01 28	566	0.2−	0.1+	1998 02 06	327	0.1−	0.4+
1996 12 09	691	0.9+	0.1+	1998 01 28	566	0.2−	0.0				

1998 BM₉ = 1996 TT

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21028541	ω	71.68771	+0.99561229	−0.09258208		
<i>a</i>	2.8006787	Ω	293.62263	+0.07927296	+0.91167751		
<i>e</i>	0.1939174	<i>i</i>	0.84998	+0.04971887	+0.40034070		
<i>P</i>	4.69	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 10 03	107	0.8−	0.5+	1996 10 04	107	0.8+	0.5−	1998 01 26	691	1.1−	0.4+
1996 10 03	107	0.6+	0.8+	1998 01 18	691	0.5+	0.1+	1998 01 26	691	0.9−	0.7+
1996 10 03	107	1.1−	0.3−	1998 01 18	691	0.4+	0.2+	1998 02 03	691	0.6+	0.6−

1996 10 03	107	0.2+	0.2+	1998 01 18	691	1.1+	0.1−	1998 02 03	691	0.5+	0.4−
1996 10 04	107	0.2+	0.8−	1998 01 26	691	1.2−	0.2+	1998 02 03	691	0.0	0.5−

1998 BG₁₁ = 1987 SM₂₉ = 1991 PQ₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21865968	ω	177.12151	+0.24429432	+0.96375587		
<i>a</i>	2.7287070	Ω	107.00073	−0.89190793	+0.26670870		
<i>e</i>	0.0315685	<i>i</i>	6.43717	−0.38055293	−0.00641048		
<i>P</i>	4.51	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 09 24	095	0.2+	0.4−	1998 01 08	704	0.7−	0.2+	1998 01 24	704	0.3−	0.2−
1991 08 06	675	0.9−	0.4−	1998 01 08	704	0.1−	1.2−	1998 01 24	704	0.4−	0.1−
1991 08 06	675	0.8−	0.5−	1998 01 08	704	0.4+	0.3−	1998 01 24	704	0.3+	0.6−
1991 08 10	675	1.5+	0.6+	1998 01 08	704	0.6−	0.4+	1998 01 25	704	0.0	0.0
1991 08 10	675	0.1+	0.9+	1998 01 23	704	0.1+	0.4+	1998 01 25	704	0.2−	0.5+
1998 01 02	704	0.5+	0.6+	1998 01 23	704	0.3−	0.1−	1998 01 25	704	0.3−	0.1+
1998 01 02	704	0.2+	0.4+	1998 01 23	704	0.3+	0.1+	1998 01 25	704	0.6+	0.8+
1998 01 02	704	0.4+	0.4+	1998 01 23	704	0.9−	0.3−	1998 01 25	704	0.1+	0.6−
1998 01 02	704	0.5+	0.6+	1998 01 23	704	0.1+	0.9−				
1998 01 02	704	0.5+	0.1+	1998 01 24	704	0.2−	0.1−				

1998 BK₁₁ = 1991 NR₇ = 1992 WS₈ = 1996 TZ₅₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21546856	ω	359.55046	+0.99933426	+0.03648193		
<i>a</i>	2.7555827	Ω	358.35871	−0.03343693	+0.91224238		
<i>e</i>	0.1075206	<i>i</i>	0.65806	−0.01459490	+0.40802318		
<i>P</i>	4.57	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 07 15	809	0.4−	0.3−	1996 10 05	809	0.2+	0.5+	1998 01 23	704	0.2+	0.7−
1991 07 15	809	0.2+	0.2−	1996 10 05	809	0.6+	0.3+	1998 01 23	704	0.3+	0.2−
1991 07 15	809	0.4+	0.2−	1996 10 05	809	0.7−	0.5+	1998 01 23	704	0.3+	0.4+
1991 07 16	809	(0.6−	3.6−)	1996 10 06	809	0.3−	1.3+	1998 01 23	704	0.0	1.3−
1991 07 16	809	(0.2−	3.6−)	1996 10 06	809	0.2−	0.9+	1998 01 23	704	0.5−	0.9−
1991 07 16	809	(0.1+	3.6−)	1996 10 06	809	0.8−	0.9−	1998 01 24	704	0.2+	0.3+
1992 11 25	675	0.2+	1.7−	1998 01 02	691	1.4−	0.2+	1998 01 24	704	0.2+	0.5+
1992 11 25	675	0.9+	1.9−	1998 01 02	691	0.8−	0.1+	1998 01 24	704	0.6+	0.3+
1992 11 28	691	0.2−	0.1+	1998 01 02	691	0.7−	0.3−	1998 01 24	704	0.3−	0.9+
1992 11 28	691	0.3−	0.0	1998 01 08	704	1.3+	0.2+	1998 01 25	704	0.7+	0.2+
1992 11 28	675	(1.7+	2.5−)	1998 01 08	704	1.3−	0.1−	1998 01 25	704	0.8+	1.0+
1992 11 28	691	0.1−	0.1−	1998 01 08	704	0.8−	0.1+	1998 01 25	704	0.8+	0.7+
1992 11 28	675	(1.5+	2.3−)	1998 01 08	704	0.0	0.7+	1998 01 25	704	0.9+	1.0+

1998 BC₁₂ = 1986 XR₄ = 1989 KC

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18600646	ω	354.10206	−0.26107504	−0.94679244		
<i>a</i>	3.0393732	Ω	110.91499	+0.89369437	−0.31076700		
<i>e</i>	0.0291052	<i>i</i>	11.62400	+0.36489752	+0.08371347		
<i>P</i>	5.30	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 12 05	010	(6.3+	0.8−)	1998 01 02	704	0.1+	0.4+	1998 01 23	704	0.3−	0.3+
1986 12 05	010	0.4+	0.4−	1998 01 02	704	0.1+	0.3+	1998 01 24	704	0.2−	0.1−
1986 12 05	010	0.3−	0.1−	1998 01 02	704	0.1+	0.2+	1998 01 24	704	0.1−	0.1+
1989 05 31	675	0.1+	1.5+	1998 01 08	704	0.9+	0.1−	1998 01 24	704	0.4−	0.2+
1989 05 31	675	1.9+	0.4−	1998 01 08	704	0.3+	0.1+	1998 01 24	704	0.2−	0.1−
1989 06 01	675	0.5−	1.4−	1998 01 08	704	0.3+	0.6+	1998 01 24	704	0.4−	0.2−
1989 06 01	675	0.1+	0.2+	1998 01 08	704	0.0	0.2−	1998 01 25	704	0.2−	0.2−
1989 06 02	675	1.6−	0.3−	1998 01 23	704	0.1+	0.1+	1998 01 25	704	0.1+	0.1−
1989 06 02	675	0.1−	0.2+	1998 01 23	704	0.1−	0.3−	1998 01 25	704	0.5−	0.0

M.P.C. 31266

1998 01 02	704	0.1+	0.1+	1998 01 23	704	0.1−	0.2−	1998 01 25	704	0.2+	0.4−
1998 01 02	704	0.1−	0.2+	1998 01 23	704	0.1+	0.7−				

1998 BH₁₂ = 1995 OL₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	57.31373		(2000.0)	P	Q
<i>n</i>	0.23849386	ω	289.15464	+0.67830637	−0.69385801
<i>a</i>	2.5752412	Ω	115.65037	+0.73358423	+0.62072927
<i>e</i>	0.1040865	<i>i</i>	15.55842	+0.04188853	+0.36504278
<i>P</i>	4.13	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 07 24	691	0.2−	0.1−	1998 01 23	704	0.1−	0.3−	1998 01 24	704	0.4−	0.2+
1995 07 24	691	0.1−	0.1+	1998 01 23	704	0.3−	0.1+	1998 01 24	566	0.6−	0.4+
1995 07 24	691	0.8+	0.2+	1998 01 23	704	0.2+	0.1−	1998 01 24	566	0.2−	0.2+
1995 07 25	691	0.1−	0.3−	1998 01 23	704	0.3−	0.2+	1998 01 24	566	0.5−	0.3+
1995 07 25	691	0.1−	0.2+	1998 01 23	704	0.2−	0.4+	1998 01 25	704	0.4+	0.3+
1995 07 25	691	0.3−	0.1−	1998 01 24	704	0.0	0.1+	1998 01 25	704	0.0	0.1−
1997 12 28	566	0.3+	0.2−	1998 01 24	704	0.1+	0.1+	1998 01 25	704	0.1+	0.5−
1997 12 28	566	0.4+	0.2−	1998 01 24	704	0.4+	0.4−	1998 01 25	704	0.1−	0.3+
1997 12 28	566	0.1+	0.2+	1998 01 24	704	0.6+	0.2−	1998 01 25	704	0.0	0.9−

1998 BM₁₂ = 1971 DM = 1993 DE₂ = 1994 LJ₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	338.55830		(2000.0)	P	Q
<i>n</i>	0.18142450	ω	261.99649	−0.65317467	−0.75718465
<i>a</i>	3.0903341	Ω	228.78661	+0.69775324	−0.59886832
<i>e</i>	0.1712979	<i>i</i>	0.44585	+0.29411438	−0.26082207
<i>P</i>	5.43	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1971 02 18	095	0.0	0.0	1998 01 02	704	0.4−	0.5+	1998 01 23	704	0.2−	0.2−
1993 02 25	399	1.1+	0.3+	1998 01 02	704	0.5−	0.5+	1998 01 24	704	0.2−	0.2−
1993 02 25	399	0.7+	0.2−	1998 01 02	704	0.3−	0.3+	1998 01 24	704	0.4−	0.4+
1993 03 02	399	0.3−	0.8−	1998 01 02	704	1.6+	0.5−	1998 01 24	704	0.1−	0.4+
1993 03 02	399	2.0−	0.6−	1998 01 08	704	0.5+	0.7+	1998 01 24	704	0.5−	0.5−
1994 06 03	809	0.9+	0.2−	1998 01 08	704	0.5+	0.0	1998 01 24	704	0.4−	0.6+
1994 06 03	809	0.3+	0.4−	1998 01 08	704	0.7+	0.8−	1998 01 25	704	1.9−	0.2+
1994 06 03	809	1.1+	0.7−	1998 01 08	704	0.3+	0.2+	1998 01 25	704	0.1+	0.2+
1994 06 04	809	0.6−	1.5+	1998 01 23	704	1.6+	0.2−	1998 01 25	704	0.2−	0.1+
1994 06 04	809	0.6−	0.7+	1998 01 23	704	0.2−	0.0	1998 01 25	704	0.0	0.4+
1994 06 04	809	0.8−	1.3+	1998 01 23	704	0.2+	0.2−	1998 01 25	704	0.2+	0.7+
1998 01 02	704	0.1−	0.3+	1998 01 23	704	0.1−	0.2−				

1998 BF₁₈ = 1996 TX₅₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	25.75786		(2000.0)	P	Q
<i>n</i>	0.23124489	ω	81.03951	−0.08556192	−0.99629313
<i>a</i>	2.6287823	Ω	13.87821	+0.89892452	−0.08104469
<i>e</i>	0.1745357	<i>i</i>	2.12576	+0.42966715	−0.02884021
<i>P</i>	4.26	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 10 05	809	0.2−	0.1+	1996 10 06	809	0.1−	0.6−	1998 01 28	691	0.1+	0.1−
1996 10 05	809	0.1−	0.1−	1998 01 22	691	0.2+	0.1−	1998 01 28	691	0.0	0.1+
1996 10 05	809	1.2+	1.5+	1998 01 22	691	0.6−	0.0	1998 02 02	691	0.0	0.2+
1996 10 06	809	0.8+	0.8−	1998 01 22	691	0.2+	0.3−	1998 02 02	691	0.0	0.3+
1996 10 06	809	0.7+	0.0	1998 01 28	691	0.0	0.1−	1998 02 02	691	0.1+	0.0

1998 FEB. 11

1998 BA₂₁ = 1996 VD

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	121.07569		(2000.0)	P	Q
<i>n</i>	0.20281627	ω	226.31916	+0.95279631	+0.29953750
<i>a</i>	2.8690241	Ω	116.19419	−0.26024575	+0.88982980
<i>e</i>	0.0807444	<i>i</i>	3.16637	−0.15636928	+0.34420956
<i>P</i>	4.86	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 11 01	595	0.3−	0.0	1998 01 22	691	0.2−	0.2+	1998 02 03	691	0.3−	0.0
1996 11 01	595	0.9−	0.3−	1998 01 22	691	0.2−	0.3−	1998 02 03	691	0.2−	0.0
1996 11 02	595	0.9+	0.3+	1998 01 29	691	0.2+	0.1−	1998 02 03	691	0.1−	0.3+
1996 11 02	595	0.4+	0.0	1998 01 29	691	0.3+	0.1+				
1998 01 22	691	0.1+	0.1−	1998 01 29	691	0.4+	0.1−				

1998 BZ₂₄ = 1993 FA₃₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	352.08338		(2000.0)	P	Q
<i>n</i>	0.18128549	ω	353.75668	−0.76576538	−0.64257661
<i>a</i>	3.0919137	Ω	146.21237	+0.59208817	−0.72045113
<i>e</i>	0.1532779	<i>i</i>	2.72435	+0.25106770	−0.26085526
<i>P</i>	5.44	<i>H</i>	12.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 03 19	809	0.1+	0.3−	1998 01 28	411	0.3−	0.6+	1998 01 29	411	0.3+	0.4−
1993 03 20	809	0.3−	0.4−	1998 01 28	411	1.2+	0.2−	1998 02 02	411	0.1−	0.2+
1993 03 24	809	0.2+	0.7+	1998 01 29	411	0.8−	0.1−	1998 02 02	411	0.3−	0.1−

1998 BN₂₅ = 1992 GG₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	177.23445		(2000.0)	P	Q
<i>n</i>	0.31189463	ω	348.20232	+0.64274755	+0.76600133
<i>a</i>	2.1534301	Ω	321.79323	−0.70142952	+0.58275746
<i>e</i>	0.0367605	<i>i</i>	1.00443	−0.30801333	+0.27135901
<i>P</i>	3.16	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1992 04 03	303	1.4−	0.4+	1998 01 26	566	0.1+	0.1−	1998 02 04	611	0.6+	0.0
1992 04 03	303	0.2+	0.3−	1998 01 28	411	0.0	0.6−	1998 02 04	611	1.1−	1.1+
1992 04 03	303	(4.3+ 0.4−)		1998 01 28	411	0.0	0.4−	1998 02 05	611	0.2−	1.6−
1992 04 04	303	0.6+	0.2−	1998 01 29	411	0.8−	0.2+	1998 02 05	611	1.1−	0.6−
1992 04 04	303	0.7+	0.1−	1998 01 29	411	0.7+	0.0	1998 02 05	611	0.4+	0.2−
1992 04 04	303	0.1−	0.1+	1998 02 02	411	0.1+	0.3+	1998 02 05	611	1.3+	1.6+
1998 01 26	566	0.1−	0.3+	1998 02 02	411	0.2−	0.2+				
1998 01 26	566	0.1+	0.1+	1998 02 04	611	0.1+	0.3−				

1998 BU₂₅ = 1977 DU₂ = 1993 DF

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	332.30675		(2000.0)	P	Q
<i>n</i>	0.18560459	ω	14.52360	−0.85530889	−0.50126702
<i>a</i>	3.0437588	Ω	134.60940	+0.45510823	−0.84776086
<i>e</i>	0.0508663	<i>i</i>	10.60886	+0.24763521	−0.17330005
<i>P</i>	5.31	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1977 02 18	381	0.3−	0.5−	1998 01 29	758	0.7−	0.2−	1998 02 01	758	0.7−	0.6−
1977 02 18	381	0.5+	0.1−	1998 01 29	758	1.5−	0.4−	1998 02 04	758	1.6+	0.6−
1977 02 18	381	0.8−	0.3+	1998 01 29	758	1.0−	0.1+	1998 02 04	758	0.0	0.8+
1977 02 18	381	0.5+	1.0+	1998 01 30	758	0.8+	0.7−	1998 02 04	758	1.6−	0.5+
1977 02 19	381	0.5+	0.7+	1998 01 30	758	0.2−	0.6−	1998 02 04	758	0.4+	0.0
1977 02 19	381	0.2−	0.7+	1998 01 30	758	0.3+	0.1+	1998 02 05	758	0.6+	0.5+
1977 02 19	381	0.3+	0.0	1998 01 30	758	0.2−	0.5−	1998 02 05	758	1.6−	1.6−
1977 02 19	381	0.0	0.3−	1998 01 31	758	1.4+	0.0	1998 02 05	758	0.1−	0.5−
1993 02 17	372	0.3−	0.1−	1998 01 31	758	0.6+	0.3+	1998 02 06	758	0.6+	0.2−

1998 FEB. 11

M.P.C. 31267

1993 02 17	372	0.3−	1.7−	1998 01 31	758	0.2+	0.0	1998 02 06	758	0.5+	0.9+
1993 02 19	372	0.1+	0.5−	1998 01 31	758	0.9−	0.4+	1998 02 06	758	0.0	0.7+
1993 02 19	372	0.1+	0.6+	1998 02 01	758	0.6+	1.1+	1998 02 09	758	0.3+	0.1−
1998 01 29	758	0.6−	0.4+	1998 02 01	758	0.3+	0.3+	1998 02 09	758	0.9+	0.3−

1998 BX₂₅ = 1990 RB₁₈

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	21.34856		(2000.0)		P		Q
<i>n</i>	0.20055161	ω	158.99060	−0.06890304			−0.98067190
<i>a</i>	2.8905819	Ω	294.57689	+0.88418417			+0.02498248
<i>e</i>	0.0768048	<i>i</i>	11.61702	+0.46202893			−0.19405797
<i>P</i>	4.91	<i>H</i>	13.0	<i>G</i>	0.15		<i>U</i> 4

Residuals in seconds of arc

1990 09 09	413	0.0	0.2−	1998 01 25	905	1.1+	0.3−	1998 01 31	886	0.2+	0.2−
1990 09 10	413	(2.5+	1.6+)	1998 01 25	905	0.2−	0.4−	1998 01 31	886	0.3−	0.2−
1990 09 11	413	0.1+	0.0	1998 01 28	905	1.2+	0.7+	1998 02 02	886	1.2−	0.0
1997 12 26	566	0.3−	0.1−	1998 01 28	905	0.1+	0.7+	1998 02 02	886	0.8−	0.1−
1997 12 26	566	0.0	0.2−	1998 01 30	385	0.0	0.2−				
1997 12 26	566	0.0	0.0	1998 01 30	385	0.0	0.1+				

1998 BR₃₃ = 1983 EJ₂ = 1992 SB₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	339.72435		(2000.0)		P		Q
<i>n</i>	0.25652435	ω	144.23326	−0.90490411			−0.42452950
<i>a</i>	2.4531098	Ω	10.77344	+0.34284850			−0.76937516
<i>e</i>	0.0515369	<i>i</i>	9.35502	+0.25219726			−0.47732229
<i>P</i>	3.84	<i>H</i>	13.5	<i>G</i>	0.15		<i>U</i> 3

Residuals in seconds of arc

1983 03 11	381	0.5−	0.1+	1992 09 28	033	0.4−	0.2−	1998 01 31	411	0.3+	0.4+
1983 03 11	381	0.4+	0.1−	1998 01 25	566	0.1−	0.2+	1998 02 01	411	0.4+	0.5−
1992 09 26	033	0.2+	0.3+	1998 01 25	566	0.0	0.3+	1998 02 01	411	0.0	0.4−
1992 09 26	033	0.1+	0.3−	1998 01 25	566	0.0	0.1+	1998 02 04	411	0.1−	0.1+
1992 09 27	033	0.2+	0.2+	1998 01 31	411	0.2−	0.1−	1998 02 04	411	0.3−	0.0

1998 BZ₄₀ = 1993 FV₅₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	16.35922		(2000.0)		P		Q
<i>n</i>	0.18191697	ω	73.34229	−0.28304190			−0.95902234
<i>a</i>	3.0847542	Ω	33.10812	+0.87080456			−0.26254635
<i>e</i>	0.1398997	<i>i</i>	1.34108	+0.40197849			−0.10651553
<i>P</i>	5.42	<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−	1993 03 25	691	0.0	0.1+	1998 01 29	566	0.1−	0.0
1993 03 20	809	0.4+	0.7−	1998 01 24	566	0.0	0.2−	1998 01 29	566	0.1−	0.1−
1993 03 23	809	(4.3+	4.3+)	1998 01 24	566	0.0	0.2−	1998 02 07	108	0.4−	0.2−
1993 03 25	691	0.0	0.6+	1998 01 24	566	0.1−	0.1−	1998 02 07	108	(0.3−	2.4+)
1993 03 25	691	0.0	0.2+	1998 01 29	566	0.1−	0.1−	1998 02 07	108	0.8+	0.8+

1998 CC₁ = 1990 KC

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	157.88623		(2000.0)		P		Q
<i>n</i>	0.21223247	ω	179.96744	+0.77627117			+0.62093176
<i>a</i>	2.7835231	Ω	140.95250	−0.57841895			+0.77022066
<i>e</i>	0.1463095	<i>i</i>	9.94929	−0.25066829			+0.14561556
<i>P</i>	4.64	<i>H</i>	13.0	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1990 05 19	413	0.6−	0.8+	1997 12 28	566	0.3−	0.1−	1998 02 04	327	0.1+	0.1+
1990 05 20	413	(4.1−	1.1+)	1998 01 25	566	0.1−	0.6+	1998 02 05	327	0.2−	0.0
1990 05 20	413	0.6−	0.2+	1998 01 25	566	0.2−	0.6+	1998 02 05	327	0.3+	0.2−

1990 05 25	675	0.5+	0.6−	1998 01 25	566	0.5−	0.8−	1998 02 05	327	0.7+	0.3−
1990 05 25	675	0.3−	0.1−	1998 01 25	566	0.2−	0.7+	1998 02 06	327	0.0	0.0
1990 05 26	413	0.6+	0.2+	1998 01 25	566	0.3+	1.5−	1998 02 06	327	0.3+	0.1+
1990 05 26	413	0.5+	0.6−	1998 01 25	566	(2.3−	1.6−)	1998 02 06	327	0.2−	0.4+
1997 12 28	566	0.4−	0.1+	1998 02 04	327	0.1−	0.3+				
1997 12 28	566	0.0	0.2+	1998 02 04	327	0.4+	0.1−				

1998 CN₁ = 1989 CN₇ = 1991 TH₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	287.74884		(2000.0)		P		Q
<i>n</i>	0.21717370	ω	181.57072	−0.90039975			+0.43343843
<i>a</i>	2.7411400	Ω	24.22484	−0.39815804			−0.78613729
<i>e</i>	0.0512942	<i>i</i>	5.25336	−0.17535809			−0.44058970
<i>P</i>	4.54	<i>H</i>	13.0	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1989 02 13	372	0.6+	1.1−	1998 01 24	566	0.2−	0.8−	1998 02 06	327	0.1+	0.4+
1989 02 13	372	0.7−	0.9+	1998 01 24	566	0.4+	0.6−	1998 02 07	327	0.2−	0.5+
1991 10 04	033	0.5−	0.2−	1998 01 24	566	0.5+	0.7−	1998 02 07	327	0.1+	0.6+
1991 10 04	033	0.2+	0.2+	1998 02 06	327	0.4−	0.2+	1998 02 07	327	0.1−	0.4+
1991 10 05	033	0.3+	0.1+	1998 02 06	327	0.1−	0.3+				

2078 P-L = 1998 BY₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	340.47489		(2000.0)		P		Q
<i>n</i>	0.24074523	ω	82.22714	+0.22986924			−0.97314943
<i>a</i>	2.5591609	Ω	354.44108	+0.83777093			+0.20405618
<i>e</i>	0.1400471	<i>i</i>	7.02404	+0.49527770			+0.10649537
<i>P</i>	4.09	<i>H</i>	13.5	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1960 09 26	675	1.2+	0.2+	1960 10 25	675	0.1−	0.8−	1998 01 24	566	0.4+	0.0
1960 09 28	675	0.1−	0.2−	1960 10 26	675	0.2−	0.2+	1998 01 28	566	0.0	0.3−
1960 09 29	675	0.2+	0.4−	1998 01 24	566	0.0	0.1+	1998 01 28	566	0.3−	0.1−
1960 10 22	675	1.0−	1.0+	1998 01 24	566	0.3+	0.2+	1998 01 28	566	0.2−	0.1−

4917 P-L = 1996 TP₆₄ = 1998 BR₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	270.97712		(2000.0)		P		Q
<i>n</i>	0.24713550	ω	190.41708	−0.86938819			+0.49396706
<i>a</i>	2.5148531	Ω	19.20043	−0.45053749			−0.78189296
<i>e</i>	0.0704697	<i>i</i>	2.20924	−0.20292892			−0.38031558
<i>P</i>	3.99	<i>H</i>	14.5	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.6+	0.4−	1996 10 10	566	0.9−	0.7−	1998 01 23	704	0.5+	0.1+
1960 09 24	675	0.4+	0.2+	1996 10 10	566	0.8−	0.5−	1998 01 23	704	0.1−	0.2−
1960 09 27	675	0.6+	1.5+	1996 10 19	910	0.7+	1.5+	1998 01 24	704	0.1+	0.2−
1960 09 28	675	0.6+	0.5−	1996 10 19	910	0.4+	1.3+	1998 01 24	704	0.2+	0.4+
1960 10 17	675	0.3+	2.2−	1996 10 19	910	0.7+	1.3+	1998 01 24	704	0.3+	0.6−
1960 10 22	675	0.5−	1.1−	1998 01 23	704	1.1+	0.1−	1998 01 24	704	0.5−	0.1+
1960 10 25	675	0.1−	0.1−	1998 01 23	704	0.4−	0.0	1998 01 24	704	1.1−	0.5+
1996 10 10	566	1.0−	0.6−	1998 01 23	704	0.1−	0.4−				

6102 P-L = 1997 WK₅₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	18.30555		(2000.0)		P		Q
<i>n</i>	0.26830145	ω	205.69367	+0.67294061			−0.73960335
<i>a</i>	2.3807879	Ω	202.01807	+0.68394442			+0.62818642
<i>e</i>	0.2062614	<i>i</i>	1.79447	+0.28172853			+0.24159617
<i>P</i>	3.67	<i>H</i>	16.0	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.4+	0.3+	1997 11 29	704	0.5-	0.3-	1997 12 04	704	(4.6-	1.1-)
1960 09 25	675	0.6-	0.3+	1997 11 29	704	0.6+	0.4+	1997 12 05	704	0.3+	0.1-
1960 09 26	675	0.0	0.1-	1997 11 29	704	1.0+	0.3+	1997 12 05	704	1.0-	0.1+
1960 09 28	675	0.2+	0.6-	1997 11 29	704	0.4-	1.5+	1997 12 05	704	1.0-	0.8-
1960 10 17	675	0.0	0.2-	1997 12 04	704	1.4+	0.7-	1997 12 05	704	0.8-	1.5+
1960 10 22	675	0.1-	0.3-	1997 12 04	704	0.5-	0.9-	1997 12 05	704	0.1+	0.2-
1960 10 26	675	0.1+	0.5+	1997 12 04	704	0.1+	0.1-				
1997 11 29	704	1.2-	0.1+	1997 12 04	704	1.8+	0.8-				

6604 P-L = 1997 WG₅₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	7.25930		(2000.0)	P	Q
n	0.24186814	ω	281.52856	+0.50733571	-0.86106360
a	2.5512338	Ω	137.92750	+0.80927473	+0.46236703
e	0.1906047	i	2.93849	+0.29611633	+0.21162751
P	4.07	H	15.0	G 0.15	U 5

Residuals in seconds of arc

1960 09 24	675	0.7-	0.8-	1997 11 29	704	0.1+	1.2+	1997 12 04	704	0.1+	1.1+
1960 09 26	675	0.9-	0.4+	1997 11 29	704	0.1-	0.2-	1997 12 04	704	(4.7-	2.9+)
1960 09 27	675	0.5+	0.7+	1997 11 29	704	0.1+	0.2-	1997 12 05	704	1.5-	1.1-
1960 09 28	675	0.7+	0.4+	1997 11 29	704	0.0	0.6-	1997 12 05	704	0.7+	0.6-
1960 10 17	675	1.0+	0.7+	1997 11 29	704	0.3+	0.7-	1997 12 05	704	0.5-	0.0
1960 10 22	675	0.6-	0.6-	1997 12 04	704	0.1-	0.3+	1997 12 05	704	1.0-	0.2+
1960 10 24	675	0.0	0.8-	1997 12 04	704	0.9+	0.8+	1997 12 05	704	2.1+	0.8+
1960 10 26	675	0.0	0.3-	1997 12 04	704	1.3-	0.9-				

6706 P-L = 1997 WU₅₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	0.47530		(2000.0)	P	Q		
n	0.24192853	ω	49.37547	+0.28433339	-0.95790049		
a	2.5508093	Ω	24.19321	+0.84772052	+0.23182341		
e	0.2576790	i	5.56810	+0.44779955	+0.16936513		
P	4.07	H	16.0	G	0.15	U	5

Residuals in seconds of arc

1960 09 24	675	0.6+	0.3-	1960 10 24	675	0.3+	0.7-	1997 12 06	704	0.3+	1.2-
1960 09 26	675	0.4-	0.0	1960 10 26	675	0.2+	0.4-	1997 12 06	704	0.2+	0.7-
1960 09 27	675	0.3-	0.4-	1997 11 30	566	0.3-	1.0+	1997 12 06	704	0.4-	0.5-
1960 09 28	675	0.8+	0.4+	1997 11 30	566	0.8-	0.7+	1997 12 06	704	0.0	0.1-
1960 10 17	675	0.4-	0.4+	1997 11 30	566	0.4-	0.9+				
1960 10 22	675	0.8-	0.8+	1997 12 06	704	1.4+	0.1-				

1291 T-1 = 1997 GK₇ = 1997 GB₂₄

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	60.21171		(2000.0)		P	Q	
n	0.22934722	ω	11.30015		-0.86381280	+0.49942908	
a	2.6432631	Ω	199.10339		-0.47659580	-0.85271657	
e	0.1320433	i	11.69118		-0.16335201	-0.15311778	
P	4.30	H	15.5	G	0.15	U	4

Residuals in seconds of arc

1971 03 25	675	3.2+	0.8-	1971 03 27	675	1.0-	0.0	1997 04 02	704	0.1+	0.5+
1971 03 25	675	1.6+	0.6-	1971 04 02	675	1.6-	0.3+	1997 04 06	704	0.6-	0.6+
1971 03 25	675	2.3+	0.6+	1971 04 16	675	1.6-	1.3-	1997 04 06	704	0.2-	0.6-
1971 03 26	675	1.9-	2.0+	1971 04 16	675	0.8-	1.3-	1997 04 07	704	0.7-	0.5-
1971 03 26	675	0.1-	0.3-	1971 05 13	675	1.1+	0.1+	1997 04 07	704	0.7+	1.0+
1971 03 26	675	0.2+	0.3-	1971 05 14	675	0.3+	1.0+	1997 04 08	704	0.5+	0.8-
1971 03 27	675	1.5-	0.7+	1997 04 02	704	0.4+	0.1-	1997 04 08	704	0.2-	0.0

2186 T-1

Id. E. Bowell (1955 observations), M. W. Buie (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	351.91149		(2000.0)	P	Q
n	0.18083878	ω	143.14106	-0.85840836	-0.51242893
a	3.0970033	Ω	6.17173	+0.40289057	-0.70183922
e	0.1174578	i	12.61947	+0.31751264	-0.49481138
P	5.45	H	12.5	G 0.15	U 4

Residuals in seconds of arc

1955 03 24	675	0.3-	0.2-	1971 03 27	675	1.6-	0.8+	1997 12 27	688	0.1-	0.2+
1955 03 24	675	0.1+	0.4-	1971 04 02	675	1.2+	0.0	1997 12 27	688	0.1+	0.2+
1971 03 24	675	0.5-	0.0	1971 04 16	675	0.3+	0.6-	1997 12 29	688	0.0	0.0
1971 03 25	675	0.5+	0.2+	1971 04 16	675	1.5+	0.5+	1997 12 29	688	0.1-	0.6-
1971 03 25	675	0.5-	0.6-	1971 05 13	675	0.1+	0.2-				
1971 03 26	675	1.4-	0.3+	1971 05 14	675	1.2+	0.1+				

3216 T-1 = 1996 TZ₆₅

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	213.46658		(2000.0)	P	Q		
n	0.21497749	ω	70.06479	+0.12710996	+0.99174248		
a	2.7597775	Ω	207.25502	-0.92337816	+0.11204389		
e	0.0298170	i	2.13077	-0.36223725	+0.06239408		
P	4.58	H	14.0	G	0.15	U	5

Residuals in seconds of arc

1971 03 24	675	1.3-	0.2+	1971 05 13	675	0.8+	0.5+	1996 10 12	566	0.4+	0.2+
1971 03 25	675	1.5+	2.3-	1971 05 13	675	1.0+	1.4+	1996 10 12	566	0.4-	0.1-
1971 03 26	675	0.8+	0.7+	1971 05 14	675	0.5-	0.5-	1996 10 12	566	0.1-	0.1+
1971 03 26	675	0.1-	0.3+	1971 05 14	675	0.2+	2.2+	1996 11 07	691	0.1+	0.4+
1971 03 27	675	0.8-	0.6-	1971 05 16	675	0.9-	1.1+	1996 11 07	691	0.5+	0.1+
1971 04 02	675	1.2-	0.2-	1996 10 07	691	0.6-	0.2+	1996 11 07	691	0.6+	0.1+
1971 04 16	675	0.1-	0.1+	1996 10 07	691	0.4-	0.2+				
1971 04 16	675	1.0+	1.5-	1996 10 07	691	0.5-	0.1+				

4107 T-1 = 1996 TD₁₂

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	350.79044		(2000.0)	P	Q		
n	0.17505126	ω	84.33926	-0.09853134	-0.99461763		
a	3.1648943	Ω	11.46441	+0.83723469	-0.10026393		
e	0.0578548	i	9.28012	+0.53789371	-0.02613263		
P	5.63	H	13.0	G	0.15	U	5

Residuals in seconds of arc

1971 03 24	675	0.5+	0.6-	1971 05 13	675	0.5-	0.4+	1996 10 08	809	2.2+	1.6+
1971 03 26	675	0.9+	0.0	1971 05 14	675	0.6-	0.5+	1996 10 08	566	1.6-	1.1-
1971 03 26	675	0.2-	1.4-	1996 09 10	566	0.3-	0.1+	1996 10 08	566	1.7-	1.1-
1971 03 27	675	1.8+	1.9-	1996 09 10	566	0.6-	0.1+	1996 10 08	566	1.8-	1.1-
1971 04 02	675	0.2-	0.2-	1996 09 10	566	0.2-	0.1-	1996 10 10	809	3.7+	0.2-
1971 04 02	675	1.0-	1.8+	1996 10 07	809	1.5-	0.7-	1996 10 10	809	3.0+	0.3-
1971 04 16	675	1.9-	0.5-	1996 10 07	809	1.1+	0.3+	1996 10 10	809	3.0+	0.2-
1971 04 16	675	1.1+	0.0	1996 10 07	809	1.3+	0.6+	1996 10 17	566	3.0-	1.2-
1971 04 16	675	0.4-	1.0+	1996 10 08	809	0.3+	1.3+	1996 10 17	566	3.1-	0.5-
1971 04 16	675	0.4-	0.0	1996 10 08	809	1.0+	1.3+	1996 10 17	566	1.3-	0.1+

4194 T-1 = 1996 RR₂₅ = 1998 BP₄₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	150.65482		(2000.0)	P	Q		
<i>n</i>	0.28667149	ω	164.24634	+0.81655733	+0.57596157		
<i>a</i>	2.2779615	Ω	160.43470	−0.54134448	+0.78733522		
<i>e</i>	0.1177602	<i>i</i>	6.64659	−0.20045022	+0.21993524		
<i>P</i>	3.44	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

1998 FEB. 11

M.P.C. 31269

Residuals in seconds of arc

1971 03 24	675	(1.2+	3.0-)	1971 05 16	675	0.1+	0.7+	1998 01 01	691	1.1-	0.8+
1971 03 26	675	0.5-	0.2-	1996 09 13	566	0.9+	0.5-	1998 01 28	566	1.2+	0.3-
1971 03 26	675	0.4-	0.7-	1996 09 13	566	0.8+	0.8-	1998 01 28	566	1.1+	0.1+
1971 03 27	675	1.7-	2.5-	1996 09 13	566	0.9+	0.6-	1998 01 28	566	1.2+	0.1-
1971 04 02	675	1.8-	1.8+	1996 09 21	691	0.7-	0.0	1998 01 29	566	0.1-	1.3-
1971 04 16	675	2.4+	1.7-	1996 09 21	691	0.6-	0.0	1998 01 29	566	0.7-	0.3-
1971 04 16	675	2.1+	0.2-	1996 09 21	691	0.8-	0.0	1998 01 29	566	0.1+	1.1-
1971 05 13	675	0.3-	0.1-	1998 01 01	691	0.8-	1.0+				
1971 05 14	675	0.4-	1.5+	1998 01 01	691	1.2-	0.9+				

1171 T-2 = 1997 EU₄₈

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	318.93098		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.19194112	ω	292.59207	+0.38715181	+0.92201582
<i>a</i>	2.9763960	Ω	0.18801	-0.77206693	+0.32451583
<i>e</i>	0.0825637	<i>i</i>	9.68423	-0.50401006	+0.21113101
<i>P</i>	5.14	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.4+	1.2-	1973 09 29	675	0.5-	1.8+	1973 10 05	675	0.4+	0.7-
1973 09 19	675	0.2+	2.1-	1973 09 29	675	0.2-	1.2+	1997 03 11	809	0.5-	0.4+
1973 09 20	675	0.6+	0.3+	1973 09 30	675	0.8-	1.4+	1997 03 11	809	0.3+	0.6+
1973 09 24	675	0.3+	0.2+	1973 09 30	675	0.6-	0.8+	1997 03 11	809	0.2+	1.1+
1973 09 24	675	0.2-	0.4-	1973 10 04	675	0.4-	1.7-	1997 03 12	809	0.1+	1.0-
1973 09 25	675	1.2-	0.1+	1973 10 04	675	1.0+	0.2-	1997 03 12	809	0.0	0.6-
1973 09 25	675	1.5-	0.9+	1973 10 05	675	0.9+	1.3-	1997 03 12	809	0.2+	0.4-

3122 T-2 = 1996 TV₆₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	236.80980		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.25649223	ω	204.28348	-0.74491162	+0.66637910
<i>a</i>	2.4533146	Ω	17.62612	-0.59331383	-0.63951327
<i>e</i>	0.1670272	<i>i</i>	6.13011	-0.30509898	-0.38335580
<i>P</i>	3.84	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	

Residuals in seconds of arc

1973 09 19	675	1.9+	1.0+	1973 09 29	675	1.2-	1.1-	1973 10 05	675	1.2-	1.0-
1973 09 19	675	1.6-	0.4-	1973 09 29	675	0.5-	1.0+	1996 10 06	809	0.6+	0.5-
1973 09 20	675	1.7+	0.7-	1973 09 30	675	0.2+	1.9+	1996 10 06	809	0.4+	0.1-
1973 09 24	675	2.1-	0.3+	1973 09 30	675	0.1+	0.5+	1996 10 06	809	0.7+	0.5-
1973 09 24	675	0.5-	0.6+	1973 10 04	675	1.1+	0.2+	1996 10 07	809	0.3-	0.9+
1973 09 25	675	0.8+	1.2-	1973 10 04	675	1.7+	0.4+	1996 10 07	809	1.5-	0.7+
1973 09 25	675	0.8-	1.1-	1973 10 05	675	0.5+	0.4-	1996 10 07	809	0.0	0.4-

4064 T-2 = 1989 EM₁₂ = 1991 XZ₂Id. T. Kobayashi (*MPC* 24237), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	218.90863		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28380376	ω	323.79064	-0.77434999	-0.63270761
<i>a</i>	2.2932810	Ω	176.92385	+0.60977040	-0.74951511
<i>e</i>	0.0306305	<i>i</i>	8.51751	+0.16900340	-0.19470024
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.1-	0.4-	1973 09 25	675	0.5-	0.1+	1991 12 07	809	1.6+	0.2-
1973 09 19	675	0.0	2.1+	1973 09 29	675	2.1+	2.1-	1991 12 07	809	0.2-	0.0
1973 09 19	675	0.3-	0.8-	1973 09 30	675	0.5+	1.7-	1991 12 07	809	1.2-	0.7+
1973 09 19	675	0.0	0.9+	1973 09 30	675	0.3+	1.2-	1991 12 09	809	0.8+	0.9+
1973 09 20	675	0.2+	1.9+	1973 10 04	675	1.3-	0.2-	1991 12 09	809	0.9-	0.5+
1973 09 20	675	0.2-	0.2+	1973 10 04	675	0.0	0.5+	1991 12 09	809	0.1-	1.0-
1973 09 24	675	0.3-	0.2+	1973 10 05	675	0.3-	0.9-	1996 04 23	566	0.0	0.4-
1973 09 24	675	0.4+	1.0-	1973 10 05	675	0.8-	1.0-	1996 04 23	566	0.1+	0.7-
1973 09 25	675	1.5+	0.9-	1989 03 06	675	0.7-	2.7-	1996 04 23	566	0.5-	0.7-

4128 T-2 = 1998 BZ₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	134.47219		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.25808861	ω	221.33463	+0.98078228	+0.18823859
<i>a</i>	2.4431876	Ω	127.74237	-0.15758960	+0.91934989
<i>e</i>	0.1929743	<i>i</i>	3.72005	-0.11502884	+0.34548809
<i>P</i>	3.82	<i>H</i>	16.0	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1973 09 19	675	0.4+	1.4-	1973 09 29	675	1.5+	1.6-	1973 10 05	675	0.4-	1.8+
1973 09 19	675	0.1-	0.3+	1973 09 29	675	1.5+	2.9-	1998 01 22	691	0.1-	0.1+
1973 09 20	675	1.5-	0.1+	1973 09 30	675	1.1-	0.9+	1998 01 22	691	0.2+	0.2+
1973 09 24	675	0.3-	1.8+	1973 09 30	675	0.9-	0.0	1998 01 22	691	0.5-	0.5-
1973 09 24	675	0.5-	1.7+	1973 10 04	675	0.3+	0.7-	1998 01 28	691	0.1-	0.3+
1973 09 25	675	0.6+	0.3-	1973 10 04	675	0.2-	1.0-	1998 01 28	691	0.1+	0.2-
1973 09 25	675	1.5+	0.2-	1973 10 05	675	0.8-	1.5+	1998 01 28	691	0.3+	0.1+

1148 T-3 = 1991 RX₂₇Id. T. Kobayashi (*MPC* 21127)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	131.62788		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21076092	ω	80.91172	+0.98843335	+0.10686138
<i>a</i>	2.7964646	Ω	272.90093	-0.14147511	+0.90532481
<i>e</i>	0.2400166	<i>i</i>	6.18559	+0.05462889	+0.41105673
<i>P</i>	4.68	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1977 10 07	675	0.5+	0.4-	1977 10 22	675	0.8+	1.3-	1991 09 17	675	1.1+	0.3+
1977 10 11	675	0.7+	0.6+	1977 10 22	675	1.8+	0.8-	1991 09 17	675	0.3-	0.3+
1977 10 11	675	0.3+	0.8+	1991 09 12	675	0.0	0.1-	1998 01 31	691	0.7-	0.2-
1977 10 12	675	0.4-	0.4+	1991 09 12	675	1.2-	0.6-	1998 01 31	691	0.8-	0.4-
1977 10 12	675	0.8-	0.9+	1991 09 14	675	0.3+	0.4+	1998 01 31	691	0.7-	0.2+
1977 10 16	675	1.1-	0.6-	1991 09 14	675	0.9+	0.0	1998 02 02	691	0.6+	0.3+
1977 10 16	675	1.0-	0.7+	1991 09 16	675	0.1-	1.0-	1998 02 02	691	0.8+	0.0
1977 10 17	675	0.3-	0.6+	1991 09 16	675	0.4-	0.8-	1998 02 02	691	0.8+	0.2-
1977 10 17	675	0.9-	0.3+	1991 09 17	095	(1.0-	2.3+)				

3834 T-3 = 1998 BL₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	10.28959		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.25405623	ω	33.58444	-0.13849788	-0.98906000
<i>a</i>	2.4689719	Ω	64.42228	+0.89580317	-0.14697442
<i>e</i>	0.1543435	<i>i</i>	3.22732	+0.42232098	-0.01260311
<i>P</i>	3.88	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	1.6+	0.8-	1977 10 17	675	1.3-	1.2-	1998 01 23	385	1.6-	1.0-
1977 10 11	675	2.0-	2.1+	1977 10 17	675	1.1+	1.7+	1998 01 24	385	0.3-	0.4+
1977 10 11	675	2.4-	1.1+	1977 10 17	675	0.2-	1.0-	1998 01 24	385	0.1-	0.3+
1977 10 12	675	0.5+	1.3+	1977 10 17	675	0.1+	0.4+	1998 01 26	385	0.1+	0.1-
1977 10 12	675	0.3-	0.4-	1977 10 21	675	0.6-	2.2-	1998 01 26	385	0.6+	0.4+
1977 10 12	675	1.0+	1.6-	1977 10 21	675	0.2+	1.6+	1998 01 29	886	1.5-	0.9+
1977 10 12	675	0.3-	0.6-	1977 10 21	675	2.2+	1.7-	1998 01 29	886	0.3+	0.3+
1977 10 16	675	0.5+	0.5+	1997 12 01	327	0.4-	0.3+	1998 01 30	385	0.8+	0.4+
1977 10 16	675	0.5-	0.2-	1997 12 01	327	0.6+	0.1+	1998 01 30	385	0.3+	0.6-
1977 10 16	675	0.8+	0.3-	1997 12 01	327	0.0	0.7+	1998 02 06	385	0.4+	0.8-
1977 10 16	675	0.3-	1.2+	1998 01 23	385	0.3+	0.1-	1998 02 06	385	0.5+	1.0-

4333 T-3 = 1996 TO₆₂ = 1997 WP₅₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	64.08396		(2000.0)		P		Q			
<i>n</i>	0.15349752	ω	224.28697		+0.99663543		-0.05923175			
<i>a</i>	3.4546321	Ω	139.00805		+0.07491549		+0.93870553			
<i>e</i>	0.0889589	<i>i</i>	4.95456		-0.03324899		+0.33959317			
<i>P</i>	6.42	<i>H</i>	12.0		<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc										
1977 10 07	675	0.1+	1.0-	1977 10 22	675	(4.7- 1.1+)	1997 11 29	704	0.8-	0.7-
1977 10 11	675	2.4+	0.7-	1977 10 22	675	0.5- 3.7+	1997 11 29	704	1.8-	0.2+

1977 10 11	675	1.7+	0.8+	1996 10 06 809 1.4+	0.6+	1997 12 05 704 0.2-	0.1-
1977 10 12	675	0.3-	0.9-	1996 10 06 809 0.4+	0.2-	1997 12 05 704 0.2-	0.4-
1977 10 12	675	0.6-	0.8-	1996 10 06 809 0.0	0.2+	1997 12 05 704 0.6+	0.4+
1977 10 16	675	1.2-	0.7+	1996 10 07 809 0.1-	1.5-	1997 12 05 704 0.2+	0.1+
1977 10 16	675	0.5-	0.0	1996 10 07 809 0.3-	1.1-	1997 12 05 704 0.3-	0.2+
1977 10 17	675	0.4-	0.1+	1996 10 07 809 0.5-	0.7-	1997 12 29 566 1.7+	0.1-
1977 10 17	675	0.1-	0.0	1997 11 29 704 0.5-	0.0	1997 12 29 566 1.9+	0.1+
1977 10 21	675	0.7-	0.3+	1997 11 29 704 0.5-	0.3-	1997 12 29 566 2.1+	0.1+
1977 10 21	675	1.2-	1.2+	1997 11 29 704 1.6-	0.8-		

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
(1003)	10.2	0.15	19971218	16.03696	319.26844	139.47098	1.83546	0.1535265	3.1469304	134	30 1923-1998	0.96	M-v 1		Williams	23132	(1003)
(1035)	10.3	0.15	19971218	85.82568	323.12135	2.20163	18.08735	0.2026600	3.1371885	76	15 1913-1998	0.77	M-v 1		Williams	26919	(1035)
(1236)	11.93	0.15	19971218	195.69895	305.50720	48.81142	13.14866	0.2436942	2.4303376	27	11 1964-1998	0.98	M-v 2		Williams	26922	(1236)
(1268)	9.12	0.15	19971218	332.99252	125.99852	351.86439	4.42402	0.1039741	3.9612206	126	23 1930-1998	0.74	M-v 1		Forti	25647	(1268)
(1788)	11.9	0.15	19971218	112.21636	142.62000	161.95104	0.66606	0.1661267	3.1064700	73	17 1952-1998	0.81	M-v 1		Forti	30288	(1788)
(2166)	14.3	0.15	19971218	41.76230	135.74085	164.16770	5.12245	0.2180603	2.3462322	70	11 1929-1997	0.98	M-v 1		Sicoli	29610	(2166)
(2185)	11.3	0.15	19971218	157.64551	260.72983	61.05602	9.60942	0.1602142	2.7096829	29	12 1929-1998	0.81	M-v 1		Forti	29656	(2185)
(2285)	14.3	0.15	19971218	154.34876	182.50524	157.99400	5.32826	0.2072958	2.2206626	56	7 1976-1998	0.89	M-v 2		Williams	30894	(2285)
(2293)	10.9	0.15	19971218	284.32992	135.38425	23.64166	0.59345	0.1321560	3.1322846	101	17 1938-1998	1.02	M-v 1		Sicoli	26167	(2293)
(2431)	12.8	0.15	19971218	191.01849	338.31234	329.29259	2.96811	0.2793913	2.6474289	71	10 1948-1996	0.72	M-v 1		Forti	29941	(2431)
(2445)	12.3	0.15	19971218	31.26732	341.04092	86.28098	6.06992	0.1463040	2.2692330	35	10 1935-1998	1.06	M-v 1		Williams	30289	(2445)
(2449)	14.26	0.15	19971218	87.83286	102.11708	179.99050	24.98261	0.1685278	1.9086861	39	7 1978-1997	1.05	M-v 2		Sicoli	23514	(2449)
(2575)	12.6	0.15	19971218	123.54388	286.82718	322.25661	4.67809	0.1235664	2.2396906	78	12 1923-1997	1.06	M-v 1		Sicoli	26757	(2575)
(2588)	13.2	0.15	19971218	109.42358	95.34704	243.01672	2.26229	0.2098607	2.4583238	42	9 1954-1998	0.92	M-v 2		Williams	25649	(2588)
(2632)	11.4	0.15	19971218	153.71882	307.17082	18.93757	10.44376	0.1035218	3.0415095	32	11 1957-1998	0.73	M-v 1		Forti	31099	(2632)
(2703)	13.5	0.15	19971218	258.35104	170.37177	49.59348	6.03647	0.0573189	2.1935626	75	8 1951-1998	0.58	M-v 1		Forti	21974	(2703)
(2748)	12.7	0.15	19971218	92.74388	346.73050	350.66312	4.22911	0.1342167	2.8057756	33	12 1966-1998	0.83	M-v 1		Forti	26925	(2748)
(2816)	11.7	0.15	19971218	138.79814	263.74167	94.07095	7.72177	0.1863930	2.7285942	34	8 1955-1998	1.00	M-v 2		Williams	29134	(2816)
(2834)	12.0	0.15	19971218	347.18149	279.19711	208.83150	6.44066	0.1566874	2.5424846	35	9 1950-1998	0.83	M-v 2		Williams	28614	(2834)
(2935)	13.0	0.15	19971218	218.85798	135.64464	135.94695	13.02174	0.1274872	2.5985957	43	7 1976-1998	0.78	M-v 1		Williams	31138	(2935)
(3074)	13.6	0.15	19971218	349.13106	151.32379	348.94395	2.42500	0.1125445	2.3386490	49	10 1975-1998	0.86	M-v 2		Williams	27120	(3074)
(3500)	12.7	0.15	19971218	145.39866	10.08204	314.97550	4.25867	0.1962461	2.2398109	33	7 1919-1998	0.87	M-v 2		Williams	28317	(3500)
(3648)	13.0	0.15	19971218	274.20149	31.82270	209.15083	7.90046	0.1061987	2.4156864	34	7 1953-1998	0.93	M-v 2		Williams	28086	(3648)
(3725)	13.7	0.15	19971218	107.34290	16.86051	345.88428	11.40167	0.2016931	2.6837289	43	7 1974-1998	0.93	M-v 2		Williams	29136	(3725)
(3824)	13.2	0.15	19971218	10.95335	107.38966	329.84394	2.80293	0.2358936	2.2545285	30	9 1929-1998	0.73	M-v 1		Forti	31007	(3824)
(3884)	12.7	0.15	19971218	323.93959	115.46739	9.68371	1.16628	0.1332140	3.1148983	42	10 1969-1997	0.84	M-v 1		Forti	23522	(3884)
(4130)	12.6	0.15	19971218	226.64862	48.94430	175.54558	9.77806	0.0449833	3.0528300	43	7 1978-1998	0.81	M-v 1		Williams	27311	(4130)
(4328)	13.9	0.15	19971218	163.38062	129.79937	194.47417	5.68912	0.1734245	2.3040125	35	7 1961-1998	0.78	M-v 2		Williams	30759	(4328)
(4776)	14.9	0.15	19971218	130.00560	348.51868	3.41395	5.40142	0.2326693	2.3149809	107	6 1975-1998	0.87	M-v 2		Williams	30783	(4776)
(5126)	10.1	0.15	19971218	293.65575	349.42131	116.47568	29.88680	0.0263553	5.2216697	32	6 1953-1997	0.75	M-v 1		Bowell	31141	(5126)
(5155)	11.9	0.15	19971218	189.84540	230.32130	61.57420	6.15900	0.1420320	3.1155783	34	9 1962-1998	0.96	M-v 1		Sicoli	26192	(5155)
(5414)	12.7	0.15	19971218	63.09132	327.13856	23.98027	2.10779	0.0823493	2.8868117	37	9 1977-1997	0.71	M-v 1		Forti	26761	(5414)
(5523)	12.2	0.15	19971218	181.19255	164.43631	88.31884	3.35947	0.0124592	2.8330825	34	6 1980-1998	0.98	M-v 1		Forti	26750	(5523)
(5535)	14.2	0.15	19971218	27.17363	8.87259	120.76111	4.24626	0.0642463	2.2127070	23	4 1942-1998	0.67	M-v 2		Williams	27111	(5535)
(5579)	14.2	0.15	19971218	97.81710	247.60285	81.01160	23.54322	0.0975034	1.9490771	31	7 1986-1997	0.61	M-v 1		Forti	30667	(5579)
(5708)	14.3	0.15	19971218	126.26330	115.73616	224.20629	3.23657	0.2112266	2.1794435	47	8 1948-1998	0.74	M-v 2		Williams	31009	(5708)
(5758)	13.7	0.15	19971218	113.66611	263.95369	62.63411	6.76720	0.0617778	2.2476105	34	8 1953-1998	0.64	M-v 1		Forti	30876	(5758)
(5819)	13.6	0.15	19971218	343.50403	277.60896	151.73530	5.60948	0.1620816	2.5289189	126	7 1969-1998	0.61	M-v 2		Williams	30902	(5819)
(5820)	13.6	0.15	19971218	155.84484	226.62706	51.46141	2.52170	0.1114430	2.4541954	31	4 1989-1997	0.72	M-v 3		Forti	31142	(5820)
(5912)	13.9	0.15	19971218	51.90193	335.32974	116.22844	3.36482	0.1676757	2.4057369	41	5 1985-1998	0.84	M-v 2		Williams	28890	(5912)

(5918)	12.5	0.15	19971218	74.51927	267.80248	85.90982	3.21450	0.0822726	2.8435392	39	6	1953-1997	0.73	M-v	1	Forti	31142	(5918)
(6304)	14.2	0.15	19971218	70.69738	90.04105	262.03949	0.95224	0.1425274	2.2418033	58	8	1980-1998	0.65	M-v	1	Forti	29123	(6304)
(6499)	12.2	0.15	19971218	152.24896	221.01298	66.15621	10.06745	0.1434269	2.7615468	25	5	1985-1998	0.63	M-v	1	Forti	30672	(6499)
(7129)	12.9	0.15	19971218	167.84804	110.87750	241.92387	11.94528	0.1371099	2.7270336	31	5	1954-1997	0.57	M-v	1	Williams	31120	(7129)
(7141)	12.9	0.15	19971218	280.77027	155.77441	47.87591	9.87838	0.0932573	2.7866890	40	5	1991-1998	0.80	M-v	1	Forti	31152	(7141)
(7198)	12.6	0.15	19971218	80.84168	240.04731	131.86544	13.63227	0.1861554	2.5965309	50	6	1951-1998	0.83	M-v	1	Forti	31128	(7198)
(7241)	13.6	0.15	19971218	119.71654	235.89300	106.05829	4.33240	0.1359670	2.2067714	32	5	1980-1998	0.59	M-v	2	Williams	27938	(7241)
1969 TQ ₁	13.0	0.15	19971218	11.98783	330.58370	68.69808	2.97910	0.1624931	3.1478601	36	5	1969-1997	0.75	M-v	1	Williams	31002	1969 TQ ₁
1969 TR ₁	13.5	0.15	19971218	117.47048	346.58914	353.27925	1.94682	0.2691704	2.2674932	76	8	1928-1998	0.85	M-v	2	Marsden	29131	1969 TR ₁
1970 JB	14.0	0.15	19971218	315.75595	281.22592	289.20110	20.64433	0.2816966	2.3168913	15	3	1970-1998	0.60	M-v	4	Williams	31134	1970 JB
1970 OF	13.5	0.15	19971218	47.38840	29.97449	321.73801	6.29859	0.3122798	2.6948696	14	5	1970-1998	0.70	M-v	3	Williams	31134	1970 OF
1971 US	14.5	0.15	19971218	59.81894	345.66726	50.70425	2.75756	0.2441388	2.3693229	15	2	1971-1998	0.40	M-v	4	Williams	31095	1971 US
1972 TC	13.0	0.15	19971218	2.64526	159.13221	247.42218	12.60647	0.1700433	2.5788772	36	3	1972-1998	0.59	M-v	2	Williams	31134	1972 TC
1975 TQ ₃	13.0	0.15	19971218	116.15530	303.14840	35.41780	13.16524	0.1818785	2.6186410	37	5	1954-1998	0.64	M-v	2	Williams	29652	1975 TQ ₃
1975 VV ₂	12.5	0.15	19971218	52.38674	292.89555	40.97211	16.78189	0.1871863	3.1024264	21	3	1975-1998	0.80	M-v	2	Williams	31002	1975 VV ₂
1976 UY	13.5	0.15	19971218	21.53551	153.23744	238.17328	11.15396	0.2103464	2.6424076	37	3	1976-1997	0.85	M-v	4	Marsden	31134	1976 UY
1976 UT ₁	14.5	0.15	19971218	38.86314	205.06087	221.57556	4.07514	0.0603246	2.2666167	19	4	1976-1998	0.60	M-v	2	Williams	27565	1976 UT ₁
1977 TD	15.0	0.15	19971218	284.49194	73.26307	102.91485	31.60905	0.0890574	1.8111471	50	3	1977-1998	0.53	M-v	2	Williams	30892	1977 TD
1978 NY	14.5	0.15	19971218	52.20496	74.18358	303.44630	5.92706	0.1225690	2.3397362	20	5	1978-1998	0.53	M-v	2	Williams	25526	1978 NY
1978 RL ₁	13.0	0.15	19971218	125.96107	198.71282	148.95313	1.79894	0.1518174	3.2242060	21	6	1977-1998	0.80	M-v	2	Williams	21964	1978 RL ₁
1978 RY ₆	12.0	0.15	19971218	9.27978	118.02785	332.07026	9.44908	0.0740872	3.2316401	36	7	1978-1997	0.76	M-v	1	Williams	29132	1978 RY ₆
1978 RX ₇	14.0	0.15	19971218	271.70881	281.88121	321.85400	5.85066	0.2102253	2.6172947	15	3	1978-1998	0.64	M-v	5	Williams	22270	1978 RX ₇
1978 SC ₅	15.0	0.15	19971218	25.86842	308.31570	63.46153	2.22464	0.1985452	2.4324263	18	2	1978-1997	0.73	M-v	5	Williams	30867	1978 SC ₅
1978 UG	14.0	0.15	19971218	33.06793	316.82037	46.20116	3.27967	0.2020426	2.4346939	22	5	1978-1997	0.63	M-v	2	Williams	31134	1978 UG
1978 UV ₇	13.5	0.15	19971218	70.41002	128.45798	199.99303	4.75937	0.1050713	2.8065482	26	3	1978-1997	1.04	M-v	6	Williams	22947	1978 UV ₇
1978 WB	14.5	0.15	19971218	59.32245	345.36025	56.21246	2.21086	0.1681947	2.4084931	17	4	1978-1998	0.97	M-v	2	Williams	27725	1978 WB
1979 HW ₆	14.0	0.15	19971218	166.02397	344.65566	267.88862	0.36146	0.1292998	2.2507195	27	5	1979-1998	0.85	M-v	2	Williams	31134	1979 HW ₆
1979 KJ	13.0	0.15	19971218	271.30294	57.08281	132.94498	11.34174	0.0495500	3.0073458	28	2	1979-1998	0.30	M-v	4	Williams	31096	1979 KJ
1979 MN ₃	14.5	0.15	19971218	284.98494	266.29065	235.57225	1.97526	0.0687630	2.2738442	29	3	1954-1997	0.86	M-v	4	Williams	31134	1979 MN ₃
1979 MK ₅	14.5	0.15	19971218	259.87427	321.32051	221.44369	2.63898	0.0871388	2.5869694	27	3	1979-1997	0.70	M-v	4	Williams	31134	1979 MK ₅
1979 SC	14.0	0.15	19971218	174.90196	226.24572	33.75682	4.65686	0.1261213	2.2935489	22	4	1979-1997	0.62	M-v	2	Williams	31134	1979 SC
1979 UH	13.5	0.15	19971218	14.13738	307.81837	132.20050	9.80135	0.2987379	2.6980968	28	4	1952-1998	0.47	M-v	2	Williams	31003	1979 UH
1980 RV ₂	14.5	0.15	19971218	94.39480	11.58869	339.46147	2.69244	0.1879334	2.2117437	16	5	1980-1998	0.76	M-v	2	Williams	30892	1980 RV ₂
1980 XX	14.5	0.15	19971218	61.75721	308.07987	87.52098	5.21116	0.1454425	2.2351508	19	4	1980-1998	0.70	M-v	2	Williams	30287	1980 XX
1981 DF ₂	14.5	0.15	19971218	63.67574	126.33660	256.06721	7.29844	0.2016681	2.3170607	30	6	1954-1998	0.77	M-v	2	Williams	24758	1981 DF ₂
1981 DR ₂	14.5	0.15	19971218	359.10966	138.28913	315.10298	10.96075	0.1562142	2.6876232	20	3	1981-1997	0.76	M-v	4	Williams	27708	1981 DR ₂
1981 EM ₁	12.5	0.15	19971218	40.31070	332.56894	120.09606	2.34174	0.1521156	3.1743708	30	4	1975-1998	0.57	M-v	2	Williams	25211	1981 EM ₁
1981 EW ₂	14.5	0.15	19971218	252.47976	299.31247	320.14419	13.16358	0.1115958	2.6465118	34	3	1981-1998	0.80	M-v	2	Williams	31003	1981 EW ₂
1981 ER ₆	14.5	0.15	19971218	349.78358	233.09300	271.83402	5.14785	0.1886676	2.6421865	66	5	1979-1998	0.67	M-v	1	Williams	21966	1981 ER ₆
1981 EZ ₇	14.5	0.15	19971218	136.47585	114.22606	220.39986	5.68272	0.1516207	2.6895094	34	6	1977-1998	0.87	M-v	2	Williams	28611	1981 EZ ₇
1981 ET ₁₀	13.5	0.15	19971218	192.91496	310.81957	336.77138	12.83598	0.1703162	2.6967592	28	4	1981-1998	0.91	M-v	2	Williams	25078	1981 ET ₁₀
1981 EE ₁₂	14.5	0.15	19971218	28.86954	147.16484	281.86837	5.29688	0.0985269	2.3005763	26	3	1981-1998	0.75	M-v	4	Williams	31134	1981 EE ₁₂
1981 EF ₁₂	16.0	0.15	19971218	260.85083	327.15679	267.57969	5.09265	0.1273651	2.2873058	20	4	1981-1998	0.93	M-v	2	Williams	31134	1981 EF ₁₂
1981 ET ₁₃	15.0	0.15	19971218	279.11720	294.69424	292.34843	4.19136	0.2179592	2.2830239	29	5	1979-1998	0.82	M-v	2	Williams	21966	1981 ET ₁₃
1981 ET ₁₅	13.5	0.15	19971218	23.69707	50.39796	350.43167	15.77200	0.0690594	2.7443616	25	3	1981-1997	0.92	M-v	3	Williams	31003	1981 ET ₁₅
1981 EM ₁₈	14.0	0.15	19971218	307.95584	201.28699	337.79779	5.86601	0.1002065	2.2809348	39	5	1979-1998	0.79	M-v	2	Williams	29132	1981 EM ₁₈
1981 ES ₂₀	14.5	0.15	19971218	136.97555	353.64392	341.67156	2.08636	0.0537170	2.6817771	22	4	1977-1998	0.53	M-v	2	Williams	28314	1981 ES ₂₀
1981 EC ₂₁	15.5	0.15	19971218	26.38931	75.66855	11.87793	4.90823	0.1716590	2.6501733	28	5	1977-1998	0.87	M-v	2	Williams	28084	1981 EC ₂₁
1981 ES ₂₁	14.0	0.15	19971218	357.90344	99.91427	354.79337	13.01325	0.1627284	2.6803097	28	3	1981-1997	0.89	M-v	3	Williams	31003	1981 ES ₂₁
1981 EJ ₂₃	13.5	0.15	19971218	338.20986	108.75458	347.66618	4.07046	0.0618342	2.7178311	22	4	1979-1998	0.98	M-v	2	Williams	31134	1981 EJ ₂₃
1981 EM ₂₆	14.5	0.15	19971218	267.09113	257.52164	6.74380	6.97378	0.0280603	3.1740426	22	4	1981-1998	1.05	M-v	2	Williams	23788	1981 EM ₂₆
1981 EY ₂₈	14.0	0.15	19971218	79.07396	36.84852	335.13144	14.48255	0.2022713	2.6991914	35	4	1981-1998	0.74	M-v	2	Williams	28084	1981 EY ₂₈
1981 EQ ₃₁	15.0	0.15	19971218	74.20166	269.33518	168.55808	6.37130	0.1488363	3.1720527	33	6	1981-1998	0.75	M-v	1	Williams	30090	1981 EQ ₃₁

1981 EY ₃₅	14.5	0.15	19971218	265.68300	231.96145	2.22540	3.88983	0.1414332	2.2826854	50	8	1953–1998	0.74	M-v	2	Williams	28314	1981 EY ₃₅
1981 EB ₃₇	14.5	0.15	19971218	165.05698	302.02757	358.26073	8.21273	0.0301780	2.6882425	21	3	1981–1998	0.79	M-v	4	Marsden	22430	1981 EB ₃₇
1981 ES ₃₈	14.5	0.15	19971218	43.76046	145.43569	198.10037	6.57555	0.1312611	2.3816964	21	3	1981–1997	0.90	M-v	4	Williams	31135	1981 ES ₃₈
1981 ET ₄₁	15.0	0.15	19971218	67.65290	190.16925	173.47063	8.15079	0.1342107	2.3328740	17	3	1981–1997	0.69	M-v	4	Williams	30868	1981 ET ₄₁
1981 ES ₄₂	15.5	0.15	19971218	14.36157	79.37366	16.81650	1.93324	0.1690200	2.6615092	24	5	1977–1998	0.83	M-v	2	Williams	27931	1981 ES ₄₂
1981 JR ₂	15.0	0.15	19971218	62.92175	168.89736	34.25519	3.51873	0.0706335	2.1921410	14	3	1981–1995	0.77	M-v	5	Williams	26166	1981 JR ₂
1981 JE ₃	14.0	0.15	19971218	281.97185	30.94681	202.32524	1.41494	0.1457354	2.6747888	26	5	1972–1998	0.73	M-v	1	Williams	29940	1981 JE ₃
1981 QY ₂	13.0	0.15	19971218	213.49123	106.38468	133.92303	2.88303	0.0159415	2.8779732	44	3	1981–1998	0.78	M-v	4	Williams	19496	1981 QY ₂
1981 RQ ₁	13.5	0.15	19971218	102.55761	195.71853	154.25111	2.53989	0.0926201	2.9009538	42	5	1955–1998	0.80	M-v	2	Williams	31135	1981 RQ ₁
1981 SN	14.0	0.15	19971218	49.90302	155.90204	216.18010	5.17624	0.1570272	2.4835408	61	7	1981–1998	0.79	M-v	3	Williams	31135	1981 SN
1981 SD ₂	13.5	0.15	19971218	131.20570	345.63452	35.16728	6.39806	0.1301520	2.3853298	13	3	1981–1998	0.67	M-v	4	Williams	28294	1981 SD ₂
1981 UJ ₂₃	12.5	0.15	19971218	162.35009	196.06159	68.01081	11.17269	0.0738904	3.0198559	24	3	1981–1998	0.66	M-v	4	Williams	31096	1981 UJ ₂₃
1981 UE ₂₆	12.5	0.15	19971218	106.18899	277.75517	100.99376	3.13502	0.0730619	2.9132949	22	4	1981–1998	0.46	M-v	3	Williams	28314	1981 UE ₂₆
1981 UT ₂₉	13.0	0.15	19971218	122.70692	50.19231	224.07998	9.20806	0.0947222	3.0378676	17	4	1981–1997	0.54	M-v	2	Williams	31097	1981 UT ₂₉
1982 FP ₃	12.5	0.15	19971218	270.70659	142.57342	67.59931	2.30871	0.1330950	3.1741052	48	7	1977–1998	0.75	M-v	2	Williams	31135	1982 FP ₃
1982 FX ₃	12.0	0.15	19971218	241.49433	226.38575	12.44525	5.35869	0.1129880	3.1716207	42	7	1951–1998	0.66	M-v	1	Williams	30090	1982 FX ₃
1982 JB ₂	14.5	0.15	19971218	350.76396	334.72781	106.43784	2.69274	0.0826061	2.2682745	43	3	1982–1998	0.80	M-v	3	Williams	31135	1982 JB ₂
1982 UZ ₉	13.5	0.15	19971218	111.76542	143.47448	224.74587	17.30194	0.2017709	2.7872823	12	3	1982–1997	0.75	M-v	4	Williams	28839	1982 UZ ₉
1982 VF	13.0	0.15	19971218	188.12706	309.13389	12.19494	8.65491	0.1059340	2.7401729	36	4	1982–1998	0.72	M-v	1	Williams	29654	1982 VF
1982 YR ₁	14.5	0.15	19971218	346.07831	46.79910	7.09150	5.93687	0.2175119	2.4574494	21	3	1982–1997	0.66	M-v	3	Williams	31135	1982 YR ₁
1983 RG ₂	14.5	0.15	19971218	31.01479	296.52578	70.21176	6.33803	0.2017924	2.2935578	28	5	1979–1997	0.62	M-v	2	Williams	31004	1983 RG ₂
1983 RP ₂	14.0	0.15	19971218	37.70127	222.85035	150.66386	4.16238	0.1706943	2.2715392	41	4	1983–1997	0.77	M-v	3	Williams	31004	1983 RP ₂
1983 RV ₃	13.5	0.15	19971218	72.95556	144.10705	175.84096	5.41180	0.1692821	2.7282729	44	3	1983–1997	0.85	M-v	4	Williams	29132	1983 RV ₃
1983 RZ ₄	15.0	0.15	19971218	61.16370	95.43623	240.08384	4.18380	0.2618034	2.2825106	23	2	1983–1998	0.65	M-v	4	Williams	31097	1983 RZ ₄
1983 TC	13.0	0.15	19971218	85.28467	125.05225	229.26408	11.90248	0.1947941	2.6948934	34	4	1983–1998	0.85	M-v	2	Marsden	31135	1983 TC
1983 WQ	12.5	0.15	19971218	142.92027	295.24617	56.54652	9.81289	0.1157903	2.6730750	23	4	1983–1998	0.70	M-v	3	Williams	28839	1983 WQ
1984 BQ	13.0	0.15	19971218	225.95113	133.32840	52.74957	7.79235	0.0653182	2.3877183	36	4	1984–1998	0.79	M-v	3	Williams	31135	1984 BQ
1984 CF	12.5	0.15	19971218	350.00712	52.52120	93.56026	10.15640	0.1005792	2.7858124	33	6	1954–1998	0.68	M-v	1	Williams	28612	1984 CF
1984 HR	13.5	0.15	19971218	237.38228	217.54301	16.48183	2.46610	0.1582334	2.3855247	43	4	1980–1998	0.56	M-v	2	Williams	31135	1984 HR
1984 LK	13.0	0.15	19971218	136.87421	76.47764	238.18757	6.55420	0.3860317	3.1138556	39	5	1968–1998	0.83	M-v	1	Williams	28883	1984 LK
1984 SK ₁	13.0	0.15	19971218	189.80362	325.01521	345.50523	6.00334	0.2957077	3.0845567	36	4	1984–1998	0.71	M-v	2	Marsden	28883	1984 SK ₁
1984 SS ₁	14.5	0.15	19971218	6.93666	196.29122	230.18536	3.04538	0.0701919	2.1627097	34	4	1981–1998	0.86	M-v	3	Marsden	31097	1984 SS ₁
1984 SY ₅	12.5	0.15	19971218	86.82827	250.92316	117.45680	2.38723	0.1465784	3.2513632	61	4	1984–1998	0.59	M-v	3	Williams	31135	1984 SY ₅
1985 GP ₁	13.5	0.15	19971218	148.54197	202.38524	98.54961	24.88404	0.1690879	2.3138045	18	3	1985–1998	0.66	M-v	3	Williams	31135	1985 GP ₁
1985 PC ₂	13.0	0.15	19971218	73.44658	263.74230	119.04976	4.84339	0.2424095	3.0861937	23	4	1980–1998	0.73	M-v	1	Williams	21970	1985 PC ₂
1985 QG ₅	13.0	0.15	19971218	69.39049	281.71458	66.70804	1.66511	0.1606118	3.1581940	16	2	1985–1998	0.87	M-v	5	Williams	31097	1985 QG ₅
1985 RS ₁	13.5	0.15	19971218	117.22543	312.48663	26.59123	2.68931	0.2172259	2.4026251	68	4	1970–1998	0.67	M-v	2	Williams	31135	1985 RS ₁
1985 RN ₄	16.0	0.15	19971218	129.84120	288.71347	53.32801	2.39832	0.3122492	2.3804387	29	3	1985–1996	0.50	M-v	4	Williams	31135	1985 RN ₄
1985 RJ ₅	14.5	0.15	19971218	62.16479	337.57032	52.67943	2.83342	0.2482185	2.4276558	17	3	1985–1998	0.71	M-v	5	Williams	16697	1985 RJ ₅
1985 TW	14.5	0.15	19971218	114.81327	344.79010	7.26557	1.30536	0.1936423	2.4061357	50	6	1985–1998	0.70	M-v	2	Williams	28883	1985 TW
1985 TJ ₁	12.5	0.15	19971218	165.41405	290.42151	26.62164	10.91335	0.0834153	3.0074599	36	4	1975–1997	0.88	M-v	3	Williams	31004	1985 TJ ₁
1985 TS ₁	12.0	0.15	19971218	240.56072	349.52438	279.17781	8.28546	0.0089181	2.9704268	18	4	1985–1997	0.84	M-v	2	Williams	30973	1985 TS ₁
1986 QQ	13.5	0.15	19971218	7.82779	85.46261	359.07269	4.32652	0.1485029	2.2804060	105	10	1950–1998	0.63	M-v	1	Williams	31135	1986 QQ
1986 QN ₃	14.5	0.15	19971218	120.57581	288.55981	83.05193	3.12530	0.1443463	2.2268273	60	7	1979–1998	0.72	M-v	1	Williams	28084	1986 QN ₃
1986 RD	13.5	0.15	19971218	170.56339	101.80218	212.95487	6.86626	0.2248088	2.7950631	41	6	1986–1998	0.56	M-v	1	Williams	30288	1986 RD
1986 RE ₁	14.5	0.15	19971218	146.27437	153.53636	199.52739	3.20499	0.2432779	2.2137816	59	5	1986–1998	0.70	M-v	2	Williams	29316	1986 RE ₁
1986 RY ₄	14.5	0.15	19971218	112.23510	338.35188	358.40765	4.36870	0.1862597	2.2609260	44	4	1986–1998	0.38	M-v	3	Williams	24911	1986 RY ₄
1986 TB	14.0	0.15	19971218	52.87535	353.69746	1.23616	14.65255	0.2216709	2.3418345	41	2	1986–1998	0.82	M-v	3	Marsden	30974	1986 TB
1986 TH	15.0	0.15	19971218	82.83533	72.48262	311.62643	5.13483	0.1366690	2.2757575	16	4	1984–1998	0.62	M-v	2	Williams	31097	1986 TH
1986 TQ	12.5	0.15	19971218	58.83411	351.27494	349.78617	16.56166	0.0742188	3.0850793	22	3	1986–1997	0.83	M-v	3	Williams	31004	1986 TQ
1986 TG ₃	13.0	0.15	19971218	92.61038	225.89795	185.74148	1.86315	0.0699680	2.8381658	22	5	1986–1998	0.49	M-v	1	Williams	29655	1986 TG ₃
1986 VQ ₂	14.5	0.15	19971218	114.18909	75.24070	278.93064	5.36262	0.2005551	2.2757537	11	4	1986–1998	0.87	M-v	3	Williams	29095	1986 VQ ₂
1986 WB	14.0	0.15	19971218	65.44546	342.63030	63.94974	7.39577	0.1276076	2.3170417	38	3	1986–1998	0.88	M-v	3	Williams	30868	1986 WB

1987 BB	14.5	0.15	19971218	341.00763	354.93177	145.07302	0.38234	0.1621130	2.3763700	52	5	1987-1998	0.68	M-v	1	Williams	27932	1987 BB
1987 BO ₁	13.0	0.15	19971218	44.06498	152.74576	277.48204	23.36075	0.2288896	2.3392366	56	4	1987-1998	0.87	M-v	2	Williams	28084	1987 BO ₁
1987 DF ₆	13.5	0.15	19971218	123.14676	248.93517	330.30006	12.55887	0.1197297	2.6686126	40	3	1980-1997	0.40	M-v	3	Williams	30974	1987 DF ₆
1987 DO ₆	11.5	0.15	19971218	138.91493	50.43440	328.31922	7.90011	0.0911282	3.0691579	49	6	1950-1998	0.65	M-v	1	Williams	29133	1987 DO ₆
1987 RO ₅	12.0	0.15	19971218	101.48048	216.86368	158.54976	6.81549	0.2911364	3.9481104	24	3	1987-1998	0.50	M-v	4	Williams	27554	1987 RO ₅
1987 RT ₅	14.5	0.15	19971218	136.17306	194.79191	119.52214	3.00467	0.1833898	2.1311400	36	6	1981-1998	0.69	M-v	2	Williams	31136	1987 RT ₅
1987 UE ₁	15.0	0.15	19971218	320.55019	188.73141	196.23360	24.71983	0.1931041	2.3108144	17	2	1987-1994	0.63	M-v	3	Williams	28613	1987 UE ₁
1987 WF ₁	12.5	0.15	19971218	315.68067	133.15168	233.58948	23.00182	0.2783528	2.3531828	28	3	1987-1997	0.51	M-v	2	Williams	30288	1987 WF ₁
1988 AA ₂	14.0	0.15	19971218	319.83887	356.81412	92.42097	5.32499	0.1676384	2.3072881	37	3	1988-1998	0.63	M-v	2	Marsden	31136	1988 AA ₂
1988 BL ₃	13.0	0.15	19971218	105.94173	82.93578	264.60551	6.05800	0.2058520	2.2565158	29	4	1959-1998	0.51	M-v	3	Williams	31098	1988 BL ₃
1988 BN ₄	12.5	0.15	19971218	301.25074	230.31932	273.67634	8.65121	0.0341943	3.0155858	26	3	1988-1997	0.35	M-v	3	Williams	31098	1988 BN ₄
1988 CE ₂	14.0	0.15	19971218	53.10055	57.78745	307.69925	6.45382	0.1492087	2.2816675	27	4	1978-1997	0.66	M-v	3	Williams	31136	1988 CE ₂
1988 CU ₃	12.5	0.15	19971218	7.58826	172.37756	286.26164	9.37009	0.0702502	2.9991068	40	2	1988-1998	0.82	M-v	4	Williams	31098	1988 CU ₃
1988 CW ₄	12.5	0.15	19971218	7.67389	214.60665	249.76854	6.93242	0.0474578	2.9933835	33	5	1955-1998	0.80	M-v	1	Williams	22599	1988 CW ₄
1988 DK	13.5	0.15	19971218	306.79428	277.87861	218.13158	9.30486	0.1725469	3.0782765	19	3	1988-1997	1.00	M-v	4	Williams	31098	1988 DK
1988 DH ₁	14.0	0.15	19971218	292.59901	50.66175	151.48776	6.58467	0.1122626	2.2423046	22	5	1951-1998	0.88	M-v	2	Williams	31136	1988 DH ₁
1988 DZ ₄	15.0	0.15	19971218	149.88972	104.62042	176.33953	19.17129	0.1303864	1.9044508	26	3	1988-1997	0.37	M-v	3	Williams	31004	1988 DZ ₄
1988 EA ₂	14.0	0.15	19971218	316.61251	24.54411	156.60828	3.69194	0.0636793	2.2585918	20	4	1971-1998	0.71	M-v	3	Williams	27932	1988 EA ₂
1988 RB ₁₂	14.5	0.15	19971218	108.26577	344.61686	350.88733	5.40554	0.2518269	2.5454694	30	8	1972-1998	0.99	M-v	2	Williams	29656	1988 RB ₁₂
1988 VB ₁	13.0	0.15	19971218	118.23719	3.85868	2.02103	13.27082	0.1764017	2.5387769	24	4	1988-1998	0.65	M-v	3	Williams	28315	1988 VB ₁
1988 VC ₁	14.5	0.15	19971218	16.83943	173.29423	267.86100	11.69670	0.1306736	2.6336224	16	3	1988-1997	0.65	M-v	3	Williams	31004	1988 VC ₁
1988 VS ₆	13.0	0.15	19971218	36.79250	211.71471	209.46749	4.90323	0.2386265	3.9522144	59	3	1988-1998	0.74	M-v	3	Williams	31136	1988 VS ₆
1989 AG	13.0	0.15	19971218	4.71865	37.56731	95.10287	12.82387	0.1405978	2.6668970	46	7	1979-1998	0.91	M-v	1	Williams	29656	1989 AG
1989 CE ₆	13.0	0.15	19971218	231.81128	313.94554	326.11907	12.09106	0.1576196	2.6997045	17	2	1989-1998	0.53	M-v	5	Williams	30975	1989 CE ₆
1989 GQ ₄	14.5	0.15	19971218	201.67189	40.88087	187.62918	4.88939	0.0933685	2.2217837	22	4	1979-1997	0.78	M-v	2	Williams	31136	1989 GQ ₄
1989 KF	12.5	0.15	19971218	280.01600	153.24094	83.32064	16.27839	0.0958024	2.8544519	18	3	1989-1998	0.91	M-v	4	Williams	28583	1989 KF
1989 NH ₁	14.5	0.15	19971218	206.91048	184.21053	120.48235	5.87923	0.2026532	2.1916422	25	4	1986-1998	1.00	M-v	2	Williams	31005	1989 NH ₁
1989 RF	12.0	0.15	19971218	178.49491	103.73380	210.10231	4.30370	0.1534914	3.1907650	15	6	1978-1998	0.83	M-v	2	Williams	25638	1989 RF
1989 RQ ₁	14.0	0.15	19971218	115.79995	195.87157	154.36736	7.71261	0.2891842	2.3363132	19	4	1971-1997	0.60	M-v	2	Williams	28884	1989 RQ ₁
1989 RO ₂	12.5	0.15	19971218	47.57727	45.12172	354.80173	23.14920	0.2950006	2.4306657	26	4	1989-1998	0.64	M-v	2	Williams	27933	1989 RO ₂
1989 RV ₂	14.0	0.15	19971218	152.02227	305.36347	44.74469	5.59915	0.1833662	2.2708129	28	3	1989-1998	0.69	M-v	3	Williams	28884	1989 RV ₂
1989 SC ₁	14.0	0.15	19971218	160.59173	52.67018	283.77982	1.56477	0.1691763	2.2740197	33	8	1950-1998	0.84	M-v	2	Williams	28884	1989 SC ₁
1989 SJ ₅	13.5	0.15	19971218	250.00494	182.98831	47.97547	7.13871	0.0719540	2.3414595	27	5	1984-1998	0.76	M-v	2	Williams	28085	1989 SJ ₅
1989 TM ₁	13.5	0.15	19971218	321.61768	38.23690	21.95970	9.92516	0.1659729	2.5959847	28	3	1989-1998	0.73	M-v	3	Williams	30894	1989 TM ₁
1989 TU ₁₀	14.0	0.15	19971218	60.46066	230.66605	179.86096	6.12350	0.2477260	2.3794738	29	5	1978-1998	0.56	M-v	1	Williams	25339	1989 TU ₁₀
1989 TP ₁₁	14.0	0.15	19971218	90.68233	145.10750	190.86842	3.61026	0.1574808	2.4194763	24	4	1978-1998	0.64	M-v	3	Williams	22811	1989 TP ₁₁
1989 UL ₁	12.5	0.15	19971218	47.63600	293.80050	44.59952	10.25846	0.1123665	2.5594676	40	5	1971-1997	0.79	M-v	2	Williams	31136	1989 UL ₁
1989 VN ₅	14.5	0.15	19971218	38.71887	128.61786	309.51649	1.61094	0.1805233	2.3948940	29	4	1989-1998	0.92	M-v	2	Williams	31005	1989 VN ₅
1989 WD	12.5	0.15	19971218	325.09404	126.60131	63.43908	7.62786	0.0664570	2.3501793	43	5	1989-1998	0.88	M-v	2	Williams	28613	1989 WD
1989 WU ₁	13.5	0.15	19971218	33.91484	110.77257	227.15824	9.93695	0.2789220	2.5893636	44	3	1972-1998	1.01	M-v	2	Williams	31136	1989 WU ₁
1989 YF ₁	13.5	0.15	19971218	346.80926	197.79226	284.92277	8.95854	0.0838515	2.5321250	29	4	1988-1998	0.62	M-v	3	Williams	31137	1989 YF ₁
1989 YA ₂	14.0	0.15	19971218	349.23772	201.07038	280.04927	5.32357	0.1787694	2.5294031	49	5	1980-1998	0.64	M-v	3	Williams	31137	1989 YA ₂
1990 BZ	13.5	0.15	19971218	42.69999	106.93495	310.50310	14.33011	0.0831594	2.5350687	36	5	1982-1998	0.65	M-v	2	Williams	31137	1990 BZ
1990 BH ₁	13.0	0.15	19971218	281.41233	87.20093	71.14348	5.62961	0.1535719	2.6377996	38	5	1950-1998	0.75	M-v	3	Williams	31137	1990 BH ₁
1990 FG	13.5	0.15	19971218	158.63607	2.47837	357.07546	25.73978	0.0304237	1.9109771	25	4	1982-1998	0.82	M-v	3	Williams	28885	1990 FG
1990 FD ₁	12.5	0.15	19971218	289.14887	76.17585	104.90673	14.13152	0.1168012	2.6465429	35	7	1954-1998	0.55	M-v	1	Marsden	31137	1990 FD ₁
1990 OH ₁	12.5	0.15	19971218	119.45415	39.87542	239.38126	27.46336	0.2966372	3.1316913	30	3	1990-1998	0.77	M-v	3	Williams	31137	1990 OH ₁
1990 OT ₄	14.0	0.15	19971218	270.63966	126.28572	153.86281	11.91117	0.1689712	2.6637856	32	5	1951-1998	0.60	M-v	1	Marsden	25538	1990 OT ₄
1990 OE ₅	13.5	0.15	19971218	239.42592	22.08045	245.32614	7.18784	0.1807399	2.7767462	17	4	1989-1998	0.82	M-v	2	Williams	21574	1990 OE ₅
1990 QA	12.0	0.15	19971218	91.76982	334.80685	26.44776	19.93879	0.2070184	3.1027639	14	3	1990-1997	0.69	M-v	3	Williams	30653	1990 QA
1990 QM ₁	13.0	0.15	19971218	67.55993	245.79455	147.28412	2.52628	0.1784201	3.1775756	45	4	1990-1997	0.79	M-v	2	Williams	31137	1990 QM ₁
1990 QJ ₂	15.5	0.15	19971218	52.38150	0.84937	34.23616	1.55018	0.1592588	2.1919929	31	3	1990-1998	0.48	M-v	3	Williams	31137	1990 QJ ₂
1990 QG ₃	16.5	0.15	19971218	56.81001	325.70031	32.48521	1.65475	0.3019309	2.2366958	23	3	1990-1997	0.71	M-v	3	Williams	31005	1990 QG ₃

1990 QO ₃	12.0	0.15	19971218	57.92268	52.64064	354.59677	10.61372	0.0761522	3.1293042	75	4	1990-1998	0.67	M-v	1	Williams	28614	1990 QO ₃
1990 QK ₈	14.0	0.15	19971218	213.88780	139.52955	122.99655	2.21984	0.0769075	2.9984599	22	2	1990-1998	0.63	M-v	5	Williams	31099	1990 QK ₈
1990 QT ₉	15.0	0.15	19971218	129.27895	167.65040	117.27081	1.55377	0.1318520	2.2000962	46	4	1990-1998	0.74	M-v	2	Williams	28885	1990 QT ₉
1990 RV	13.0	0.15	19971218	7.38493	353.74360	119.86344	2.66753	0.1434106	3.0818106	33	5	1990-1998	0.79	M-v	1	Williams	29134	1990 RV
1990 RK ₂	14.5	0.15	19971218	136.85812	162.14654	176.88524	2.35891	0.0686234	2.1298412	20	5	1990-1998	0.83	M-v	2	Williams	28085	1990 RK ₂
1990 RE ₅	12.5	0.15	19971218	277.98637	246.76057	333.28720	12.65908	0.1068090	2.9776854	29	7	1955-1998	0.68	M-v	1	Williams	28885	1990 RE ₅
1990 RE ₇	13.0	0.15	19971218	78.27234	66.91614	358.74678	10.50203	0.1079463	2.9854841	24	4	1982-1998	0.74	M-v	1	Williams	23537	1990 RE ₇
1990 SX	12.5	0.15	19971218	120.93039	14.36560	336.48609	11.22578	0.1770061	3.1356576	21	3	1990-1998	0.62	M-v	3	Williams	25529	1990 SX
1990 SF ₃	14.0	0.15	19971218	1.06403	284.98222	119.04225	3.78422	0.0647556	2.2903843	20	3	1990-1998	0.52	M-v	4	Williams	31099	1990 SF ₃
1990 SG ₃	14.0	0.15	19971218	59.98999	197.48257	131.19036	4.04513	0.1906307	2.2874394	23	5	1983-1998	0.85	M-v	2	Williams	31137	1990 SG ₃
1990 SZ ₇	14.0	0.15	19971218	283.11626	99.75391	40.62727	6.54474	0.1063257	2.2415909	28	3	1990-1998	0.67	M-v	3	Williams	31005	1990 SZ ₇
1990 SL ₁₀	14.0	0.15	19971218	30.52762	317.66385	20.42850	14.03146	0.1049694	2.3209428	19	2	1990-1997	0.73	M-v	3	Williams	31099	1990 SL ₁₀
1990 SV ₁₂	13.5	0.15	19971218	80.54131	319.79153	63.41695	2.27610	0.1742906	3.1754602	22	5	1985-1998	0.53	M-v	1	Williams	28085	1990 SV ₁₂
1990 SA ₁₅	13.5	0.15	19971218	352.02648	158.60359	252.45882	4.49171	0.1343158	2.2810207	25	3	1990-1998	0.54	M-v	3	Williams	31137	1990 SA ₁₅
1990 TJ ₃	14.0	0.15	19971218	66.55942	305.61682	90.36895	4.73658	0.1294949	2.2055976	25	5	1954-1998	0.72	M-v	2	Williams	30781	1990 TJ ₃
1990 UF ₁	13.5	0.15	19971218	98.14368	286.30745	58.72620	4.47305	0.1503802	2.2231604	23	3	1990-1998	0.82	M-v	4	Williams	29612	1990 UF ₁
1990 UZ ₁	14.5	0.15	19971218	63.55639	261.97383	135.78173	4.43411	0.1585695	2.2062377	16	3	1990-1998	0.78	M-v	4	Williams	25213	1990 UZ ₁
1990 UL ₂	13.5	0.15	19971218	55.57799	352.35861	63.03595	5.40637	0.1288430	2.2072377	26	5	1988-1998	0.73	M-v	2	Williams	31137	1990 UL ₂
1990 UN ₂	14.5	0.15	19971218	64.00641	278.11376	54.08360	6.06476	0.0944604	2.3288047	34	3	1990-1997	0.82	M-v	3	Williams	31137	1990 UN ₂
1990 VD ₃	14.5	0.15	19971218	247.04652	228.15151	277.51729	3.23343	0.0615146	2.3724956	23	3	1990-1997	0.80	M-v	3	Williams	30895	1990 VD ₃
1990 VB ₆	14.0	0.15	19971218	340.20090	297.72065	133.02193	7.54753	0.0822627	2.3481944	15	3	1990-1997	0.44	M-v	4	Williams	24739	1990 VB ₆
1990 WF	13.5	0.15	19971218	56.47616	255.60603	130.92747	4.52764	0.1437519	2.2538011	20	2	1990-1998	0.78	M-v	5	Williams	31099	1990 WF
1990 WX ₃	14.0	0.15	19971218	72.03650	307.00780	95.79637	6.69407	0.1688145	2.2085441	30	5	1980-1998	0.70	M-v	1	Williams	30895	1990 WX ₃
1990 WQ ₆	15.0	0.15	19971218	54.02970	173.71374	176.22807	4.32165	0.1315777	2.3386005	33	4	1990-1997	0.95	M-v	1	Williams	27912	1990 WQ ₆
1991 AB ₂	13.5	0.15	19971218	342.68669	332.62283	175.68456	4.02745	0.1251516	2.2674078	14	3	1990-1998	0.62	M-v	5	Williams	28298	1991 AB ₂
1991 CB ₁	17.5	0.15	19971218	281.48751	345.55278	317.56172	14.57522	0.5947657	1.6872266	32	4	1991-1998	0.45	M-v	3	Williams	28885	1991 CB ₁
1991 DM	14.0	0.15	19971218	311.99423	25.48087	133.37058	1.34207	0.1487636	2.3680594	28	4	1991-1998	0.60	M-v	2	Williams	31137	1991 DM
1991 FD	13.5	0.15	19971218	329.83931	358.47087	167.81931	24.90964	0.1816963	2.3469213	13	3	1991-1998	0.85	M-v	3	Williams	25426	1991 FD
1991 GR	11.5	0.15	19971218	58.44494	0.41869	19.43621	15.60145	0.1222194	2.5639299	51	7	1953-1998	0.60	M-v	1	Williams	31137	1991 GR
1991 GY ₃	15.5	0.15	19971218	315.78227	149.02417	18.66421	2.82443	0.1260713	2.3931805	50	3	1991-1998	0.49	M-v	4	Williams	31138	1991 GY ₃
1991 GP ₆	15.5	0.15	19971218	269.45105	31.32296	193.66972	1.99721	0.1654792	2.4061736	32	6	1977-1998	0.72	M-v	2	Williams	29659	1991 GP ₆
1991 GG ₇	14.0	0.15	19971218	0.28356	94.30179	18.86493	4.21652	0.1581141	2.4000336	33	3	1982-1998	0.50	M-v	4	Williams	31100	1991 GG ₇
1991 GH ₁₀	14.0	0.15	19971218	47.33825	10.76909	51.74686	6.83966	0.1019554	2.4162356	38	5	1989-1998	0.57	M-v	1	Williams	29942	1991 GH ₁₀
1991 LQ	13.0	0.15	19971218	176.15772	204.27788	94.29903	15.23141	0.1500972	2.5787090	16	3	1991-1998	1.05	M-v	4	Williams	31138	1991 LQ
1991 NF ₃	13.5	0.15	19971218	121.54492	102.84466	272.56031	11.80048	0.2047922	2.6451477	30	5	1989-1998	0.77	M-v	1	Williams	29659	1991 NF ₃
1991 PB ₂	14.5	0.15	19971218	244.34352	114.07633	112.52310	6.36454	0.1997006	2.6145616	24	3	1991-1998	0.73	M-v	3	Williams	23124	1991 PB ₂
1991 PW ₉	13.5	0.15	19971218	52.35732	157.56596	152.87971	9.97311	0.0808847	3.1597273	30	4	1991-1997	0.87	M-v	2	Williams	31006	1991 PW ₉
1991 PJ ₁₂	12.5	0.15	19971218	16.45574	144.20678	263.30711	8.40797	0.1423081	3.0539716	27	4	1986-1997	0.83	M-v	3	Williams	31100	1991 PJ ₁₂
1991 PT ₁₂	13.5	0.15	19971218	107.48380	297.93787	58.22014	0.88036	0.0829467	2.7904843	24	5	1982-1998	0.52	M-v	1	Williams	31100	1991 PT ₁₂
1991 PT ₁₆	13.0	0.15	19971218	124.44840	165.37229	152.59456	2.39528	0.0633441	2.9105091	18	3	1991-1998	0.85	M-v	5	Williams	30655	1991 PT ₁₆
1991 PV ₁₆	13.0	0.15	19971218	62.96165	289.15374	96.62787	3.05196	0.1216286	2.9286985	28	3	1986-1998	0.72	M-v	4	Williams	31101	1991 PV ₁₆
1991 RS ₇	14.0	0.15	19971218	190.02246	180.11679	108.43625	8.51691	0.1128568	2.7561294	31	2	1991-1998	0.62	M-v	4	Williams	31138	1991 RS ₇
1991 RZ ₈	12.5	0.15	19971218	199.16168	280.04874	350.10234	1.38893	0.0272273	2.8579948	42	4	1991-1998	0.46	M-v	2	Williams	31138	1991 RZ ₈
1991 RK ₁₁	13.5	0.15	19971218	286.12647	74.03041	134.75974	11.24478	0.1254522	2.5657266	24	5	1955-1998	0.65	M-v	1	Williams	29659	1991 RK ₁₁
1991 RQ ₁₁	13.5	0.15	19971218	294.44080	59.15270	134.69513	15.91032	0.0425162	2.6242100	29	5	1990-1998	0.89	M-v	2	Williams	28615	1991 RQ ₁₁
1991 RB ₁₂	13.5	0.15	19971218	59.80627	83.18958	320.06734	12.75093	0.1699280	2.8099863	39	3	1991-1998	0.69	M-v	3	Williams	31138	1991 RB ₁₂
1991 RD ₁₂	14.0	0.15	19971218	38.90875	284.33676	127.15061	3.34774	0.1164877	2.8345962	32	5	1953-1998	0.77	M-v	1	Williams	31138	1991 RD ₁₂
1991 RP ₁₇	14.0	0.15	19971218	223.67033	301.09296	349.89142	12.02140	0.2647862	2.5762879	19	3	1991-1998	1.06	M-v	4	Williams	24105	1991 RP ₁₇
1991 RT ₄₀	13.0	0.15	19971218	165.31400	259.72238	32.64532	2.35623	0.0387598	2.8784859	29	5	1981-1998	0.46	M-v	1	Williams	31006	1991 RT ₄₀
1991 TJ ₁₄	13.5	0.15	19971218	182.66456	200.00946	116.06165	3.89008	0.0578871	2.7165797	25	8	1954-1998	0.72	M-v	1	Williams	28615	1991 TJ ₁₄
1991 UC	12.5	0.15	19971218	114.97245	54.56847	313.11991	1.06815	0.0322900	2.8711877	14	3	1990-1998	0.89	M-v	5	Williams	22815	1991 UC
1991 VH	16.5	0.15	19971218	53.24621	207.05752	139.48567	13.91652	0.1438463	1.1365704	193	2	1991-1998	0.55	M-v	2	Williams	31138	1991 VH
1991 VC ₂	12.5	0.15	19971218	70.40569	201.07618	210.08691	9.23810	0.0837629	2.9826723	24	4	1986-1998	0.48	M-v	1	Williams	28615	1991 VC ₂

1991 VD ₂	12.5	0.15	19971218	46.95645	301.12667	103.67459	3.01807	0.1809779	3.1082449	61	3	1985–1998	0.66	M-v	4	Williams	31101	1991 VD ₂
1991 VX ₂	12.5	0.15	19971218	65.30078	66.06076	303.19758	4.41368	0.1506342	3.1770611	21	3	1991–1998	0.87	M-v	5	Williams	31138	1991 VX ₂
1991 VH ₄	12.5	0.15	19971218	109.10839	260.06993	100.69142	5.97834	0.1246873	2.9919301	17	3	1991–1997	0.87	M-v	3	Williams	29135	1991 VH ₄
1991 VP ₄	13.0	0.15	19971218	39.06193	309.65588	110.99788	6.73722	0.1597568	3.1104391	33	3	1980–1998	0.42	M-v	4	Williams	20339	1991 VP ₄
1991 VX ₅	12.5	0.15	19971218	316.22676	82.71500	87.11934	10.86183	0.0497581	2.9850155	21	2	1991–1998	0.76	M-v	5	Williams	30978	1991 VX ₅
1991 XS	13.0	0.15	19971218	6.61478	244.19932	236.56592	9.95149	0.1379593	3.0266660	23	4	1991–1998	0.78	M-v	1	Williams	28585	1991 XS
1992 AB	14.0	0.15	19971218	344.11728	55.60990	88.90041	40.75550	0.5526008	3.2875592	159	6	1992–1998	0.56	M-v	1	Williams	31138	1992 AB
1992 AK ₁	12.0	0.15	19971218	68.66004	294.02099	99.56322	2.91849	0.1689211	3.2324217	37	5	1990–1998	0.82	M-v	1	Williams	28886	1992 AK ₁
1992 BF	19.5	0.15	19971218	141.45489	336.24496	315.61824	7.26913	0.2715712	0.9078952	88	2	1992–1998	0.66	M-v	4	Williams	31102	1992 BF
1992 CR ₂	14.5	0.15	19971218	168.47817	55.05052	201.95360	4.07980	0.1069188	2.1907303	32	2	1992–1998	0.70	M-v	5	Williams	31102	1992 CR ₂
1992 CU ₂	13.5	0.15	19971218	111.95102	98.75536	277.13450	8.11089	0.0804798	3.1736013	21	4	1988–1998	0.74	M-v	1	Williams	29135	1992 CU ₂
1992 EY ₉	16.0	0.15	19971218	144.40960	290.27678	317.96270	2.61291	0.0771071	2.3324138	36	4	1992–1998	0.62	M-v	1	Williams	31138	1992 EY ₉
1992 EY ₁₁	13.5	0.15	19971218	20.12131	70.44958	70.66553	2.53579	0.1261911	3.1988186	16	3	1992–1998	0.31	M-v	4	Williams	26190	1992 EY ₁₁
1992 EB ₁₃	14.0	0.15	19971218	62.63176	6.71454	306.81329	4.10192	0.1237820	2.3803129	14	4	1986–1997	0.59	M-v	2	Williams	31006	1992 EB ₁₃
1992 FS ₁	14.0	0.15	19971218	185.34645	172.58668	104.74655	7.14852	0.1732304	2.2620041	29	4	1989–1998	0.72	M-v	2	Williams	31138	1992 FS ₁
1992 FO ₃	15.0	0.15	19971218	81.74968	203.49606	185.03220	1.23187	0.0421889	2.1658168	32	6	1982–1998	0.80	M-v	1	Williams	29660	1992 FO ₃
1992 GG ₃	14.0	0.15	19971218	260.18317	310.13364	264.03561	0.89277	0.0465473	2.2074164	44	5	1992–1998	0.70	M-v	2	Williams	27729	1992 GG ₃
1992 GF ₄	14.5	0.15	19971218	98.91914	338.87469	37.91330	6.55581	0.1812348	2.2226983	36	4	1960–1998	0.90	M-v	2	Williams	30471	1992 GF ₄
1992 HM	13.5	0.15	19971218	165.29352	181.73986	50.52762	26.04821	0.1544946	2.3993186	15	5	1981–1997	0.59	M-v	2	Williams	25650	1992 HM
1992 HY ₆	15.0	0.15	19971218	231.78869	164.21218	90.14486	4.97932	0.1453595	2.1934663	19	3	1976–1998	0.34	M-v	5	Williams	31138	1992 HY ₆
1992 JF	14.0	0.15	19971218	177.57428	235.18666	56.36718	4.69009	0.2159773	2.2944928	35	7	1957–1998	0.77	M-v	1	Marsden	28886	1992 JF
1992 LJ	14.0	0.15	19971218	148.21627	100.36118	145.13903	4.11752	0.1445106	2.4804648	32	7	1976–1997	0.99	M-v	3	Williams	28886	1992 LJ
1992 LK	14.0	0.15	19971218	178.13249	224.80105	75.53173	6.46031	0.2265704	2.2932343	27	3	1982–1998	0.62	M-v	3	Williams	30896	1992 LK
1992 LS	14.0	0.15	19971218	92.93530	99.23927	203.58868	4.05115	0.1661968	2.5296478	34	3	1992–1997	0.65	M-v	3	Williams	27455	1992 LS
1992 OK	14.5	0.15	19971218	47.21900	103.17496	248.44628	7.43622	0.3540730	2.7556466	52	2	1992–1998	0.66	M-v	3	Williams	31102	1992 OK
1992 OY ₂	14.0	0.15	19971218	109.35999	227.58985	134.27209	4.56835	0.1940575	2.4614873	25	3	1989–1998	0.88	M-v	4	Williams	29660	1992 OY ₂
1992 OJ ₈	13.5	0.15	19971218	185.18206	18.52963	301.00143	6.75400	0.1321740	2.2961295	36	3	1992–1998	0.78	M-v	4	Williams	23134	1992 OJ ₈
1992 PN ₁	14.0	0.15	19971218	38.23925	69.22467	312.73919	11.45633	0.1834495	2.6671088	27	3	1992–1997	0.57	M-v	3	Williams	31103	1992 PN ₁
1992 PJ ₂	14.5	0.15	19971218	166.83025	82.83613	212.04167	5.60831	0.3178614	2.4147542	27	4	1988–1998	0.57	M-v	2	Williams	31139	1992 PJ ₂
1992 RM ₂	14.0	0.15	19971218	114.65346	347.52496	340.75609	13.66935	0.1686661	2.5600091	21	3	1988–1997	0.69	M-v	4	Williams	31006	1992 RM ₂
1992 RJ ₃	14.5	0.15	19971218	237.47162	270.67069	344.38764	7.20758	0.1076246	2.3691266	22	4	1991–1998	0.81	M-v	2	Williams	28615	1992 RJ ₃
1992 RZ ₅	14.5	0.15	19971218	347.23964	77.30600	83.18219	3.06160	0.1659522	2.4041107	22	4	1992–1998	0.75	M-v	2	Williams	29136	1992 RZ ₅
1992 SD ₁	13.5	0.15	19971218	129.87346	294.50834	48.19200	9.74657	0.0960147	2.5409329	24	4	1992–1998	0.68	M-v	1	Williams	28086	1992 SD ₁
1992 SN ₁	12.5	0.15	19971218	77.37468	27.55598	11.52954	15.10577	0.2080188	2.5725834	32	5	1990–1998	0.79	M-v	2	Williams	28317	1992 SN ₁
1992 ST ₁	12.5	0.15	19971218	115.07971	333.88980	315.44739	7.55041	0.2086995	2.7894742	27	7	1955–1997	0.90	M-v	2	Williams	31139	1992 ST ₁
1992 SW ₁₀	13.0	0.15	19971218	19.78023	68.00060	20.33741	10.25749	0.1925633	2.6366600	25	6	1974–1998	0.46	M-v	1	Williams	23538	1992 SW ₁₀
1992 SM ₁₂	13.5	0.15	19971218	208.89793	151.02230	149.85380	6.21952	0.1383959	2.3855527	20	6	1987–1998	0.76	M-v	2	Williams	29317	1992 SM ₁₂
1992 SO ₂₄	14.5	0.15	19971218	359.65892	272.29872	218.01801	7.17436	0.0857363	2.4655835	36	5	1991–1998	0.79	M-v	1	Williams	25538	1992 SO ₂₄
1992 SQ ₂₆	15.0	0.15	19971218	76.31725	285.43357	109.56907	4.06944	0.1339410	2.6122699	41	5	1977–1998	0.71	M-v	2	Williams	29661	1992 SQ ₂₆
1992 UT ₁	13.0	0.15	19971218	185.80862	211.46258	83.11269	4.59585	0.1460249	2.5203940	20	5	1988–1998	0.85	M-v	2	Williams	29661	1992 UT ₁
1992 UA ₃	13.5	0.15	19971218	72.30111	352.63284	44.57551	3.94322	0.0986762	2.6572312	40	4	1992–1998	0.79	M-v	1	Williams	31139	1992 UA ₃
1992 UH ₄	13.0	0.15	19971218	100.15843	269.80493	73.92435	13.68737	0.1906545	2.6736681	16	3	1991–1997	0.67	M-v	3	Williams	31007	1992 UH ₄
1992 UP ₆	12.0	0.15	19971218	23.71644	154.20219	218.66728	12.80763	0.1609130	2.9724473	19	3	1982–1998	0.83	M-v	4	Williams	30896	1992 UP ₆
1992 WN ₁	13.5	0.15	19971218	353.92988	306.81327	132.09791	5.52315	0.1643845	2.9130992	14	4	1991–1997	0.57	M-v	4	Williams	31139	1992 WN ₁
1992 WG ₅	13.0	0.15	19971218	13.38892	22.52580	88.05937	14.15688	0.1140286	2.7090052	14	4	1989–1998	0.47	M-v	1	Williams	30979	1992 WG ₅
1992 YL ₂	13.0	0.15	19971218	336.07277	13.65480	93.29847	11.38630	0.0598378	2.9931641	16	4	1931–1998	0.68	M-v	2	Marsden	31007	1992 YL ₂
1993 BE ₂	12.5	0.15	19971218	79.78899	270.11064	97.68853	12.00128	0.1141150	3.0109311	26	5	1965–1998	0.68	M-v	3	Williams	30658	1993 BE ₂
1993 BB ₆	13.0	0.15	19971218	140.83624	347.82456	358.40725	1.65118	0.0469230	2.9187241	28	6	1981–1998	0.69	M-v	1	Williams	29661	1993 BB ₆
1993 DO	12.5	0.15	19971218	67.31667	270.70807	154.03393	10.79067	0.0955796	3.0023618	29	9	1951–1998	0.77	M-v	1	Williams	28317	1993 DO
1993 FF ₄	13.5	0.15	19971218	25.28358	58.58705	41.87738	2.34943	0.1416283	3.0598178	18	3	1982–1998	0.61	M-v	5	Williams	24230	1993 FF ₄
1993 FT ₄	12.5	0.15	19971218	264.23563	111.70245	123.39565	2.64726	0.1445534	3.1599487	24	5	1981–1998	0.75	M-v	1	Williams	25975	1993 FT ₄
1993 FS ₁₄	11.5	0.15	19971218	78.93881	295.18005	105.04629	6.44287	0.1595291	3.1623704	12	4	1992–1998	0.51	M-v	2	Williams	28887	1993 FS ₁₄
1993 FO ₃₄	13.0	0.15	19971218	240.12405	93.88215	173.52213	7.36766	0.1658423	3.1924814	17	3	1993–1998	0.63	M-v	3	Williams	28588	1993 FO ₃₄

1993 FU ₃₅	12.5	0.15	19971218	45.56825	323.45703	104.76136	2.37669	0.1526693	3.2125982	12	2	1993–1998	0.55	M-v	5	Williams	31104	1993 FU ₃₅
1993 FT ₃₇	13.0	0.15	19971218	343.98619	1.34463	161.30402	2.57052	0.1534373	3.0374275	33	4	1977–1998	0.52	M-v	1	Williams	30659	1993 FT ₃₇
1993 FK ₈₀	13.0	0.15	19971218	58.59895	16.96421	38.54252	4.70380	0.2050081	3.1317570	26	5	1979–1998	0.45	M-v	1	Williams	29137	1993 FK ₈₀
1993 HH	12.0	0.15	19971218	305.29035	150.25136	37.80203	16.79237	0.0738325	3.2071199	12	3	1990–1997	0.65	M-v	4	Williams	30979	1993 HH
1993 HH ₃	12.5	0.15	19971218	35.54889	327.11302	124.09985	3.00932	0.1074518	3.1254026	22	4	1982–1998	0.53	M-v	1	Williams	23528	1993 HH ₃
1993 NU ₁	15.0	0.15	19971218	11.31491	225.81494	152.02360	2.87633	0.2108130	2.3868887	18	3	1993–1997	0.55	M-v	3	Williams	31007	1993 NU ₁
1993 OP	13.0	0.15	19971218	52.70668	95.42613	286.25943	23.90664	0.1982637	2.2876143	26	4	1990–1998	0.72	M-v	1	Williams	31139	1993 OP
1993 OA ₃	13.0	0.15	19971218	78.86485	59.61155	283.20040	23.20796	0.2418773	2.3252054	19	4	1954–1998	0.84	M-v	3	Williams	23135	1993 OA ₃
1993 OF ₃	15.5	0.15	19971218	75.27367	318.53689	326.39062	1.21020	0.1276639	2.4044458	49	3	1992–1997	0.63	M-v	3	Williams	31139	1993 OF ₃
1993 OJ ₇	14.5	0.15	19971218	349.01244	117.61802	297.84328	5.85212	0.0951069	2.3024067	14	4	1979–1997	0.57	M-v	2	Williams	24763	1993 OJ ₇
1993 PB	16.0	0.15	19971218	299.53139	212.22419	316.02858	40.87475	0.6070727	1.4236349	88	3	1993–1998	0.56	M-v	3	Williams	31007	1993 PB
1993 QO	14.0	0.15	19971218	51.11476	77.57845	314.04369	21.94795	0.2844525	2.2986282	36	3	1986–1998	0.68	M-v	2	Marsden	31104	1993 QO
1993 SZ	14.5	0.15	19971218	71.56322	170.43280	216.14460	3.08813	0.1553875	2.2705290	27	3	1993–1998	0.67	M-v	4	Williams	28318	1993 SZ
1993 SN ₂	16.5	0.15	19971218	29.70012	145.12662	264.71080	1.94183	0.1562330	2.3361814	37	3	1993–1998	0.68	M-v	3	Williams	31139	1993 SN ₂
1993 SG ₃	15.0	0.15	19971218	299.16204	331.99094	168.56807	3.75479	0.1256438	2.3223442	39	2	1993–1997	0.82	M-v	5	Williams	31139	1993 SG ₃
1993 SW ₃	14.5	0.15	19971218	117.29035	279.53873	55.35693	6.21809	0.2007856	2.2354955	30	4	1973–1998	0.60	M-v	2	Williams	31139	1993 SW ₃
1993 SQ ₅	15.0	0.15	19971218	323.64442	160.33550	357.70623	3.41538	0.0200515	2.1751764	23	2	1993–1998	0.81	M-v	5	Williams	31104	1993 SQ ₅
1993 TU	14.0	0.15	19971218	170.32662	327.54601	335.02432	4.37306	0.1277369	2.1955190	32	5	1992–1998	0.78	M-v	2	Williams	31139	1993 TU
1993 TJ ₁	13.5	0.15	19971218	111.85109	316.60192	23.32115	6.01380	0.1919468	2.2741913	22	6	1955–1998	0.95	M-v	2	Williams	28616	1993 TJ ₁
1993 TE ₃	13.5	0.15	19971218	97.83833	335.34568	11.88091	8.22163	0.1184864	2.3063330	19	4	1979–1997	0.97	M-v	4	Williams	30452	1993 TE ₃
1993 TE ₅	14.0	0.15	19971218	146.82592	46.16005	280.90279	2.96401	0.2266307	2.1989637	38	4	1983–1998	0.59	M-v	2	Williams	28888	1993 TE ₅
1993 TQ ₂₃	14.5	0.15	19971218	4.12050	13.18849	104.58906	1.88060	0.0960831	2.2358788	20	5	1978–1998	0.85	M-v	2	Williams	25228	1993 TQ ₂₃
1993 TC ₂₅	15.5	0.15	19971218	354.00618	329.86517	107.02590	3.48755	0.1704086	2.4384559	25	2	1993–1998	0.67	M-v	4	Williams	31104	1993 TC ₂₅
1993 TN ₂₉	16.0	0.15	19971218	79.61978	195.45662	125.33247	3.24795	0.2175081	2.4275945	23	4	1989–1998	0.80	M-v	2	Williams	31007	1993 TN ₂₉
1993 TH ₃₂	14.0	0.15	19971218	152.12516	120.76847	142.15303	2.70047	0.1846669	2.3838306	37	4	1988–1998	0.78	M-v	3	Williams	31139	1993 TH ₃₂
1993 UN	15.0	0.15	19971218	167.42253	187.99864	120.41843	0.57342	0.1579623	2.1648044	66	4	1993–1998	0.60	M-v	2	Williams	28087	1993 UN
1993 VS	15.0	0.15	19971218	17.95786	271.52956	126.08072	1.51826	0.1738917	2.5359442	33	2	1993–1998	0.51	M-v	4	Williams	31140	1993 VS
1993 VS ₁	14.0	0.15	19971218	37.40630	130.81314	279.86103	2.43363	0.2049519	2.3938250	24	3	1982–1998	0.57	M-v	4	Williams	31104	1993 VS ₁
1993 VB ₂	14.0	0.15	19971218	55.21551	167.89040	246.74991	2.06464	0.0874370	2.3111115	21	4	1991–1998	0.83	M-v	2	Williams	30783	1993 VB ₂
1993 WD	17.0	0.15	19971218	265.90442	132.26907	56.58932	63.46100	0.2666089	1.0067146	309	6	1991–1998	0.61	M-v	3	Williams	31140	1993 WD
1993 WH	15.5	0.15	19931129	45.55501	119.84156	247.11975	20.63839	0.0397550	1.8913263	10	1	25 days	1.37			Williams		1993 WH
1993 XO	12.5	0.15	19971218	18.74730	143.17118	250.03008	12.95785	0.1740481	2.5846215	17	5	1972–1998	0.52	M-v	2	Williams	27558	1993 XO
1993 XV	13.5	0.15	19971218	27.24139	136.83766	289.01982	6.37585	0.2105037	2.4759690	31	2	1993–1998	0.55	M-v	4	Williams	31105	1993 XV
1993 XY	15.5	0.15	19971218	301.99805	11.37173	188.18943	4.95493	0.1666751	2.3245045	34	4	1993–1998	0.63	M-v	1	Williams	28087	1993 XY
1993 XN ₁	12.5	0.15	19971218	172.37001	181.81498	95.03919	16.46663	0.1504447	2.5851998	42	4	1991–1998	0.75	M-v	2	Williams	31140	1993 XN ₁
1993 YE	14.5	0.15	19971218	38.48210	317.43885	149.97042	0.95222	0.0860646	2.3080978	34	4	1991–1998	0.60	M-v	1	Williams	28318	1993 YE
1994 AD	15.0	0.15	19971218	338.56505	137.45357	9.12476	1.18663	0.1236107	2.4309187	30	4	1977–1998	0.51	M-v	2	Williams	28087	1994 AD
1994 AQ	12.5	0.15	19971218	48.83634	254.47481	126.64785	13.79181	0.1938684	2.5983406	43	4	1992–1998	0.58	M-v	1	Williams	29137	1994 AQ
1994 AT ₁	12.5	0.15	19971218	44.23366	328.60732	55.85414	13.72954	0.2242371	2.6532101	30	3	1991–1998	0.49	M-v	2	Williams	31140	1994 AT ₁
1994 AZ ₂	13.0	0.15	19971218	308.49830	211.26302	290.26644	11.04423	0.2075683	2.6898882	35	3	1991–1997	0.71	M-v	4	Williams	31140	1994 AZ ₂
1994 AC ₁₇	13.5	0.15	19971218	312.78411	55.48230	106.47404	3.62686	0.2191253	2.5591412	42	4	1986–1998	0.80	M-v	3	Williams	31140	1994 AC ₁₇
1994 CB ₁	14.0	0.15	19971218	6.01155	197.37430	248.04148	3.17645	0.2976942	2.5687296	21	4	1988–1998	0.56	M-v	2	Marsden	28888	1994 CB ₁
1994 CE ₁	14.0	0.15	19971218	50.04708	108.67650	320.84664	13.35836	0.1419658	2.5446917	25	2	1994–1998	0.77	M-v	5	Williams	31105	1994 CE ₁
1994 CJ ₂	14.0	0.15	19971218	281.30948	84.65015	130.98473	7.67015	0.1372509	2.5653268	26	3	1991–1998	0.70	M-v	4	Williams	29662	1994 CJ ₂
1994 CL ₂	14.5	0.15	19971218	3.42026	337.16221	118.26460	4.30295	0.1614124	2.6172860	36	3	1992–1998	0.57	M-v	3	Williams	31140	1994 CL ₂
1994 CN ₂	16.5	0.15	19971218	124.99785	248.12984	99.37615	1.43825	0.3950346	1.5733043	99	3	1994–1998	0.52	M-v	4	Williams	31140	1994 CN ₂
1994 DA	14.5	0.15	19971218	251.37107	54.54838	162.07922	9.17737	0.0683688	2.6634772	42	4	1994–1998	0.69	M-v	1	Williams	28617	1994 DA
1994 ER ₃	13.0	0.15	19971218	356.41465	351.77321	141.66190	7.60438	0.2544628	2.5926695	19	4	1951–1998	0.70	M-v	2	Williams	29104	1994 ER ₃
1994 EH ₇	13.5	0.15	19971218	214.64077	275.09936	10.65585	12.83074	0.1653092	2.6410852	20	4	1990–1998	1.06	M-v	3	Williams	29944	1994 EH ₇
1994 GH ₉	13.5	0.15	19971218	336.41866	308.33944	207.70375	11.65690	0.2282839	2.6242835	32	5	1992–1998	0.68	M-v	1	Williams	27937	1994 GH ₉
1994 GY ₉	14.5	0.15	19971218	18.97778	262.84919	173.64023	10.42211	0.2121701	2.6991008	32	4	1952–1998	0.51	M-v	2	Williams	31140	1994 GY ₉
1994 JG	13.0	0.15	19971218	147.02352	151.98099	195.65937	9.46779	0.0872120	3.0032655	47	4	1985–1998	0.48	M-v	1	Williams	26191	1994 JG
1994 JS ₁	14.0	0.15	19971218	334.73945	22.23035	168.82066	19.44849	0.3511202	2.6036736	35	3	1994–1998	0.64	M-v	3	Williams	30092	1994 JS ₁

1994 LR	12.0	0.15	19971218	256.41864	129.44441	95.02002	12.66738	0.0533213	3.0785375	22	4	1972–1998	0.53	M-v	1	Williams	31140	1994 LR
1994 TF ₁₅	14.0	0.15	19971218	22.13158	3.24179	316.77170	2.54658	0.2231664	2.2308624	24	3	1994–1997	0.73	M-v	4	Williams	31008	1994 TF ₁₅
1994 VW ₁	15.5	0.15	19971218	36.53523	320.00880	109.38321	15.53899	0.2598887	1.9626800	35	3	1994–1997	0.50	M-v	2	Williams	31008	1994 VW ₁
1994 WO ₁₃	15.5	0.15	19941124	353.26514	208.90831	215.78739	22.79026	0.2564826	2.3658188	6	1	4 days	0.72			Williams		1994 WO ₁₃
1994 WP ₁₃	13.5	0.15	19941124	22.52330	240.09768	140.42680	12.79271	0.2199312	2.6140400	6	1	4 days	0.32			Williams		1994 WP ₁₃
1994 XY ₄	14.5	0.15	19971218	71.47101	317.09591	85.70739	24.39296	0.1334131	1.8735904	12	5	1953–1998	0.82	M-v	2	Marsden	24577	1994 XY ₄
1994 YH ₁	14.0	0.15	19971218	320.39795	180.89636	268.20409	3.04323	0.0251167	2.2003543	37	2	1994–1998	0.63	M-v	4	Williams	31140	1994 YH ₁
1994 YV ₁	14.0	0.15	19971218	288.49855	50.07454	74.90949	7.36136	0.0457168	2.2994529	22	4	1992–1998	0.46	M-v	2	Williams	30689	1994 YV ₁
1994 YJ ₂	12.5	0.15	19971218	181.58142	104.41845	95.10947	14.06280	0.1127069	2.5857543	13	3	1991–1997	0.80	M-v	4	Williams	24754	1994 YJ ₂
1995 AJ	13.5	0.15	19971218	92.99557	39.00632	286.29831	6.42315	0.2069107	2.2373880	28	4	1989–1998	0.67	M-v	2	Williams	31140	1995 AJ
1995 AN	14.0	0.15	19971218	8.90876	123.34298	343.97321	18.11492	0.0774344	1.9681153	27	6	1954–1998	0.62	M-v	2	Williams	30292	1995 AN
1995 BH ₂	14.5	0.15	19971218	263.60630	76.49156	109.35545	2.09779	0.1883606	2.3203802	22	3	1993–1997	0.74	M-v	4	Williams	25084	1995 BH ₂
1995 BU ₄	15.5	0.15	19971218	40.71022	11.50309	17.46646	8.38905	0.1899345	2.2118236	32	3	1995–1998	0.30	M-v	2	Williams	31141	1995 BU ₄
1995 CK	14.0	0.15	19971218	359.34371	313.11489	114.43273	7.44972	0.0883066	2.3362035	17	3	1993–1997	0.52	M-v	3	Williams	30983	1995 CK
1995 CM	14.5	0.15	19971218	249.55818	181.10493	24.61821	5.15136	0.2008653	2.3290265	12	3	1988–1998	0.45	M-v	5	Williams	24907	1995 CM
1995 CV	12.5	0.15	19971218	292.62235	144.41792	152.99629	7.04771	0.0875004	5.2315953	48	4	1995–1998	0.51	M-v	2	Williams	29946	1995 CV
1995 CM ₁	14.0	0.15	19971218	106.59869	331.67827	351.22875	9.96711	0.1196265	2.3914067	24	3	1989–1997	0.78	M-v	4	Williams	31141	1995 CM ₁
1995 CS ₆	15.8	0.15	19950212	8.99646	192.67936	297.30756	3.81519	0.0814627	2.6570419	12	1	29 days	0.28		D	Nakano		1995 CS ₆
1995 CJ ₁₀	15.6	0.15	19950304	311.71324	248.86739	350.20596	12.33492	0.2295638	2.6159526	12	1	26 days	0.31		D	Nakano		1995 CJ ₁₀
1995 DF	15.0	0.15	19971218	293.80699	55.74840	117.08825	4.51018	0.1471365	2.2352041	28	3	1979–1998	0.51	M-v	4	Williams	31141	1995 DF
1995 DR	14.5	0.15	19971218	201.65983	84.85724	156.16488	6.94672	0.1426863	2.4380558	17	3	1991–1997	0.73	M-v	4	Williams	30983	1995 DR
1995 DO ₁	14.0	0.15	19971218	237.38597	174.79545	33.31996	4.86127	0.1873758	2.4264731	25	4	1980–1998	0.67	M-v	2	Williams	31141	1995 DO ₁
1995 DR ₁	14.0	0.15	19971218	326.33955	337.90699	136.17254	8.38510	0.0651419	2.3496187	20	3	1993–1997	0.54	M-v	3	Williams	30874	1995 DR ₁
1995 DD ₆	17.9	0.15	19950304	31.67642	328.28465	157.81858	5.97702	0.1158156	2.2628311	12	1	33 days	0.37		D	Nakano		1995 DD ₆
1995 DN ₆	16.2	0.15	19950304	263.02358	144.92712	135.69468	2.35303	0.1502349	2.5246738	12	1	33 days	0.25		D	Nakano		1995 DN ₆
1995 DP ₆	16.8	0.15	19950304	130.22020	237.99295	146.26682	3.22207	0.1675538	2.3152972	12	1	39 days	0.29		D	Nakano		1995 DP ₆
1995 DD ₇	17.2	0.15	19950304	50.46640	322.06926	143.29436	3.35698	0.1211012	2.3436905	12	1	39 days	0.24		D	Nakano		1995 DD ₇
1995 DA ₈	15.7	0.15	19950304	335.02738	34.27192	160.91408	8.35548	0.0822631	2.4323320	12	1	33 days	0.38		D	Nakano		1995 DA ₈
1995 DK ₉	17.0	0.15	19950304	59.86607	297.02001	155.00933	7.27767	0.1520102	2.5345872	12	1	33 days	0.19		D	Nakano		1995 DK ₉
1995 EO	15.0	0.15	19971218	317.09309	261.73899	236.01740	3.21361	0.1004977	2.2890343	67	3	1995–1998	0.58	M-v	3	Marsden	31141	1995 EO
1995 EZ ₄	16.2	0.15	19950324	298.06514	115.97731	139.09559	3.34943	0.1687483	2.3950349	12	1	33 days	0.28		D	Nakano		1995 EZ ₄
1995 EN ₅	14.3	0.15	19950304	15.37981	340.23620	165.99940	18.23892	0.1616340	3.2202772	12	1	27 days	0.16		D	Nakano		1995 EN ₅
1995 EH ₇	15.7	0.15	19950304	344.22831	21.49169	167.67276	27.30127	0.1132627	3.1488075	12	1	27 days	0.45		D	Nakano		1995 EH ₇
1995 ER ₇	14.0	0.15	19950324	228.85788	155.12726	162.45837	8.91531	0.1717535	2.4412749	11	1	33 days	0.13		D	Nakano		1995 ER ₇
1995 FT	13.0	0.15	19971218	245.43342	68.84016	142.66283	3.58254	0.1453252	2.4340403	28	3	1995–1998	0.68	M-v	4	Williams	31141	1995 FT
1995 FV	14.5	0.15	19971218	256.14484	70.68111	154.42740	4.76748	0.0904891	2.3058050	26	5	1989–1998	0.68	M-v	2	Williams	31141	1995 FV
1995 GF	13.0	0.15	19971218	323.33349	45.54410	67.15112	6.68071	0.0794448	2.5494603	49	4	1985–1997	0.65	M-v	3	Williams	31141	1995 GF
1995 GO	9.0	0.15	19971218	338.42653	290.17097	6.12456	17.64100	0.6216186	18.0711792	119	4	1995–1998	0.61	M-v	1	Williams	30292	1995 GO
1995 HG	13.5	0.15	19971218	222.11433	234.13067	54.39796	5.45201	0.1258233	2.2485685	18	5	1989–1998	0.63	M-v	1	Williams	28889	1995 HG
1995 KC	15.0	0.15	19971218	255.41145	24.87490	193.62751	10.20613	0.1743052	2.4264382	48	3	1995–1998	0.74	M-v	3	Marsden	28087	1995 KC
1995 KN	14.0	0.15	19971218	273.48501	84.39301	76.30843	4.99362	0.0741718	2.2575928	37	2	1995–1998	0.70	M-v	3	Williams	31106	1995 KN
1995 KL ₁	13.5	0.15	19971218	287.40476	284.48899	306.57812	22.06310	0.2078991	2.3114862	23	3	1974–1998	0.39	M-v	2	Williams	26191	1995 KL ₁
1995 LD	14.5	0.15	19971218	268.24826	16.90467	216.77131	6.00469	0.0705562	2.3565744	51	4	1991–1998	0.49	M-v	1	Williams	28617	1995 LD
1995 MG ₁	13.5	0.15	19971218	53.02593	244.13237	159.30327	9.00284	0.2922719	2.7171403	20	4	1971–1998	0.55	M-v	1	Williams	29664	1995 MG ₁
1995 OG	14.5	0.15	19971218	122.96735	54.52557	312.83782	10.14214	0.1155023	2.9799010	42	3	1995–1998	0.73	M-v	3	Williams	28617	1995 OG
1995 ON	14.0	0.15	19971218	294.33430	112.21335	130.03545	6.97387	0.1279260	2.2928378	55	4	1984–1998	0.51	M-v	1	Marsden	28889	1995 ON
1995 OO	17.0	0.15	19971218	327.47933	211.16824	349.62083	24.02214	0.7792357	2.1513037	41	2	1995–1998	0.44	M-v	2	Williams	31141	1995 OO
1995 OU	14.0	0.15	19971218	220.83787	288.88187	0.86577	5.59673	0.2208667	2.5501760	14	3	1991–1998	0.41	M-v	3	Williams	26192	1995 OU
1995 OV	13.0	0.15	19971218	204.45284	297.08858	346.45716	7.75090	0.2480240	2.7256777	22	4	1994–1998	0.70	M-v	2	Williams	28618	1995 OV
1995 OD ₁	14.5	0.15	19971218	335.97013	5.75622	154.64994	12.25394	0.0875054	3.0068800	41	3	1995–1998	0.53	M-v	3	Williams	31141	1995 OD ₁
1995 QS ₃	12.5	0.15	19971218	119.26849	67.67741	305.62031	12.40362	0.1180914	3.1749709	13	4	1984–1998	0.88	M-v	3	Williams	25964	1995 QS ₃
1995 SX ₁₂	14.0	0.15	19971218	275.65472	17.64113	203.33957	0.32278	0.1008314	3.0453682	28	4	1972–1998	0.72	M-v	1	Williams	30761	1995 SX ₁₂
1995 SK ₅₃	13.0	0.15	19971218	194.88766	316.19835	30.07650	10.62360	0.1327057	2.9224575	30	5	1990–1998	0.54	M-v	1	Williams	30901	1995 SK ₅₃

1995 UQ ₅	12.0	0.15	19971218	197.98962	333.88617	318.61637	10.63318	0.1758700	3.0503926	20	4	1979–1998	0.74	M-v	2	Williams	30666	1995 UQ ₅
1996 CC	13.0	0.15	19971218	165.31560	328.21726	61.46039	19.50495	0.1292014	2.7006396	34	4	1990–1998	0.52	M-v	2	Williams	30093	1996 CC
1996 DH	16.5	0.15	19971218	190.75164	351.33255	309.40497	17.23140	0.2767007	1.5871889	102	2	1996–1998	0.57	M-v	3	Williams	31107	1996 DH
1996 EN	16.5	0.15	19971218	266.20679	125.08320	164.24400	37.95321	0.4309287	1.5066850	252	3	1996–1998	0.55	M-v	1	Marsden	28618	1996 EN
1996 EU ₂	11.0	0.15	19971218	128.70965	171.77908	263.98727	15.48276	0.1069965	3.4139454	26	4	1977–1998	0.51	M-v	2	Williams	30293	1996 EU ₂
1996 FG ₃	18.5	0.15	19971218	108.32228	23.38283	300.47827	1.98148	0.3497324	1.0543527	232	3	1996–1998	0.60	M-v	4	Williams	31141	1996 FG ₃
1996 MN	16.0	0.15	19971218	134.03780	48.97230	263.72552	5.93608	0.1461702	2.2697130	39	2	1996–1998	0.46	M-v	3	Marsden	31108	1996 MN
1996 MR	16.5	0.15	19971218	133.24899	193.37433	134.83949	4.28123	0.3493816	2.3927336	54	3	1995–1998	0.48	M-v	2	Williams	27938	1996 MR
1996 NA	15.0	0.15	19971218	199.99656	158.37169	103.91226	24.25836	0.0644166	1.9306015	32	2	1996–1998	0.38	M-v	3	Marsden	31142	1996 NA
1996 NX	12.5	0.15	19971218	176.42630	318.01722	271.43516	14.02657	0.0570254	2.5713537	18	3	1991–1998	0.69	M-v	4	Williams	27731	1996 NX
1996 NZ ₃	14.0	0.15	19971218	64.99246	116.82750	276.85234	2.91382	0.0899877	2.4479944	31	3	1976–1998	0.76	M-v	3	Williams	31108	1996 NZ ₃
1996 NB ₄	14.0	0.15	19971218	258.64998	229.48670	311.68149	2.47384	0.1255665	2.4297693	21	4	1978–1997	1.06	M-v	2	Williams	31142	1996 NB ₄
1996 NN ₄	14.0	0.15	19971218	46.58469	223.84813	151.19878	1.85404	0.1733208	3.2226503	27	3	1991–1997	0.90	M-v	3	Williams	31108	1996 NN ₄
1996 NX ₄	14.0	0.15	19971218	350.76792	308.29439	139.01342	5.59016	0.0235260	2.6489711	26	3	1990–1998	0.74	M-v	4	Williams	28319	1996 NX ₄
1996 OE	16.5	0.15	19971218	142.84696	242.43322	57.23355	2.62837	0.0494156	2.4082252	33	3	1995–1998	0.42	M-v	3	Marsden	31142	1996 OE
1996 OL	15.0	0.15	19971218	146.61282	230.13850	96.90679	4.53319	0.1646320	2.2545309	29	2	1996–1998	0.50	M-v	4	Williams	31108	1996 OL
1996 ON	15.5	0.15	19971218	117.56447	71.42567	269.72220	3.81197	0.2500908	2.3864139	75	4	1978–1998	0.45	M-v	2	Marsden	28618	1996 ON
1996 OS ₂	14.5	0.15	19971218	72.51992	313.24077	33.94459	2.46563	0.0920763	2.7294034	35	3	1994–1997	0.48	M-v	2	Williams	31109	1996 OS ₂
1996 PK	14.5	0.15	19971218	284.49107	203.37477	7.65400	3.04077	0.0830034	2.3138762	63	3	1991–1998	0.52	M-v	3	Marsden	31142	1996 PK
1996 PA ₁	15.0	0.15	19971218	108.44477	213.35874	133.69032	7.41023	0.1344079	2.3778439	41	2	1996–1998	0.30	M-v	4	Marsden	31142	1996 PA ₁
1996 PY ₇	13.5	0.15	19971218	21.85844	280.94798	126.74648	2.91465	0.0506386	2.8378362	30	5	1949–1997	0.98	M-v	1	Williams	31142	1996 PY ₇
1996 QD ₁	14.5	0.15	19971218	248.83657	321.69564	238.53006	3.09935	0.0856765	2.2925979	28	2	1996–1998	0.56	M-v	4	Marsden	31142	1996 QD ₁
1996 QQ ₁	13.5	0.15	19971218	66.32603	273.08078	108.85338	2.13765	0.2019129	3.1290670	85	3	1991–1998	0.68	M-v	3	Williams	31142	1996 QQ ₁
1996 RM	14.0	0.15	19971218	71.36462	36.01465	355.38399	16.69678	0.0898523	2.9357953	34	2	1996–1998	0.62	M-v	3	Williams	31110	1996 RM
1996 RC ₁	15.0	0.15	19971218	168.02145	173.44798	138.13542	2.46067	0.1267163	2.2252950	29	3	1995–1998	0.32	M-v	4	Williams	29319	1996 RC ₁
1996 RG ₁	14.5	0.15	19971218	144.50795	18.15478	9.13450	5.75511	0.1649867	2.1812768	30	4	1991–1998	0.61	M-v	3	Williams	29140	1996 RG ₁
1996 RQ ₂	14.0	0.15	19971218	290.92593	240.08240	314.23382	1.55940	0.1502767	2.4083031	42	4	1991–1998	0.51	M-v	2	Williams	31009	1996 RQ ₂
1996 RU ₂	15.5	0.15	19971218	197.59891	241.79847	44.79690	0.87783	0.1006164	2.1575034	29	4	1993–1998	0.54	M-v	2	Williams	30902	1996 RU ₂
1996 RJ ₃	14.5	0.15	19971218	133.12525	297.51252	9.91521	5.48179	0.1931249	2.4135623	47	3	1985–1998	0.49	M-v	3	Marsden	31142	1996 RJ ₃
1996 RE ₄	13.0	0.15	19971218	146.44874	306.21069	26.69323	12.75320	0.1697185	2.6067049	32	4	1975–1998	0.48	M-v	2	Williams	31142	1996 RE ₄
1996 RF ₅	14.5	0.15	19971218	160.41969	189.19073	117.22030	7.16368	0.1273015	2.3136542	25	3	1984–1998	0.64	M-v	4	Williams	31142	1996 RF ₅
1996 SJ ₄	14.5	0.15	19971218	148.58238	337.47449	343.84662	5.07001	0.2007314	2.2324055	33	5	1976–1998	0.67	M-v	3	Williams	31142	1996 SJ ₄
1996 SS ₄	15.0	0.15	19971218	291.13174	8.32580	202.19983	3.74176	0.0612574	2.3533929	45	3	1995–1998	0.43	M-v	3	Williams	31009	1996 SS ₄
1996 SK ₆	14.0	0.15	19971218	83.30707	172.31344	198.47470	6.15771	0.2578765	3.1828864	20	3	1990–1998	0.68	M-v	4	Williams	28319	1996 SK ₆
1996 SS ₆	13.0	0.15	19971218	158.02930	249.75718	67.54457	3.05738	0.0537888	2.9146529	60	4	1981–1998	0.51	M-v	3	Williams	31142	1996 SS ₆
1996 SR ₇	13.5	0.15	19971218	164.21066	357.04284	282.93927	2.53098	0.1891815	2.6623539	32	3	1994–1998	0.79	M-v	5	Williams	28619	1996 SR ₇
1996 SO ₈	11.0	0.15	19971218	23.41575	63.67568	303.18343	5.06732	0.1127850	5.2585285	16	2	1996–1998	0.50	M-v	4	Williams	30986	1996 SO ₈
1996 TE	14.5	0.15	19971218	93.27985	313.02839	55.57880	2.88729	0.0898372	2.8285342	45	2	1996–1998	0.29	M-v	3	Williams	31110	1996 TE
1996 TO	15.0	0.15	19971218	188.35545	153.39082	142.95191	3.49032	0.1478661	2.3272951	26	4	1978–1998	0.61	M-v	2	Williams	28864	1996 TO
1996 TR ₁	13.5	0.15	19971218	5.45536	302.28903	164.55791	5.07163	0.0517842	2.7470019	28	2	1996–1998	0.46	M-v	5	Williams	31110	1996 TR ₁
1996 TB ₆	13.0	0.15	19971218	101.77302	345.70452	31.80018	12.21688	0.3079628	2.7310194	47	4	1978–1998	0.59	M-v	3	Williams	31142	1996 TB ₆
1996 TM ₆	16.0	0.15	19971218	95.70944	334.46718	45.13001	2.22336	0.1950479	2.3834701	21	4	1978–1998	0.50	M-v	2	Williams	28081	1996 TM ₆
1996 TJ ₉	14.5	0.15	19971218	208.16583	64.13301	208.92944	2.87410	0.0842433	2.5416185	57	3	1992–1998	0.51	M-v	3	Williams	31110	1996 TJ ₉
1996 TL ₉	14.5	0.15	19971218	199.44931	215.47573	89.33305	4.87513	0.1854893	2.3134950	55	3	1992–1998	0.34	M-v	3	Williams	28619	1996 TL ₉
1996 TR ₉	15.0	0.15	19971218	161.76426	188.56472	136.09343	4.33180	0.1958520	2.2779668	51	3	1971–1998	0.40	M-v	3	Williams	31142	1996 TR ₉
1996 TN ₁₀	12.5	0.15	19971218	46.08555	68.13411	359.56332	9.59704	0.0928801	2.9886718	18	7	1980–1998	0.82	M-v	1	Williams	28890	1996 TN ₁₀
1996 TR ₁₀	12.5	0.15	19971218	161.00661	144.14162	160.55073	10.61636	0.2542445	2.3969750	16	5	1981–1998	0.95	M-v	3	Williams	30293	1996 TR ₁₀
1996 TV ₁₀	14.0	0.15	19971218	230.51320	221.34110	43.91506	5.91648	0.1234671	2.2341267	22	5	1976–1998	0.67	M-v	2	Williams	30902	1996 TV ₁₀
1996 TW ₁₀	13.5	0.15	19971218	166.67230	194.16748	126.17910	2.19916	0.1043196	2.3865086	22	4	1981–1998	0.78	M-v	2	Williams	29140	1996 TW ₁₀
1996 TF ₁₁	14.0	0.15	19971218	164.87942	36.27312	274.61778	2.31853	0.2094160	2.4127614	16	3	1992–1997	0.54	M-v	4	Williams	31142	1996 TF ₁₁
1996 TT ₁₁	14.5	0.15	19971218	121.50317	150.02855	199.30679	1.58409	0.1516819	2.6109920	29	3	1992–1998	0.47	M-v	3	Marsden	29666	1996 TT ₁₁
1996 TL ₁₂	12.5	0.15	19971218	135.35477	299.75213	36.12065	13.49239	0.1885046	2.6860987	38	4	1960–1998	0.47	M-v	3	Williams	31142	1996 TL ₁₂
1996 TO ₁₃	14.5	0.15	19971218	94.78079	166.94608	203.93692	10.70943	0.0924073	2.9690371	31	4	1991–1998	0.41	M-v	1	Williams	31009	1996 TO ₁₃

1996 TC ₁₅	14.0	0.15	19971218	184.90820	268.30714	85.04499	9.87118	0.1405528	2.6994362	31	3	1994–1998	0.39	M-v	2	Williams	31110	1996 TC ₁₅
1996 TS ₁₅	12.0	0.15	19971218	144.97314	284.84113	32.55203	22.96560	0.0943967	3.2473152	38	3	1990–1998	0.56	M-v	3	Williams	31111	1996 TS ₁₅
1996 TZ ₂₀	15.0	0.15	19971218	67.92872	84.74638	323.67460	1.15386	0.0809066	2.9220779	23	3	1976–1998	0.42	M-v	3	Williams	31009	1996 TZ ₂₀
1996 TY ₂₇	14.5	0.15	19971218	333.18440	47.87902	96.69247	5.73557	0.1973602	3.1928184	25	2	1996–1998	0.32	M-v	5	Williams	31111	1996 TY ₂₇
1996 TG ₂₈	14.5	0.15	19971218	274.65425	35.43129	167.53681	9.83892	0.2136215	2.7352243	21	3	1973–1998	0.50	M-v	4	Williams	28309	1996 TG ₂₈
1996 TR ₄₁	14.5	0.15	19971218	13.30783	344.99131	124.04135	3.72634	0.1117591	2.5721818	21	5	1980–1998	1.06	M-v	2	Williams	31111	1996 TR ₄₁
1996 TK ₄₈	14.0	0.15	19971218	136.25299	187.33191	145.05071	2.55464	0.2245826	2.5791595	20	4	1975–1998	0.75	M-v	2	Williams	29631	1996 TK ₄₈
1996 UA	14.0	0.15	19971218	137.63540	312.87473	18.16781	12.25292	0.1092914	2.6253706	40	2	1996–1998	0.28	M-v	3	Marsden	31111	1996 UA
1996 UB	13.0	0.15	19971218	146.87335	90.10274	247.81312	1.00637	0.0123673	2.8689944	29	4	1991–1998	0.67	M-v	2	Williams	31144	1996 UB
1996 UC	13.5	0.15	19971218	80.58847	273.30864	92.99142	2.99411	0.2477889	3.1492617	59	5	1974–1998	0.57	M-v	2	Williams	31144	1996 UC
1996 UO	13.0	0.15	19971218	125.55042	302.26734	14.06498	1.85426	0.0692180	2.8428022	47	4	1991–1998	0.48	M-v	2	Williams	31111	1996 UO
1996 UQ	14.0	0.15	19971218	132.04668	325.25838	1.11263	12.64458	0.1622059	2.6844504	27	3	1990–1998	0.44	M-v	3	Williams	28619	1996 UQ
1996 UT	12.0	0.15	19971218	90.53084	208.47004	162.51516	1.37325	0.1719744	3.2049478	48	4	1978–1998	0.45	M-v	1	Williams	31144	1996 UT
1996 UU ₁	13.5	0.15	19971218	6.25265	90.79678	10.60911	4.96035	0.1393526	3.1689712	40	2	1996–1998	0.27	M-v	3	Marsden	31144	1996 UU ₁
1996 UC ₃	13.0	0.15	19971218	48.51340	103.78801	302.55811	4.29856	0.2289656	4.0029319	31	3	1980–1998	0.59	M-v	4	Williams	28619	1996 UC ₃
1996 UC ₄	14.5	0.15	19971218	105.93509	334.85249	39.17458	3.71221	0.0803897	2.6761801	35	4	1983–1998	0.48	M-v	2	Williams	31009	1996 UC ₄
1996 UF ₄	14.0	0.15	19971218	110.11548	315.18200	44.80094	4.67046	0.1078472	2.8155339	43	4	1982–1998	0.46	M-v	2	Williams	31144	1996 UF ₄
1996 VJ	12.5	0.15	19971218	64.15006	355.44288	51.34666	11.08459	0.1034927	3.1811997	25	4	1992–1998	0.65	M-v	2	Williams	29631	1996 VJ
1996 VP	14.5	0.15	19971218	236.34047	196.51263	51.80374	2.99077	0.1676319	2.4162736	62	4	1988–1998	0.57	M-v	3	Marsden	31144	1996 VP
1996 VQ	12.5	0.15	19971218	17.87272	83.56965	33.99625	13.54258	0.1327809	2.9803010	45	4	1980–1998	0.40	M-v	2	Williams	31111	1996 VQ
1996 VV	13.5	0.15	19971218	192.04746	233.92780	57.08101	4.13951	0.1362910	2.5225119	43	3	1992–1998	0.59	M-v	3	Williams	31112	1996 VV
1996 VC ₁	13.5	0.15	19971218	110.26934	96.46433	271.30400	0.94439	0.1077599	2.9512695	33	4	1991–1998	0.45	M-v	3	Williams	28866	1996 VC ₁
1996 VD ₁	13.5	0.15	19971218	166.80590	258.04866	41.61357	17.62331	0.1084875	3.1430678	17	3	1988–1998	0.71	M-v	4	Williams	28599	1996 VD ₁
1996 VA ₅	13.5	0.15	19971218	231.10976	48.00410	207.20429	11.82800	0.1535570	2.5726031	26	3	1992–1998	0.75	M-v	3	Williams	31010	1996 VA ₅
1996 VB ₅	13.5	0.15	19971218	176.48049	287.20203	51.36263	6.42338	0.0462407	2.2289619	53	3	1986–1998	0.60	M-v	3	Williams	31112	1996 VB ₅
1996 VM ₅	14.0	0.15	19971218	2.09989	73.36613	88.74016	5.03972	0.0704315	2.4432243	47	3	1992–1998	0.55	M-v	3	Marsden	29632	1996 VM ₅
1996 VQ ₆	13.5	0.15	19971218	184.69016	229.58961	71.42048	13.85842	0.1854315	2.6504748	26	3	1990–1998	0.41	M-v	3	Marsden	28891	1996 VQ ₆
1996 VB ₈	14.0	0.15	19971218	205.62317	130.16145	170.19735	3.31235	0.1947788	2.1535840	18	6	1980–1998	0.81	M-v	2	Williams	30878	1996 VB ₈
1996 VG ₈	13.5	0.15	19971218	217.85910	26.70431	262.75943	5.80244	0.1932988	2.2124764	20	4	1986–1998	0.57	M-v	2	Williams	29947	1996 VG ₈
1996 VV ₈	12.5	0.15	19971218	117.28626	293.82514	57.51006	18.04704	0.0992612	3.1820800	14	3	1990–1997	0.62	M-v	4	Williams	31010	1996 VV ₈
1996 VX ₈	14.0	0.15	19971218	182.26174	112.52428	202.89529	6.38519	0.1980050	2.3282587	25	7	1978–1998	0.82	M-v	2	Williams	28891	1996 VX ₈
1996 VB ₉	12.0	0.15	19971218	45.81636	259.45236	160.32040	4.51101	0.2524118	4.0001964	20	5	1990–1998	0.66	M-v	1	Williams	29320	1996 VB ₉
1996 VX ₁₅	14.0	0.15	19971218	327.79658	356.02208	202.87020	1.73586	0.1591771	2.3894689	20	3	1987–1998	0.83	M-v	5	Williams	28603	1996 VX ₁₅
1996 VR ₃₀	12.0	0.15	19971218	307.16524	277.93802	268.72644	6.65266	0.0243549	3.1777932	24	4	1989–1998	0.75	M-v	2	Williams	30903	1996 VR ₃₀
1996 VS ₃₀	12.5	0.15	19971218	202.83523	306.69700	347.52242	3.09693	0.1106698	2.7527704	25	6	1986–1998	0.77	M-v	1	Williams	28868	1996 VS ₃₀
1996 VK ₃₈	12.5	0.15	19971218	237.53715	93.11617	169.52918	7.53074	0.1018889	2.7446447	19	5	1977–1998	0.75	M-v	2	Williams	29320	1996 VK ₃₈
1996 WQ	13.0	0.15	19971218	293.71813	268.88423	303.38209	11.85726	0.1378015	2.6016260	22	4	1975–1998	0.44	M-v	1	Marsden	28891	1996 WQ
1996 WC ₃	15.0	0.15	19971218	126.68099	146.34424	199.69570	10.44926	0.1991903	2.6989309	27	4	1994–1998	0.31	M-v	1	Williams	28891	1996 WC ₃
1996 XC	14.0	0.15	19971218	265.93042	167.40634	96.10745	6.70518	0.1904366	2.4373961	34	3	1991–1998	0.42	M-v	4	Williams	29140	1996 XC
1996 XR	14.5	0.15	19971218	179.38681	270.53342	51.96920	1.66777	0.1093500	2.6367058	26	2	1996–1998	0.49	M-v	4	Williams	31112	1996 XR
1996 XR ₁	11.5	0.15	19971218	108.73066	285.78494	87.84216	4.62438	0.2161835	3.9690872	28	4	1987–1998	0.42	M-v	1	Williams	29666	1996 XR ₁
1996 XY ₂₅	14.5	0.15	19971218	105.85553	207.14346	144.79525	13.70921	0.1730956	2.6304713	34	2	1996–1998	0.78	M-v	4	Williams	31113	1996 XY ₂₅
1996 XJ ₂₆	14.0	0.15	19971218	175.49456	221.71639	96.57341	3.07841	0.1225184	2.9617731	23	4	1985–1998	0.59	M-v	1	Williams	31113	1996 XJ ₂₆
1996 XN ₂₆	13.0	0.15	19971218	213.10280	227.17301	64.84969	2.95439	0.0486628	2.8675194	16	4	1986–1998	0.93	M-v	3	Williams	29633	1996 XN ₂₆
1996 XT ₃₀	12.0	0.15	19971218	279.26361	148.78476	80.73843	18.18358	0.0936385	3.1788489	13	3	1982–1997	0.50	M-v	4	Williams	28874	1996 XT ₃₀
1996 XG ₃₂	13.5	0.15	19971218	301.27284	8.85240	235.14378	1.95354	0.1339397	2.2505762	22	5	1981–1998	0.83	M-v	2	Williams	29320	1996 XG ₃₂
1996 YH ₃	11.5	0.15	19971218	132.53961	261.28533	64.69126	16.93980	0.0929527	3.2138758	43	4	1979–1998	0.45	M-v	2	Williams	31144	1996 YH ₃
1996 YP ₃	13.5	0.15	19971218	257.96366	178.92358	63.85132	15.01486	0.0650098	2.5824863	24	3	1990–1998	0.61	M-v	4	Williams	29119	1996 YP ₃
1997 AN ₂₂	12.0	0.15	19971218	246.96746	1.59382	294.13482	9.18648	0.0726255	3.0259714	21	5	1971–1998	0.44	M-v	1	Williams	31113	1997 AN ₂₂
1997 BB ₁	11.5	0.15	19971218	218.48465	357.33652	254.43965	11.45556	0.0881482	3.1890258	16	4	1973–1998	0.43	M-v	2	Williams	31113	1997 BB ₁
1997 CU ₂₆	6.5	0.15	19971218	324.92632	242.15399	300.47776	23.42531	0.1681714	15.7087025	257	2	1997–1998	0.50	M-v	3	Williams	31144	1997 CU ₂₆
1997 CM ₂₈	14.0	0.15	19971218	247.91530	159.83499	163.71215	2.81148	0.0900633	2.6385543	16	4	1984–1998	0.60	M-v	2	Williams	29929	1997 CM ₂₈
1997 CS ₂₉	5.0	0.15	19971218	297.28228	234.15141	304.31481	2.25287	0.0057527	43.7210924	37	2	1997–1998	0.29	M-v	4	Marsden	31144	1997 CS ₂₉

1997 FG ₃	15.0	0.15	19970402	112.06358	245.17500	187.91867	4.97659	0.0791564	2.7123930	10	1	7 days	0.78	D	Williams	1997 FG ₃	
1997 FP ₃	17.0	0.15	19970402	55.68539	96.73453	20.79942	2.92677	0.1876416	2.3701479	10	1	7 days	0.58	D	Williams	1997 FP ₃	
1997 FR ₃	16.5	0.15	19970402	320.70066	42.26723	196.22329	7.17038	0.0690435	2.3004572	10	1	7 days	0.67	D	Williams	1997 FR ₃	
1997 FP ₄	16.0	0.15	19970402	330.69197	286.24531	307.40593	2.11465	0.1377085	2.5184178	10	1	7 days	0.50	D	Williams	1997 FP ₄	
1997 PD ₆	16.0	0.15	19971218	56.85997	0.80768	308.22219	5.20694	0.1955575	2.1927747	16	1	118 days	0.45	M-v	4	Williams	1997 PD ₆
1997 QN	15.0	0.15	19971218	17.82591	132.34098	256.98115	5.01912	0.1011699	2.2884762	56	1	159 days	0.48	M-v	3	Williams	31145 1997 QN
1997 QP	13.0	0.15	19971218	138.99465	261.98712	328.08303	13.62022	0.0666976	2.5824835	31	1	125 days	0.16	M-v	4	Williams	30904 1997 QP
1997 QC ₁	15.0	0.15	19971218	70.23294	119.93635	169.81707	3.41120	0.1414404	2.2864334	42	1	112 days	0.46	M-v	4	Williams	31145 1997 QC ₁
1997 QD ₅	14.5	0.15	19970820	5.74146	347.26052	311.96900	22.29854	0.1484902	3.2114342	4	1	3 days	0.15	E	Williams	1997 QD ₅	
1997 QE ₅	16.0	0.15	19970820	334.91910	238.72937	137.66857	8.22209	0.2876274	2.8120256	4	1	9 days	0.04		Williams	1997 QE ₅	
1997 QF ₅	16.5	0.15	19970820	281.84730	265.10712	152.52785	2.04310	0.0965841	2.4323840	5	1	9 days	0.60	E	Williams	1997 QF ₅	
1997 QG ₅	15.5	0.15	19970820	315.48911	94.41982	298.48416	5.47622	0.0465793	2.7778662	4	1	4 days	0.19	E	Williams	1997 QG ₅	
1997 RK ₇	14.5	0.15	19971218	17.55850	54.79839	302.87978	7.18250	0.2612934	2.4347201	52	3	1978–1997	0.36	M-v	2	Williams	31114 1997 RK ₇
1997 RZ ₇	13.0	0.15	19971218	3.77852	42.21772	339.70569	14.81898	0.1768236	2.5969234	20	1	144 days	0.50	M-v	4	Williams	31145 1997 RZ ₇
1997 ST	14.0	0.15	19971218	1.70635	208.14785	210.64290	3.39763	0.0709271	2.2686417	51	4	1980–1998	0.53	M-v	1	Williams	31145 1997 ST
1997 SG ₁	13.0	0.15	19971218	276.49716	339.75437	161.02550	13.52528	0.1076988	2.6724279	61	2	1977–1998	0.77	M-v	4	Marsden	31145 1997 SG ₁
1997 SE ₅	15.0	0.15	19971218	11.64876	56.38807	288.05872	2.61437	0.6674904	3.7224681	410	1	226 days	0.54	M-v	3	Marsden	31145 1997 SE ₅
1997 SZ ₁₀	8.5	0.15	19970929	0.29221	2.43028	9.68109	12.81191	0.2016714	39.5921302	9	1	50 days	0.52	E	Marsden	1997 SZ ₁₀	
1997 SQ ₁₇	14.0	0.15	19971218	79.54991	284.50257	14.24819	12.53412	0.1815750	2.4379571	21	1	89 days	0.61	M-v	6	Williams	1997 SQ ₁₇
1997 SD ₂₅	12.3	0.15	19971218	317.18187	252.48711	195.29928	10.40013	0.0681353	3.0367975	16	1	92 days	0.47	M-v	5	Nakano	1997 SD ₂₅
1997 SW ₃₃	13.0	0.15	19971218	346.26024	47.76171	37.82327	4.98711	0.1462783	3.1307686	39	4	1977–1998	0.65	M-v	2	Williams	31145 1997 SW ₃₃
1997 SX ₃₃	13.0	0.15	19971218	17.50361	3.75937	38.73904	0.96445	0.1850648	3.1024318	28	4	1975–1998	0.63	M-v	1	Williams	31114 1997 SX ₃₃
1997 TT ₉	11.5	0.15	19971218	315.61912	38.33749	44.50967	10.11076	0.0645112	5.1032391	25	1	119 days	0.45	M-v	4	Williams	31012 1997 TT ₉
1997 TA ₁₈	14.5	0.15	19971218	35.46612	225.95124	187.64867	11.44673	0.1789207	2.6388948	35	1	114 days	0.42	M-v	4	Williams	31146 1997 TA ₁₈
1997 TJ ₁₉	13.0	0.15	19971218	3.34751	357.50603	46.35146	5.95704	0.0874857	2.7640555	31	1	113 days	0.50	M-v	4	Williams	31146 1997 TJ ₁₉
1997 TW ₂₁	16.5	0.15	19970929	104.76293	53.51345	210.10843	1.98081	0.1875688	2.4383285	9	1	17 days	0.22		Williams	1997 TW ₂₁	
1997 TZ ₂₄	16.0	0.15	19970929	298.22912	84.40774	356.77912	1.68948	0.1464803	3.0840059	9	1	13 days	1.13	E	Williams	1997 TZ ₂₄	
1997 TN ₂₆	13.0	0.15	19971218	53.24835	307.86210	28.35354	13.03466	0.1927246	2.6056514	21	1	105 days	0.86	M-v	5	Williams	1997 TN ₂₆
1997 TT ₂₆	14.0	0.15	19971108	351.40366	34.76923	37.95893	8.88986	0.2843963	2.6951909	20	1	51 days	0.43		Williams	1997 TT ₂₆	
1997 UF ₁	15.0	0.15	19971218	16.70488	174.59172	218.06144	4.32422	0.1387777	2.3209710	24	1	97 days	0.77	M-v	4	Asher	1997 UF ₁
1997 UH ₁	14.0	0.15	19971218	349.87790	24.27362	41.90816	7.43512	0.0832956	2.3592690	50	3	1986–1998	0.72	M-v	3	Williams	30989 1997 UH ₁
1997 UO ₁	15.0	0.15	19971218	24.08833	140.19986	249.26997	3.78476	0.1941977	2.1825554	85	1	96 days	0.58	M-v	4	Williams	31146 1997 UO ₁
1997 UU ₂	13.5	0.15	19971218	0.36862	92.33912	313.78622	1.59171	0.0203953	2.8946729	16	1	102 days	0.42	M-v	4	Williams	31146 1997 UU ₂
1997 UK ₃	15.0	0.15	19971218	10.42792	179.91276	228.88304	4.19683	0.2537681	2.3812671	53	4	1964–1998	0.62	M-v	2	Williams	31146 1997 UK ₃
1997 UO ₃	14.5	0.15	19971218	347.45272	205.80279	238.61647	7.07977	0.2061195	2.3573187	20	1	95 days	0.50	M-v	4	Williams	1997 UO ₃
1997 US ₃	13.5	0.15	19971218	16.43242	169.94583	228.98000	12.89774	0.1619006	2.7100361	20	1	95 days	0.55	M-v	4	Williams	1997 US ₃
1997 UT ₃	13.5	0.15	19971218	1.36599	204.10596	213.67873	0.65732	0.1349571	3.2023828	34	1	150 days	0.64	M-v	4	Williams	31146 1997 UT ₃
1997 UY ₃	14.0	0.15	19971218	350.66461	200.24232	235.91554	2.72844	0.1520963	2.5838580	34	2	1989–1998	0.67	M-v	4	Williams	31147 1997 UY ₃
1997 UA ₄	14.5	0.15	19971218	207.74995	316.00413	254.07955	3.59277	0.0578607	2.3104980	54	1	87 days	0.78	M-v	4	Williams	31147 1997 UA ₄
1997 UK ₅	14.5	0.15	19971218	40.76825	29.95668	320.51985	13.50297	0.2201699	2.5512588	28	1	88 days	0.40	M-v	4	Williams	31147 1997 UK ₅
1997 UF ₇	14.0	0.15	19971218	0.25059	23.66645	47.77418	7.31659	0.0965827	2.3262213	22	1	95 days	0.62	M-v	4	Williams	1997 UF ₇
1997 UX ₇	13.5	0.15	19971218	335.00534	222.40803	226.26428	7.09264	0.1956662	2.7919861	45	3	1969–1998	0.58	M-v	2	Williams	31147 1997 UX ₇
1997 UO ₈	12.0	0.15	19971218	331.28337	39.15445	39.88706	15.33623	0.0812612	2.5580896	21	1	95 days	0.55	M-v	5	Williams	31147 1997 UO ₈
1997 UP ₈	14.0	0.15	19971218	56.98091	264.41776	72.44753	2.41716	0.1708347	2.1634769	24	4	1981–1998	0.45	M-v	2	Williams	31115 1997 UP ₈
1997 UW ₈	15.0	0.15	19971218	85.28138	148.96834	157.32830	2.86792	0.1925193	2.6240386	43	4	1994–1997	0.72	M-v	1	Williams	31147 1997 UW ₈
1997 UZ ₈	13.5	0.15	19971218	95.55917	102.59581	217.86708	3.83668	0.0768785	2.3902116	35	3	1978–1998	0.72	M-v	2	Williams	31147 1997 UZ ₈
1997 UF ₉	16.5	0.15	19971218	280.08924	157.75747	37.28338	25.88048	0.6042424	1.4423815	131	1	102 days	0.57	M-v	4	Marsden	31147 1997 UF ₉
1997 UL ₉	15.0	0.15	19971218	322.02748	73.05638	37.22186	14.29842	0.2176987	2.6060606	35	1	95 days	0.69	M-v	5	Williams	31147 1997 UL ₉
1997 UN ₉	14.5	0.15	19971218	71.21726	348.98542	333.76780	1.46088	0.1390409	2.6281286	31	1	123 days	0.58	M-v	5	Williams	31147 1997 UN ₉
1997 US ₉	17.5	0.15	19971218	232.66130	357.19334	212.31465	20.01563	0.2818347	1.0523775	126	1	78 days	0.59	M-v	5	Williams	31147 1997 US ₉
1997 UU ₁₀	15.0	0.15	19971218	292.12676	112.89286	22.10139	4.03029	0.1470505	2.4308274	22	1	93 days	0.58	M-v	5	Williams	31147 1997 UU ₁₀
1997 UX ₁₄	15.0	0.15	19971218	9.94826	347.64128	43.20244	10.19713	0.1047478	2.7360412	23	1	74 days	0.55	M-v	4	Williams	31147 1997 UX ₁₄
1997 UW ₁₈	12.5	0.15	19971108	264.58661	83.76790	62.77165	9.21453	0.0128910	3.3999520	25	1	40 days	0.73		Williams	1997 UW ₁₈	

1998 FEB. 11

M.P.C. 31281

1997 UT ₂₀	14.0	0.15	19971218	190.37062	195.26153	42.93712	8.75050	0.0777966	2.4593606	16	1	68 days	0.42	M-v	5	Williams	1997 UT ₂₀
1997 UA ₂₂	14.5	0.15	19971218	46.53820	252.22604	106.67476	5.78491	0.2018378	2.2905629	17	1	99 days	0.56	M-v	5	Williams	1997 UA ₂₂
1997 UM ₂₄	13.5	0.15	19971218	273.52354	122.18643	40.25299	6.58981	0.0593264	2.3168185	22	1	64 days	0.51	M-v	5	Williams	1997 UM ₂₄
1997 VE	14.5	0.15	19971218	151.22393	263.82559	346.11769	1.71202	0.1506011	2.6167791	33	2	1991–1997	0.41	M-v	5	Williams	31116 1997 VE
1997 VR	15.0	0.15	19971218	40.43216	194.08766	172.95303	2.98392	0.1887639	2.2609679	29	3	1990–1998	0.77	M-v	3	Williams	31116 1997 VR
1997 VV	11.5	0.15	19971218	359.31141	162.89301	241.64815	12.60753	0.0674644	3.1713899	29	1	85 days	0.63	M-v	4	Williams	31148 1997 VV
1997 VB ₁	11.5	0.15	19971218	266.09470	165.59517	343.01412	3.85131	0.0742638	5.1948327	28	2	1978–1998	0.53	M-v	4	Marsden	31116 1997 VB ₁
1997 VQ ₁	12.5	0.15	19971218	0.68684	167.85168	245.94678	8.29769	0.0694406	2.8406291	31	4	1978–1998	0.76	M-v	3	Williams	31116 1997 VQ ₁
1997 VV ₁	11.5	0.15	19971218	349.16960	12.49405	20.30742	4.67334	0.1429903	5.2286216	26	1	94 days	0.50	M-v	5	Williams	31148 1997 VV ₁
1997 VZ ₁	14.5	0.15	19971218	28.88085	140.96697	247.98694	6.18650	0.1381921	2.4716994	25	1	77 days	0.54	M-v	4	Williams	1997 VZ ₁
1997 VD ₂	14.5	0.15	19971218	31.61570	44.12420	340.23220	2.98823	0.1665693	2.5192910	15	1	89 days	0.53	M-v	5	Williams	1997 VD ₂
1997 VE ₂	14.5	0.15	19971108	305.37070	297.34914	196.99012	5.02288	0.2605232	2.5727163	13	1	28 days	0.69			Williams	1997 VE ₂
1997 VF ₂	14.5	0.15	19971108	346.97253	8.40710	59.57583	14.39267	0.1503569	2.5719081	20	1	33 days	0.93			Williams	1997 VF ₂
1997 VQ ₂	14.0	0.15	19971128	18.15886	16.89105	326.05131	11.83325	0.2120476	2.6191608	17	1	58 days	0.39			Williams	1997 VQ ₂
1997 VU ₂	12.0	0.15	19971218	134.89426	311.69043	293.32370	8.91316	0.0635761	2.9880334	28	3	1989–1998	0.42	M-v	4	Williams	31148 1997 VU ₂
1997 VB ₃	13.0	0.15	19971218	2.66364	4.70346	62.36756	4.50150	0.1983785	2.3476077	30	1	86 days	0.55	M-v	4	Williams	1997 VB ₃
1997 VJ ₃	13.5	0.15	19971218	21.77416	174.03079	228.53621	3.42601	0.0798421	2.6823140	33	1	85 days	0.69	M-v	4	Williams	1997 VJ ₃
1997 VS ₃	14.5	0.15	19971108	9.36292	329.37396	72.21029	3.45387	0.2018969	2.3697252	25	1	29 days	0.50			Williams	1997 VS ₃
1997 VU ₃	14.5	0.15	19971218	22.33727	207.68413	191.58576	2.74181	0.1898123	2.3459997	44	4	1973–1998	0.80	M-v	2	Williams	31149 1997 VU ₃
1997 VB ₄	15.0	0.15	19971218	309.02923	106.78232	60.23268	7.84793	0.0751134	2.3211744	20	1	77 days	0.25	M-v	4	Marsden	1997 VB ₄
1997 VE ₄	14.3	0.15	19971218	55.76465	108.46806	235.17377	10.67599	0.3023441	2.5859863	26	1	83 days	0.58	M-v	5	Asher	1997 VE ₄
1997 VA ₅	15.0	0.15	19971218	15.20764	351.44396	56.77330	6.70351	0.1698410	2.2947604	37	3	1976–1998	0.51	M-v	3	Williams	31149 1997 VA ₅
1997 VC ₅	13.0	0.15	19971218	94.26442	265.30635	63.58893	10.63645	0.0872142	3.0778705	22	1	90 days	0.32	M-v	5	Williams	1997 VC ₅
1997 VK ₅	12.5	0.15	19971218	175.24432	348.15872	269.61587	6.11953	0.1292587	2.4848058	28	5	1950–1998	0.63	M-v	2	Williams	30995 1997 VK ₅
1997 VZ ₅	15.0	0.15	19971108	344.87203	17.87912	72.35131	6.49596	0.2240451	2.6328313	18	1	26 days	0.77			Williams	1997 VZ ₅
1997 VH ₆	14.5	0.15	19971218	91.47124	267.24259	49.52467	4.77152	0.0429713	2.6384267	32	1	95 days	0.66	M-v	5	Williams	1997 VH ₆
1997 VJ ₆	14.5	0.15	19971218	346.55411	84.01316	6.31724	4.36742	0.1122500	2.5583955	24	1	64 days	0.27	M-v	4	Williams	31149 1997 VJ ₆
1997 VM ₆	13.0	0.15	19971218	33.09618	159.85080	284.58624	12.38240	0.1240593	2.5913501	17	1	80 days	0.40	M-v	5	Williams	1997 VM ₆
1997 VO ₆	12.0	0.15	19971218	19.59797	157.44866	244.43807	12.62081	0.0652668	3.1291777	39	4	1975–1998	0.74	M-v	2	Williams	31150 1997 VO ₆
1997 VU ₆	14.0	0.15	19971218	79.23070	173.24295	158.16247	2.35559	0.0689117	2.8433956	15	2	1978–1998	0.61	M-v	5	Williams	31150 1997 VU ₆
1997 VY ₆	14.5	0.15	19971218	11.25667	152.11707	253.37485	1.02444	0.2329039	2.7690567	29	2	1992–1997	0.65	M-v	4	Williams	31117 1997 VY ₆
1997 VA ₇	13.5	0.15	19971128	324.45912	204.39450	224.85596	16.74099	0.1068126	2.8001527	21	1	55 days	0.55			Williams	1997 VA ₇
1997 VF ₇	14.5	0.15	19971218	341.98692	210.67831	236.14598	8.30297	0.2059274	3.0309951	31	1	92 days	0.59	M-v	5	Williams	1997 VF ₇
1997 VN ₈	15.5	0.15	19971108	341.27636	70.29437	17.66567	4.28420	0.2372705	2.5672232	12	1	27 days	0.40			Williams	1997 VN ₈
1997 VX ₈	12.8	0.15	19971128	30.20763	303.40426	67.03257	13.94602	0.1867582	2.6372644	25	1	57 days	0.69			Nakano	1997 VX ₈
1997 VA ₉	15.5	0.15	19971218	328.68878	264.16406	203.35185	4.09110	0.1852243	2.3588185	14	2	1993–1997	0.92	M-v	5	Williams	31118 1997 VA ₉
1997 WX	14.5	0.15	19971218	354.40354	29.49612	9.27998	8.00190	0.0695316	2.3411137	17	1	96 days	0.65	M-v	5	Williams	31150 1997 WX
1997 WU ₃	14.0	0.15	19971218	263.60080	275.17238	241.81015	4.85766	0.0928294	2.2426039	29	4	1982–1998	0.44	M-v	2	Williams	31118 1997 WU ₃
1997 WB ₆	14.5	0.15	19971218	276.69086	73.97262	79.74374	4.38307	0.0608823	2.3197358	21	1	55 days	0.61			Williams	1997 WB ₆
1997 WD ₇	14.5	0.15	19971218	355.49316	171.14330	298.57968	5.85930	0.0928880	2.3376615	28	1	61 days	0.28	M-v	6	Williams	1997 WD ₇
1997 WK ₇	13.8	0.15	19971218	283.48902	108.63524	43.08717	4.38083	0.0903792	2.2689131	21	1	61 days	0.77	M-v	6	Nakano	1997 WK ₇
1997 WO ₇	12.9	0.15	19971218	333.83831	33.85373	59.09407	10.67034	0.0712746	3.0664153	24	1	61 days	0.72	M-v	6	Nakano	1997 WO ₇
1997 WP ₇	15.2	0.15	19971218	65.57503	12.91217	327.97713	0.59575	0.1886252	2.1722006	24	1	84 days	0.74	M-v	5	Nakano	1997 WP ₇
1997 WQ ₉	15.5	0.15	19971218	355.76133	254.61856	177.75925	2.27406	0.1769485	2.3844993	22	1	88 days	0.57	M-v	5	Williams	1997 WQ ₉
1997 WC ₁₀	16.5	0.15	19971218	341.38097	272.85341	177.36768	2.52001	0.1356050	2.4040996	15	1	66 days	0.46	M-v	6	Williams	1997 WC ₁₀
1997 WH ₁₀	15.0	0.15	19971218	329.14921	318.11945	135.63867	3.01738	0.0093251	2.8591707	12	1	62 days	0.26	M-v	5	Williams	1997 WH ₁₀
1997 WD ₁₂	16.5	0.15	19971218	13.20478	198.15336	207.62468	3.77341	0.1806954	2.5986465	12	1	57 days	0.43			Williams	1997 WD ₁₂
1997 WH ₁₃	16.5	0.15	19971218	19.12773	138.22040	302.57271	5.33355	0.1499549	2.3160110	15	1	72 days	0.35	M-v	5	Williams	1997 WH ₁₃
1997 WJ ₁₃	13.3	0.15	19971218	44.32123	121.54740	263.01187	7.99896	0.0443969	2.9949477	15	1	63 days	0.89	M-v	6	Asher	1997 WJ ₁₃
1997 WK ₁₃	15.2	0.15	19971218	17.85912	357.59650	53.53702	5.01969	0.1560352	2.3116096	23	1	63 days	1.02	M-v	5	Asher	1997 WK ₁₃
1997 WL ₁₃	14.3	0.15	19971218	4.06229	173.16546	255.90769	7.03769	0.2026705	2.7778042	29	1	61 days	0.74	M-v	5	Asher	1997 WL ₁₃
1997 WN ₁₃	15.0	0.15	19971218	352.77869	271.88257	173.87615	1.97592	0.1775187	2.3536982	27	4	1986–1997	0.81	M-v	2	Williams	31119 1997 WN ₁₃
1997 WP ₁₄	14.0	0.15	19971218	354.79880	297.60988	131.02640	2.58067	0.0817602	3.0935111	29	4	1991–1998	0.64	M-v	1	Williams	31152 1997 WP ₁₄

1997 WQ ₁₅	14.5	0.15	19971218	44.00955	146.87225	213.74229	4.72263	0.1834344	3.1464764	30	3	1991-1998	0.66	M-v	3	Williams	31119	1997 WQ ₁₅
1997 WM ₁₆	14.0	0.15	19971218	38.69945	222.95233	116.76834	6.72526	0.1885174	2.2684187	34	3	1973-1998	0.62	M-v	3	Williams	31152	1997 WM ₁₆
1997 WU ₁₆	14.5	0.15	19971218	33.34965	122.34785	243.74084	9.78077	0.3117937	2.3818109	18	1	63 days	0.43	M-v	5	Williams		1997 WU ₁₆
1997 WZ ₁₆	14.5	0.15	19971218	174.18463	336.78316	247.48599	8.23558	0.1072532	2.7647819	21	3	1991-1997	0.45	M-v	4	Williams	31152	1997 WZ ₁₆
1997 WC ₂₁	14.5	0.15	19971218	356.15553	102.55119	308.24774	5.10156	0.2983955	2.6597084	34	1	107 days	0.54	M-v	5	Williams	31152	1997 WC ₂₁
1997 WD ₂₁	14.6	0.15	19971218	26.83433	159.80233	243.00887	13.46769	0.1500524	2.6886840	16	1	64 days	0.82	M-v	5	Asher		1997 WD ₂₁
1997 WR ₂₁	15.0	0.15	19971218	48.81215	112.32906	276.41332	4.62646	0.1662722	2.2657861	23	2	1993-1998	0.65	M-v	4	Williams	31120	1997 WR ₂₁
1997 WS ₂₁	15.5	0.15	19971218	20.60897	247.81691	167.45392	2.87717	0.1194239	2.2188903	26	3	1990-1997	0.58	M-v	4	Williams	31120	1997 WS ₂₁
1997 WT ₂₁	13.5	0.15	19971218	101.10131	286.60409	60.55008	3.12627	0.0732390	2.8496639	17	3	1994-1997	0.62	M-v	4	Williams	31120	1997 WT ₂₁
1997 WB ₂₂	13.0	0.15	19971218	248.38867	137.17214	98.25240	9.30359	0.0921448	2.3152732	39	3	1942-1998	0.43	M-v	3	Williams	31121	1997 WB ₂₂
1997 WQ ₂₂	16.0	0.15	19971218	83.13644	67.14654	310.53118	1.82709	0.1771496	2.2623235	21	2	1993-1998	0.38	M-v	5	Williams	31121	1997 WQ ₂₂
1997 WS ₂₂	17.0	0.15	19971218	176.97506	196.96019	59.29795	23.98284	0.1207427	1.2696649	86	1	69 days	0.50	M-v	4	Williams	31152	1997 WS ₂₂
1997 WT ₂₂	19.0	0.15	19971218	319.96355	74.56769	72.08586	8.16070	0.3061025	1.4852611	102	1	72 days	0.48	M-v	4	Marsden	31152	1997 WT ₂₂
1997 WU ₂₂	15.5	0.15	19971218	216.24032	334.10302	260.93940	15.97525	0.4420674	1.4675929	72	2	1990-1998	0.50	M-v	4	Williams	31121	1997 WU ₂₂
1997 WL ₂₃	14.5	0.15	19971218	38.33940	317.15194	57.19605	2.80124	0.2040971	2.6942379	31	1	69 days	0.74	M-v	5	Williams		1997 WL ₂₃
1997 WM ₂₃	14.5	0.15	19971218	108.61518	254.08695	113.02199	3.26605	0.0933877	2.8396986	12	1	63 days	0.20	M-v	5	Williams		1997 WM ₂₃
1997 WT ₂₃	14.5	0.15	19971218	51.63626	94.34919	254.68745	1.49917	0.1919480	2.4094166	33	5	1982-1997	0.59	M-v	2	Williams	31152	1997 WT ₂₃
1997 WQ ₂₈	12.5	0.15	19971218	328.42116	89.20862	8.79716	11.27102	0.1580129	2.6451425	28	1	55 days	0.80			Williams		1997 WQ ₂₈
1997 WZ ₃₀	13.5	0.15	19971218	44.71551	287.97211	81.42377	3.01603	0.0844961	2.8037043	17	1	89 days	0.59	M-v	5	Williams		1997 WZ ₃₀
1997 WQ ₃₁	13.5	0.15	19971218	39.21230	293.33895	80.13924	3.13259	0.1141845	2.9480564	13	1	50 days	0.57			Williams		1997 WQ ₃₁
1997 WU ₃₁	15.0	0.15	19971218	349.27361	206.46714	236.64129	3.20570	0.2025866	2.5863185	14	1	60 days	0.80	M-v	6	Williams		1997 WU ₃₁
1997 WW ₃₃	13.0	0.15	19971128	226.32197	178.78105	20.47467	0.56701	0.0321062	3.0359519	12	1	8 days	0.90		E	Williams		1997 WW ₃₃
1997 WH ₃₅	14.5	0.15	19971128	19.65598	320.58561	79.67388	5.22184	0.0690178	2.7769729	13	1	9 days	0.81			Williams		1997 WH ₃₅
1997 WY ₃₅	13.5	0.15	19971218	33.89614	337.37411	50.38139	11.44143	0.1267937	2.9891131	28	1	64 days	0.73	M-v	5	Williams	31153	1997 WY ₃₅
1997 WC ₃₆	15.5	0.15	19971128	21.92360	333.82155	55.13112	7.13304	0.2545339	2.3753521	19	1	22 days	0.93			Williams		1997 WC ₃₆
1997 WN ₃₆	12.5	0.15	19971128	9.24326	344.71388	68.87997	23.38240	0.0321439	3.1459441	29	1	39 days	0.95			Williams		1997 WN ₃₆
1997 WU ₃₆	15.0	0.15	19971128	80.60691	233.24303	88.32373	6.66042	0.1825519	2.1925852	16	1	6 days	0.54			Williams		1997 WU ₃₆
1997 WB ₃₇	12.0	0.15	19971218	196.55427	143.91583	86.69556	11.86768	0.0983806	3.2155510	21	1	68 days	0.48	M-v	5	Williams		1997 WB ₃₇
1997 WG ₃₇	14.0	0.15	19971128	238.99223	320.82578	231.68079	14.82554	0.0752027	2.7002140	18	1	6 days	0.59		E	Williams		1997 WG ₃₇
1997 WO ₃₇	15.0	0.15	19971218	45.93217	256.32895	104.88974	3.18125	0.1971592	2.4346685	21	1	60 days	0.57	M-v	6	Williams		1997 WO ₃₇
1997 WB ₃₈	14.5	0.15	19971128	148.53846	169.16392	100.77180	2.43425	0.1257759	2.1738304	21	1	36 days	0.64			Williams		1997 WB ₃₈
1997 WZ ₃₉	15.5	0.15	19971128	345.95501	234.33090	212.01963	3.98972	0.1596516	2.3653690	20	1	7 days	0.55			Williams		1997 WZ ₃₉
1997 WO ₄₄	14.0	0.15	19971218	258.74387	306.19725	253.15188	5.38989	0.1956497	2.5383391	29	4	1991-1998	0.80	M-v	2	Williams	31122	1997 WO ₄₄
1997 WP ₄₄	13.5	0.15	19971218	33.91344	304.35320	84.55214	2.75158	0.1979815	3.1263719	31	4	1990-1998	0.47	M-v	1	Williams	31122	1997 WP ₄₄
1997 WK ₄₅	13.0	0.15	19971218	350.41981	16.03457	71.57236	2.07030	0.1737671	3.1914047	25	1	39 days	0.56			Williams		1997 WK ₄₅
1997 WV ₄₅	15.0	0.15	19971128	20.61319	311.12979	85.42055	4.19288	0.1747183	2.5431276	20	1	35 days	1.29			Williams		1997 WV ₄₅
1997 WA ₄₆	15.0	0.15	19971128	53.82411	224.66594	129.56878	4.51000	0.1648070	2.2740604	13	1	9 days	0.80			Williams		1997 WA ₄₆
1997 WO ₄₆	12.5	0.15	19971128	131.75473	33.27745	245.88735	4.61064	0.1944911	2.6276437	16	1	9 days	0.97		E	Williams		1997 WO ₄₆
1997 WK ₄₇	14.0	0.15	19971128	353.78738	6.06834	66.91872	2.89186	0.2022599	2.9076937	16	1	9 days	1.04			Williams		1997 WK ₄₇
1997 WP ₄₇	14.5	0.15	19971108	56.80633	41.92771	293.82269	3.54928	0.2306927	2.5155900	11	1	9 days	0.81		E	Williams		1997 WP ₄₇
1997 WA ₄₈	15.0	0.15	19971128	10.99814	0.99340	47.14876	6.46131	0.2328863	2.5877437	18	1	22 days	0.82			Williams		1997 WA ₄₈
1997 WR ₄₉	13.0	0.15	19971128	88.81775	166.47513	144.04341	1.81224	0.2432582	3.1687851	16	1	39 days	0.85			Williams		1997 WR ₄₉
1997 WS ₄₉	15.0	0.15	19971128	20.58920	174.31047	228.22199	5.90541	0.0646924	2.4361476	13	1	8 days				Williams		1997 WS ₄₉
1997 WX ₄₉	13.5	0.15	19971128	142.08564	213.06312	58.03090	5.95880	0.1919310	2.2610195	12	1	9 days	0.77		E	Williams		1997 WX ₄₉
1997 WG ₅₀	13.5	0.15	19971128	118.62658	25.28565	281.56535	4.12161	0.0793003	2.1790411	15	1	7 days	0.93		E	Williams		1997 WG ₅₀
1997 WN ₅₁	14.0	0.15	19971128	132.62741	65.86909	207.10766	7.07404	0.2282206	2.3438307	12	1	6 days	0.75		E	Williams		1997 WN ₅₁
1997 WO ₅₁	13.5	0.15	19971128	289.37199	59.68598	94.30506	6.90590	0.1948841	3.2026128	12	1	6 days	1.13		E	Williams		1997 WO ₅₁
1997 WD ₅₂	15.0	0.15	19971128	336.61471	36.87411	61.24004	19.08663	0.1038547	2.4360433	15	1	6 days	1.27		E	Williams		1997 WD ₅₂
1997 WT ₅₂	13.0	0.15	19971128	246.37555	132.66454	65.71454	12.68100	0.1308692	3.0736685	14	1	6 days	0.57		E	Williams		1997 WT ₅₂
1997 WV ₅₂	16.5	0.15	19971128	29.44982	352.39112	36.25708	2.76788	0.1814532	2.2790950	18	1	6 days	1.09			Williams		1997 WV ₅₂
1997 WJ ₅₃	12.5	0.15	19971128	61.97120	85.58829	274.30573	7.91196	0.1112491	3.0649785	13	1	6 days	0.43		E	Williams		1997 WJ ₅₃
1997 WV ₅₃	16.0	0.15	19971128	345.78223	28.59932	62.55598	1.81019	0.1801558	2.4036336	13	1	6 days	0.99			Williams		1997 WV ₅₃
1997 WW ₅₃	15.5	0.15	19971128	3.47511	335.65221	88.51789	6.06996	0.1871618	2.6257679	13	1	6 days	0.96			Williams		1997 WW ₅₃

1997 XA	14.0	0.15	19971218	343.96920	202.29549	246.46094	8.97458	0.1943979	2.7816170	23	1	50 days	0.54	Williams	1997 XA
1997 XC	13.5	0.15	19971128	346.63695	246.71407	242.76986	13.61762	0.2500008	3.0572786	14	1	33 days	0.24	Williams	1997 XC
1997 XG	15.5	0.15	19971218	46.74981	334.04599	88.18402	0.70321	0.1093465	2.2104588	15	1	57 days	0.39	Williams	1997 XG
1997 XH	15.1	0.15	19971128	263.50088	272.86197	319.44343	5.62520	0.1438316	2.2287999	10	1	57 days	0.36	Nakano	1997 XH
1997 XM	14.0	0.15	19971218	15.03982	49.80552	24.10790	2.46101	0.1803305	2.5806850	22	3	1984–1998	0.56	M-v 3 Williams	31123 1997 XM
1997 XZ	13.5	0.15	19971218	281.85648	209.59407	338.45142	2.23977	0.1094630	2.4113471	19	3	1991–1998	0.44	M-v 5 Williams	31123 1997 XZ
1997 XJ ₁	15.1	0.15	19971218	13.86298	160.83970	259.50180	23.70109	0.1744808	2.3175645	24	1	57 days	0.55	Asher	1997 XJ ₁
1997 XV ₁	14.5	0.15	19971218	326.30203	357.46577	119.02034	7.06631	0.0667442	2.3160181	21	2	1996–1997	0.47	M-v 4 Williams	31124 1997 XV ₁
1997 XO ₂	16.5	0.15	19971218	18.93503	303.06572	114.75094	5.14693	0.2422798	2.6018272	17	1	33 days	0.26	Williams	1997 XO ₂
1997 XQ ₂	12.5	0.15	19971218	98.44727	139.78967	182.81290	2.56973	0.0888149	2.7234586	65	3	1991–1998	0.66	M-v 3 Marsden	31124 1997 XQ ₂
1997 XS ₂	19.5	0.15	19971218	355.28756	23.62164	75.32055	19.58553	0.5236803	2.6539607	70	1	40 days	0.54	M-v 5 Marsden	31154 1997 XS ₂
1997 XN ₃	14.5	0.15	19971218	301.73729	86.25892	99.19914	3.77046	0.1536655	2.4297683	25	1	59 days	0.42	Williams	1997 XN ₃
1997 XX ₃	13.0	0.15	19971218	250.95250	137.66478	159.08525	5.36885	0.1889513	3.9481952	22	2	1997–1998	0.45	M-v 4 Williams	31124 1997 XX ₃
1997 XD ₅	15.0	0.15	19971218	265.93048	115.32445	124.35024	6.21254	0.0445799	2.4330144	10	1	57 days	0.33	Williams	1997 XD ₅
1997 XF ₅	14.0	0.15	19971218	9.42392	164.72134	328.32824	15.35000	0.0825773	3.1800285	13	1	63 days	0.20	M-v 6 Williams	1997 XF ₅
1997 XJ ₅	15.6	0.15	19980107	17.60712	228.99575	196.92246	5.18480	0.1367283	3.0573382	13	1	53 days	0.38	Nakano	1997 XJ ₅
1997 XT ₅	12.5	0.15	19971218	61.30938	254.94959	102.24108	7.41612	0.1466250	3.1176628	39	2	1991–1998	0.71	M-v 5 Williams	31124 1997 XT ₅
1997 XU ₅	15.5	0.15	19971218	24.87855	214.60159	183.14900	2.92295	0.2463962	2.3063298	27	1	55 days	0.80	Williams	1997 XU ₅
1997 XD ₆	15.0	0.15	19971128	59.68572	274.47346	56.43416	14.81029	0.1993217	2.5536341	21	1	46 days	0.67	Williams	1997 XD ₆
1997 XC ₈	16.0	0.15	19971218	23.39145	146.76127	296.99846	3.53038	0.1313200	2.3827347	11	1	59 days	0.19	Williams	1997 XC ₈
1997 XF ₈	15.0	0.15	19971218	355.34412	184.91264	297.40651	6.98830	0.1944230	2.5420468	22	1	58 days	0.46	Williams	1997 XF ₈
1997 XN ₉	14.5	0.15	19971218	333.54751	22.97684	80.72032	22.87039	0.0514804	2.6521309	27	1	50 days	0.90	Williams	1997 XN ₉
1997 XU ₉	14.0	0.15	19971218	67.94931	282.45765	50.33520	5.19800	0.2529568	2.2831587	14	1	64 days	0.43	M-v 6 Williams	1997 XU ₉
1997 XB ₁₀	14.0	0.15	19971218	281.64381	106.66713	67.18834	12.90038	0.1388356	2.3488240	40	4	1959–1998	0.76	M-v 2 Williams	31125 1997 XB ₁₀
1997 XD ₁₀	14.1	0.15	19980107	233.15386	282.36052	310.69286	6.92634	0.0669667	2.3085731	9	1	51 days	0.36	Nakano	1997 XD ₁₀
1997 XH ₁₀	15.0	0.15	19971218	328.20312	56.49733	61.34593	6.06020	0.1253714	2.2851576	23	2	1976–1998	0.76	M-v 4 Williams	31125 1997 XH ₁₀
1997 XL ₁₀	13.0	0.15	19971128	24.23779	330.70588	72.02231	11.47992	0.1066792	2.9784900	30	1	34 days	0.78	Williams	1997 XL ₁₀
1997 XM ₁₀	15.0	0.15	19971218	33.01829	30.06865	13.41513	2.32772	0.2050193	2.4041232	16	3	1993–1998	0.65	M-v 5 Williams	31125 1997 XM ₁₀
1997 XN ₁₀	15.5	0.15	19971218	347.44934	29.10643	67.10241	3.08671	0.1743976	2.4264686	19	2	1996–1998	0.59	M-v 4 Williams	31125 1997 XN ₁₀
1997 XO ₁₀	13.5	0.15	19971128	61.09844	277.84820	76.87707	10.92935	0.1511505	2.9505714	17	1	33 days	0.85	Williams	1997 XO ₁₀
1997 XS ₁₀	15.5	0.15	19971218	35.68100	355.72500	21.03490	4.58108	0.2269690	2.3798943	21	1	110 days	0.31	M-v 4 Williams	31155 1997 XS ₁₀
1997 XZ ₁₀	15.5	0.15	19971128	341.84756	167.68480	289.91751	2.19625	0.1427049	2.5313739	32	1	29 days	0.61	Williams	1997 XZ ₁₀
1997 XF ₁₁	17.0	0.15	19971218	96.67585	102.47343	214.12698	4.09459	0.4837452	1.4417178	91	1	60 days	0.53	M-v 5 Williams	31155 1997 XF ₁₁
1997 XK ₁₁	13.5	0.15	19971218	61.91210	304.30284	93.97015	7.26393	0.1240002	2.4519395	31	1	64 days	0.37	M-v 5 Williams	1997 XK ₁₁
1997 XL ₁₁	13.0	0.15	19971218	156.20769	222.81301	95.65483	7.18715	0.0548870	2.7781604	21	1	61 days	0.45	M-v 5 Williams	1997 XL ₁₁
1997 XO ₁₁	14.0	0.15	19971218	113.47260	43.77809	256.94878	6.10922	0.1319274	2.3032486	14	1	61 days	0.48	M-v 5 Williams	1997 XO ₁₁
1997 XS ₁₁	13.0	0.15	19971128	340.52255	185.49902	264.29278	8.19272	0.0497072	3.0505577	16	1	34 days	0.91	Williams	1997 XS ₁₁
1997 XY ₁₁	15.0	0.15	19971128	37.87386	272.52797	110.17775	5.74800	0.1373787	2.7726976	10	1	8 days	1.00	Williams	1997 XY ₁₁
1997 YK	12.8	0.15	19980107	75.41977	94.63679	267.42360	17.96763	0.1254063	1.9483833	10	1	32 days	0.46	Nakano	1997 YK
1997 YL	13.5	0.15	19980107	43.94047	288.53287	109.02481	16.46761	0.2462148	2.7566733	29	1	36 days	0.54	Williams	1997 YL
1997 YO	11.0	0.15	19971218	335.27726	28.89832	107.16479	17.64318	0.1693083	3.1397098	20	1	34 days	0.47	Williams	1997 YO
1997 YP	15.5	0.15	19980107	21.22957	324.73097	111.01576	2.22142	0.1754171	2.4589271	17	1	35 days	0.81	Williams	1997 YP
1997 YQ	14.5	0.15	19971218	66.40343	171.61050	198.75021	2.35862	0.2085024	2.3959877	19	3	1989–1998	0.74	M-v 5 Williams	31126 1997 YQ
1997 YR	14.5	0.15	19971218	321.58201	27.70120	121.39945	4.51589	0.1377262	2.3350225	14	2	1984–1998	0.79	M-v 5 Williams	31126 1997 YR
1997 YS	13.2	0.15	19980107	67.73678	119.18912	276.34390	5.70347	0.0309067	3.0897384	15	1	27 days	0.42	Nakano	1997 YS
1997 YU	13.5	0.15	19971218	34.95487	303.73405	107.71644	1.87829	0.1908036	3.1406615	39	2	1996–1998	0.49	M-v 3 Williams	31126 1997 YU
1997 YV	14.0	0.15	19980107	59.17965	220.57710	162.95088	2.37550	0.2130589	2.3757794	14	1	27 days	0.81	Nakano	1997 YV
1997 YW	12.6	0.15	19980107	44.70501	134.18534	270.56282	11.42668	0.1848258	2.6420998	10	1	27 days	0.59	Nakano	1997 YW
1997 YX	14.5	0.15	19971218	7.09837	247.66559	202.34219	1.95941	0.1580706	2.5332726	28	4	1982–1998	0.49	M-v 4 Williams	31126 1997 YX
1997 YY	15.0	0.15	19971218	101.81767	75.42158	261.82188	4.15041	0.2157834	2.2685666	13	2	1993–1998	0.64	M-v 5 Williams	31126 1997 YY
1997 YZ	12.5	0.15	19971218	240.94217	301.54040	237.24777	17.13516	0.0953899	3.1106944	38	2	1986–1998	0.69	M-v 4 Williams	31126 1997 YZ
1997 YA ₁	15.0	0.15	19980107	76.32570	138.80901	199.16652	4.12552	0.2459615	2.3715881	27	1	37 days	0.40	Marsden	1997 YA ₁
1997 YC ₁	14.0	0.15	19971218	86.85222	282.45258	72.23799	3.64684	0.2145478	2.3668559	29	3	1971–1998	0.54	M-v 4 Williams	31127 1997 YC ₁

1997 YS ₁	14.5	0.15	19971218	67.91521	292.76423	99.52671	7.18639	0.1207329	2.4145984	24	2	1989–1998	0.50	M-v	5	Williams	31127	1997 YS ₁
1997 YT ₁	13.5	0.15	19971218	83.87645	105.19419	251.09990	12.02353	0.2278477	2.4653668	19	1	26 days	0.23			Marsden		1997 YT ₁
1997 YU ₁	16.0	0.15	19971218	52.92711	90.81181	293.09345	20.77252	0.3654733	2.2954403	19	1	57 days	0.47			Williams		1997 YU ₁
1997 YZ ₁	14.1	0.15	19980107	35.41073	352.24492	59.09048	3.19544	0.2136323	2.3573791	8	1	29 days	0.41			Nakano		1997 YZ ₁
1997 YC ₂	13.2	0.15	19980107	324.92758	51.26771	103.29317	16.56465	0.1445476	2.7615849	8	1	26 days	0.46			Nakano		1997 YC ₂
1997 YD ₂	15.0	0.15	19980107	301.02396	246.44532	286.79162	4.37198	0.0637916	2.1671074	13	1	29 days	0.36			Nakano		1997 YD ₂
1997 YE ₂	13.2	0.15	19980107	11.57726	15.48852	75.47702	5.60764	0.1058187	2.1959264	24	1	41 days	0.33			Asher		1997 YE ₂
1997 YG ₂	14.5	0.15	19980107	30.91057	328.71867	103.76449	9.62357	0.0863563	3.0083936	11	1	34 days	0.54			Nakano		1997 YG ₂
1997 YH ₂	16.2	0.15	19980107	343.27745	29.48804	99.84300	5.32666	0.1176402	2.1659751	12	1	34 days	0.58			Nakano		1997 YH ₂
1997 YJ ₂	14.2	0.15	19980107	13.52729	164.86788	287.81328	10.86637	0.0805753	2.6881902	11	1	26 days	0.50			Nakano		1997 YJ ₂
1997 YM ₂	16.1	0.15	19980107	16.45189	341.08359	92.73042	7.64024	0.3403797	2.6307904	8	1	34 days	0.38			Nakano		1997 YM ₂
1997 YN ₂	12.5	0.15	19980107	72.00265	84.04771	292.65684	15.58114	0.1752513	3.2403710	22	1	35 days	0.54			Williams		1997 YN ₂
1997 YR ₂	14.0	0.15	19971218	84.44093	247.72436	81.46293	3.45169	0.1864291	2.4421705	29	1	39 days	0.79			Williams		1997 YR ₂
1997 YV ₂	13.0	0.15	19980107	324.98198	52.44691	105.43467	2.19982	0.1238400	3.1000393	51	1	40 days	0.70			Williams		1997 YV ₂
1997 YW ₂	15.5	0.15	19980107	19.50483	344.58039	102.20667	3.33311	0.1278983	2.3922937	21	1	35 days	0.46			Williams		1997 YW ₂
1997 YY ₂	14.2	0.15	19980107	43.14080	311.43601	107.64406	0.96852	0.0715209	2.1928871	33	1	38 days	0.35			Asher		1997 YY ₂
1997 YA ₃	14.1	0.15	19980107	39.80808	313.93695	100.16310	12.61700	0.1685598	2.6747938	8	1	31 days	0.53			Nakano		1997 YA ₃
1997 YE ₃	12.3	0.15	19980107	339.25965	9.45661	123.36418	7.51873	0.0672588	3.1455154	8	1	32 days	0.71			Nakano		1997 YE ₃
1997 YG ₃	13.3	0.15	19980107	355.95022	193.59928	280.62909	8.90104	0.0658351	2.9855280	16	1	38 days	0.43			Asher		1997 YG ₃
1997 YL ₃	14.5	0.15	19980107	188.52210	194.01485	91.15764	8.41685	0.1671679	2.5617684	16	1	35 days	0.74			Williams		1997 YL ₃
1997 YM ₃	17.0	0.15	19971218	16.43235	73.47205	303.62802	4.01967	0.6736285	3.2390925	58	1	45 days	0.47	M-v	5	Williams	31156	1997 YM ₃
1997 YX ₃	14.0	0.15	19971218	41.65110	85.99694	298.94003	27.98006	0.4202119	2.7834591	69	2	1984–1998	0.66	M-v	4	Williams	31128	1997 YX ₃
1997 YZ ₃	15.0	0.15	19980107	129.78852	235.25937	107.54213	23.75900	0.0662175	1.9342212	15	1	38 days	0.39			Williams		1997 YZ ₃
1997 YA ₄	14.5	0.15	19971218	101.10987	38.76775	314.10171	5.38859	0.1876851	2.2045105	20	2	1993–1998	0.65	M-v	5	Williams	31128	1997 YA ₄
1997 YE ₄	14.0	0.15	19971128	67.40940	107.05065	253.40058	3.81260	0.1422956	2.2102436	15	1	42 days	0.66			Williams		1997 YE ₄
1997 YH ₄	14.0	0.15	19971218	62.98445	336.18290	59.53780	2.93025	0.0755110	2.8449330	28	2	1996–1998	0.50	M-v	3	Williams	31128	1997 YH ₄
1997 YK ₄	12.0	0.15	19971218	195.24003	281.05074	11.31788	5.84244	0.1369147	3.0904488	29	4	1979–1998	0.61	M-v	2	Williams	31128	1997 YK ₄
1997 YM ₄	14.0	0.15	19971218	89.04460	57.61791	270.31394	12.77596	0.1720908	2.5768557	23	2	1989–1997	0.40	M-v	5	Williams	31128	1997 YM ₄
1997 YO ₄	12.0	0.15	19971218	300.02749	73.90354	64.75151	11.21649	0.0591835	2.9829757	15	2	1977–1997	0.49	M-v	5	Williams	31128	1997 YO ₄
1997 YQ ₄	14.0	0.15	19980107	43.38940	309.89944	114.43184	12.29914	0.1525487	3.1647249	16	1	33 days	0.62			Williams		1997 YQ ₄
1997 YA ₅	13.5	0.15	19971218	351.72818	180.17873	267.97532	16.48888	0.1495386	2.7593709	23	1	44 days	0.26			Williams		1997 YA ₅
1997 YF ₅	15.0	0.15	19971128	29.93049	151.18698	235.29086	5.04937	0.1535059	2.2215365	19	1	31 days	0.60			Williams		1997 YF ₅
1997 YG ₅	14.5	0.15	19971218	348.27558	351.50086	98.91167	5.02812	0.1618135	2.4159372	25	1	53 days	0.58			Williams		1997 YG ₅
1997 YK ₅	12.4	0.15	19980127	70.40743	306.66269	93.91043	15.94134	0.0383137	2.6505431	10	1	34 days	0.45			Asher		1997 YK ₅
1997 YL ₅	13.5	0.15	19980127	345.34369	8.88947	127.88559	6.52994	0.0827584	2.7825033	26	1	34 days	0.31			Asher		1997 YL ₅
1997 YM ₅	12.9	0.15	19980107	177.94159	106.27327	190.10625	1.10808	0.0693658	2.6291275	10	1	34 days	0.52			Asher		1997 YM ₅
1997 YN ₅	14.5	0.15	19980107	69.87566	268.86701	118.01743	12.11943	0.1593012	3.0593055	14	1	35 days	0.61			Williams		1997 YN ₅
1997 YO ₅	15.5	0.15	19980107	7.40451	346.85503	116.90963	6.13487	0.1070906	2.2829881	31	1	36 days	0.72			Williams		1997 YO ₅
1997 YP ₅	14.0	0.15	19980127	64.22932	264.33743	126.34929	2.62541	0.2131585	2.4281269	29	1	35 days	0.42			Asher		1997 YP ₅
1997 YT ₅	12.2	0.15	19980127	166.02025	25.43283	285.38003	9.31871	0.0963297	2.9841488	18	1	34 days	1.14			Asher		1997 YT ₅
1997 YU ₅	14.6	0.15	19980127	14.38174	174.08683	281.32921	6.96968	0.2713298	2.7866027	10	1	34 days	0.25			Asher		1997 YU ₅
1997 YV ₅	12.0	0.15	19980107	177.71406	341.90631	309.85549	10.37348	0.2132445	2.3222111	10	1	34 days	0.51			Asher		1997 YV ₅
1997 YW ₅	12.5	0.15	19971218	341.96882	63.45743	64.09310	6.10049	0.0969765	2.7993076	18	3	1985–1998	0.64	M-v	4	Williams	31128	1997 YW ₅
1997 YX ₅	15.4	0.15	19980127	21.59572	155.64573	292.81918	7.26134	0.1813039	2.8852073	17	1	34 days	0.51			Asher		1997 YX ₅
1997 YZ ₅	14.4	0.15	19971218	329.78692	65.62842	79.42128	5.66137	0.1505321	2.4542478	16	1	56 days	0.31			Asher		1997 YZ ₅
1997 YA ₆	14.6	0.15	19980127	45.84480	15.87632	39.09240	3.83461	0.1716915	2.6027239	17	1	41 days	0.42			Asher		1997 YA ₆
1997 YE ₆	15.0	0.15	19980107	43.22416	192.08938	218.30779	1.92627	0.2007279	2.3812665	15	1	31 days	0.25			Williams		1997 YE ₆
1997 YU ₆	14.5	0.15	19980107	306.06659	62.56789	109.52929	7.11199	0.0426451	2.3485794	27	1	31 days	0.82			Williams		1997 YU ₆
1997 YV ₆	13.0	0.15	19971218	311.32147	241.85114	293.72902	15.31605	0.1702990	2.9335742	13	1	61 days	0.33	M-v	5	Williams		1997 YV ₆
1997 YW ₆	15.5	0.15	19980107	48.48521	283.41678	107.77548	12.48970	0.3156134	2.6120076	14	1	32 days	0.44			Williams		1997 YW ₆
1997 YX ₆	12.5	0.15	19980107	57.74214	287.92007	111.34301	14.59196	0.1797077	3.2202708	28	1	31 days	0.34			Williams		1997 YX ₆
1997 YY ₆	17.5	0.15	19971218	12.62899	335.28287	72.77278	8.23957	0.3179301	2.5888635	18	1	57 days	1.15			Marsden		1997 YY ₆
1997 YG ₇	14.5	0.15	19980127	277.66889	98.94505	115.56161	12.97795	0.1157159	2.6790799	23	1	37 days	0.47			Asher		1997 YG ₇

1998 FEB. 11

M.P.C. 31285

1997 YH ₇	14.6	0.15	19980107	47.51859	73.38731	328.10471	2.67300	0.1321025	2.2946164	10	1	32 days	0.55		Asher	1997 YH ₇
1997 YJ ₇	13.9	0.15	19980127	46.69377	313.67812	93.76743	12.90651	0.2192440	2.5790572	10	1	35 days	0.58		Asher	1997 YJ ₇
1997 YK ₇	14.4	0.15	19980107	19.17558	356.06424	84.35316	13.06085	0.1556169	2.6403051	11	1	34 days	0.62		Asher	1997 YK ₇
1997 YM ₇	12.1	0.15	19980107	120.38419	244.38586	114.05337	10.36705	0.1731809	2.8055733	10	1	32 days	0.46		Asher	1997 YM ₇
1997 YN ₇	11.8	0.15	19980107	91.52383	275.30521	110.66625	15.57046	0.1266004	2.6046672	8	1	32 days	0.33		Asher	1997 YN ₇
1997 YO ₇	13.5	0.15	19971218	345.89570	40.46299	103.73078	11.66491	0.0636557	2.9827376	14	2	1991–1998	0.51	M-v 5	Williams	1997 YO ₇
1997 YQ ₇	11.7	0.15	19980107	51.20179	86.88834	336.42217	11.59117	0.1502640	2.6699531	8	1	32 days	0.26		Asher	1997 YQ ₇
1997 YR ₇	14.5	0.15	19980107	65.16933	92.17185	299.87638	13.93346	0.1112833	2.5721207	18	1	34 days	0.58		Williams	1997 YR ₇
1997 YZ ₇	15.0	0.15	19980107	25.27409	148.83316	281.02310	10.56053	0.1927315	2.5384096	17	1	23 days	0.33		Marsden	1997 YZ ₇
1997 YA ₈	13.5	0.15	19971218	281.32650	317.16245	251.52871	11.92019	0.2144777	2.4507105	34	2	1991–1998	0.58	M-v 4	Marsden	1997 YA ₈
1997 YE ₈	14.5	0.15	19971218	74.02269	190.77206	181.15206	7.30822	0.1618439	2.4344463	17	1	27 days	0.31		Marsden	1997 YE ₈
1997 YN ₈	14.0	0.15	19971218	153.19187	262.43875	14.19021	2.77339	0.1576187	2.2486528	33	1	51 days	0.56		Williams	1997 YN ₈
1997 YP ₈	12.0	0.15	19980107	263.15899	116.72542	107.17998	13.14564	0.1272332	3.1737767	23	1	28 days	0.51		Williams	1997 YP ₈
1997 YQ ₈	16.5	0.15	19980107	30.17024	10.22784	56.50329	3.54209	0.1621912	2.3763567	16	1	28 days	0.84		Williams	1997 YQ ₈
1997 YR ₈	14.0	0.15	19980107	179.64933	290.50304	357.26884	9.16213	0.0688338	3.0689787	22	1	28 days	0.62		Williams	1997 YR ₈
1997 YT ₈	12.5	0.15	19980107	36.13345	144.36301	257.61236	12.19869	0.2442381	2.6197136	23	1	21 days	0.48		Williams	1997 YT ₈
1997 YK ₉	14.5	0.15	19980107	343.45648	59.28339	40.50390	6.80091	0.0724224	2.3475535	11	1	28 days	0.38		Williams	1997 YK ₉
1997 YW ₉	15.5	0.15	19971128	349.03378	213.11916	237.42294	8.43883	0.2429806	2.5130504	20	1	31 days	0.87		Williams	1997 YW ₉
1997 YB ₁₀	13.0	0.15	19971218	22.36531	118.37443	313.31067	6.85409	0.2079537	2.7712709	29	3	1987–1998	0.79	M-v 4	Williams	1997 YB ₁₀
1997 YC ₁₀	13.6	0.15	19980107	347.57352	264.67410	319.76205	1.84307	0.0736712	2.5854089	8	1	22 days	0.41		Nakano	1997 YC ₁₀
1997 YD ₁₀	13.5	0.15	19971218	181.06496	318.46475	229.81144	5.15293	0.1080656	2.3170610	20	3	1984–1998	0.44	M-v 5	Williams	1997 YD ₁₀
1997 YE ₁₀	14.2	0.15	19980127	13.32909	157.45627	305.46673	12.58626	0.1025302	2.5771493	31	1	32 days	0.41		Asher	1997 YE ₁₀
1997 YF ₁₀	14.2	0.15	19980127	343.28268	98.90100	50.37663	3.48082	0.2442187	2.3012013	24	1	35 days	0.51		Asher	1997 YF ₁₀
1997 YJ ₁₀	13.7	0.15	19980127	5.90645	26.95672	85.90660	10.64018	0.1267241	2.5662474	16	1	32 days	0.59		Asher	1997 YJ ₁₀
1997 YK ₁₀	15.1	0.15	19980127	9.30263	141.09946	325.34364	8.04857	0.1752495	2.6159281	18	1	32 days	0.55		Asher	1997 YK ₁₀
1997 YL ₁₀	15.6	0.15	19980127	80.61277	356.71656	27.93882	3.19786	0.1292762	2.2469732	13	1	32 days	0.87		Asher	1997 YL ₁₀
1997 YM ₁₀	14.5	0.15	19980107	63.36069	313.42741	103.47784	8.79985	0.1110474	2.3242226	9	1	33 days	0.37		Williams	1997 YM ₁₀
1997 YN ₁₀	14.4	0.15	19980107	59.77162	316.29399	94.80823	8.81252	0.1992970	2.5653552	11	1	33 days	0.25		Asher	1997 YN ₁₀
1997 YO ₁₀	12.4	0.15	19980127	221.42796	207.54791	60.23408	6.21158	0.1309764	2.2904336	10	1	32 days	0.39		Asher	1997 YO ₁₀
1997 YP ₁₀	15.0	0.15	19971218	316.65134	153.17795	3.41128	5.10414	0.0632935	2.2055946	21	3	1993–1998	0.66	M-v 4	Williams	1997 YP ₁₀
1997 YQ ₁₀	13.0	0.15	19980127	4.68485	37.07983	78.08486	9.69376	0.0853741	2.9305974	13	1	34 days	0.32		Asher	1997 YQ ₁₀
1997 YS ₁₀	13.0	0.15	19971218	92.52889	165.93883	209.24067	2.88134	0.1261389	2.4082521	22	2	1989–1998	0.66	M-v 4	Williams	1997 YS ₁₀
1997 YW ₁₀	15.0	0.15	19971218	17.90392	56.00536	31.94164	2.87591	0.1792241	2.4086119	15	1	25 days	0.51		Williams	1997 YW ₁₀
1997 YF ₁₁	14.5	0.15	19980107	271.07651	115.17679	106.13977	7.52413	0.1246374	2.3461228	24	1	28 days	0.37		Williams	1997 YF ₁₁
1997 YJ ₁₁	13.9	0.15	19980107	275.92661	222.42464	3.93767	3.81754	0.1594554	2.5747710	11	1	33 days	0.41		Nakano	1997 YJ ₁₁
1997 YL ₁₁	17.5	0.15	19971218	350.87599	91.16675	36.79824	5.45825	0.4210155	2.6711359	43	1	37 days	0.44	M-v 4	Williams	1997 YL ₁₁
1997 YP ₁₁	14.0	0.15	19971218	25.72677	247.22244	197.30740	3.11566	0.0276005	2.2251523	20	3	1993–1998	0.45	M-v 3	Williams	1997 YP ₁₁
1997 YQ ₁₁	14.5	0.15	19971218	236.42631	163.06075	86.07964	7.75917	0.1782066	2.2809287	13	1	68 days	0.48	M-v 5	Asher	1997 YQ ₁₁
1997 YU ₁₁	12.8	0.15	19980107	119.54518	353.27407	20.46375	7.04428	0.1131710	2.3545144	8	1	31 days	0.32		Asher	1997 YU ₁₁
1997 YV ₁₁	11.4	0.15	19980107	57.76789	315.17145	125.41791	17.61352	0.0977401	3.1953341	8	1	31 days	0.34		Asher	1997 YV ₁₁
1997 YW ₁₁	13.5	0.15	19980107	119.23999	252.76360	93.15510	4.68025	0.0985105	2.8039951	15	1	25 days	0.36		Williams	1997 YW ₁₁
1997 YX ₁₁	14.0	0.15	19980107	4.07214	222.53352	252.94388	9.14497	0.0553707	3.0393298	15	1	33 days	0.59		Williams	1997 YX ₁₁
1997 YZ ₁₁	14.5	0.15	19980107	149.03223	168.90555	159.22047	9.13389	0.0819811	2.6191383	9	1	30 days	0.40		Williams	1997 YZ ₁₁
1997 YA ₁₂	14.5	0.15	19980107	132.42782	183.55347	156.35847	9.04480	0.1111251	2.3529616	9	1	30 days	0.35		Williams	1997 YA ₁₂
1997 YB ₁₂	14.0	0.15	19971218	62.06611	126.05810	276.97976	14.06285	0.1131972	2.5965987	20	1	110 days	0.49	M-v 4	Williams	1997 YB ₁₂
1997 YK ₁₂	13.5	0.15	19971218	16.87613	160.19348	287.52734	5.76431	0.0701569	3.1602920	24	1	117 days	0.40	M-v 4	Williams	1997 YK ₁₂
1997 YH ₁₃	14.5	0.15	19980107	318.60253	288.58239	252.07552	5.80674	0.1496017	3.1678115	12	1	31 days	0.25		Williams	1997 YH ₁₃
1997 YJ ₁₃	15.0	0.15	19980107	182.25825	31.86914	272.33831	8.33116	0.0818472	2.5893077	9	1	28 days	0.06		Williams	1997 YJ ₁₃
1997 YK ₁₃	14.6	0.15	19980127	302.56695	297.81941	263.77400	6.47555	0.1963485	2.3379806	13	1	30 days	0.46		Asher	1997 YK ₁₃
1997 YR ₁₃	11.6	0.15	19980127	95.07929	162.26380	217.98474	0.10081	0.1294187	3.2110105	10	1	30 days	0.34		Asher	1997 YR ₁₃
1997 YS ₁₃	13.9	0.15	19980127	310.54507	222.77121	328.49463	0.37592	0.1351596	2.4212462	10	1	30 days	0.62		Asher	1997 YS ₁₃
1997 YT ₁₃	14.5	0.15	19980107	114.55279	51.78268	309.53948	7.13729	0.0759007	2.4192604	20	1	32 days	0.63		Williams	1997 YT ₁₃
1997 YU ₁₃	11.9	0.15	19980107	166.36202	318.80064	359.14228	1.46139	0.0461481	2.9237240	10	1	30 days	0.43		Asher	1997 YU ₁₃

1997 YV ₁₃	13.4	0.15	19980127	42.42151	131.57960	266.85998	4.99050	0.3874529	2.5994084	14	1	33 days	0.43		Nakano	1997 YV ₁₃
1997 YX ₁₃	13.2	0.15	19980127	13.21014	351.07079	122.80701	22.44797	0.0740459	2.5492238	12	1	35 days	0.29		Asher	1997 YX ₁₃
1997 YY ₁₃	15.0	0.15	19980107	334.85341	219.77036	298.03131	4.92607	0.1642579	2.5585168	10	1	30 days	0.67		Asher	1997 YY ₁₃
1997 YZ ₁₃	14.2	0.15	19980107	77.94099	266.33080	118.03692	6.14605	0.1824106	2.3662102	8	1	28 days	0.49		Asher	1997 YZ ₁₃
1997 YA ₁₄	14.2	0.15	19980127	29.94701	148.39366	288.16261	22.49658	0.2346906	2.3322773	11	1	30 days	0.44		Asher	1997 YA ₁₄
1997 YB ₁₄	14.0	0.15	19971218	16.79615	331.20247	117.35272	14.36329	0.2100008	2.5471185	20	2	1994–1998	0.28	M-v 4	Williams	1997 YB ₁₄
1997 YD ₁₄	14.0	0.15	19971218	13.50372	149.10342	308.94278	7.72462	0.2046183	3.1446991	19	1	94 days	0.29	M-v 4	Williams	1997 YD ₁₄
1997 YF ₁₄	15.0	0.15	19971218	19.35900	155.37303	294.36810	5.10784	0.1613387	2.5401719	28	2	1994–1998	0.50	M-v 4	Williams	1997 YF ₁₄
1997 YG ₁₄	15.0	0.15	19980107	14.62334	166.14139	301.98631	13.60327	0.0572383	2.6205674	19	1	54 days	0.47		Asher	1997 YG ₁₄
1997 YH ₁₄	14.0	0.15	19980107	306.74344	220.18669	324.05269	1.04503	0.0553930	2.9310379	21	1	30 days	0.49		Williams	1997 YH ₁₄
1997 YJ ₁₄	15.5	0.15	19980107	14.41132	148.69262	309.24893	3.03782	0.2370703	2.5773194	16	1	30 days	0.38		Williams	1997 YJ ₁₄
1997 YK ₁₄	12.3	0.15	19980127	188.11672	347.80170	315.21492	8.65548	0.0785079	3.1896266	10	1	30 days	0.37		Asher	1997 YK ₁₄
1997 YL ₁₄	15.0	0.15	19980127	336.57061	271.25008	240.27372	2.68352	0.0769094	2.3333967	16	1	30 days	0.43		Asher	1997 YL ₁₄
1997 YO ₁₄	13.0	0.15	19980107	43.77069	31.30989	311.26169	4.26492	0.2332436	2.6192643	12	1	29 days	0.27		Williams	1997 YO ₁₄
1997 YP ₁₄	14.0	0.15	19980107	121.67670	27.22452	330.67596	1.16966	0.0585082	2.8733041	9	1	18 days	0.12		Marsden	1997 YP ₁₄
1997 YW ₁₄	15.0	0.15	19980107	289.26134	246.74295	295.44520	3.45186	0.0131120	2.3986059	21	1	27 days	0.78		Williams	1997 YW ₁₄
1997 YC ₁₅	14.5	0.15	19980107	298.63732	129.28416	58.69149	0.90211	0.1383312	2.4394143	38	1	28 days	0.46		Williams	1997 YC ₁₅
1997 YD ₁₅	14.0	0.15	19971218	12.70227	352.16407	96.88371	3.59250	0.1332402	2.6186954	35	1	58 days	0.46		Williams	1997 YD ₁₅
1997 YF ₁₅	14.0	0.15	19980107	238.85695	314.14822	298.34229	8.66032	0.2098138	2.9736467	12	1	26 days	0.32		Williams	1997 YF ₁₅
1997 YX ₁₅	12.5	0.15	19971218	185.58289	350.11550	294.86077	14.43052	0.1150361	3.0383631	26	3	1979–1998	0.70	M-v 3	Williams	1997 YX ₁₅
1997 YG ₁₆	15.6	0.15	19971218	343.06004	329.39500	132.07633	3.66745	0.1416477	2.3581111	12	1	62 days	0.45	M-v 5	Asher	1997 YG ₁₆
1997 YL ₁₆	13.5	0.15	19980107	79.07482	79.86514	285.45807	11.65158	0.2314029	2.4043866	26	1	23 days	0.74		Williams	1997 YL ₁₆
1997 YN ₁₆	15.3	0.15	19980107	325.92151	25.31526	130.62406	3.09477	0.1632766	2.4611278	11	1	20 days	0.66		Nakano	1997 YN ₁₆
1997 YP ₁₆	14.2	0.15	19980127	357.00138	194.36529	285.72091	5.11501	0.1375079	2.6202650	30	1	33 days	0.71		Asher	1997 YP ₁₆
1997 YU ₁₆	13.5	0.15	19980107	257.85500	141.33106	73.17182	3.00536	0.0190183	2.6281942	18	1	19 days	0.38		Williams	1997 YU ₁₆
1997 YX ₁₆	14.0	0.15	19971218	73.74559	286.19787	91.24665	6.52990	0.1144462	2.2755626	17	1	11 days	0.50		Williams	1997 YX ₁₆
1997 YY ₁₆	14.5	0.15	19980107	17.00752	37.22350	356.37991	5.41149	0.1170581	2.1414742	12	1	23 days	0.62		Williams	1997 YY ₁₆
1997 YZ ₁₆	14.0	0.15	19971218	35.80304	260.59777	150.00388	5.46766	0.1160030	2.4334228	13	5	1985–1998	0.81	M-v 2	Williams	1997 YZ ₁₆
1997 YN ₁₇	15.0	0.15	19980107	41.18272	57.36590	359.54805	1.32476	0.1715790	2.3904725	27	1	26 days	0.55		Williams	1997 YN ₁₇
1997 YQ ₁₇	16.5	0.15	19980107	97.73695	67.20093	301.03859	12.86442	0.0819958	2.5777695	14	1	34 days	0.27		Williams	1997 YQ ₁₇
1997 YX ₁₇	17.0	0.15	19980107	48.50331	111.36192	308.91068	6.42991	0.0707723	2.3204334	14	1	30 days	0.13		Williams	1997 YX ₁₇
1997 YY ₁₇	16.0	0.15	19980107	137.64296	6.65146	321.92069	4.95785	0.1734369	2.6585721	11	1	23 days	0.26		Williams	1997 YY ₁₇
1997 YA ₁₈	17.0	0.15	19980107	224.60455	306.73562	318.88575	5.33984	0.1929930	2.3437104	12	1	23 days	0.29		Williams	1997 YA ₁₈
1997 YB ₁₈	14.0	0.15	19980107	292.71018	250.01156	310.11521	9.70935	0.1302973	3.1342465	15	1	25 days	0.55		Williams	1997 YB ₁₈
1997 YC ₁₈	17.0	0.15	19971218	10.62628	150.05479	301.32894	7.06292	0.1868130	2.7698266	18	1	71 days	0.36	M-v 5	Williams	1997 YC ₁₈
1997 YF ₁₈	12.5	0.15	19980107	292.79894	186.47900	51.48124	11.79033	0.1426497	3.1264844	9	1	41 days	0.24		Williams	1997 YF ₁₈
1997 YH ₁₈	14.5	0.15	19980107	42.40913	12.65409	38.07301	1.91692	0.1819003	2.4295164	21	1	19 days	0.38		Williams	1997 YH ₁₈
1997 YJ ₁₈	13.0	0.15	19980107	88.23576	4.98607	354.60889	1.79643	0.0370405	2.8771549	15	1	36 days	0.47		Williams	1997 YJ ₁₈
1997 YK ₁₈	13.0	0.15	19971218	25.08820	289.36509	146.63796	10.68073	0.0841064	2.9998354	8	1	26 days	0.09		Williams	1997 YK ₁₈
1997 YO ₁₈	14.0	0.15	19971218	256.44214	255.78526	342.61319	6.97448	0.1469139	2.4849128	24	2	1971–1998	0.47	M-v 5	Williams	1997 YO ₁₈
1997 YS ₁₉	14.5	0.15	19971128	352.00425	356.55003	78.51765	7.46859	0.0928048	2.4253593	20	1	37 days	0.62		Williams	1997 YS ₁₉
1997 YF ₂₀	16.5	0.15	19980107	324.96667	211.34092	311.05102	5.83309	0.0366251	2.3481847	10	1	38 days	0.16		Williams	1997 YF ₂₀
1998 AA	13.5	0.15	19971218	77.60567	85.23742	246.58846	23.50030	0.2450404	2.3749905	39	1	60 days	0.62	M-v 5	Williams	1998 AA
1998 AD	14.0	0.15	19980107	358.22343	51.28191	351.22392	12.23623	0.2315994	2.5502743	28	1	21 days	0.55		Williams	1998 AD
1998 AF	15.0	0.15	19980127	4.32587	306.98746	160.59639	5.11324	0.1007038	2.2759178	20	1	26 days	0.60		Asher	1998 AF
1998 AH	14.0	0.15	19980107	12.29597	67.16772	13.32379	4.05357	0.2825630	2.6001794	35	1	26 days	0.65		Williams	1998 AH
1998 AK	14.5	0.15	19980107	349.42845	210.58571	275.20352	1.26983	0.1453638	2.3942373	35	1	27 days	0.71		Asher	1998 AK
1998 AL	13.4	0.15	19971218	39.07186	304.78792	120.57601	5.61650	0.1807755	2.3775965	15	1	67 days	0.36	M-v 5	Asher	1998 AL
1998 AM	15.3	0.15	19980127	22.48308	138.46606	327.70518	3.96012	0.0896559	2.3041749	16	1	30 days	0.48		Asher	1998 AM
1998 AN	13.0	0.15	19971218	344.20683	172.02414	330.81705	4.55031	0.0871315	2.7705449	30	4	1991–1998	0.52	M-v 2	Williams	1998 AN
1998 AP	13.0	0.15	19980127	339.09937	35.82842	127.60507	8.86440	0.1567295	2.7901407	13	1	30 days	0.28		Asher	1998 AP
1998 AS	14.6	0.15	19980127	291.31811	195.92712	22.80605	1.34788	0.1404145	2.4316431	10	1	30 days	0.61		Asher	1998 AS
1998 AV	13.5	0.15	19971218	238.40134	131.99022	114.90992	22.40286	0.0075354	3.1497331	19	1	88 days	0.68	M-v 5	Asher	1998 AV

1998 AW	12.7	0.15	19980127	21.69937	152.90058	315.19799	16.89473	0.1205098	3.1592771	10	1	30 days	0.25	Asher	1998 AW
1998 AY	17.3	0.15	19980127	354.03172	46.05817	96.73384	4.26262	0.2145896	2.3714274	16	1	30 days	0.59	Asher	1998 AY
1998 AZ	11.2	0.15	19980127	265.26751	271.66295	326.94992	10.03101	0.0736731	3.0679274	10	1	30 days	0.38	Asher	1998 AZ
1998 AA ₁	15.0	0.15	19980127	357.19392	34.83082	103.37419	5.58191	0.2410188	2.4058495	10	1	30 days	0.47	Asher	1998 AA ₁
1998 AB ₁	13.3	0.15	19980127	36.70329	326.93240	121.15665	20.64829	0.1323030	2.8359602	10	1	30 days	0.33	Asher	1998 AB ₁
1998 AC ₁	15.5	0.15	19980107	6.99953	141.29533	332.23237	6.97806	0.1171041	2.2310046	13	1	30 days	0.55	Williams	1998 AC ₁
1998 AB ₂	14.5	0.15	19980107	356.54271	5.88971	108.02934	7.42795	0.0911026	2.5435958	20	1	24 days	0.44	Williams	1998 AB ₂
1998 AC ₃	14.0	0.15	19980107	75.26159	281.50537	99.82065	7.87666	0.1183227	2.3368320	12	1	14 days	0.53	Williams	1998 AC ₃
1998 AD ₃	15.0	0.15	19971218	261.23609	237.92154	338.27286	2.12488	0.1103702	2.3868318	21	2	1980–1998	0.56	M-v 6 Williams	31131 1998 AD ₃
1998 AE ₃	14.0	0.15	19971218	260.36106	280.87407	305.40001	7.66037	0.2025313	2.3431725	12	1	3 days	0.40	E Williams	1998 AE ₃
1998 AJ ₃	14.5	0.15	19971218	358.60033	34.27408	73.33858	3.68469	0.0694400	2.8349270	18	1	56 days	0.78	D Williams	1998 AJ ₃
1998 AK ₃	13.5	0.15	19980107	337.37246	21.48868	125.97208	4.78169	0.0414484	2.8004847	15	1	19 days	0.61	Williams	1998 AK ₃
1998 AQ ₄	15.5	0.15	19980107	130.14569	35.58733	303.94542	13.16792	0.0836815	2.6806559	18	1	34 days	0.34	Williams	1998 AQ ₄
1998 AR ₄	14.5	0.15	19980107	235.64619	308.94262	309.12129	7.17951	0.2124141	2.3003797	15	1	19 days	0.67	Williams	1998 AR ₄
1998 AS ₄	13.5	0.15	19980107	310.02539	235.50806	304.16974	11.03569	0.1427334	2.4241096	17	1	28 days	0.23	Williams	1998 AS ₄
1998 AT ₄	14.0	0.15	19980107	198.93180	179.86814	102.99403	7.10250	0.1489826	2.2541135	19	1	19 days	0.46	Williams	1998 AT ₄
1998 AU ₄	16.5	0.15	19980107	60.25001	51.03192	344.85762	2.53096	0.1931363	2.9482258	11	1	22 days	0.22	Williams	1998 AU ₄
1998 AW ₄	15.0	0.15	19980107	329.60497	53.02815	125.60846	17.22867	0.1838509	3.1548600	20	1	33 days	0.70	Marsden	1998 AW ₄
1998 AX ₄	14.0	0.15	19980107	45.41601	331.27319	93.47007	24.34999	0.0803549	1.9627699	21	1	22 days	0.46	Williams	1998 AX ₄
1998 AZ ₄	14.5	0.15	19980107	340.49908	214.62539	271.92996	7.10907	0.0718601	2.2420225	10	1	14 days	0.51	Williams	1998 AZ ₄
1998 AA ₅	15.0	0.15	19980107	79.24435	92.82478	273.49703	7.86715	0.1825813	2.7831032	13	1	16 days	0.58	Williams	1998 AA ₅
1998 AB ₅	15.5	0.15	19980107	186.32346	160.88982	120.58471	7.93886	0.1423148	2.2958894	12	1	13 days	0.67	Williams	1998 AB ₅
1998 AC ₅	15.5	0.15	19980107	255.23625	120.08967	100.88154	8.99575	0.0595232	2.6615693	20	1	5 days	0.50	E Williams	1998 AC ₅
1998 AH ₅	13.5	0.15	19980107	8.09499	349.04742	140.94118	2.62104	0.1337722	3.1461345	9	1	17 days	0.20	Williams	1998 AH ₅
1998 AL ₆	16.0	0.15	19971218	48.39597	315.88591	69.47978	2.46838	0.2766400	2.3530696	12	1	3 days	1.04	E Williams	1998 AL ₆
1998 AM ₆	14.5	0.15	19971218	270.39732	125.14657	79.17273	2.91260	0.0907232	2.2761837	9	1	3 days	0.28	E Williams	1998 AM ₆
1998 AO ₆	14.0	0.15	19980107	11.35587	152.13367	311.87156	12.19817	0.1128075	2.5540263	22	1	34 days	0.38	Williams	1998 AO ₆
1998 AP ₆	14.0	0.15	19980107	258.86730	262.96157	323.35761	8.07208	0.0447839	2.7449975	15	1	27 days	0.34	Williams	1998 AP ₆
1998 AR ₆	13.5	0.15	19980107	21.05591	1.29333	97.59958	7.17663	0.1202663	3.3875388	9	1	14 days	0.33	Williams	1998 AR ₆
1998 AT ₆	15.0	0.15	19980107	276.16131	115.83203	98.36608	7.30615	0.0602334	2.3406041	15	1	33 days	0.22	Williams	1998 AT ₆
1998 AU ₆	15.5	0.15	19980107	310.12329	80.83111	106.08358	13.24161	0.1465934	2.3574077	19	1	33 days	0.26	Williams	1998 AU ₆
1998 AW ₆	13.5	0.15	19980107	241.51887	148.95328	89.66043	4.81386	0.1106505	2.4744962	13	1	2 days	0.28	E Williams	1998 AW ₆
1998 AX ₆	15.5	0.15	19980107	166.04588	225.55001	75.99665	2.25743	0.0792410	2.1211365	13	1	12 days	0.35	Williams	1998 AX ₆
1998 AY ₆	14.0	0.15	19980107	22.01721	13.30932	64.90583	2.27661	0.1790973	2.9744010	15	1	21 days	0.50	Williams	1998 AY ₆
1998 AZ ₆	14.0	0.15	19980107	131.24983	246.74190	77.97091	2.01191	0.1918142	2.1440643	9	1	12 days	0.39	Williams	1998 AZ ₆
1998 AF ₇	14.0	0.15	19980107	217.24855	158.41259	100.12367	7.75873	0.1031359	2.3200067	10	1	12 days	0.18	Williams	1998 AF ₇
1998 AH ₇	14.0	0.15	19971218	47.40069	320.15734	80.09847	4.20368	0.1580812	2.2563845	13	1	14 days	0.44	Williams	1998 AH ₇
1998 AJ ₇	14.5	0.15	19971218	38.44556	89.76042	320.42922	3.44977	0.1811896	2.6070255	12	1	9 days	0.29	D Williams	1998 AJ ₇
1998 AK ₇	13.5	0.15	19980107	280.48972	255.43905	320.51303	21.35717	0.1048563	3.1513896	13	1	30 days	0.56	Williams	1998 AK ₇
1998 AQ ₇	16.5	0.15	19980107	52.62142	13.60067	25.33515	2.15107	0.2279752	2.4330733	21	1	26 days	0.35	Williams	1998 AQ ₇
1998 AK ₈	16.5	0.15	19980107	351.10606	11.64244	126.86131	48.23797	0.1820811	1.7983368	128	1	27 days	0.37	Williams	1998 AK ₈
1998 AL ₈	14.5	0.15	19980107	342.05517	59.49113	74.68105	1.99967	0.1617143	2.6551865	27	1	12 days	0.31	Williams	1998 AL ₈
1998 AM ₈	15.0	0.15	19980107	358.87657	260.81421	146.02769	3.96828	0.1665253	2.4046533	6	1	7 days	1.08	E Williams	1998 AM ₈
1998 AN ₈	14.0	0.15	19971218	28.59901	323.98241	44.61839	15.55869	0.0962906	2.6768679	21	1	94 days	0.40	M-v 5 Williams	1998 AN ₈
1998 AP ₈	15.0	0.15	19971218	311.01060	327.26515	164.50422	2.27671	0.2447896	2.5626786	24	1	96 days	0.66	M-v 6 Williams	1998 AP ₈
1998 AQ ₈	14.0	0.15	19980107	154.24211	103.98580	238.05969	4.25284	0.0194196	2.8206302	12	1	26 days	0.32	Williams	1998 AQ ₈
1998 AW ₈	15.5	0.15	19971218	355.64214	200.33424	223.58328	4.84041	0.1175733	2.2515611	32	1	102 days	0.77	M-v 5 Williams	1998 AW ₈
1998 AX ₈	14.5	0.15	19980107	40.11078	85.93508	266.73944	2.06354	0.2780296	2.8556273	12	1	18 days	0.66	Williams	1998 AX ₈
1998 AY ₈	14.5	0.15	19980107	88.91484	158.04733	179.58588	2.10662	0.1249848	2.8408639	6	1	2 days	0.20	E Williams	1998 AY ₈
1998 AA ₉	15.5	0.15	19980107	325.53942	184.92503	324.09357	5.89173	0.1809779	2.3190174	8	1	2 days	0.41	E Williams	1998 AA ₉
1998 AC ₉	14.0	0.15	19980107	80.22549	354.25954	26.43788	4.05807	0.0337950	3.1410345	10	1	2 days	0.24	E Williams	1998 AC ₉
1998 AN ₉	17.0	0.15	19980107	47.28446	332.04415	80.62470	3.40443	0.2124079	2.4687373	6	1	2 days	0.19	E Williams	1998 AN ₉
1998 AX ₉	16.5	0.15	19980107	323.22906	42.88337	120.58824	1.39023	0.1569357	2.3360517	10	1	27 days	0.25	Williams	1998 AX ₉

1998 AB ₁₀	15.5	0.15	19980107	11.95642	16.04657	18.30330	1.96987	0.2855109	2.4977412	9	1	14 days	0.28	E	Williams	1998 AB ₁₀
1998 AC ₁₀	14.5	0.15	19980107	72.86583	92.51158	248.24740	22.08215	0.1269975	2.5440600	8	1	15 days	0.29		Williams	1998 AC ₁₀
1998 AG ₁₀	14.5	0.15	19971218	10.23671	329.10059	82.75350	8.78200	0.1350380	2.6561275	19	1	50 days	0.59		Williams	1998 AG ₁₀
1998 AK ₁₀	21.0	0.15	19980107	0.10078	63.55268	47.31952	0.84545	0.3144668	2.0465378	20	1	27 days	0.41		Williams	1998 AK ₁₀
1998 AL ₁₀	14.5	0.15	19980107	50.79223	264.68549	141.73501	4.93956	0.1571450	2.5219925	8	1	25 days	0.24		Williams	1998 AL ₁₀
1998 AM ₁₀	14.0	0.15	19980107	161.03772	173.28246	145.91373	7.90790	0.0907162	2.4533416	7	1	24 days	0.15		Williams	1998 AM ₁₀
1998 AN ₁₀	15.5	0.15	19980107	24.06653	220.56812	232.71942	2.98160	0.0730828	2.2363230	4	1	17 days	0.19		Williams	1998 AN ₁₀
1998 BA	15.4	0.15	19980127	42.12607	129.14687	284.80258	5.75605	0.2047681	2.2696890	20	1	38 days	0.49		Asher	1998 BA
1998 BB	14.4	0.15	19980127	64.99863	1.00727	34.55311	3.57950	0.1517891	2.2984233	11	1	17 days	0.30		Asher	1998 BB
1998 BC	14.9	0.15	19980127	251.84806	262.40404	329.27190	8.08422	0.0423722	2.4904176	11	1	13 days	0.41		Asher	1998 BC
1998 BD	13.9	0.15	19980127	89.55486	319.30807	52.20111	5.29933	0.1750205	2.2624155	9	1	17 days	0.46		Asher	1998 BD
1998 BF	16.5	0.15	19980107	25.08262	142.06839	308.99371	5.05730	0.0874543	2.1723624	7	1	15 days	0.20		Williams	1998 BF
1998 BJ	14.3	0.15	19980107	48.26277	119.90986	284.33170	6.34411	0.1877048	2.2322137	28	1	27 days	0.51		Asher	1998 BJ
1998 BK	15.2	0.15	19980127	55.67862	325.18904	81.68142	6.11459	0.2113876	2.3515571	11	1	13 days	0.47		Asher	1998 BK
1998 BM	11.8	0.15	19980127	186.80287	311.59601	347.70780	8.39354	0.0826151	3.1405937	8	1	13 days	0.59		Asher	1998 BM
1998 BN	13.1	0.15	19980127	31.53597	114.20050	341.86757	9.78148	0.0775970	2.9822581	8	1	15 days	0.36		Asher	1998 BN
1998 BO	14.5	0.15	19980107	299.68552	110.36572	85.87452	6.11038	0.0973266	2.2484778	11	1	15 days	0.32		Williams	1998 BO
1998 BP	14.2	0.15	19980127	5.94190	96.01343	27.97745	4.88798	0.1013377	2.3119695	8	1	15 days	0.75		Asher	1998 BP
1998 BQ	14.0	0.15	19980107	314.79193	3.15685	106.55792	7.37611	0.1125491	2.1942567	9	1	9 days	0.52		Williams	1998 BQ
1998 BT	12.4	0.15	19980127	281.24583	112.84537	103.51598	11.21392	0.0388580	2.9617626	8	1	14 days	0.38		Asher	1998 BT
1998 BV	14.5	0.15	19980127	9.82782	347.32864	133.58907	5.74675	0.1629598	2.3277885	15	1	14 days	0.51		Williams	1998 BV
1998 BW	13.0	0.15	19980127	296.42906	268.34983	316.12499	14.04744	0.2123094	2.8696835	18	1	14 days	0.55		Williams	1998 BW
1998 BX	12.6	0.15	19980127	56.02328	278.46866	129.74559	3.62921	0.3033028	4.1546106	11	1	14 days	0.49		Asher	1998 BX
1998 BY	14.0	0.15	19980127	208.32019	302.95965	330.80195	8.84015	0.0115346	2.4775419	8	1	12 days	0.41		Asher	1998 BY
1998 BZ	12.7	0.15	19980127	62.83084	306.72432	87.61906	7.94863	0.2228669	2.3567679	8	1	12 days	0.23		Asher	1998 BZ
1998 BA ₁	12.4	0.15	19980127	200.43654	168.75196	133.66878	13.81123	0.1370207	3.0900953	8	1	14 days	0.43		Asher	1998 BA ₁
1998 BB ₁	15.4	0.15	19980127	147.59062	18.06374	325.47046	12.10970	0.0882211	2.6340231	13	1	14 days	0.56		Asher	1998 BB ₁
1998 BD ₁	14.0	0.15	19980127	304.57550	250.30479	314.17434	11.75307	0.1185473	2.6788586	15	1	14 days	0.53		Williams	1998 BD ₁
1998 BF ₁	14.3	0.15	19980127	8.33037	14.13389	100.27587	12.67013	0.0306723	2.7201396	14	1	34 days	0.37		Asher	1998 BF ₁
1998 BG ₁	14.1	0.15	19980127	33.89240	359.93745	80.19081	6.33609	0.1253427	2.2893693	8	1	12 days	0.69		Asher	1998 BG ₁
1998 BJ ₁	14.5	0.15	19980127	312.60731	67.36731	123.06364	9.75608	0.0650289	3.0106619	11	1	14 days	0.47		Williams	1998 BJ ₁
1998 BK ₁	15.0	0.15	19971218	306.36059	95.78645	95.59009	3.35781	0.1481113	2.3923062	14	1	69 days	0.45	M-v 6	Williams	1998 BK ₁
1998 BL ₁	14.2	0.15	19980127	105.15058	249.76630	136.36431	11.66281	0.0596903	2.6971690	14	1	14 days	0.51		Asher	1998 BL ₁
1998 BM ₁	14.7	0.15	19980127	19.09775	334.38462	137.86777	6.06786	0.1460078	3.1846709	14	1	14 days	0.40		Asher	1998 BM ₁
1998 BN ₁	15.8	0.15	19980127	34.34585	73.54448	8.64496	3.98840	0.1008503	2.3004445	14	1	12 days	0.25		Asher	1998 BN ₁
1998 BQ ₁	15.8	0.15	19980127	324.16126	67.56749	117.61141	4.85765	0.1640869	2.5991673	11	1	14 days	0.49		Asher	1998 BQ ₁
1998 BR ₁	12.7	0.15	19980127	100.96151	312.47657	43.91488	5.82426	0.2531755	2.3667404	8	1	12 days	0.26		Asher	1998 BR ₁
1998 BA ₂	14.0	0.15	19980107	102.94956	303.67049	48.10912	4.18082	0.1817878	2.5603964	13	1	15 days	0.53		Marsden	1998 BA ₂
1998 BB ₂	12.5	0.15	19980107	230.49904	153.29046	102.30050	17.63352	0.1417595	3.1300609	15	1	15 days	0.47		Marsden	1998 BB ₂
1998 BC ₂	15.0	0.15	19980107	41.45808	69.93486	345.56884	4.85033	0.1621624	2.2516970	14	1	15 days	0.32		Marsden	1998 BC ₂
1998 BE ₂	12.0	0.15	19980107	270.77806	66.07521	150.51895	1.82190	0.1241208	3.1842102	19	1	20 days	0.35		Williams	1998 BE ₂
1998 BG ₂	13.5	0.15	19980107	188.93881	199.63139	87.31176	1.16329	0.1694926	2.2153794	35	1	17 days	0.76		Williams	1998 BG ₂
1998 BK ₂	14.0	0.15	19980107	108.57502	219.56458	138.81917	3.53689	0.0712032	2.3010213	12	1	6 days	0.42		Williams	1998 BK ₂
1998 BM ₂	12.5	0.15	19980107	24.26647	335.80941	112.47226	11.62809	0.0532390	2.6693204	26	1	5 days	0.48		Williams	1998 BM ₂
1998 BQ ₂	13.0	0.15	19980107	151.35059	84.70380	233.81583	2.19882	0.0526085	2.7213351	13	1	5 days	0.77		E Williams	1998 BQ ₂
1998 BS ₂	14.9	0.15	19980127	350.88337	27.55696	110.12296	7.08883	0.1153341	2.3286652	20	1	38 days	0.72		Nakano	1998 BS ₂
1998 BV ₂	15.1	0.15	19971218	17.31628	43.15233	46.03261	1.94037	0.1472074	2.4236097	20	1	73 days	0.63	M-v 5	Nakano	1998 BV ₂
1998 BX ₂	14.7	0.15	19980127	357.80541	179.94115	309.99080	21.61380	0.2663844	3.1018336	19	1	18 days	0.51		Nakano	1998 BX ₂
1998 BY ₂	14.6	0.15	19980127	16.78214	101.96246	4.30137	2.90750	0.1040378	2.2555682	16	1	18 days	0.61		Nakano	1998 BY ₂
1998 BA ₃	15.5	0.15	19980107	176.76929	71.23538	237.96174	1.44327	0.1147494	2.2689104	10	1	8 days	0.32		Marsden	1998 BA ₃
1998 BO ₃	18.0	0.15	19980107	42.86201	296.15555	127.76789	4.54109	0.1755540	2.3299682	12	1	12 days	0.23		Williams	1998 BO ₃
1998 BR ₃	18.5	0.15	19980107	7.11117	95.25338	17.64320	0.01792	0.1474443	2.3925437	8	1	12 days	0.29		E Williams	1998 BR ₃
1998 BS ₃	16.0	0.15	19980107	207.82360	159.97729	126.41184	1.25397	0.1333934	2.7658684	12	1	12 days	0.48		E Williams	1998 BS ₃

1998 BT ₃	17.5	0.15	19980107	14.47806	339.33058	122.63053	1.90248	0.2247893	3.0718804	9	1	12 days	0.31	Williams	1998 BT ₃
1998 BU ₃	16.5	0.15	19980107	350.88538	11.15318	124.58677	3.32328	0.1533763	2.4173902	18	1	12 days	0.44	Williams	1998 BU ₃
1998 BV ₃	17.0	0.15	19980107	60.75121	33.28064	26.51112	0.41007	0.0538331	2.5075239	12	1	12 days	0.34	Williams	1998 BV ₃
1998 BW ₃	16.0	0.15	19980107	6.19609	244.63084	220.98094	2.04745	0.1015693	2.3952677	8	1	5 days	0.26	Marsden	1998 BW ₃
1998 BZ ₃	15.5	0.15	19980107	316.71520	253.95828	284.00550	3.04302	0.1073586	2.5552143	8	1	5 days	0.22	Marsden	1998 BZ ₃
1998 BA ₄	16.5	0.15	19980127	348.18277	15.25926	125.22181	3.06458	0.1344147	2.3405184	15	1	12 days	0.65	Williams	1998 BA ₄
1998 BB ₄	15.0	0.15	19980127	7.37262	342.31642	138.29751	5.31282	0.1808502	2.3447221	17	1	10 days	0.30	Williams	1998 BB ₄
1998 BC ₄	15.4	0.15	19980127	6.76224	22.53300	96.62757	3.20484	0.2033537	2.9674262	13	1	17 days	0.46	Nakano	1998 BC ₄
1998 BE ₄	14.8	0.15	19980127	319.79028	214.16390	326.37056	4.20380	0.0750129	2.3095213	14	1	16 days	0.62	Nakano	1998 BE ₄
1998 BG ₄	14.5	0.15	19971218	289.29364	184.67305	26.28261	1.13208	0.1485161	2.3920056	19	1	90 days	0.53	M-v 6 Williams	1998 BG ₄
1998 BH ₄	15.0	0.15	19980107	339.54734	180.23978	335.67759	1.98279	0.1962584	2.2716914	6	1	5 days	0.33	E Williams	1998 BH ₄
1998 BK ₄	16.8	0.15	19980127	322.50665	81.23015	111.23641	3.97366	0.2357609	2.3005500	10	1	6 days	0.55	Asher	1998 BK ₄
1998 BM ₄	15.5	0.15	19980127	19.16508	140.45527	310.45320	14.32784	0.1564748	3.1231751	22	1	11 days	0.30	Williams	1998 BM ₄
1998 BQ ₄	14.5	0.15	19980107	204.20385	353.10659	291.40153	14.66637	0.2074447	3.1649099	9	1	13 days	0.10	Williams	1998 BQ ₄
1998 BW ₄	14.5	0.15	19980107	282.48139	325.56304	255.56823	3.58065	0.2223460	2.5846432	12	1	13 days	0.47	Williams	1998 BW ₄
1998 BC ₅	15.5	0.15	19980107	77.51034	114.94869	268.70614	3.58130	0.1585099	2.3718345	10	1	34 days	0.23	Williams	1998 BC ₅
1998 BD ₅	13.0	0.15	19980107	227.75973	115.07616	149.06886	5.82311	0.1354614	3.1087714	12	1	27 days	0.21	Williams	1998 BD ₅
1998 BE ₅	15.5	0.15	19980107	337.14550	282.55647	216.41565	4.82194	0.0710170	2.3163500	12	1	37 days	0.32	Williams	1998 BE ₅
1998 BH ₅	15.5	0.15	19980107	139.28959	218.30811	124.77698	5.10775	0.0730770	2.5487091	14	1	12 days	0.14	Williams	1998 BH ₅
1998 BJ ₅	17.5	0.15	19980107	258.07690	132.32449	114.58236	1.96740	0.1668747	2.4423548	9	1	6 days	0.13	Williams	1998 BJ ₅
1998 BO ₅	16.0	0.15	19980127	81.44479	85.35695	304.02335	2.53118	0.0732720	2.7963613	12	1	12 days	0.22	Williams	1998 BO ₅
1998 BQ ₅	15.5	0.15	19980107	66.63149	282.56212	128.70579	6.64922	0.0913883	3.0712730	9	1	8 days	0.17	E Williams	1998 BQ ₅
1998 BR ₅	16.0	0.15	19980107	57.96173	92.39455	315.41624	4.36310	0.1997978	3.0727807	12	1	8 days	0.20	E Williams	1998 BR ₅
1998 BS ₅	16.5	0.15	19980107	259.45232	115.91877	127.32296	6.29778	0.1552139	2.3058582	9	1	8 days	0.14	Williams	1998 BS ₅
1998 BT ₅	18.0	0.15	19980107	56.82650	283.88430	125.64747	5.91049	0.1690192	2.2496020	12	1	3 days	0.27	E Williams	1998 BT ₅
1998 BU ₅	18.5	0.15	19980107	336.52578	81.10339	72.53024	0.61557	0.1249574	2.2790603	15	1	8 days	0.23	E Williams	1998 BU ₅
1998 BV ₅	18.0	0.15	19980107	23.54322	332.67039	126.57724	9.00414	0.0734625	2.6466208	8	1	8 days	0.15	Williams	1998 BV ₅
1998 BW ₅	16.0	0.15	19980107	66.31657	275.16213	124.95687	3.61667	0.1857385	2.7540960	9	1	8 days	0.19	Williams	1998 BW ₅
1998 BY ₅	18.0	0.15	19980107	325.02819	47.95344	121.86628	4.45329	0.1143880	2.6806012	12	1	8 days	0.23	Williams	1998 BY ₅
1998 BZ ₅	16.0	0.15	19980107	252.12942	132.08147	118.50035	3.36758	0.1284050	3.0493589	9	1	8 days	0.45	Williams	1998 BZ ₅
1998 BF ₆	17.0	0.15	19980107	14.91701	11.84755	86.37156	2.45328	0.0835290	2.2528510	8	1	6 days	0.18	Williams	1998 BF ₆
1998 BH ₆	17.0	0.15	19980107	259.80212	165.55061	65.47102	1.92357	0.1238457	2.4095126	8	1	6 days	0.15	Williams	1998 BH ₆
1998 BJ ₆	14.5	0.15	19980107	2.11063	4.42380	108.34037	7.24918	0.2093833	2.7098242	19	1	3 days	0.31	Williams	1998 BJ ₆
1998 BO ₆	17.0	0.15	19980127	261.14513	263.44650	347.19228	1.26450	0.1827408	2.5978103	9	1	7 days	0.20	Williams	1998 BO ₆
1998 BP ₆	13.0	0.15	19980107	8.39270	331.54607	96.69010	11.96794	0.2082964	2.9194706	12	1	5 days	0.43	Williams	1998 BP ₆
1998 BQ ₆	16.6	0.15	19980127	354.88990	9.57186	123.20343	2.18949	0.2306395	2.2711825	6	1	7 days	0.58	Nakano	1998 BQ ₆
1998 BR ₆	14.9	0.15	19980127	37.73169	301.01649	123.15053	4.81189	0.2828406	2.4354723	8	1	9 days	0.43	Asher	1998 BR ₆
1998 BS ₆	14.5	0.15	19980127	196.02167	152.27048	144.65446	3.87779	0.1268847	2.2515974	11	1	11 days	0.39	Williams	1998 BS ₆
1998 BT ₆	16.0	0.15	19980127	311.58892	340.41270	207.55200	1.40460	0.1061997	2.3972344	14	1	11 days	0.53	Williams	1998 BT ₆
1998 BW ₆	12.4	0.15	19980127	337.02516	131.79731	32.26911	1.30319	0.1274496	3.0544395	8	1	11 days	0.30	Asher	1998 BW ₆
1998 BX ₆	14.1	0.15	19980127	8.02311	11.20899	111.41536	5.24985	0.1149564	2.2400576	8	1	11 days	0.15	Asher	1998 BX ₆
1998 BY ₆	13.5	0.15	19980127	129.19982	222.65092	135.58755	5.35677	0.1039736	2.7286607	8	1	11 days	0.53	Asher	1998 BY ₆
1998 BZ ₆	12.9	0.15	19980127	16.95838	2.93317	119.55540	13.38904	0.0782537	2.7576914	8	1	11 days	0.15	Asher	1998 BZ ₆
1998 BA ₇	14.6	0.15	19980127	311.53415	103.86593	97.10879	3.26245	0.1141142	2.4071571	11	1	11 days	0.51	Asher	1998 BA ₇
1998 BB ₇	13.1	0.15	19980127	352.38173	163.51201	346.67789	5.69404	0.0568940	2.3977808	8	1	11 days	0.42	Asher	1998 BB ₇
1998 BC ₇	14.0	0.15	19980107	35.73806	158.43490	262.23714	1.69499	0.2204444	2.3849994	17	1	5 days	0.41	Williams	1998 BC ₇
1998 BD ₇	13.7	0.15	19980127	327.84605	261.71162	250.62949	7.71453	0.1403571	3.0827366	10	1	9 days	0.33	Asher	1998 BD ₇
1998 BE ₇	15.0	0.15	19980127	12.14463	298.70296	103.23602	14.45896	0.5101653	3.1308616	22	1	14 days	0.59	Marsden	1998 BE ₇
1998 BG ₇	16.0	0.15	19980127	87.08105	100.27277	282.33761	3.98255	0.1787289	2.2967470	9	1	5 days	0.20	Williams	1998 BG ₇
1998 BH ₇	15.5	0.15	19980127	16.38431	276.58368	193.06144	1.06032	0.0948135	2.1346896	12	1	5 days	0.34	E Williams	1998 BH ₇
1998 BO ₇	16.5	0.15	19980127	9.54572	308.38265	166.87664	2.48456	0.1827263	2.3151459	9	1	5 days	0.15	Williams	1998 BO ₇
1998 BP ₇	15.0	0.15	19980127	241.71161	94.32133	157.09095	1.90967	0.0288876	2.9606945	9	1	5 days	0.49	E Williams	1998 BP ₇
1998 BQ ₇	16.0	0.15	19980127	52.26577	268.53835	136.24950	9.72844	0.2968104	2.6530146	9	1	5 days	0.26	E Williams	1998 BQ ₇

1998 BU ₇	15.0	0.15	19980107	42.35168	302.60256	80.18011	13.25952	0.2755181	2.5654256	8	1	9 days	0.41	Marsden	1998 BU ₇
1998 BW ₇	17.0	0.15	19980107	14.04905	33.28276	53.90278	6.93615	0.1841205	2.3342626	13	1	7 days	0.43	Williams	1998 BW ₇
1998 BX ₇	16.5	0.15	19980127	27.60459	271.33667	145.15028	9.00324	0.5042617	2.6087510	47	1	15 days	0.38	Marsden	1998 BX ₇
1998 BY ₇	21.5	0.15	19980127	337.24516	88.97833	123.10224	3.27205	0.5978589	2.0016662	62	1	17 days	0.40	Williams	1998 BY ₇
1998 BZ ₇	17.5	0.15	19971218	321.47345	102.77273	112.53718	6.47744	0.5548642	2.0376541	104	1	15 days	0.37	Marsden	1998 BZ ₇
1998 BB ₈	14.5	0.15	19980107	8.31890	349.26128	140.08563	15.83004	0.0608569	2.6051386	15	1	23 days	0.46	Williams	1998 BB ₈
1998 BC ₈	15.5	0.15	19980107	316.61590	208.70345	343.45104	2.92941	0.1562041	2.2888385	10	1	4 days	0.31	E Williams	1998 BC ₈
1998 BD ₈	13.1	0.15	19980127	95.75097	54.60832	327.56915	12.41873	0.1904870	2.6415955	11	1	10 days	0.45	Asher	1998 BD ₈
1998 BE ₈	14.8	0.15	19980127	68.63893	66.99727	343.40221	3.98261	0.1576740	2.2067628	11	1	10 days	0.30	Asher	1998 BE ₈
1998 BF ₈	13.8	0.15	19980127	251.87133	121.42286	136.22692	11.00551	0.0343073	2.9524958	9	1	6 days	0.48	Asher	1998 BF ₈
1998 BJ ₈	14.0	0.15	19980107	26.00680	333.05961	129.10567	9.36138	0.1737770	2.9839159	12	1	24 days	0.28	Williams	1998 BJ ₈
1998 BL ₈	12.3	0.15	19980127	187.67393	343.69774	336.10566	13.62376	0.2409752	2.3326362	8	1	6 days	0.54	E Asher	1998 BL ₈
1998 BM ₈	15.0	0.15	19980127	354.64865	173.88693	334.30805	12.07708	0.1205348	2.4092295	12	1	7 days	0.45	Williams	1998 BM ₈
1998 BN ₈	15.8	0.15	19980127	342.84712	158.46227	2.91494	4.26386	0.0864369	2.2389025	9	1	6 days	0.17	Asher	1998 BN ₈
1998 BP ₈	14.5	0.15	19980127	185.67144	315.37073	3.63011	4.91481	0.1229908	2.2508058	9	1	6 days	0.47	Asher	1998 BP ₈
1998 BQ ₈	15.0	0.15	19980127	315.45822	69.75713	129.63717	6.11586	0.1306601	2.3971080	9	1	9 days	0.34	Williams	1998 BQ ₈
1998 BR ₈	13.0	0.15	19980127	31.78118	129.80909	339.12429	9.27119	0.0750108	3.0481100	9	1	7 days	0.24	Williams	1998 BR ₈
1998 BS ₈	13.9	0.15	19980127	302.31044	125.09374	87.69799	3.14039	0.1149254	2.4349506	6	1	6 days	0.21	Asher	1998 BS ₈
1998 BT ₈	11.8	0.15	19980127	5.87510	162.53858	330.36736	19.90798	0.0433920	3.1061181	8	1	10 days	0.52	Asher	1998 BT ₈
1998 BV ₈	15.5	0.15	19980107	34.84840	4.78459	69.52315	3.85116	0.1741685	2.5687262	20	1	27 days	0.44	Williams	1998 BV ₈
1998 BW ₈	14.5	0.15	19980107	274.72527	222.69923	14.34271	5.21099	0.1508958	3.1901960	15	1	12 days	0.30	Williams	1998 BW ₈
1998 BX ₈	14.5	0.15	19980107	299.23478	220.70212	338.78386	11.53095	0.0547131	2.9890954	18	1	14 days	0.33	Williams	1998 BX ₈
1998 BY ₈	15.5	0.15	19980107	27.01480	119.56133	332.66880	11.17746	0.1604438	2.5605798	12	1	14 days	0.45	Williams	1998 BY ₈
1998 BZ ₈	13.5	0.15	19980107	49.52595	355.22371	77.82619	4.79829	0.0984090	2.6386344	12	1	14 days	0.15	Williams	1998 BZ ₈
1998 BB ₉	16.5	0.15	19980127	317.59785	251.42871	305.18045	26.75216	0.2407273	2.3041397	9	1	4 days	0.14	Williams	1998 BB ₉
1998 BD ₉	16.5	0.15	19980127	327.24769	192.98581	334.96767	6.18654	0.0680255	2.3332013	9	1	4 days	0.18	E Williams	1998 BD ₉
1998 BG ₉	19.5	0.15	19980127	4.11969	1.05247	115.56598	12.97521	0.5336085	2.5067842	76	1	13 days	0.52	Williams	1998 BG ₉
1998 BJ ₉	15.5	0.15	19980127	287.01036	285.85357	296.70937	7.32791	0.1136180	2.3857747	9	1	5 days	0.22	Williams	1998 BJ ₉
1998 BK ₉	15.0	0.15	19980127	15.11584	255.70508	215.64611	2.13915	0.2401006	3.0595331	9	1	5 days	0.14	Williams	1998 BK ₉
1998 BN ₉	17.5	0.15	19980107	42.28209	120.50491	308.29797	7.28218	0.1438385	2.3190640	9	1	13 days	0.16	Williams	1998 BN ₉
1998 BO ₉	18.0	0.15	19980107	329.99016	214.98189	310.53717	2.45906	0.1559051	2.6210794	9	1	11 days	0.15	Williams	1998 BO ₉
1998 BR ₉	16.0	0.15	19980127	331.87959	347.45350	128.63816	3.20529	0.1513695	2.5207796	9	1	11 days	0.16	Williams	1998 BR ₉
1998 BS ₉	16.0	0.15	19971218	314.41424	326.05764	156.99692	2.85353	0.1183824	2.3802420	13	1	65 days	0.37	M-v Williams	1998 BS ₉
1998 BT ₉	15.0	0.15	19980127	263.70939	87.45323	90.09873	10.22416	0.0788921	2.8769279	9	1	11 days	0.16	Williams	1998 BT ₉
1998 BV ₉	15.5	0.15	19980127	14.22597	275.40479	141.84784	3.39522	0.1102505	2.9886277	8	1	11 days	0.27	Williams	1998 BV ₉
1998 BW ₉	16.0	0.15	19980127	292.01066	11.53905	148.16566	3.16230	0.1083766	2.2907507	9	1	11 days	0.26	Williams	1998 BW ₉
1998 BY ₉	15.5	0.15	19980127	3.35289	330.07793	103.39901	6.80893	0.1134981	2.7327748	9	1	11 days	0.16	Williams	1998 BY ₉
1998 BB ₁₀	20.5	0.15	19980127	54.69726	259.03254	124.46729	11.58190	0.4264208	1.2741977	101	1	11 days	0.51	Williams	1998 BB ₁₀
1998 BH ₁₀	14.0	0.15	19980107	201.22535	231.52468	47.64721	7.12233	0.0240894	2.7589255	23	1	39 days	1.21	Williams	1998 BH ₁₀
1998 BL ₁₀	16.5	0.15	19980107	68.21615	53.41930	337.16896	25.77711	0.0874135	2.6424166	7	1	8 days	0.35	Marsden	1998 BL ₁₀
1998 BM ₁₀	16.0	0.15	19980127	345.50485	45.11112	122.92154	24.03867	0.3679788	2.4009672	41	1	3 days	0.56	Williams	1998 BM ₁₀
1998 BR ₁₀	14.9	0.15	19980127	25.96461	4.90368	97.01380	3.72800	0.2137823	2.6097534	7	1	8 days	0.47	Asher	1998 BR ₁₀
1998 BS ₁₀	15.5	0.15	19980127	75.06914	275.14444	124.41911	6.92728	0.2494958	2.3185562	10	1	8 days	0.43	Williams	1998 BS ₁₀
1998 BT ₁₀	14.0	0.15	19980107	57.52654	92.79874	297.62080	7.57748	0.1707928	2.4462978	15	1	2 days	0.46	E Williams	1998 BT ₁₀
1998 BW ₁₀	12.5	0.15	19980107	276.12022	258.42725	301.66271	9.75374	0.0469012	2.9912569	30	1	32 days	0.40	D Williams	1998 BW ₁₀
1998 BA ₁₁	15.0	0.15	19980107	280.52523	113.83198	97.64561	5.00485	0.1377181	2.2982006	13	1	2 days	0.45	E Williams	1998 BA ₁₁
1998 BB ₁₁	15.0	0.15	19980107	73.04009	284.93916	101.66012	6.80353	0.1504451	2.4065311	14	1	2 days	1.04	E Williams	1998 BB ₁₁
1998 BD ₁₁	14.0	0.15	19980107	14.15957	71.42887	31.26994	2.91418	0.0809787	3.1936411	15	1	6 days	0.42	E Williams	1998 BD ₁₁
1998 BF ₁₁	13.0	0.15	19980107	22.43007	332.10149	107.87049	11.29524	0.0955087	3.0527134	18	1	23 days	0.36	Williams	1998 BF ₁₁
1998 BL ₁₁	14.5	0.15	19980107	279.14277	109.74029	98.39959	3.21806	0.1493006	2.4060681	20	1	28 days	0.78	Williams	1998 BL ₁₁
1998 BO ₁₁	12.0	0.15	19980107	84.71244	263.56722	112.17645	16.89663	0.1420049	3.1708551	19	1	2 days	0.25	E Williams	1998 BO ₁₁
1998 BQ ₁₁	15.0	0.15	19980107	258.56602	261.08339	324.89454	4.02058	0.0792304	2.1857598	10	1	5 days	0.59	Marsden	1998 BQ ₁₁
1998 BS ₁₁	14.5	0.15	19980107	269.90506	237.09667	343.11145	3.08174	0.1108206	2.3295917	17	1	2 days	0.29	E Williams	1998 BS ₁₁

1998 FEB. 11

M.P.C. 31291

1998 BU ₁₁	14.5	0.15	19980107	295.86529	95.29403	103.87543	6.31247	0.1566364	2.3431870	15	1	2 days	0.33	E	Williams	1998 BU ₁₁
1998 BV ₁₁	14.0	0.15	19980107	107.67179	21.44898	341.64172	4.13673	0.0754068	2.6039846	14	1	2 days	0.57	E	Williams	1998 BV ₁₁
1998 BW ₁₁	14.0	0.15	19980107	120.36435	261.38416	78.18060	3.43038	0.2338628	2.3708255	20	1	40 days	0.37		Williams	1998 BW ₁₁
1998 BY ₁₁	13.5	0.15	19980107	123.01914	219.19255	110.24182	8.30573	0.1629371	2.2329036	14	1	2 days	0.41	E	Williams	1998 BY ₁₁
1998 BZ ₁₁	15.5	0.15	19980107	8.82876	156.64945	297.43606	2.03126	0.1851918	2.3571098	18	1	17 days	0.39		Williams	1998 BZ ₁₁
1998 BA ₁₂	13.5	0.15	19980107	240.24182	304.92022	291.62393	5.22620	0.0998163	2.6214580	20	1	23 days	0.50		Williams	1998 BA ₁₂
1998 BD ₁₂	13.0	0.15	19980107	20.05210	97.36658	345.57029	0.90058	0.1567623	3.1308535	33	1	23 days	0.42		Williams	1998 BD ₁₂
1998 BG ₁₂	14.0	0.15	19980107	349.58951	177.23379	312.12943	6.93337	0.1223566	2.7764228	17	1	2 days	0.40	E	Williams	1998 BG ₁₂
1998 BK ₁₂	15.5	0.15	19980107	316.48150	69.59693	103.44579	5.09934	0.1344550	2.3429058	17	1	6 days	0.67	E	Williams	1998 BK ₁₂
1998 BL ₁₂	13.5	0.15	19980107	113.10138	233.77551	111.66742	16.84048	0.0663597	2.3283437	15	1	2 days	0.48	E	Williams	1998 BL ₁₂
1998 BO ₁₂	13.5	0.15	19980107	222.03219	143.51028	112.99329	7.59456	0.1653282	2.3367825	26	1	30 days	0.49		Williams	1998 BO ₁₂
1998 BQ ₁₂	14.5	0.15	19980107	27.17688	321.65004	112.25492	3.07172	0.1263193	2.5617965	13	1	2 days	0.86	E	Williams	1998 BQ ₁₂
1998 BR ₁₂	15.0	0.15	19980107	4.91599	349.39201	113.93646	4.45668	0.1754523	2.3839328	42	1	28 days	0.49		Williams	1998 BR ₁₂
1998 BT ₁₂	14.5	0.15	19980107	53.00058	284.75547	109.76485	3.36647	0.2418247	2.4736369	17	1	4 days	0.53	E	Williams	1998 BT ₁₂
1998 BU ₁₂	14.5	0.15	19980107	88.73147	254.00901	114.99401	10.13106	0.1475960	2.3556985	15	1	3 days	0.63	E	Williams	1998 BU ₁₂
1998 BV ₁₂	12.5	0.15	19980107	166.07092	330.24794	337.06883	1.34524	0.0876466	2.8560571	25	1	10 days	0.48		Williams	1998 BV ₁₂
1998 BW ₁₂	14.0	0.15	19980127	294.74365	260.79920	304.27947	13.23418	0.1735190	2.7536521	19	1	7 days	0.52		Williams	1998 BW ₁₂
1998 BX ₁₂	13.5	0.15	19980107	253.12233	141.21235	106.80238	5.32631	0.2456884	2.4718253	18	1	3 days	0.77	E	Williams	1998 BX ₁₂
1998 BY ₁₂	14.5	0.15	19980107	332.11548	38.47563	109.35148	4.53172	0.0740191	2.2672755	19	1	3 days	0.69	E	Williams	1998 BY ₁₂
1998 BZ ₁₂	14.5	0.15	19980107	297.07792	149.06598	46.31209	1.37705	0.1439671	2.6330944	13	1	2 days	0.63	E	Williams	1998 BZ ₁₂
1998 BC ₁₃	13.5	0.15	19980107	32.04944	29.20146	40.19663	1.29638	0.1821571	3.2225918	13	1	2 days	0.47	E	Williams	1998 BC ₁₃
1998 BL ₁₃	14.0	0.15	19980107	127.77583	218.65663	108.96132	5.33077	0.1881789	2.2562775	15	1	24 days	0.45		Williams	1998 BL ₁₃
1998 BO ₁₃	13.0	0.15	19980107	292.59916	221.10590	341.08734	0.53233	0.1916668	3.3259637	22	1	19 days	0.55		Williams	1998 BO ₁₃
1998 BQ ₁₃	15.5	0.15	19980127	9.75939	80.18907	31.57377	1.33718	0.1313519	2.1975351	13	1	5 days	0.86	E	Williams	1998 BQ ₁₃
1998 BS ₁₃	13.5	0.15	19980107	329.11781	254.32345	257.46096	3.07989	0.0448675	2.7854870	19	1	35 days	0.42		Williams	1998 BS ₁₃
1998 BT ₁₃	26.5	0.15	19971218	352.20393	353.16215	123.42677	1.41898	0.5984989	2.4901103	15	1	6 days	1.05	M-v 7	Williams	1998 BT ₁₃
1998 BX ₁₃	13.5	0.15	19980127	107.80493	187.21978	113.42649	4.80947	0.2441757	2.9173544	9	1	7 days	0.13	E	Williams	1998 BX ₁₃
1998 BF ₁₄	15.0	0.15	19980127	7.18599	342.13789	135.68274	6.67229	0.1394811	2.4468528	25	1	10 days	0.77		Williams	1998 BF ₁₄
1998 BG ₁₄	13.5	0.15	19980127	21.76804	333.02274	125.26334	4.45641	0.0830089	2.5443449	12	1	6 days	0.48	E	Williams	1998 BG ₁₄
1998 BT ₁₄	12.7	0.15	19980127	288.08939	281.54109	286.77880	8.18791	0.0948540	3.0806733	10	1	8 days	0.57		Nakano	1998 BT ₁₄
1998 BU ₁₄	13.9	0.15	19980127	24.65273	326.15473	133.61510	7.15748	0.0616416	2.3271949	17	1	17 days	0.36		Nakano	1998 BU ₁₄
1998 BV ₁₄	16.5	0.15	19980127	253.82126	178.59709	86.99524	4.93912	0.2084574	2.1690076	17	1	13 days	0.44		Marsden	1998 BV ₁₄
1998 BW ₁₄	15.5	0.15	19980127	93.84378	325.35097	71.37499	4.55513	0.0807223	2.7825427	14	1	10 days	0.38		Williams	1998 BW ₁₄
1998 BX ₁₄	17.0	0.15	19980127	309.70387	127.12750	57.51488	3.31951	0.1560467	2.3897834	19	1	10 days	0.57		Williams	1998 BX ₁₄
1998 BE ₁₅	14.0	0.15	19980107	39.69423	309.30345	124.34984	13.50516	0.0566316	2.6577042	20	1	37 days	0.46		Williams	1998 BE ₁₅
1998 BJ ₁₅	16.0	0.15	19980127	73.57372	121.93464	278.60432	12.52776	0.1380655	2.3437155	15	1	7 days	0.39		Williams	1998 BJ ₁₅
1998 BM ₁₅	13.5	0.15	19980127	85.56700	135.86617	259.39152	2.62206	0.0786710	3.2147291	9	1	5 days	0.29	E	Williams	1998 BM ₁₅
1998 BR ₁₅	15.0	0.15	19980127	197.04025	190.88037	107.51247	10.25127	0.1715757	2.5199642	9	1	5 days	0.30		Williams	1998 BR ₁₅
1998 BS ₁₅	13.0	0.15	19980127	43.43448	95.98938	335.47768	7.41969	0.1587886	2.3122604	9	1	5 days	0.08		Williams	1998 BS ₁₅
1998 BY ₁₅	15.0	0.15	19980127	98.55871	101.26438	274.33263	6.27993	0.1570184	2.4731482	9	1	4 days	0.15		Williams	1998 BY ₁₅
1998 BZ ₁₅	16.0	0.15	19980127	56.21038	131.74574	291.82701	5.46940	0.1619391	2.4477339	9	1	4 days	0.23		Williams	1998 BZ ₁₅
1998 BA ₁₆	15.5	0.15	19980107	320.24115	55.43433	120.45475	30.23689	0.1756786	2.6183990	12	1	29 days	0.21		Williams	1998 BA ₁₆
1998 BE ₁₇	16.0	0.15	19980127	85.10389	276.85265	130.67475	4.61393	0.1045910	2.7891873	9	1	11 days	0.15		Williams	1998 BE ₁₇
1998 BF ₁₇	15.5	0.15	19980127	172.63104	213.35650	117.62835	2.81128	0.1193201	2.6054383	9	1	11 days	0.18		Williams	1998 BF ₁₇
1998 BM ₁₇	15.5	0.15	19980127	237.09474	173.83218	109.42321	2.27094	0.1825669	2.4094870	9	1	11 days	0.13		Williams	1998 BM ₁₇
1998 BP ₁₇	17.0	0.15	19980127	320.57767	70.97262	125.36690	3.97496	0.1706294	2.3336888	9	1	11 days	0.09		Williams	1998 BP ₁₇
1998 BR ₁₇	15.5	0.15	19980127	144.50972	255.17687	102.43240	2.14720	0.0622993	2.7738351	9	1	11 days	0.13		Williams	1998 BR ₁₇
1998 BZ ₁₈	15.5	0.15	19971218	323.74075	226.35287	295.21056	2.61886	0.1731988	2.5841534	16	1	120 days	0.63	M-v 5	Williams	1998 BZ ₁₈
1998 BA ₁₉	14.0	0.15	19980127	75.18036	28.29759	8.24648	6.22030	0.1294578	2.2987174	6	1	8 days	0.60		Williams	1998 BA ₁₉
1998 BB ₁₉	12.5	0.15	19980127	133.59613	332.60819	6.02809	9.46097	0.1936283	3.1356859	12	1	9 days	0.55		Williams	1998 BB ₁₉
1998 BC ₁₉	14.5	0.15	19980127	237.56463	192.72400	67.36129	8.33743	0.1216318	2.6343121	9	1	9 days	0.46		Williams	1998 BC ₁₉
1998 BD ₁₉	16.5	0.15	19980127	11.61291	96.25946	11.87584	5.36528	0.2155878	2.2893749	10	1	9 days	0.51		Williams	1998 BD ₁₉
1998 BJ ₁₉	14.5	0.15	19980127	280.56907	66.01549	157.50636	2.34535	0.0948930	2.2265711	7	1	5 days	0.10	E	Williams	1998 BJ ₁₉

1998 BK ₁₉	14.5	0.15	19980127	230.60804	138.49975	134.83759	10.05864	0.1677644	2.3323774	16	1	9 days	0.99	E Williams	1998 BK ₁₉
1998 BQ ₁₉	16.5	0.15	19980107	36.57241	309.99393	119.07320	16.02838	0.1007847	2.5636792	9	1	8 days	0.10	Williams	1998 BQ ₁₉
1998 BS ₁₉	14.0	0.15	19980127	170.14550	80.40404	223.10161	0.53085	0.2914430	2.9466572	9	1	12 days	0.32	Williams	1998 BS ₁₉
1998 BU ₁₉	16.0	0.15	19980127	25.16794	157.54521	284.83504	1.65365	0.1780496	3.9806554	9	1	12 days	0.21	E Williams	1998 BU ₁₉
1998 BV ₁₉	16.0	0.15	19980127	150.37858	204.27778	120.66301	7.33658	0.0654193	2.8038376	8	1	12 days	0.52	Williams	1998 BV ₁₉
1998 BW ₁₉	17.0	0.15	19980127	156.13485	21.21453	296.54326	4.23206	0.1388615	2.2701401	9	1	12 days	0.19	Williams	1998 BW ₁₉
1998 BX ₁₉	16.5	0.15	19980127	45.70399	292.14383	123.27114	2.30861	0.1973772	2.5543258	9	1	12 days	0.19	Williams	1998 BX ₁₉
1998 BA ₂₀	15.5	0.15	19980127	323.70012	318.40321	205.22616	0.22089	0.0986897	2.8602643	9	1	12 days	0.23	Williams	1998 BA ₂₀
1998 BE ₂₀	15.5	0.15	19980127	344.42519	201.51824	299.23314	10.87935	0.1281049	2.6517912	9	1	11 days	0.19	Williams	1998 BE ₂₀
1998 BF ₂₀	16.0	0.15	19980127	43.03960	312.82102	119.88237	5.23191	0.0538693	2.7990333	9	1	12 days	0.15	Williams	1998 BF ₂₀
1998 BG ₂₀	15.5	0.15	19980127	332.90438	215.26674	295.77921	3.77435	0.0672853	2.9346460	9	1	12 days	0.17	Williams	1998 BG ₂₀
1998 BM ₂₀	14.5	0.15	19980127	180.02918	180.84992	118.82907	13.62273	0.0969251	3.1678960	9	1	12 days	0.19	Williams	1998 BM ₂₀
1998 BN ₂₀	15.5	0.15	19980127	56.05835	116.82787	299.54300	8.36838	0.0773042	3.1436845	9	1	12 days	0.20	Williams	1998 BN ₂₀
1998 BQ ₂₀	15.5	0.15	19980127	54.14702	288.30499	123.64203	2.09030	0.1387398	3.2443438	8	1	12 days	0.52	E Williams	1998 BQ ₂₀
1998 BS ₂₀	16.0	0.15	19980127	111.31088	64.18210	296.10031	1.19742	0.0887083	2.6147696	9	1	12 days	0.21	Williams	1998 BS ₂₀
1998 BU ₂₀	16.0	0.15	19980127	184.01898	177.15574	120.42780	6.87458	0.1393218	2.6198299	8	1	12 days	0.18	Williams	1998 BU ₂₀
1998 BB ₂₁	16.0	0.15	19980127	308.93730	235.63259	300.21394	5.63581	0.0569275	2.7152146	9	1	12 days	0.17	Williams	1998 BB ₂₁
1998 BG ₂₁	16.0	0.15	19980127	235.23266	314.62138	298.59542	11.84327	0.1028690	2.7287131	9	1	12 days	0.16	Williams	1998 BG ₂₁
1998 BH ₂₁	18.0	0.15	19980127	56.26396	106.57461	301.05032	8.59070	0.1608302	2.5169623	9	1	12 days	0.20	Williams	1998 BH ₂₁
1998 BJ ₂₁	18.0	0.15	19980127	71.60658	89.95427	302.15721	5.31871	0.1497793	2.4912660	9	1	12 days	0.28	Williams	1998 BJ ₂₁
1998 BK ₂₁	16.5	0.15	19980127	90.82483	5.45813	15.59934	0.42134	0.0751496	2.8083622	9	1	12 days	0.17	Williams	1998 BK ₂₁
1998 BV ₂₁	14.0	0.15	19980127	108.87081	44.04342	299.44947	12.08135	0.2736023	3.0377131	9	1	11 days	0.45	E Williams	1998 BV ₂₁
1998 BB ₂₂	16.5	0.15	19980127	13.96204	160.84046	301.16443	11.94144	0.1198523	2.5938129	9	1	11 days	0.11	Williams	1998 BB ₂₂
1998 BX ₂₂	15.5	0.15	19980107	183.70524	315.93484	359.53418	3.74681	0.0576892	2.2248688	9	1	6 days	0.06	Williams	1998 BX ₂₂
1998 BZ ₂₂	15.0	0.15	19980107	193.97981	217.89229	93.22210	3.26831	0.0981097	2.6139935	12	1	22 days	0.17	Williams	1998 BZ ₂₂
1998 BS ₂₃	15.0	0.15	19980127	39.65201	139.98597	299.29103	0.67780	0.1441887	2.8687943	12	1	8 days	0.34	Williams	1998 BS ₂₃
1998 BY ₂₃	15.5	0.15	19980127	37.25636	307.02505	131.06216	3.14290	0.1938685	3.0329276	9	1	8 days	0.17	E Williams	1998 BY ₂₃
1998 BJ ₂₄	16.4	0.15	19980127	16.60327	346.75573	124.85203	2.90578	0.0995509	2.3551767	19	1	10 days	0.54	Nakano	1998 BJ ₂₄
1998 BL ₂₄	16.5	0.15	19980127	62.93048	87.16050	321.47424	3.44302	0.1930586	2.8750384	9	1	8 days	0.60	E Williams	1998 BL ₂₄
1998 BM ₂₄	16.5	0.15	19980127	62.78388	295.76612	120.48907	2.28874	0.1358959	3.2389506	9	1	8 days	0.56	E Williams	1998 BM ₂₄
1998 BP ₂₄	14.5	0.15	19980127	287.63358	279.26598	307.84867	12.20362	0.1991563	2.5294853	27	1	14 days	0.42	Williams	1998 BP ₂₄
1998 BQ ₂₄	13.5	0.15	19980127	346.73885	107.36323	28.72442	3.29900	0.1414389	2.3174879	8	1	7 days	0.25	Asher	1998 BQ ₂₄
1998 BR ₂₄	15.0	0.15	19980127	3.23500	345.22603	146.16595	3.81845	0.2166165	2.6110767	9	1	8 days	0.57	Williams	1998 BR ₂₄
1998 BS ₂₄	15.5	0.15	19980127	9.45744	346.68696	136.40864	3.36453	0.1606134	2.3582674	9	1	8 days	0.46	Williams	1998 BS ₂₄
1998 BT ₂₄	13.5	0.15	19980127	47.70257	77.56264	4.33718	4.37134	0.1068484	2.2921382	6	1	5 days	0.29	Asher	1998 BT ₂₄
1998 BU ₂₄	15.7	0.15	19980127	26.77914	26.11301	64.96531	3.03473	0.2796534	2.4537719	6	1	5 days	0.52	Asher	1998 BU ₂₄
1998 BV ₂₄	12.0	0.15	19980127	172.00298	253.79507	75.70064	6.04010	0.1146680	3.2176437	6	1	5 days	0.34	E Williams	1998 BV ₂₄
1998 BW ₂₄	12.3	0.15	19980127	320.88393	72.11609	125.47350	17.04242	0.1905388	3.1056627	6	1	5 days	0.22	Asher	1998 BW ₂₄
1998 BX ₂₄	14.7	0.15	19980127	11.04080	327.75658	151.66959	3.87253	0.2143747	2.4521309	6	1	5 days	0.49	Asher	1998 BX ₂₄
1998 BY ₂₄	14.0	0.15	19980127	50.96536	166.29133	277.03686	1.15356	0.0565822	2.8803234	9	1	8 days	0.32	Williams	1998 BY ₂₄
1998 BA ₂₅	15.0	0.15	19980127	311.49259	239.83920	318.46551	4.96148	0.1301629	2.3024128	9	1	8 days	0.36	Williams	1998 BA ₂₅
1998 BB ₂₅	13.7	0.15	19980127	32.62408	100.07747	354.04014	4.18660	0.1839955	2.6250323	6	1	5 days	0.22	Asher	1998 BB ₂₅
1998 BC ₂₅	13.7	0.15	19980127	53.53143	70.77799	352.45454	5.68929	0.2205466	2.4803192	6	1	5 days	0.46	E Asher	1998 BC ₂₅
1998 BD ₂₅	13.2	0.15	19980127	169.25209	208.55930	122.51528	13.50046	0.1510074	2.6430909	6	1	5 days	0.28	Asher	1998 BD ₂₅
1998 BE ₂₅	11.9	0.15	19980127	74.20210	68.74923	351.90239	9.28966	0.0559797	2.6846040	6	1	5 days	0.17	Asher	1998 BE ₂₅
1998 BG ₂₅	13.2	0.15	19980127	267.62207	117.51334	119.92622	7.33384	0.0196686	2.7116195	6	1	5 days	0.57	Asher	1998 BG ₂₅
1998 BH ₂₅	12.7	0.15	19980127	280.77729	172.69481	69.55287	2.96780	0.1842106	2.4826701	6	1	5 days	0.44	E Asher	1998 BH ₂₅
1998 BJ ₂₅	13.9	0.15	19980127	15.10095	61.29975	58.87034	2.56403	0.1197338	2.2613534	6	1	5 days	0.31	Asher	1998 BJ ₂₅
1998 BK ₂₅	12.2	0.15	19980127	159.84170	249.22524	87.68915	6.65230	0.1520055	2.3807236	6	1	5 days	0.34	Asher	1998 BK ₂₅
1998 BL ₂₅	14.0	0.15	19980127	259.93409	106.79486	150.15310	5.30139	0.1458875	2.7789484	9	1	7 days	0.66	E Williams	1998 BL ₂₅
1998 BM ₂₅	14.0	0.15	19980127	19.85105	123.29039	344.50591	4.95966	0.2162382	2.3272609	6	1	7 days	0.27	E Williams	1998 BM ₂₅
1998 BP ₂₅	14.0	0.15	19980127	15.01721	347.60849	129.68851	2.42431	0.2069147	3.2228273	9	1	7 days	0.40	Williams	1998 BP ₂₅
1998 BV ₂₅	14.0	0.15	19980127	256.35322	108.60965	139.95115	9.53445	0.0939103	2.3326149	9	1	4 days	0.19	E Williams	1998 BV ₂₅

1998 FEB. 11

M.P.C. 31293

1998 BW ₂₅	13.2	0.15	19980127	42.12594	312.73881	119.93937	3.91014	0.1010050	3.0349163	6	1	9 days	0.61	Asher	1998 BW ₂₅
1998 BY ₂₅	15.0	0.15	19980127	295.67717	117.04903	92.08380	7.13818	0.0521427	2.2213433	9	1	9 days	0.42	Williams	1998 BY ₂₅
1998 BZ ₂₅	12.9	0.15	19980127	47.91597	352.01855	94.79708	10.63267	0.0780088	3.0222676	6	1	6 days	0.56	Asher	1998 BZ ₂₅
1998 BA ₂₆	12.8	0.15	19980127	310.36744	230.68937	349.85223	14.23935	0.2814591	2.7943857	6	1	6 days	0.27	Asher	1998 BA ₂₆
1998 BB ₂₆	13.1	0.15	19980127	122.27332	300.76324	65.92822	8.33454	0.1416171	2.3272908	6	1	6 days	0.33	Asher	1998 BB ₂₆
1998 BC ₂₆	11.5	0.15	19980127	107.23907	294.61018	73.39475	9.64118	0.2885690	2.4856925	6	1	6 days	0.67	E Williams	1998 BC ₂₆
1998 BM ₂₆	13.5	0.15	19980127	169.52122	248.97771	65.13363	13.54894	0.1552023	2.5873788	6	1	5 days	0.29	Williams	1998 BM ₂₆
1998 BO ₂₆	17.3	0.15	19980127	351.92832	197.84132	327.12160	4.44361	0.3971762	2.3892241	14	1	3 days	0.35	Asher	1998 BO ₂₆
1998 BP ₂₆	17.5	0.15	19980127	352.25613	186.41410	331.14293	20.19398	0.2561176	1.7191161	49	1	12 days	0.37	Marsden	1998 BP ₂₆
1998 BQ ₂₆	15.0	0.15	19980127	242.43348	167.34557	91.30188	7.63247	0.1463340	2.2975476	11	1	8 days	0.59	Williams	1998 BQ ₂₆
1998 BR ₂₆	26.0	0.15	19971218	318.67046	61.56894	130.25756	12.29142	0.4891455	1.6412879	19	1	1 days	0.77	M-v 7 Williams	1998 BR ₂₆
1998 BX ₂₆	16.0	0.15	19980107	27.37277	317.24100	127.79219	8.37356	0.1820230	2.8070651	12	1	12 days	0.26	Williams	1998 BX ₂₆
1998 BB ₂₇	15.5	0.15	19980107	22.45220	131.75496	312.07743	0.55880	0.2809180	3.1632188	9	1	8 days	0.24	E Williams	1998 BB ₂₇
1998 BJ ₂₇	17.0	0.15	19980107	35.82672	122.32577	324.55789	1.72555	0.0521692	2.7233204	9	1	8 days	0.15	Williams	1998 BJ ₂₇
1998 BL ₂₇	15.5	0.15	19980107	17.97236	112.99500	350.25545	1.16265	0.1345730	2.8322980	12	1	8 days	0.80	E Williams	1998 BL ₂₇
1998 BL ₂₈	17.5	0.15	19980127	52.19903	108.97771	315.60252	3.55418	0.1266604	2.1756029	9	1	6 days	0.23	E Williams	1998 BL ₂₈
1998 BN ₂₈	17.5	0.15	19980127	357.91651	19.23892	115.26278	2.52886	0.1435595	3.1199226	9	1	6 days	0.26	Williams	1998 BN ₂₈
1998 BO ₂₈	14.5	0.15	19980127	27.44599	319.56026	126.81622	8.33268	0.2621655	3.9878908	9	1	6 days	0.10	Williams	1998 BO ₂₈
1998 BB ₃₀	16.0	0.15	19980127	335.42112	28.68167	129.74417	3.65325	0.0645067	2.2485659	12	1	5 days	0.71	E Williams	1998 BB ₃₀
1998 BD ₃₀	14.4	0.15	19980127	344.37615	17.18443	139.81171	1.96940	0.1582660	2.8613582	11	1	10 days	0.51	Nakano	1998 BD ₃₀
1998 BF ₃₀	15.5	0.15	19980127	75.96904	243.52954	174.31314	1.42600	0.0461747	2.5128358	6	1	3 days	0.13	E Williams	1998 BF ₃₀
1998 BG ₃₀	15.5	0.15	19980127	50.66940	277.35709	145.06455	6.35300	0.2369243	2.4527347	6	1	3 days	0.05	E Williams	1998 BG ₃₀
1998 BH ₃₀	14.5	0.15	19980127	321.32880	251.39669	288.82998	2.79335	0.1280213	2.5951549	13	1	13 days	1.45	Williams	1998 BH ₃₀
1998 BK ₃₀	13.0	0.15	19980127	97.53264	85.73153	303.96323	2.76891	0.0386389	2.6162979	12	1	13 days	0.61	Williams	1998 BK ₃₀
1998 BA ₃₁	15.0	0.15	19980107	26.68827	259.93889	174.89984	5.07289	0.1629099	2.3293326	11	1	35 days	0.23	Williams	1998 BA ₃₁
1998 BC ₃₁	18.5	0.15	19980127	4.75995	338.47945	145.98824	1.38197	0.0944518	2.3504663	9	1	8 days	0.23	Williams	1998 BC ₃₁
1998 BE ₃₁	16.5	0.15	19980127	17.68048	306.20687	165.28784	0.66969	0.0438944	2.5764302	9	1	8 days	0.36	E Williams	1998 BE ₃₁
1998 BF ₃₁	17.5	0.15	19980127	61.78942	118.54802	295.59505	1.44487	0.1343492	2.3044211	10	1	8 days	0.57	Williams	1998 BF ₃₁
1998 BG ₃₁	14.0	0.15	19980127	192.50354	351.69190	308.54054	7.30718	0.0656288	2.5826180	15	1	10 days	0.50	Williams	1998 BG ₃₁
1998 BL ₃₁	16.5	0.15	19980127	204.29296	342.36823	313.80929	4.57343	0.1969937	2.7209215	9	1	8 days	0.33	E Williams	1998 BL ₃₁
1998 BM ₃₁	14.0	0.15	19980127	130.23455	331.52068	18.86360	0.21362	0.1675401	3.1203112	9	1	8 days	0.33	E Williams	1998 BM ₃₁
1998 BN ₃₁	14.0	0.15	19980127	177.92671	359.91608	315.10416	15.37587	0.1763934	2.9500637	9	1	8 days	0.48	Williams	1998 BN ₃₁
1998 BQ ₃₁	17.0	0.15	19980127	85.34232	75.11628	317.32072	4.79844	0.1349899	2.7006888	9	1	8 days	0.52	E Williams	1998 BQ ₃₁
1998 BX ₃₂	16.5	0.15	19980107	184.16204	207.87897	102.25454	6.64017	0.2020083	2.2257769	9	1	11 days	0.21	Williams	1998 BX ₃₂
1998 BY ₃₂	17.0	0.15	19980127	184.01354	301.90501	11.58697	5.03895	0.0603797	2.6256588	9	1	3 days	0.46	E Williams	1998 BY ₃₂
1998 BH ₃₃	13.9	0.15	19980216	51.09600	58.80173	8.26426	13.33658	0.1688695	2.5625383	8	1	6 days	0.61	Nakano	1998 BH ₃₃
1998 BJ ₃₃	13.0	0.15	19980107	289.60404	245.42049	307.34120	14.10082	0.0323778	2.5720234	12	1	43 days	0.20	Williams	1998 BJ ₃₃
1998 BK ₃₃	14.5	0.15	19980127	313.57073	103.27654	91.23483	7.40406	0.0554941	2.3957948	9	1	11 days	0.33	Williams	1998 BK ₃₃
1998 BL ₃₃	14.0	0.15	19980127	347.06253	46.35655	118.38604	14.87125	0.2153746	3.1680999	9	1	11 days	0.38	Williams	1998 BL ₃₃
1998 BM ₃₃	16.0	0.15	19980127	333.63798	104.22447	77.94526	5.78838	0.1949956	2.5694615	12	1	10 days	0.31	Williams	1998 BM ₃₃
1998 BN ₃₃	12.9	0.15	19980127	85.32192	353.21314	43.55225	7.53584	0.2004665	2.4977010	12	1	8 days	0.31	Asher	1998 BN ₃₃
1998 BO ₃₃	11.8	0.15	19980127	249.74490	225.90935	55.93590	8.23379	0.2552261	2.9983638	9	1	4 days	0.56	Asher	1998 BO ₃₃
1998 BP ₃₃	12.6	0.15	19980127	40.65646	335.34703	132.67668	10.82018	0.0829849	2.7793338	6	1	4 days	0.35	Asher	1998 BP ₃₃
1998 BQ ₃₃	13.2	0.15	19980127	226.00310	223.34809	76.68450	4.92538	0.1564790	2.2950286	6	1	4 days	0.31	Asher	1998 BQ ₃₃
1998 BS ₃₃	13.1	0.15	19980127	326.47760	79.35646	116.62735	6.40135	0.1406091	2.4278638	6	1	4 days	0.14	Asher	1998 BS ₃₃
1998 BT ₃₃	13.1	0.15	19980127	105.90964	303.99176	81.57481	6.06669	0.1441871	2.3155187	8	1	4 days	0.13	Asher	1998 BT ₃₃
1998 BU ₃₃	13.4	0.15	19980127	26.94555	21.67560	100.61050	5.66664	0.0887812	2.6634970	6	1	4 days	0.47	Asher	1998 BU ₃₃
1998 BV ₃₃	11.4	0.15	19980127	121.51430	335.36047	56.46553	5.89123	0.0515776	3.2222533	6	1	4 days	0.24	E Asher	1998 BV ₃₃
1998 BW ₃₃	14.0	0.15	19980127	17.71434	126.98940	353.76444	13.05945	0.2571846	2.8431228	6	1	4 days	0.75	E Williams	1998 BW ₃₃
1998 BX ₃₃	13.0	0.15	19980127	211.51848	329.46447	345.82799	26.08628	0.2078834	2.4061043	6	1	4 days	0.46	E Williams	1998 BX ₃₃
1998 BY ₃₃	13.3	0.15	19980127	51.32138	24.32138	60.14511	5.95718	0.0926751	2.2884974	6	1	4 days	0.24	Asher	1998 BY ₃₃
1998 BA ₃₄	13.5	0.15	19980127	102.32197	286.19313	78.21491	13.15154	0.2160680	3.0779901	10	1	3 days	0.44	Williams	1998 BA ₃₄
1998 BB ₃₄	13.0	0.15	19980127	248.46297	271.61634	21.38322	5.97565	0.2515815	2.6885712	7	1	4 days	0.54	E Williams	1998 BB ₃₄

1998 BC ₃₄	21.0	0.15	19980127	356.83620	16.49286	125.83442	17.16399	0.5617403	3.3138982	15	1	11 days	0.25	Williams	1998 BC ₃₄
1998 BG ₃₄	15.5	0.15	19980127	199.03026	247.95451	63.05828	1.10710	0.1194508	3.1503960	9	1	11 days	0.15	Williams	1998 BG ₃₄
1998 BP ₃₄	17.0	0.15	19980127	263.73669	229.16508	27.35352	2.02591	0.1355937	2.4477938	8	1	11 days	0.13	Williams	1998 BP ₃₄
1998 BB ₃₇	15.5	0.15	19980127	131.08549	48.99444	307.40894	2.18052	0.0426193	2.2975373	12	1	9 days	0.69	E Williams	1998 BB ₃₇
1998 BV ₄₁	17.0	0.15	19980127	347.27411	150.45073	2.63913	5.40292	0.0938377	2.4680835	12	1	9 days	0.32	Marsden	1998 BV ₄₁
1998 BW ₄₁	15.5	0.15	19980107	57.07284	228.30347	174.52059	5.71613	0.1827288	2.3627070	9	1	7 days	0.32	Williams	1998 BW ₄₁
1998 BC ₄₂	15.0	0.15	19980107	290.72099	87.70423	118.47311	11.88531	0.0214158	3.0801767	9	1	13 days	0.32	Williams	1998 BC ₄₂
1998 BD ₄₂	16.0	0.15	19980127	316.97473	85.39350	91.64956	7.54737	0.1577386	2.2737703	9	1	6 days	0.45	Marsden	1998 BD ₄₂
1998 BU ₄₃	15.0	0.15	19980127	337.68037	115.14640	46.91610	5.56109	0.1972391	2.3519690	9	1	7 days	0.43	Williams	1998 BU ₄₃
1998 CA	14.5	0.15	19980127	7.51698	19.06486	96.30934	9.65165	0.2291517	2.6113138	19	1	4 days	0.69	Williams	1998 CA
1998 CD	15.4	0.15	19980127	24.25872	37.90075	65.52066	4.76574	0.2414318	2.4591551	6	1	3 days	0.39	Asher	1998 CD
1998 CL	15.5	0.15	19980127	67.62415	274.32929	126.46126	3.89225	0.2091515	2.3642270	15	1	10 days	0.50	Williams	1998 CL
1998 CS	15.0	0.15	19980127	217.55833	311.88338	325.97909	13.03871	0.0425066	2.6035139	12	1	10 days	0.17	Williams	1998 CS
1998 CA ₁	14.5	0.15	19980127	113.56339	39.48578	327.69332	7.87562	0.2746723	2.2734985	9	1	2 days	0.16	E Williams	1998 CA ₁
1998 CR ₁	14.5	0.15	19980127	250.67097	119.59061	157.73467	5.62203	0.1629708	2.5563865	11	1	3 days	0.19	E Williams	1998 CR ₁
2025 P-L	12.5	0.15	19971218	313.67828	229.98610	359.40577	9.53962	0.1836598	3.1992120	21	4	1960-1998	0.53	M-v 2 Williams	28891 2025 P-L
2607 P-L	14.5	0.15	19971218	54.44161	218.82885	192.38082	6.19184	0.2013846	2.7351385	20	3	1960-1998	0.55	M-v 2 Williams	28891 2607 P-L
2779 P-L	15.0	0.15	19971218	39.42378	303.30882	51.75809	2.21105	0.1805562	2.2424213	38	3	1960-1997	0.56	M-v 2 Williams	31131 2779 P-L
2827 P-L	15.0	0.15	19971218	198.91822	198.67083	27.96029	4.97432	0.1018966	2.3733739	22	3	1960-1997	0.78	M-v 4 Williams	25442 2827 P-L
3520 P-L	13.0	0.15	19971218	31.74630	141.25020	243.41027	9.50742	0.1238764	3.0144119	30	3	1960-1998	0.64	M-v 3 Williams	31160 3520 P-L
4025 P-L	14.5	0.15	19971218	48.21254	237.87113	197.07157	7.53201	0.0656753	2.2129523	26	4	1960-1998	0.76	M-v 2 Williams	28088 4025 P-L
4031 P-L	14.5	0.15	19971218	30.26684	87.25652	341.79374	5.09253	0.1825396	2.3696032	19	4	1960-1998	0.98	M-v 2 Williams	28892 4031 P-L
4041 P-L	15.5	0.15	19971218	67.27100	96.41008	292.45907	1.86732	0.1703203	2.3659150	18	5	1960-1998	0.67	M-v 2 Williams	29141 4041 P-L
4204 P-L	14.0	0.15	19971218	89.05018	144.83576	206.79911	9.94240	0.0528517	2.9866941	20	3	1960-1998	0.61	M-v 4 Williams	28607 4204 P-L
4269 P-L	14.5	0.15	19971218	21.20295	226.89287	205.45418	8.32451	0.0718686	2.9852137	18	3	1960-1997	0.37	M-v 4 Williams	31022 4269 P-L
4522 P-L	14.0	0.15	19971218	98.39771	342.29984	6.24879	5.14147	0.0691715	2.7347504	19	3	1960-1998	0.52	M-v 4 Williams	28082 4522 P-L
4545 P-L	13.5	0.15	19971218	211.22960	81.55892	199.35576	1.38109	0.0279221	2.9464877	20	3	1960-1998	0.39	M-v 4 Marsden	17836 4545 P-L
4607 P-L	14.0	0.15	19971218	291.00829	184.75352	18.99995	5.41989	0.1181498	2.7025690	25	3	1960-1998	0.40	M-v 4 Williams	20830 4607 P-L
4667 P-L	14.0	0.15	19971218	120.48433	301.62050	27.63356	7.01082	0.2088476	2.7267589	21	4	1960-1998	0.87	M-v 4 Williams	28620 4667 P-L
5011 P-L	14.5	0.15	19971218	113.02901	121.34650	243.19264	5.17555	0.0234632	2.7210337	14	4	1960-1998	0.49	M-v 2 Williams	28892 5011 P-L
6030 P-L	12.5	0.15	19971218	83.14562	218.49549	182.24384	3.30747	0.0154346	3.6533210	32	5	1960-1998	0.80	M-v 1 Williams	29141 6030 P-L
6114 P-L	14.0	0.15	19971218	295.56779	222.80052	348.51687	12.82590	0.1428896	2.6919724	24	3	1960-1998	0.50	M-v 4 Williams	21978 6114 P-L
6199 P-L	16.0	0.15	19971218	29.08795	173.65290	211.36285	2.86071	0.1674984	2.2368080	21	2	1960-1998	0.56	M-v 3 Williams	31161 6199 P-L
6214 P-L	15.0	0.15	19971218	27.17060	226.52785	222.10930	4.32846	0.1148497	2.3584113	14	4	1960-1998	0.53	M-v 2 Williams	25442 6214 P-L
6533 P-L	13.0	0.15	19971218	245.38971	150.61492	121.91619	1.87148	0.1362951	3.2159142	18	5	1954-1998	0.76	M-v 2 Williams	29948 6533 P-L
6579 P-L	14.0	0.15	19971218	349.45346	16.11260	66.60363	3.15294	0.0893243	2.3750658	38	3	1960-1998	0.82	M-v 4 Williams	31161 6579 P-L
6643 P-L	14.5	0.15	19971218	55.97872	18.70408	31.38913	4.79994	0.1683944	2.2205971	22	4	1960-1998	0.74	M-v 2 Williams	29668 6643 P-L
6673 P-L	12.5	0.15	19971218	94.03601	212.59715	170.20592	21.99285	0.0211395	3.2601019	9	3	1960-1997	0.44	M-v 4 Williams	23680 6673 P-L
6840 P-L	17.0	0.15	19971218	98.15159	254.00781	103.45648	2.63378	0.1332719	2.5272005	15	3	1960-1998	0.58	M-v 5 Williams	23986 6840 P-L
9530 P-L	14.0	0.15	19971218	315.70263	290.17058	176.89266	9.70876	0.1650119	2.3820339	12	3	1960-1998	0.78	M-v 5 Williams	28892 9530 P-L
9560 P-L	14.5	0.15	19971218	224.85509	153.58773	102.31817	3.94269	0.1153768	2.2048159	20	3	1960-1998	0.56	M-v 4 Williams	25076 9560 P-L
2149 T-1	12.5	0.15	19971218	20.74733	99.85654	4.18951	7.30161	0.1002306	3.1090490	20	3	1971-1998	0.67	M-v 4 Williams	25436 2149 T-1
2202 T-1	14.0	0.15	19971218	284.77696	74.87103	156.56939	4.14390	0.3292765	3.1219500	20	4	1971-1998	0.56	M-v 1 Williams	26192 2202 T-1
2209 T-1	13.0	0.15	19971218	73.05153	295.98969	76.65388	3.00161	0.1817312	3.1747695	24	8	1968-1998	0.69	M-v 1 Williams	31161 2209 T-1
3233 T-1	14.0	0.15	19971218	24.15896	91.44068	3.85516	7.32094	0.1343507	2.7529776	27	5	1971-1998	0.81	M-v 2 Williams	27938 3233 T-1
3297 T-1	13.5	0.15	19971218	305.54796	24.16111	179.20163	2.06701	0.1302684	3.1099622	29	3	1971-1998	1.11	M-v 4 Williams	21124 3297 T-1
1045 T-2	14.0	0.15	19971218	28.55151	166.57548	199.74567	7.83421	0.1418616	2.2690327	37	5	1955-1997	0.92	M-v 2 Williams	30914 1045 T-2
1107 T-2	14.5	0.15	19971218	151.01821	33.81118	276.95113	2.21197	0.1835057	2.7487770	18	3	1973-1998	0.93	M-v 5 Williams	21978 1107 T-2
1279 T-2	15.5	0.15	19971218	70.96237	213.78070	173.53805	1.32635	0.1665362	2.2367257	32	3	1973-1998	0.91	M-v 4 Williams	22972 1279 T-2
1298 T-2	15.0	0.15	19971218	349.52241	322.17694	171.57625	5.40475	0.0717137	2.2223363	39	5	1973-1998	0.79	M-v 2 Williams	27939 1298 T-2
2034 T-2	14.5	0.15	19971218	2.82148	69.35762	56.68760	0.99168	0.1399026	3.1608336	50	4	1973-1998	0.92	M-v 2 Williams	30888 2034 T-2
2225 T-2	15.0	0.15	19971218	246.55358	200.93736	16.57094	2.17157	0.1353618	2.4573515	35	4	1973-1998	0.88	M-v 2 Williams	28620 2225 T-2
3042 T-2	15.5	0.15	19971218	1.23457	322.51655	145.73687	4.18971	0.0456571	2.2275868	33	4	1973-1998	0.82	M-v 2 Williams	30294 3042 T-2

3155 T-2	13.5	0.15	19971218	353.49546	344.43577	139.42572	6.41137	0.1055261	3.1659567	28	5	1973–1998	1.01	M-v	1	Williams	28620	3155 T-2
3176 T-2	15.0	0.15	19971218	26.10539	104.34927	25.93059	4.16509	0.0587281	2.4260658	29	4	1973–1998	0.93	M-v	3	Williams	23870	3176 T-2
3212 T-2	15.5	0.15	19971218	61.20619	222.28870	167.66573	6.57041	0.1473975	2.4745129	31	5	1973–1998	1.21	M-v	4	Williams	25341	3212 T-2
3290 T-2	13.5	0.15	19971218	300.03559	126.83175	31.57174	6.26021	0.0390680	3.1852424	38	4	1973–1998	0.80	M-v	3	Williams	28088	3290 T-2
3327 T-2	13.5	0.15	19971218	52.37372	324.02096	81.18558	3.21437	0.1788044	3.1913922	23	5	1973–1998	0.64	M-v	3	Williams	23686	3327 T-2
4283 T-2	14.0	0.15	19971218	342.00487	11.08376	111.26536	2.49578	0.1560874	3.1988893	29	3	1973–1998	0.66	M-v	6	Williams	28320	4283 T-2
5065 T-2	15.5	0.15	19971218	322.00852	244.72367	243.49777	9.80148	0.0737097	2.4766624	27	3	1973–1998	0.89	M-v	4	Williams	22701	5065 T-2
5105 T-2	13.5	0.15	19971218	300.51478	252.28822	293.32964	7.74881	0.2055375	2.7457983	39	3	1973–1998	0.53	M-v	4	Williams	31132	5105 T-2
1017 T-3	13.0	0.15	19971218	180.29610	26.87797	284.62512	7.74448	0.1387511	2.7810684	34	5	1977–1998	0.88	M-v	2	Williams	31023	1017 T-3
1188 T-3	15.0	0.15	19971218	125.42292	20.99769	309.54403	6.16736	0.1116692	2.4592020	22	3	1977–1998	0.91	M-v	5	Williams	31001	1188 T-3
2480 T-3	13.5	0.15	19971218	297.22439	236.48442	354.16991	8.10135	0.1300810	2.4014142	31	7	1955–1998	1.01	M-v	2	Williams	28893	2480 T-3
3019 T-3	13.5	0.15	19971218	158.30377	129.07867	191.38525	8.65751	0.1559742	2.7997013	29	5	1977–1998	0.89	M-v	1	Williams	25652	3019 T-3
3100 T-3	15.0	0.15	19971218	257.86064	80.82163	151.38160	2.96218	0.1228019	2.4315946	24	4	1973–1998	1.00	M-v	4	Williams	22088	3100 T-3
3464 T-3	16.5	0.15	19971218	120.11407	351.88026	7.39533	2.57206	0.2132632	2.4397334	33	3	1977–1998	0.71	M-v	4	Williams	31161	3464 T-3
4171 T-3	14.0	0.15	19971218	308.81228	52.28860	59.00225	5.92180	0.0578573	2.2216816	47	5	1964–1998	0.88	M-v	2	Williams	30915	4171 T-3
4343 T-3	12.5	0.15	19971218	308.94534	15.55107	177.64077	10.40725	0.2354973	2.7936355	28	7	1977–1998	0.81	M-v	1	Williams	29651	4343 T-3

1995 CS₆ = 1995 DD₅ (S. Nakano)
 1995 CJ₁₀ = 1995 DT₆ (S. Nakano)
 1995 DD₆ = 1995 FV₁ (S. Nakano)
 1995 DN₆ = 1995 FV₅ (S. Nakano)
 1995 DP₆ = 1995 FX₁₈ (S. Nakano)
 1995 DD₇ = 1995 FH₆ (S. Nakano)
 1995 DA₈ = 1995 FT₁ (S. Nakano)
 1995 DK₉ = 1995 FA₅ (S. Nakano)
 1995 EZ₄ = 1995 FO₆ (S. Nakano)
 1995 EN₅ = 1995 FD₆ (S. Nakano)
 1995 EH₇ = 1995 FJ₅ (S. Nakano)
 1995 ER₇ = 1995 FY₁₉ (S. Nakano)
 1997 FG₃ = 1997 GL₁₉ (G. V. Williams)
 1997 FP₃ = 1997 GQ₂₀ (G. V. Williams)
 1997 FR₃ = 1997 GH₂₀ (G. V. Williams)
 1997 FP₄ = 1997 GT₁₉ (G. V. Williams)
 1998 AJ₃ = 1997 YV₁₀ (G. V. Williams)
 1998 AJ₇ = 1997 YJ₂₀ (G. V. Williams)
 1998 BW₁₀ = 1997 YN₁₈ (G. V. Williams)

NEW NAMES OF MINOR PLANETS

(4008) Corbin = 1977 BY

Discovered 1977 Jan. 22 at the Carlos U. Cesco Station of the Felix Aguilar Observatory.

Named in honor of Thomas E. Corbin, head of the Meridian Circle Division at the U.S. Naval Observatory, and his wife, Brenda Groves Corbin, since 1973 the Observatory's librarian. Serving early in his career as astronomer-in-charge of the Observatory's southern station in Argentina, Tom Corbin has since been responsible for several important astrometric programs, including the *Astrographic Catalogue Reference Stars* catalogue. Brenda Corbin is one of the most renowned astronomical librarians in the world, known for her work in the Special Libraries Association, the IAU Commission 5 Working Group on Nomenclature and for her enthusiasm in tracking down copies of rare works.

(4176) Sudek = 1987 DS

Discovered 1987 Feb. 24 by A. Mrkos at Kleť.

Named in memory of Josef Sudek (1896–1976), outstanding Czech photographer, well-known for his black-and-white series of still lifes and views of Prague. Name suggested by M. Tichý.

(4270) Juanvictoria = 1975 TJ₆

Discovered 1975 Oct. 1 at the Carlos U. Cesco Station of the Felix Aguilar Observatory.

Named in memory of Juan Victoria (1906–1986), legal representative of the Yale-Columbia Southern Station when it was under construction in the early 1960s; he also supervised the construction of the dome and facilities for the U.S. Naval Observatory's station nearby. A mining engineer by training, Victoria was known for his teaching and research in the engineering department of the Cuyo National University, and he also advised the government on the development and establishment of the Minerals Laboratory and the Mining Research Institute. One of Victoria's greatest accomplishments was the construction of the San Juan Auditorium, considered to be one of best such buildings in Latin America.

(5015) Litke = 1975 VP

Discovered 1975 Nov. 1 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named for Fedor Petrovich Litke (1797–1882), Russian navigator and geographer, investigator of the Arctic regions, admiral and scientist, president of the Imperial Academy of Sciences in St. Petersburg during 1864–1882. His name is often found on world maps.

(5552) Studnička = 1982 SJ₁

Discovered 1982 Sept. 16 by A. Mrkos at Kleť.

Named in memory of František Josef Studnička (1836–1903), professor of mathematics at Charles University in Prague, also active in astronomy and meteorology. He was known as the author of several textbooks and popular articles. He started his work as a lecturer in České Budějovice (1862–1864). Name suggested by J. Tichý and M. Šolc.

(5945) Roachapproach = 1984 SQ₃

Discovered 1984 Sept. 28 by B. A. Skiff at the Anderson Mesa Station of Lowell Observatory.

Named in honor of Steve Roach, musician and composer of 'space music'. Among the most progressive performers in the genre, his prolific output includes seminal works such as "Structures from Silence" (1984), "Dreamtime Return" (1988) and "The Magnificent Void" (1996). His mixture of heavily-processed electronic sounds with primitive woodwinds and percussion conveys powerful impressions of spatial immensity. These have inspired the discoverer through endless nights at the telescope. Name suggested by L. Kohanov.

(5953) Shelton = 1987 HS

Discovered 1987 Apr. 25 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

Named in honor of Ian Shelton, Canadian astronomer, best known for his discovery of the supernova in the Large Magellanic Cloud on 1987 Feb. 24. During his four years as resident observer at the University of Toronto Southern Observatory, he participated in programs with astronomers worldwide, and more recently he has generously contributed to the astronomical education of school children, parents and teachers. Name suggested and citation prepared by D. MacCormack and R. Garrison.

(6083) Janeirabloom = 1984 SQ₂

Discovered 1984 Sept. 25 by B. A. Skiff at the Anderson Mesa Station of Lowell Observatory.

Named in honor of soprano saxophonist and jazz composer Jane Ira Bloom. Bloom is known for her chromatic, lyrical playing and compositions for orchestra, unusual ensembles and dance troupes. Her performances with traditional jazz groups appear on several critically acclaimed recordings. As the first musician in the NASA Art Program, she wrote "Most Distant Galaxy" and "Einstein's Red/Blue Universe", the latter on commission for the American Composers' Orchestra.

(6157) Prey = 1991 RX₂

Discovered 1991 Sept. 9 by L. D. Schmadel and F. Börngen at Tautenburg.

Named in memory of Adalbert Prey (1873–1949), professor of astronomy in Innsbruck, Prague and, eventually, Vienna, where he was elected to membership in the Austrian Academy of Sciences. After World War II until his death he served as one of the two secretaries of the Academy. He worked on the motion of 70 Oph (sometimes called "Prey's star"), as well as on the dynamics of minor planets and the moon. He thoroughly investigated the field of isostasy and gravitation, to which he devoted a series of papers. Named by the first discoverer following a suggestion by H. Haupt, who also prepared the citation.

(6229) Tursachan = 1983 VN₇

Discovered 1983 Nov. 4 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

The name is "Standing Stones" in Gaelic, a term used to refer to the stones placed during neolithic times into groups—often circles—throughout the British Isles. Many of these arrangements exhibit astronomical alignments and may have been used to track the progression of seasons and mark the occurrence of other significant astronomical events. The name was suggested by Alice Cathryne Dennis, a seventh-grade student at The Mountain School in Flagstaff, Arizona, as winner of a contest to name this minor planet in conjunction with the 1997 Flagstaff Festival of Science. Citation prepared by C. B. Luginbuhl.

(6518) Vernon = 1990 FR

Discovered 1990 Mar. 23 by E. F. Helin at Palomar.

Named in honor of Robert and Esther Vernon, longtime friends and, for more than 35 years, neighbors of the discoverer and her parents, Fred and Kay Francis. Their wise counsel, advice and solace over the years have been a source of comfort and renewed strength. Bob, now "retired", travels the world from Slovakia to Mongolia, sharing his wealth of experience and expertise with emerging democracies.

(6540) Stepling = 1982 SL₁

Discovered 1982 Sept. 16 by A. Mrkos at Kletř.

Named in memory of Joseph Stepling (1716–1778), founder and the first director of the astronomical observatory at the Jesuit college in Prague called Klementinum (1751). He was also known for introducing Newtonian physics to Prague. Name suggested by J. Tichá and M. Šolc.

(6685) Boitsov = 1978 QG₂

Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of Vasilij Vasil'evich Boitsov (Bojtsov, 1908–1997), specialist on the technology of mechanical engineering and standardization. From 1963 to 1984 he headed the U.S.S.R. State Committee for standards and represented his country in the International Organization for Standardization, of which he served as president (1977–1979). Boitsov was an initiator and active participant in fundamental research on the creation of standard measurement systems. Name suggested by the Institute of Theoretical Astronomy and supported by the discoverer.

(6753) Fursenko = 1974 RV₁

Discovered 1974 Sept. 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Margarita Aleksandrovna Fursenko (b. 1931), staff member of the Institute of Theoretical Astronomy during 1955–1997 and a well-known expert on ephemeris astronomy. She made a major contribution to the calculation and publication of 40 volumes of the annual *Astronomicheskij Ezhegodnik*, as well as to the development of special ephemerides for space missions, lunar laser ranging and radioastronomical observations with RATAN-600. Name suggested by ITA and supported by the discoverer.

(6952) Niccolò = 1986 JT

Discovered 1986 May 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for Niccolò Fulchignoni (b. 1991), second son of Marcello Fulchignoni and M. Antonietta Barucci, planetary scientists at the Observatoire de Paris. Niccolò is the "Renaissance" Italian form of the name Nikolaus (northern Europe's Santa Claus) and has been given to distinguished personalities of the arts, literature and philosophy—Paganini, Tommaseo and Machiavelli, for example. Name suggested and citation provided by M. Fulchignoni.

(7011) Worley = 1987 SK₁

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

Named in memory of Charles Edmund Worley (1935–1997), indefatigable observer and cataloguer of double-star positions. Following two years at the Lick Observatory, he was on the staff of the U.S. Naval Observatory from 1961. His work has significantly enhanced our knowledge of the motion of double-star and multiple-star systems and of stellar masses. Name suggested by H. Eichhorn.

(7078) Unoönsson = 1985 UH₃

Discovered 1985 Oct. 17 by C.-I. Lagerkvist at Kvistaberg.

Named in honor of Uno Jönsson (b. 1937), a friend of the discoverer, to celebrate his 60th birthday. Long interested in astronomy, Jönsson has written several books for a general audience. He has also edited textbooks on astronomy, in one case with the discoverer as a contributing author.

(7116) Mentall = 1986 XX

Discovered 1986 Dec. 2 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of E. Talmadge Mentall (b. 1927), who retired from a drafting career to join Sky Publishing Corporation in 1994. With his artistic skill and life-long enthusiasm for astronomy, "Tal" soon played a pivotal role in the *Millennium Star Atlas* (1997), a joint undertaking with the European Space Agency's Hipparcos project. He meticulously drafted all the outlines of nebulae and measured the orientations of 2000 galaxies not available from the literature. Name proposed by R. W. Sinnott, endorsed by B. G. Marsden and the discoverer.

(7217) Dacke = 1979 QX₃

Discovered 1979 Aug. 22 by C.-I. Lagerkvist at the European Southern Observatory.

Named for Nils Dacke (d. 1543), born in Torsås in the Swedish province Småland. Dacke was the leader of the peasants who rebelled against king Gustav Wasa in 1542. This uprising, mainly against clerical policy, tax policy and prohibition of trade across the Danish border, was the last of the large rebellions in Sweden against the king and centralized power. Initially, Dacke and his army had great success and forced the king to sign a peace treaty after he lost most of the southern provinces to the rebels. The next year the king hired foreign mercenaries, and Dacke's army was beaten. Dacke was shot, and the uprising was at an end.

(7226) Kryl = 1984 QJ

Discovered 1984 Aug. 21 by A. Mrkos at Kleť.

Named in memory of Karel Kryl (1944–1994), Czech singer and songwriter, from 1969 a resident of Germany working at Radio Free Europe. His songs were appreciated as a symbol of freedom by many people in the former Czechoslovakia. Name suggested by J. Tichá and M. Tichý.

(7228) MacGillivray = 1985 GO

Discovered 1985 Apr. 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Sally M. MacGillivray of Sky Publishing Corporation. With an early bent for music and philosophy, followed by 20 years' experience in book publishing, she brought to the *Millennium Star Atlas* (1997) an elegance that is rare in a scientific work and evokes bibliophilic traditions. As publication manager of this collaborative venture with the European Space Agency's Hipparcos project, she masterfully orchestrated the many iterations by two teams of illustrators needed to complete the 1548 charts in the atlas. Name suggested by R. W. Sinnott and endorsed by the discoverer.

(7290) Johnrather = 1991 JY₁

Discovered 1991 May 11 by E. F. Helin at Palomar.

Named in honor of John D. Rather (b. 1938), astrophysicist, on the completion of his 60th revolution around the sun on 1998 Jan. 25. Long associated with special projects at NASA and in industry, he served in the early 1990s as chair of the Near-Earth Object Interception Committee, which examined possible mitigation processes

against the threat of minor planets and comets on collision courses with the earth. As a direct consequence of his urging the use of an aggressive treatment that allowed his wife to triumph over cancer, he has in recent years transferred his interest in mitigation to a new career in leading-edge research to fight this scourge.

(7360) Moberg = 1996 BQ₁₇

Discovered 1996 Jan. 30 by C.-I. Lagerkvist at the European Southern Observatory.

Named in memory of Vilhelm Moberg (1898–1973), Swedish novelist and writer. Moberg mainly wrote about society's lower classes and always fought for the individual against the authorities. He also strove unsuccessfully to make Sweden a republic. Among his best-known novels are *Utvandrarna* ("The Emigrants") and *Invandrarna* ("The Immigrants"), about a family moving from Småland to Minnesota during the nineteenth century.

(7391) Strouhal = 1983 VS₁

Discovered 1983 Nov. 8 by A. Mrkos at Kleť.

Named in memory of Vincenc Strouhal (1850–1922), professor of experimental physics. He founded and built up the Institute of Physics of the Czech part of Charles University (1907). Name suggested by J. Tichá and M. Šolc.

(7639) Offutt = 1985 DC₁

Discovered 1985 Feb. 21 at the Oak Ridge Observatory.

Named in honor of Warren Offutt (b. 1928), on the occasion of his 70th birthday, 1998 Feb. 13. After a career as an engineering executive, he turned in his retirement to the astronomical applications of CCDs, considering in particular the contributions that can be made by amateur astronomers. At his observatory in New Mexico he has made key observations of several of the objects discovered in the Kuiper Belt in recent years, as well as of other comets and minor planets as faint as 22nd magnitude. His follow-up of S/1997 U 2, one of the two recently discovered satellites of Uranus, played a crucial role in the establishment of its orbit.

(7669) Malše = 1995 PB

Discovered 1995 Aug. 4 by M. Tichý and Z. Moravec at Kleť.

Named for a Czech river. The České Budějovice Observatory is situated at the confluence of the Malše and Vltava rivers.

(7671) Albis = 1995 UK₁

Discovered 1995 Oct. 22 by Z. Moravec at Kleť.

The Latin name for one of Europe's principal rivers, known in German as the Elbe and in Czech as the Labe. Rising in the Krkonoše mountains of the Czech Republic, the river continues into Germany through Dresden to its mouth beyond Hamburg. Its most significant tributary is the Vltava (or Moldau), on which Prague is located.

(7672) Hawking = 1995 UO₂

Discovered 1995 Oct. 24 at Kleť.

Named in honor of Stephen Hawking (b. 1942), theoretical physicist, professor of mathematics at Cambridge University. He is renowned for his research on cosmology and quantum gravitation theory, as well as on the physics of black holes. Besides his scientific work, he is also the author of the well-known popularizations *A Brief History of Time* and *Black holes and Baby Universes and Other Essays*.

(7690) Sackler = 2291 T-1

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Raymond and Beverly Sackler, wise, perceptive and generous supporters of science and the arts. Their special interest in stimulating astronomical research through direct support, and the fostering of collaborations and exchange of knowledge among astronomers worldwide, has been a great boon to this exciting field, now in a truly “golden age”.

(7711) Říp = 1994 XF

Discovered 1994 Dec. 2 by Z. Moravec at Kleť.

Named for a hill in central Bohemia (459 m above sea level) located about 30 km north of Prague. When a mythological ancestor of Čech, the Father of the Czech nation, came to Bohemia, he is said to have climbed this hill, looked around and made the decision to stay there because of the wealth and fertility of the country.

(7720) Lepaute = 4559 P-L

Discovered 1960 Sept. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named after Nicole-Reine Lepaute (1723–1788), extraordinarily talented French mathematician. The astronomers Lalande and Clairaut sought her help for the computations needed to predict the 1759 return of comet 1P/Halley. Lepaute’s computations for the annular eclipse of 1764 were used throughout Europe. Unfortunately, years of calculation left her nearly blind.

(7721) Andrillat = 6612 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Yvette Marie Josette (b.1925), French spectroscopist who works mainly on infrared spectra of early-type stars. She has also contributed to the spectroscopy of galaxies, novae, planetary nebulae and comets. Near the end of her renowned career she became acting director of the Observatoire de Haute Provence. The planet is named also in honor of her husband, Henri Andrillat, who is a retired professor of astronomy and a prominent cosmologist. The couple now live in Toulouse. Name suggested and citation prepared by H. Haupt.

(7722) Firneis = 2240 T-2

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Maria Gertrude Firneis (b.1937), a professor of astronomy at the University of Vienna. She has worked on delicate astrometric and statistical problems and is an authority on the history of astronomy. She is also engaged in dating ancient events and correlating them with celestial phenomena. Name suggested and citation prepared by H. Haupt.

(7796) Járacimrman = 1996 BG

Discovered 1996 Jan. 16 by Z. Moravec at Kleť.

Named for Jára Cimrman, a fictitious Czech genius. An analogue to Leonardo da Vinci, he was a playwright, composer, poet, painter, versatile scientist, inventor, polar explorer, sportsman, first man on the moon, etc. Although his name is not mentioned in any encyclopedia, his work is explored at the Jára Cimrman Theatre in Prague. This theater is headed by the famous cimrmanologists Z. Svěrák and L. Smoljak, who endorsed the name proposal.

(7804) Boesgaard = 3083 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Ann Merchant Boesgaard (b.1939), astronomer at the University of Hawaii, well-known for her investigations of the lithium and beryllium content of stellar atmospheres.

(7824) Lynch = 1991 RM₂

Discovered 1991 Sept. 7 by E. F. Helin at Palomar.

Named in honor of William Lynch III of the Jet Propulsion Laboratory and an outstanding model of efficiency, friendliness and dedication to his work and responsibilities. He is the epitome of the NASA/JPL motto, “Faster, better and cheaper”, in the sense that anyone who works in a highly-charged, positive fashion, streamlined for action, leads to a more successful and economical operation. Always with a big smile and a cheerful greeting, he is one of JPL’s biggest assets.

(7830) Akihikotago = 1993 DC₁

Discovered 1993 Feb. 24 by Y. Kushida and O. Muramatsu at the Yatsugatake South Base Observatory.

Named in honor of Akihiko Tago (b.1932), credited with the discovery of comets C/1968 H1, C/1969 T1, C/1987 B1 (and an independent discovery of C/1970 U1) and the 1994 nova V2313 Oph. At the Satsuki Municipal Observatory in Yanahara, Okayama, Tago works as an instructor, popularizing astronomy, particularly among the young. Name proposed by the discoverers, following a suggestion by H. Kosai, who prepared the citation.

(7846) Setvák = 1996 BJ

Discovered 1996 Jan. 16 by M. Tichý at Kleť.

Named in honor of Martin Setvák (b.1958), meteorologist and head of the Satellite Department of the Czech Hydrometeorological Institute in Prague, on the occasion of his 40th birthday, 1998 Feb. 14. His main professional interest is in convective storms, but his long-time hobby is astrophotography. This minor planet also honors his wife Stáňa Setváková (b.1967), a staff member of the Prague Planetarium. Name proposed by the discoverer and J. Tichá.

(7933) Magritte = 1989 GP₄

Discovered 1989 Apr. 3 by E. W. Elst at the European Southern Observatory.

Named for the Belgian painter René Magritte Lessines (1898–1967), well known for his magical surrealist style. In the 1930s composed his *Magritte dictionary*, placing ordinary objects, such as apples, stones and pipes, in a surrealist context, thereby aiming to surprise and alienate. The philosophy of his work may best be summarized as “creating the unknown with known things”. Citation written by K. Leterme at the request of the discoverer.

(8000) Isaac Newton = 1986 RL₅

Discovered 1986 Sept. 5 by H. Debehogne at the European Southern Observatory.

Named for Isaac Newton (1643–1727), hailed by some as the greatest universal genius of all time. Newton formulated the laws of motion, with the specific application to gravitation, and is known for his 1687 publication of the *Principia Mathematica*. He also made seminal contributions to optics and the construction of the reflecting telescope. Newton was the last to observe, from his rooms at Trinity College, Cambridge, the great comet of 1680—the first comet to have its motion explained on gravitational principles. He also served as master of the Royal Mint in London. Named by the Small Bodies Names Committee.

(8010) Bönnhardt = 1989 GB₁

Discovered 1989 Apr. 3 by E. W. Elst at the European Southern Observatory.

Named in honor of Hermann Böhnhardt (b. 1955), astronomer at the European Southern Observatory, known for his observational and theoretical studies of comets. He took a particular interest in (7968) Elst-Pizarro, a Themis-family minor planet that also appeared in the guise of comet 133P/1996 N2. In addition to the main, sunward tail temporarily exhibited by this strange object, Böhnhardt detected a faint anti-sunward tail, which he had predicted by means of Finson-Probststein modeling.

(8020) Erzgebirge = 1990 TV₁₃

Discovered 1990 Oct. 14 by F. Börngen and L. D. Schmadel at Tautenburg.

Named for a low mountain range along the border of Saxony and Bohemia, about 150 km in length and rich in forests. This region is relatively densely populated, owing to its past richness of silver and tin ore (“Erz”, in German). Pitchblende (“Joachimsthaler Pechblende”), first found in the Erzgebirge, was used by the Curies in 1898 to isolate the radioactive elements polonium and radium. The Sternwarte Drebach, which is situated in Middle Erzgebirge, contributed an extensive series of observations of this minor planet in 1997, thereby enabling it to be numbered. Name proposed by the first discoverer.

(8048) Andrlé = 1995 DB₁

Discovered 1995 Feb. 22 by M. Tichý and Z. Moravec at Kleť.

Named in memory of Pavel Andrlé (1936–1991), Czech astronomer and celestial mechanician. Methods described in his textbook were used at Kleť for the preliminary orbit determination of this minor planet. Name proposed by discoverers and endorsed by J. Tichá.

(8096) Emilezola = 1993 OW₃

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

Named in memory of the French writer Emile Zola (1840–1902), founder of the naturalist movement in literature. His writings show a credulous faith in science and an uncritical acceptance of scientific determinism. Although he believed that human nature was completely determined by heredity, he thought that it could be perfected. The controversial views expressed in his famous “J’accuse”, published in the newspaper *L’Aurore* on 1898 Jan. 13, forced his flight to England. Nevertheless, he received a public funeral in France, and his remains are preserved in the Panthéon, although he never became a member of the Académie.

(8106) Carpino = 1994 YB

Discovered 1994 Dec. 23 by M. Cavagna and P. Sicoli at Sormano.

Named in honor of Mario Carpino (b. 1957), Italian astronomer at Brera Astronomical Observatory in Milan. From his initial studies of satellite geodesy, he acquired a taste for extreme accuracy in orbit determination, applying these skills to the study of the dynamics of solar-system bodies in projects such as LONGSTOP and SPACEGUARD. When The Spaceguard Foundation was established in Rome in 1996 he became its secretary. Citation prepared by A. Milani at the request of the discoverers.

(8113) Matsue = 1996 HD₁

Discovered 1996 Apr. 21 by R. H. McNaught and H. Abe at Yatsuka.

Named for a city located in the ancient Izumo district in western Japan. A beautiful city rich in culture, history and archeological remains, Matsue has been designated as an International Cultural Center.

(8114) Lafcadio = 1996 HZ₁

Discovered 1996 Apr. 24 by H. Abe at Yatsuka.

Named in memory of Lafcadio Hearn (1850–1904). Born of an Irish father and Greek mother on the Ionian isle of Lefkás, he worked 20 years as a newspaper reporter in the United States before moving to Japan in 1890, changing his name to Yakumo Koizumi and becoming a naturalized Japanese citizen. He was commissioned by the Japanese Ministry of Education to teach in a Shimane prefectural junior high school in Matsue, and from insights and impressions gleaned during his stay there he wrote his first and perhaps most famous major work on Japan, “Glimpses of Unfamiliar Japan”.

(8116) Jeanperrin = 1996 HA₁₅

Discovered 1996 Apr. 17 by E. W. Elst at the European Southern Observatory.

Named in memory of the French physicist Jean Perrin (1870–1942), who studied Brownian motion and thereby confirmed the atomic nature of matter. At the same time he formed his ideas about the atom and its electrons, envisaging an atom as a small solar system, thereby anticipating the model by Rutherford. In 1926 he was honored with the Nobel prize in physics. The Centre National de la Recherche Scientifique and the Palais de la Découverte in Paris were created through his efforts. French astronomers especially honor him for his creation of the Observatoire de Haute Provence in 1936.

EPHEMERIDES

(7335) 1989 JA			<i>a, e, i</i> = 1.77, 0.48, 15			Elements <i>MPC</i> 28570		
Date	TT	α_{2000}	δ_{2000}	Δ	<i>r</i>	ϵ	ϕ	<i>V</i>
1998 02 06		09 31.90	+39 49.5	1.539	2.471	155.7	9.4	20.5
1998 02 16		09 14.90	+40 57.4	1.538	2.444	150.0	11.6	20.6
1998 02 26		08 58.74	+41 26.5	1.563	2.415	141.0	14.9	20.7
1998 03 08		08 45.39	+41 18.5	1.611	2.383	131.0	18.3	20.9
1998 03 18		08 36.10	+40 40.7	1.676	2.350	121.0	21.3	21.0
1998 03 28		08 31.24	+39 41.8	1.753	2.314	111.5	23.7	21.2
1998 04 07		08 30.66	+38 28.8	1.836	2.275	102.6	25.4	21.3
1998 04 17		08 33.87	+37 06.5	1.922	2.235	94.4	26.6	21.4
1998 04 27		08 40.26	+35 37.5	2.006	2.192	86.7	27.3	21.4
1998 05 07		08 49.32	+34 02.8	2.087	2.147	79.5	27.5	21.5
1998 05 17		09 00.53	+32 22.5	2.161	2.099	72.9	27.4	21.5
1998 05 27		09 13.51	+30 36.2	2.227	2.049	66.7	27.0	21.5
1998 06 06		09 27.95	+28 43.1	2.283	1.997	60.9	26.4	21.5

1987 QX			<i>a, e, i</i> = 2.79, 0.46, 14			Elements <i>MPC</i> 28612		
Date	TT	α_{2000}	δ_{2000}	Δ	<i>r</i>	ϵ	ϕ	<i>V</i>
1998 02 06		10 08.16	+23 23.9	2.265	3.230	165.9	4.3	20.2
1998 02 16		09 57.47	+23 51.8	2.294	3.268	168.6	3.4	20.2
1998 02 26		09 47.12	+24 07.7	2.354	3.306	160.8	5.6	20.4
1998 03 08		09 38.00	+24 09.8	2.444	3.342	150.2	8.5	20.6
1998 03 18		09 30.78	+23 58.7	2.560	3.377	139.3	11.1	20.9
1998 03 28		09 25.79	+23 36.1	2.697	3.412	128.8	13.2	21.1
1998 04 07		09 23.13	+23 04.0	2.851	3.445	118.7	14.8	21.3
1998 04 17		09 22.70	+22 24.4	3.018	3.478	109.1	15.8	21.5
1998 04 27		09 24.26	+21 38.9	3.192	3.510	100.0	16.4	21.6
1998 05 07		09 27.58	+20 48.5	3.370	3.541	91.4	16.6	21.8
1998 05 17		09 32.38	+19 54.2	3.548	3.571	83.1	16.3	21.9
1998 05 27		09 38.40	+18 56.5	3.723	3.600	75.2	15.8	22.0

1995 LH		$a, e, i = 2.69, 0.41, 11$				Elements <i>MPC</i> 31141		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		10 28.47	+26 02.0	2.810	3.754	160.6	5.0	19.5
1998 02 16		10 19.78	+26 54.4	2.784	3.745	164.6	4.0	19.5
1998 02 26		10 10.64	+27 36.1	2.789	3.736	160.4	5.1	19.5
1998 03 08		10 01.82	+28 03.5	2.824	3.726	151.4	7.3	19.6
1998 03 18		09 54.06	+28 15.3	2.886	3.714	141.3	9.7	19.8
1998 03 28		09 47.91	+28 11.8	2.971	3.702	130.9	11.8	19.9
1998 04 07		09 43.72	+27 54.5	3.075	3.690	120.8	13.5	20.1
1998 04 17		09 41.62	+27 25.6	3.193	3.676	111.2	14.8	20.2
1998 04 27		09 41.56	+26 47.2	3.319	3.661	101.9	15.6	20.3
1998 05 07		09 43.43	+26 01.1	3.450	3.646	93.1	16.0	20.4
1998 05 17		09 47.02	+25 08.8	3.581	3.630	84.7	16.1	20.4
1998 05 27		09 52.11	+24 11.2	3.710	3.613	76.6	15.8	20.5
1998 06 06		09 58.49	+23 09.3	3.833	3.595	68.9	15.3	20.5
1998 06 16		10 05.96	+22 03.5	3.948	3.576	61.5	14.5	20.6

1992 JE		$a, e, i = 2.19, 0.46, 6$				Elements <i>MPC</i> 28615		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		10 45.72	+01 49.7	1.949	2.869	154.3	8.6	20.3
1998 02 16		10 36.58	+02 46.3	1.869	2.838	166.3	4.7	20.0
1998 02 26		10 26.14	+03 55.9	1.818	2.805	174.5	1.9	19.8
1998 03 08		10 15.41	+05 12.5	1.799	2.771	165.6	5.1	19.9
1998 03 18		10 05.49	+06 28.8	1.809	2.736	153.4	9.4	20.1
1998 03 28		09 57.33	+07 38.3	1.846	2.698	141.4	13.3	20.3
1998 04 07		09 51.62	+08 36.0	1.904	2.660	130.0	16.8	20.4
1998 04 17		09 48.68	+09 19.2	1.978	2.620	119.3	19.5	20.6
1998 04 27		09 48.53	+09 47.0	2.063	2.578	109.4	21.6	20.7
1998 05 07		09 51.06	+09 59.5	2.154	2.535	100.2	23.1	20.8
1998 05 17		09 56.00	+09 57.3	2.246	2.491	91.7	23.9	20.9
1998 05 27		10 03.06	+09 41.5	2.336	2.445	83.9	24.3	20.9
1998 06 06		10 11.99	+09 12.8	2.422	2.398	76.5	24.3	21.0
1998 06 16		10 22.52	+08 32.3	2.501	2.349	69.6	23.9	21.0
1998 06 26		10 34.47	+07 40.7	2.571	2.299	63.1	23.2	21.0

1996 HW ₁		$a, e, i = 2.05, 0.45, 8$				Elements <i>MPC</i> 31141		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		10 55.10	+01 49.0	1.927	2.837	152.3	9.3	19.8
1998 02 16		10 45.58	+03 00.7	1.891	2.856	164.8	5.2	19.6
1998 02 26		10 35.11	+04 22.3	1.886	2.874	175.5	1.5	19.4
1998 03 08		10 24.72	+05 46.7	1.912	2.890	167.9	4.1	19.6
1998 03 18		10 15.43	+07 06.3	1.968	2.904	155.7	8.1	19.9
1998 03 28		10 08.00	+08 15.5	2.052	2.917	143.8	11.7	20.1
1998 04 07		10 02.93	+09 10.6	2.158	2.928	132.5	14.6	20.3
1998 04 17		10 00.38	+09 50.4	2.282	2.938	121.9	16.9	20.5
1998 04 27		10 00.27	+10 14.9	2.418	2.946	112.0	18.5	20.7
1998 05 07		10 02.40	+10 25.1	2.562	2.953	102.7	19.5	20.9
1998 05 17		10 06.49	+10 22.4	2.710	2.958	94.0	19.9	21.0
1998 05 27		10 12.26	+10 08.0	2.858	2.962	85.8	19.9	21.1
1998 06 06		10 19.46	+09 43.4	3.004	2.964	78.0	19.6	21.2
1998 06 16		10 27.84	+09 09.7	3.143	2.965	70.6	18.9	21.3
1998 06 26		10 37.20	+08 28.0	3.275	2.964	63.5	17.9	21.4

1995 DW ₂		$a, e, i = 24.92, 0.24, 4$				Elements <i>MPC</i> 29664		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		13 17.67	-06 39.9	18.500	18.961	116.6	2.7	22.0
1998 02 16		13 17.17	-06 35.5	18.355	18.963	126.8	2.4	22.0
1998 02 26		13 16.37	-06 29.4	18.228	18.965	137.1	2.0	21.9
1998 03 08		13 15.31	-06 21.8	18.123	18.967	147.4	1.6	21.9
1998 03 18		13 14.06	-06 13.2	18.045	18.969	157.7	1.1	21.8
1998 03 28		13 12.65	-06 03.7	17.994	18.972	168.0	0.6	21.8
1998 04 07		13 11.17	-05 53.9	17.973	18.974	177.8	0.1	21.7
1998 04 17		13 09.67	-05 44.2	17.983	18.976	171.3	0.5	21.8
1998 04 27		13 08.23	-05 34.9	18.022	18.978	161.2	1.0	21.8
1998 05 07		13 06.90	-05 26.5	18.090	18.980	151.2	1.5	21.9
1998 05 17		13 05.74	-05 19.3	18.183	18.982	141.2	1.9	21.9
1998 05 27		13 04.80	-05 13.5	18.300	18.984	131.4	2.3	22.0
1998 06 06		13 04.13	-05 09.5	18.435	18.987	121.6	2.6	22.0
1998 06 16		13 03.74	-05 07.3	18.586	18.989	111.9	2.8	22.0
1998 06 26		13 03.66	-05 07.0	18.747	18.991	102.4	3.0	22.1
1998 07 06		13 03.89	-05 08.7	18.915	18.993	92.9	3.1	22.1
1998 07 16		13 04.43	-05 12.4	19.083	18.996	83.5	3.0	22.1
1998 07 26		13 05.28	-05 17.9	19.249	18.998	74.2	2.9	22.1
1998 08 05		13 06.42	-05 25.2	19.407	19.000	65.0	2.8	22.1
1998 08 15		13 07.83	-05 34.0	19.554	19.003	55.8	2.5	22.1
1998 08 25		13 09.47	-05 44.2	19.686	19.005	46.6	2.2	22.1
1998 09 04		13 11.33	-05 55.5	19.799	19.008	37.4	1.8	22.1

1994 JF ₁		$a, e, i = 2.54, 0.48, 3$				Elements <i>MPC</i> 27447		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		13 29.00	-04 49.8	1.446	2.062	114.6	25.8	20.5
1998 02 16		13 37.66	-05 06.1	1.290	2.003	122.5	24.6	20.2
1998 02 26		13 44.33	-05 05.2	1.145	1.943	131.0	22.6	19.8
1998 03 08		13 48.49	-04 44.8	1.013	1.884	140.0	19.8	19.4
1998 03 18		13 49.73	-04 03.9	0.896	1.825	149.6	16.0	18.9
1998 03 28		13 47.69	-03 03.1	0.797	1.767	159.7	11.3	18.4
1998 04 07		13 42.43	-01 46.9	0.717	1.710	169.0	6.4	17.9
1998 04 17		13 34.67	-00 25.0	0.657	1.654	170.0	6.0	17.7
1998 04 27		13 25.77	+00 48.8	0.615	1.600	160.7	12.0	17.7
1998 05 07		13 17.71	+01 38.7	0.592	1.549	149.7	19.2	17.8
1998 05 17		13 12.47	+01 52.7	0.582	1.501	139.2	26.1	17.9
1998 05 27		13 11.42	+01 25.1	0.583	1.457	129.9	32.3	18.0
1998 06 06		13 15.36	+00 15.8	0.590	1.417	121.8	37.5	18.1
1998 06 16		13 24.39	-01 31.3	0.602	1.384	115.2	41.6	18.2
1998 06 26		13 38.30	-03 50.6	0.617	1.356	109.8	44.8	18.3
1998 07 06		13 56.80	-06 35.2	0.635	1.336	105.6	47.1	18.4
1998 07 16		14 19.49	-09 37.0	0.655	1.323	102.5	48.6	18.5
1998 07 26		14 46.00	-12 46.5	0.681	1.318	100.1	49.3	18.6
1998 08 05		15 15.95	-15 53.0	0.712	1.322	98.4	49.4	18.7
1998 08 15		15 48.77	-18 44.8	0.750	1.333	97.1	48.9	18.8
1998 08 25		16 23.81	-21 11.3	0.798	1.352	96.0	48.0	19.0
1998 09 04		17 00.28	-23 04.2	0.856	1.379	95.0	46.8	19.1
1998 09 14		17 37.20	-24 18.6	0.926	1.411	93.8	45.3	19.3
1998 09 24		18 13.74	-24 53.7	1.007	1.450	92.3	43.7	19.5
1998 10 04		18 49.18	-24 52.0	1.099	1.493	90.6	42.1	19.7
1998 10 14		19 22.98	-24 18.2	1.203	1.541	88.4	40.3	19.9

1998 10 24	19 54.91	-23 17.8	1.317	1.592	85.8	38.6	20.1
1998 11 03	20 24.90	-21 56.5	1.441	1.645	82.9	36.8	20.4
1998 11 13	20 53.00	-20 19.3	1.573	1.701	79.6	34.9	20.6
1998 11 23	21 19.37	-18 30.3	1.712	1.758	76.0	33.0	20.8
1998 12 03	21 44.21	-16 33.0	1.857	1.816	72.2	31.1	21.0
1998 12 13	22 07.68	-14 30.2	2.006	1.875	68.0	29.1	21.2
1998 12 23	22 30.00	-12 23.9	2.157	1.934	63.7	27.1	21.3

1991 CB ₁		$a, e, i = 1.69, 0.59, 15$				Elements <i>MPC</i> 31274	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 02 06	13 30.73	-24 21.5	1.120	1.689	106.5	34.0	20.3
1998 02 16	13 43.67	-28 38.8	0.957	1.609	111.6	34.8	19.9
1998 02 26	13 56.95	-33 47.8	0.804	1.524	116.0	35.7	19.4
1998 03 08	14 11.40	-40 12.3	0.663	1.437	119.0	37.2	18.9
1998 03 18	14 29.45	-48 29.2	0.539	1.345	119.6	40.0	18.4
1998 03 28	14 59.19	-59 29.2	0.433	1.251	116.2	45.7	17.9
1998 04 07	16 25.3	-73 21.6	0.353	1.154	107.0	56.0	17.6
1998 04 17	22 19.4	-76 13.7	0.306	1.056	91.4	71.8	17.6
1998 04 27	00 40.58	-55 49.5	0.302	0.959	72.4	90.1	18.0
1998 05 07	01 16.63	-34 26.6	0.342	0.867	56.3	104.6	18.7
1998 05 17	01 35.97	-17 06.1	0.417	0.785	46.6	110.8	19.3
1998 05 27	01 53.37	-03 43.9	0.521	0.722	42.6	108.1	19.4
1998 06 06	02 13.85	+06 41.4	0.647	0.688	42.0	99.0	19.3
1998 06 16	02 39.17	+14 54.5	0.783	0.689	42.6	87.0	19.2
1998 06 26	03 08.80	+21 19.9	0.919	0.726	43.7	75.3	19.3

1995 BL ₂		$a, e, i = 1.23, 0.50, 24$				Elements <i>MPC</i> 27937	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 02 06	13 34.73	-38 02.2	0.784	1.356	99.4	45.9	18.9
1998 02 16	14 02.62	-47 15.8	0.677	1.283	99.2	49.5	18.5
1998 02 26	14 47.49	-57 59.5	0.591	1.206	96.2	54.7	18.3
1998 03 08	16 22.35	-68 42.3	0.530	1.124	89.9	62.0	18.1
1998 03 18	19 44.3	-72 20.1	0.499	1.038	80.6	71.1	18.1
1998 03 28	22 23.56	-62 55.2	0.500	0.948	69.7	80.7	18.2
1998 04 07	23 29.90	-48 45.0	0.530	0.858	59.0	89.0	18.4

1992 SL		$a, e, i = 1.64, 0.33, 9$				Elements <i>MPC</i> 27567	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 02 06	13 35.64	-09 50.0	1.590	2.154	111.3	25.3	21.3
1998 02 16	13 37.38	-10 35.8	1.460	2.141	120.7	23.4	21.1
1998 02 26	13 35.65	-11 08.0	1.340	2.125	131.0	20.6	20.8
1998 03 08	13 30.00	-11 24.3	1.234	2.108	142.2	16.8	20.5
1998 03 18	13 20.34	-11 22.5	1.147	2.089	154.3	11.9	20.1
1998 03 28	13 07.13	-11 01.7	1.082	2.067	167.0	6.3	19.7
1998 04 07	12 51.61	-10 24.1	1.044	2.044	175.4	2.3	19.4
1998 04 17	12 35.72	-09 36.2	1.033	2.018	164.3	7.7	19.6
1998 04 27	12 21.49	-08 47.6	1.048	1.991	151.3	14.1	19.9
1998 05 07	12 10.53	-08 08.1	1.085	1.961	139.0	19.7	20.1
1998 05 17	12 03.68	-07 44.9	1.137	1.929	127.7	24.5	20.3
1998 05 27	12 01.06	-07 41.2	1.201	1.896	117.5	28.3	20.5
1998 06 06	12 02.42	-07 57.9	1.271	1.861	108.5	31.2	20.7
1998 06 16	12 07.29	-08 33.9	1.343	1.823	100.3	33.2	20.8
1998 06 26	12 15.22	-09 27.2	1.414	1.785	93.0	34.7	20.9
1998 07 06	12 25.83	-10 35.9	1.482	1.744	86.4	35.6	21.0

1998 07 16	12 38.78	-11 57.8	1.545	1.702	80.4	36.1	21.1
1998 07 26	12 53.87	-13 30.7	1.601	1.658	74.9	36.3	21.1
1998 08 05	13 10.99	-15 12.8	1.650	1.613	69.9	36.2	21.1
1998 08 15	13 30.05	-17 01.4	1.691	1.567	65.3	36.0	21.1
1998 08 25	13 51.11	-18 54.2	1.724	1.520	61.1	35.6	21.1

1996 EN		$a, e, i = 1.51, 0.43, 38$				Elements <i>MPC</i> 31278	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 02 06	13 57.27	-03 07.3	0.896	1.527	108.4	37.8	18.7
1998 02 16	14 22.36	+01 59.9	0.758	1.467	113.6	38.1	18.3
1998 02 26	14 51.02	+09 30.4	0.642	1.404	117.1	38.9	17.8
1998 03 08	15 25.05	+19 46.5	0.554	1.339	117.1	41.3	17.5
1998 03 18	16 07.29	+32 12.9	0.503	1.273	112.1	46.4	17.3
1998 03 28	17 01.41	+44 43.6	0.490	1.206	102.8	53.8	17.3
1998 04 07	18 10.33	+54 37.2	0.510	1.139	92.0	61.4	17.5
1998 04 17	19 31.68	+60 24.9	0.548	1.075	82.0	67.7	17.7
1998 04 27	20 54.27	+62 18.6	0.594	1.014	73.6	72.3	17.9
1998 05 07	22 06.57	+61 22.1	0.637	0.959	66.9	75.4	18.1
1998 05 17	23 05.92	+58 36.6	0.675	0.913	61.8	77.5	18.2

1993 BX ₃		$a, e, i = 1.40, 0.28, 3$				Elements <i>MPC</i> 22239	
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation	V
1998 02 06	14 37.03	-17 31.9	0.418	1.102	-2.94	+1.4	21.1
1998 02 16	14 56.06	-17 48.8	0.415	1.138	-3.34	+4.8	21.0
1998 02 26	15 09.85	-17 35.9	0.407	1.177	-3.91	+8.8	20.9
1998 03 08	15 17.40	-16 52.8	0.396	1.218	-4.65	+13.6	20.7
1998 03 18	15 17.95	-15 39.4	0.385	1.260	-5.53	+19.5	20.5
1998 03 28	15 11.09	-13 56.8	0.378	1.303	-6.43	+25.9	20.3
1998 04 07	14 57.56	-11 51.0	0.379	1.345	-7.15	+31.7	20.1
1998 04 17	14 39.93	-09 37.1	0.393	1.387	-7.41	+35.0	19.9
1998 04 27	14 21.74	-07 36.4	0.423	1.427	-7.12	+34.7	19.8
1998 05 07	14 06.49	-06 08.2	0.470	1.467	-6.41	+31.4	20.4
1998 05 17	13 56.20	-05 20.7	0.533	1.504	-5.53	+26.8	21.0
1998 05 27	13 51.22	-05 11.7	0.610	1.539	-4.67	+22.2	21.5
1998 06 06	13 51.14	-05 34.5	0.698	1.573	-3.92	+18.3	22.0

1994 VR ₆		$a, e, i = 2.74, 0.43, 30$				Elements <i>MPC</i> 29663	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 02 06	15 37.85	-08 52.3	2.828	2.876	82.8	19.9	19.0
1998 02 16	15 45.57	-09 42.5	2.643	2.834	90.8	20.4	18.9
1998 02 26	15 51.82	-10 30.8	2.459	2.791	99.0	20.5	18.7
1998 03 08	15 56.23	-11 18.3	2.277	2.747	107.7	20.1	18.5
1998 03 18	15 58.43	-12 06.7	2.102	2.703	116.9	19.2	18.2
1998 03 28	15 58.00	-12 57.7	1.938	2.657	126.7	17.5	18.0
1998 04 07	15 54.52	-13 52.8	1.787	2.612	137.2	15.1	17.7
1998 04 17	15 47.73	-14 53.4	1.656	2.565	148.4	11.8	17.4
1998 04 27	15 37.59	-15 59.6	1.547	2.518	160.4	7.7	17.0
1998 05 07	15 24.49	-17 10.3	1.466	2.470	173.0	2.9	16.6
1998 05 17	15 09.43	-18 23.5	1.414	2.422	174.0	2.5	16.4
1998 05 27	14 53.82	-19 36.9	1.393	2.374	161.0	8.0	16.7
1998 06 06	14 39.30	-20 49.4	1.400	2.325	148.4	13.2	16.8
1998 06 16	14 27.29	-22 01.8	1.430	2.276	136.4	17.9	17.0
1998 06 26	14 18.68	-23 15.9	1.479	2.227	125.4	21.8	17.1
1998 07 06	14 13.92	-24 34.2	1.541	2.179	115.3	25.0	17.3

M.P.C. 31302

1998 FEB. 11

1998 07 16	14 12.99	-25 58.4	1.610	2.130	106.1	27.3	17.4
1998 07 26	14 15.72	-27 29.4	1.683	2.081	97.8	28.9	17.5
1998 08 05	14 21.87	-29 07.5	1.756	2.033	90.4	29.9	17.6
1998 08 15	14 31.18	-30 51.9	1.826	1.986	83.6	30.4	17.6
1998 08 25	14 43.50	-32 41.6	1.890	1.940	77.4	30.6	17.6
1998 09 04	14 58.75	-34 34.7	1.949	1.895	71.8	30.4	17.6
1998 09 14	15 16.90	-36 28.8	2.001	1.851	66.8	30.0	17.6
1998 09 24	15 38.02	-38 20.9	2.045	1.810	62.2	29.4	17.6

1994 JS		$a, e, i = 42.29, 0.22, 14$				Elements <i>MPC</i> 30092		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		16 08.46	−22 37.1	35.645	35.363	72.6	1.5	23.7
1998 02 16		16 08.92	−22 39.5	35.472	35.359	82.6	1.6	23.7
1998 02 26		16 09.18	−22 41.4	35.295	35.354	92.6	1.6	23.7
1998 03 08		16 09.23	−22 42.7	35.119	35.349	102.6	1.6	23.7
1998 03 18		16 09.08	−22 43.5	34.950	35.345	112.6	1.5	23.7
1998 03 28		16 08.73	−22 43.8	34.792	35.340	122.6	1.4	23.6
1998 04 07		16 08.20	−22 43.6	34.650	35.336	132.6	1.2	23.6
1998 04 17		16 07.52	−22 43.0	34.529	35.331	142.6	1.0	23.6
1998 04 27		16 06.71	−22 41.8	34.431	35.327	152.5	0.8	23.6
1998 05 07		16 05.80	−22 40.4	34.359	35.322	162.4	0.5	23.5
1998 05 17		16 04.82	−22 38.7	34.315	35.317	172.1	0.2	23.5
1998 05 27		16 03.82	−22 36.7	34.301	35.313	177.1	0.1	23.4
1998 06 06		16 02.83	−22 34.7	34.316	35.308	167.9	0.3	23.5
1998 06 16		16 01.88	−22 32.7	34.359	35.304	158.1	0.6	23.5
1998 06 26		16 01.02	−22 30.8	34.429	35.299	148.4	0.9	23.6
1998 07 06		16 00.26	−22 29.1	34.524	35.295	138.7	1.1	23.6
1998 07 16		15 59.65	−22 27.7	34.641	35.290	129.1	1.3	23.6
1998 07 26		15 59.19	−22 26.7	34.776	35.285	119.4	1.4	23.6
1998 08 05		15 58.91	−22 26.2	34.925	35.281	109.8	1.6	23.7
1998 08 15		15 58.82	−22 26.2	35.083	35.276	100.2	1.6	23.7
1998 08 25		15 58.93	−22 26.7	35.247	35.272	90.6	1.6	23.7
1998 09 04		15 59.23	−22 27.7	35.411	35.267	81.0	1.6	23.7
1998 09 14		15 59.73	−22 29.3	35.571	35.263	71.4	1.5	23.7
1998 09 24		16 00.41	−22 31.5	35.721	35.258	61.8	1.4	23.7
1998 10 04		16 01.26	−22 34.1	35.858	35.254	52.2	1.3	23.7
1998 10 14		16 02.26	−22 37.2	35.977	35.249	42.6	1.1	23.7
1998 10 24		16 03.39	−22 40.7	36.076	35.245	32.9	0.9	23.7

1993 BW ₂		$a, e, i = 1.34, 0.31, 22$				Elements <i>MPC</i> 27326		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		16 13.24	+02 11.5	1.586	1.674	77.3	35.1	21.1
1998 02 16		16 31.01	+03 06.8	1.510	1.693	82.5	35.3	21.0
1998 02 26		16 47.02	+04 20.2	1.430	1.709	87.9	35.4	20.9
1998 03 08		17 00.92	+05 51.0	1.347	1.722	93.5	35.1	20.8
1998 03 18		17 12.34	+07 37.9	1.264	1.732	99.4	34.5	20.6
1998 03 28		17 20.81	+09 38.9	1.180	1.739	105.6	33.6	20.5
1998 04 07		17 25.73	+11 50.2	1.100	1.743	112.0	32.2	20.3
1998 04 17		17 26.54	+14 05.4	1.024	1.744	118.6	30.3	20.1
1998 04 27		17 22.60	+16 15.0	0.955	1.742	125.2	28.2	19.9
1998 05 07		17 13.55	+18 04.7	0.897	1.737	131.3	25.9	19.6
1998 05 17		16 59.63	+19 16.1	0.852	1.729	136.2	23.9	19.5
1998 05 27		16 41.94	+19 30.9	0.822	1.719	138.7	22.9	19.3
1998 06 06		16 22.64	+18 35.8	0.810	1.705	138.0	23.5	19.3

1998 06 16	16 04.40	+16 30.7	0.815	1.688	134.2	25.6	19.4
1998 06 26	15 49.43	+13 27.8	0.836	1.668	128.2	28.6	19.5
1998 07 06	15 39.13	+09 45.7	0.871	1.646	121.1	31.9	19.6
1998 07 16	15 33.82	+05 43.4	0.917	1.620	113.7	35.0	19.8
1998 07 26	15 33.27	+01 34.6	0.970	1.592	106.5	37.7	20.0
1998 08 05	15 37.04	-02 31.9	1.027	1.561	99.7	39.8	20.1
1998 08 15	15 44.58	-06 30.8	1.086	1.527	93.3	41.5	20.2
1998 08 25	15 55.48	-10 19.5	1.143	1.490	87.3	42.7	20.3
1998 09 04	16 09.44	-13 56.6	1.198	1.451	81.8	43.5	20.4
1998 09 14	16 26.24	-17 20.8	1.247	1.410	76.6	44.0	20.4
1998 09 24	16 45.79	-20 31.1	1.291	1.367	71.9	44.2	20.4
1998 10 04	17 08.07	-23 25.9	1.327	1.321	67.5	44.4	20.4
1998 10 14	17 33.08	-26 02.9	1.355	1.275	63.5	44.5	20.4

(7358) 1995 YA ₃			<i>a, e, i</i> = 2.20, 0.50, 5			Elements <i>MPC</i> 28577		
Date	TT	α_{2000}	δ_{2000}	Δ	<i>r</i>	ϵ	ϕ	<i>V</i>
1998 02 06		16 23.79	−24 27.0	2.637	2.460	68.9	22.0	19.5
1998 02 16		16 39.29	−24 59.5	2.460	2.408	75.4	23.4	19.4
1998 02 26		16 54.36	−25 25.7	2.279	2.355	82.0	24.6	19.2
1998 03 08		17 08.80	−25 45.6	2.097	2.301	88.8	25.5	19.0
1998 03 18		17 22.40	−25 59.5	1.916	2.245	95.7	26.2	18.8
1998 03 28		17 34.91	−26 07.5	1.738	2.187	102.8	26.4	18.5
1998 04 07		17 45.97	−26 10.2	1.564	2.128	110.1	26.2	18.2
1998 04 17		17 55.22	−26 07.8	1.398	2.067	117.9	25.4	17.9
1998 04 27		18 02.15	−26 00.8	1.240	2.005	126.0	24.0	17.5
1998 05 07		18 06.18	−25 48.8	1.093	1.941	134.8	21.6	17.1
1998 05 17		18 06.71	−25 31.2	0.960	1.876	144.4	18.3	16.6
1998 05 27		18 03.11	−25 05.9	0.842	1.811	154.8	13.8	16.1
1998 06 06		17 55.06	−24 29.5	0.742	1.744	166.2	8.0	15.5
1998 06 16		17 42.88	−23 38.0	0.661	1.677	178.6	0.9	14.8
1998 06 26		17 27.82	−22 28.8	0.601	1.610	168.3	7.4	14.9
1998 07 06		17 12.25	−21 04.3	0.560	1.543	155.0	16.2	15.0
1998 07 16		16 58.98	−19 33.2	0.536	1.477	142.2	25.0	15.0
1998 07 26		16 50.33	−18 06.2	0.523	1.412	130.4	33.2	15.1
1998 08 05		16 47.76	−16 52.1	0.517	1.350	120.1	40.6	15.2
1998 08 15		16 51.66	−15 53.4	0.513	1.291	111.3	46.9	15.3
1998 08 25		17 01.93	−15 07.9	0.509	1.237	104.1	52.4	15.3
1998 09 04		17 18.38	−14 30.1	0.501	1.190	98.4	57.0	15.3
1998 09 14		17 40.72	−13 52.0	0.490	1.151	94.2	60.7	15.3
1998 09 24		18 08.89	−13 05.2	0.476	1.121	91.4	63.5	15.3
1998 10 04		18 42.96	−12 00.3	0.461	1.102	90.1	65.2	15.2
1998 10 14		19 22.81	−10 28.1	0.447	1.095	90.3	65.6	15.2
1998 10 24		20 08.11	−08 21.4	0.439	1.101	91.9	64.6	15.1
1998 11 03		20 57.69	−05 38.5	0.440	1.118	94.7	62.2	15.1
1998 11 13		21 49.33	−02 27.5	0.456	1.147	98.1	58.7	15.1
1998 11 23		22 40.39	+00 55.2	0.489	1.185	101.3	54.8	15.2
1998 12 03		23 28.56	+04 12.0	0.540	1.232	103.7	51.0	15.4
1998 12 13		00 12.46	+07 10.5	0.610	1.285	104.9	47.8	15.7
1998 12 23		00 51.89	+09 46.4	0.697	1.343	104.7	45.1	16.0
1999 01 02		01 27.30	+12 01.0	0.800	1.405	103.5	42.9	16.3
1999 01 12		01 59.35	+13 56.4	0.915	1.469	101.3	41.0	16.7
1999 01 22		02 28.79	+15 35.7	1.043	1.535	98.4	39.4	17.0
1999 02 01		02 56.23	+17 01.0	1.182	1.602	94.9	37.8	17.3

1995 YV₃ $a, e, i = 2.79, 0.44, 30$ Elements *MPC* 29665

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		16 41.44	+04 16.7	4.129	3.924	71.2	13.8	20.8
1998 02 16		16 48.36	+04 47.0	3.983	3.911	78.7	14.3	20.8
1998 02 26		16 54.13	+05 25.7	3.834	3.897	86.3	14.7	20.7
1998 03 08		16 58.56	+06 11.8	3.683	3.883	94.1	14.8	20.6
1998 03 18		17 01.46	+07 04.0	3.534	3.867	102.1	14.6	20.5
1998 03 28		17 02.68	+08 00.5	3.390	3.851	110.2	14.1	20.4
1998 04 07		17 02.06	+08 58.8	3.256	3.834	118.3	13.3	20.3
1998 04 17		16 59.55	+09 55.6	3.135	3.816	126.3	12.2	20.1
1998 04 27		16 55.17	+10 47.3	3.031	3.797	133.8	11.0	20.0
1998 05 07		16 49.07	+11 29.4	2.947	3.778	140.2	9.8	19.9
1998 05 17		16 41.60	+11 57.8	2.887	3.757	144.7	9.0	19.8
1998 05 27		16 33.21	+12 09.0	2.851	3.736	146.3	8.7	19.7
1998 06 06		16 24.51	+12 00.5	2.841	3.714	144.6	9.1	19.7
1998 06 16		16 16.13	+11 32.0	2.855	3.691	139.9	10.2	19.8
1998 06 26		16 08.65	+10 44.5	2.894	3.667	133.4	11.6	19.8
1998 07 06		16 02.56	+09 40.7	2.953	3.643	125.8	13.1	19.9
1998 07 16		15 58.15	+08 23.8	3.029	3.617	117.8	14.4	20.0
1998 07 26		15 55.59	+06 57.4	3.119	3.591	109.7	15.4	20.1
1998 08 05		15 54.93	+05 24.8	3.219	3.564	101.5	16.2	20.2
1998 08 15		15 56.11	+03 48.9	3.325	3.536	93.6	16.6	20.2
1998 08 25		15 59.02	+02 11.8	3.433	3.507	85.8	16.7	20.3
1998 09 04		16 03.55	+00 35.6	3.541	3.477	78.2	16.5	20.3
1998 09 14		16 09.53	-00 58.4	3.645	3.446	70.7	16.0	20.4
1998 09 24		16 16.83	-02 29.2	3.742	3.415	63.5	15.2	20.4

1994 JR₁ $a, e, i = 39.43, 0.12, 4$ Elements *MPC* 30291

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 06		16 44.21	-18 38.9	35.163	34.758	65.0	1.5	23.1
1998 02 16		16 44.85	-18 39.2	35.002	34.758	75.0	1.6	23.1
1998 02 26		16 45.29	-18 39.0	34.832	34.759	84.9	1.6	23.1
1998 03 08		16 45.54	-18 38.4	34.660	34.759	94.9	1.6	23.1
1998 03 18		16 45.57	-18 37.4	34.491	34.759	104.8	1.6	23.1
1998 03 28		16 45.41	-18 36.1	34.329	34.759	114.8	1.5	23.1
1998 04 07		16 45.05	-18 34.5	34.180	34.759	124.7	1.4	23.1
1998 04 17		16 44.52	-18 32.7	34.047	34.759	134.6	1.2	23.0
1998 04 27		16 43.84	-18 30.8	33.936	34.759	144.5	1.0	23.0
1998 05 07		16 43.03	-18 28.7	33.848	34.760	154.3	0.7	23.0
1998 05 17		16 42.13	-18 26.7	33.787	34.760	164.0	0.5	22.9
1998 05 27		16 41.17	-18 24.6	33.754	34.760	173.1	0.2	22.9
1998 06 06		16 40.18	-18 22.8	33.750	34.760	174.5	0.2	22.9
1998 06 16		16 39.22	-18 21.1	33.775	34.760	165.6	0.4	22.9
1998 06 26		16 38.30	-18 19.7	33.829	34.760	156.1	0.7	23.0
1998 07 06		16 37.46	-18 18.6	33.909	34.760	146.4	0.9	23.0
1998 07 16		16 36.74	-18 17.9	34.013	34.761	136.8	1.1	23.0
1998 07 26		16 36.15	-18 17.6	34.138	34.761	127.2	1.3	23.1
1998 08 05		16 35.73	-18 17.7	34.281	34.761	117.5	1.5	23.1
1998 08 15		16 35.49	-18 18.3	34.436	34.761	107.9	1.6	23.1
1998 08 25		16 35.44	-18 19.3	34.601	34.761	98.3	1.6	23.1
1998 09 04		16 35.58	-18 20.7	34.770	34.762	88.7	1.7	23.1
1998 09 14		16 35.93	-18 22.6	34.938	34.762	79.1	1.6	23.1
1998 09 24		16 36.46	-18 24.7	35.101	34.762	69.5	1.5	23.1

1998 10 04	16 37.18	-18 27.2	35.254	34.762	59.8	1.4	23.1
1998 10 14	16 38.06	-18 29.9	35.392	34.762	50.2	1.3	23.1
1998 10 24	16 39.10	-18 32.7	35.512	34.762	40.6	1.1	23.1
1998 11 03	16 40.25	-18 35.7	35.610	34.763	30.9	0.8	23.1

(7822) 1991 CS $a, e, i = 1.12, 0.16, 37$ Elements *MPC* 30437

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 16		02 10.65	-23 47.4	0.947	0.979	60.8	61.7	19.4
1998 02 26		02 53.65	-17 30.6	0.917	1.000	63.1	62.0	19.4
1998 03 08		03 35.87	-10 19.9	0.902	1.024	65.2	61.7	19.4
1998 03 18		04 17.35	-02 42.8	0.905	1.049	66.9	60.7	19.5
1998 03 28		04 58.15	+04 46.9	0.928	1.076	67.8	59.2	19.5
1998 04 07		05 38.34	+11 37.5	0.970	1.103	68.1	57.3	19.6
1998 04 17		06 17.85	+17 27.4	1.027	1.130	67.6	55.2	19.7
1998 04 27		06 56.59	+22 07.9	1.097	1.156	66.5	53.0	19.9
1998 05 07		07 34.48	+25 39.4	1.173	1.181	65.0	50.8	20.0
1998 05 17		08 11.34	+28 07.7	1.253	1.204	63.2	48.6	20.1
1998 05 27		08 47.10	+29 40.6	1.331	1.225	61.3	46.5	20.2

1993 OZ₂ $a, e, i = 2.99, 0.44, 22$ Elements *MPC* 29662

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 02 26		18 28.43	-10 48.8	3.157	2.811	60.8	17.9	20.2
1998 03 08		18 42.00	-10 39.6	2.993	2.765	67.3	19.3	20.1
1998 03 18		18 54.98	-10 26.6	2.823	2.719	73.8	20.6	19.9
1998 03 28		19 07.24	-10 11.1	2.650	2.672	80.4	21.6	19.8
1998 04 07		19 18.59	-09 54.8	2.475	2.625	87.3	22.4	19.6
1998 04 17		19 28.86	-09 39.9	2.300	2.577	94.3	22.8	19.5
1998 04 27		19 37.85	-09 28.9	2.127	2.530	101.6	22.9	19.2
1998 05 07		19 45.28	-09 25.2	1.958	2.482	109.3	22.6	19.0
1998 05 17		19 50.89	-09 32.5	1.796	2.434	117.5	21.6	18.8
1998 05 27		19 54.37	-09 55.3	1.643	2.386	126.1	20.1	18.5
1998 06 06		19 55.37	-10 38.6	1.503	2.338	135.5	17.7	18.2
1998 06 16		19 53.68	-11 47.0	1.379	2.290	145.5	14.5	17.8
1998 06 26		19 49.16	-13 23.9	1.274	2.242	156.3	10.5	17.4
1998 07 06		19 42.01	-15 29.7	1.191	2.196	167.7	5.7	17.0
1998 07 16		19 32.89	-18 00.0	1.134	2.149	176.1	1.8	16.7
1998 07 26		19 22.88	-20 45.4	1.103	2.104	166.4	6.5	16.8
1998 08 05		19 13.53	-23 33.4	1.097	2.059	154.4	12.3	17.0
1998 08 15		19 06.36	-26 12.2	1.115	2.016	142.7	17.7	17.2
1998 08 25		19 02.58	-28 34.0	1.150	1.974	131.9	22.4	17.4
1998 09 04		19 03.00	-30 34.7	1.200	1.934	122.0	26.2	17.5
1998 09 14		19 07.83	-32 13.5	1.260	1.896	113.1	29.2	17.7
1998 09 24		19 16.99	-33 30.1	1.326	1.861	105.2	31.4	17.8
1998 10 04		19 30.17	-34 24.6	1.395	1.828	98.1	32.8	17.9
1998 10 14		19 46.87	-34 56.6	1.465	1.797	91.8	33.7	18.0
1998 10 24		20 06.59	-35 05.3	1.534	1.770	86.1	34.1	18.1
1998 11 03		20 28.78	-34 49.7	1.603	1.747	80.9	34.1	18.2
1998 11 13		20 52.87	-34 09.3	1.670	1.727	76.3	33.8	18.2
1998 11 23		21 18.33	-33 03.7	1.735	1.711	72.0	33.3	18.3
1998 12 03		21 44.69	-31 33.5	1.799	1.700	68.2	32.6	18.3
1998 12 13		22 11.49	-29 40.0	1.863	1.693	64.6	31.7	18.3
1998 12 23		22 38.41	-27 25.2	1.926	1.690	61.3	30.7	18.4

1995 WQ ₅		$a, e, i = 2.35, 0.41, 21$				Elements <i>MPC</i> 28303		
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation	V	
1998 03 08		16 36.08	-06 01.2	2.651	2.967	-0.66	+5.2	22.0
1998 03 18		16 40.18	-05 46.2	2.486	2.938	-0.71	+5.6	21.8
1998 03 28		16 42.14	-05 27.0	2.327	2.908	-0.77	+6.0	21.6
1998 04 07		16 41.68	-05 05.4	2.177	2.877	-0.83	+6.4	21.4
1998 04 17		16 38.58	-04 43.9	2.042	2.845	-0.90	+6.8	21.1
1998 04 27		16 32.76	-04 25.4	1.925	2.811	-0.95	+7.1	20.9
1998 05 07		16 24.36	-04 13.7	1.830	2.777	-1.00	+7.5	20.6
1998 05 17		16 13.89	-04 12.3	1.761	2.741	-1.02	+7.8	20.4
1998 05 27		16 02.13	-04 24.5	1.719	2.704	-1.02	+8.0	20.3
1998 06 06		15 50.17	-04 52.3	1.706	2.666	-0.99	+8.1	20.4
1998 06 16		15 39.14	-05 36.0	1.719	2.627	-0.94	+8.1	20.5
1998 06 26		15 29.98	-06 34.5	1.756	2.587	-0.87	+8.1	20.6
1998 07 06		15 23.36	-07 45.7	1.812	2.546	-0.81	+8.0	20.8
1998 07 16		15 19.61	-09 07.0	1.882	2.503	-0.75	+8.0	20.9
1998 07 26		15 18.80	-10 36.0	1.961	2.460	-0.69	+7.9	21.0
1998 08 05		15 20.83	-12 10.5	2.047	2.415	-0.66	+7.8	21.1
1998 08 15		15 25.51	-13 48.7	2.133	2.370	-0.63	+7.7	21.2
1998 08 25		15 32.64	-15 29.0	2.219	2.324	-0.62	+7.7	21.2
1998 09 04		15 42.04	-17 10.0	2.301	2.277	-0.62	+7.6	21.3
1998 09 14		15 53.52	-18 50.3	2.377	2.229	-0.63	+7.5	21.3
1998 09 24		16 06.98	-20 28.5	2.445	2.180	-0.65	+7.4	21.3

116P/Wild 4		Elements <i>MPC</i> 30064							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 03 28		22 29.60	-12 11.2	4.707	3.904	32.6	7.9	20.4	
1998 04 07		22 39.32	-11 15.4	4.649	3.934	39.9	9.4	20.4	
1998 04 17		22 48.39	-10 22.7	4.575	3.964	47.3	10.7	20.5	
1998 04 27		22 56.75	-09 33.9	4.487	3.993	54.9	11.9	20.5	
1998 05 07		23 04.30	-08 50.0	4.386	4.021	62.5	12.9	20.5	
1998 05 17		23 10.94	-08 11.7	4.275	4.050	70.4	13.6	20.5	
1998 05 27		23 16.57	-07 39.8	4.156	4.077	78.5	14.1	20.4	
1998 06 06		23 21.06	-07 15.3	4.031	4.104	86.9	14.3	20.4	
1998 06 16		23 24.30	-06 58.9	3.905	4.131	95.6	14.2	20.3	
1998 06 26		23 26.18	-06 51.2	3.781	4.157	104.7	13.7	20.3	
1998 07 06		23 26.60	-06 52.8	3.662	4.182	114.1	12.8	20.2	
1998 07 16		23 25.49	-07 03.6	3.554	4.207	124.0	11.6	20.1	
1998 07 26		23 22.87	-07 23.5	3.460	4.231	134.2	9.9	20.0	
1998 08 05		23 18.80	-07 51.3	3.385	4.255	144.8	7.9	19.9	
1998 08 15		23 13.51	-08 25.3	3.334	4.278	155.8	5.6	19.7	
1998 08 25		23 07.29	-09 03.0	3.310	4.301	166.9	3.1	19.6	
1998 09 04		23 00.57	-09 41.6	3.316	4.323	176.7	0.8	19.4	
1998 09 14		22 53.83	-10 18.0	3.352	4.345	169.4	2.4	19.6	
1998 09 24		22 47.55	-10 49.5	3.418	4.366	158.2	4.9	19.8	
1998 10 04		22 42.16	-11 13.9	3.513	4.386	147.1	7.1	20.0	
1998 10 14		22 38.00	-11 30.0	3.632	4.406	136.2	9.0	20.1	
1998 10 24		22 35.26	-11 37.0	3.772	4.426	125.7	10.5	20.3	
1998 11 03		22 34.03	-11 35.1	3.928	4.445	115.4	11.6	20.4	
1998 11 13		22 34.32	-11 24.6	4.096	4.463	105.5	12.3	20.5	
1998 11 23		22 36.03	-11 06.0	4.270	4.481	96.0	12.7	20.7	
1998 12 03		22 39.05	-10 40.2	4.447	4.499	86.7	12.6	20.8	
1998 12 13		22 43.24	-10 08.0	4.622	4.516	77.7	12.3	20.8	

1998 12 23	22 48.44	-09 30.0	4.792	4.532	68.9	11.7	20.9
1999 01 02	22 54.51	-08 47.0	4.952	4.548	60.4	10.8	20.9
1999 01 12	23 01.29	-07 59.7	5.101	4.563	52.1	9.8	21.0
1999 01 22	23 08.66	-07 08.8	5.236	4.578	43.9	8.6	21.0
1999 02 01	23 16.50	-06 15.0	5.354	4.592	35.9	7.2	21.0

31P/Schwassmann-Wachmann 2		Elements <i>MPC</i> 18256							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 03 28		22 34.01	-11 13.4	5.868	5.041	31.2	5.9	22.3	
1998 04 07		22 41.89	-10 31.8	5.776	5.038	39.0	7.2	22.3	
1998 04 17		22 49.33	-09 52.7	5.667	5.035	46.9	8.4	22.4	
1998 04 27		22 56.25	-09 16.7	5.543	5.031	54.8	9.4	22.3	
1998 05 07		23 02.56	-08 44.7	5.406	5.027	62.9	10.3	22.3	
1998 05 17		23 08.16	-08 17.3	5.259	5.023	71.1	11.0	22.3	
1998 05 27		23 12.96	-07 55.4	5.104	5.019	79.5	11.4	22.2	
1998 06 06		23 16.85	-07 39.7	4.945	5.014	88.1	11.7	22.2	
1998 06 16		23 19.74	-07 30.7	4.784	5.009	96.9	11.6	22.1	
1998 06 26		23 21.53	-07 29.2	4.627	5.003	106.0	11.3	22.0	
1998 07 06		23 22.14	-07 35.5	4.476	4.998	115.4	10.6	21.9	
1998 07 16		23 21.53	-07 49.6	4.337	4.992	125.1	9.6	21.8	
1998 07 26		23 19.69	-08 11.2	4.213	4.986	135.2	8.3	21.7	
1998 08 05		23 16.67	-08 39.6	4.109	4.979	145.6	6.6	21.6	
1998 08 15		23 12.64	-09 13.3	4.029	4.973	156.2	4.7	21.4	
1998 08 25		23 07.81	-09 50.3	3.976	4.966	166.9	2.7	21.3	
1998 09 04		23 02.48	-10 28.4	3.952	4.958	175.8	0.9	21.1	
1998 09 14		22 57.02	-11 04.8	3.958	4.951	169.4	2.1	21.2	
1998 09 24		22 51.83	-11 37.3	3.995	4.943	158.7	4.2	21.4	
1998 10 04		22 47.26	-12 03.8	4.060	4.935	147.8	6.2	21.5	
1998 10 14		22 43.62	-12 22.9	4.149	4.927	137.1	7.9	21.6	
1998 10 24		22 41.14	-12 33.7	4.260	4.918	126.6	9.3	21.7	
1998 11 03		22 39.95	-12 36.0	4.388	4.910	116.3	10.4	21.8	
1998 11 13		22 40.09	-12 30.0	4.528	4.901	106.4	11.2	21.9	
1998 11 23		22 41.54	-12 16.0	4.676	4.891	96.8	11.6	22.0	
1998 12 03		22 44.24	-11 54.7	4.826	4.882	87.4	11.6	22.1	
1998 12 13		22 48.08	-11 26.8	4.975	4.872	78.3	11.4	22.1	
1998 12 23		22 52.95	-10 52.8	5.119	4.862	69.5	10.9	22.2	
1999 01 02		22 58.71	-10 13.7	5.254	4.852	60.9	10.2	22.2	
1999 01 12		23 05.24	-09 30.1	5.378	4.842	52.5	9.3	22.2	
1999 01 22		23 12.42	-08 42.5	5.487	4.831	44.2	8.2	22.2	
1999 02 01		23 20.13	-07 51.9	5.580	4.820	36.2	6.9	22.2	

124P/Mrkos		Elements <i>MPC</i> 25932							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 03 28		22 59.63	-22 32.8	4.752	3.953	33.0	7.9	21.4	22.4
1998 04 07		23 08.87	-21 32.9	4.709	3.991	39.7	9.2	21.4	22.5
1998 04 17		23 17.48	-20 39.0	4.650	4.028	46.7	10.4	21.4	22.5
1998 04 27		23 25.36	-19 51.7	4.575	4.065	53.9	11.5	21.4	22.6
1998 05 07		23 32.43	-19 11.8	4.486	4.100	61.4	12.5	21.4	22.6
1998 05 17		23 38.58	-18 39.8	4.385	4.135	69.2	13.2	21.3	22.6
1998 05 27		23 43.70	-18 16.2	4.275	4.169	77.2	13.7	21.3	22.5
1998 06 06		23 47.66	-18 01.6	4.159	4.202	85.5	13.9	21.3	22.5
1998 06 16		23 50.32	-17 56.2	4.040	4.235	94.1	13.8	21.2	22.5
1998 06 26		23 51.56	-18 00.2	3.921	4.266	103.0	13.4	21.2	22.4
1998 07 06		23 51.25	-18 13.1	3.808	4.297	112.3	12.6	21.2	22.3

1998 07 16	23 49.30	−18 34.1	3.703	4.327	121.9	11.5	21.1	22.2
1998 07 26	23 45.68	−19 01.6	3.614	4.357	131.8	10.0	21.1	22.1
1998 08 05	23 40.43	−19 33.3	3.543	4.385	141.8	8.2	21.1	22.0
1998 08 15	23 33.77	−20 06.3	3.495	4.413	151.6	6.3	21.1	21.9
1998 08 25	23 25.97	−20 37.0	3.475	4.440	160.3	4.4	21.1	21.8
1998 09 04	23 17.50	−21 02.1	3.485	4.466	164.9	3.4	21.1	21.8
1998 09 14	23 08.89	−21 18.6	3.526	4.492	161.7	4.0	21.1	21.9
1998 09 24	23 00.67	−21 24.8	3.597	4.517	153.5	5.7	21.2	22.0
1998 10 04	22 53.36	−21 19.6	3.696	4.541	143.7	7.5	21.3	22.2
1998 10 14	22 47.32	−21 03.5	3.821	4.564	133.4	9.1	21.4	22.3
1998 10 24	22 42.80	−20 37.4	3.966	4.587	123.2	10.5	21.5	22.5

17P/Holmes			Elements MPC 29881					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 04 07		13 14.46	−30 31.8	3.641	4.574	156.0	5.1	22.5
1998 04 17		13 06.86	−30 09.2	3.599	4.549	158.8	4.6	22.5
1998 04 27		12 59.51	−29 35.3	3.586	4.524	156.1	5.2	22.5
1998 05 07		12 52.93	−28 53.3	3.601	4.499	149.4	6.6	22.5

26P/Grigg-Skjellerup			Elements MPC 23483					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 04 07		22 58.19	+07 53.5	3.426	2.618	30.9	11.3	22.0
1998 04 17		23 11.27	+09 22.0	3.431	2.691	36.5	12.8	22.1
1998 04 27		23 23.36	+10 47.6	3.421	2.763	42.5	14.2	22.2
1998 05 07		23 34.41	+12 09.6	3.395	2.833	48.7	15.5	22.3
1998 05 17		23 44.35	+13 27.4	3.356	2.901	55.3	16.6	22.3
1998 05 27		23 53.11	+14 40.2	3.304	2.968	62.1	17.6	22.4
1998 06 06		00 00.54	+15 47.1	3.240	3.034	69.3	18.2	22.4
1998 06 16		00 06.53	+16 47.2	3.167	3.098	76.8	18.6	22.4
1998 06 26		00 10.92	+17 39.1	3.087	3.161	84.8	18.7	22.4
1998 07 06		00 13.55	+18 21.3	3.003	3.222	93.1	18.4	22.4
1998 07 16		00 14.28	+18 52.0	2.918	3.282	101.9	17.6	22.3
1998 07 26		00 13.01	+19 09.2	2.837	3.340	111.1	16.5	22.3
1998 08 05		00 09.70	+19 10.6	2.764	3.398	120.9	14.9	22.2
1998 08 15		00 04.48	+18 54.4	2.704	3.453	131.0	12.8	22.1
1998 08 25		23 57.60	+18 19.2	2.662	3.508	141.3	10.4	22.0
1998 09 04		23 49.53	+17 25.3	2.643	3.561	151.3	7.8	21.9
1998 09 14		23 40.89	+16 14.9	2.652	3.614	159.9	5.5	21.9
1998 09 24		23 32.35	+14 52.1	2.691	3.664	163.6	4.4	21.9
1998 10 04		23 24.59	+13 22.5	2.761	3.714	159.5	5.4	22.0
1998 10 14		23 18.13	+11 52.4	2.860	3.763	150.8	7.4	22.2
1998 10 24		23 13.32	+10 27.3	2.987	3.810	140.8	9.5	22.4

130P/McNaught-Hughes			Elements MPC 29881					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 04 07		23 10.68	−10 20.3	2.913	2.140	32.7	14.6	17.3 21.3
1998 04 17		23 31.26	−08 27.5	2.867	2.152	37.0	16.3	17.3 21.3
1998 04 27		23 51.23	−06 36.4	2.816	2.167	41.5	17.9	17.3 21.4
1998 05 07		00 10.55	−04 48.7	2.760	2.184	46.0	19.4	17.3 21.4
1998 05 17		00 29.19	−03 06.0	2.700	2.203	50.7	20.8	17.3 21.4
1998 05 27		00 47.10	−01 29.5	2.635	2.225	55.5	22.1	17.3 21.4
1998 06 06		01 04.21	−00 00.7	2.566	2.248	60.6	23.1	17.3 21.4
1998 06 16		01 20.42	+01 19.5	2.492	2.273	65.8	24.1	17.3 21.4
1998 06 26		01 35.62	+02 29.9	2.415	2.301	71.3	24.7	17.3 21.4

1998 07 06	01 49.65	+03 29.8	2.334	2.329	77.2	25.2	17.3	21.3
1998 07 16	02 02.33	+04 18.4	2.250	2.360	83.4	25.3	17.4	21.3
1998 07 26	02 13.43	+04 55.1	2.164	2.391	90.0	25.1	17.4	21.2
1998 08 05	02 22.70	+05 19.5	2.078	2.424	97.2	24.5	17.4	21.1
1998 08 15	02 29.88	+05 31.6	1.994	2.458	104.9	23.5	17.4	21.1
1998 08 25	02 34.69	+05 31.5	1.915	2.493	113.2	21.9	17.4	21.0
1998 09 04	02 36.89	+05 19.7	1.843	2.529	122.2	19.7	17.4	20.8
1998 09 14	02 36.36	+04 57.8	1.782	2.566	131.9	17.0	17.4	20.7
1998 09 24	02 33.12	+04 27.9	1.737	2.603	142.2	13.6	17.4	20.6
1998 10 04	02 27.50	+03 53.6	1.711	2.641	152.9	9.9	17.5	20.4
1998 10 14	02 20.09	+03 19.3	1.709	2.680	163.3	6.1	17.6	20.3
1998 10 24	02 11.76	+02 49.8	1.734	2.719	170.1	3.6	17.7	20.2
1998 11 03	02 03.51	+02 29.8	1.786	2.758	165.7	5.1	17.9	20.4
1998 11 13	01 56.27	+02 22.3	1.866	2.798	155.8	8.3	18.1	20.7
1998 11 23	01 50.73	+02 29.0	1.971	2.838	145.2	11.5	18.3	20.9
1998 12 03	01 47.33	+02 49.6	2.098	2.878	134.8	14.1	18.5	21.2
1998 12 13	01 46.19	+03 23.0	2.243	2.919	124.8	16.1	18.7	21.5
1998 12 23	01 47.27	+04 07.2	2.402	2.959	115.2	17.5	19.0	21.7
1999 01 02	01 50.38	+05 00.1	2.573	2.999	106.2	18.4	19.2	21.9
1999 01 12	01 55.29	+05 59.8	2.750	3.040	97.6	18.7	19.4	22.1
1999 01 22	02 01.77	+07 04.4	2.930	3.080	89.3	18.6	19.7	22.2
1999 02 01	02 09.58	+08 12.3	3.112	3.120	81.4	18.2	19.9	22.4
1999 02 11	02 18.52	+09 22.0	3.291	3.160	73.7	17.4	20.1	22.5

61P/Shajn-Schaldach			Elements MPC 16381					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 04 17		14 44.92	−09 44.8	4.213	5.184	163.9	3.1	22.5
1998 04 27		14 39.33	−09 12.3	4.174	5.174	172.9	1.4	22.4
1998 05 07		14 33.54	−08 41.1	4.166	5.163	170.4	1.9	22.4
1998 05 17		14 27.93	−08 12.9	4.188	5.152	160.5	3.8	22.5

117P/Helin-Roman-Alu 1			Elements MPC 27080					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 04 17		23 43.60	−10 36.4	4.749	3.976	35.6	8.5	17.9 21.0
1998 04 27		23 53.96	−09 39.5	4.672	3.988	42.5	9.8	17.9 21.0
1998 05 07		00 03.80	−08 47.3	4.582	4.001	49.5	11.1	17.8 21.0
1998 05 17		00 13.05	−08 00.5	4.481	4.014	56.6	12.1	17.8 21.0
1998 05 27		00 21.63	−07 19.9	4.369	4.027	63.9	13.1	17.8 21.0
1998 06 06		00 29.44	−06 46.1	4.249	4.040	71.3	13.8	17.8 21.0
1998 06 16		00 36.35	−06 19.8	4.122	4.053	79.0	14.2	17.7 20.9
1998 06 26		00 42.26	−06 01.8	3.992	4.067	87.0	14.5	17.7 20.9
1998 07 06		00 47.03	−05 52.4	3.860	4.080	95.2	14.4	17.6 20.8
1998 07 16		00 50.53	−05 52.1	3.731	4.094	103.8	14.0	17.6 20.7
1998 07 26		00 52.64	−06 00.8	3.608	4.108	112.7	13.2	17.6 20.6
1998 08 05		00 53.27	−06 18.4	3.494	4.122	122.0	12.1	17.5 20.5
1998 08 15		00 52.37	−06 43.8	3.393	4.136	131.6	10.6	17.5 20.4
1998 08 25		00 49.98	−07 15.6	3.311	4.150	141.5	8.7	17.5 20.3
1998 09 04		00 46.23	−07 51.4	3.251	4.164	151.4	6.6	17.5 20.2
1998 09 14		00 41.37	−08 28.3	3.215	4.179	160.9	4.5	17.5 20.0
1998 09 24		00 35.77	−09 03.0	3.208	4.193	167.6	3.0	17.5 19.9
1998 10 04		00 29.87	−09 32.3	3.230	4.208	166.1	3.3	17.5 20.0
1998 10 14		00 24.18	−09 53.3	3.281	4.222	158.0	5.1	17.6 20.1
1998 10 24		00 19.14	−10 04.1	3.360	4.237	148.1	7.1	17.7 20.3
1998 11 03		00 15.14	−10 03.8	3.463	4.252	137.9	9.0	17.8 20.4

1998 11 13	00 12.44	-09 52.2	3.588	4.267	127.7	10.6	17.9	20.6
1998 11 23	00 11.17	-09 29.9	3.731	4.281	117.8	11.8	18.0	20.7
1998 12 03	00 11.40	-08 57.9	3.886	4.296	108.1	12.6	18.1	20.9
1998 12 13	00 13.05	-08 17.6	4.050	4.311	98.8	13.0	18.2	21.0
1998 12 23	00 16.04	-07 30.1	4.218	4.326	89.7	13.1	18.3	21.1
1999 01 02	00 20.25	-06 36.6	4.386	4.341	80.9	12.9	18.5	21.2
1999 01 12	00 25.52	-05 38.4	4.551	4.356	72.4	12.4	18.6	21.2
1999 01 22	00 31.73	-04 36.4	4.709	4.371	64.2	11.7	18.7	21.3
1999 02 01	00 38.74	-03 31.5	4.858	4.386	56.1	10.7	18.8	21.3
1999 02 11	00 46.41	-02 24.8	4.996	4.401	48.3	9.6	18.9	21.3
1999 02 21	00 54.64	-01 16.9	5.119	4.416	40.6	8.4	18.9	21.4
1999 03 03	01 03.31	-00 08.6	5.228	4.431	33.1	7.0	19.0	21.3

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	MPC
1997 YQ ₁₆	1998 01 12.2	07 34.41	+25 52.1	16.5	-1.10	+ 3.2	1.8/11.7	31130
9085 P-L	1998 01 12.3	07 35.20	+27 58.5	19.8	-1.25	+ 2.1	2.4/11.7	24114
1998 AD ₃	1998 01 12.3	07 35.21	+24 16.0	17.9	-1.14	+ 1.9	1.1/12.1	31287
1997 YJ ₅	1998 01 12.4	07 35.39	+26 04.0	16.5	-0.92	- 1.0	1.3/12.0	31255
1990 SF ₉	1998 01 12.4	07 35.60	+29 22.0	18.1	-0.90	+ 2.1	2.1/11.5	31137
1997 YS ₅	1998 01 12.5	07 35.79	+26 09.1	14.9	-1.03	- 3.0	1.9/12.2	31256
1997 YK ₁₂	1998 01 12.5	07 35.80	+20 53.7	17.4	-0.91	+ 0.3	0.2/12.6	31285
1997 YC ₁	1998 01 12.6	07 36.11	+25 29.1	17.1	-1.17	+ 3.6	1.5/12.1	31283
1981 EE ₁₂	1998 01 12.7	07 36.46	+19 44.7	16.6	-1.16	- 0.7	0.8/12.9	31271
(8216)	1998 01 12.7	07 36.65	+25 26.8	18.5	-1.08	+ 3.4	1.3/12.2	31090
1996 VN ₅	1998 01 12.8	07 37.34	+20 46.8	17.6	-0.84	+ 2.6	0.2/13.0	31248
(8161)	1998 01 12.9	07 37.70	+22 27.7	18.0	-0.86	+ 2.5	0.3/12.9	31078
(8319)	1998 01 13.0	07 38.04	+24 41.7	17.6	-0.91	+ 2.4	1.1/12.6	31222
1996 TT ₉	1998 01 13.0	07 38.05	+33 17.3	18.5	-0.99	+ 1.4	3.6/11.5	31245
1997 YH ₄	1998 01 13.0	07 38.23	+25 10.9	17.7	-0.98	+ 2.8	1.3/12.6	31284
(7442)	1998 01 13.1	07 38.38	+22 32.0	18.3	-0.85	+ 2.0	0.3/13.0	28836
9086 P-L	1998 01 13.1	07 38.54	+12 35.2	18.8	-1.22	+ 3.1	4.0/14.4	27328
1988 CU ₃	1998 01 13.2	07 38.62	+19 45.9	16.1	-0.96	- 1.0	0.6/13.4	31273
1992 DG ₁₀	1998 01 13.2	07 38.92	+20 09.2	16.7	-1.22	+ 1.1	0.6/13.4	31231
1997 YW ₅	1998 01 13.3	07 39.07	+29 00.5	15.8	-1.01	+ 4.0	2.9/12.2	31284
1978 SJ ₅	1998 01 13.3	07 39.08	+31 04.7	17.7	-1.22	+ 2.6	3.8/12.1	31134
1189 T-3	1998 01 13.4	07 39.46	+21 21.8	19.8	-1.08	+ 1.4	0.0/13.4	31161
1990 QJ ₂	1998 01 13.4	07 39.66	+24 24.3	17.4	-1.21	+ 2.9	1.4/13.1	31273
4667 P-L	1998 01 13.5	07 40.09	+31 45.0	18.5	-1.06	+ 2.3	3.2/12.2	31294
1996 OC ₁	1998 01 13.5	07 40.35	+21 04.6	16.1	-1.05	+ 6.5	0.2/13.7	31242
1997 WD ₇	1998 01 13.6	07 40.57	+22 28.6	16.5	-1.16	- 1.1	0.5/13.6	31281
1988 CT ₄	1998 01 13.7	07 40.73	+07 42.4	17.1	-0.83	+ 2.2	4.2/15.6	31136
1981 EB ₃₇	1998 01 13.7	07 40.85	+33 13.1	18.4	-1.11	+ 1.1	4.1/12.2	31272
1991 GA ₇	1998 01 13.8	07 41.22	+14 14.5	17.2	-1.01	+ 2.8	3.3/14.8	31229
1980 RV ₂	1998 01 13.8	07 41.42	+24 46.4	17.3	-1.24	+ 1.9	1.4/13.4	31271
1996 QM ₁	1998 01 13.8	07 41.66	+08 53.0	18.5	-1.03	+ 3.3	5.6/15.7	27924
1997 YX ₁₅	1998 01 13.9	07 41.65	+21 53.4	17.1	-0.95	- 0.9	0.1/13.9	31286
1998 AP ₇	1998 01 13.9	07 41.89	+23 02.9	18.2	-0.99	+ 3.7	0.6/13.7	31260
1994 GY ₉	1998 01 14.0	07 42.21	+05 12.6	17.2	-0.88	+ 5.7	6.9/17.1	31276
1998 AJ	1998 01 14.1	07 42.66	+20 47.5	16.2	-0.89	+ 3.8	0.2/14.2	31259
1991 RZ ₈	1998 01 14.1	07 42.73	+23 06.7	16.4	-0.96	+ 2.1	0.6/13.9	31274

1988 RB ₁₂	1998 01 14.1	07 42.83	+28 20.3	18.5	-1.12	+ 1.6	2.3/13.3	31273
1997 YG ₁₇	1998 01 14.2	07 43.21	+22 46.1	18.2	-1.09	+ 5.9	0.5/14.0	31130
3212 T-2	1998 01 14.2	07 43.22	+12 17.3	18.5	-1.01	+ 4.6	3.6/15.7	31295
(8286)	1998 01 14.2	07 43.35	+28 22.5	16.2	-1.30	+ 0.9	2.9/13.5	31215
1986 RY ₄	1998 01 14.3	07 43.49	+27 54.1	17.7	-1.24	+ 2.0	2.5/13.5	31272
1998 AS ₁	1998 01 14.3	07 43.76	+21 14.3	16.8	-0.88	+ 3.4	0.0/14.4	31260
2370 T-3	1998 01 14.4	07 43.88	+09 46.8	18.6	-0.89	+ 1.7	3.5/16.0	23686
1997 YY ₅	1998 01 14.4	07 43.90	+25 38.2	16.0	-0.96	+ 0.1	1.3/13.9	31256
1990 QQ ₈	1998 01 14.6	07 44.76	+23 59.4	18.6	-0.88	+ 2.4	0.8/14.2	30686
(8254)	1998 01 14.6	07 44.81	+12 19.3	17.5	-1.07	+ 3.9	3.8/16.0	31208
1107 T-2	1998 01 14.7	07 45.30	+20 15.5	18.9	-0.95	+ 1.9	0.3/14.9	31294
1055 T-2	1998 01 14.7	07 45.51	+24 18.6	19.0	-0.99	+ 2.0	1.0/14.4	28320
1997 YO ₉	1998 01 14.8	07 45.98	+11 26.4	17.9	-1.01	+ 3.7	3.9/16.4	31257
1996 TV ₁₄	1998 01 14.9	07 45.92	+22 50.9	17.6	-0.95	+ 2.1	0.5/14.7	31246
1996 UL ₁	1998 01 15.0	07 46.35	+04 05.4	18.7	-0.82	+ 2.0	5.2/17.6	31247
1981 DQ ₃	1998 01 15.0	07 46.52	+28 54.8	16.2	-1.13	- 0.4	2.7/14.2	27302
(8261)	1998 01 15.0	07 46.55	+22 58.0	17.9	-0.88	+ 2.1	0.5/14.8	31210
1990 RQ ₈	1998 01 15.0	07 46.61	+22 56.1	18.9	-0.86	+ 2.1	0.5/14.8	31137
(8255)	1998 01 15.1	07 46.79	+20 41.8	16.9	-0.99	+ 2.0	0.2/15.2	31209
(8263)	1998 01 15.1	07 46.86	+20 33.5	17.3	-1.15	+ 4.0	0.2/15.2	31210
1984 LK	1998 01 15.1	07 46.93	+13 48.3	18.8	-0.79	+ 1.6	1.7/16.2	31272
1989 YF ₁	1998 01 15.1	07 47.07	+18 20.9	16.1	-1.10	- 1.9	1.2/15.4	31273
1993 XK	1998 01 15.2	07 47.43	+21 47.1	16.8	-1.08	+ 5.2	0.3/15.1	31236
(8244)	1998 01 15.2	07 47.46	+12 17.3	17.1	-1.09	+ 3.9	3.7/17.0	31206
(8299)	1998 01 15.2	07 47.51	+15 01.0	18.0	-1.13	+ 4.2	2.5/16.2	31218
1982 FX ₃	1998 01 15.4	07 48.47	+28 39.1	16.7	-0.91	+ 2.0	2.2/14.4	31272
1997 YB ₁₀	1998 01 15.5	07 48.50	+24 59.2	15.6	-1.06	- 1.1	1.6/15.1	31285
(7323)	1998 01 15.6	07 48.98	+24 52.4	16.7	-0.93	+ 2.5	1.3/15.1	28568
3269 T-2	1998 01 15.6	07 49.10	+10 37.3	18.7	-0.93	+ 4.8	3.7/17.5	16439
1989 YA ₂	1998 01 15.6	07 49.25	+18 18.5	16.0	-1.04	- 1.0	1.3/16.0	31273
(8276)	1998 01 15.6	07 49.31	+19 42.2	15.8	-1.10	+ 2.2	0.6/15.9	31213
1993 VS ₁	1998 01 15.7	07 49.73	+19 47.5	16.0	-1.11	+ 1.4	0.6/15.9	31276
1996 VD ₁	1998 01 15.7	07 49.79	+44 28.5	18.7	-1.07	+ 2.9	6.3/11.8	31279
(8293)	1998 01 15.9	07 50.60	+15 01.5	16.7	-0.98	+ 3.3	2.0/16.9	31217
1981 ER ₇	1998 01 15.9	07 50.64	+15 00.2	19.7	-1.10	+ 2.1	2.3/16.8	26916
1979 MJ ₄	1998 01 15.9	07 50.68	+18 10.5	18.6	-0.97	+ 6.0	0.9/16.5	30778
1981 ES ₂	1998 01 15.9	07 50.71	+16 36.2	18.4	-1.16	- 0.9	1.9/16.5	26915
(8287)	1998 01 16.0	07 50.64	+21 46.9	17.0	-1.20	+ 4.3	0.3/15.9	31216
1991 VD ₂	1998 01 16.0	07 50.98	+21 57.9	16.2	-0.90	+ 3.4	0.3/15.9	31275
1996 PA ₁	1998 01 16.1	07 51.05	+17 16.9	18.2	-1.05	+ 5.7	1.4/16.7	31278
1996 TS ₁₅	1998 01 16.1	07 51.29	+52 20.1	17.4	-1.20	+ 2.2	8.2/10.6	31279
(8277)	1998 01 16.1	07 51.40	+21 08.0	17.2	-1.09	+ 1.8	0.1/16.1	31214
1997 YR ₅	1998 01 16.1	07 51.53	+21 36.7	17.0	-1.14	+ 4.8	0.3/16.1	31256
1996 RC	1998 01 16.2	07 51.65	+16 52.1	18.5	-1.08	+ 4.0	1.8/16.9	28596
(8312)	1998 01 16.2	07 51.79	+35 01.9	17.4	-0.98	+ 2.7	4.1/14.0	31221
1993 FK ₃₃	1998 01 16.3	07 52.08	+19 57.1	16.2	-0.85	+ 4.1	0.4/16.5	31234
1996 OP ₂	1998 01 16.4	07 52.38	+03 13.7	18.6	-0.98	+ 4.8	5.9/19.6	27938
1992 JF	1998 01 16.4	07 52.72	+27 14.2	17.8	-1.16	+ 3.7	2.2/15.5	31275
1977 DP ₂	1998 01 16.4	07 52.76	+22 38.2	17.4	-0.92	+ 2.7	0.7/16.2	31222
1996 NZ ₃	1998 01 16.4	07 52.83	+19 13.9	16.8	-1.08	+ 1.6	0.7/16.7	31278
1997 YQ ₅	1998 01 16.6	07 53.30	+21 07.0	16.8	-1.00	+ 6.6	10.6/06.0	31255

1998 FEB. 11

M.P.C. 31307

1998 AL₄ 1998 01 16.6 07 53.32 +22 25.4 17.1 -0.94 + 2.2 0.5/16.4 31260
 1990 BZ 1998 01 16.6 07 53.52 +27 20.1 16.5 -1.24 - 3.6 2.6/16.1 31273
 1981 DF₂ 1998 01 16.6 07 53.72 +12 12.0 17.2 -1.15 + 0.6 3.7/17.8 31271
 1991 QG 1998 01 16.8 07 54.08 +09 54.4 18.4 -0.93 + 3.2 3.4/18.6 30896
 1997 YC₁₈ 1998 01 16.8 07 54.40 +21 55.5 19.5 -1.04 - 1.3 0.5/16.7 31286
 1997 YD₁₀ 1998 01 16.8 07 54.45 +25 34.9 16.8 -1.18 + 1.4 1.8/16.2 31285
 1998 BA₂₁ 1998 01 16.8 07 54.55 +20 51.8 19.0 -0.92 + 3.4 7.8/28.0 31266
 1998 BJ₂ 1998 01 16.8 07 54.57 +17 33.5 16.3 -1.04 + 3.6 1.5/17.0 31263
 1989 WJ₁ 1998 01 16.9 07 54.62 +10 38.2 16.4 -1.03 + 2.5 4.2/18.5 28316
 1981 EC₃₁ 1998 01 16.9 07 54.93 +41 24.7 18.2 -1.27 - 0.9 8.3/14.4 31096
 1984 SY₅ 1998 01 17.0 07 54.95 +20 46.1 17.0 -0.84 + 2.9 0.0/17.0 31272
 1990 QK₈ 1998 01 17.1 07 55.73 +20 25.9 18.3 -0.88 + 3.0 0.1/17.2 31274
 1996 QQ₁ 1998 01 17.1 07 55.76 +21 13.3 17.5 -0.89 + 3.1 0.1/17.1 31278
 1981 EW₃₃ 1998 01 17.1 07 55.78 +17 48.8 18.7 -0.98 + 2.1 1.0/17.6 28581
 (8248) 1998 01 17.1 07 55.82 +16 50.3 17.0 -1.10 + 3.5 1.7/17.8 31207
 1981 EY₃₈ 1998 01 17.2 07 55.76 +09 54.9 18.6 -1.07 + 1.1 3.6/18.6 28611
 1997 WA₇ 1998 01 17.2 07 55.89 +28 36.3 16.8 -1.04 + 6.3 2.4/15.7 31118
 1996 RQ₂ 1998 01 17.2 07 56.17 +21 35.6 16.4 -1.11 + 2.3 0.4/17.2 31278
 1996 TR₁₀ 1998 01 17.3 07 56.33 +09 54.8 16.8 -0.98 + 4.8 3.5/19.2 31278
 1997 YV₆ 1998 01 17.3 07 56.48 +19 10.6 16.3 -1.07 - 3.3 0.6/17.5 31284
 6840 P-L 1998 01 17.4 07 56.73 +21 43.9 20.3 -1.04 + 3.8 0.4/17.3 31294
 1992 UK₉ 1998 01 17.4 07 57.01 +22 58.7 17.5 -1.00 + 4.1 0.8/17.1 31232
 1981 EH₇ 1998 01 17.4 07 57.08 -03 00.8 19.0 -0.89 + 2.8 9.0/21.7 26916
 (8175) 1998 01 17.6 07 57.60 +27 57.7 16.7 -0.92 + 5.0 2.2/16.3 31081
 1990 SZ₄ 1998 01 17.7 07 57.95 +23 27.1 18.9 -0.86 + 2.6 0.8/17.3 25529
 (8264) 1998 01 17.7 07 58.24 +21 33.9 17.0 -1.15 + 3.8 0.3/17.6 31211
 1994 AY₅ 1998 01 17.8 07 58.67 +20 50.2 19.3 -1.16 - 2.1 0.1/17.8 31237
 1996 VP 1998 01 17.8 07 58.69 +25 03.3 17.9 -1.11 + 3.6 1.6/17.2 31279
 1993 TZ₃₆ 1998 01 17.9 07 58.97 +13 35.3 18.6 -1.08 + 4.9 2.8/19.2 25332
 1997 YG₁₀ 1998 01 17.9 07 58.99 +27 13.1 16.4 -1.05 + 3.0 2.8/16.9 31257
 5023 P-L 1998 01 17.9 07 59.26 +10 12.6 19.1 -1.04 + 2.4 3.8/19.6 28319
 6099 P-L 1998 01 18.1 07 59.87 +28 11.2 19.1 -1.13 + 1.7 2.8/17.1 29649
 1996 VA₅ 1998 01 18.1 07 59.93 +02 12.6 17.6 -0.94 + 2.4 6.2/21.0 31279
 3189 T-2 1998 01 18.2 08 00.15 +31 47.1 19.4 -1.17 + 2.6 4.7/16.5 22701
 1996 RF₅ 1998 01 18.2 08 00.26 +20 42.8 17.7 -1.09 + 5.8 0.1/18.2 31278
 1996 TZ₉ 1998 01 18.2 08 00.27 +07 56.8 18.8 -0.85 + 2.8 4.0/20.4 28307
 1996 UU₁ 1998 01 18.3 08 00.71 +28 06.7 17.2 -0.94 + 1.9 2.7/17.2 31279
 1988 CW₄ 1998 01 18.3 08 00.82 +12 20.5 16.4 -0.89 + 1.0 2.8/19.6 31273
 1996 PB₁ 1998 01 18.3 08 00.85 +22 52.1 19.7 -1.10 + 2.7 0.8/18.0 31109
 1993 XV 1998 01 18.4 08 01.10 +18 31.8 15.5 -1.11 - 1.0 0.9/18.7 31276
 (7559) 1998 01 18.5 08 01.64 +28 02.4 17.1 -1.10 + 4.7 2.4/17.2 29591
 1993 FA₂ 1998 01 18.5 08 01.68 +23 37.9 17.1 -0.87 + 4.3 1.0/18.0 31233
 1995 SO₃₃ 1998 01 18.6 08 01.73 +21 55.0 16.6 -0.90 + 2.5 0.5/18.4 31241
 1993 DR₂ 1998 01 18.6 08 01.86 +27 03.8 17.4 -0.98 + 0.5 2.0/17.7 31103
 1993 SW₃ 1998 01 18.6 08 01.92 +29 35.2 17.9 -1.23 + 4.2 3.4/17.2 31276
 1992 GG₃ 1998 01 18.7 08 02.31 +19 32.3 16.3 -1.16 + 2.9 0.4/18.9 31275
 1997 YQ₁₁ 1998 01 18.7 08 02.52 +27 18.7 17.7 -1.18 + 6.1 2.6/17.5 31285
 1997 WG₇ 1998 01 18.7 08 02.60 +21 11.1 16.2 -1.18 - 1.8 0.4/18.7 31251
 1997 WH₁₃ 1998 01 18.7 08 02.65 +21 13.5 18.2 -1.16 - 0.7 0.4/18.7 31281
 2257 T-2 1998 01 18.9 08 03.32 +26 52.0 16.8 -1.08 + 2.8 2.9/17.9 31161
 4550 P-L 1998 01 18.9 08 03.45 +28 27.9 18.4 -1.21 + 2.1 3.9/17.8 17462

1993 TJ₁ 1998 01 19.0 08 03.80 +30 20.5 16.9 -1.24 + 2.9 3.7/17.5 31276
 1991 PT₁₂ 1998 01 19.1 08 04.07 +21 34.0 17.3 -0.96 + 2.9 0.4/18.9 31274
 1977 DR₂ 1998 01 19.2 08 04.41 +28 51.5 17.5 -1.23 + 1.3 3.4/18.0 31134
 1996 TE 1998 01 19.2 08 04.47 +24 20.4 18.4 -0.96 + 3.1 1.3/18.6 31278
 (8318) 1998 01 19.2 08 04.72 +20 26.8 17.4 -0.87 + 2.7 0.0/19.3 31222
 1981 EM₄₀ 1998 01 19.2 08 04.73 +19 32.4 19.0 -0.97 + 4.0 0.3/19.4 28611
 1996 UQ 1998 01 19.3 08 05.05 +37 31.4 18.5 -1.16 + 1.1 5.4/16.8 31279
 1990 TM₁ 1998 01 19.3 08 05.08 +25 23.3 16.3 -0.84 + 3.7 1.4/18.4 29658
 1998 BP₅ 1998 01 19.3 08 05.21 +21 16.1 18.0 -1.16 + 0.9 0.4/19.3 31264
 1996 TD₁₈ 1998 01 19.6 08 06.18 +15 50.7 19.4 -0.83 + 2.2 1.3/20.4 31246
 (8242) 1998 01 19.7 08 06.56 +35 46.1 17.7 -1.02 + 2.4 4.7/17.0 31206
 1976 UT₁ 1998 01 19.7 08 06.73 +12 49.0 16.9 -1.08 + 2.9 3.3/21.0 31271
 (8269) 1998 01 19.7 08 06.82 +11 40.6 16.1 -0.98 + 6.9 3.4/22.0 31212
 1996 RA₅ 1998 01 19.8 08 06.83 +26 31.8 17.2 -1.02 0.0 2.2/18.9 31244
 1981 ED₁₀ 1998 01 19.8 08 07.10 +21 42.8 18.4 -1.16 + 2.1 0.7/19.6 26916
 1992 WT₁ 1998 01 19.8 08 07.14 +27 03.0 16.6 -1.03 + 4.9 2.4/18.6 31103
 1269 T-1 1998 01 19.9 08 07.55 +32 29.4 18.1 -1.11 + 0.1 4.9/18.2 31161
 4599 P-L 1998 01 20.0 08 07.73 +28 56.8 17.5 -1.05 + 2.2 3.2/18.6 28319
 1978 SU₄ 1998 01 20.0 08 07.98 +10 10.7 18.0 -1.04 + 3.1 3.7/21.7 31223
 1997 YZ₁₇ 1998 01 20.1 08 08.32 +22 54.7 17.9 -1.24 + 1.7 1.2/19.7 31259
 1995 SU₃₂ 1998 01 20.1 08 08.35 +06 12.1 18.8 -0.76 + 4.7 4.0/23.0 25967
 1995 FV 1998 01 20.1 08 08.41 +15 27.7 17.2 -1.06 + 5.2 1.9/21.0 31277
 1979 UH 1998 01 20.2 08 08.55 +16 05.1 15.3 -0.85 +10.6 1.9/21.2 31271
 1996 YZ₂ 1998 01 20.2 08 08.61 +03 36.3 17.8 -0.83 + 2.6 5.3/23.2 31113
 1996 TO₁₃ 1998 01 20.2 08 08.73 +04 12.9 18.9 -0.83 + 2.9 5.0/23.2 31278
 1988 SC 1998 01 20.2 08 09.04 +40 53.6 16.5 -1.30 - 1.1 8.8/17.6 31136
 (8253) 1998 01 20.3 08 08.97 +11 34.9 17.6 -1.05 + 2.0 4.0/21.6 31208
 1991 VP₇ 1998 01 20.3 08 09.00 -01 04.0 18.1 -0.83 + 2.2 6.5/24.1 30470
 1981 ER₃₃ 1998 01 20.3 08 09.13 +10 59.5 19.1 -1.06 + 3.3 3.9/21.8 26921
 1997 YP₁₀ 1998 01 20.3 08 09.23 +28 59.7 17.2 -1.24 + 2.1 4.1/19.0 31285
 1996 QE 1998 01 20.3 08 09.24 +02 15.7 18.6 -0.91 + 5.4 5.9/24.0 31243
 3042 T-2 1998 01 20.3 08 09.27 +16 43.0 17.6 -1.08 + 5.8 1.5/21.0 31294
 1979 MU₇ 1998 01 20.4 08 09.53 +14 14.8 20.7 -1.10 + 2.7 2.0/21.4 30779
 1998 BE 1998 01 20.4 08 09.80 +30 03.4 17.1 -1.04 + 3.2 3.3/18.7 31261
 1996 TR₁ 1998 01 20.5 08 10.03 +14 20.5 16.9 -0.91 + 4.4 2.1/21.6 31278
 2315 T-2 1998 01 20.6 08 10.25 +17 48.4 19.2 -0.96 + 3.7 0.9/21.0 16883
 1975 TQ₃ 1998 01 20.6 08 10.47 +39 58.7 17.3 -1.19 + 2.9 6.4/17.2 31271
 1986 EJ₁ 1998 01 20.6 08 10.66 +43 33.7 17.2 -1.30 + 1.6 7.9/16.5 31135
 1997 VB₄ 1998 01 20.8 08 11.28 +32 26.3 17.6 -1.17 + 5.7 5.4/18.4 31281
 4109 T-1 1998 01 20.9 08 11.66 +21 55.7 17.9 -0.82 + 2.8 0.5/20.6 28607
 2716 P-L 1998 01 21.0 08 12.10 +17 21.5 20.1 -1.06 + 4.1 0.9/21.5 27732
 1996 UC 1998 01 21.1 08 12.68 +21 58.6 18.0 -0.88 + 3.3 0.6/20.8 31279
 1993 SR₁ 1998 01 21.1 08 12.69 +26 36.7 17.4 -1.21 + 3.6 2.7/20.1 30899
 1991 VP₄ 1998 01 21.2 08 12.80 +21 44.6 16.7 -0.87 + 5.1 0.6/20.8 31275
 1992 EG₂₂ 1998 01 21.2 08 12.83 +23 25.9 17.6 -1.18 + 5.5 1.3/20.6 31231
 1972 HL 1998 01 21.2 08 13.18 -03 17.1 18.0 -0.77 + 1.9 5.9/25.4 23787
 1981 QD 1998 01 21.3 08 13.32 +21 53.9 18.2 -1.09 + 2.6 0.7/21.0 31225
 1997 YW₁₃ 1998 01 21.3 08 13.49 +12 41.6 15.7 -1.10 + 0.6 3.3/22.4 31258
 1997 YD₁₈ 1998 01 21.4 08 13.70 +22 00.5 16.6 -0.88 + 3.5 0.7/21.0 31259
 1981 EY₁₁ 1998 01 21.4 08 13.72 +25 44.5 16.9 -1.21 - 0.6 2.8/20.7 31223
 1988 BL₃ 1998 01 21.4 08 13.94 +13 41.2 16.2 -1.15 + 1.9 2.4/22.4 31273

1988 FM ₁	1998 01 21.4	08 13.98 +27 00.2 15.7	-1.00	0.0	2.4/20.4	31227
1998 BM ₇	1998 01 21.6	08 14.49 +17 54.5 16.4	-0.82	+ 5.9	0.6/22.0	31264
(8292)	1998 01 21.6	08 14.50 +40 32.5 15.5	-1.27	- 1.6	8.2/18.9	31217
1996 QP	1998 01 21.6	08 14.77 +12 19.3 19.3	-1.06	+ 5.6	2.8/23.1	27924
9560 P-L	1998 01 21.6	08 14.86 +22 04.0 17.2	-1.15	+ 5.5	0.9/21.3	31294
1991 VN ₄	1998 01 21.7	08 14.91 +27 50.9 15.9	-0.92	+ 5.5	2.5/20.0	31230
1993 UB ₁	1998 01 21.7	08 15.00 +57 03.7 16.1	-1.90	- 2.2	14.3/16.9	30291
4917 P-L	1998 01 21.8	08 15.70 +23 26.6 17.6	-1.06	+ 3.2	1.4/21.2	31267
1998 BU	1998 01 21.8	08 15.77 +26 25.2 16.9	-1.09	+ 2.2	2.7/20.8	31261
1996 XY ₂₅	1998 01 21.9	08 15.74 +11 40.8 18.5	-0.92	+ 7.0	2.7/23.7	31279
1981 EK ₃₂	1998 01 21.9	08 15.92 +11 16.9 19.9	-1.08	+ 2.1	3.4/23.3	26921
1998 BW ₁	1998 01 21.9	08 16.17 +17 37.4 16.0	-0.89	+ 3.8	0.8/22.4	31262
1997 YP ₁₁	1998 01 22.1	08 16.88 +14 06.0 16.4	-1.09	+ 4.1	2.5/23.2	31285
1994 LR	1998 01 22.2	08 17.25 +28 03.5 16.4	-0.89	+ 5.9	2.5/20.4	31277
1990 UQ ₄	1998 01 22.2	08 17.38 +19 13.1 17.9	-1.14	+ 5.8	0.2/22.4	31229
1990 QO ₃	1998 01 22.3	08 17.42 +32 48.7 16.4	-1.00	+ 0.8	4.1/20.2	31274
1998 BH ₁₂	1998 01 22.3	08 17.51 +22 32.9 17.0	-0.99	+10.0	1.1/21.6	31266
1996 VJ ₄	1998 01 22.3	08 17.52 +00 46.1 18.0	-0.79	+ 1.2	5.2/25.7	31112
1998 BZ ₁	1998 01 22.3	08 17.60 +18 10.6 16.9	-0.87	+ 4.1	0.6/22.6	31263
1994 HD	1998 01 22.3	08 17.87 -25 35.5 16.7	-0.80	+ 3.6	18.8/03.8	25643
1981 ER ₃₈	1998 01 22.4	08 18.22 +00 54.5 17.9	-0.86	+ 5.3	7.7/26.6	26922
1998 BZ ₁₈	1998 01 22.4	08 18.27 +19 02.8 17.7	-1.02	+ 1.7	0.3/22.6	31291
1998 BY ₁	1998 01 22.4	08 18.30 +19 52.7 17.4	-0.90	+ 8.7	0.1/22.4	31263
(8249)	1998 01 22.5	08 18.43 +24 05.6 16.9	-1.07	+ 7.2	2.0/21.6	31207
1994 GP	1998 01 22.6	08 18.69 +33 18.2 16.2	-1.06	+ 4.0	4.8/19.8	28590
1981 EO ₃₁	1998 01 22.6	08 18.78 +15 14.7 19.3	-0.96	+ 3.9	1.6/23.4	26921
1985 RR ₃	1998 01 22.6	08 19.01 +07 59.1 17.2	-0.80	+ 4.4	3.4/25.1	31135
1991 SY	1998 01 22.7	08 19.34 +40 59.0 17.1	-1.19	+ 2.9	7.2/18.5	29659
1996 SK ₇	1998 01 22.7	08 19.45 +43 23.5 19.4	-1.22	+ 2.0	6.8/18.5	28864
1998 BE ₁	1998 01 22.7	08 19.48 +25 26.8 16.9	-1.11	+ 6.7	2.6/21.6	31262
1979 PA	1998 01 22.8	08 19.77 +02 07.9 19.7	-0.92	+ 2.2	5.2/25.9	25338
(8272)	1998 01 22.9	08 19.93 +30 10.4 15.3	-1.19	+ 0.6	4.9/21.3	31213
1996 TF ₁₅	1998 01 22.9	08 20.10 +21 32.2 17.6	-0.87	+ 2.9	0.6/22.6	31246
1992 QB	1998 01 23.1	08 20.89 +52 12.8 18.5	-1.50	+ 5.0	10.2/15.5	22432
1996 TK ₁₅	1998 01 23.1	08 20.91 +00 30.2 18.0	-0.89	+ 4.0	5.8/27.0	29666
1981 EN ₃₁	1998 01 23.1	08 21.08 +15 15.2 19.2	-1.06	+ 5.0	1.6/24.0	26921
1991 LQ	1998 01 23.1	08 21.13 +30 17.9 17.2	-1.04	+ 6.9	3.4/20.8	31274
(8243)	1998 01 23.1	08 21.28 +32 37.9 17.3	-1.10	+ 3.2	4.3/20.7	31206
1997 YM ₁₄	1998 01 23.2	08 21.24 +18 14.7 17.0	-0.97	+ 8.4	0.5/23.5	31258
1990 ST ₆	1998 01 23.2	08 21.62 +21 26.6 19.4	-0.83	+ 3.7	0.5/22.9	31005
(7319)	1998 01 23.4	08 22.06 +23 51.3 17.3	-1.17	+ 3.8	1.7/22.6	28818
1998 BH ₁	1998 01 23.4	08 22.22 +26 42.0 18.1	-1.16	+ 4.7	2.7/22.1	31262
1997 YA ₄	1998 01 23.4	08 22.31 +21 13.6 17.3	-1.23	+ 1.7	0.7/23.2	31284
1991 RS ₇	1998 01 23.4	08 22.42 +22 38.2 18.2	-0.93	+ 5.3	1.0/22.8	31274
(7644)	1998 01 23.4	08 22.44 -02 24.1 17.8	-0.93	+ 2.6	7.4/27.7	29898
1998 BR ₄	1998 01 23.4	08 22.47 +15 59.5 18.0	-0.87	+ 2.1	1.1/24.1	31264
(8252)	1998 01 23.5	08 22.47 +16 14.7 16.1	-1.10	+ 1.2	1.5/24.0	31208
1989 TH ₃	1998 01 23.5	08 22.89 +18 56.7 20.7	-1.06	+ 4.6	0.2/23.7	25328
3155 T-2	1998 01 23.6	08 22.88 +16 39.9 17.2	-0.82	+ 5.0	0.9/24.2	31295
(8285)	1998 01 23.6	08 23.25 -04 11.3 15.6	-0.80	+ 0.9	9.6/28.1	31215
1993 YL	1998 01 23.6	08 23.26 +23 24.2 16.0	-1.10	+ 5.1	1.7/22.9	31236

1985 RS ₁	1998 01 23.7	08 23.30 +23 37.5 17.2	-1.10	+ 3.4	1.5/22.9	31272
1993 UR ₂	1998 01 23.7	08 23.59 +09 45.5 16.3	-1.01	+ 6.5	4.3/25.8	31140
1991 LM	1998 01 23.7	08 23.60 +27 59.7 15.3	-1.02	+ 8.4	2.9/21.7	31229
1981 EM ₃₉	1998 01 23.7	08 23.73 +27 11.5 18.8	-1.21	+ 2.4	3.2/22.4	26922
1981 ED ₃₇	1998 01 23.8	08 23.78 +25 48.9 18.3	-1.14	+ 3.5	2.2/22.6	28084
1998 BO ₁	1998 01 23.8	08 24.08 +26 17.6 16.5	-1.18	+ 1.3	3.1/22.8	31262
1981 DP ₁	1998 01 23.9	08 24.36 +10 03.7 19.0	-1.07	+ 2.2	3.4/25.5	26914
6673 P-L	1998 01 23.9	08 24.42 -03 00.2 17.4	-0.74	+ 6.0	6.3/29.4	31294
3327 T-2	1998 01 24.0	08 24.87 +22 35.7 17.5	-0.87	+ 3.6	1.1/23.4	31295
1996 UC ₃	1998 01 24.0	08 24.91 +19 08.0 17.9	-0.75	+ 1.6	0.0/24.1	31279
1996 TJ ₁₄	1998 01 24.1	08 25.25 +27 43.0 16.8	-0.99	+ 0.9	2.7/22.7	31246
1990 MC	1998 01 24.1	08 25.28 +01 53.2 18.6	-0.79	+ 3.4	4.3/27.7	29942
1995 GW	1998 01 24.2	08 25.50 +35 49.8 15.8	-1.21	+ 3.9	7.7/20.8	31106
1988 VS ₆	1998 01 24.2	08 25.79 +12 08.7 17.8	-0.72	+ 2.7	2.0/25.7	31273
1994 CT ₁₁	1998 01 24.3	08 25.99 +21 49.7 17.6	-0.98	+ 4.2	0.9/23.8	31238
1990 JN ₁	1998 01 24.3	08 26.06 +17 28.8 17.3	-0.92	+ 3.0	0.6/24.7	31137
1997 YB ₁₂	1998 01 24.3	08 26.28 +07 36.6 17.4	-1.07	- 1.4	4.4/26.0	31285
2202 T-1	1998 01 24.4	08 26.27 +15 53.3 18.2	-0.89	+ 4.0	1.0/25.1	31294
1996 TJ ₉	1998 01 24.4	08 26.37 +14 34.9 18.1	-0.98	+ 3.5	1.6/25.3	31278
1998 BS ₁	1998 01 24.4	08 26.42 +25 34.7 16.3	-1.10	+ 1.7	2.8/23.4	31262
1981 ES ₂₀	1998 01 24.5	08 26.76 +21 11.6 18.2	-0.99	+ 2.8	0.7/24.2	31271
1998 BT ₁	1998 01 24.5	08 26.90 +25 59.6 16.9	-1.25	+ 2.1	3.2/23.4	31262
1981 DW ₂	1998 01 24.5	08 27.05 +11 50.9 19.4	-1.08	+ 2.2	2.7/25.8	26914
1996 SR	1998 01 24.6	08 27.35 +14 13.2 20.3	-0.97	+ 4.7	1.7/25.7	29947
1997 YS ₁	1998 01 24.6	08 27.35 +24 19.2 17.4	-1.06	+ 6.6	2.1/23.5	31284
1992 HY ₆	1998 01 24.7	08 27.60 +23 59.7 17.8	-1.17	+ 6.0	1.9/23.7	31275
1993 TU	1998 01 24.7	08 27.69 +22 58.4 17.0	-1.21	+ 2.5	1.5/24.1	31276
1997 XK ₁₁	1998 01 24.7	08 27.86 +25 25.7 16.4	-1.06	+ 6.4	2.5/23.4	31283
1976 QS	1998 01 24.8	08 27.98 +23 42.9 18.0	-1.21	+ 2.2	1.7/24.1	31095
1998 BU ₁	1998 01 24.8	08 28.20 +28 11.7 17.2	-1.01	+ 9.8	3.6/22.6	31262
(7427)	1998 01 25.0	08 29.10 +23 02.8 17.0	-0.99	+ 4.2	1.4/24.3	28833
1996 SS ₆	1998 01 25.0	08 29.10 +22 54.8 17.2	-0.91	+ 3.6	1.2/24.3	31278
1993 TG ₃₉	1998 01 25.0	08 29.17 +19 14.1 17.5	-1.05	+ 6.2	0.1/25.0	28616
1993 UN ₆	1998 01 25.1	08 29.30 +25 14.9 18.8	-1.09	+ 6.9	2.7/23.8	31236
1994 BA ₁	1998 01 25.1	08 29.40 +29 46.3 17.3	-1.11	+ 1.6	4.5/23.3	31237
1997 XL ₁₁	1998 01 25.2	08 29.74 +24 21.0 17.0	-0.94	+ 5.1	1.7/24.1	31283
1991 GP ₆	1998 01 25.2	08 29.79 +15 45.6 18.4	-1.06	+ 4.0	1.3/25.9	31274
1991 GY ₃	1998 01 25.2	08 29.89 +24 08.3 17.8	-1.10	+ 3.3	2.3/24.3	31274
1989 SJ ₅	1998 01 25.2	08 30.09 +31 04.2 16.5	-1.17	+ 4.6	4.8/22.8	31273
1981 EY ₂₈	1998 01 25.3	08 30.02 +31 20.5 17.9	-1.19	- 0.8	4.3/23.5	31271
1997 WB ₂₂	1998 01 25.3	08 30.08 +26 10.1 15.9	-1.10	+ 7.8	2.8/23.7	31282
1990 RG ₂	1998 01 25.3	08 30.14 +06 08.5 17.7	-0.77	+ 3.9	3.4/28.1	23671
1996 RM	1998 01 25.3	08 30.15 +39 56.6 18.3	-1.18	- 0.4	6.8/21.9	31278
(7586)	1998 01 25.3	08 30.19 +10 26.6 18.2	-0.89	+ 2.2	2.5/26.9	29597
1981 EJ ₂₀	1998 01 25.4	08 30.56 +31 47.3 17.7	-1.12	+ 0.9	5.1/23.2	26918
1996 UG ₃	1998 01 25.5	08 31.13 +38 36.5 17.2	-1.13	+ 2.6	5.8/21.7	31144
(8265)	1998 01 25.5	08 31.27 +19 19.3 16.7	-1.10	+ 6.1	0.2/25.5	31211
1996 PY ₆	1998 01 25.5	08 31.35 +54 38.6 19.4	-1.66	+ 2.0	11.5/18.2	28319
1981 ET ₁₀	1998 01 25.7	08 32.05 +29 27.8 18.0	-1.08	+ 0.8	3.2/24.0	31271
(7327)	1998 01 25.8	08 32.21 +24 53.5 17.9	-1.19	+ 3.6	2.2/24.7	28569
1996 TC ₈	1998 01 26.0	08 32.98 +15 11.0 18.3	-1.10	+ 4.1	1.5/26.7	28306

1998 FEB. 11

M.P.C. 31309

1996 TK ₇	1998 01 26.0	08 33.04 +17 55.3	19.0	-0.87	+	3.5	0.3/26.2	31245
1052 T-2	1998 01 26.0	08 33.34 +19 38.3	19.4	-0.83	+	2.9	0.2/25.9	25970
1995 OV	1998 01 26.1	08 33.35 +26 22.3	17.7	-1.00	+	2.2	2.2/24.7	31277
1125 T-2	1998 01 26.1	08 33.39 +17 29.2	18.5	-0.83	+	3.1	0.4/26.4	29142
1992 UL ₆	1998 01 26.1	08 33.40 +27 21.6	16.4	-0.98	+	5.2	3.5/24.3	31232
1988 DD ₃	1998 01 26.1	08 33.67 +10 30.8	17.5	-0.90	+	0.8	2.7/27.6	25537
4257 P-L	1998 01 26.1	08 33.81 +24 05.7	19.3	-1.17	+	1.8	2.1/25.3	16035
3100 T-3	1998 01 26.2	08 34.07 +16 35.7	18.0	-1.03	+	4.9	0.8/26.7	31295
4343 T-3	1998 01 26.3	08 34.26 +04 54.9	15.6	-0.87	+	5.7	5.4/29.4	31295
1980 VX ₂	1998 01 26.3	08 34.49 -22 55.9	17.2	-0.95	-	0.2	15.6/04.4	28882
4041 P-L	1998 01 26.4	08 34.64 +17 54.3	18.1	-1.11	+	3.2	10.3/16.0	31294
1978 VR ₁₀	1998 01 26.4	08 34.79 +33 02.4	17.4	-1.02	+	5.9	5.3/23.0	31223
1980 XX	1998 01 26.4	08 34.83 +24 42.7	16.9	-1.15	+	6.2	2.6/25.2	31271
1998 BU ₂₅	1998 01 26.5	08 35.04 +16 23.1	16.4	-0.82	+	6.5	0.7/27.1	31266
1996 VP ₂	1998 01 26.5	08 35.09 +18 36.6	19.6	-0.84	+	3.1	0.0/26.5	28867
(8281)	1998 01 26.5	08 35.28 +16 48.3	16.5	-0.97	+	1.3	0.7/27.0	31214
1998 BT ₂	1998 01 26.6	08 35.52 +24 04.8	17.6	-1.04	+	6.4	2.4/25.4	31263
1996 QX ₁	1998 01 26.6	08 35.80 +20 52.9	16.6	-1.12	-	0.9	0.8/26.3	31243
3834 T-3	1998 01 26.6	08 35.85 +24 05.2	17.7	-1.03	+	4.6	2.4/25.6	31269
1993 SZ	1998 01 26.7	08 35.98 +13 01.1	17.1	-1.10	+	4.3	2.3/27.8	31276
1994 AF	1998 01 26.7	08 36.10 +12 52.4	17.2	-1.04	+	3.3	2.4/27.9	31237
1998 BX ₂₅	1998 01 26.7	08 36.31 +14 23.1	16.5	-0.99	-	0.7	1.5/27.5	31267
1998 BV ₂	1998 01 26.8	08 36.50 +22 16.4	17.2	-1.05	+	3.9	1.7/26.1	31288
1988 CP ₁	1998 01 26.9	08 36.70 +17 52.1	17.1	-0.89	+	4.4	8.4/16.0	31136
1981 EV ₃₀	1998 01 26.9	08 36.75 +20 27.9	18.8	-0.98	+	2.6	0.6/26.6	26920
1996 UT	1998 01 26.9	08 37.12 +17 23.3	16.6	-0.82	+	3.3	0.3/27.2	31279
1981 EY ₁₆	1998 01 27.0	08 37.12 +13 17.5	19.0	-1.09	+	3.7	2.1/28.0	26918
1989 PT	1998 01 27.0	08 37.31 +15 12.5	17.2	-1.05	+	6.3	1.2/27.8	28315
1981 EZ ₇	1998 01 27.1	08 37.96 +09 49.9	18.8	-0.91	+	3.4	2.7/29.0	31271
1998 BW ₂	1998 01 27.2	08 37.90 +22 25.0	16.9	-0.86	+	5.3	1.2/26.3	31263
1992 UT ₁	1998 01 27.3	08 38.40 +23 25.4	16.9	-1.01	+	4.7	1.6/26.3	31275
1997 YB ₁₇	1998 01 27.4	08 38.79 +18 26.1	16.8	-0.91	+	3.1	0.0/27.4	31258
1992 FO ₃	1998 01 27.4	08 38.89 +16 28.9	17.2	-1.13	+	4.7	0.9/27.8	31275
1996 ON	1998 01 27.4	08 38.97 +14 41.7	19.3	-1.06	+	3.1	1.3/28.2	31278
5011 P-L	1998 01 27.4	08 39.21 +10 51.4	18.2	-0.93	+	2.7	2.6/29.0	31294
(7429)	1998 01 27.5	08 39.32 +20 17.2	16.0	-0.93	+	3.1	0.6/27.2	28833
3355 T-3	1998 01 27.5	08 39.53 +05 36.2	19.2	-0.86	+	3.8	4.1/30.3	20518
1996 TF ₁₁	1998 01 27.6	08 40.04 +16 23.0	17.9	-1.03	+	3.3	0.7/28.1	31278
1990 RW ₇	1998 01 27.7	08 39.97 +15 09.1	17.3	-0.83	+	4.0	1.0/28.4	29134
4031 P-L	1998 01 27.7	08 39.99 +24 05.7	16.6	-1.16	+	1.0	2.6/26.7	31294
1996 TH ₇	1998 01 27.7	08 40.38 +22 38.4	17.3	-0.98	+	3.3	1.5/26.9	31245
1996 TU ₉	1998 01 27.8	08 40.53 +06 30.7	19.2	-0.80	+	4.4	3.4/30.5	31245
3066 P-L	1998 01 27.8	08 40.75 -01 34.2	17.5	-0.87	+	3.6	6.8/01.3	30293
1996 UA	1998 01 27.8	08 40.78 +36 42.7	18.2	-1.15	+	2.1	6.0/24.2	31279
1990 TX ₄	1998 01 27.8	08 40.82 +06 27.7	17.9	-0.81	+	3.2	3.3/30.4	31228
1992 LK	1998 01 27.9	08 40.92 +26 18.6	17.8	-1.12	+	5.2	2.7/26.2	31275
(8170)	1998 01 28.0	08 41.38 +17 18.9	16.1	-1.08	-	0.3	0.4/28.2	31080
1996 VV ₈	1998 01 28.0	08 41.68 +42 13.4	17.6	-1.00	+	3.9	6.5/22.4	31279
1982 FN	1998 01 28.1	08 41.80 -14 56.2	17.5	-0.89	+	8.6	12.5/06.4	25078
1996 SK ₆	1998 01 28.2	08 42.07 +09 52.3	18.8	-0.81	+	3.7	2.3/30.1	31278
1990 QM ₁	1998 01 28.2	08 42.12 +16 59.8	17.2	-0.83	+	3.9	0.4/28.5	31273

(7347)	1998 01 28.2	08 42.13 +17 30.0	16.8	-0.86	+	3.3	0.2/28.4	28818
(8289)	1998 01 28.2	08 42.32 +15 17.7	16.8	-1.15	+	3.4	1.2/28.8	31216
(7380)	1998 01 28.3	08 42.88 +19 10.3	17.2	-1.04	+	5.1	0.3/28.2	28821
1993 QO	1998 01 28.4	08 42.95 +23 04.8	16.3	-1.61	-	7.2	2.2/28.1	31276
1992 PD ₆	1998 01 28.4	08 43.02 +22 28.9	17.9	-1.06	+	4.9	1.6/27.5	22407
1990 QA	1998 01 28.4	08 43.35 +46 54.9	17.1	-1.16	+	1.5	8.0/22.5	31273
4089 P-L	1998 01 28.6	08 43.88 +05 17.1	18.2	-0.89	+	4.2	4.1/31.5	28892
1993 FG ₁₂	1998 01 28.6	08 44.13 +01 48.9	16.8	-0.75	+	6.8	5.6/02.0	30291
1996 TG ₇	1998 01 28.7	08 44.35 +22 06.5	18.1	-1.05	+	3.8	1.3/27.9	31245
1993 UN	1998 01 28.8	08 44.52 +18 13.5	17.9	-1.14	+	4.6	0.1/28.8	31276
1996 QP ₁	1998 01 29.0	08 45.58 +15 40.2	18.3	-1.01	+	4.7	0.8/29.6	31243
1997 YC ₁₄	1998 01 29.0	08 45.72 +18 37.9	16.6	-1.16	+	2.1	0.2/29.0	31258
1991 RG ₂₅	1998 01 29.1	08 45.84 +25 45.7	17.8	-0.91	+	4.9	2.2/27.3	31230
1996 TP ₃₆	1998 01 29.1	08 46.04 +19 41.9	18.8	-1.15	+	2.7	0.6/28.8	31246
1981 US ₁₄	1998 01 29.1	08 46.12 +21 19.8	16.8	-1.05	+	4.6	1.2/28.5	28883
1969 TR ₁	1998 01 29.1	08 46.17 +20 11.6	17.0	-1.13	+	3.9	0.8/28.7	31271
1981 EQ ₈	1998 01 29.2	08 46.35 +11 46.2	17.2	-0.97	+	3.5	2.5/30.5	26916
1981 EK ₃₀	1998 01 29.2	08 46.36 +10 05.3	19.1	-1.09	+	2.3	3.1/30.7	26920
1992 AK ₁	1998 01 29.2	08 46.51 +20 05.6	16.4	-0.83	+	3.9	0.6/28.8	31275
(8239)	1998 01 29.2	08 46.51 +16 46.3	16.8	-0.84	+	3.7	0.4/29.5	31095
3019 T-3	1998 01 29.2	08 46.60 +06 45.2	18.1	-0.84	+	4.3	3.3/31.8	31295
1987 RN ₃	1998 01 29.3	08 46.68 +13 06.5	16.5	-0.99	+	1.1	1.7/30.2	31227
1998 AO ₉	1998 01 29.4	08 47.00 +21 59.4	18.6	-0.91	+	3.5	1.3/28.5	31261
1987 BB	1998 01 29.4	08 47.16 +17 42.1	16.1	-0.99	+	4.2	0.1/29.5	31273
1996 SJ ₄	1998 01 29.4	08 47.21 +22 44.3	18.0	-1.17	+	3.0	1.7/28.5	31278
1996 VV	1998 01 29.4	08 47.37 +24 06.7	17.4	-1.03	+	4.3	2.1/28.1	31279
(8310)	1998 01 29.5	08 47.85 +18 29.5	16.8	-1.03	+	7.1	0.3/29.4	31220
1996 MR	1998 01 29.6	08 48.10 +17 16.1	20.7	-1.01	+	5.0	0.2/29.8	31278
1995 HQ ₂	1998 01 29.6	08 48.16 +28 30.7	20.6	-1.10	+	5.0	3.8/27.3	28302
1998 AL ₇	1998 01 29.7	08 48.29 +15 33.3	15.5	-1.00	+	3.6	1.0/30.2	31260
1279 T-2	1998 01 29.7	08 48.64 +16 07.9	17.9	-1.12	+	5.0	0.7/30.1	31294
1997 YQ ₁₃	1998 01 29.9	08 49.21 +15 26.0	16.4	-0.91	+	3.4	0.8/30.4	31258
1981 EJ ₃	1998 01 29.9	08 49.47 +17 33.6	17.0	-1.11	-	1.5	0.1/30.0	26915
(8270)	1998 01 29.9	08 49.49 +23 44.1	16.3	-1.21	+	3.5	2.3/28.8	31212
1989 UF ₁	1998 01 30.0	08 49.91 +15 40.6	17.3	-1.08	+	3.7	0.8/30.5	31228
6516 P-L	1998 01 30.1	08 49.97 +28 16.3	18.8	-1.29	+	2.7	4.3/28.2	29141
1997 YD ₁₄	1998 01 30.1	08 50.34 +17 25.9	17.1	-0.93	+	0.2	0.1/30.2	31286
1996 TK ₄₈	1998 01 30.2	08 50.49 +16 42.3	18.1	-0.95	+	4.4	0.3/30.5	31279
1997 YF ₁₄	1998 01 30.3	08 50.90 +14 58.3	17.3	-1.04	+	1.2	1.2/30.8	31286
1995 OY ₃	1998 01 30.3	08 51.05 +16 59.3	21.4	-0.82	+	3.5	0.2/30.5	25645
1997 YE ₁₄	1998 01 30.3	08 51.07 +14 58.4	17.3	-0.94	+	1.6	0.8/30.9	31258
1981 EY ₄₀	1998 01 30.4	08 51.47 +15 28.2	19.8	-0.93	+	3.8	0.7/30.9	22271
1996 TS ₁₁	1998 01 30.5	08 51.63 +20 38.6	19.9	-1.07	+	3.9	1.0/29.9	31246
1996 TW ₈	1998 01 30.5	08 51.63 +01 09.4	16.5	-1.12	-	3.7	6.2/01.8	31142
1986 RV ₅	1998 01 30.5	08 51.72 +10 14.1	18.0	-1.09	+	3.8	2.9/01.1	31226
4194 T-1	1998 01 30.5	08 51.89 +12 06.4	17.7	-1.03	+	6.5	2.0/31.9	31268
1993 FN ₈	1998 01 30.5	08 51.97 +15 55.3	17.7	-0.81	+	5.5	0.6/31.0	31233
1996 UF ₄	1998 01 30.6	08 52.08 +24 47.2	18.2	-0.95	+	3.7	2.3/29.1	31279
1991 VH ₄	1998 01 30.7	08 52.33 +21 57.0	16.9	-0.86	+	4.7	1.3/29.7	31275
1993 FT ₄	1998 01 30.7	08 52.49 +18 03.3	16.8	-0.83	+	4.0	0.1/30.6	31275
1997 YO ₁₈	1998 01 30.7	08 52.50 +24 00.5	17.3	-1.12	+	2.0	2.4/29.5	31286

1997 YB ₁₄	1998 01 30.7	08 52.72 +23 42.2 16.2	-0.91 +13.1	2.7/28.9	31286	4333 T-1	1998 02 01.8	09 01.15 +19 00.1 17.4	-0.84 + 4.3	0.7/01.4	23533
(7388)	1998 01 30.8	08 52.94 +03 13.6 16.0	-0.77 + 5.4	4.7/03.4	28823	1978 WB	1998 02 01.8	09 01.17 +20 49.0 17.2	-1.07 + 4.6	1.6/01.0	31271
(8283)	1998 01 30.8	08 52.98 +31 09.9 16.0	-0.98 + 5.1	4.5/27.6	31215	1998 AX	1998 02 01.9	09 01.53 +23 24.0 16.8	-1.14 + 1.4	2.8/31.7	31260
1981 ES ₄₂	1998 01 30.9	08 53.18 +20 46.2 18.0	-0.98 + 3.4	1.4/30.2	31272	1981 EF ₁₂	1998 02 01.9	09 01.54 +10 13.0 18.7	-1.09 + 2.6	2.8/03.3	31271
1991 GG ₇	1998 01 30.9	08 53.53 +25 25.3 16.0	-1.07 + 2.8	3.7/29.3	31274	1981 SE ₂	1998 02 02.0	09 01.76 +19 16.7 18.0	-1.03 + 5.3	0.8/01.5	27566
1996 LP ₁	1998 01 30.9	08 53.64 +15 53.2 17.4	-1.09 + 8.5	0.7/31.4	31242	1986 RD	1998 02 02.0	09 02.01 +07 05.0 18.4	-0.83 + 3.8	2.7/04.4	31272
1979 QJ ₁	1998 01 31.0	08 53.64 +13 02.1 16.5	-0.99 + 9.1	2.0/32.0	31223	(8311)	1998 02 02.0	09 02.01 +13 37.4 17.4	-1.02 + 6.2	1.3/02.8	31220
(8315)	1998 01 31.0	08 53.65 +26 55.2 17.0	-1.16 + 6.9	3.6/28.8	31221	1981 EM ₁₈	1998 02 02.2	09 02.58 +21 47.1 16.1	-1.18 + 1.4	2.2/01.3	31271
1998 CC ₁	1998 01 31.0	08 53.68 +14 58.6 17.4	-0.86 + 6.0	0.7/31.6	31267	1981 EU ₆	1998 02 02.2	09 02.61 +05 18.8 19.8	-1.01 + 3.5	3.6/04.7	27303
1993 TE ₃₄	1998 01 31.1	08 54.12 +15 09.5 18.1	-1.09 + 6.0	0.9/31.6	31235	1996 OL	1998 02 02.2	09 02.63 +21 16.4 18.3	-1.09 + 5.9	1.6/01.2	31278
6030 P-L	1998 01 31.2	08 54.77 +13 46.8 17.6	-0.71 + 3.4	0.9/01.1	31294	1991 VX ₅	1998 02 02.2	09 02.68 +28 50.8 16.5	-0.90 + 6.0	3.9/30.1	31275
1997 XN ₈	1998 01 31.3	08 54.98 +17 26.4 16.5	-1.15 + 2.3	0.0/31.3	31252	(8296)	1998 02 02.3	09 03.03 +22 45.4 15.2	-1.04 - 1.0	2.6/01.3	31217
1993 VB ₂	1998 01 31.4	08 55.48 +13 53.4 16.5	-1.06 + 4.0	1.5/01.2	31276	1996 TE ₈	1998 02 02.3	09 03.10 +05 18.4 19.1	-0.87 + 6.7	3.7/05.4	28307
1998 BD ₄	1998 01 31.4	08 55.55 +19 21.3 17.3	-1.15 - 1.0	0.8/31.1	31263	1996 SP ₇	1998 02 02.3	09 03.34 +05 10.8 20.6	-0.90 + 3.4	3.4/05.1	28597
1979 MQ ₅	1998 01 31.5	08 55.63 +07 30.3 19.5	-0.85 + 1.9	3.0/02.6	31223	1996 RU ₂	1998 02 02.3	09 03.45 +18 22.7 18.1	-1.15 + 4.9	0.6/02.1	31278
1992 RO ₁	1998 01 31.5	08 55.66 +15 50.0 18.5	-0.97 + 7.3	0.5/31.9	30782	1982 TL ₂	1998 02 02.4	09 03.36 +08 23.3 16.4	-1.04 + 2.8	3.7/04.2	31135
1998 BM ₉	1998 01 31.6	08 56.34 +16 53.6 19.0	-0.92 + 3.6	7.7/21.0	31265	1998 AV	1998 02 02.4	09 03.68 +26 54.0 18.0	-0.83 + 9.0	2.9/30.5	31286
1998 BA ₉	1998 01 31.6	08 56.43 +11 41.1 17.0	-0.84 + 1.6	1.7/01.9	31265	1997 XO ₈	1998 02 02.4	09 03.76 +20 57.5 17.4	-1.00 + 6.2	1.8/01.5	31252
1990 TJ ₃	1998 01 31.7	08 56.46 +23 05.5 16.4	-1.13 + 6.4	2.5/30.4	31274	1990 UZ ₁	1998 02 02.4	09 03.85 +16 26.0 16.6	-1.08 + 7.3	0.1/02.6	31274
1352 T-2	1998 01 31.7	08 56.58 +16 16.8 16.3	-1.01 + 4.2	10.6/12.0	15080	(7444)	1998 02 02.5	09 03.79 +26 27.6 17.3	-1.01 + 2.1	3.0/31.5	28837
1994 GH ₉	1998 01 31.7	08 56.81 -04 40.9 15.9	-0.81 + 4.2	9.9/06.2	31276	1997 WQ ₂₂	1998 02 02.5	09 04.25 +16 34.2 18.6	-1.13 + 4.0	0.1/02.6	31282
(7544)	1998 01 31.8	08 56.83 +16 26.9 16.3	-0.88 + 3.4	0.3/32.0	29588	1996 WC ₃	1998 02 02.7	09 04.65 +02 32.0 19.5	-0.86 + 4.8	4.2/06.2	31279
1992 UO ₃	1998 01 31.8	08 56.88 +36 12.6 17.5	-1.13 + 2.9	5.9/27.6	29661	1990 RK ₂	1998 02 02.7	09 04.80 +13 44.5 17.0	-1.11 + 5.8	1.2/03.4	31274
1981 EQ ₆	1998 01 31.8	08 57.02 +24 45.6 19.6	-1.13 0.0	2.7/30.5	26915	1995 SX ₁₂	1998 02 02.7	09 04.87 +16 13.7 18.0	-0.85 + 3.7	0.1/02.9	31277
1996 RD ₁	1998 01 31.8	08 57.06 +12 59.3 18.2	-1.08 + 5.4	1.6/01.8	31142	1996 VJ	1998 02 02.9	09 05.40 +33 13.1 17.1	-0.92 + 3.6	5.0/29.9	31279
(8262)	1998 01 31.8	08 57.28 +18 42.5 17.7	-1.08 + 4.2	9.7/21.0	31210	1997 WP ₂₂	1998 02 02.9	09 05.73 +17 43.6 18.0	-0.79 + 3.8	0.3/02.7	31251
1990 SV ₁₂	1998 01 31.9	08 57.29 +20 22.7 18.0	-0.84 + 3.6	0.9/31.2	31274	1991 PZ ₅	1998 02 03.0	09 06.21 +20 41.0 17.4	-1.06 + 1.6	1.5/02.3	31229
1996 TO	1998 01 31.9	08 57.34 +16 08.1 18.3	-1.03 + 5.6	0.4/01.2	31278	1985 RJ ₅	1998 02 03.1	09 06.64 +21 30.2 17.4	-1.10 + 4.6	1.9/02.1	31272
1984 JR	1998 01 31.9	08 57.36 +19 40.2 19.0	-1.04 + 5.3	0.9/31.4	25636	1981 ET ₁₃	1998 02 03.2	09 06.63 +13 32.9 17.3	-1.15 + 2.5	1.3/03.8	31271
1995 UQ ₅	1998 01 31.9	08 57.39 +19 08.9 16.9	-0.88 + 1.5	0.5/31.5	31278	1981 EO ₄₄	1998 02 03.2	09 06.89 +17 23.3 18.9	-1.09 + 3.8	0.3/03.1	31225
1991 RK ₁₁	1998 01 31.9	08 57.69 +16 16.5 16.4	-0.92 + 9.1	9.7/12.0	31274	1993 TE ₅	1998 02 03.2	09 06.91 +13 49.4 17.4	-1.11 + 4.0	1.0/03.9	31276
1997 YK ₄	1998 02 01.0	08 57.97 +24 35.2 17.0	-0.87 + 2.8	2.0/30.4	31284	1991 GT ₂	1998 02 03.3	09 07.48 +00 16.8 17.5	-0.95 + 5.2	5.4/07.3	29658
1995 GA	1998 02 01.0	08 58.11 +15 55.4 18.0	-1.05 + 8.6	0.5/01.4	31240	4790 P-L	1998 02 03.5	09 07.82 +18 46.6 19.6	-0.95 + 3.5	0.8/03.0	28312
1981 EH ₈	1998 02 01.1	08 58.20 +20 05.8 18.3	-1.20 - 0.5	1.4/31.6	26916	4607 P-L	1998 02 03.5	09 07.89 +24 52.4 17.4	-1.01 + 3.3	3.1/01.6	31294
1993 VC ₅	1998 02 01.1	08 58.43 -03 29.5 16.8	-0.94 +18.7	8.8/08.7	30472	1996 XR ₆	1998 02 03.5	09 07.96 +22 02.6 19.1	-1.01 + 2.9	1.8/02.3	28606
1997 YS ₁₀	1998 02 01.2	08 58.60 +12 21.3 16.2	-1.01 + 4.6	1.8/02.3	31285	5069 T-2	1998 02 03.5	09 08.03 +04 47.0 17.2	-0.92 + 3.6	4.1/06.3	28088
1978 RL ₁	1998 02 01.2	08 58.91 +16 23.0 17.9	-0.78 + 3.6	0.2/01.5	31271	1996 TX ₈	1998 02 03.6	09 08.66 +28 32.6 18.5	-1.37 - 1.3	4.0/01.7	29631
1978 VT ₁₀	1998 02 01.2	08 58.91 +14 20.6 18.4	-1.02 + 4.2	1.0/01.9	28314	1985 SV ₂	1998 02 03.6	09 08.66 +10 54.8 17.4	-1.05 + 2.7	2.0/04.9	28295
1981 EW ₂₈	1998 02 01.3	08 58.88 +14 34.1 18.2	-1.09 + 2.8	1.1/01.8	26920	1996 UB	1998 02 03.7	09 08.87 +14 56.3 16.8	-0.88 + 3.8	0.5/04.1	31279
1993 GM ₁	1998 02 01.3	08 58.95 +10 14.7 16.2	-0.82 + 3.2	2.4/02.9	28616	1997 WM ₂₃	1998 02 03.7	09 09.02 +18 15.4 18.5	-0.88 + 4.7	0.6/03.3	31282
1992 UA ₃	1998 02 01.3	08 59.02 +23 38.0 17.0	-1.00 + 4.0	2.3/30.9	31275	1979 UR	1998 02 03.7	09 09.06 +24 54.6 17.6	-1.02 + 3.1	2.8/01.9	23969
1996 TT ₁₁	1998 02 01.4	08 59.47 +14 47.4 18.4	-0.94 + 4.2	0.7/02.0	31278	1996 TN ₁₀	1998 02 03.7	09 09.06 +27 37.7 16.5	-0.99 + 1.5	3.7/01.4	31278
1985 PC ₂	1998 02 01.4	08 59.49 +18 44.2 17.3	-0.85 + 4.8	0.5/01.0	31272	1993 VJ ₄	1998 02 03.8	09 09.43 +20 14.0 17.9	-1.12 + 4.3	1.4/03.0	28087
(8298)	1998 02 01.5	08 59.88 +23 13.3 16.4	-1.16 + 2.8	3.0/31.3	31218	3078 P-L	1998 02 03.8	09 09.47 +12 56.3 16.8	-1.09 + 1.7	1.5/04.6	30914
1997 XV ₈	1998 02 01.5	08 59.91 +16 25.2 16.4	-1.13 + 1.0	0.3/01.7	31253	1979 MZ ₄	1998 02 03.9	09 09.65 +18 53.3 19.2	-0.93 + 6.3	0.8/03.3	30778
1994 CJ ₂	1998 02 01.5	09 00.13 +17 22.8 16.9	-0.94 + 7.5	0.1/01.5	31276	1979 SU ₁₁	1998 02 03.9	09 09.66 +18 57.5 17.3	-0.81 + 3.9	0.7/03.3	28882
1991 RB ₁₂	1998 02 01.7	09 00.52 +19 55.8 17.0	-1.07 - 0.4	1.0/01.2	31274	1981 EZ ₄₂	1998 02 03.9	09 09.80 +15 03.6 18.8	-1.07 + 4.9	0.5/04.3	28581
1981 PF	1998 02 01.7	09 00.65 +12 16.1 18.7	-0.95 + 7.2	1.4/02.9	28611	1996 VQ ₆	1998 02 04.0	09 09.90 +34 36.2 18.1	-1.03 + 5.3	5.4/30.2	31279
1996 RJ ₅	1998 02 01.7	09 00.67 +21 44.8 18.7	-0.99 + 2.4	1.5/31.7	28319	1991 VL ₁₀	1998 02 04.0	09 10.03 +14 38.2 18.2	-0.85 + 4.3	0.5/04.5	30290
1992 SD ₁	1998 02 01.8	09 01.06 +32 35.4 17.4	-1.09 + 4.1	5.3/29.2	31275	3196 T-3	1998 02 04.0	09 10.05 +19 20.0 18.8	-1.01 + 4.8	1.0/03.3	28088
1996 RC ₁	1998 02 01.8	09 01.06 +16 34.8 18.0	-1.08 + 5.6	0.1/01.9	31278	1985 TW	1998 02 04.0	09 10.06 +18 00.9 18.0	-1.04 + 4.3	0.6/03.7	31272

1998 FEB. 11

M.P.C. 31311

1996 TZ₂₀ 1998 02 04.1 09 10.30 +16 34.7 18.7 -0.88 + 3.5 0.1/04.0 31279
 1981 EL₃₁ 1998 02 04.1 09 10.48 +10 21.8 17.7 -0.98 + 7.5 2.6/05.7 26921
 (8246) 1998 02 04.1 09 10.60 +18 01.4 17.4 -1.11 + 3.9 0.6/03.8 31207
 1996 TV₁₇ 1998 02 04.2 09 10.98 +24 00.5 20.9 -0.96 + 3.4 2.3/02.5 30279
 4060 T-2 1998 02 04.2 09 11.11 +15 04.9 18.8 -0.89 + 4.9 0.4/04.6 28609
 (8259) 1998 02 04.2 09 11.15 +24 51.1 17.0 -1.16 + 5.9 3.4/02.3 31210
 1991 GH₁₀ 1998 02 04.3 09 11.09 +28 31.5 16.9 -1.10 + 4.5 5.0/01.4 31274
 1991 UC 1998 02 04.4 09 11.57 +16 08.5 16.3 -0.89 + 3.6 0.0/04.4 31274
 1993 FE₃₁ 1998 02 04.4 09 11.63 -05 31.2 16.5 -0.71 + 6.3 5.9/10.7 25731
 1991 RQ₁₁ 1998 02 04.4 09 11.85 +16 31.8 16.6 -0.88 +10.7 0.1/04.4 31274
 1994 AD 1998 02 04.4 09 11.92 +18 02.9 17.1 -1.01 + 4.0 0.8/04.1 31276
 1981 EA₂₃ 1998 02 04.5 09 12.19 +25 03.6 18.6 -1.06 + 1.8 3.1/02.7 26919
 1990 RV 1998 02 04.5 09 12.20 +17 20.7 16.3 -0.83 + 4.8 0.4/04.3 31274
 (8306) 1998 02 04.5 09 12.30 +08 31.3 18.4 -1.05 + 5.4 2.7/06.4 31219
 1981 EC₃₅ 1998 02 04.6 09 12.47 +12 27.6 19.7 -1.02 + 6.7 1.4/05.6 26921
 1996 TX₇ 1998 02 04.6 09 12.52 +14 38.2 17.9 -1.05 + 6.5 0.6/05.0 31245
 1990 SX 1998 02 04.7 09 12.70 +22 19.2 17.5 -0.89 + 1.6 1.7/03.3 31274
 1982 JE₁ 1998 02 04.7 09 12.95 +24 07.6 17.7 -1.13 + 5.6 3.0/02.9 27931
 (8227) 1998 02 04.7 09 13.01 +18 21.8 18.0 -0.78 + 3.7 0.6/04.2 31092
 (8217) 1998 02 04.7 09 13.05 +13 22.6 18.1 -1.05 + 5.4 1.0/05.4 31090
 1990 VX₁ 1998 02 04.7 09 13.08 +13 31.2 17.3 -1.13 + 4.9 1.0/05.4 22592
 1996 OF 1998 02 04.8 09 13.23 +22 12.7 18.7 -1.07 + 7.7 2.5/03.3 31242
 1973 SF₆ 1998 02 04.8 09 13.44 +08 57.8 17.5 -1.03 + 6.3 2.5/06.6 28610
 1986 TH 1998 02 04.8 09 13.55 +15 21.2 17.6 -1.14 + 2.6 0.3/05.0 31272
 1996 RD₄ 1998 02 04.9 09 13.72 +36 07.5 17.7 -1.05 + 3.9 5.9/30.8 31244
 1992 RJ₃ 1998 02 04.9 09 13.96 +22 13.9 17.6 -1.15 + 2.2 2.4/03.7 31275
 1996 PQ 1998 02 05.0 09 14.23 +13 21.9 16.9 -0.97 + 8.5 1.1/06.0 30785
 1985 TJ₁ 1998 02 05.1 09 14.39 +31 41.5 17.3 -0.95 + 2.7 4.5/01.3 31272
 1996 RS₅ 1998 02 05.1 09 14.43 +35 36.4 16.7 -1.06 + 1.7 5.8/31.7 29666
 1987 UF₅ 1998 02 05.1 09 14.43 +24 52.9 17.1 -0.96 + 4.2 2.8/03.0 21257
 1998 BL 1998 02 05.1 09 14.45 +24 46.1 17.8 -0.95 + 5.3 3.1/02.9 31261
 1401 T-2 1998 02 05.2 09 14.68 +15 46.1 19.4 -1.02 + 4.0 0.1/05.3 24237
 1993 VN₂ 1998 02 05.4 09 15.71 +14 27.1 17.2 -1.04 + 5.8 0.5/06.0 28616
 1998 BU₆ 1998 02 05.5 09 15.93 +18 48.4 16.6 -1.01 + 8.6 1.3/04.7 31264
 1981 EO₂₅ 1998 02 05.5 09 16.00 -06 49.6 18.6 -0.71 + 7.1 6.7/12.4 26919
 1989 CE₈ 1998 02 05.5 09 16.04 +01 26.1 16.1 -0.92 + 2.4 5.2/08.9 21571
 (7605) 1998 02 05.5 09 16.27 +11 45.7 15.9 -1.05 - 2.4 1.3/06.3 29602
 1986 QO₄ 1998 02 05.6 09 16.47 +24 27.1 17.1 -1.19 + 2.9 3.3/03.8 22810
 1995 SR 1998 02 05.6 09 16.63 -22 02.7 20.0 -0.91 + 3.0 10.7/15.4 27328
 4354 T-3 1998 02 05.7 09 16.69 +16 20.5 17.3 -1.07 + 7.2 0.2/05.6 29669
 2252 T-2 1998 02 05.7 09 16.74 +26 11.9 18.1 -1.02 + 2.1 3.4/03.4 19329
 1996 TL₁₂ 1998 02 05.7 09 16.93 +36 10.9 17.2 -1.08 + 3.1 6.0/31.8 31278
 1977 DY₃ 1998 02 05.7 09 17.06 +18 35.7 17.9 -0.82 + 3.7 0.7/05.1 26187
 1998 AR 1998 02 05.8 09 17.10 +19 06.6 15.2 -1.08 + 2.4 1.5/05.1 31260
 1986 VQ₂ 1998 02 05.8 09 17.17 +10 05.6 17.9 -1.09 + 3.5 2.1/07.1 31272
 1993 SQ₅ 1998 02 05.9 09 17.63 +20 09.9 17.2 -1.16 + 3.5 2.0/05.0 31276
 2610 P-L 1998 02 05.9 09 17.73 +12 27.3 18.5 -0.96 + 5.4 1.1/06.8 28891
 1998 AL 1998 02 05.9 09 17.76 +18 42.3 15.6 -1.00 + 7.8 1.3/05.2 31286
 1987 ON 1998 02 05.9 09 17.93 +08 16.4 17.4 -0.86 + 7.3 2.2/08.0 25424
 1981 EX₃₅ 1998 02 06.0 09 17.99 +04 02.2 19.9 -1.04 + 3.5 4.7/08.6 26921
 1993 FR₄₄ 1998 02 06.0 09 18.16 +17 45.7 15.6 -0.88 + 2.4 0.7/05.6 28616

1979 MC₃ 1998 02 06.0 09 18.21 +13 40.0 19.4 -0.96 + 5.0 0.7/06.6 30778
 1998 AN 1998 02 06.1 09 18.50 +17 35.1 16.1 -0.96 + 2.3 0.7/05.7 31286
 1990 RE₅ 1998 02 06.1 09 18.75 +21 43.7 16.5 -1.00 + 0.5 2.0/04.9 31274
 1981 ES₃₂ 1998 02 06.2 09 18.81 +12 26.5 19.1 -1.14 + 1.6 1.3/06.9 22271
 1992 SW₁₀ 1998 02 06.2 09 19.17 +33 06.0 15.8 -1.13 + 0.9 7.3/02.6 31275
 1998 BV₆ 1998 02 06.3 09 19.18 +18 19.2 17.3 -0.78 + 6.2 0.8/05.6 31264
 1989 TW₃ 1998 02 06.3 09 19.23 +16 01.0 19.4 -1.02 + 6.2 0.1/06.2 28613
 1981 EV₄₇ 1998 02 06.3 09 19.37 +03 26.5 19.2 -0.85 + 6.4 3.8/09.6 26923
 1990 OE₅ 1998 02 06.3 09 19.56 +04 50.4 17.8 -0.88 + 3.2 3.3/08.9 31273
 1993 HG 1998 02 06.4 09 19.90 +17 42.2 17.6 -0.84 + 3.8 0.7/06.0 31234
 1996 VC₁ 1998 02 06.5 09 20.23 +14 30.3 17.7 -0.85 + 3.8 0.3/06.8 31279
 1996 VJ₂ 1998 02 06.5 09 20.39 +07 59.8 17.7 -1.03 + 5.5 2.8/08.4 31248
 1981 EZ₂₄ 1998 02 06.7 09 20.78 +01 30.8 18.2 -0.85 + 7.1 4.8/10.6 26919
 1997 VM₆ 1998 02 06.7 09 20.81 +02 34.0 16.1 -1.04 - 0.3 5.1/09.3 31281
 1981 EN₆ 1998 02 06.8 09 21.15 +07 25.2 19.5 -1.06 + 3.3 2.9/08.6 26915
 1981 EF₃ 1998 02 06.8 09 21.50 +03 28.5 18.1 -1.03 + 3.5 5.1/09.6 28580
 1993 FB₂₃ 1998 02 06.8 09 21.54 +07 30.2 18.4 -0.75 + 4.0 2.2/08.9 26191
 6214 P-L 1998 02 06.8 09 21.56 +07 11.8 17.4 -0.98 + 5.0 3.6/08.9 31294
 1989 RF 1998 02 06.9 09 21.82 +09 35.9 17.2 -0.75 + 3.8 1.5/08.5 31273
 1981 EC₁₁ 1998 02 07.0 09 22.03 +11 40.1 19.4 -0.93 + 3.2 1.2/07.9 21966
 1996 PW₆ 1998 02 07.0 09 22.31 +16 29.8 17.9 -1.03 + 4.2 0.4/06.8 31243
 (7418) 1998 02 07.1 09 22.42 +14 39.8 15.5 -0.95 + 8.7 0.3/07.3 28831
 2607 P-L 1998 02 07.1 09 22.47 +07 04.2 18.0 -0.88 + 5.9 3.0/09.4 31294
 4393 T-1 1998 02 07.1 09 22.60 +17 43.1 18.4 -0.83 + 4.5 0.7/06.6 31023
 1996 MS 1998 02 07.1 09 22.72 +17 14.9 21.4 -0.93 + 5.8 0.5/06.7 28319
 3196 T-1 1998 02 07.2 09 22.91 +12 15.6 16.6 -0.91 + 4.0 1.2/08.0 23791
 1993 FM₁₆ 1998 02 07.3 09 23.17 +23 50.0 16.0 -0.83 + 4.1 2.5/05.1 28887
 1988 DH₁ 1998 02 07.3 09 23.19 +12 27.7 16.1 -0.98 + 8.9 1.3/08.1 31273
 1017 T-3 1998 02 07.3 09 23.22 +08 28.9 17.4 -0.89 + 2.5 2.0/08.9 31295
 1990 SJ₁₆ 1998 02 07.3 09 23.28 +12 32.8 17.2 -0.83 + 2.9 0.8/08.0 29658
 1991 VC₂ 1998 02 07.3 09 23.45 +01 45.4 16.7 -0.80 + 4.6 4.2/11.0 31274
 1298 T-2 1998 02 07.4 09 23.95 +09 28.1 17.0 -0.97 + 7.8 2.6/09.1 31294
 1998 AQ 1998 02 07.5 09 24.35 +19 49.4 16.6 -0.79 +10.8 1.4/06.1 31259
 1996 VB₉ 1998 02 07.6 09 24.37 +12 52.0 17.0 -0.68 + 4.2 0.6/08.3 31279
 1998 BJ₄ 1998 02 07.6 09 24.44 +13 43.0 15.1 -1.09 - 2.5 0.7/07.9 31264
 1998 BG₄ 1998 02 07.6 09 24.52 +17 11.5 16.9 -1.04 + 4.7 0.8/07.2 31289
 3295 T-2 1998 02 07.6 09 24.73 +11 14.6 18.6 -0.94 + 6.7 1.3/08.7 29142
 (7415) 1998 02 07.7 09 25.14 +16 55.5 17.8 -0.78 + 4.1 0.5/07.3 28830
 1996 OK 1998 02 07.8 09 25.10 +17 46.1 19.4 -1.06 + 7.5 0.9/07.1 31242
 1993 FU₃₅ 1998 02 07.8 09 25.13 +17 14.6 16.5 -0.81 + 4.4 0.6/07.3 31276
 9542 P-L 1998 02 07.8 09 25.53 +19 42.2 18.1 -0.87 + 4.2 1.4/06.7 28607
 1996 VR₃₀ 1998 02 07.9 09 25.65 +07 04.2 16.4 -0.81 + 2.6 2.4/09.9 31279
 3216 T-1 1998 02 07.9 09 25.66 +11 56.5 17.7 -0.88 + 4.5 1.1/08.7 31268
 1987 DN 1998 02 07.9 09 25.80 +14 24.6 16.1 -0.85 + 2.3 0.2/08.1 31226
 1991 XS 1998 02 08.0 09 26.08 -01 29.9 16.7 -0.81 + 3.2 5.9/12.3 31275
 1993 CO 1998 02 08.0 09 26.11 +19 14.4 15.7 -0.89 + 4.0 1.4/07.0 28887
 1993 FO₃₄ 1998 02 08.0 09 26.14 +09 08.6 17.9 -0.75 + 4.9 1.6/09.7 31275
 1992 PT 1998 02 08.0 09 26.28 +13 51.2 19.3 -0.99 + 4.8 0.4/08.4 28317
 1996 RN 1998 02 08.1 09 26.50 +18 51.2 18.6 -1.09 + 3.4 1.3/07.3 31244
 1996 US 1998 02 08.2 09 26.89 +22 06.2 18.5 -0.98 + 3.8 2.1/06.5 31247
 1992 SQ₂₆ 1998 02 08.2 09 27.15 +18 20.1 18.4 -0.94 + 5.8 1.2/07.4 31275

1995 PC	1998 02 08.3	09 27.12 +15 26.3 20.0	-0.78 + 3.7	0.1/08.2	28889	1992 GF ₂	1998 02 10.8	09 37.30 +17 50.2 18.0	-1.10 + 5.1	1.4/10.0	31231
1971 US	1998 02 08.3	09 27.36 +19 59.6 17.3	-1.10 + 4.9	2.0/07.2	31271	1992 YU ₁	1998 02 10.9	09 37.83 +09 13.3 16.9	-0.91 + 3.2	1.6/12.2	31233
1981 EY ₃₅	1998 02 08.5	09 28.06 +19 56.0 17.1	-1.13 + 3.9	2.1/07.4	31272	1996 VU ₂	1998 02 10.9	09 37.86 +12 29.5 17.6	-0.82 + 4.7	0.5/11.4	31248
1996 VL	1998 02 08.6	09 28.36 +21 07.7 18.5	-1.08 + 3.7	2.0/07.1	28866	1997 YT ₁₀	1998 02 11.2	09 38.78 +22 04.0 16.8	-0.88 + 6.7	2.6/08.9	31257
1993 XY	1998 02 08.8	09 29.41 +07 33.7 17.6	-0.95 + 6.6	3.2/10.8	31276	4250 T-3	1998 02 11.3	09 39.03 +13 55.7 18.3	-0.97 + 6.2	0.0/11.3	16884
4545 P-L	1998 02 08.9	09 29.70 +12 57.2 17.5	-0.84 + 4.3	0.6/09.4	31294	(7366)	1998 02 11.3	09 39.07 +23 34.6 16.3	-0.84 + 3.8	2.7/08.8	29587
1998 BK ₁	1998 02 09.0	09 30.10 +19 18.4 17.2	-0.99 + 6.4	2.0/07.8	31288	1996 TR ₄₁	1998 02 11.3	09 39.25 +16 08.8 17.1	-0.91 + 6.5	0.8/10.8	31279
1998 AS ₈	1998 02 09.1	09 30.40 +12 50.3 16.8	-0.85 + 4.6	0.6/09.6	31261	1998 BG ₈	1998 02 11.3	09 39.41 +19 02.3 17.2	-0.98 + 5.5	1.8/10.1	31264
1989 RQ ₁	1998 02 09.1	09 30.57 +11 48.9 17.8	-0.99 + 7.1	0.9/09.9	31273	1996 RL ₄	1998 02 11.4	09 39.41 +25 19.5 18.8	-1.12 + 1.5	3.9/08.9	28088
2200 T-2	1998 02 09.1	09 30.74 +14 52.4 18.8	-1.00 + 4.7	0.1/09.2	29314	1998 BK ₈	1998 02 11.4	09 39.64 +19 56.2 17.6	-1.03 + 6.4	2.6/09.8	31265
1994 AE ₉	1998 02 09.2	09 30.70 +13 22.4 19.4	-0.99 + 4.4	0.5/09.5	23982	1996 OJ ₂	1998 02 11.4	09 39.68 +06 03.9 18.7	-1.07 + 2.5	2.7/13.3	31243
1998 BC ₁	1998 02 09.2	09 30.91 +14 23.7 16.1	-0.81 + 4.0	0.1/09.3	31261	1992 CU ₂	1998 02 11.5	09 39.77 +04 57.9 18.2	-0.80 + 2.6	2.5/13.8	31275
(8257)	1998 02 09.2	09 30.94 +26 42.8 16.8	-1.17 + 6.2	4.8/06.1	31209	2561 P-L	1998 02 11.5	09 39.83 +34 19.9 16.7	-1.11 + 1.9	7.3/06.3	29668
1996 XO ₂	1998 02 09.2	09 31.07 +12 49.2 18.0	-0.84 + 4.5	0.6/09.8	31249	1996 RE ₄	1998 02 11.6	09 40.17 +32 26.8 17.5	-1.08 + 2.8	5.6/06.9	31278
1996 VK ₃₈	1998 02 09.3	09 31.15 +08 59.7 16.4	-0.84 + 6.2	1.8/10.9	31279	1981 EC ₃₈	1998 02 11.6	09 40.33 +09 39.6 19.5	-1.03 + 5.2	1.6/12.7	28070
1993 BB ₆	1998 02 09.3	09 31.30 +16 16.7 17.1	-0.87 + 3.8	0.5/08.9	31275	1981 EC ₂₁	1998 02 11.6	09 40.50 +20 51.3 18.3	-1.00 + 2.9	2.8/10.0	31271
1992 BD ₂	1998 02 09.4	09 31.50 +13 17.2 17.6	-0.76 + 6.2	0.4/09.8	31231	1993 HH	1998 02 11.6	09 40.62 +39 33.1 16.6	-1.00 + 2.4	7.6/04.4	31276
1993 FZ ₄	1998 02 09.5	09 32.11 +15 44.5 19.0	-0.76 + 4.2	0.3/09.3	26190	1996 VB ₁₅	1998 02 11.7	09 40.60 +19 18.9 19.2	-0.83 + 4.0	1.7/10.3	28603
4166 T-1	1998 02 09.5	09 32.33 +28 35.3 19.0	-0.89 + 2.6	3.8/06.0	25436	3308 T-1	1998 02 11.7	09 40.74 +12 58.0 17.9	-0.79 + 4.3	0.3/12.0	26193
1979 MW ₂	1998 02 09.6	09 32.50 +12 08.7 18.5	-0.79 + 4.7	0.7/10.3	28610	1990 RH ₇	1998 02 11.7	09 40.75 +17 00.8 18.5	-0.82 + 4.3	0.9/10.9	23671
(8307)	1998 02 09.8	09 33.17 +22 10.7 18.1	-1.19 + 4.0	3.1/08.0	31219	1984 SK ₁	1998 02 11.7	09 40.96 +17 15.7 18.5	-0.79 + 3.1	0.8/10.9	31272
1994 CY ₁₁	1998 02 09.8	09 33.40 +20 45.3 17.5	-0.99 + 2.6	2.9/08.4	23864	1998 BZ ₂₄	1998 02 11.8	09 41.30 +13 35.8 15.6	-0.80 + 5.2	0.1/11.9	31266
(7489)	1998 02 09.9	09 33.53 -03 15.1 19.1	-0.78 + 5.7	4.6/15.0	29087	1981 ER ₂₈	1998 02 11.9	09 41.77 +30 50.2 19.4	-1.10 + 1.3	5.2/08.0	26920
1981 EQ ₃₂	1998 02 10.0	09 33.97 +03 38.1 19.0	-0.84 + 4.2	2.9/12.9	28839	1998 BH ₈	1998 02 11.9	09 41.79 +19 39.5 15.5	-0.88 + 7.5	1.8/10.3	31265
1996 UC ₄	1998 02 10.0	09 34.06 +20 24.5 18.3	-0.95 + 4.2	2.0/08.5	31279	1992 AP ₁	1998 02 12.0	09 41.83 +12 47.5 16.1	-0.81 + 4.0	0.3/12.3	28316
1992 WN ₃	1998 02 10.0	09 34.13 +29 23.0 16.6	-0.99 + 5.1	5.3/06.1	31233	1982 UZ ₉	1998 02 12.0	09 41.85 -11 43.1 18.3	-0.82 + 4.4	7.3/19.6	31272
1996 SH ₇	1998 02 10.0	09 34.22 +18 49.3 18.4	-1.02 + 4.6	1.4/09.0	28864	1996 VS ₃₀	1998 02 12.0	09 41.87 +15 51.5 16.5	-0.91 + 3.7	0.6/11.5	31279
1991 HM	1998 02 10.1	09 34.32 +33 21.3 17.0	-1.12 + 5.2	6.9/04.9	28316	1979 MX ₇	1998 02 12.0	09 41.96 +05 08.0 19.6	-0.95 + 3.2	2.8/14.2	30779
1981 EX ₂₉	1998 02 10.1	09 34.52 +10 45.1 18.6	-1.01 + 1.2	1.2/11.0	26920	1985 RN ₄	1998 02 12.0	09 42.04 +17 33.0 20.2	-1.01 + 5.0	1.2/11.1	31272
1998 BA ₈	1998 02 10.2	09 34.82 +19 19.0 17.4	-1.03 + 5.7	2.0/09.0	31264	1993 TQ ₂₃	1998 02 12.0	09 42.21 +16 09.9 16.3	-1.02 + 6.2	1.1/11.5	31276
1981 ED ₂₆	1998 02 10.2	09 34.90 +07 37.5 17.9	-0.98 + 6.9	2.9/12.1	26919	1981 EN ₂₅	1998 02 12.1	09 42.14 +10 29.1 17.3	-0.95 + 7.1	1.5/13.0	26919
1992 ML	1998 02 10.2	09 34.92 +15 03.7 17.2	-1.07 + 4.6	0.2/10.1	27913	2034 T-2	1998 02 12.1	09 42.60 +15 23.2 18.0	-0.81 + 4.1	0.6/11.8	31294
1997 YP ₇	1998 02 10.2	09 35.06 +22 42.0 17.1	-0.81 + 3.7	2.1/08.1	31256	1996 WQ	1998 02 12.1	09 42.62 +05 55.4 16.0	-1.06 - 0.4	3.1/13.8	31279
(7529)	1998 02 10.3	09 35.23 +09 01.1 17.5	-0.94 + 5.4	1.8/11.7	29293	1996 VG ₇	1998 02 12.2	09 42.53 -13 32.5 18.0	-0.84 + 6.4	9.1/21.2	28602
1992 OP ₅	1998 02 10.3	09 35.36 +10 36.0 17.6	-1.01 + 6.0	1.4/11.3	28086	1996 TR ₉	1998 02 12.2	09 42.94 +14 36.4 18.4	-1.01 + 6.6	0.3/12.0	31278
1991 GW	1998 02 10.3	09 35.42 +29 33.6 17.5	-1.15 + 4.5	6.6/06.3	28072	1991 FD	1998 02 12.3	09 43.15 -06 24.2 15.6	-0.73 +21.0	8.6/20.5	31274
1992 OY ₂	1998 02 10.3	09 35.44 +15 15.2 17.6	-0.96 + 6.2	0.3/10.1	31275	1996 PK	1998 02 12.3	09 43.19 +17 46.7 16.9	-1.07 + 4.1	1.7/11.3	31278
1995 MG ₁	1998 02 10.4	09 35.45 +09 51.0 16.8	-0.90 + 8.1	1.6/11.7	31277	2149 T-1	1998 02 12.3	09 43.27 +21 41.2 16.4	-0.90 + 2.3	2.6/10.4	31294
1998 BZ ₄₀	1998 02 10.4	09 35.63 +16 26.7 16.5	-0.84 + 3.9	0.7/09.9	31267	1989 RO ₂	1998 02 12.3	09 43.33 +39 40.1 15.7	-1.68 - 5.5	10.7/08.9	31273
1996 TW ₁₀	1998 02 10.4	09 35.70 +15 17.5 16.8	-0.99 + 5.7	0.3/10.2	31278	1996 VR ₁	1998 02 12.4	09 43.57 +38 03.5 18.7	-1.07 + 4.3	7.9/05.4	31248
1992 SF ₁₄	1998 02 10.4	09 35.75 -13 10.6 18.6	-0.91 + 4.4	8.1/18.6	27914	1996 UD ₃	1998 02 12.4	09 43.63 +17 03.7 16.6	-0.94 + 3.1	1.2/11.6	31247
1989 EF ₆	1998 02 10.5	09 35.96 +16 53.6 16.8	-1.01 + 1.3	0.9/10.0	31227	1996 VL ₄	1998 02 12.5	09 44.10 +19 05.6 18.7	-0.89 + 4.4	1.7/11.1	29117
3109 P-L	1998 02 10.5	09 36.21 +04 52.3 18.4	-0.88 + 1.7	2.9/12.8	14628	1981 EV ₁₀	1998 02 12.6	09 44.47 +04 30.2 19.0	-1.01 + 5.0	3.8/15.0	22270
1996 TN ₁₉	1998 02 10.6	09 36.24 +15 19.0 19.2	-1.01 + 4.9	0.3/10.3	29140	1991 RS ₄₀	1998 02 12.7	09 44.58 +16 40.8 18.0	-0.89 + 4.2	1.0/11.9	31230
4619 P-L	1998 02 10.6	09 36.32 +16 51.7 17.4	-1.09 + 4.3	1.2/10.0	30914	1998 BN ₂₅	1998 02 12.7	09 44.90 +13 28.9 16.2	-1.10 + 5.1	0.0/12.8	31266
1981 ES ₄₇	1998 02 10.6	09 36.50 +18 29.9 19.0	-1.08 + 5.2	1.6/09.6	22697	6643 P-L	1998 02 12.8	09 44.95 +22 14.3 16.9	-1.16 + 4.1	3.7/10.7	31294
1996 TV ₁₀	1998 02 10.7	09 36.79 +24 51.1 17.0	-1.15 + 5.1	4.2/08.0	31278	1262 T-2	1998 02 12.8	09 44.96 +20 31.4 18.4	-1.18 + 3.9	3.0/11.1	15078
1997 YO ₇	1998 02 10.7	09 36.97 +25 25.4 17.4	-0.84 + 7.2	3.7/07.4	31285	1981 UE ₂₆	1998 02 12.9	09 45.37 +16 49.9 16.6	-0.84 + 4.9	1.0/12.0	31272
1998 CN ₁	1998 02 10.8	09 37.03 +22 06.2 16.6	-0.96 + 3.6	2.8/08.8	31267	1995 OD ₁	1998 02 12.9	09 45.44 +09 59.0 18.1	-0.75 + 8.5	1.2/14.0	31277
2651 P-L	1998 02 10.8	09 37.15 +18 40.5 20.0	-1.01 + 3.6	1.4/09.7	21977	1991 PU	1998 02 13.0	09 45.67 +09 40.5 17.6	-0.91 + 3.6	1.2/14.0	24104
1988 VS ₂	1998 02 10.8	09 37.30 -04 52.0 17.3	-0.87 + 5.6	6.0/16.3	29656	1996 XJ ₂₆	1998 02 13.0	09 46.02 +16 50.5 18.6	-0.82 + 4.6	0.9/12.1	31279

1998 FEB. 11

M.P.C. 31313

(8258)	1998 02 13.1	09 46.11 +19 53.6 18.3	-1.09 + 4.0	2.3/11.5	31209	1991 GK ₅	1998 02 16.7	10 00.17 +16 28.6 16.6	-1.03 + 4.3	1.8/15.6	31229
1992 SC ₁	1998 02 13.1	09 46.14 +13 19.1 17.3	-0.92 + 6.2	0.0/13.2	30782	3297 T-1	1998 02 16.7	10 00.26 +10 28.4 17.2	-0.79 + 4.9	0.6/17.2	31294
3233 T-1	1998 02 13.1	09 46.20 +21 58.5 17.2	-1.00 + 2.0	3.2/11.1	31294	1996 TO ₉	1998 02 16.7	10 00.56 +41 47.2 18.2	-1.39 - 2.5	11.0/10.1	29116
1996 SY ₄	1998 02 13.2	09 46.57 +18 03.5 19.3	-1.00 + 5.2	1.5/12.0	31142	(7775)	1998 02 16.8	10 00.86 +06 35.3 16.2	-0.92 + 4.1	1.9/18.4	30264
(7343)	1998 02 13.3	09 46.89 +18 25.9 16.6	-1.16 + 3.8	2.2/12.1	28574	1981 DU	1998 02 16.8	10 00.89 +01 23.3 18.4	-1.02 + 4.3	3.9/19.7	26914
1978 RX ₇	1998 02 13.3	09 47.12 +12 53.3 17.1	-1.02 + 2.8	0.2/13.5	31271	1991 AB ₂	1998 02 16.8	10 00.89 +08 15.9 15.2	-0.91 + 7.9	1.8/18.0	31274
1979 MJ ₈	1998 02 13.5	09 47.72 +06 34.1 19.2	-0.95 + 5.2	2.3/15.3	30779	1990 HH ₁	1998 02 16.9	10 00.96 +07 26.9 16.9	-0.84 + 8.5	1.5/18.4	26189
1975 SP ₁	1998 02 13.5	09 47.81 +02 18.3 20.4	-0.86 + 5.9	3.3/16.7	25526	1981 EU ₁₁	1998 02 16.9	10 01.22 +17 48.4 19.7	-1.00 + 2.4	1.7/15.5	26917
1981 EC ₄₀	1998 02 13.5	09 48.01 +05 27.7 19.3	-0.95 + 2.5	2.4/15.5	26922	1974 RY ₁	1998 02 17.0	10 01.55 +09 33.1 18.3	-0.96 + 5.9	0.8/17.8	29652
1979 MX ₃	1998 02 13.6	09 48.28 +08 19.2 20.6	-1.03 + 5.1	1.7/14.9	30778	1996 TH ₄₂	1998 02 17.0	10 01.56 +17 40.2 17.5	-1.04 + 5.6	2.0/15.5	31246
(7550)	1998 02 13.6	09 48.33 +04 50.0 18.5	-0.99 + 5.9	2.9/16.0	29589	5061 T-2	1998 02 17.0	10 01.57 +07 43.7 18.6	-1.08 + 4.0	1.5/18.2	15258
1990 UL ₂	1998 02 13.6	09 48.50 +23 36.8 15.9	-1.12 + 5.5	4.5/11.0	31274	1990 EA ₇	1998 02 17.0	10 01.58 +18 47.7 16.3	-1.06 + 2.1	2.4/15.4	24240
1993 TC ₃	1998 02 13.7	09 48.58 +11 44.5 18.1	-1.05 + 6.4	0.5/14.1	30472	1991 LZ	1998 02 17.1	10 01.85 -03 24.1 17.1	-0.93 + 7.0	5.9/21.0	30654
(7379)	1998 02 13.8	09 49.20 +10 00.6 19.0	-0.90 + 4.1	1.0/14.7	28821	1981 ET ₃₄	1998 02 17.1	10 01.85 -03 20.4 20.2	-0.82 + 5.2	4.1/21.7	27909
(7616)	1998 02 13.9	09 49.56 -01 12.0 16.4	-0.79 + 4.0	4.2/18.0	29604	1995 SJ ₄	1998 02 17.1	10 01.91 -16 46.0 18.9	-0.78 + 2.0	7.3/25.6	29664
(7365)	1998 02 13.9	09 49.60 +10 03.2 17.3	-1.01 + 7.7	1.1/14.9	28579	1995 JK	1998 02 17.2	10 02.10 +15 30.3 18.3	-0.95 + 7.9	1.2/16.2	25335
1995 AN	1998 02 14.0	09 49.69 +28 30.1 15.6	-1.77 - 8.4	8.1/12.3	31277	1991 PE ₁₀	1998 02 17.2	10 02.22 +14 34.6 17.6	-0.94 + 2.6	0.8/16.6	28614
(7501)	1998 02 14.0	09 49.74 +11 29.5 17.0	-0.74 + 4.1	0.4/14.5	29090	3141 T-2	1998 02 17.2	10 02.45 +15 26.8 19.2	-1.00 + 4.9	1.2/16.4	24237
2087 T-2	1998 02 14.0	09 49.76 +15 10.1 18.0	-0.91 + 3.5	0.6/13.5	21978	1981 SG ₃	1998 02 17.3	10 02.75 +07 21.8 18.4	-0.97 + 4.6	1.5/18.6	29094
1992 SO ₂₄	1998 02 14.1	09 49.99 +00 26.2 17.3	-0.90 + 5.7	5.2/17.7	31275	6114 P-L	1998 02 17.6	10 03.72 +20 19.8 17.2	-1.11 + 0.2	3.2/15.7	31294
1986 WB	1998 02 14.3	09 51.19 +26 23.8 16.9	-1.10 + 5.3	5.3/10.8	31272	1995 LD	1998 02 17.6	10 04.01 +01 43.4 17.4	-0.94 + 6.0	4.0/20.6	31277
1995 FH ₅	1998 02 14.4	09 51.55 +37 24.2 19.6	-1.44 - 0.2	8.2/09.1	29946	4128 T-2	1998 02 17.7	10 04.28 +13 59.0 19.8	-0.94 + 6.2	0.7/17.2	31269
1991 PO ₈	1998 02 14.4	09 51.61 +14 15.2 19.6	-0.91 + 3.1	0.4/14.2	22083	1995 OU	1998 02 17.8	10 04.50 +16 44.2 18.0	-0.99 + 3.9	1.6/16.5	31277
1994 EH ₇	1998 02 14.6	09 52.26 +28 14.0 17.8	-1.07 + 2.4	4.8/10.7	31276	5133 T-2	1998 02 17.8	10 04.70 +09 19.0 19.2	-0.96 + 2.0	0.8/18.5	31132
1996 VT ₈	1998 02 14.7	09 52.67 +33 11.3 18.2	-0.99 + 4.5	5.9/08.9	31249	1148 T-3	1998 02 17.8	10 04.73 +03 53.6 18.8	-0.84 + 3.9	2.2/20.1	31269
(7346)	1998 02 14.9	09 53.24 +15 04.1 16.9	-0.84 + 5.2	0.7/14.3	28574	1994 AM ₁	1998 02 17.9	10 04.90 +03 01.7 18.1	-1.02 + 4.1	3.3/20.3	31008
4025 P-L	1998 02 14.9	09 53.37 +01 43.2 17.0	-0.96 + 8.0	4.7/18.2	31294	1997 AU ₃	1998 02 17.9	10 05.05 +14 01.9 17.3	-0.89 + 2.3	0.6/17.4	31250
1991 NL	1998 02 14.9	09 53.41 -09 43.0 18.0	-0.93 + 2.5	6.9/20.8	31229	1981 ER ₆	1998 02 18.0	10 05.15 +03 03.3 16.9	-0.90 + 2.9	3.8/20.3	31271
(7461)	1998 02 15.1	09 53.99 +12 40.5 17.6	-0.78 + 4.1	0.0/15.2	29079	1993 FF ₄	1998 02 18.1	10 05.52 +15 29.5 17.1	-0.84 + 4.2	1.3/17.0	31275
2287 T-2	1998 02 15.2	09 54.55 +08 04.2 17.7	-0.83 + 6.4	1.5/16.6	21978	1995 OG	1998 02 18.1	10 05.70 +06 57.7 19.0	-0.86 + 2.3	1.4/19.4	31277
6755 P-L	1998 02 15.3	09 54.82 +13 48.8 19.0	-0.84 + 4.2	0.3/15.0	29314	1994 CE ₁	1998 02 18.1	10 05.90 +07 45.5 17.0	-1.12 - 0.2	1.5/19.0	31276
1996 VX ₈	1998 02 15.4	09 55.17 +04 04.8 17.8	-0.96 + 6.1	2.9/17.8	31279	1981 EP ₄₀	1998 02 18.2	10 06.29 +03 50.1 18.8	-0.96 + 6.8	2.6/20.5	21968
1994 EJ ₁	1998 02 15.4	09 55.34 -06 14.7 16.1	-0.78 +11.4	6.4/22.1	29662	1979 MG ₈	1998 02 18.3	10 06.69 +21 07.0 18.1	-0.79 + 8.3	2.9/15.3	30779
1987 BO ₁	1998 02 15.4	09 55.40 -24 16.6 16.1	-1.27 - 2.5	15.1/25.4	31273	1993 FS ₁₄	1998 02 18.3	10 06.72 +18 21.8 16.1	-0.78 + 5.3	1.9/16.4	31275
1988 XE	1998 02 15.4	09 55.45 -09 33.1 16.3	-0.98 + 3.8	8.4/22.0	30780	1988 TW ₂	1998 02 18.4	10 06.99 -24 54.5 17.4	-1.03 + 1.0	11.8/28.2	28884
1995 MB	1998 02 15.6	09 56.24 -23 21.7 18.2	-1.16 - 2.4	12.1/23.0	25963	1990 OB ₂	1998 02 18.6	10 07.48 +17 46.9 19.0	-0.83 + 2.7	1.5/16.9	18633
1993 FW ₃₄	1998 02 15.7	09 56.38 +13 16.5 17.5	-0.74 + 4.5	0.2/15.5	28616	2246 T-2	1998 02 18.6	10 07.61 +08 09.7 19.4	-0.84 + 5.3	1.0/19.6	28892
(7549)	1998 02 15.8	09 56.91 -02 16.0 17.0	-0.78 + 4.6	4.5/20.2	29589	(7507)	1998 02 18.7	10 07.97 +04 25.5 18.2	-0.98 + 5.2	2.3/20.7	29092
1996 VP ₁	1998 02 15.8	09 57.00 -05 21.8 17.8	-0.89 + 3.0	4.9/20.7	31248	2604 P-L	1998 02 18.7	10 08.15 +15 10.7 16.9	-1.08 + 4.6	1.5/17.8	28619
1079 T-2	1998 02 16.0	09 57.64 +14 20.7 17.6	-0.89 + 4.3	0.6/15.5	29668	(7414)	1998 02 18.8	10 08.42 +11 17.6 17.5	-0.76 + 4.3	0.0/18.9	28830
1994 JG	1998 02 16.1	09 57.94 +01 59.5 17.7	-0.75 + 5.6	2.9/19.3	31276	1995 WB ₄₃	1998 02 18.8	10 08.57 +05 33.0 18.1	-0.74 + 3.8	1.5/20.6	31008
1996 RE ₁	1998 02 16.1	09 58.03 +20 01.3 18.2	-1.00 + 5.5	2.8/14.1	31244	1996 VM ₂	1998 02 18.9	10 08.80 +29 48.2 19.2	-0.96 + 4.8	5.2/13.5	31248
1994 AE ₁₁	1998 02 16.1	09 58.14 +20 23.6 17.9	-0.99 + 5.7	3.1/14.0	29662	1981 EQ ₁₅	1998 02 18.9	10 09.03 +00 18.2 17.7	-0.86 + 5.7	4.5/22.3	28580
1996 VG ₈	1998 02 16.2	09 58.25 +03 02.1 16.7	-1.07 + 4.4	3.5/18.6	31279	1991 RP ₁₇	1998 02 19.0	10 09.09 +18 25.8 18.2	-1.04 + 2.6	2.2/17.2	31274
1995 GV	1998 02 16.3	09 58.61 +08 06.8 17.1	-1.00 + 6.5	1.7/17.5	26191	1995 QS ₃	1998 02 19.0	10 09.40 +02 54.4 17.4	-0.82 + 2.0	2.3/21.3	31277
1981 EC ₁₉	1998 02 16.3	09 58.64 +16 33.1 17.4	-1.12 + 3.3	1.6/15.3	31224	1979 OA	1998 02 19.1	10 09.48 -13 37.5 18.2	-1.05 - 1.2	7.6/24.3	25527
1990 HU ₁	1998 02 16.3	09 58.76 +14 35.4 17.0	-0.85 +10.4	0.8/15.6	24582	3464 T-3	1998 02 19.1	10 09.56 +13 55.8 20.3	-0.99 + 4.7	0.8/18.4	31295
1992 WG ₅	1998 02 16.4	09 59.06 +32 59.9 16.4	-0.93 + 7.2	7.6/09.7	31275	(7615)	1998 02 19.1	10 09.66 +15 17.1 17.4	-0.96 + 6.0	1.2/18.0	29604
1993 HH ₃	1998 02 16.6	09 59.72 +14 10.1 16.4	-0.79 + 5.2	0.6/16.0	31276	1989 CE ₆	1998 02 19.2	10 09.75 +09 44.9 16.9	-0.99 + 1.7	0.5/19.6	31273
1995 KL ₁	1998 02 16.6	09 59.97 -06 45.9 16.1	-1.42 - 7.4	8.6/18.9	31277	1981 DK ₂	1998 02 19.3	10 10.58 +07 02.5 17.7	-0.96 - 0.3	2.0/20.4	31096
1996 VM ₃	1998 02 16.6	10 00.15 +10 34.4 17.1	-0.83 + 4.3	0.5/17.2	29117	1993 FK ₈₀	1998 02 19.4	10 10.77 +18 14.0 17.2	-0.85 + 3.9	2.1/17.5	31276

1992 SJ ₂₆	1998 02 19.4	10 10.91 +25 13.5 19.1	-1.02 + 3.8	4.5/15.7	25641	(7551)	1998 02 22.1	10 21.25 +06 15.2 16.2	-0.72 + 6.4	1.3/23.5	29589
4152 P-L	1998 02 19.5	10 11.00 -00 28.3 17.8	-0.76 + 6.3	3.2/23.1	26423	1996 TL ₉	1998 02 22.2	10 21.35 +17 35.9 18.1	-1.01 + 6.5	2.5/20.0	31278
1990 SX ₁₆	1998 02 19.5	10 11.04 +22 01.1 17.7	-0.90 + 2.7	3.0/16.6	28885	1996 VP ₄	1998 02 22.2	10 21.60 +06 56.9 17.8	-0.78 + 4.8	1.0/23.3	28619
1993 TM ₁₂	1998 02 19.5	10 11.33 +12 32.0 16.6	-1.01 + 7.1	0.6/19.2	31139	1989 VN ₅	1998 02 22.3	10 21.75 +08 56.1 16.8	-1.00 + 4.9	0.5/22.7	31273
1994 CT ₁₂	1998 02 19.7	10 11.74 +16 37.0 16.7	-0.90 + 7.9	2.0/18.0	31238	1994 AC ₁	1998 02 22.3	10 21.99 +02 07.1 17.1	-1.07 + 3.1	3.1/24.5	27716
1981 EJ ₂₇	1998 02 19.7	10 11.81 +10 05.4 18.7	-1.05 + 5.5	0.4/20.0	26920	1988 XO	1998 02 22.3	10 22.02 +31 42.2 17.4	-0.97 + 6.3	6.5/15.4	25339
1981 EX ₇	1998 02 19.8	10 12.06 -02 39.3 19.7	-0.81 + 7.3	4.2/24.2	26916	1981 DU ₂	1998 02 22.4	10 22.41 +02 44.3 19.0	-0.98 + 2.0	2.4/24.4	26914
1996 UR	1998 02 19.8	10 12.35 +04 44.1 17.0	-0.85 + 6.2	2.0/21.8	29140	1981 ER ₁₃	1998 02 22.4	10 22.45 +04 04.6 19.5	-0.91 + 3.9	2.3/24.2	26917
(7348)	1998 02 19.9	10 12.64 +12 01.6 16.3	-0.81 + 4.3	0.3/19.7	28575	(7457)	1998 02 22.5	10 22.72 +15 15.2 17.1	-0.91 + 3.7	1.6/21.1	29078
1981 ES ₃	1998 02 19.9	10 12.78 +02 55.9 17.9	-0.99 + 2.0	2.7/22.0	26915	1973 QR ₁	1998 02 22.5	10 22.77 +06 23.9 17.2	-1.03 + 6.6	1.3/23.6	27725
1992 SY ₁₆	1998 02 19.9	10 12.78 +18 53.4 18.2	-1.06 + 2.2	2.9/18.0	27914	1996 VK ₈	1998 02 22.5	10 22.79 +06 45.6 18.7	-0.86 + 4.4	0.9/23.6	28602
1996 XR ₁	1998 02 19.9	10 12.85 +16 38.9 17.6	-0.63 + 3.7	1.2/18.3	31279	1993 HV ₁	1998 02 22.6	10 22.82 +46 08.8 20.0	-1.09 + 1.1	8.9/10.8	26191
1981 ER ₂₁	1998 02 19.9	10 12.89 +10 21.5 18.3	-0.72 + 5.3	0.2/20.2	26188	1996 VP ₅	1998 02 22.6	10 22.99 -03 04.6 16.5	-0.74 + 4.7	3.9/26.7	30903
1991 NS ₂	1998 02 20.0	10 13.00 +04 07.7 17.8	-0.87 + 6.9	2.3/22.1	28886	1981 JE ₃	1998 02 22.6	10 23.08 +08 14.5 17.1	-0.89 + 5.5	0.7/23.2	31272
1989 SR ₃	1998 02 20.1	10 13.23 +14 58.6 17.5	-0.73 + 4.6	1.1/18.9	31227	1988 EA ₂	1998 02 22.6	10 23.09 +09 44.3 16.0	-0.95 + 8.0	0.1/22.8	31273
1995 HL	1998 02 20.1	10 13.51 +27 17.0 17.6	-1.07 + 5.0	5.2/15.4	28617	1986 QC ₁	1998 02 22.7	10 23.45 +15 18.9 17.4	-0.86 + 5.8	1.7/21.2	31226
1998 BF ₁₈	1998 02 20.3	10 14.19 +13 37.7 18.6	-0.94 + 4.3	1.1/19.6	31266	1981 EE ₂₃	1998 02 22.7	10 23.57 +07 47.4 19.4	-0.90 + 4.4	0.7/23.4	25438
1981 EG ₂₃	1998 02 20.3	10 14.30 +11 43.4 17.5	-0.80 + 4.2	0.3/20.1	26919	1981 ER ₁₀	1998 02 22.8	10 23.54 +06 15.2 18.3	-1.00 + 5.6	1.3/23.9	21966
1994 CS ₂	1998 02 20.4	10 14.45 +19 00.5 15.7	-0.83 +11.6	3.0/17.6	31238	3526 T-3	1998 02 22.8	10 23.59 +12 17.2 19.3	-1.02 + 5.1	0.8/22.2	27939
1981 EG ₄₀	1998 02 20.4	10 14.57 +11 06.9 19.0	-0.78 + 4.9	0.1/20.4	31135	1979 TH ₂	1998 02 22.8	10 23.67 +11 28.8 17.0	-0.80 + 4.3	0.4/22.4	31134
(7577)	1998 02 20.5	10 15.05 +17 59.2 16.6	-0.77 + 7.1	2.1/18.3	29595	4349 T-1	1998 02 22.8	10 23.72 +09 01.7 18.4	-0.79 + 6.2	0.3/23.2	22087
1987 RO ₅	1998 02 20.5	10 15.05 +09 47.4 18.1	-0.60 + 4.3	0.2/21.0	31273	1979 ME ₇	1998 02 22.8	10 23.90 -09 17.6 17.7	-0.97 + 2.9	6.8/28.4	21100
1991 VD ₆	1998 02 20.6	10 15.30 +17 24.3 18.4	-0.81 + 6.3	2.0/18.6	31230	1987 DW ₆	1998 02 22.9	10 24.02 +11 56.1 16.2	-0.81 + 4.2	0.6/22.3	31136
1981 EC ₄₃	1998 02 20.6	10 15.31 +05 47.6 18.6	-0.97 + 6.8	1.7/22.1	26922	1978 NK	1998 02 22.9	10 24.28 +05 14.0 19.0	-0.86 + 4.8	1.4/24.4	28610
1996 TM ₆	1998 02 20.7	10 15.75 +14 26.9 19.4	-1.01 + 5.3	1.3/19.7	31278	1984 CF	1998 02 23.0	10 24.46 +25 04.3 15.9	-0.86 + 6.7	5.4/18.1	31272
1991 TJ ₁₄	1998 02 20.8	10 15.95 +14 25.3 17.3	-0.86 + 5.9	1.2/19.7	31274	1998 BR ₃₃	1998 02 23.0	10 24.77 +20 54.2 16.4	-1.10 + 1.8	4.4/20.3	31267
1981 DZ ₁	1998 02 20.8	10 15.98 -15 31.7 18.0	-0.69 + 7.0	7.8/02.1	21966	1992 GF ₄	1998 02 23.1	10 24.88 +20 37.5 17.7	-1.13 + 4.6	4.0/20.2	31275
1993 BR ₂	1998 02 20.9	10 16.33 +14 13.3 16.2	-0.91 + 2.6	1.4/20.0	21803	1993 UU	1998 02 23.3	10 25.78 +23 43.3 16.3	-1.11 + 5.1	5.1/19.5	25216
1981 EV ₃₁	1998 02 20.9	10 16.55 +07 56.1 19.2	-0.98 + 8.1	1.1/21.8	26921	1979 MH ₆	1998 02 23.4	10 26.09 +19 39.8 18.8	-0.78 + 7.5	3.1/20.2	15701
1996 VE ₉	1998 02 20.9	10 16.63 +27 25.7 16.2	-0.86 + 5.3	5.2/15.7	29320	1981 EJ ₃₈	1998 02 23.5	10 26.28 -00 14.6 16.8	-0.81 + 7.7	3.6/26.7	26922
1981 EP ₄₂	1998 02 21.1	10 17.25 +07 14.2 18.6	-0.87 + 5.9	1.1/22.2	29940	1981 DW ₁	1998 02 23.5	10 26.32 -00 54.8 19.4	-0.91 + 3.5	4.2/26.5	26914
1981 ES ₁₅	1998 02 21.1	10 17.30 +13 09.0 18.5	-1.08 + 1.4	0.9/20.5	26918	1980 TZ ₃	1998 02 23.5	10 26.46 +07 00.8 17.0	-1.04 + 6.1	1.0/24.3	28882
(7720)	1998 02 21.1	10 17.30 +10 18.7 19.6	-0.73 + 4.2	0.1/21.3	30074	1996 XY ₅	1998 02 23.6	10 26.67 +17 59.5 18.3	-0.64 + 3.9	1.8/21.0	28871
1996 VB ₈	1998 02 21.1	10 17.48 +08 50.9 17.0	-1.05 + 7.3	0.7/21.7	31279	4825 T-1	1998 02 23.6	10 26.79 +12 50.7 17.3	-1.02 + 7.1	1.2/22.7	31023
1987 RA ₃	1998 02 21.2	10 17.53 +12 03.2 18.2	-0.88 + 6.1	0.4/20.8	22078	4135 T-2	1998 02 23.6	10 26.98 +21 43.0 17.9	-0.96 + 3.4	3.9/20.3	19690
1981 EZ ₃₅	1998 02 21.2	10 17.56 +11 19.3 19.0	-0.78 + 4.5	0.2/21.0	26921	1983 RX ₄	1998 02 23.7	10 27.04 +00 37.9 17.9	-1.03 + 5.7	3.2/26.3	28084
1996 VM	1998 02 21.2	10 17.75 +35 20.1 17.7	-1.05 + 5.8	8.6/13.0	31247	1993 FD ₂₂	1998 02 23.7	10 27.09 +08 06.7 17.2	-0.81 + 5.1	0.6/24.2	24408
1984 SF ₆	1998 02 21.3	10 17.96 +13 26.2 17.8	-0.77 + 4.9	0.8/20.5	31225	1996 VB ₃₀	1998 02 23.7	10 27.25 +10 00.5 18.6	-0.92 + 6.1	0.1/23.7	29118
1989 TD	1998 02 21.3	10 18.07 +08 22.2 18.7	-1.01 + 4.9	0.7/22.0	21973	1992 SK ₂₆	1998 02 23.7	10 27.42 +08 04.8 18.1	-0.89 + 6.7	0.5/24.3	29661
1981 EZ ₂₈	1998 02 21.5	10 18.67 +20 09.8 18.4	-1.41 - 1.9	3.5/19.6	15409	6700 P-L	1998 02 23.8	10 27.38 +13 09.5 18.0	-0.91 + 4.2	1.2/22.8	28319
1981 EW ₂	1998 02 21.5	10 18.92 +05 04.1 18.0	-1.03 + 0.8	1.9/22.9	31271	1996 SF ₈	1998 02 23.8	10 27.71 +08 39.2 19.1	-0.90 + 5.5	0.3/24.2	29630
1997 CT ₁	1998 02 21.5	10 18.96 +06 42.8 19.1	-0.59 + 3.3	0.7/22.8	31250	1981 EW ₄₅	1998 02 23.9	10 27.87 +04 28.7 18.6	-0.72 + 4.9	1.3/25.5	17628
1996 SS ₄	1998 02 21.6	10 19.25 +05 08.8 17.6	-0.94 + 6.7	2.1/23.2	31278	1993 FK ₈₁	1998 02 23.9	10 28.13 +05 05.3 16.5	-0.73 + 7.4	1.4/25.5	30092
1993 YN ₂	1998 02 21.6	10 19.29 +04 50.1 17.6	-0.96 + 5.3	2.5/23.3	23342	1981 EO ₄₀	1998 02 24.0	10 28.24 +02 57.3 18.2	-0.80 + 8.5	2.0/26.2	25647
1996 RK ₁	1998 02 21.7	10 19.79 +13 38.9 19.6	-0.91 + 4.7	1.1/20.9	31244	(7356)	1998 02 24.0	10 28.32 -02 40.1 16.6	-1.03 - 0.1	4.9/26.9	28577
(7499)	1998 02 21.8	10 20.14 +08 06.8 17.0	-0.84 + 2.3	0.6/22.5	29090	1993 FE ₄₈	1998 02 24.0	10 28.40 +07 57.2 17.1	-0.79 + 4.9	0.5/24.6	28317
(7431)	1998 02 21.9	10 20.20 +08 13.6 16.8	-0.78 + 4.9	0.6/22.6	28834	1996 XE ₁₉	1998 02 24.0	10 28.56 +07 19.1 17.1	-0.75 + 5.0	0.6/24.8	30671
1993 OV ₁₀	1998 02 21.9	10 20.32 +07 29.3 20.0	-0.58 + 3.3	0.5/22.8	22959	1996 TY ₄	1998 02 24.0	10 28.58 +28 26.8 17.5	-1.16 - 0.5	7.7/19.4	31244
1994 CC ₁₈	1998 02 22.0	10 20.78 +20 57.7 16.8	-1.14 + 0.7	4.0/19.6	23785	1996 XR	1998 02 24.1	10 28.69 +12 11.6 18.4	-0.89 + 5.1	0.8/23.4	31279
3224 T-3	1998 02 22.1	10 21.06 +08 58.2 18.2	-1.00 + 7.8	0.5/22.5	27732	1981 EZ ₄₀	1998 02 24.1	10 28.75 +11 58.1 18.7	-1.08 + 4.1	0.9/23.5	28314
1995 KA ₁	1998 02 22.1	10 21.14 -06 07.0 18.4	-0.89 + 9.8	5.3/27.5	29138	1996 YP ₃	1998 02 24.1	10 28.80 +35 13.4 17.3	-1.05 + 4.5	8.9/15.7	31279

1998 FEB. 11

M.P.C. 31315

1978 VF₃ 1998 02 24.2 10 29.16 +12 08.7 18.3 -1.02 + 5.6 1.0/23.5 23245
 6533 P-L 1998 02 24.2 10 29.17 +11 03.5 17.6 -0.75 + 4.8 0.4/23.8 31294
 1996 SV₇ 1998 02 24.2 10 29.18 +02 56.2 18.1 -0.99 + 4.4 2.3/26.1 29307
 1996 TR₅ 1998 02 24.2 10 29.24 +17 47.3 18.5 -1.28 - 0.3 2.7/22.5 28306
 1152 T-2 1998 02 24.3 10 29.46 +14 43.9 18.0 -1.03 + 4.6 1.8/22.9 21808
 2259 T-1 1998 02 24.3 10 29.55 +12 18.7 17.5 -0.77 + 5.7 0.9/23.5 31161
 1981 EM₃₅ 1998 02 24.4 10 29.67 +14 31.7 18.8 -1.12 + 3.8 2.0/23.1 26921
 3219 T-1 1998 02 24.4 10 29.69 +08 53.9 17.7 -1.08 + 4.1 0.2/24.6 31023
 1990 US₃ 1998 02 24.4 10 30.07 +19 10.4 18.3 -0.77 + 4.9 2.6/21.4 23975
 1994 ER₃ 1998 02 24.5 10 30.02 +13 14.9 14.6 -0.71 +10.6 1.7/23.1 31276
 1981 EV₃₈ 1998 02 24.5 10 30.26 +07 42.5 18.4 -0.80 + 3.3 0.5/25.0 26922
 (8229) 1998 02 24.5 10 30.27 -00 21.6 17.5 -0.71 + 6.6 2.5/27.8 31093
 1984 DZ 1998 02 24.5 10 30.41 +12 11.0 16.4 -1.16 + 2.3 1.2/23.9 23132
 1992 SL₂₃ 1998 02 24.6 10 30.72 +30 46.5 17.6 -1.12 + 1.3 7.8/19.0 24230
 1991 GE₂ 1998 02 24.8 10 31.42 +27 56.2 16.8 -0.99 + 8.3 6.2/18.5 29658
 1981 ES₅ 1998 02 24.9 10 31.71 -00 59.0 18.2 -0.93 + 3.1 3.2/27.8 19857
 1993 DO 1998 02 24.9 10 31.92 +09 50.7 16.4 -0.75 + 7.8 0.2/24.8 31275
 1992 OO 1998 02 24.9 10 31.99 +30 36.3 17.0 -1.00 +11.9 6.7/17.1 25441
 1988 VO₃ 1998 02 25.0 10 32.03 +14 21.7 18.6 -0.96 + 4.3 1.6/23.6 28315
 1991 PN₈ 1998 02 25.0 10 32.06 +08 13.0 18.1 -0.85 + 5.5 0.3/25.3 28886
 1983 RL 1998 02 25.0 10 32.10 +12 14.0 16.5 -1.61 - 2.9 1.4/24.5 21969
 1989 SC₁ 1998 02 25.0 10 32.14 +07 04.2 17.4 -1.01 + 5.6 0.7/25.7 31273
 3474 T-3 1998 02 25.0 10 32.28 +15 39.8 17.2 -0.97 + 5.5 2.8/23.2 28088
 1996 XF₁ 1998 02 25.0 10 32.33 +17 22.6 18.0 -0.76 + 4.7 2.1/22.5 29320
 1981 EW₁₂ 1998 02 25.1 10 32.40 +06 43.5 19.6 -1.08 + 3.3 1.0/25.8 26917
 1988 VB₁ 1998 02 25.1 10 32.73 +19 31.9 17.0 -1.07 + 2.1 3.3/22.5 31273
 1996 XN₂₆ 1998 02 25.2 10 32.74 +13 55.3 17.0 -0.84 + 4.9 1.5/23.8 31279
 1996 XT₃₀ 1998 02 25.2 10 32.90 +35 43.3 16.7 -0.87 + 5.1 7.5/15.8 31279
 4314 P-L 1998 02 25.3 10 33.04 +12 08.5 19.0 -0.92 + 3.7 0.9/24.4 14629
 1979 MY₃ 1998 02 25.3 10 33.19 +14 39.6 19.0 -0.88 + 6.7 1.7/23.6 30778
 1990 WX₃ 1998 02 25.3 10 33.21 +19 54.3 16.8 -1.06 + 7.3 4.3/22.1 31274
 (7413) 1998 02 25.3 10 33.24 +09 42.9 17.9 -0.76 + 4.4 0.2/25.2 28829
 1978 VE₁₅ 1998 02 25.5 10 33.90 +14 33.9 17.2 -1.01 + 5.8 2.0/23.9 23347
 1993 FW₃₁ 1998 02 25.6 10 34.48 +23 10.4 16.0 -0.83 + 3.1 3.8/21.4 30897
 1990 OV₄ 1998 02 25.7 10 34.58 -12 20.8 18.8 -0.83 + 2.5 5.5/04.0 29316
 1991 RJ 1998 02 25.7 10 34.60 +09 27.3 16.9 -1.00 + 2.0 0.2/25.6 30290
 1989 EH₁ 1998 02 25.7 10 34.84 +07 42.3 16.6 -0.82 + 6.8 0.4/26.2 29941
 1996 XH₆ 1998 02 25.7 10 34.97 +12 32.7 17.4 -0.80 + 5.3 1.0/24.7 30786
 1977 RR₆ 1998 02 25.7 10 35.01 +11 32.9 17.5 -1.00 + 4.3 0.9/25.1 25077
 1981 EO₅ 1998 02 25.8 10 34.97 -01 52.4 19.3 -0.97 + 5.9 4.3/29.0 26915
 1997 XF₅ 1998 02 25.8 10 35.01 +04 36.3 18.0 -0.92 + 0.3 1.4/26.9 31283
 1992 OJ₈ 1998 02 25.8 10 35.38 +01 39.1 16.9 -1.04 + 3.8 2.6/27.9 31275
 1981 ES₃₁ 1998 02 25.9 10 35.65 +04 09.0 18.6 -0.68 + 7.6 1.3/27.6 26921
 1979 MM₇ 1998 02 26.0 10 35.91 +08 23.3 18.8 -1.02 + 8.1 0.2/26.2 30779
 2037 P-L 1998 02 26.1 10 36.16 +22 51.9 18.2 -0.95 + 1.0 4.0/22.3 22086
 1989 TU₁₀ 1998 02 26.2 10 36.49 +04 40.1 16.9 -0.95 + 8.5 1.5/27.5 31273
 1981 EX₂₁ 1998 02 26.2 10 36.81 +02 48.3 17.8 -0.80 + 7.9 1.7/28.2 22074
 1989 RJ₂ 1998 02 26.2 10 36.88 -26 30.3 18.3 -1.03 + 4.1 11.1/10.5 30781
 1981 EW₆ 1998 02 26.3 10 36.84 -01 47.3 19.1 -1.01 + 3.4 4.8/01.2 26916
 1996 TC₁₆ 1998 02 26.3 10 36.88 -01 12.3 18.7 -1.00 + 4.8 4.4/01.2 28309
 (7390) 1998 02 26.3 10 36.93 +04 04.3 18.2 -0.83 + 8.8 1.4/27.9 28823

1978 RN₅ 1998 02 26.3 10 36.94 +14 47.0 18.2 -0.95 + 3.1 1.7/24.7 29652
 1984 SP₄ 1998 02 26.3 10 37.06 +03 53.0 18.9 -0.95 + 4.4 1.5/27.7 28582
 1990 EU 1998 02 26.3 10 37.06 -01 33.8 18.1 -0.93 + 3.9 3.3/01.3 19027
 1995 KZ 1998 02 26.3 10 37.27 +20 57.0 18.1 -0.93 +14.0 4.0/21.9 29138
 1996 VY₂₉ 1998 02 26.4 10 37.32 +06 21.0 17.4 -0.97 + 6.7 0.8/27.1 29118
 1993 FH₂₂ 1998 02 26.4 10 37.49 +08 08.5 17.8 -0.74 + 4.5 0.1/26.6 28887
 2012 P-L 1998 02 26.5 10 37.64 +13 09.0 19.3 -0.94 + 3.4 1.3/25.3 27938
 4262 T-1 1998 02 26.5 10 37.80 +14 25.3 16.7 -0.87 + 5.3 2.1/24.8 21808
 1997 YR₁₁ 1998 02 26.5 10 37.83 +16 05.3 16.7 -1.14 + 3.4 3.1/24.6 31257
 1991 RE₂₀ 1998 02 26.5 10 37.91 +11 02.8 16.9 -1.00 + 1.3 0.8/26.0 31101
 1970 JB 1998 02 26.6 10 37.97 -30 54.0 16.0 -1.33 -13.3 20.8/01.7 31271
 1990 TK₁₃ 1998 02 26.6 10 37.99 +22 12.6 18.1 -0.78 + 5.6 3.7/22.2 28584
 1981 ES₄₃ 1998 02 26.8 10 38.89 +05 50.7 18.5 -0.73 + 4.8 0.8/27.2 26923
 1990 UJ₅ 1998 02 26.9 10 39.39 +04 26.6 16.9 -0.72 + 6.5 1.1/28.3 23672
 1991 TQ₆ 1998 02 26.9 10 39.48 +02 43.1 17.6 -0.88 + 4.0 2.2/28.7 25649
 3160 T-2 1998 02 27.0 10 39.64 +07 38.0 18.1 -0.71 + 6.9 0.2/27.3 25971
 1969 QR 1998 02 27.0 10 39.72 -04 37.2 17.2 -1.00 + 5.9 4.9/02.9 28881
 6571 P-L 1998 02 27.1 10 40.10 +11 57.8 16.6 -0.82 + 5.9 1.3/26.0 31023
 (7345) 1998 02 27.2 10 40.41 +14 07.7 19.2 -0.93 + 5.4 1.6/25.5 28574
 1981 ET₄₇ 1998 02 27.2 10 40.66 +11 16.0 18.6 -0.90 + 4.1 0.8/26.5 18807
 1979 MT₄ 1998 02 27.3 10 40.61 -11 39.2 17.5 -0.98 + 3.0 7.3/05.3 22948
 1981 EH₂₁ 1998 02 27.3 10 40.66 -02 00.4 17.7 -0.67 + 9.1 2.8/03.0 28838
 (7422) 1998 02 27.3 10 40.98 +12 29.2 17.1 -1.00 + 6.5 1.4/26.1 28831
 1981 EP₁₁ 1998 02 27.3 10 41.05 +06 09.3 19.1 -1.03 + 4.4 0.7/28.0 28580
 4095 T-2 1998 02 27.4 10 41.08 +00 38.3 18.1 -0.70 + 7.8 2.1/02.0 30467
 1993 FM₄₀ 1998 02 27.4 10 41.14 +09 35.2 18.5 -0.77 + 5.1 0.4/27.0 23527
 2186 T-1 1998 02 27.4 10 41.26 +19 06.8 16.3 -0.95 + 0.9 3.7/24.6 31268
 1992 SM₁₂ 1998 02 27.4 10 41.41 +09 53.1 16.8 -0.92 + 7.9 0.5/27.0 31275
 2206 T-3 1998 02 27.5 10 41.40 +04 00.8 18.9 -0.84 + 4.9 1.3/28.8 24120
 1975 XF 1998 02 27.5 10 41.63 +08 32.1 18.4 -0.94 + 7.8 0.1/27.5 27930
 1985 TS₁ 1998 02 27.6 10 41.73 -03 37.0 16.2 -0.82 + 3.4 3.7/03.1 31272
 1996 VA₇ 1998 02 27.6 10 42.14 +02 40.8 17.3 -0.85 + 6.4 2.1/01.4 31010
 1993 FT₃₇ 1998 02 27.7 10 42.17 +08 02.1 16.1 -0.77 + 5.8 0.1/27.8 31276
 (8050) 1998 02 27.9 10 43.02 +05 25.4 18.6 -1.05 + 6.8 1.0/28.7 30864
 (7592) 1998 02 27.9 10 43.05 +30 26.4 15.7 -0.90 + 6.7 8.2/20.2 29599
 1993 FU₃₂ 1998 02 27.9 10 43.14 +10 43.1 19.4 -0.74 + 5.0 0.7/27.1 26927
 1983 WQ 1998 02 27.9 10 43.19 +23 45.7 16.8 -0.94 + 4.3 4.8/23.2 31272
 1991 RQ₁₆ 1998 02 27.9 10 43.24 +14 35.5 19.3 -0.87 + 5.2 1.9/26.0 28585
 1996 VK 1998 02 27.9 10 43.30 +20 31.8 17.2 -0.93 + 4.6 4.2/24.2 30785
 1986 RF₇ 1998 02 28.0 10 43.53 +08 41.0 17.5 -1.01 + 7.0 0.2/27.9 28612
 3088 T-2 1998 02 28.1 10 43.75 +13 15.0 20.1 -0.86 + 5.0 1.6/26.5 15083
 1981 EJ₁₉ 1998 02 28.1 10 43.75 +08 22.4 17.1 -0.76 + 4.8 0.1/28.0 22270
 1981 EL₃₃ 1998 02 28.1 10 44.00 +01 02.4 19.6 -1.01 + 4.8 2.2/02.2 22599
 2763 P-L 1998 02 28.1 10 44.04 +10 59.5 18.9 -0.81 + 5.2 0.9/27.3 20514
 1996 UX 1998 02 28.2 10 44.04 +06 25.8 16.2 -0.83 + 4.9 0.5/28.7 28865
 1996 XQ₁₃ 1998 02 28.3 10 44.58 -10 15.3 17.8 -0.85 + 5.0 5.6/06.1 31249
 1981 ES₃₅ 1998 02 28.3 10 44.72 +14 53.7 16.8 -0.86 + 2.0 2.1/26.4 22271
 1997 YS₁₁ 1998 02 28.3 10 44.76 +16 33.6 17.6 -1.00 + 7.9 3.2/25.6 31257
 1992 WX₂ 1998 02 28.4 10 44.75 +03 39.1 16.3 -0.84 + 6.4 1.7/01.8 29661
 (7340) 1998 02 28.5 10 45.13 +06 50.1 17.0 -0.84 + 4.7 0.4/28.8 28572
 1993 FS₃₄ 1998 02 28.5 10 45.16 +11 03.0 17.0 -0.74 + 4.3 0.8/27.5 28588

5125 T-2	1998 02 28.5	10 45.25 -02 43.9 18.2	-0.83 + 2.8	3.1/03.6	27928
1996 UK ₁	1998 02 28.5	10 45.32 +13 02.9 18.0	-0.98 + 5.4	1.7/27.0	28866
1985 QM ₅	1998 02 28.5	10 45.45 +08 34.7 18.1	-0.77 + 5.3	0.2/28.4	18426
1996 XG ₂₀	1998 02 28.6	10 45.54 +04 41.6 20.2	-0.83 + 5.0	0.9/01.6	28873
1979 TY ₁	1998 02 28.7	10 46.06 +21 22.8 17.3	-1.14 + 2.9	5.6/25.1	30892
1994 PV ₂₄	1998 02 28.9	10 46.64 +10 30.4 18.5	-0.60 + 3.3	0.5/28.0	29138
1980 VO	1998 02 28.9	10 46.76 +22 11.5 17.6	-1.04 + 3.7	4.6/24.9	30287
1989 SQ	1998 03 01.0	10 47.04 +02 51.5 16.5	-1.04 + 4.9	1.8/02.4	28884
1989 NH ₁	1998 03 01.0	10 47.09 +14 12.2 17.7	-1.02 + 8.1	2.3/27.0	31273
1981 ED ₃	1998 03 01.0	10 47.11 -07 06.6 19.5	-0.71 + 7.0	4.7/06.2	30754
1991 RN ₅	1998 03 01.0	10 47.26 +07 21.4 16.8	-0.81 + 6.8	0.1/01.2	28846
1996 XT ₁₀	1998 03 01.1	10 47.50 +13 24.5 20.7	-1.02 + 4.2	1.9/27.5	28606
1981 EO ₈	1998 03 01.2	10 47.91 +01 49.6 16.6	-0.92 + 4.6	2.2/03.0	28084
1993 FY ₂₂	1998 03 01.4	10 48.60 +11 57.8 17.6	-0.86 + 2.5	1.4/28.2	23524
(7404)	1998 03 01.5	10 48.95 +02 07.1 17.6	-0.83 + 6.8	1.6/03.3	28827
1996 XN ₂	1998 03 01.6	10 49.35 +04 06.7 19.7	-0.89 + 5.1	1.0/02.6	30786
1981 EV ₂₉	1998 03 01.6	10 49.38 -08 39.2 19.0	-0.81 + 7.7	5.7/07.1	23535
1995 OB ₁	1998 03 01.6	10 49.70 -01 06.7 19.9	-0.88 + 4.2	2.6/04.2	29318
4017 P-L	1998 03 01.7	10 49.65 +14 56.1 18.9	-0.98 + 2.4	2.2/27.7	22601
1993 UF ₇	1998 03 01.7	10 49.96 +09 38.9 17.2	-0.98 + 8.3	0.9/01.1	27716
1979 MO ₈	1998 03 01.8	10 50.01 -05 19.4 18.9	-0.82 + 3.2	3.8/05.6	30779
1047 T-3	1998 03 01.8	10 50.20 -02 11.6 18.8	-0.85 + 4.3	2.9/04.7	25646
1995 HP	1998 03 01.8	10 50.21 +12 35.0 17.7	-0.98 + 6.5	1.7/28.3	28591
1992 SN ₁	1998 03 01.9	10 50.80 +21 48.8 16.3	-1.12 + 1.2	4.9/26.3	31275
1990 UY ₃	1998 03 02.0	10 50.77 +22 00.3 18.4	-0.78 + 4.2	3.6/25.3	29658
1993 FZ ₃₅	1998 03 02.0	10 51.10 +10 04.0 17.4	-0.73 + 4.9	0.7/01.2	27730
5077 T-2	1998 03 02.1	10 51.13 +00 32.3 19.6	-0.96 + 4.4	2.3/04.1	28881
1995 TF ₁	1998 03 02.1	10 51.24 -12 32.5 19.0	-0.85 + 5.0	5.8/08.4	26569
1993 TZ ₃₂	1998 03 02.1	10 51.46 +10 29.5 17.4	-1.01 + 7.4	1.3/01.2	27936
1996 TK ₁₀	1998 03 02.2	10 51.66 +06 02.0 17.9	-1.02 + 4.1	0.4/02.6	28890
(8275)	1998 03 02.2	10 51.81 +15 14.6 16.1	-1.00 + 6.9	3.7/27.8	31213
1991 GA ₉	1998 03 02.2	10 51.81 -00 20.3 16.4	-0.89 + 7.9	3.1/04.7	28086
(7751)	1998 03 02.2	10 51.82 +05 28.9 17.9	-0.91 + 5.5	0.6/02.8	30257
1981 EB ₃₅	1998 03 02.4	10 52.34 +03 13.0 17.9	-0.92 + 8.8	1.6/03.7	26921
1981 ET ₁₇	1998 03 02.4	10 52.46 +05 16.6 17.5	-0.93 + 5.5	0.7/03.0	21561
1996 VL ₈	1998 03 02.5	10 52.67 +02 07.5 17.5	-1.03 + 5.2	1.7/04.0	29117
1996 VH ₁₆	1998 03 02.5	10 52.72 +25 12.5 19.9	-1.11 + 4.7	6.6/25.0	28604
1992 CQ ₂	1998 03 02.5	10 52.85 +08 10.9 16.5	-0.72 + 6.9	0.3/02.2	23538
1981 EE ₄₂	1998 03 02.5	10 52.89 +02 52.9 18.7	-0.69 + 8.4	1.2/04.1	26922
1991 NF ₃	1998 03 02.6	10 53.14 -10 52.3 18.1	-0.89 + 3.9	5.3/08.2	31274
1981 EM ₂₇	1998 03 02.6	10 53.15 +08 54.7 17.4	-0.75 + 5.6	0.6/02.0	28581
1996 TC ₅₄	1998 03 02.7	10 53.36 +11 20.0 19.1	-0.97 + 4.4	1.6/01.5	28598
1997 YT ₁₁	1998 03 02.7	10 53.63 +23 09.1 15.6	-0.83 + 9.8	5.8/24.9	31257
(7511)	1998 03 02.9	10 54.23 +07 33.3 17.9	-0.74 + 4.8	0.2/02.7	29289
(7334)	1998 03 02.9	10 54.30 +07 55.3 17.2	-0.89 + 7.8	0.3/02.6	29893
(7411)	1998 03 02.9	10 54.40 +06 24.4 16.2	-0.96 + 0.7	7.8/23.0	28829
1988 NY	1998 03 02.9	10 54.42 +37 03.4 19.1	-1.04 +11.1	10.2/18.7	25648
1981 EM ₁	1998 03 02.9	10 54.55 +09 29.7 16.4	-0.76 + 5.2	0.8/02.2	31271
(7508)	1998 03 03.0	10 54.66 +02 40.5 18.3	-0.83 + 5.0	1.3/04.4	29092
(7432)	1998 03 03.0	10 54.68 +08 20.2 17.0	-0.75 + 4.5	0.4/02.6	28834
3134 T-3	1998 03 03.1	10 54.87 +04 06.1 18.1	-1.02 + 7.6	1.0/04.0	29669

1978 RA ₈	1998 03 03.3	10 55.65 +07 28.1 19.1	-0.74 + 4.9	0.2/03.1	25728
1981 ER ₉	1998 03 03.3	10 55.67 +01 14.5 18.5	-0.78 + 3.5	1.7/05.0	26916
3502 T-3	1998 03 03.3	10 55.70 +09 54.4 18.6	-1.04 + 5.8	1.4/02.4	12802
1981 DL ₃	1998 03 03.3	10 56.05 -02 05.7 17.8	-1.01 + 4.9	3.2/06.0	26914
1996 PB ₅	1998 03 03.4	10 55.99 +03 08.1 17.5	-1.04 + 5.3	1.4/04.5	30785
1995 HG	1998 03 03.7	10 57.17 +16 19.5 16.5	-1.06 + 5.6	3.7/28.8	31277
1994 FS	1998 03 03.7	10 57.35 +04 24.6 17.0	-0.94 + 6.4	0.8/04.5	28888
(7502)	1998 03 03.7	10 57.38 +05 02.2 16.4	-0.81 + 5.5	0.5/04.3	29090
(7326)	1998 03 03.7	10 57.51 -05 14.7 18.1	-0.88 + 7.5	3.7/07.7	28568
1983 QG	1998 03 03.9	10 57.98 +27 43.1 18.6	-0.92 + 4.9	5.5/25.1	28612
2204 T-3	1998 03 04.1	10 58.82 -03 44.3 18.3	-0.89 + 6.6	4.1/07.4	29321
1995 FM ₁₁	1998 03 04.2	10 59.08 +03 58.1 19.0	-1.01 + 8.1	1.0/05.0	25223
1995 KO ₁	1998 03 04.3	10 59.56 +34 21.6 18.9	-1.01 +13.3	9.7/20.8	29138
1982 VF	1998 03 04.4	10 59.76 +13 31.9 17.2	-0.92 + 3.3	2.2/02.3	31272
1198 T-1	1998 03 04.4	11 00.07 +02 55.7 17.3	-0.81 + 3.6	1.2/05.5	19878
1993 VY	1998 03 04.5	11 00.52 +43 48.2 17.3	-1.68 - 5.4	15.3/24.8	31236
1988 VK ₂	1998 03 04.6	11 00.54 +18 50.1 16.9	-0.93 + 5.3	4.1/28.7	29656
1993 FG ₂₄	1998 03 04.6	11 00.75 -01 17.0 16.5	-0.72 + 6.7	2.2/07.2	29662
1988 PK	1998 03 04.7	11 00.87 +06 19.7 18.4	-0.90 + 6.7	0.0/04.7	29656
1981 EL ₄₄	1998 03 04.8	11 01.28 -01 47.8 20.5	-1.05 + 4.3	3.1/07.1	26923
1977 PP ₁	1998 03 04.8	11 01.48 +01 43.4 17.1	-0.80 + 6.2	1.4/06.3	30648
1993 FT ₂₃	1998 03 04.8	11 01.50 +05 00.6 17.2	-0.75 + 4.5	0.3/05.3	23525
1993 FZ ₂₅	1998 03 04.9	11 01.63 +03 12.5 16.5	-0.78 + 4.9	0.9/05.9	28616
1996 UA ₃	1998 03 05.0	11 01.95 +20 18.4 19.7	-1.02 + 5.4	4.8/28.6	30785
1325 T-2	1998 03 05.0	11 02.08 +11 07.5 17.9	-0.89 + 4.0	1.6/03.5	25540
1993 FR ₁₈	1998 03 05.0	11 02.23 +19 28.5 18.1	-0.80 + 3.5	3.4/28.8	31234
1981 EY ₉	1998 03 05.0	11 02.38 +00 28.7 16.9	-1.01 + 4.3	2.6/06.7	29132
(7466)	1998 03 05.2	11 03.12 +11 34.1 17.3	-0.73 + 3.5	1.3/03.6	29080
1996 YO ₂	1998 03 05.3	11 03.25 +11 28.0 17.2	-0.83 + 5.1	1.8/03.6	29667
7607 P-L	1998 03 05.3	11 03.27 +12 04.5 17.9	-0.98 + 6.6	2.5/03.5	22274
(7445)	1998 03 05.3	11 03.36 +04 16.7 18.5	-1.01 + 6.5	0.6/05.9	28837
1981 EH ₃₀	1998 03 05.4	11 03.59 +03 22.0 19.0	-0.69 + 7.7	0.9/06.4	26920
1996 VD ₆	1998 03 05.4	11 03.73 +01 56.6 18.1	-0.72 + 5.3	1.1/06.8	31249
1981 EB ₃₃	1998 03 05.5	11 04.01 +00 00.2 19.1	-0.96 + 2.4	1.9/07.2	25536
1981 ET ₄₀	1998 03 05.5	11 04.22 +03 16.2 19.8	-0.90 + 4.5	0.9/06.4	26922
1996 RB ₄	1998 03 05.6	11 04.39 -12 29.0 16.8	-0.96 + 2.9	6.3/11.2	28319
1993 XF ₁	1998 03 05.7	11 04.58 +15 15.1 17.9	-1.02 + 6.2	3.3/02.8	29318
1996 VG ₃	1998 03 05.7	11 04.91 +00 22.4 18.9	-0.90 + 6.1	1.7/07.5	28600
1990 RK ₅	1998 03 05.8	11 04.92 +01 11.0 18.5	-0.76 + 5.4	1.2/07.3	26579
(7321)	1998 03 05.8	11 05.05 +06 38.1 16.4	-0.87 + 6.7	0.3/05.6	28567
1986 QN ₃	1998 03 05.8	11 05.05 +11 25.1 17.6	-1.02 + 6.4	2.0/04.1	31272
1993 KT ₁	1998 03 05.8	11 05.09 +54 06.6 17.0	-1.53 + 3.2	19.6/16.0	25651
1993 XO ₁	1998 03 05.8	11 05.21 +00 26.9 16.9	-0.96 + 7.0	1.9/07.6	28888
1981 DW	1998 03 05.9	11 05.38 -05 30.1 18.5	-0.95 + 2.1	4.4/09.1	26914
1981 EN ₃₈	1998 03 05.9	11 05.53 -04 20.9 19.8	-0.68 + 7.4	3.0/09.5	30780
1981 EV ₃₃	1998 03 05.9	11 05.58 -03 52.3 19.9	-0.74 +13.7	3.3/09.7	26921
1994 AR ₂	1998 03 05.9	11 05.62 +07 32.5 16.8	-0.98 + 6.0	0.7/05.4	31237
1982 TT ₂	1998 03 06.0	11 05.71 +15 20.5 17.3	-0.91 + 3.0	2.6/03.2	27726
1992 DB ₁₀	1998 03 06.0	11 05.81 +01 58.1 18.8	-0.70 + 5.6	1.0/07.3	23861
1981 EM ₄₆	1998 03 06.0	11 05.83 +03 16.6 18.8	-0.99 + 6.3	1.0/06.8	26923
1981 ES ₂₄	1998 03 06.0	11 05.88 +03 57.3 18.2	-1.09 + 2.6	0.8/06.5	26919

1998 FEB. 11

M.P.C. 31317

1971 SB	1998 03 06.0	11 06.00 +18 07.2	16.0 -1.97 - 9.8	6.5/04.7	25338	1996 VU ₅	1998 03 08.7	11 15.71 +06 30.8	16.9 -0.75 + 5.2	0.5/08.1	30670
1996 VQ	1998 03 06.1	11 06.05 +24 30.0	16.3 -0.97 + 1.3	6.5/28.7	31279	1986 TG ₃	1998 03 08.7	11 15.91 +03 48.9	16.8 -0.80 + 5.7	0.3/09.1	31272
(7582)	1998 03 06.1	11 06.20 +11 41.0	16.4 -0.72 + 6.6	1.6/04.1	29597	1989 UE	1998 03 08.8	11 16.11 +10 15.5	17.5 -0.99 + 5.8	1.9/07.1	23684
1993 TJ ₂₄	1998 03 06.1	11 06.25 +08 33.0	19.2 -1.02 + 7.2	1.1/05.3	27715	1991 PY ₁₀	1998 03 08.8	11 16.24 -00 14.2	16.9 -0.78 + 7.8	1.5/10.6	30655
3827 T-3	1998 03 06.1	11 06.48 +08 13.2	21.0 -0.95 + 5.5	0.8/05.4	28313	1981 DX	1998 03 08.8	11 16.28 -06 25.2	17.1 -0.74 + 4.2	3.2/12.5	28882
1996 TG	1998 03 06.3	11 07.00 +03 16.8	17.1 -1.04 + 5.1	0.9/07.0	29140	1175 T-2	1998 03 08.8	11 16.33 +03 18.4	17.6 -0.90 + 6.0	0.6/09.3	28620
1996 TD ₈	1998 03 06.4	11 07.46 -10 03.5	21.0 -0.81 + 7.1	4.1/11.9	29116	1996 QU	1998 03 09.0	11 17.09 -13 32.4	18.0 -1.30 - 0.4	6.7/13.6	31243
(7617)	1998 03 06.5	11 07.71 +06 00.7	17.4 -0.79 + 7.2	0.1/06.4	29605	1070 T-2	1998 03 09.0	11 17.11 +01 11.9	18.4 -0.88 + 8.2	1.3/10.2	22274
1188 T-1	1998 03 06.5	11 07.71 +06 47.0	16.0 -1.11 + 2.6	0.5/06.2	28620	(7500)	1998 03 09.0	11 17.19 +14 01.1	16.7 -1.03 + 4.8	3.5/06.3	29090
1991 GM ₁₀	1998 03 06.5	11 07.77 +10 58.4	18.1 -0.57 + 3.8	1.0/04.7	29135	1988 XX ₁	1998 03 09.2	11 17.57 +20 11.8	17.3 -1.02 + 2.4	4.9/04.7	28613
4049 P-L	1998 03 06.6	11 08.06 -00 02.6	17.7 -0.69 + 6.1	1.5/08.6	23866	3358 T-3	1998 03 09.5	11 18.80 +07 26.5	17.2 -0.96 + 4.3	1.3/08.6	23989
1996 XA ₆	1998 03 06.6	11 08.11 -02 06.2	16.8 -0.79 + 3.8	2.1/09.0	28871	1981 GG	1998 03 09.5	11 19.01 +26 45.0	16.3 -1.09 - 0.7	9.5/03.3	28882
1985 GA ₁	1998 03 06.6	11 08.17 +11 30.4	16.6 -0.98 + 9.0	2.3/04.7	29133	1996 XL ₄	1998 03 09.6	11 19.06 -11 14.2	20.7 -0.88 + 4.9	4.4/14.7	30786
1992 UA ₁	1998 03 06.7	11 08.45 +17 57.2	16.3 -1.13 + 0.1	4.7/03.6	30658	1993 FO	1998 03 09.6	11 19.27 +03 39.8	17.2 -0.74 + 5.0	0.2/09.9	29102
1986 RE ₁	1998 03 06.7	11 08.45 +02 34.3	18.1 -0.98 + 7.0	1.0/07.7	31272	1996 SD ₇	1998 03 09.6	11 19.40 -07 30.2	18.1 -0.94 + 6.2	4.1/13.5	29307
1981 EM ₉	1998 03 06.7	11 08.45 -02 56.8	19.4 -1.02 + 5.2	3.3/09.2	26916	1996 TT ₅	1998 03 09.7	11 19.56 -25 37.4	19.1 -1.07 + 2.9	9.9/19.4	28864
1274 T-2	1998 03 06.7	11 08.46 +06 53.2	18.0 -0.87 + 4.7	0.5/06.3	29142	1981 EU ₄₃	1998 03 09.8	11 19.78 -07 30.7	19.5 -1.02 + 1.7	3.9/13.1	26923
1981 DJ	1998 03 06.7	11 08.65 -07 07.8	17.8 -0.72 + 5.4	3.8/11.0	26914	1991 CU ₁	1998 03 09.8	11 19.91 -03 41.1	15.9 -0.95 + 5.0	3.7/12.3	29135
1987 DQ ₆	1998 03 06.9	11 09.19 +08 49.0	15.6 -0.88 + 1.5	0.9/06.0	31226	1981 EQ ₃₄	1998 03 09.8	11 20.07 +04 21.1	19.1 -0.84 + 7.4	0.0/09.9	26921
(7375)	1998 03 06.9	11 09.43 -01 47.9	17.3 -1.01 + 3.0	2.4/09.0	28820	1991 AK ₂	1998 03 09.8	11 20.10 -17 57.7	18.4 -0.69 + 7.2	6.0/18.3	26189
1991 PD ₁₃	1998 03 07.0	11 09.41 +05 17.8	19.2 -0.88 + 4.8	0.0/07.0	24104	1994 XY ₄	1998 03 09.8	11 20.17 +51 51.1	17.3 -1.50 + 2.3	20.4/21.0	31277
4640 P-L	1998 03 07.0	11 09.45 +04 42.4	19.3 -0.68 + 6.1	0.2/07.3	26192	1989 RV ₂	1998 03 09.9	11 20.23 +12 25.6	17.6 -1.02 + 5.2	2.8/07.5	31273
1996 TB ₆	1998 03 07.0	11 09.80 +19 50.4	17.8 -0.94 + 3.3	4.0/02.8	31278	1994 EQ	1998 03 09.9	11 20.30 +18 20.9	16.9 -1.08 + 1.8	5.2/05.9	29920
1992 BB ₅	1998 03 07.1	11 09.99 +14 53.7	17.1 -0.76 + 5.2	2.7/04.0	29660	1996 VC ₃₄	1998 03 09.9	11 20.30 +15 31.5	19.9 -1.05 + 5.5	4.0/06.5	28604
1981 EO ₉	1998 03 07.1	11 10.00 -01 04.5	17.7 -0.76 + 2.8	1.6/09.1	29653	1331 T-2	1998 03 10.0	11 20.61 +01 34.9	19.4 -0.84 + 5.2	0.8/10.9	25229
9057 P-L	1998 03 07.1	11 10.05 +01 40.1	16.8 -1.00 + 4.3	1.6/08.0	28620	1996 UB ₄	1998 03 10.0	11 20.75 +00 13.7	19.6 -0.92 + 8.5	1.4/11.4	28599
(7408)	1998 03 07.3	11 10.67 +05 30.7	17.4 -1.04 + 5.4	0.1/07.3	28828	1109 T-2	1998 03 10.0	11 20.90 +03 04.5	18.3 -0.98 + 5.1	0.4/10.4	27927
1981 DF	1998 03 07.3	11 10.73 -00 50.0	16.5 -0.89 + 1.2	2.0/09.1	19857	1994 PO ₁	1998 03 10.1	11 20.84 +44 37.8	18.6 -1.00 + 2.2	9.6/22.0	24763
1995 QE ₂	1998 03 07.5	11 11.39 -21 13.7	19.5 -0.72 + 5.8	6.3/17.2	29107	6055 P-L	1998 03 10.1	11 21.13 +02 55.1	19.6 -0.99 + 5.6	0.5/10.6	27732
1996 XY ₁₂	1998 03 07.5	11 11.67 +24 11.2	19.9 -0.84 + 4.7	5.8/01.2	30786	1978 UJ ₄	1998 03 10.2	11 21.28 -02 50.1	20.0 -0.93 + 6.4	2.2/12.5	28314
1997 CE ₁₈	1998 03 07.6	11 11.68 +07 37.4	20.2 -0.54 + 4.3	0.4/06.8	29928	1995 QC ₂	1998 03 10.2	11 21.66 -01 24.2	16.9 -1.03 + 1.4	1.8/11.8	30455
1990 HW ₁	1998 03 07.6	11 11.76 +18 08.6	16.4 -0.82 +10.5	4.5/02.9	31228	1995 QF ₁	1998 03 10.3	11 21.73 +03 58.0	19.4 -0.85 + 6.2	0.0/10.4	30455
1981 EQ ₁₆	1998 03 07.6	11 11.77 +02 23.0	18.9 -0.85 + 1.8	0.8/08.4	31224	1989 KF	1998 03 10.5	11 22.39 +30 52.5	16.6 -0.89 + 4.9	8.5/28.7	31273
1996 SX ₆	1998 03 07.6	11 11.82 -05 05.4	19.4 -0.84 + 5.5	3.3/11.0	28864	1981 EF ₂₈	1998 03 10.5	11 22.40 +10 25.5	17.7 -0.94 + 3.1	1.9/08.6	25536
(8228)	1998 03 07.6	11 11.96 +03 17.3	15.9 -0.82 + 9.5	0.6/08.3	31093	1994 LD ₁	1998 03 10.7	11 23.12 +12 35.8	20.9 -0.85 + 2.9	2.1/08.1	24409
1985 PL ₁	1998 03 07.7	11 12.06 -02 34.7	18.1 -0.74 + 7.7	2.3/10.4	22698	1983 RL ₄	1998 03 10.7	11 23.39 +05 28.6	18.3 -0.79 + 9.3	0.4/10.2	18424
1996 VJ ₃₀	1998 03 07.7	11 12.14 -03 45.6	17.2 -0.92 + 6.0	2.9/10.5	28868	1994 VW ₁	1998 03 10.8	11 23.84 +32 33.3	17.6 -1.14 + 7.9	13.4/01.0	31277
1277 T-2	1998 03 07.7	11 12.14 +05 19.2	18.5 -0.72 + 4.9	0.0/07.7	29142	1997 XT ₁₀	1998 03 11.0	11 24.19 -15 55.6	16.4 -0.92 - 0.9	8.1/16.6	31253
1991 GY ₂	1998 03 07.7	11 12.21 -00 04.3	18.0 -0.86 + 8.5	2.2/09.5	29098	1981 EZ ₄₅	1998 03 11.0	11 24.22 +05 06.2	18.4 -0.69 + 5.7	0.3/10.6	26923
1992 QC	1998 03 07.9	11 12.88 +32 47.2	19.9 -1.18 + 2.0	7.8/27.5	25215	1994 AH ₃	1998 03 11.0	11 24.40 -04 31.9	16.2 -0.93 + 5.5	3.3/13.7	29137
1978 RQ ₉	1998 03 08.0	11 13.13 +05 42.5	16.2 -1.08 + 2.7	0.3/07.8	25438	1996 VS ₄	1998 03 11.1	11 24.67 +10 31.1	16.5 -0.88 + 5.0	2.3/09.0	28600
1985 RV ₂	1998 03 08.1	11 13.84 +09 02.8	19.4 -0.92 + 7.4	1.3/06.9	29655	1977 RY ₆	1998 03 11.1	11 24.95 +07 54.8	17.9 -0.88 + 3.3	1.2/10.0	21964
1981 UV ₂₃	1998 03 08.2	11 13.88 +16 19.1	17.0 -0.98 + 5.0	3.6/04.7	27910	1993 PZ ₂	1998 03 11.2	11 24.89 -01 11.5	18.6 -0.56 + 3.9	0.9/12.9	30897
1992 UJ	1998 03 08.2	11 14.19 +02 20.0	17.6 -0.92 + 5.2	0.9/09.1	28317	1991 FV ₂	1998 03 11.2	11 24.94 +08 38.9	16.3 -1.05 + 4.4	2.0/09.8	25080
1983 RF ₂	1998 03 08.3	11 14.46 +16 29.1	18.5 -0.89 + 5.2	3.3/04.7	28883	1987 SN ₁₂	1998 03 11.3	11 25.41 +04 47.5	18.1 -0.86 + 5.9	0.3/11.0	25648
1989 AG	1998 03 08.3	11 14.54 +27 01.3	16.2 -0.87 + 6.2	8.4/28.5	31273	1993 FL ₁₅	1998 03 11.3	11 25.42 +10 08.2	17.0 -0.77 + 4.9	1.8/09.2	23523
1996 QU ₁	1998 03 08.3	11 14.59 +01 00.6	18.1 -0.97 + 4.7	1.2/09.5	29140	1995 FA ₁	1998 03 11.3	11 25.52 +01 14.0	17.4 -0.99 + 7.1	1.1/12.1	29302
1981 EH ₁₁	1998 03 08.5	11 15.09 +03 23.4	18.2 -0.96 + 2.4	0.4/08.9	21966	1986 QZ	1998 03 11.3	11 25.63 +09 03.3	16.9 -0.99 + 7.2	1.9/09.7	30651
1981 ET ₂₉	1998 03 08.5	11 15.30 -01 32.7	18.5 -0.73 + 5.4	2.0/10.7	22271	1996 VP ₆	1998 03 11.4	11 25.90 +00 07.9	17.8 -0.94 + 4.5	1.1/12.5	28891
1990 GS	1998 03 08.6	11 15.34 +09 09.4	17.4 -1.04 + 2.1	1.5/07.4	27728	1987 RD ₁	1998 03 11.5	11 26.06 +04 50.9	16.6 -0.90 + 4.9	0.4/11.2	28612
4014 P-L	1998 03 08.6	11 15.36 +04 04.9	17.0 -1.11 + 3.8	0.3/08.8	22821	1991 CN	1998 03 11.5	11 26.16 +05 12.2	15.5 -1.03 + 3.8	0.7/11.1	28885

1968 OH	1998 03 11.6	11 26.42 -14 29.5 17.5	-0.85 + 4.3	5.3/17.4	28610	1996 VO ₁	1998 03 13.6	11 34.01 +19 24.4 16.9	-0.99 + 2.7	5.0/08.7	29140
1981 EM ₁₂	1998 03 11.6	11 26.74 -01 42.6 19.9	-0.87 + 1.2	1.6/13.2	11045	1981 UK ₁₁	1998 03 13.7	11 34.12 +05 19.0 18.3	-0.90 + 6.6	0.8/12.9	28882
1995 QK ₁	1998 03 11.7	11 26.94 +04 23.3 18.6	-0.79 + 7.2	0.3/11.5	26403	1990 VK ₆	1998 03 13.7	11 34.31 -03 10.5 18.0	-0.70 + 6.7	1.5/15.8	23516
1971 UT	1998 03 11.7	11 27.11 -04 08.1 17.8	-0.93 + 7.1	2.7/14.3	28293	1990 RE ₇	1998 03 13.7	11 34.48 +04 37.2 17.1	-0.88 + 2.4	0.6/13.2	31274
1019 T-1	1998 03 11.8	11 27.22 -03 52.0 18.3	-0.82 + 5.5	2.2/14.3	24403	1994 CM ₁₃	1998 03 13.8	11 34.60 +08 35.8 17.9	-0.96 + 4.2	1.9/12.1	30453
(7737)	1998 03 11.8	11 27.47 +01 49.2 17.7	-0.92 + 6.6	0.6/12.4	30254	1995 US	1998 03 13.9	11 34.99 -14 41.4 16.8	-0.95 + 0.4	5.0/18.8	30665
1981 EZ ₂₃	1998 03 11.8	11 27.52 +00 13.2 19.6	-0.84 + 6.4	1.2/13.0	21967	1989 VJ ₁	1998 03 13.9	11 35.10 +01 33.5 19.2	-0.89 + 9.0	0.4/14.4	28297
1996 WZ	1998 03 11.9	11 27.48 +19 46.7 16.7	-0.83 + 3.6	4.6/06.6	29666	1997 AO ₁	1998 03 14.0	11 35.24 +09 00.9 16.2	-0.60 + 4.3	1.4/11.8	30460
1981 ET ₂₀	1998 03 11.9	11 27.50 +05 23.4 17.9	-1.01 + 0.9	0.8/11.4	22429	1995 QJ ₃	1998 03 14.1	11 35.82 -02 28.8 18.4	-0.71 + 8.2	1.4/16.0	29139
1996 TQ ₁	1998 03 12.0	11 28.25 +02 29.9 18.6	-0.93 + 6.6	0.3/12.4	29320	2583 P-L	1998 03 14.1	11 35.85 +06 54.6 18.7	-0.80 + 4.8	1.3/12.8	27925
1994 CA ₁	1998 03 12.1	11 28.23 +00 02.6 18.3	-0.88 + 7.7	1.3/13.2	31140	1996 VV ₅	1998 03 14.1	11 35.86 -02 37.7 17.5	-0.85 + 7.0	1.7/15.9	28601
1987 SH ₄	1998 03 12.1	11 28.27 +14 40.4 17.9	-0.98 + 2.7	3.4/08.8	29941	1995 SO ₂	1998 03 14.1	11 35.88 -03 02.0 20.2	-0.87 + 6.0	1.7/16.0	30783
1978 VW ₄	1998 03 12.1	11 28.40 +05 44.3 18.9	-0.98 + 5.6	0.9/11.4	27930	1995 KM ₁	1998 03 14.2	11 36.02 +08 24.1 19.7	-0.98 + 7.4	2.1/12.3	30783
1992 EN ₂₅	1998 03 12.2	11 28.60 +05 39.0 19.5	-0.71 + 4.6	0.6/11.5	24106	4095 P-L	1998 03 14.2	11 36.23 -03 42.4 19.1	-0.83 + 6.3	2.1/16.4	28892
1995 QM ₂	1998 03 12.2	11 28.70 +09 49.8 17.2	-0.81 + 5.8	1.9/10.1	29664	(7692)	1998 03 14.3	11 36.45 +03 15.5 17.4	-0.85 + 1.5	0.2/14.1	30067
1981 ET ₃₉	1998 03 12.2	11 28.73 +01 17.5 19.1	-0.79 + 3.8	0.6/13.0	26922	1996 SK ₈	1998 03 14.3	11 36.70 +03 46.8 17.6	-0.96 + 5.5	0.4/14.0	29307
1992 DA ₁₀	1998 03 12.3	11 29.03 -02 06.7 19.2	-0.70 + 4.8	1.3/14.2	29616	1991 TR ₁	1998 03 14.4	11 36.70 -25 26.4 16.7	-1.03 +11.8	11.3/25.3	28086
1981 SL	1998 03 12.3	11 29.11 -01 13.1 19.0	-0.89 + 7.5	1.4/13.8	29653	1992 YC ₂	1998 03 14.4	11 36.78 +00 04.5 18.6	-0.87 + 5.4	0.7/15.2	29661
1981 DV	1998 03 12.3	11 29.16 -11 03.9 18.0	-0.77 + 9.4	5.0/17.7	11044	1982 SM ₂	1998 03 14.5	11 37.31 +01 36.1 18.4	-1.02 + 4.7	0.3/14.8	25327
1981 EQ ₁₃	1998 03 12.3	11 29.34 -03 51.8 15.9	-1.10 - 3.4	3.4/14.0	26917	1996 VK ₃	1998 03 14.7	11 37.78 -01 00.2 18.1	-0.82 + 5.9	1.1/15.8	31144
1983 CZ ₂	1998 03 12.3	11 29.38 -04 26.0 15.9	-1.00 + 1.7	3.6/14.6	8138	1993 FA ₂₃	1998 03 14.8	11 38.32 -02 47.7 17.3	-0.74 + 6.0	1.5/16.6	23524
1981 EN ₁₅	1998 03 12.4	11 29.30 -01 06.1 18.3	-0.99 + 5.8	1.9/13.8	21967	1992 YW ₃	1998 03 14.8	11 38.32 +24 15.9 14.8	-0.87 + 4.3	8.3/07.5	31139
1981 EM ₃	1998 03 12.4	11 29.40 -07 33.3 17.8	-0.97 + 6.5	4.3/15.9	29653	1995 UL ₃	1998 03 14.8	11 38.35 +07 11.9 17.0	-0.79 + 2.5	1.2/13.4	29319
1993 FX ₂₃	1998 03 12.5	11 29.69 +02 28.0 18.2	-0.79 + 4.5	0.2/12.8	26400	6584 P-L	1998 03 14.9	11 38.55 +05 53.9 17.1	-0.88 + 4.5	1.3/13.8	23986
1982 SG ₁₂	1998 03 12.5	11 29.79 +00 46.8 17.2	-0.90 + 9.1	0.9/13.4	28314	1981 EK ₂₀	1998 03 14.9	11 38.56 +04 08.8 17.6	-1.03 + 1.7	0.7/14.4	26918
1992 SQ ₂₃	1998 03 12.5	11 29.84 -06 10.0 18.9	-0.94 + 7.2	3.0/15.6	21798	1992 PX	1998 03 14.9	11 38.60 +03 59.7 18.3	-0.91 + 7.6	0.6/14.4	31139
1981 DY ₁	1998 03 12.5	11 30.05 -06 32.3 18.7	-0.88 + 1.2	3.1/15.3	26914	1996 XS ₂₅	1998 03 14.9	11 38.81 +31 45.5 17.6	-0.81 + 6.1	8.4/03.2	31249
1996 TL ₁₀	1998 03 12.6	11 30.14 -01 12.1 18.4	-1.02 + 5.0	1.5/13.9	28619	1981 EF ₃₁	1998 03 14.9	11 38.83 +04 03.0 18.5	-0.93 + 8.3	0.7/14.4	26921
2045 T-2	1998 03 12.6	11 30.18 +08 19.2 16.4	-1.03 + 1.6	1.8/11.2	27939	1987 UN ₁	1998 03 14.9	11 38.83 -13 43.7 17.8	-0.81 + 7.0	4.8/20.7	31227
4068 P-L	1998 03 12.6	11 30.27 +01 58.7 17.0	-1.05 + 5.0	0.5/13.0	22971	1994 LF ₁	1998 03 15.1	11 39.26 -40 11.6 18.9	-0.91 + 6.6	13.0/01.1	24395
1996 YK	1998 03 12.6	11 30.31 +03 01.1 17.4	-0.70 + 4.6	0.0/12.7	29140	1979 ME ₂	1998 03 15.1	11 39.39 +10 58.2 21.2	-0.84 + 6.6	2.4/12.2	30778
1974 SF	1998 03 12.7	11 30.70 +01 02.3 18.9	-0.90 + 7.2	0.7/13.5	28610	1991 RY ₄	1998 03 15.1	11 39.49 -00 03.4 19.3	-0.81 + 5.7	0.7/15.9	22084
1995 UR ₅	1998 03 12.8	11 31.16 -05 30.3 17.6	-0.71 + 7.1	2.4/15.9	27731	1994 BM	1998 03 15.2	11 39.62 -04 47.6 17.1	-1.00 + 4.1	2.6/17.3	30472
1997 AX ₁₄	1998 03 12.8	11 31.18 +19 27.3 18.9	-0.86 + 6.7	4.4/07.2	29125	(7406)	1998 03 15.2	11 39.65 -00 07.5 17.5	-0.90 + 5.7	0.7/16.0	28828
1988 RC ₅	1998 03 12.9	11 31.22 +11 41.5 16.9	-0.97 + 5.0	2.9/10.3	29095	1977 EO ₁	1998 03 15.4	11 40.39 +06 19.5 16.6	-0.80 + 4.6	1.4/14.1	27118
1981 EG ₁₈	1998 03 12.9	11 31.36 +02 04.7 17.1	-1.04 + 4.3	0.4/13.2	29609	1996 UG ₁	1998 03 15.5	11 40.79 -00 20.8 18.8	-0.95 + 8.1	0.8/16.3	28599
2672 T-3	1998 03 12.9	11 31.51 -05 31.9 18.0	-0.67 + 6.1	2.0/16.0	29949	1989 SR ₁	1998 03 15.7	11 41.46 +10 42.9 17.4	-1.00 + 6.3	3.4/12.9	28884
1996 XC	1998 03 13.0	11 31.71 +15 01.3 17.0	-0.95 + 7.1	4.5/09.0	31279	1993 FG ₆	1998 03 15.7	11 41.56 +04 10.7 17.5	-0.75 + 4.6	0.6/15.0	26190
5016 P-L	1998 03 13.1	11 31.96 +07 08.6 17.3	-1.08 + 3.4	1.9/12.0	28319	1996 VU ₆	1998 03 15.7	11 41.60 +13 53.9 19.1	-0.90 + 5.0	3.4/11.9	29308
1996 VD ₉	1998 03 13.1	11 32.07 +08 35.5 17.2	-0.85 + 6.1	1.8/11.3	28603	1973 SB ₆	1998 03 15.8	11 41.75 +03 32.9 18.3	-0.90 + 6.3	0.5/15.3	25338
1990 BY ₁	1998 03 13.2	11 32.25 -02 38.6 15.6	-0.90 + 6.4	2.2/15.0	28885	1981 EC ₃₉	1998 03 15.8	11 41.82 -00 20.7 19.7	-0.66 +11.9	0.7/16.7	26922
(7325)	1998 03 13.2	11 32.37 +01 55.7 16.6	-0.87 + 9.3	0.4/13.6	28568	1996 UU	1998 03 15.9	11 42.25 -09 41.9 17.8	-0.82 + 8.9	3.7/20.1	31247
1993 TY ₂₄	1998 03 13.2	11 32.50 +02 19.5 19.0	-0.99 + 8.0	0.3/13.5	23125	5175 T-3	1998 03 15.9	11 42.41 +23 21.5 17.0	-0.84 + 6.7	9.3/08.0	22702
1996 TY ₈	1998 03 13.2	11 32.56 -26 54.3 20.0	-0.91 + 8.3	8.8/24.9	28864	1990 YC	1998 03 16.0	11 42.56 +07 09.1 16.7	-1.02 + 6.3	2.1/14.4	25440
2277 T-2	1998 03 13.2	11 32.61 +06 29.7 18.0	-0.86 + 4.7	1.1/12.2	29142	1992 RZ ₃	1998 03 16.0	11 42.62 +01 13.4 17.7	-0.96 + 6.6	0.3/16.2	28586
1991 PH ₂	1998 03 13.3	11 32.76 +05 12.9 18.5	-0.88 + 5.7	0.8/12.6	28845	1995 SD ₅	1998 03 16.1	11 43.03 -00 05.4 16.2	-0.89 + 1.9	0.6/16.7	29946
1997 AY	1998 03 13.3	11 33.00 +08 43.7 17.3	-0.72 + 4.4	1.4/11.5	29320	1988 RD ₆	1998 03 16.1	11 43.04 +04 39.9 17.9	-0.92 + 5.6	0.9/15.2	29316
1990 OE ₄	1998 03 13.4	11 33.15 -03 49.4 18.8	-0.78 + 6.1	1.8/15.7	21974	1979 MM ₄	1998 03 16.1	11 43.23 -00 49.0 17.5	-0.97 + 7.9	1.1/17.0	30778
1984 SS ₅	1998 03 13.4	11 33.17 +12 09.0 18.2	-0.74 + 4.6	2.3/10.4	29316	7081 P-L	1998 03 16.2	11 43.46 +00 34.6 18.1	-1.08 + 3.7	0.5/16.6	22822
3060 T-2	1998 03 13.6	11 33.87 +08 49.7 16.7	-0.91 + 5.2	2.6/11.7	28892	1979 MB ₆	1998 03 16.2	11 43.50 +04 20.0 18.9	-0.96 + 7.4	0.9/15.4	22270
1981 DO ₃	1998 03 13.6	11 33.99 -05 45.6 17.9	-0.74 + 3.9	2.3/16.4	28882	1996 XG ₉	1998 03 16.3	11 43.95 +17 02.8 16.9	-0.90 + 3.9	5.6/11.4	31249