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EDITORIAL NOTICE

Readers will notice that the astrometric observations of minor planets that would normally be contained in this batch of *Minor Planet Circulars* have been transferred to a separate *Minor Planet Circulars Supplement*. This new publication, abbreviated *MPS*, is offered in an attempt to reduce the bulk (and thus the postage costs) of the printed material issued. The *MPS* simply consists of a small-print ordered listing of the observations. Henceforth the *MPCs* themselves will include a detailed *summary* of the observations of minor planets; they will also contain, as before, the observations of comets, as well as all the usual orbital information, name citations, ephemerides, etc. The *MPC* summary will list, for each observatory, the designation of each object observed (an asterisk as usual 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 and of the number of objects, together with the total range of dates covered by the observations. For the moment, the *MPS* will be sent automatically to *MPC* subscribers, but normally only by surface mail. Airmail *MPC* subscribers who *do* wish to receive the *MPS* by airmail will need to double the airmail surcharge. It may become necessary to institute a separate subscription for the *MPS* anyway. In the mean time, subscribers who *do not* in fact require the *MPS* at all may request that it not be sent to them. This introduction of the *MPS* will not change the situation with regard to subscribers to the Computer Service and Extended Computer Service.

At the meetings of the IAU General Assembly in Kyoto in August, the most significant change was the increased authority of the divisions that had been proposed at the previous General Assembly. Commission 20 is one of six commissions contained in a broader Division III, and it was decided to transfer the Small Bodies Names Committee (SBNC), which judges on the suitability of names proposed for minor planets, from Commission 20 directly to Division III. The SBNC was also enlarged and currently consists of the following 11 members: M. A'Hearn (U.S.), K. Aksnes (Norway), J. Fernández (Uruguay), P. M. Kilmartin (New Zealand), Y. Kozai (Japan), B. G. Marsden (U.S.), H. Rickman (Sweden), L. D. Schmadel (Germany), V. A. Shor (Russia), R. M. West (Denmark) and D. K. Yeomans (U.S.). As has been discussed previously in these *Circulars*, the principal problem involving the proposals of names is the frequent poor quality and unsuitability of the citations that are submitted with them. High on the agenda for the SBNC is the development of an improved mechanism for handling these citations.

The recent recovery (*MPEC* 1997-T03) of 1996 N2 (*IAUC* 6456, 6457, etc.), a Themis-family minor planet with observations also in 1979 and 1985 that showed a

persistent tail during (but only during) the 1996 opposition, means that this object can now be given a permanent number. Following the precedent of (2060) = 95P and (4015) = 107P, it is being numbered (and named) both as a minor planet (*MPC* 30751, 30803) and as a periodic comet (*MPC* 30714, 30739).

The twelfth edition of the *Catalogue of Cometary Orbits*, complete through the entries in the Sept. 1997 batch of these *Circulars*, is now available. Separate entries are given for individual components of several split comets, yielding a total of 1582 entries for 1548 cometary apparitions referring to 937 different comets, 191 of them of short period. There is a tabulation giving osculating elements for the 132 numbered periodic comets (except for seven that are lost) for the standard epochs 1997 June 1 and Dec. 18, 1998 July 6 and 1999 Jan. 22. 'Original' and 'future' reciprocal semimajor axes are given for the 308 high-quality long-period orbits. There is also a more extended list of 'X/' comets for which orbits cannot be computed. The 119-page *Catalogue* sells for \$30.00 (\$40.00 for airmail delivery outside North America). There is also an e-mail edition (with just the basic orbital information) for \$50.00.

ERRATA

<i>MPC</i>	Line	
30493	15	For 5900 read 5644
30601	11	For F. Ma read P. J. Shelus
30601	12	For feng@astro.as.utexas.edu read pjs@astro.as.utexas.edu
30601	13 to 14	These lines are to be deleted.

NEW OBSERVATORY CODES

The following listing is a continuation to that on *MPC* 30493. 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	$\rho \cos \phi'$	$\rho \sin \phi'$	
470	13.3286	0.74929	+0.66006	Ceccano
758	279.2379	0.88044	+0.47257	BCC Observatory, Cocoa
828	288.9758	0.74656	+0.66310	Assonet
949	359.8169	0.67454	+0.73577	Durtal

DELETED OBSERVATIONS

The following observations are to be deleted.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	N Obs.
1989 EH ₆	1992 11 28.27604	03 12 49.13	+15 07 11.9	MPC29402		1 675
4082 P-L	1950 12 09.48472	07 53 18.39	+22 30 34.6	MPC24466	18.8	675

Note 1: 1989 EH₆ = (7571).

IDENTIFICATION CHANGES

Continuation to MPC 30493.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	Obs.
1986 TW ₁₈	* 1986 10 05.91052	00 09 52.83	+07 57 49.2	1986 RA ₁₄	16.2	V	095
1991 GP ₁₄	* 1991 04 10.07569	12 50 25.44	-05 44 35.7	1991 GM ₂	18.7		809
1991 GP ₁₄	1991 04 10.08889	12 50 24.65	-05 44 32.3	1991 GM ₂			809
1991 GP ₁₄	1991 04 10.10208	12 50 23.77	-05 44 29.4	1991 GM ₂			809
1994 YR ₄	* 1994 12 25.45556	04 51 25.26	+22 05 19.1	1994 YQ ₂	16.8		399
1994 YR ₄	1994 12 25.47002	04 51 24.68	+22 05 17.7	1994 YQ ₂			399
1996 RW ₃₃	* 1996 09 12.29722	00 17 55.06	+07 40 33.8	1996 RC ₂₈			809
1997 RL ₁₀	* 1997 09 10.34925	23 27 38.17	-01 52 19.0	1997 RE ₆			658
1997 RL ₁₀	1997 09 10.35131	23 27 38.08	-01 52 19.8	1997 RE ₆			658
1997 RL ₁₀	1997 09 10.35606	23 27 37.83	-01 52 23.1	1997 RE ₆			658

NUMBERING OF A PERIODIC COMET

Continuation to the list on MPC 30310.

133P/1996 N2 = 1979 OW₇ (Elst-Pizarro)

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

046	Kleť. 0.57-m $f/5.2$ reflector + CCD. Observers J. Tichá, M. Tichý and Z. Moravec.
057	Belgrade. 0.14-m $f/12$ Askania astrograph + CCD. Observers Vl. Benishek, V. Protitch-Benishek and I. Graovac.
101	Kharkov. 0.16-m $f/0.72$ refractor. Observer P. P. Pavlenko.
103	Ljubljana. 0.25-m $f/10.8$ Schmidt-Cassegrain + CCD. Observer H. Mikuž.
108	Montelupo. 0.30-m $f/5.7$ Schmidt-Cassegrain + CCD. Observers M. Tombelli and G. Forti.
118	Modra. 0.6-m $f/5.5$ reflector + CCD. Observers A. Galád, P. Kolény, L. Kornoš, A. Pravda and P. Zigo.
249	SOHO. SOHO-LASCO coronagraphs C3 and C2. Observers D. A. Biesecker, D. Lewis and C. St. Cyr. Reduction by G. V. Williams.
327	Xinglong. 0.60-m Schmidt + CCD. Observers R. Chen and X. Y. Li.
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.
372	Geisei. 0.60-m $f/3.5$ reflector. Observer T. Seki. From <i>Orient. Astron. Assoc. Comet Bull.</i>

388	Mitaka. 0.50-m $f/12$ reflector + CCD. Observer H. Fukushima and I. Sato.
400	Kitami. 0.25-m $f/3.4$ hyperboloid astrocamera + CCD. Observer K. Endate.
402	Dynic Astronomical Observatory. 0.60-m $f/4.0$ reflector + CCD. Observer A. Sugie.
422	Loomberah. 0.25-m $f/4.1$ reflector + CCD. Observer G. J. Garradd.
504	Le Creusot. 0.40-m $f/5$ reflector + CCD. Observer J. C. Merlin.
540	Linz. 0.3-m $f/5.2$ Schmidt-Cassegrain + CCD. Observers E. Meyer, E. Obermair and H. Raab.
557	Ondřejov. 0.65-m $f/3.6$ reflector + CCD. Observers P. Pravec and L. Šarounová.
587	Sormano. 0.5-m reflector + CCD. Observers M. Cavagna and F. Manca.
610	Pianoro. 0.25-m $f/4$ Schmidt-Cassegrain. Observer V. Goretti.
616	Brno. 0.4-m $f/4.4$ reflector + CCD. Observers D. Hanžl and F. Hroch. Measured by F. Hroch.
628	Mülheim-Ruhr. 0.2-m Schmidt-Cassegrain + CCD. Observer A. Martin.
670	Camarillo. 0.25-m Schmidt-Cassegrain + CCD. Observer J. E. Rogers.
675	Palomar. 5-m reflector + CCD and 0.46-m Schmidt. Observers J. Alu, A. Bormanis, E. Helin, M. Hicks, K. J. Lawrence, J. Owens and D. Rabinowitz. Measured by K. J. Lawrence and D. Rabinowitz.
691	Kitt Peak. 0.91-m Spacewatch telescope. Observers T. Gehrels, J. V. Scotti and J. Montani.
709	Cloudercroft. 0.60-m $f/7$ Ritchey-Chrétien + CCD. Observer W. Offutt.
758	Cocoa. 0.3-m reflector + CCD. Observer I. Griffin.
809	European Southern Observatory. 0.6-m Bochum and 1.5-m Danish reflectors + CCD. Observers E. Braatz, U. Carsenty, G. Hahn, C.-I. Lagerkvist, S. Mottola, A. Nathues and T. Rauch.
817	Sudbury. 0.41-m Schmidt-Cassegrain. Observer D. di Cicco.
844	Los Molinos. 0.35-m reflector + CCD. Observers N. Sosa, O. Mendez and J. Scheck.
861	Barão Geraldo. 0.20-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer P. R. Holvorcem.
864	Kumamoto. 0.41-m $f/5.0$ reflector + CCD. Observer J. Kobayashi.
867	Saji Observatory. 1.03-m $f/4.8$ reflector + CCD. Observers M. Yamanishi, A. Miyamoto, M. Aimoto and T. Oribe.
886	Susono. 0.25-m $f/6.3$ reflector + CCD. Observer M. Akiyama.
896	Yatsugatake South Base Observatory. 0.40-m $f/5.0$ reflector + CCD. Observer Y. Kushida.
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.
963	Werrington. 0.28-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer J. Mackey.
978	Conder Brow. 0.33-m $f/3$ reflector + CCD. Observer D. G. Buczynski.

Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N Obs.
C/1995 O1 (Hale-Bopp)						
C/1995 O1	1997 03 13.11032	22 45 40.92	+41 54 58.1			101
C/1995 O1	1997 03 13.11535	22 45 43.65	+41 55 08.6			101
C/1995 O1	1997 03 13.11836	22 45 45.22	+41 55 15.2			101
C/1995 O1	1997 03 30.70841	01 35 27.29	+44 58 56.1			101
C/1995 O1	1997 03 30.71134	01 35 29.06	+44 58 53.0			101
C/1995 O1	1997 03 30.71437	01 35 30.61	+44 58 51.0			101
C/1995 O1	1997 04 01.71175	01 53 55.93	+44 17 19.2			101
C/1995 O1	1997 04 01.71606	01 53 58.08	+44 17 10.3			101

C/1995 O1	1997 04 01.72112	01 54 00.62	+44 17 03.6		101
C/1995 O1	1997 09 09.82604	07 56 44.63	-28 35 23.5	7 T	372
C/1995 O1	1997 09 10.82483	07 57 26.14	-29 00 09.8		372
C/1995 O1	1997 09 10.82744	07 57 26.29	-29 00 13.7	7 T	372
C/1995 O1	1997 09 16.31206	08 00 58.23	-31 17 02.9	7.3 T	844
C/1995 O1	1997 09 16.31329	08 00 58.28	-31 17 04.4	7.4 T	844
C/1995 O1	1997 09 16.31714	08 00 58.38	-31 17 09.4	7.7 T	844
C/1995 O1	1997 09 16.32002	08 00 58.55	-31 17 13.3	7.6 T	844
C/1995 O1	1997 09 18.41926	08 02 12.57	-32 09 59.4		758
C/1995 O1	1997 09 19.30524	08 02 42.46	-32 32 16.4		844
C/1995 O1	1997 09 19.32917	08 02 43.23	-32 32 52.5		844
C/1995 O1	1997 09 19.34591	08 02 43.81	-32 33 18.3		844
C/1995 O1	1997 09 19.35964	08 02 44.24	-32 33 39.2		844
C/1995 O1	1997 09 19.42579	08 02 46.48	-32 35 22.4		758
C/1995 O1	1997 09 20.40997	08 03 18.76	-33 00 11.0	9.2 T	758
C/1995 O1	1997 09 20.41051	08 03 18.82	-33 00 11.8	9.2 T	758
C/1995 O1	1997 09 21.39504	08 03 50.10	-33 25 04.3		758
C/1995 O1	1997 09 21.40876	08 03 50.43	-33 25 25.1		758
C/1995 O1	1997 09 23.41257	08 04 51.06	-34 16 08.7		758
C/1995 O1	1997 09 23.41858	08 04 51.22	-34 16 19.2		758
C/1995 O1	1997 09 23.42190	08 04 51.29	-34 16 23.6		758
C/1995 O1	1997 09 23.42656	08 04 51.44	-34 16 30.2		758
C/1995 O1	1997 09 23.43456	08 04 51.72	-34 16 42.1		758
C/1995 O1	1997 09 24.40934	08 05 19.60	-34 41 25.8		758
C/1995 O1	1997 09 24.41223	08 05 19.71	-34 41 30.3		758
C/1995 O1	1997 09 24.43428	08 05 20.29	-34 42 04.3		758
C/1995 O1	1997 09 24.43718	08 05 20.34	-34 42 08.6		758
C/1995 O1	1997 09 25.40421	08 05 47.08	-35 06 41.5	9.6 N	758
C/1995 O1	1997 09 25.40554	08 05 47.08	-35 06 43.0	9.7 N	758
C/1995 O1	1997 09 25.40688	08 05 47.13	-35 06 44.9	9.5 N	758
C/1995 O1	1997 09 29.40915	08 07 25.77	-36 48 30.6	10.9 N	758
C/1995 O1	1997 09 29.42281	08 07 26.20	-36 48 52.6	9.7 N	758
C/1995 O1	1997 09 29.43964	08 07 26.62	-36 49 18.8	10.6 N	758
C/1995 O1	1997 09 30.33663	08 07 45.80	-37 12 09.0		844
C/1995 O1	1997 09 30.33757	08 07 45.84	-37 12 10.6		844
C/1995 O1	1997 09 30.33860	08 07 45.87	-37 12 12.0		844
C/1995 O1	1997 09 30.79620	08 07 55.55	-37 23 52.5		897
C/1995 O1	1997 09 30.80553	08 07 55.70	-37 24 07.5		897
C/1995 O1	1997 09 30.80897	08 07 55.77	-37 24 13.4		897
C/1995 O1	1997 09 30.81353	08 07 55.88	-37 24 19.7		355
C/1995 O1	1997 09 30.81476	08 07 55.89	-37 24 22.2	8.5 T	355
C/1995 O1	1997 09 30.81587	08 07 55.92	-37 24 23.5		355
C/1995 O1	1997 10 02.40998	08 08 27.38	-38 04 59.5	11.0 N	758
C/1995 O1	1997 10 02.42374	08 08 27.57	-38 05 20.9	11.0 N	758
C/1995 O1	1997 10 02.43819	08 08 27.82	-38 05 42.5	10.9 N	758
C/1995 O1	1997 10 03.42234	08 08 45.45	-38 30 50.0	10.0 N	758
C/1995 O1	1997 10 03.43328	08 08 45.67	-38 31 04.9	9.4 N	758
C/1995 O1	1997 10 03.44499	08 08 45.76	-38 31 25.1	9.9 N	758
C/1995 O1	1997 10 05.39017	08 09 16.85	-39 21 02.1	9.4 N	758
C/1995 O1	1997 10 05.39786	08 09 17.14	-39 21 10.7	9.3 N	758
C/1995 O1	1997 10 05.40609	08 09 17.23	-39 21 24.8	9.2 N	758
C/1995 O1	1997 10 05.80944	08 09 22.63	-39 31 37.4		897
C/1995 O1	1997 10 05.81284	08 09 22.78	-39 31 43.9		897

C/1995 O1	1997 10 05.81530	08 09 22.78	-39 31 47.1		897
C/1995 O1	1997 10 06.83230	08 09 36.34	-39 57 39.7	1	864
C/1995 O1	1997 10 06.83457	08 09 36.30	-39 57 44.3	1	864
C/1995 O1	1997 10 07.40884	08 09 43.60	-40 12 21.1	9.9 N	758
C/1995 O1	1997 10 07.41692	08 09 43.66	-40 12 33.2	10.0 N	758
C/1995 O1	1997 10 07.43454	08 09 43.81	-40 12 59.9	9.2 N	758
C/1995 O1	1997 10 08.83264	08 09 58.68	-40 48 32.1	1	864
C/1995 O1	1997 10 08.84297	08 09 58.78	-40 48 47.8	7.9 T	1 864
C/1995 O1	1997 10 09.42228	08 10 04.23	-41 03 30.6	10.0 N	758
C/1995 O1	1997 10 09.43289	08 10 04.43	-41 03 47.1	10.0 N	758
C/1995 O1	1997 10 09.44426	08 10 04.54	-41 04 03.8	10.1 N	758
C/1995 O1	1997 10 10.75694	08 10 14.67	-41 37 20.1	12.6 N	422
C/1995 O1	1997 10 10.75785	08 10 14.66	-41 37 21.4	12.7 N	422
C/1995 O1	1997 10 11.38818	08 10 18.82	-41 53 22.0	9.5 N	758
C/1995 O1	1997 10 11.41145	08 10 19.01	-41 53 58.2	9.0 N	758
C/1995 O1	1997 10 11.43538	08 10 19.11	-41 54 34.7	8.7 N	758
C/1995 O1	1997 10 11.74069	08 10 20.66	-42 02 15.2	12.4 N	422
C/1995 O1	1997 10 11.74149	08 10 20.65	-42 02 16.6	12.3 N	422
C/1995 O1	1997 10 11.74229	08 10 20.66	-42 02 17.7	12.4 N	422
C/1995 O1	1997 10 12.79780	08 10 25.45	-42 29 01.1		897
C/1995 O1	1997 10 12.80120	08 10 25.46	-42 29 05.9		897
C/1995 O1	1997 10 12.80550	08 10 25.51	-42 29 13.6		897
C/1995 O1	1997 10 12.83571	08 10 25.51	-42 29 58.7		360
C/1995 O1	1997 10 12.83744	08 10 25.52	-42 30 01.8		360
C/1995 O1	1997 10 14.39184	08 10 29.68	-43 09 17.0	10.4 N	758
C/1995 O1	1997 10 14.41950	08 10 29.48	-43 09 56.2	10.4 N	758

C/1996 J1 (Evans-Drinkwater)

C/1996 J1-B	1997 08 13.75208	03 10 17.04	+39 03 14.9	14.5 T	372
C/1996 J1-B	1997 08 13.80174	03 10 18.13	+39 03 31.0		372
C/1996 J1-B	1997 08 27.76215	03 13 46.22	+40 11 19.4	15 T	372
C/1996 J1-B	1997 08 28.73576	03 13 50.20	+40 15 26.2	15 T	372
C/1996 J1-B	1997 09 03.68850	03 13 42.82	+40 38 38.4		897
C/1996 J1-A	1997 09 16.03491	03 10 22.87	+41 14 05.4	2	118
C/1996 J1-B	1997 09 16.03491	03 10 37.56	+41 14 08.9		118
C/1996 J1-B	1997 09 16.04550	03 10 37.30	+41 14 10.3		118
C/1996 J1-A	1997 09 16.05296	03 10 22.39	+41 14 07.3	2	118
C/1996 J1-B	1997 09 16.05296	03 10 37.12	+41 14 11.2		118
C/1996 J1-A	1997 09 16.83779	03 10 03.62	+41 15 37.6		587
C/1996 J1-B	1997 09 16.83779	03 10 17.92	+41 15 45.6		587
C/1996 J1-A	1997 09 16.84138	03 10 03.69	+41 15 38.0		587
C/1996 J1-B	1997 09 16.84138	03 10 17.91	+41 15 46.7		587
C/1996 J1-B	1997 09 16.96797	03 10 14.63	+41 16 02.7		118
C/1996 J1-A	1997 09 16.97247	03 09 59.61	+41 15 59.5	3	118
C/1996 J1-A	1997 09 16.98296	03 09 59.38	+41 16 00.5	3	118
C/1996 J1-B	1997 09 16.98296	03 10 14.21	+41 16 04.3	15.3 T	118
C/1996 J1-A	1997 09 17.95861	03 09 33.91	+41 17 50.7	4	118
C/1996 J1-B	1997 09 17.95861	03 09 48.81	+41 17 55.9		118
C/1996 J1-B	1997 09 17.97435	03 09 48.37	+41 17 57.3		118
C/1996 J1-A	1997 09 17.97947	03 09 33.29	+41 17 53.7	4	118
C/1996 J1-A	1997 09 17.98241	03 09 33.23	+41 17 53.8	16.5 T	4 118
C/1996 J1-B	1997 09 17.98241	03 09 48.13	+41 17 58.3		118
C/1996 J1-B	1997 09 19.05342	03 09 18.60	+41 19 50.9		118

C/1996 J1-B	1997 09 19.06597	03 09 18.24	+41 19 52.1	15.3 T	118
C/1996 J1-A	1997 09 21.00094	03 08 05.87	+41 22 44.8		118
C/1996 J1-B	1997 09 21.00094	03 08 20.99	+41 22 50.3		118
C/1996 J1-A	1997 09 21.00731	03 08 05.78	+41 22 45.7	16.8 T	118
C/1996 J1-B	1997 09 21.00731	03 08 20.78	+41 22 51.1	15.5 T	118
C/1996 J1-A	1997 09 22.08748	03 07 31.28	+41 24 10.1		118
C/1996 J1-B	1997 09 22.08748	03 07 46.50	+41 24 15.8		118
C/1996 J1-A	1997 09 22.09339	03 07 31.11	+41 24 10.3	17.2 T	118
C/1996 J1-B	1997 09 22.09339	03 07 46.30	+41 24 16.2	15.5 T	118
C/1996 J1-A	1997 09 24.71949	03 06 01.36	+41 26 51.8	17.4 T	402
C/1996 J1-B	1997 09 24.71949	03 06 16.78	+41 26 57.9	15.2 T	402
C/1996 J1-A	1997 09 24.72296	03 06 01.24	+41 26 51.5		402
C/1996 J1-B	1997 09 24.72296	03 06 16.66	+41 26 58.2		402
C/1996 J1-A	1997 09 24.72643	03 06 01.13	+41 26 52.1		402
C/1996 J1-B	1997 09 24.72643	03 06 16.53	+41 26 58.3		402
C/1996 J1-B	1997 09 27.60785	03 04 28.29	+41 28 38.7	15.2 T	897
C/1996 J1-B	1997 09 27.62173	03 04 27.74	+41 28 39.2		897
C/1996 J1-B	1997 09 27.97989	03 04 13.60	+41 28 45.3		504
C/1996 J1-B	1997 09 27.98546	03 04 13.35	+41 28 45.5		504
C/1996 J1-B	1997 09 27.99557	03 04 12.93	+41 28 45.9	15.3 T	504
C/1996 J1-B	1997 09 28.09752	03 04 08.69	+41 28 47.7	15.6 T	118
C/1996 J1-B	1997 09 28.11486	03 04 07.99	+41 28 47.6		118
C/1996 J1-B	1997 09 28.62248	03 03 47.75	+41 28 55.5		352
C/1996 J1-B	1997 09 28.62479	03 03 47.70	+41 28 55.3		352
C/1996 J1-B	1997 09 28.62711	03 03 47.55	+41 28 55.2		352
C/1996 J1-B	1997 09 28.62942	03 03 47.46	+41 28 55.1		352
C/1996 J1-B	1997 09 29.69204	03 03 03.64	+41 29 01.4	15.4 T	900
C/1996 J1-B	1997 09 29.70465	03 03 03.10	+41 29 01.4	15.5 T	900
C/1996 J1-A	1997 09 29.77326	03 02 44.51	+41 28 52.6	17.3 T	360
C/1996 J1-B	1997 09 29.77326	03 03 00.18	+41 29 01.3	15.1 T	360
C/1996 J1-A	1997 09 29.77865	03 02 44.29	+41 28 52.6		360
C/1996 J1-B	1997 09 29.77865	03 02 59.94	+41 29 01.3		360
C/1996 J1-A	1997 10 02.77225	03 00 34.02	+41 28 03.9	16.9 T	867
C/1996 J1-B	1997 10 02.77225	03 00 49.76	+41 28 12.7	14.9 T	867
C/1996 J1-A	1997 10 02.78301	03 00 33.51	+41 28 04.0		867
C/1996 J1-B	1997 10 02.78301	03 00 49.24	+41 28 12.4		867
C/1996 J1-B	1997 10 03.93416	02 59 56.81	+41 27 26.3		504
C/1996 J1-B	1997 10 03.94050	02 59 56.55	+41 27 26.1	14.9 T	504
C/1996 J1-B	1997 10 03.94506	02 59 56.32	+41 27 25.7		504
C/1996 J1-A	1997 10 04.06566	02 59 34.69	+41 27 10.2		118
C/1996 J1-B	1997 10 04.06566	02 59 50.56	+41 27 20.5		118
C/1996 J1-A	1997 10 04.06963	02 59 34.52	+41 27 10.1		118
C/1996 J1-B	1997 10 04.06963	02 59 50.38	+41 27 20.3		118
C/1996 J1-B	1997 10 04.07333	02 59 50.21	+41 27 20.0		118
C/1996 J1-A	1997 10 04.07718	02 59 34.16	+41 27 09.5	17.1 T	118
C/1996 J1-B	1997 10 04.07718	02 59 50.02	+41 27 20.0	15.3 T	118
C/1996 J1-B	1997 10 08.01044	02 56 40.64	+41 22 55.9		118
C/1996 J1-B	1997 10 08.01323	02 56 40.47	+41 22 55.4		118
C/1996 J1-B	1997 10 08.01777	02 56 40.29	+41 22 54.7	15.2 T	118
C/1996 J1-B	1997 10 12.66975	02 52 40.47	+41 14 05.2		897
C/1996 J1-B	1997 10 12.68303	02 52 39.77	+41 14 03.4		897
C/1996 J1-B	1997 10 12.68694	02 52 39.52	+41 14 03.2	14.9 T	897
C/1996 J1-B	1997 10 12.72225	02 52 37.65	+41 13 58.2	15.1 T	402

C/1996 J1-B	1997 10 12.72572	02 52 37.45	+41 13 57.8		402
C/1996 J1-B	1997 10 12.72919	02 52 37.26	+41 13 57.2		402
C/1996 J1-A	1997 10 12.77572	02 52 18.63	+41 13 35.8	17.1 T	867
C/1996 J1-B	1997 10 12.77572	02 52 34.72	+41 13 50.5	14.9 T	867
C/1996 J1-A	1997 10 12.78266	02 52 18.17	+41 13 34.9		867
C/1996 J1-B	1997 10 12.78266	02 52 34.37	+41 13 49.5		867

C/1997 A1 (NEAT)

C/1997 A1	1997 09 27.64873	06 42 21.73	+55 29 18.5	17.9 T	897
C/1997 A1	1997 09 27.68064	06 42 19.19	+55 29 51.6	18.0 T	897
C/1997 A1	1997 09 27.68493	06 42 18.90	+55 29 54.6		897
C/1997 A1	1997 09 29.77856	06 39 28.72	+56 07 01.2	18.0 T	402
C/1997 A1	1997 09 29.78273	06 39 28.43	+56 07 06.1		402
C/1997 A1	1997 09 29.78690	06 39 28.04	+56 07 09.7		402
C/1997 A1	1997 10 12.77951	06 13 37.13	+60 05 50.5	18.1 T	360
C/1997 A1	1997 10 12.78681	06 13 36.01	+60 05 58.6		360

C/1997 D1 (Mueller)

C/1997 D1	1997 06 20.46365	08 18 45.29	+36 50 13.3	13.8 T	897
C/1997 D1	1997 06 20.46781	08 18 45.18	+36 50 09.9		897
C/1997 D1	1997 09 04.80625	08 27 26.56	+24 02 28.7	15 T	372
C/1997 D1	1997 09 09.81250	08 26 54.41	+23 11 51.6	15 T	372
C/1997 D1	1997 09 24.39780	08 22 41.77	+20 34 41.2	13.8 T	758
C/1997 D1	1997 09 24.39962	08 22 41.66	+20 34 40.5	13.7 T	758
C/1997 D1	1997 09 24.40064	08 22 41.72	+20 34 38.8	13.6 T	758
C/1997 D1	1997 09 25.39450	08 22 13.78	+20 23 14.3	13.8 T	758
C/1997 D1	1997 09 25.39694	08 22 13.66	+20 23 13.3	13.7 T	758
C/1997 D1	1997 09 29.75917	08 19 50.86	+19 31 40.4	13.3 T	402
C/1997 D1	1997 09 29.76125	08 19 50.79	+19 31 39.1		402
C/1997 D1	1997 09 29.76333	08 19 50.71	+19 31 37.4		402
C/1997 D1	1997 09 29.77224	08 19 50.37	+19 31 30.8	13.1 T	900
C/1997 D1	1997 09 29.78137	08 19 50.02	+19 31 24.3	13.3 T	900
C/1997 D1	1997 09 30.72662	08 19 14.40	+19 19 55.1		897
C/1997 D1	1997 09 30.73799	08 19 14.00	+19 19 46.3	13.2 T	897
C/1997 D1	1997 10 02.39311	08 18 07.35	+18 59 20.1	13.9 T	758
C/1997 D1	1997 10 02.39443	08 18 07.29	+18 59 18.3	13.9 T	758
C/1997 D1	1997 10 05.15139	08 16 03.38	+18 24 17.7		118
C/1997 D1	1997 10 05.15361	08 16 03.26	+18 24 16.0		118
C/1997 D1	1997 10 05.15714	08 16 03.10	+18 24 13.3	13.6 T	118
C/1997 D1	1997 10 05.79419	08 15 32.07	+18 15 58.2		900
C/1997 D1	1997 10 05.79972	08 15 31.84	+18 15 53.3		900
C/1997 D1	1997 10 10.51055	08 11 11.69	+17 12 23.7	18.0 T	691
C/1997 D1	1997 10 12.80799	08 08 43.86	+16 39 46.1	13.1 T	360
C/1997 D1	1997 10 12.81076	08 08 43.67	+16 39 43.7		360

C/1997 J1 (Mueller)

C/1997 J1	1997 06 12.97382	09 17 00.03	+57 47 51.6		057
C/1997 J1	1997 06 15.92726	09 15 49.73	+56 42 53.2		057
C/1997 J1	1997 06 29.49622	09 14 06.24	+52 16 23.5	13.2 T	897
C/1997 J1	1997 06 29.50336	09 14 06.26	+52 16 15.7		897
C/1997 J1	1997 09 04.81181	09 29 39.33	+39 19 47.9		372
C/1997 J1	1997 09 09.80590	09 30 18.11	+38 48 08.1	15.5 T	372
C/1997 J1	1997 09 21.11500	09 30 44.84	+37 47 36.4		118
C/1997 J1	1997 09 21.12190	09 30 44.80	+37 47 34.7	14.0 T	118

C/1997 J1	1997 09 30.74318	09 29 42.46	+37 08 14.1		897
C/1997 J1	1997 09 30.76559	09 29 42.13	+37 08 10.6	14.4 T	897
C/1997 J1	1997 09 30.82421	09 29 41.43	+37 07 57.9	14.5 T	900
C/1997 J1	1997 09 30.83309	09 29 41.36	+37 07 55.4	14.1 T	900
C/1997 J1	1997 10 05.81151	09 28 29.99	+36 52 00.2	14.5 T	900
C/1997 J1	1997 10 05.82357	09 28 29.75	+36 51 58.6	14.4 T	900
C/1997 J1	1997 10 12.81045	09 25 56.35	+36 34 36.0		897
C/1997 J1	1997 10 12.81510	09 25 56.23	+36 34 35.4	14.0 T	360
C/1997 J1	1997 10 12.81788	09 25 56.14	+36 34 35.1		360
C/1997 J1	1997 10 12.82075	09 25 56.03	+36 34 34.7	14.0 T	897

C/1997 J2 (Meunier-Dupouy)

C/1997 J2	1997 06 15.90098	10 58 12.35	+71 23 53.6		057
C/1997 J2	1997 06 20.55196	11 02 53.03	+71 02 38.2		897
C/1997 J2	1997 06 20.55643	11 02 53.37	+71 02 36.8	12.3 T	897
C/1997 J2	1997 06 20.58250	11 02 54.99	+71 02 29.0		897
C/1997 J2	1997 06 29.56543	11 13 59.49	+70 20 43.1	12.5 T	897
C/1997 J2	1997 06 29.58090	11 14 00.75	+70 20 39.0		897
C/1997 J2	1997 06 29.89880	11 14 26.94	+70 19 10.7		057
C/1997 J2	1997 07 01.89994	11 17 17.19	+70 09 42.2		057
C/1997 J2	1997 07 04.85468	11 21 39.88	+69 55 51.0		057
C/1997 J2	1997 07 30.88833	12 10 01.24	+67 48 44.3		057
C/1997 J2	1997 08 21.45313	13 01 28.56	+65 50 38.3		372
C/1997 J2	1997 08 24.51632	13 09 30.16	+65 32 06.6	13 T	372
C/1997 J2	1997 08 28.45268	13 20 03.58	+65 07 28.1		897
C/1997 J2	1997 08 28.48115	13 20 08.10	+65 07 16.1		897
C/1997 J2	1997 09 11.41678	13 59 29.07	+63 30 56.9		897
C/1997 J2	1997 09 11.43748	13 59 32.56	+63 30 47.9		897
C/1997 J2	1997 09 12.80025	14 03 32.27	+63 20 29.8	13.0 T	628
C/1997 J2	1997 09 12.81275	14 03 34.41	+63 20 24.2	12.9 T	628
C/1997 J2	1997 09 12.82942	14 03 37.38	+63 20 16.7	13.2 T	628
C/1997 J2	1997 09 12.84123	14 03 39.50	+63 20 10.9	13.0 T	628
C/1997 J2	1997 09 13.79748	14 06 28.50	+63 12 51.7	12.7 T	628
C/1997 J2	1997 09 13.83637	14 06 35.41	+63 12 33.3	12.9 T	628
C/1997 J2	1997 09 13.87873	14 06 42.87	+63 12 13.7	12.5 T	628
C/1997 J2	1997 09 14.91414	14 09 46.65	+63 04 10.7	13.1 T	628
C/1997 J2	1997 09 14.92873	14 09 49.27	+63 04 04.4	13.0 T	628
C/1997 J2	1997 09 14.94331	14 09 51.90	+63 03 57.0	12.9 T	628
C/1997 J2	1997 09 17.93434	14 18 46.99	+62 40 07.3		5 118
C/1997 J2	1997 09 17.94343	14 18 48.58	+62 40 02.9	12.0 T	5 118
C/1997 J2	1997 09 19.03122	14 22 04.41	+62 31 10.5	12.9 T	758
C/1997 J2	1997 09 19.43125	14 23 16.85	+62 27 52.8	12.7 T	360
C/1997 J2	1997 09 19.43472	14 23 17.51	+62 27 50.9		360
C/1997 J2	1997 09 19.50326	14 23 29.80	+62 27 15.6		897
C/1997 J2	1997 09 20.04569	14 25 07.96	+62 22 45.0	12.9 T	758
C/1997 J2	1997 09 20.04869	14 25 08.55	+62 22 44.6	12.9 T	758
C/1997 J2	1997 09 20.93667	14 27 49.66	+62 15 16.4	12.4 T	504
C/1997 J2	1997 09 20.93763	14 27 49.83	+62 15 15.6		504
C/1997 J2	1997 09 20.93816	14 27 49.94	+62 15 15.5		504
C/1997 J2	1997 09 20.93944	14 27 50.17	+62 15 14.8		504
C/1997 J2	1997 09 20.94054	14 27 50.39	+62 15 14.1		504
C/1997 J2	1997 09 20.94171	14 27 50.57	+62 15 13.8		504
C/1997 J2	1997 09 20.94321	14 27 50.87	+62 15 13.4		504

C/1997 J2	1997 09 20.94538	14 27 51.28	+62 15 12.5		504
C/1997 J2	1997 09 20.95462	14 27 52.94	+62 15 06.3		118
C/1997 J2	1997 09 20.96163	14 27 54.27	+62 15 03.0	12.4 T	118
C/1997 J2	1997 09 21.03114	14 28 06.61	+62 14 29.3	13.3 T	758
C/1997 J2	1997 09 21.03747	14 28 07.92	+62 14 25.5	13.2 T	758
C/1997 J2	1997 09 22.00268	14 31 03.71	+62 06 14.2	13.1 T	758
C/1997 J2	1997 09 22.00503	14 31 04.06	+62 06 12.4	13.0 T	758
C/1997 J2	1997 09 23.85431	14 36 42.37	+61 50 11.9		504
C/1997 J2	1997 09 23.85795	14 36 43.08	+61 50 10.3		504
C/1997 J2	1997 09 23.85994	14 36 43.42	+61 50 08.7		504
C/1997 J2	1997 09 23.86068	14 36 43.53	+61 50 08.6		504
C/1997 J2	1997 09 23.86275	14 36 43.87	+61 50 07.4		504
C/1997 J2	1997 09 23.86367	14 36 44.09	+61 50 07.1		504
C/1997 J2	1997 09 23.87103	14 36 45.49	+61 50 03.0		504
C/1997 J2	1997 09 23.87162	14 36 45.58	+61 50 02.9		504
C/1997 J2	1997 09 23.87499	14 36 46.14	+61 50 01.1		504
C/1997 J2	1997 09 24.75762	14 39 28.25	+61 42 15.5		118
C/1997 J2	1997 09 24.76462	14 39 29.49	+61 42 11.4	13.7 T	118
C/1997 J2	1997 09 25.89951	14 42 58.41	+61 32 02.9		504
C/1997 J2	1997 09 25.90199	14 42 58.88	+61 32 01.6		504
C/1997 J2	1997 09 25.90298	14 42 59.11	+61 32 01.2		504
C/1997 J2	1997 09 25.90755	14 42 59.89	+61 31 59.0		504
C/1997 J2	1997 09 25.90911	14 43 00.22	+61 31 58.1		504
C/1997 J2	1997 09 25.90960	14 43 00.32	+61 31 57.9		504
C/1997 J2	1997 09 25.91008	14 43 00.43	+61 31 57.3		504
C/1997 J2	1997 09 26.75029	14 45 35.43	+61 24 23.0	13.8 T	118
C/1997 J2	1997 09 26.75774	14 45 36.85	+61 24 19.0		118
C/1997 J2	1997 09 27.95435	14 49 18.27	+61 13 21.0	12.8 T	504
C/1997 J2	1997 09 27.95595	14 49 18.58	+61 13 20.0		504
C/1997 J2	1997 09 27.95652	14 49 18.65	+61 13 19.9		504
C/1997 J2	1997 09 27.95713	14 49 18.79	+61 13 19.5		504
C/1997 J2	1997 09 27.95773	14 49 18.88	+61 13 19.0		504
C/1997 J2	1997 09 27.95964	14 49 19.25	+61 13 18.1		504
C/1997 J2	1997 09 27.96038	14 49 19.42	+61 13 17.4		504
C/1997 J2	1997 09 28.42674	14 50 45.73	+61 09 00.4		360
C/1997 J2	1997 09 28.42734	14 50 45.95	+61 08 59.6		900
C/1997 J2	1997 09 28.43316	14 50 46.92	+61 08 56.6		360
C/1997 J2	1997 09 28.43567	14 50 47.35	+61 08 54.5	12.3 T	900
C/1997 J2	1997 09 28.78017	14 51 51.40	+61 05 42.6		046
C/1997 J2	1997 09 28.78174	14 51 51.71	+61 05 41.7		046
C/1997 J2	1997 09 28.78321	14 51 51.97	+61 05 40.8		046
C/1997 J2	1997 09 28.78456	14 51 52.24	+61 05 40.1		046
C/1997 J2	1997 09 29.01693	14 52 35.26	+61 03 30.5	13.2 T	758
C/1997 J2	1997 09 29.02071	14 52 35.92	+61 03 28.5	13.2 T	758
C/1997 J2	1997 09 29.43398	14 53 52.77	+60 59 36.1	12.5 T	402
C/1997 J2	1997 09 29.43607	14 53 53.15	+60 59 34.7		402
C/1997 J2	1997 09 29.43815	14 53 53.54	+60 59 33.5		402
C/1997 J2	1997 09 29.74199	14 54 50.06	+60 56 41.0		118
C/1997 J2	1997 09 29.74728	14 54 51.08	+60 56 38.0	12.6 T	118
C/1997 J2	1997 09 30.00149	14 55 38.27	+60 54 14.5	13.5 T	758
C/1997 J2	1997 09 30.00665	14 55 39.24	+60 54 12.1	13.3 T	758
C/1997 J2	1997 09 30.00860	14 55 39.61	+60 54 11.1	13.4 T	758
C/1997 J2	1997 09 30.48385	14 57 08.16	+60 49 40.2	12.0 T	897

C/1997 J2	1997 09 30.49080	14 57 09.58	+60 49 35.9		897
C/1997 J2	1997 10 01.01185	14 58 46.60	+60 44 38.1	13.2 T	758
C/1997 J2	1997 10 01.01690	14 58 47.56	+60 44 35.1	13.2 T	758
C/1997 J2	1997 10 01.85262	15 01 23.76	+60 36 32.3		504
C/1997 J2	1997 10 01.85404	15 01 24.03	+60 36 31.6		504
C/1997 J2	1997 10 01.85803	15 01 24.79	+60 36 29.1	12.8 T	504
C/1997 J2	1997 10 01.85919	15 01 25.01	+60 36 28.6		504
C/1997 J2	1997 10 01.86042	15 01 25.21	+60 36 27.8		504
C/1997 J2	1997 10 05.86738	15 13 56.10	+59 56 45.1	12.5 T	504
C/1997 J2	1997 10 05.86916	15 13 56.41	+59 56 44.1		504
C/1997 J2	1997 10 05.87115	15 13 56.77	+59 56 43.0		504
C/1997 J2	1997 10 05.87250	15 13 57.03	+59 56 41.9		504
C/1997 J2	1997 10 05.87477	15 13 57.45	+59 56 40.5		504
C/1997 J2	1997 10 05.88001	15 13 58.45	+59 56 37.3		504
C/1997 J2	1997 10 05.88147	15 13 58.75	+59 56 36.6		504
C/1997 J2	1997 10 05.88204	15 13 58.83	+59 56 36.1		504
C/1997 J2	1997 10 05.88447	15 13 59.30	+59 56 34.5		504
C/1997 J2	1997 10 06.76686	15 16 45.16	+59 47 34.7	13.0 T	118
C/1997 J2	1997 10 06.77579	15 16 46.84	+59 47 28.7		118
C/1997 J2	1997 10 12.40208	15 34 27.58	+58 47 53.2	12.2 T	900
C/1997 J2	1997 10 12.41131	15 34 29.39	+58 47 46.7		900
C/1997 J2	1997 10 12.47787	15 34 41.83	+58 47 02.3		897
C/1997 J2	1997 10 12.48031	15 34 42.34	+58 47 00.6	12.2 T	897
C/1997 J2	1997 10 12.48292	15 34 42.87	+58 46 59.0		897
C/1997 J2	1997 10 14.05034	15 39 38.94	+58 29 40.3	13.1 N	758
C/1997 J2	1997 10 14.06426	15 39 41.54	+58 29 31.8	13.1 N	758

C/1997 L1 (Xinglong)

C/1997 L1	1997 06 29.58618	15 20 26.96	-03 01 07.5	17.9 T	897
C/1997 L1	1997 06 29.59009	15 20 26.95	-03 01 05.1		897
C/1997 L1	1997 06 29.61093	15 20 26.50	-03 00 58.4		897
C/1997 L1	1997 07 05.53403	15 18 52.36	-02 24 31.6		897
C/1997 L1	1997 07 05.54444	15 18 52.16	-02 24 27.0	18.5 T	897
C/1997 L1	1997 07 05.55486	15 18 51.97	-02 24 22.4		897
C/1997 L1	1997 09 19.44115	15 34 01.71	+00 55 46.0	18.3 T	1 360
C/1997 L1	1997 09 19.44740	15 34 01.95	+00 55 45.3		1 360
C/1997 L1	1997 09 19.45226	15 34 02.10	+00 55 46.0		1 360

C/1997 O1 (Tilbrook)

C/1997 O1	1997 07 29.47153	12 33 43.73	-13 14 09.5	11 T	372
C/1997 O1	1997 09 17.75110	13 44 06.94	+06 05 57.7		1 118
C/1997 O1	1997 09 17.75466	13 44 07.20	+06 06 00.8		1 118
C/1997 O1	1997 09 17.75818	13 44 07.44	+06 06 02.8	14.0 T	1 118
C/1997 O1	1997 09 21.75131	13 48 45.45	+06 57 04.0		1 118
C/1997 O1	1997 09 21.75277	13 48 45.56	+06 57 05.2	14.2 T	1 118

C/1997 P2 (Spacewatch)

C/1997 P2	1997 08 24.54476	21 34 51.29	-06 27 17.8	19 T	372
C/1997 P2	1997 08 28.55069	21 33 14.34	-06 24 50.4		372
C/1997 P2	1997 08 28.56875	21 33 13.92	-06 24 49.6	19.3 T	372
C/1997 P2	1997 09 16.80322	21 27 07.27	-06 15 04.9		4 118
C/1997 P2	1997 09 16.81501	21 27 07.15	-06 15 04.7		4 118
C/1997 P2	1997 09 16.82894	21 27 06.94	-06 15 03.7	18.9 T	4 118
C/1997 P2	1997 09 21.85558	21 26 09.11	-06 12 12.0		118

C/1997 P2	1997 09 21.85922	21 26 09.06	-06 12 12.2	18.8 T	118
C/1997 P2	1997 09 28.47350	21 25 22.40	-06 07 38.5	19.7 T	402
C/1997 P2	1997 09 28.50207	21 25 22.29	-06 07 35.8		402
C/1997 P2	1997 09 28.51596	21 25 22.24	-06 07 33.6		402
C/1997 P2	1997 09 29.48433	21 25 18.28	-06 06 50.5	19.9 T	402
C/1997 P2	1997 09 29.51957	21 25 18.18	-06 06 48.3		402
C/1997 P2	1997 09 30.49711	21 25 15.05	-06 05 57.5	19.0 T	402
C/1997 P2	1997 09 30.50266	21 25 15.03	-06 05 59.2		402
C/1997 P2	1997 09 30.50822	21 25 15.05	-06 05 58.1		402

C/1997 R1 (SOHO)

C/1997 R1	1997 09 08.14922	10 47 25.7	+04 43 20		249
Geocentric position (AU)	-0.00849630	-0.00070560	-0.00108481		
C/1997 R1	1997 09 08.16823	10 47 48.5	+04 43 49		249
Geocentric position (AU)	-0.00849742	-0.00069989	-0.00108216		
C/1997 R1	1997 09 08.21674	10 48 56.3	+04 45 40		249
Geocentric position (AU)	-0.00850001	-0.00068658	-0.00107598		
C/1997 R1	1997 09 08.23352	10 49 18.7	+04 46 35		249
Geocentric position (AU)	-0.00850112	-0.00068088	-0.00107332		
C/1997 R1	1997 09 08.25101	10 49 45.2	+04 47 56		249
Geocentric position (AU)	-0.00850185	-0.00067708	-0.00107156		
C/1997 R1	1997 09 08.28699	10 50 33.6	+04 50 06		249
Geocentric position (AU)	-0.00850369	-0.00066758	-0.00106713		
C/1997 R1	1997 09 08.32378	10 51 30.9	+04 51 08		249
Geocentric position (AU)	-0.00850587	-0.00065617	-0.00106183		
C/1997 R1	1997 09 08.34793	10 52 03.1	+04 52 52		249
Geocentric position (AU)	-0.00850696	-0.00065048	-0.00105918		
C/1997 R1	1997 09 08.36508	10 52 29.3	+04 53 03		249
Geocentric position (AU)	-0.00850804	-0.00064478	-0.00105652		
C/1997 R1	1997 09 08.40850	10 53 33.3	+04 55 34		249
Geocentric position (AU)	-0.00851020	-0.00063338	-0.00105121		
C/1997 R1	1997 09 08.44493	10 54 30.1	+04 57 52		249
Geocentric position (AU)	-0.00851198	-0.00062389	-0.00104679		
C/1997 R1	1997 09 08.47238	10 55 16.5	+04 59 09		249
Geocentric position (AU)	-0.00851341	-0.00061630	-0.00104325		
C/1997 R1	1997 09 08.49325	10 55 47.6	+04 59 56		249
Geocentric position (AU)	-0.00851447	-0.00061060	-0.00104059		
C/1997 R1	1997 09 08.52865	10 56 44.5	+05 02 05		249
Geocentric position (AU)	-0.00851623	-0.00060111	-0.00103616		

C/1997 R2 (SOHO)

C/1997 R2	1997 09 14.84054	11 09 04.5	+02 04 07		249
Geocentric position (AU)	-0.00869020	-0.00106740	-0.00022726		
C/1997 R2	1997 09 14.88681	11 10 04.1	+02 06 09		249
Geocentric position (AU)	-0.00869057	-0.00107971	-0.00022106		
C/1997 R2	1997 09 14.94293	11 11 18.2	+02 08 07		249
Geocentric position (AU)	-0.00869097	-0.00109377	-0.00021397		
C/1997 R2	1997 09 14.96765	11 11 54.1	+02 09 16		249
Geocentric position (AU)	-0.00869112	-0.00109904	-0.00021131		
C/1997 R2	1997 09 14.98211	11 12 11.8	+02 10 13		249
Geocentric position (AU)	-0.00869122	-0.00110256	-0.00020954		
C/1997 R2	1997 09 15.01615	11 12 59.3	+02 10 59		249
Geocentric position (AU)	-0.00869146	-0.00111133	-0.00020511		

C/1997 R2	1997 09 15.03759	11 13 26.6	+02 12 10	249
Geocentric position (AU)	-0.00869160	-0.00111660	-0.00020245	
C/1997 R2	1997 09 15.06546	11 14 06.9	+02 12 49	249
Geocentric position (AU)	-0.00869178	-0.00112362	-0.00019891	
C/1997 R2	1997 09 15.10295	11 15 02.7	+02 14 43	249
Geocentric position (AU)	-0.00869205	-0.00113414	-0.00019360	
C/1997 R2	1997 09 15.21574	11 17 50.3	+02 19 53	249
Geocentric position (AU)	-0.00869273	-0.00116216	-0.00017943	
C/1997 R2	1997 09 15.23053	11 18 12.1	+02 20 31	249
Geocentric position (AU)	-0.00869281	-0.00116566	-0.00017766	
C/1997 R2	1997 09 15.25101	11 18 44.4	+02 22 09	249
Geocentric position (AU)	-0.00869293	-0.00117091	-0.00017501	
C/1997 R2	1997 09 15.28697	11 19 45.2	+02 23 20	249
Geocentric position (AU)	-0.00869312	-0.00117965	-0.00017058	
C/1997 R2	1997 09 15.32378	11 20 44.3	+02 25 12	249
Geocentric position (AU)	-0.00869334	-0.00119014	-0.00016527	
C/1997 R2	1997 09 15.36477	11 21 54.5	+02 28 42	249
Geocentric position (AU)	-0.00869356	-0.00120061	-0.00015996	
C/1997 R2	1997 09 15.40642	11 23 07.0	+02 31 00	249
Geocentric position (AU)	-0.00869376	-0.00121109	-0.00015466	
C/1997 R2	1997 09 15.45367	11 24 26.4	+02 31 22	249
Geocentric position (AU)	-0.00869396	-0.00122156	-0.00014935	
C/1997 R2	1997 09 15.46549	11 24 49.6	+02 31 40	249
Geocentric position (AU)	-0.00869402	-0.00122504	-0.00014758	
C/1997 R2	1997 09 15.48215	11 25 21.6	+02 33 15	249
Geocentric position (AU)	-0.00869409	-0.00122853	-0.00014581	

C/1997 R3 (SOHO)

C/1997 R3	1997 09 15.99808	11 10 04.3	+01 35 51	249
Geocentric position (AU)	-0.00869577	-0.00135878	-0.00007954	
C/1997 R3	1997 09 16.03628	11 10 50.2	+01 36 52	249
Geocentric position (AU)	-0.00869584	-0.00136743	-0.00007513	
C/1997 R3	1997 09 16.06545	11 11 24.1	+01 38 11	249
Geocentric position (AU)	-0.00869588	-0.00137435	-0.00007159	
C/1997 R3	1997 09 16.10087	11 12 12.2	+01 39 03	249
Geocentric position (AU)	-0.00869595	-0.00138472	-0.00006630	
C/1997 R3	1997 09 16.12516	11 12 42.5	+01 39 46	249
Geocentric position (AU)	-0.00869598	-0.00138990	-0.00006365	
C/1997 R3	1997 09 16.14809	11 13 10.4	+01 40 23	249
Geocentric position (AU)	-0.00869601	-0.00139508	-0.00006100	
C/1997 R3	1997 09 16.18475	11 14 00.5	+01 41 55	249
Geocentric position (AU)	-0.00869606	-0.00140543	-0.00005571	
C/1997 R3	1997 09 16.22869	11 14 56.8	+01 43 08	249
Geocentric position (AU)	-0.00869610	-0.00141579	-0.00005042	
C/1997 R3	1997 09 16.27795	11 16 01.2	+01 45 01	249
Geocentric position (AU)	-0.00869614	-0.00142785	-0.00004424	
C/1997 R3	1997 09 16.32378	11 17 06.2	+01 46 53	249
Geocentric position (AU)	-0.00869617	-0.00143991	-0.00003807	
C/1997 R3	1997 09 16.40642	11 19 02.0	+01 49 21	249
Geocentric position (AU)	-0.00869619	-0.00146057	-0.00002749	
C/1997 R3	1997 09 16.44184	11 19 54.4	+01 50 33	249
Geocentric position (AU)	-0.00869619	-0.00146917	-0.00002308	

C/1997 R3	1997 09 16.47725	11 20 46.4	+01 52 10	249
Geocentric position (AU)	-0.00869618	-0.00147776	-0.00001868	
C/1997 R3	1997 09 16.48976	11 21 04.3	+01 52 55	249
Geocentric position (AU)	-0.00869618	-0.00148120	-0.00001691	
C/1997 R3	1997 09 16.52866	11 22 01.2	+01 55 02	249
Geocentric position (AU)	-0.00869617	-0.00148979	-0.00001251	
C/1997 R3	1997 09 16.57517	11 23 18.3	+01 56 25	249
Geocentric position (AU)	-0.00869614	-0.00150180	-0.00000634	
C/1997 R3	1997 09 16.61222	11 24 15.9	+01 58 26	249
Geocentric position (AU)	-0.00869611	-0.00151038	-0.00000193	
C/1997 R3	1997 09 16.66197	11 25 36.3	+02 01 46	249
Geocentric position (AU)	-0.00869607	-0.00152239	-0.00000423	
C/1997 R3	1997 09 16.68766	11 26 20.9	+02 01 48	249
Geocentric position (AU)	-0.00869604	-0.00152924	-0.00000776	
C/1997 R3	1997 09 16.71406	11 27 03.1	+02 03 28	249
Geocentric position (AU)	-0.00869600	-0.00153609	-0.00001128	
C/1997 R3	1997 09 16.71757	11 27 11.5	+02 03 32	249
Geocentric position (AU)	-0.00869600	-0.00153609	-0.00001128	
C/1997 R3	1997 09 16.77922	11 28 55.2	+02 04 36	249
Geocentric position (AU)	-0.00869591	-0.00155150	-0.00001920	
C/1997 R3	1997 09 16.80244	11 29 41.1	+02 06 03	249
Geocentric position (AU)	-0.00869587	-0.00155835	-0.00002272	

C/1997 S1 (SOHO)

C/1997 S1	1997 09 29.86532	12 02 21.9	-03 57 03	249
Geocentric position (AU)	-0.00828604	-0.00451320	-0.00162609	
C/1997 S1	1997 09 29.91802	12 03 31.8	-03 55 03	249
Geocentric position (AU)	-0.00828299	-0.00452303	-0.00163172	
C/1997 S1	1997 09 29.95725	12 04 25.6	-03 54 19	249
Geocentric position (AU)	-0.00828037	-0.00453144	-0.00163655	
C/1997 S1	1997 09 29.98818	12 05 04.7	-03 52 51	249
Geocentric position (AU)	-0.00827862	-0.00453704	-0.00163976	
C/1997 S1	1997 09 29.99537	12 05 16.2	-03 52 23	249
Geocentric position (AU)	-0.00827818	-0.00453844	-0.00164057	
C/1997 S1	1997 09 30.01889	12 05 49.0	-03 51 51	249
Geocentric position (AU)	-0.00827642	-0.00454404	-0.00164378	
C/1997 S1	1997 09 30.03698	12 06 11.5	-03 50 25	249
Geocentric position (AU)	-0.00827555	-0.00454684	-0.00164538	
C/1997 S1	1997 09 30.06545	12 06 50.6	-03 48 57	249
Geocentric position (AU)	-0.00827378	-0.00455243	-0.00164859	
C/1997 S1	1997 09 30.10295	12 07 46.3	-03 47 26	249
Geocentric position (AU)	-0.00827114	-0.00456081	-0.00165341	
C/1997 S1	1997 09 30.13212	12 08 24.0	-03 46 31	249
Geocentric position (AU)	-0.00826937	-0.00456640	-0.00165661	
C/1997 S1	1997 09 30.16822	12 09 18.1	-03 44 45	249
Geocentric position (AU)	-0.00826715	-0.00457337	-0.00166062	
C/1997 S1	1997 09 30.21569	12 10 25.4	-03 42 12	249
Geocentric position (AU)	-0.00826404	-0.00458313	-0.00166623	
C/1997 S1	1997 09 30.23050	12 10 50.2	-03 42 20	249
Geocentric position (AU)	-0.00826315	-0.00458591	-0.00166783	
C/1997 S1	1997 09 30.25104	12 11 19.5	-03 40 23	249
Geocentric position (AU)	-0.00826181	-0.00459009	-0.00167023	

C/1997 S1	1997 09 30.29097	12 12 20.0	-03 38 22	249
Geocentric position (AU)	-0.00825912	-0.00459843	-0.00167503	
C/1997 S1	1997 09 30.33101	12 13 24.3	-03 36 44	249
Geocentric position (AU)	-0.00825643	-0.00460676	-0.00167982	
C/1997 S1	1997 09 30.36735	12 14 19.2	-03 35 00	249
Geocentric position (AU)	-0.00825418	-0.00461370	-0.00168382	
C/1997 S1	1997 09 30.40642	12 15 21.8	-03 31 45	249
Geocentric position (AU)	-0.00825148	-0.00462202	-0.00168861	
C/1997 S1	1997 09 30.44115	12 16 20.9	-03 29 38	249
Geocentric position (AU)	-0.00824922	-0.00462895	-0.00169260	
C/1997 S1	1997 09 30.49293	12 17 47.5	-03 26 19	249
Geocentric position (AU)	-0.00824604	-0.00463863	-0.00169818	
C/1997 S1	1997 09 30.51928	12 18 26.8	-03 27 35	249
Geocentric position (AU)	-0.00824422	-0.00464416	-0.00170137	
C/1997 S1	1997 09 30.52887	12 18 50.4	-03 24 34	249
Geocentric position (AU)	-0.00824377	-0.00464554	-0.00170216	
C/1997 S1	1997 09 30.53839	12 19 01.8	-03 26 24	249
Geocentric position (AU)	-0.00824286	-0.00464831	-0.00170376	
C/1997 S1	1997 09 30.57147	12 20 01.7	-03 23 28	249
Geocentric position (AU)	-0.00824103	-0.00465383	-0.00170694	
C/1997 S1	1997 09 30.59008	12 20 37.9	-03 21 49	249
Geocentric position (AU)	-0.00823966	-0.00465797	-0.00170933	

C/1997 T1 (Utsunomiya)

C/1997 T1	1997 10 05.65333	22 37 00.39	+71 53 19.3	10.5 T	6	864
C/1997 T1	1997 10 05.65903	22 36 52.53	+71 53 05.9			897
C/1997 T1	1997 10 05.66062	22 36 50.40	+71 53 02.3	10.9 T		897
C/1997 T1	1997 10 05.66134	22 36 49.43	+71 53 00.6			896
C/1997 T1	1997 10 05.66388	22 36 45.79	+71 52 55.3			896
C/1997 T1	1997 10 05.66434	22 36 45.21	+71 52 55.2			864
C/1997 T1	1997 10 05.66524	22 36 43.95	+71 52 52.1			897
C/1997 T1	1997 10 05.66736	22 36 41.08	+71 52 48.0			896
C/1997 T1	1997 10 05.67014	22 36 37.19	+71 52 41.6			896
C/1997 T1	1997 10 05.67251	22 36 33.98	+71 52 36.1			897
C/1997 T1	1997 10 05.67279	22 36 33.63	+71 52 36.6			864
C/1997 T1	1997 10 05.67292	22 36 33.46	+71 52 35.6			896
C/1997 T1	1997 10 05.69529	22 36 02.55	+71 51 46.8	11.2 T		900
C/1997 T1	1997 10 05.69924	22 35 57.22	+71 51 38.4			900
C/1997 T1	1997 10 05.70787	22 35 45.34	+71 51 18.3			896
C/1997 T1	1997 10 05.71528	22 35 35.27	+71 51 01.9			896
C/1997 T1	1997 10 05.72014	22 35 28.63	+71 50 51.0			896
C/1997 T1	1997 10 05.76193	22 34 33.59	+71 49 21.2		5	118
C/1997 T1	1997 10 05.76336	22 34 31.80	+71 49 18.1		7	118
C/1997 T1	1997 10 05.76421	22 34 30.40	+71 49 16.8	13.8 N		046
C/1997 T1	1997 10 05.76461	22 34 29.92	+71 49 15.7	11.2 T	1	118
C/1997 T1	1997 10 05.76525	22 34 28.96	+71 49 14.6			046
C/1997 T1	1997 10 05.76608	22 34 27.86	+71 49 12.7	11.0 T		046
C/1997 T1	1997 10 05.78309	22 34 04.55	+71 48 35.3			046
C/1997 T1	1997 10 05.78400	22 34 03.32	+71 48 33.4			046
C/1997 T1	1997 10 05.78484	22 34 02.17	+71 48 31.5			046
C/1997 T1	1997 10 05.98597	22 29 28.49	+71 40 48.8			118
C/1997 T1	1997 10 05.99381	22 29 17.98	+71 40 30.1			118
C/1997 T1	1997 10 05.99954	22 29 10.29	+71 40 16.4	11.3 T		118

C/1997 T1	1997 10 06.04894	22 28 03.75	+71 38 17.7			557
C/1997 T1	1997 10 06.05128	22 28 00.58	+71 38 11.9			557
C/1997 T1	1997 10 06.05365	22 27 57.45	+71 38 06.2			557
C/1997 T1	1997 10 06.05544	22 27 55.06	+71 38 01.9			557
C/1997 T1	1997 10 06.10049	22 26 56.86	+71 36 17.0	12.4 T		709
C/1997 T1	1997 10 06.10392	22 26 52.24	+71 36 09.0	12.5 T		709
C/1997 T1	1997 10 06.10675	22 26 48.47	+71 36 01.4	12.4 T		709
C/1997 T1	1997 10 06.10963	22 26 44.58	+71 35 54.6	12.4 T		709
C/1997 T1	1997 10 06.11253	22 26 40.67	+71 35 47.9	12.4 T		709
C/1997 T1	1997 10 06.11587	22 26 36.17	+71 35 40.1	12.5 T		709
C/1997 T1	1997 10 06.18889	22 24 58.72	+71 32 38.5	10 T		675
C/1997 T1	1997 10 06.22691	22 24 08.07	+71 31 03.0			675
C/1997 T1	1997 10 06.46725	22 18 52.63	+71 20 43.7			864
C/1997 T1	1997 10 06.47322	22 18 44.89	+71 20 23.2			400
C/1997 T1	1997 10 06.47598	22 18 41.37	+71 20 17.2			400
C/1997 T1	1997 10 06.47808	22 18 38.41	+71 20 14.5			864
C/1997 T1	1997 10 06.48524	22 18 29.05	+71 19 50.6			400
C/1997 T1	1997 10 06.48911	22 18 23.61	+71 19 42.4			400
C/1997 T1	1997 10 06.48976	22 18 23.06	+71 19 43.6			360
C/1997 T1	1997 10 06.49184	22 18 20.32	+71 19 38.3			360
C/1997 T1	1997 10 06.49392	22 18 17.60	+71 19 32.7			360
C/1997 T1	1997 10 06.49730	22 18 12.97	+71 19 21.0			400
C/1997 T1	1997 10 06.50377	22 18 04.65	+71 19 05.8	10.9 T		900
C/1997 T1	1997 10 06.51144	22 17 54.66	+71 18 45.3			900
C/1997 T1	1997 10 06.52567	22 17 36.05	+71 18 07.0			352
C/1997 T1	1997 10 06.52775	22 17 33.37	+71 18 01.0	11.1 T		352
C/1997 T1	1997 10 06.53192	22 17 27.92	+71 17 49.6			352
C/1997 T1	1997 10 06.53237	22 17 27.36	+71 17 49.1	11.8 T		388
C/1997 T1	1997 10 06.53611	22 17 22.36	+71 17 38.9			867
C/1997 T1	1997 10 06.53715	22 17 20.95	+71 17 35.9			867
C/1997 T1	1997 10 06.54097	22 17 15.94	+71 17 25.8			867
C/1997 T1	1997 10 06.54692	22 17 08.39	+71 17 09.2	11.7 T		388
C/1997 T1	1997 10 06.55127	22 17 02.73	+71 16 57.5	11.7 T		388
C/1997 T1	1997 10 06.55449	22 16 58.57	+71 16 48.6	11.5 T		388
C/1997 T1	1997 10 06.65525	22 14 47.67	+71 12 09.6			864
C/1997 T1	1997 10 06.67324	22 14 24.54	+71 11 18.9	11.0 T		864
C/1997 T1	1997 10 06.70132	22 13 48.02	+71 09 57.1			327
C/1997 T1	1997 10 06.70540	22 13 42.59	+71 09 45.5			327
C/1997 T1	1997 10 06.70943	22 13 37.68	+71 09 34.3			327
C/1997 T1	1997 10 06.73293	22 13 10.07	+71 08 30.9			046
C/1997 T1	1997 10 06.73407	22 13 08.59	+71 08 27.6			046
C/1997 T1	1997 10 06.73529	22 13 07.03	+71 08 24.2			046
C/1997 T1	1997 10 06.73628	22 13 05.76	+71 08 21.4			046
C/1997 T1	1997 10 06.74568	22 12 53.02	+71 07 52.7			616
C/1997 T1	1997 10 06.74589	22 12 53.47	+71 07 54.2			118
C/1997 T1	1997 10 06.74711	22 12 51.05	+71 07 48.6			616
C/1997 T1	1997 10 06.74778	22 12 51.12	+71 07 48.5	11.6 T		118
C/1997 T1	1997 10 06.75235	22 12 45.16	+71 07 35.7			118
C/1997 T1	1997 10 06.75340	22 12 42.80	+71 07 30.7			616
C/1997 T1	1997 10 06.75566	22 12 41.06	+71 07 26.1	11.5 T		540
C/1997 T1	1997 10 06.75671	22 12 39.68	+71 07 23.3			540
C/1997 T1	1997 10 06.75769	22 12 38.54	+71 07 20.0			540
C/1997 T1	1997 10 06.87858	22 10 03.48	+71 01 33.0	11.0 T		103

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C/1997 T1	1997 10 06.88395	22 09 56.57	+71 01 17.0	11.0 T	103	C/1997 T1	1997 10 08.60282	21 36 20.40	+69 24 11.6		864
C/1997 T1	1997 10 06.89344	22 09 44.35	+71 00 48.7	11.0 T	103	C/1997 T1	1997 10 08.61244	21 36 09.94	+69 23 34.3	11.0 T	864
C/1997 T1	1997 10 07.08514	22 05 45.52	+70 51 20.4		817	C/1997 T1	1997 10 08.73132	21 34 03.96	+69 15 54.4		118
C/1997 T1	1997 10 07.09205	22 05 36.80	+70 50 59.3		817	C/1997 T1	1997 10 08.73755	21 33 57.23	+69 15 30.2		118
C/1997 T1	1997 10 07.09660	22 05 31.14	+70 50 45.7		817	C/1997 T1	1997 10 08.74054	21 33 54.12	+69 15 19.1	11.8 T	118
C/1997 T1	1997 10 07.10699	22 05 18.25	+70 50 14.2		817	C/1997 T1	1997 10 08.75838	21 33 34.80	+69 14 10.0		046
C/1997 T1	1997 10 07.11186	22 05 12.00	+70 49 58.8		817	C/1997 T1	1997 10 08.75928	21 33 33.82	+69 14 06.4		046
C/1997 T1	1997 10 07.11304	22 05 10.73	+70 49 55.5		817	C/1997 T1	1997 10 08.76014	21 33 32.93	+69 14 03.2		046
C/1997 T1	1997 10 07.52949	21 56 43.43	+70 27 57.2	11.5 T	402	C/1997 T1	1997 10 08.78762	21 33 02.12	+69 12 08.5		864
C/1997 T1	1997 10 07.53053	21 56 42.15	+70 27 54.0		402	C/1997 T1	1997 10 08.79405	21 32 55.42	+69 11 44.2	11.0 T	864
C/1997 T1	1997 10 07.53191	21 56 40.58	+70 27 48.3	12.1 T	355	C/1997 T1	1997 10 08.89043	21 31 14.20	+69 05 31.8		057
C/1997 T1	1997 10 07.53270	21 56 39.61	+70 27 45.8		355	C/1997 T1	1997 10 08.89893	21 31 05.33	+69 04 58.0		057
C/1997 T1	1997 10 07.54414	21 56 25.77	+70 27 08.2		355	C/1997 T1	1997 10 09.78837	21 16 15.18	+68 03 28.2		046
C/1997 T1	1997 10 07.54560	21 56 24.10	+70 27 03.0		355	C/1997 T1	1997 10 09.78928	21 16 14.31	+68 03 24.2		046
C/1997 T1	1997 10 07.54591	21 56 23.79	+70 27 02.9		367	C/1997 T1	1997 10 09.79027	21 16 13.35	+68 03 19.9		046
C/1997 T1	1997 10 07.54730	21 56 22.15	+70 26 58.5		367	C/1997 T1	1997 10 09.86413	21 15 02.79	+67 57 58.4	11.4 T	118
C/1997 T1	1997 10 07.54869	21 56 20.40	+70 26 54.2		367	C/1997 T1	1997 10 09.86582	21 15 01.09	+67 57 50.8		118
C/1997 T1	1997 10 07.55008	21 56 18.76	+70 26 49.3		367	C/1997 T1	1997 10 09.86881	21 14 58.27	+67 57 37.9		118
C/1997 T1	1997 10 07.72450	21 52 53.29	+70 17 03.4		616	C/1997 T1	1997 10 10.42095	21 06 32.13	+67 16 41.4		896
C/1997 T1	1997 10 07.72670	21 52 50.69	+70 16 56.1		616	C/1997 T1	1997 10 10.42500	21 06 28.42	+67 16 23.7		896
C/1997 T1	1997 10 07.72833	21 52 48.81	+70 16 50.6		616	C/1997 T1	1997 10 10.43056	21 06 23.33	+67 15 58.4		896
C/1997 T1	1997 10 07.75880	21 52 12.85	+70 15 07.2	11.7 T	118	C/1997 T1	1997 10 10.43750	21 06 17.24	+67 15 26.1		896
C/1997 T1	1997 10 07.76235	21 52 08.76	+70 14 55.4		118	C/1997 T1	1997 10 10.44097	21 06 14.11	+67 15 10.8		896
C/1997 T1	1997 10 07.76478	21 52 05.74	+70 14 47.1		118	C/1997 T1	1997 10 10.46611	21 05 51.64	+67 13 15.7		900
C/1997 T1	1997 10 07.79053	21 51 35.96	+70 13 18.3		963	C/1997 T1	1997 10 10.47379	21 05 44.79	+67 12 41.1	10.7 T	900
C/1997 T1	1997 10 07.81905	21 51 00.54	+70 11 34.4		864	C/1997 T1	1997 10 10.48977	21 05 30.61	+67 11 27.6	11.2 T	355
C/1997 T1	1997 10 07.82003	21 50 59.51	+70 11 30.4		864	C/1997 T1	1997 10 10.50459	21 05 17.39	+67 10 19.9		355
C/1997 T1	1997 10 07.82555	21 50 52.97	+70 11 12.0		864	C/1997 T1	1997 10 10.53480	21 04 50.72	+67 08 00.9		367
C/1997 T1	1997 10 07.82785	21 50 50.37	+70 11 03.4	10.8 T	864	C/1997 T1	1997 10 10.53619	21 04 49.43	+67 07 54.6		367
C/1997 T1	1997 10 07.85434	21 50 20.51	+70 09 40.2		046	C/1997 T1	1997 10 10.53758	21 04 48.17	+67 07 48.1		367
C/1997 T1	1997 10 07.85513	21 50 19.59	+70 09 37.4		046	C/1997 T1	1997 10 10.53897	21 04 47.00	+67 07 41.6		367
C/1997 T1	1997 10 07.85801	21 50 16.23	+70 09 27.5		046	C/1997 T1	1997 10 10.54090	21 04 45.14	+67 07 32.9	11.5 T	402
C/1997 T1	1997 10 08.03166	21 46 56.30	+69 59 13.2		978	C/1997 T1	1997 10 10.54179	21 04 44.31	+67 07 28.6		402
C/1997 T1	1997 10 08.04550	21 46 40.72	+69 58 24.4		978	C/1997 T1	1997 10 10.54439	21 04 42.12	+67 07 17.0		402
C/1997 T1	1997 10 08.40724	21 39 55.54	+69 36 32.1	13.5 N	388	C/1997 T1	1997 10 10.54546	21 04 41.16	+67 07 11.4		355
C/1997 T1	1997 10 08.44444	21 39 14.19	+69 34 12.9		388	C/1997 T1	1997 10 10.55280	21 04 34.38	+67 06 36.2	10.0 T	886
C/1997 T1	1997 10 08.46620	21 38 50.18	+69 32 51.3	11.2 T	355	C/1997 T1	1997 10 10.55713	21 04 30.87	+67 06 17.4		355
C/1997 T1	1997 10 08.47947	21 38 35.56	+69 32 01.2		355	C/1997 T1	1997 10 10.56025	21 04 27.95	+67 06 02.4		886
C/1997 T1	1997 10 08.51707	21 37 54.00	+69 29 38.7		900	C/1997 T1	1997 10 10.60816	21 03 46.00	+67 02 22.3		360
C/1997 T1	1997 10 08.52369	21 37 46.77	+69 29 13.8		367	C/1997 T1	1997 10 10.62049	21 03 35.20	+67 01 24.9	10.9 T	360
C/1997 T1	1997 10 08.52478	21 37 45.51	+69 29 09.4	11.2 T	900	C/1997 T1	1997 10 10.62309	21 03 32.94	+67 01 12.6		360
C/1997 T1	1997 10 08.52508	21 37 45.27	+69 29 08.5		367	C/1997 T1	1997 10 10.81953	21 00 45.31	+66 46 01.0		963
C/1997 T1	1997 10 08.52647	21 37 43.77	+69 29 03.2		367	C/1997 T1	1997 10 10.98332	20 58 27.13	+66 33 09.6	12.0 N	758
C/1997 T1	1997 10 08.52704	21 37 43.21	+69 29 00.8	11.4 T	402	C/1997 T1	1997 10 10.98691	20 58 24.25	+66 32 52.5	12.0 N	758
C/1997 T1	1997 10 08.52786	21 37 42.28	+69 28 57.8		367	C/1997 T1	1997 10 11.03844	20 57 40.91	+66 28 49.4	12.1 N	758
C/1997 T1	1997 10 08.52843	21 37 41.64	+69 28 55.9		402	C/1997 T1	1997 10 11.80075	20 47 35.00	+65 27 18.7		057
C/1997 T1	1997 10 08.52981	21 37 40.11	+69 28 50.6		402	C/1997 T1	1997 10 11.80805	20 47 29.31	+65 26 43.5		057
C/1997 T1	1997 10 08.53301	21 37 36.54	+69 28 38.0		897	C/1997 T1	1997 10 12.19149	20 42 44.52	+64 54 49.9	11.8 T	1 670
C/1997 T1	1997 10 08.54177	21 37 26.98	+69 28 04.5		897	C/1997 T1	1997 10 12.28108	20 41 39.49	+64 47 16.5		670
C/1997 T1	1997 10 08.55081	21 37 17.08	+69 27 30.2	10.8 T	897	C/1997 T1	1997 10 12.29913	20 41 26.31	+64 45 45.2		670
C/1997 T1	1997 10 08.55250	21 37 15.22	+69 27 23.6		897	C/1997 T1	1997 10 12.45063	20 39 39.26	+64 32 59.6	11.0 T	900
C/1997 T1	1997 10 08.58425	21 36 40.65	+69 25 22.5	10.5 T	886	C/1997 T1	1997 10 12.46196	20 39 31.28	+64 32 01.7		900
C/1997 T1	1997 10 08.59190	21 36 32.78	+69 24 53.1		886	C/1997 T1	1997 10 12.49185	20 39 10.11	+64 29 28.9		897

C/1997 T1	1997 10 12.49429	20 39 08.34	+64 29 16.2		897
C/1997 T1	1997 10 12.53074	20 38 42.71	+64 26 09.4		355
C/1997 T1	1997 10 12.54934	20 38 29.63	+64 24 34.1		355
C/1997 T1	1997 10 12.70375	20 36 42.61	+64 11 17.6	11.6 T	402
C/1997 T1	1997 10 12.70514	20 36 41.65	+64 11 10.4		402
C/1997 T1	1997 10 12.70653	20 36 40.73	+64 11 03.3		402
C/1997 T1	1997 10 12.77569	20 35 54.99	+64 05 13.1		963
C/1997 T1	1997 10 13.49844	20 28 03.69	+63 02 25.9	11.3 T	402
C/1997 T1	1997 10 13.49983	20 28 02.80	+63 02 18.6		402
C/1997 T1	1997 10 13.50121	20 28 01.94	+63 02 11.2		402
C/1997 T1	1997 10 13.51085	20 27 55.89	+63 01 20.2		367
C/1997 T1	1997 10 13.51223	20 27 55.06	+63 01 12.8		367
C/1997 T1	1997 10 13.51362	20 27 54.24	+63 01 05.4		367
C/1997 T1	1997 10 13.51501	20 27 53.34	+63 00 58.2		367
C/1997 T1	1997 10 13.76744	20 25 18.93	+62 38 40.9		118
C/1997 T1	1997 10 13.77480	20 25 14.38	+62 38 01.7	10.7 T	118
C/1997 T1	1997 10 13.77803	20 25 12.98	+62 37 43.8		963
C/1997 T1	1997 10 14.02203	20 22 47.31	+62 16 01.5	12.2 N	758
C/1997 T1	1997 10 14.04686	20 22 32.48	+62 13 49.1	12.5 N	758

C/1997 T2 (SOHO)

C/1997 T2	1997 10 03.28698	12 12 50.5	-05 19 58		249
Geocentric position (AU)	-0.00804677	-0.00517344	-0.00201111		
C/1997 T2	1997 10 03.32377	12 13 36.7	-05 18 04		249
Geocentric position (AU)	-0.00804356	-0.00518109	-0.00201566		
C/1997 T2	1997 10 03.34045	12 13 54.8	-05 17 29		249
Geocentric position (AU)	-0.00804249	-0.00518364	-0.00201717		
C/1997 T2	1997 10 03.36476	12 14 27.1	-05 17 10		249
Geocentric position (AU)	-0.00804034	-0.00518872	-0.00202020		
C/1997 T2	1997 10 03.40644	12 15 24.0	-05 14 40		249
Geocentric position (AU)	-0.00803712	-0.00519635	-0.00202474		
C/1997 T2	1997 10 03.44113	12 16 07.9	-05 13 52		249
Geocentric position (AU)	-0.00803443	-0.00520269	-0.00202852		
C/1997 T2	1997 10 03.49324	12 17 18.0	-05 11 58		249
Geocentric position (AU)	-0.00803065	-0.00521157	-0.00203381		
C/1997 T2	1997 10 03.52877	12 18 07.5	-05 10 45		249
Geocentric position (AU)	-0.00802795	-0.00521789	-0.00203759		
C/1997 T2	1997 10 03.57377	12 19 09.5	-05 08 44		249
Geocentric position (AU)	-0.00802416	-0.00522674	-0.00204287		
C/1997 T2	1997 10 03.61517	12 20 05.0	-05 06 52		249
Geocentric position (AU)	-0.00802090	-0.00523431	-0.00204739		
C/1997 T2	1997 10 03.63816	12 20 37.8	-05 05 38		249
Geocentric position (AU)	-0.00801927	-0.00523810	-0.00204965		
C/1997 T2	1997 10 03.66197	12 21 14.0	-05 05 06		249
Geocentric position (AU)	-0.00801764	-0.00524187	-0.00205190		
C/1997 T2	1997 10 03.68560	12 21 48.2	-05 03 59		249
Geocentric position (AU)	-0.00801546	-0.00524691	-0.00205491		
C/1997 T2	1997 10 03.71545	12 22 31.1	-05 02 47		249
Geocentric position (AU)	-0.00801328	-0.00525194	-0.00205792		
C/1997 T2	1997 10 03.74441	12 23 11.0	-05 01 19		249
Geocentric position (AU)	-0.00801110	-0.00525697	-0.00206093		
C/1997 T2	1997 10 03.75751	12 23 32.2	-05 00 30		249
Geocentric position (AU)	-0.00801001	-0.00525948	-0.00206243		

C/1997 T2	1997 10 03.83730	12 25 34.5	-04 56 39		249
Geocentric position (AU)	-0.00800344	-0.00527452	-0.00207143		
C/1997 T2	1997 10 03.88051	12 26 40.0	-04 54 04		249
Geocentric position (AU)	-0.00800014	-0.00528202	-0.00207593		
C/1997 T2	1997 10 03.92039	12 27 44.4	-04 52 26		249
Geocentric position (AU)	-0.00799684	-0.00528952	-0.00208042		
C/1997 T2	1997 10 03.93627	12 28 11.5	-04 51 30		249
Geocentric position (AU)	-0.00799574	-0.00529201	-0.00208192		
C/1997 T2	1997 10 03.96685	12 28 59.4	-04 49 58		249
Geocentric position (AU)	-0.00799353	-0.00529700	-0.00208491		
C/1997 T2	1997 10 03.98212	12 29 22.6	-04 48 26		249
Geocentric position (AU)	-0.00799243	-0.00529949	-0.00208640		
C/1997 T2	1997 10 04.01615	12 30 22.6	-04 46 19		249
Geocentric position (AU)	-0.00798967	-0.00530572	-0.00209014		
C/1997 T2	1997 10 04.03076	12 30 40.1	-04 48 16		249
Geocentric position (AU)	-0.00798856	-0.00530821	-0.00209163		
C/1997 T2	1997 10 04.03697	12 31 00.2	-04 44 37		249
Geocentric position (AU)	-0.00798801	-0.00530945	-0.00209238		
C/1997 T2	1997 10 04.06203	12 31 36.9	-04 46 13		249
Geocentric position (AU)	-0.00798580	-0.00531442	-0.00209536		
C/1997 T2	1997 10 04.06544	12 31 48.8	-04 43 05		249
Geocentric position (AU)	-0.00798580	-0.00531442	-0.00209536		
C/1997 T2	1997 10 04.08631	12 32 20.7	-04 44 03		249
Geocentric position (AU)	-0.00798413	-0.00531815	-0.00209760		
C/1997 T2	1997 10 04.09894	12 32 44.5	-04 43 03		249
Geocentric position (AU)	-0.00798302	-0.00532063	-0.00209909		
C/1997 T2	1997 10 04.12172	12 33 30.1	-04 41 17		249
Geocentric position (AU)	-0.00798080	-0.00532559	-0.00210208		

P/1997 T3

P/1997 T3	1997 10 05.07800	01 15 20.50	+03 04 03.0		809
P/1997 T3	1997 10 05.08532	01 15 20.28	+03 04 01.6		809
P/1997 T3	1997 10 06.21191	01 14 46.74	+03 01 10.9		809
P/1997 T3	1997 10 06.21799	01 14 46.55	+03 01 10.1		809
P/1997 T3	1997 10 06.99668	01 14 23.30	+02 59 08.2	19.0 N	046
P/1997 T3	1997 10 06.99941	01 14 23.22	+02 59 08.0		046
P/1997 T3	1997 10 07.00264	01 14 23.13	+02 59 07.4		046
P/1997 T3	1997 10 07.00669	01 14 23.00	+02 59 06.6		046
P/1997 T3	1997 10 07.15794	01 14 18.59	+02 58 47.9		809
P/1997 T3	1997 10 07.16691	01 14 18.32	+02 58 46.5		809
P/1997 T3	1997 10 07.17177	01 14 18.17	+02 58 45.8		809
P/1997 T3	1997 10 07.28978	01 14 14.58	+02 58 25.2	18.8 N	709
P/1997 T3	1997 10 07.29836	01 14 14.26	+02 58 24.0	18.8 N	709
P/1997 T3	1997 10 07.30730	01 14 14.02	+02 58 22.7	18.6 N	709
P/1997 T3	1997 10 07.31563	01 14 13.74	+02 58 21.0	18.3 N	709
P/1997 T3	1997 10 07.34699	01 14 12.83	+02 58 16.2	18.5 N	709
P/1997 T3	1997 10 07.35492	01 14 12.58	+02 58 14.9	18.7 N	709
P/1997 T3	1997 10 07.37501	01 14 11.95	+02 58 11.5	18.6 N	709
P/1997 T3	1997 10 07.38441	01 14 11.71	+02 58 10.0	18.5 N	8 709
P/1997 T3	1997 10 07.87075	01 13 57.21	+02 56 57.2		557
P/1997 T3	1997 10 07.88512	01 13 57.20	+02 57 00.8	18.7 N	5 118
P/1997 T3	1997 10 07.88852	01 13 57.02	+02 57 00.6	18.7 N	5 118
P/1997 T3	1997 10 07.89789	01 13 56.82	+02 56 58.5	19.0 N	5 118

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P/1997 T3	1997 10 07.89918	01 13 56.31	+02 56 52.7		557	43P	1997 09 30.72193	08 01 00.01	+18 00 50.6		897
P/1997 T3	1997 10 07.90740	01 13 56.08	+02 56 52.1		557	43P	1997 10 01.38818	08 02 42.65	+17 47 45.8	13.4 T	758
P/1997 T3	1997 10 07.93979	01 13 55.10	+02 56 46.9	19.0 N	557	43P	1997 10 01.38961	08 02 42.87	+17 47 43.8	13.5 T	758
P/1997 T3	1997 10 08.19534	01 13 47.44	+02 56 11.5		809	43P	1997 10 02.83437	08 06 23.84	+17 19 00.0		867
P/1997 T3	1997 10 08.20647	01 13 47.10	+02 56 09.8		809	43P	1997 10 02.83715	08 06 24.27	+17 18 56.6		867
P/1997 T3	1997 10 08.59362	01 13 35.11	+02 55 09.0	19.7 N	388	43P	1997 10 05.13900	08 12 11.24	+16 32 20.0		118
P/1997 T3	1997 10 08.60003	01 13 35.22	+02 55 07.5		388	43P	1997 10 05.14149	08 12 11.61	+16 32 17.0		118
P/1997 T3	1997 10 08.61133	01 13 34.88	+02 55 06.4		388	43P	1997 10 05.14463	08 12 12.07	+16 32 12.9	13.1 T	118
P/1997 T3	1997 10 08.61922	01 13 34.63	+02 55 05.3	19.0 N	402	43P	1997 10 10.82066	08 26 00.58	+14 33 17.7	12.7 T	402
P/1997 T3	1997 10 08.62061	01 13 34.53	+02 55 04.4		388	43P	1997 10 10.82274	08 26 00.88	+14 33 15.0		402
P/1997 T3	1997 10 08.62339	01 13 34.49	+02 55 04.7		402	43P	1997 10 10.82483	08 26 01.18	+14 33 12.3		402
P/1997 T3	1997 10 08.62756	01 13 34.37	+02 55 03.3		402	43P	1997 10 12.80208	08 30 40.57	+13 50 32.7	13.0 T	360
P/1997 T3	1997 10 08.63172	01 13 34.27	+02 55 03.2		402	43P	1997 10 12.80486	08 30 40.94	+13 50 29.0		360
P/1997 T3	1997 10 08.66875	01 13 33.14	+02 54 57.4	19.1 N	402						
P/1997 T3	1997 10 08.67292	01 13 32.97	+02 54 57.2		402						
P/1997 T3	1997 10 09.21558	01 13 16.68	+02 53 39.1		809	48P	1997 06 29.66477	19 34 09.65	-17 13 17.5	16.9 T	897
P/1997 T3	1997 10 09.22308	01 13 16.46	+02 53 38.1		809	48P	1997 06 29.67518	19 34 09.24	-17 13 22.3		897
P/1997 T3	1997 10 09.85605	01 12 57.46	+02 52 00.5		046	48P	1997 09 15.82515	19 14 20.60	-26 26 40.7		5 118
P/1997 T3	1997 10 09.87653	01 12 56.75	+02 51 57.2		046	48P	1997 09 15.84108	19 14 21.28	-26 26 43.8	16.6 T	5 118
P/1997 T3	1997 10 09.88426	01 12 56.54	+02 51 55.8		046						
P/1997 T3	1997 10 10.26159	01 12 45.09	+02 51 03.5		809						
P/1997 T3	1997 10 10.26843	01 12 44.85	+02 51 02.3		809	65P	1997 08 09.67782	01 00 36.45	-07 10 53.5	14.7 T	897
P/1997 T3	1997 10 10.27498	01 12 44.64	+02 51 01.4		809	65P	1997 08 09.69560	01 00 36.37	-07 10 56.5		897
P/1997 T3	1997 10 10.69271	01 12 31.95	+02 49 56.9	18.5 N	402	65P	1997 08 09.70005	01 00 36.32	-07 10 58.0		897
P/1997 T3	1997 10 10.69618	01 12 31.83	+02 49 55.1		402	65P	1997 08 28.70126	00 55 29.95	-08 24 10.0		352
P/1997 T3	1997 10 10.69965	01 12 31.77	+02 49 56.2		402	65P	1997 08 28.70334	00 55 29.91	-08 24 10.8		352
P/1997 T3	1997 10 10.87230	01 12 26.71	+02 49 30.0	18.6 N	046	65P	1997 09 04.99262	00 51 46.34	-08 56 51.7	16.5 T	610
P/1997 T3	1997 10 10.88891	01 12 26.14	+02 49 28.2		046	65P	1997 09 04.99885	00 51 46.16	-08 56 52.8		610
P/1997 T3	1997 10 10.89347	01 12 26.01	+02 49 26.8		046	65P	1997 09 05.00509	00 51 45.97	-08 56 53.9		610
P/1997 T3	1997 10 12.65637	01 11 32.60	+02 45 09.1	18.8 N	402	65P	1997 09 05.01133	00 51 45.79	-08 56 55.0		610
P/1997 T3	1997 10 12.65984	01 11 32.48	+02 45 09.0		402	65P	1997 09 10.98047	00 48 07.26	-09 23 47.3		610
P/1997 T3	1997 10 12.66331	01 11 32.34	+02 45 09.0		402	65P	1997 09 10.98534	00 48 07.04	-09 23 48.8		610
P/1997 T3	1997 10 12.70072	01 11 31.20	+02 45 03.4	18.7 N	867	65P	1997 09 10.99020	00 48 06.82	-09 23 50.3		610
P/1997 T3	1997 10 12.70801	01 11 30.97	+02 45 02.2		867	65P	1997 09 15.92672	00 44 47.37	-09 45 20.0		118
P/1997 T3	1997 10 12.71840	01 11 30.60	+02 45 00.1	18.9 N	3 360	65P	1997 09 15.93228	00 44 47.12	-09 45 20.9		118
P/1997 T3	1997 10 12.72413	01 11 30.42	+02 45 00.2		3 360	65P	1997 09 15.94191	00 44 46.70	-09 45 23.9		118
P/1997 T3	1997 10 12.72606	01 11 30.42	+02 44 59.7		867	65P	1997 09 15.98015	00 44 45.08	-09 45 33.2		118
P/1997 T3	1997 10 12.72830	01 11 30.27	+02 44 59.1		3 360	65P	1997 09 15.98729	00 44 44.77	-09 45 35.1		118
						65P	1997 09 15.99778	00 44 44.30	-09 45 37.8	14.8 T	118
						65P	1997 09 21.94732	00 40 27.72	-10 09 44.6		118
9P	1997 10 05.41377	06 11 38.27	+25 37 58.4	21.7 N	675	65P	1997 09 21.95162	00 40 27.54	-10 09 45.6		118
9P	1997 10 05.51041	06 11 39.08	+25 38 05.6	21.7 N	675	65P	1997 09 21.95374	00 40 27.44	-10 09 46.3	15.5 T	118
						65P	1997 09 28.67671	00 35 25.93	-10 33 37.2	15.2 T	402
						65P	1997 09 28.67949	00 35 25.79	-10 33 38.1		402
43P	1997 09 03.71047	06 45 13.01	+25 22 59.8		897	65P	1997 09 28.68227	00 35 25.67	-10 33 38.5		402
43P	1997 09 03.71786	06 45 14.38	+25 22 54.5		897	65P	1997 09 29.60694	00 34 44.04	-10 36 34.3	15.0 T	360
43P	1997 09 03.72084	06 45 14.85	+25 22 52.2	12.5 T	897	65P	1997 09 29.61111	00 34 43.84	-10 36 35.1		360
43P	1997 09 17.08882	07 24 11.93	+22 07 26.3		118	65P	1997 10 01.57816	00 33 15.26	-10 42 29.9		897
43P	1997 09 17.09594	07 24 13.10	+22 07 19.6	12.7 T	118	65P	1997 10 01.58510	00 33 15.01	-10 42 31.5		897
43P	1997 09 21.08060	07 35 18.45	+20 59 46.5		118	65P	1997 10 01.60434	00 33 13.99	-10 42 35.3	15.4 T	897
43P	1997 09 21.08520	07 35 19.21	+20 59 41.7	12.6 T	118						
43P	1997 09 29.75014	07 58 29.26	+18 19 48.7	12.3 T	900						
43P	1997 09 29.75928	07 58 30.70	+18 19 37.8		900	69P	1997 10 08.79417	07 13 21.62	+10 10 57.9	17.8 T	402
43P	1997 09 30.70629	08 00 57.57	+18 01 09.6		897	69P	1997 10 08.79833	07 13 22.03	+10 10 58.1		402

M.P.C. 30724

1997 OCT. 16

69P	1997 10 08.80250	07 13 22.32	+10 11 00.6		402	78P	1997 10 06.05718	06 29 15.58	+18 38 51.4	13.3 T	118
69P	1997 10 12.81047	07 20 08.91	+10 14 56.8	18.4 T	402	78P	1997 10 10.73825	06 35 12.75	+18 14 24.7	12.5 T	402
69P	1997 10 12.81345	07 20 09.22	+10 14 58.0		402	78P	1997 10 10.74103	06 35 12.94	+18 14 24.0		402
69P	1997 10 12.81643	07 20 09.49	+10 14 57.3		402	78P	1997 10 10.74381	06 35 13.15	+18 14 23.0		402
69P	1997 10 12.81941	07 20 09.77	+10 14 57.4		402	78P	1997 10 11.73311	06 36 24.15	+18 09 05.5	12.2 T	900
69P	1997 10 12.82238	07 20 10.07	+10 14 58.3		402	78P	1997 10 11.74226	06 36 24.79	+18 09 02.9		900
69P	1997 10 12.84238	07 20 12.04	+10 14 59.0	18.3 T	867	78P	1997 10 12.77101	06 37 36.98	+18 03 29.7	12.3 T	360
69P	1997 10 13.78266	07 21 46.00	+10 16 03.6	18.9 T	867	78P	1997 10 12.77378	06 37 37.18	+18 03 28.9		360
69P	1997 10 13.79655	07 21 47.32	+10 16 04.2		867						
74P/Smirnova-Chernykh						81P/Wild 2					
74P	1997 09 29.61632	01 13 19.84	-00 20 02.0	18.4 T	360	81P	1997 06 29.46113	11 41 33.09	+05 32 19.4		897
74P	1997 09 29.62795	01 13 19.42	-00 20 04.4		360	81P	1997 06 29.46322	11 41 33.46	+05 32 16.9	11.9 T	897
74P	1997 09 29.63351	01 13 19.22	-00 20 05.7		360	81P	1997 06 29.46971	11 41 34.42	+05 32 10.7		897
74P	1997 09 30.63229	01 12 46.22	-00 23 25.0	18.3 T	360	103P/Hartley 2					
74P	1997 09 30.63785	01 12 46.04	-00 23 26.3		360	103P	1997 07 04.69514	19 38 49.57	+01 16 43.0		897
74P	1997 09 30.64340	01 12 45.86	-00 23 27.5		360	103P	1997 07 04.70197	19 38 49.18	+01 16 45.6	17.5 T	897
74P	1997 10 06.62016	01 09 23.58	-00 43 00.7	18.3 T	867	103P	1997 08 09.62985	18 53 17.27	+02 10 58.5	15.2 T	897
74P	1997 10 06.62850	01 09 23.30	-00 43 02.3		867	103P	1997 08 09.63655	18 53 16.81	+02 10 56.0		897
74P	1997 10 06.63475	01 09 23.04	-00 43 03.6		867	103P	1997 08 09.64363	18 53 16.29	+02 10 55.4		897
78P/Gehrels 2						103P	1997 09 15.79979	18 34 29.71	-01 57 35.5	14.9 T	046
78P	1997 08 09.73432	04 42 14.29	+20 51 32.0		897	103P	1997 09 15.80411	18 34 29.78	-01 57 37.5		046
78P	1997 08 09.73676	04 42 14.71	+20 51 32.6		897	103P	1997 09 15.80671	18 34 29.82	-01 57 38.9		046
78P	1997 08 15.76797	04 55 32.01	+20 57 12.6		864	103P	1997 09 17.82403	18 35 12.83	-02 14 57.2		118
78P	1997 08 15.77837	04 55 33.41	+20 57 13.2	12.6 T	864	103P	1997 09 17.83759	18 35 13.13	-02 15 04.8		118
78P	1997 08 28.74626	05 23 00.02	+20 51 42.0		352	103P	1997 09 17.84495	18 35 13.28	-02 15 08.3		118
78P	1997 08 28.74834	05 23 00.31	+20 51 42.1		352	103P	1997 09 18.84991	18 35 39.07	-02 23 47.2	5	118
78P	1997 08 28.75043	05 23 00.47	+20 51 41.8		352	103P	1997 09 18.86067	18 35 39.32	-02 23 52.8	16.7 T	5 118
78P	1997 09 03.72765	05 34 59.90	+20 41 27.8	12.4 T	897	103P	1997 09 19.45694	18 35 56.02	-02 28 59.3	15.1 T	360
78P	1997 09 03.73000	05 35 00.24	+20 41 27.3		897	103P	1997 09 19.45972	18 35 56.10	-02 29 00.8		360
78P	1997 09 17.05469	05 59 47.48	+20 03 04.6		118	103P	1997 10 06.49793	18 50 48.49	-04 53 34.4		867
78P	1997 09 17.06255	05 59 48.31	+20 03 02.9	12.6 T	118	103P	1997 10 06.50348	18 50 48.96	-04 53 37.2		867
78P	1997 09 18.03346	06 01 29.58	+19 59 29.5		118	103P	1997 10 06.50869	18 50 49.31	-04 53 39.5		867
78P	1997 09 18.04123	06 01 30.35	+19 59 28.0	12.7 T	118	103P	1997 10 06.80978	18 51 12.27	-04 56 07.8	16.0 T	118
78P	1997 09 21.04571	06 06 36.84	+19 47 53.4		118	103P	1997 10 06.81485	18 51 12.68	-04 56 10.3		118
78P	1997 09 21.05214	06 06 37.49	+19 47 52.0	13.0 T	118	103P	1997 10 12.42410	18 59 05.74	-05 40 38.7		900
78P	1997 09 21.35109	06 07 07.28	+19 46 41.9	13.1 T	758	103P	1997 10 12.43344	18 59 06.61	-05 40 43.9	15.2 T	900
78P	1997 09 21.35253	06 07 07.52	+19 46 42.0	13.1 T	758	104P/Kowal 2					
78P	1997 09 24.40419	06 12 06.69	+19 34 00.0	13.5 T	758	104P	1997 08 09.65685	22 55 54.69	+19 19 24.1	15.7 T	897
78P	1997 09 24.40560	06 12 06.77	+19 33 59.8	13.3 T	758	104P	1997 08 09.66899	22 55 54.17	+19 19 27.5		897
78P	1997 09 25.35760	06 13 37.63	+19 29 51.9	12.6 T	758	104P	1997 08 28.64316	22 41 51.23	+20 12 41.2		352
78P	1997 09 25.35905	06 13 37.77	+19 29 51.8	12.6 T	758	104P	1997 08 28.64524	22 41 51.08	+20 12 41.2		352
78P	1997 09 29.72284	06 20 19.81	+19 10 01.6		900	104P	1997 08 28.64733	22 41 50.94	+20 12 41.5		352
78P	1997 09 29.73199	06 20 20.62	+19 09 58.8	12.7 T	900	104P	1997 09 02.59791	22 37 05.54	+20 07 34.4	15.0 T	897
78P	1997 09 30.68209	06 21 44.69	+19 05 28.8		897	104P	1997 09 02.61411	22 37 04.55	+20 07 32.2		897
78P	1997 09 30.69200	06 21 45.55	+19 05 25.8		897	104P	1997 09 15.87510	22 23 38.42	+19 10 21.2		118
78P	1997 10 02.81609	06 24 48.65	+18 55 07.9		867	104P	1997 09 15.88213	22 23 37.98	+19 10 18.3	15.6 T	118
78P	1997 10 02.81910	06 24 48.89	+18 55 07.3		867	104P	1997 09 16.88920	22 22 38.05	+19 03 28.8		118
78P	1997 10 05.12029	06 27 59.99	+18 43 37.2		118	104P	1997 09 16.89565	22 22 37.64	+19 03 25.7		118
78P	1997 10 05.12233	06 28 00.14	+18 43 36.6		118	104P	1997 09 16.90672	22 22 36.96	+19 03 21.1	15.7 T	118
78P	1997 10 05.12481	06 28 00.35	+18 43 36.0	12.7 T	118	104P	1997 09 17.87965	22 21 39.70	+18 56 25.5		118
78P	1997 10 06.05090	06 29 15.10	+18 38 53.4		118	104P	1997 09 17.88363	22 21 39.44	+18 56 23.7	15.5 T	118
78P	1997 10 06.05510	06 29 15.42	+18 38 52.2		118	104P	1997 09 18.94044	22 20 37.77	+18 48 32.3		118

1997 OCT. 16

M.P.C. 30725

104P	1997 09 18.94835	22 20 37.31	+18 48 28.5	118	116P	1997 08 02.22272	19 13 10.11	-27 50 12.1	14.5 T	861
104P	1997 09 19.00816	22 20 33.74	+18 48 00.8	118	116P	1997 08 09.50322	19 08 42.24	-27 48 33.5		897
104P	1997 09 19.01317	22 20 33.44	+18 47 58.4	118	116P	1997 08 09.51699	19 08 41.83	-27 48 32.8	15.6 T	897
104P	1997 09 19.44914	22 20 08.79	+18 44 38.7	14.4 T	897	128P/Shoemaker-Holt 1				
104P	1997 09 19.45609	22 20 08.44	+18 44 35.7	897	128P-B	1997 08 28.73242	04 17 55.65	+20 21 17.7		352
104P	1997 09 19.46303	22 20 08.03	+18 44 32.5	897	128P-B	1997 09 16.08737	04 31 54.19	+20 27 54.7		118
104P	1997 09 19.89606	22 19 43.09	+18 41 09.7	15.5 T	108	128P-B	1997 09 16.09426	04 31 54.41	+20 27 54.7	118
104P	1997 09 19.90341	22 19 42.77	+18 41 05.9	108	128P-B	1997 09 16.10093	04 31 54.67	+20 27 54.6	16.3 T	118
104P	1997 09 20.90595	22 18 45.90	+18 33 00.0	118	128P-B	1997 09 17.01390	04 32 27.31	+20 27 41.2		118
104P	1997 09 20.90882	22 18 45.74	+18 32 58.5	118	128P-B	1997 09 17.02457	04 32 27.66	+20 27 41.2	17.3 T	118
104P	1997 09 20.91624	22 18 45.30	+18 32 55.0	15.2 T	118	128P-B	1997 09 18.01385	04 33 01.95	+20 27 23.7	118
104P	1997 09 21.88425	22 17 51.46	+18 24 50.4	118	128P-B	1997 09 18.02554	04 33 02.34	+20 27 23.4	16.6 T	118
104P	1997 09 21.89088	22 17 51.10	+18 24 46.9	118	128P-B	1997 09 19.08951	04 33 37.85	+20 27 01.0		5 118
104P	1997 09 21.89363	22 17 50.93	+18 24 45.4	14.6 T	118	128P-B	1997 09 19.09609	04 33 38.07	+20 27 01.2	16.5 T 5 118
104P	1997 09 22.82873	22 16 59.95	+18 16 41.7	046	128P-B	1997 09 24.74162	04 36 24.28	+20 23 53.5	15.0 T	402
104P	1997 09 22.82987	22 16 59.89	+18 16 41.1	046	128P-B	1997 09 24.74579	04 36 24.31	+20 23 52.7		402
104P	1997 09 22.83156	22 16 59.80	+18 16 40.2	046	128P-B	1997 09 24.75109	04 36 24.46	+20 23 52.8		402
104P	1997 09 26.88641	22 13 29.89	+17 39 01.2	15.8 T	118	128P-B	1997 09 25.14204	04 36 34.42	+20 23 35.5	16.6 T 118
104P	1997 09 26.89406	22 13 29.51	+17 38 56.5	118	128P-B	1997 09 25.14946	04 36 34.62	+20 23 35.0		118
104P	1997 09 27.84910	22 12 43.42	+17 29 28.6	15.9 T	118	128P-B	1997 09 27.69369	04 37 35.41	+20 21 31.2	897
104P	1997 09 27.85631	22 12 43.07	+17 29 24.0	118	128P-B	1997 09 27.70413	04 37 35.58	+20 21 30.5		897
104P	1997 09 28.47883	22 12 13.84	+17 23 08.4	900	128P-B	1997 09 27.71655	04 37 35.84	+20 21 29.1		897
104P	1997 09 28.49860	22 12 12.88	+17 22 57.1	14.7 T	900	128P-B	1997 09 28.12586	04 37 44.82	+20 21 06.4	16.7 T 118
104P	1997 09 28.54748	22 12 10.50	+17 22 26.4	352	128P-B	1997 09 28.13823	04 37 45.03	+20 21 05.8		118
104P	1997 09 28.55007	22 12 10.41	+17 22 25.6	352	128P-B	1997 09 30.63250	04 38 35.15	+20 18 38.7		897
104P	1997 09 28.55218	22 12 10.27	+17 22 24.2	352	128P-B	1997 09 30.64676	04 38 35.42	+20 18 38.1	16.0 T	897
104P	1997 09 28.65700	22 12 05.12	+17 21 19.4	14.5 T	402	128P-B	1997 10 02.79655	04 39 11.66	+20 16 13.8	15.8 T 867
104P	1997 09 28.65978	22 12 05.00	+17 21 17.5	402	128P-B	1997 10 02.80280	04 39 11.78	+20 16 13.1		867
104P	1997 09 28.66256	22 12 04.87	+17 21 15.8	402	128P-B	1997 10 04.11847	04 39 30.94	+20 14 36.6		118
104P	1997 09 29.59462	22 11 22.46	+17 11 41.4	14.8 T	360	128P-B	1997 10 04.12481	04 39 31.02	+20 14 36.1	118
104P	1997 09 29.59757	22 11 22.31	+17 11 39.2	360	128P-B	1997 10 04.13017	04 39 31.10	+20 14 35.6		118
104P	1997 09 29.77831	22 11 14.55	+17 09 44.4	118	128P-B	1997 10 04.13230	04 39 31.13	+20 14 35.4	15.7 T	118
104P	1997 09 29.78500	22 11 14.22	+17 09 40.3	15.4 T	118	128P-B	1997 10 05.09374	04 39 43.69	+20 13 21.9	118
104P	1997 10 01.58579	22 09 56.41	+16 50 36.1	14.6 T	867	128P-B	1997 10 05.09693	04 39 43.73	+20 13 21.7	118
104P	1997 10 01.59204	22 09 56.11	+16 50 32.2	867	128P-B	1997 10 05.10060	04 39 43.78	+20 13 21.5	16.4 T	118
104P	1997 10 01.60002	22 09 55.77	+16 50 26.6	867	128P-B	1997 10 10.46954	04 40 30.49	+20 05 35.4	18.3 T	691
104P	1997 10 03.92341	22 08 24.43	+16 24 57.1	15.0 T	108	128P-B	1997 10 10.48419	04 40 30.47	+20 05 35.7	16.1 T 691
104P	1997 10 03.92885	22 08 24.21	+16 24 52.6	108	128P-B	1997 10 12.74863	04 40 38.49	+20 01 49.5	15.7 T	867
104P	1997 10 03.93394	22 08 23.93	+16 24 50.0	108	128P-B	1997 10 12.76406	04 40 38.49	+20 01 48.0	16.4 T	360
104P	1997 10 04.79801	22 07 52.81	+16 15 09.3	15.3 T	046	128P-B	1997 10 12.76701	04 40 38.48	+20 01 47.7	360
104P	1997 10 04.80006	22 07 52.70	+16 15 08.0	046	128P-B	1997 10 12.77383	04 40 38.39	+20 01 46.9	16.0 T	897
104P	1997 10 04.80347	22 07 52.60	+16 15 05.7	046	128P-B	1997 10 12.78103	04 40 38.46	+20 01 46.9	15.9 T	897
104P	1997 10 05.83879	22 07 16.58	+16 03 20.6	616	128P-B	1997 10 12.80350	04 40 38.49	+20 01 43.8		867
104P	1997 10 05.85125	22 07 16.24	+16 03 12.4	616		129P/Shoemaker-Levy 3				
104P	1997 10 05.85561	22 07 16.11	+16 03 08.8	616	129P	1997 10 06.11626	07 32 36.52	+24 30 03.3		118
104P	1997 10 06.88399	22 06 42.89	+15 51 23.0	15.2 T	118	129P	1997 10 06.11918	07 32 36.70	+24 30 03.0	118
104P	1997 10 06.89383	22 06 42.57	+15 51 16.0	118	129P	1997 10 06.12853	07 32 37.34	+24 30 01.7		118
116P/Wild 4					129P	1997 10 06.13559	07 32 37.80	+24 30 00.2	18.0 T	118
116P	1997 07 04.65351	19 38 09.73	-27 16 10.5	897	129P	1997 10 12.79288	07 39 42.66	+24 12 35.3	18.5 T	360
116P	1997 07 04.66132	19 38 09.30	-27 16 11.1	897	129P	1997 10 12.79705	07 39 42.92	+24 12 34.7		360
116P	1997 07 04.67110	19 38 08.70	-27 16 12.6	14.8 T	897	129P	1997 10 13.80662	07 40 43.71	+24 09 57.0	17.4 T 867
116P	1997 08 02.21727	19 13 10.41	-27 50 11.5	14.1 T	861					

129P	1997 10 13.81322	07 40 44.12	+24 09 55.5	867
129P	1997 10 13.82016	07 40 44.54	+24 09 54.3	867

131P/Mueller 2

131P	1997 09 23.45003	01 31 58.16	+13 40 09.3	18.0 T	691
131P	1997 09 23.47204	01 31 57.65	+13 40 03.7	18.1 T	691
131P	1997 09 23.49394	01 31 57.14	+13 39 57.0	18.2 T	691
131P	1997 09 24.66760	01 31 30.67	+13 33 55.2	16.7 T	402
131P	1997 09 24.67178	01 31 30.54	+13 33 54.1		402
131P	1997 09 24.67595	01 31 30.44	+13 33 52.7		402
131P	1997 09 26.10521	01 30 55.50	+13 26 09.6	17.9 T	046
131P	1997 09 26.10729	01 30 55.52	+13 26 08.5		046
131P	1997 09 26.10950	01 30 55.41	+13 26 07.9		046
131P	1997 09 26.99045	01 30 33.02	+13 21 12.3	17.8 T	046
131P	1997 09 26.99464	01 30 32.90	+13 21 11.8		046
131P	1997 09 26.99976	01 30 32.81	+13 21 10.1		046
131P	1997 09 27.00216	01 30 32.66	+13 21 09.0		046
131P	1997 09 28.68759	01 29 47.39	+13 11 23.4	16.8 T	900
131P	1997 09 28.70535	01 29 46.81	+13 11 17.2	16.8 T	900
131P	1997 09 29.70017	01 29 18.75	+13 05 18.8	17.9 T	360
131P	1997 09 29.70608	01 29 18.58	+13 05 16.6		360
131P	1997 09 30.59553	01 28 52.91	+12 59 47.6	17.2 T	402
131P	1997 09 30.59970	01 28 52.80	+12 59 45.9		402
131P	1997 09 30.60387	01 28 52.64	+12 59 44.3		402
131P	1997 10 01.55843	01 28 24.25	+12 53 42.8	16.8 T	402
131P	1997 10 01.56120	01 28 24.12	+12 53 41.7		402
131P	1997 10 01.56398	01 28 24.06	+12 53 40.5		402
131P	1997 10 09.34746	01 24 08.30	+12 00 19.6	20.6 N	691
131P	1997 10 09.35587	01 24 08.01	+12 00 15.9	18.2 T	691

132P/Helin-Roman-Alu 2

132P	1997 08 28.68615	01 57 50.92	+10 37 30.1		352
132P	1997 08 28.68823	01 57 51.14	+10 37 32.0		352
132P	1997 09 26.12532	02 13 24.85	+09 19 49.9	17.0 T	046
132P	1997 09 26.12753	02 13 24.85	+09 19 49.1		046
132P	1997 09 26.13169	02 13 24.88	+09 19 47.8		046
132P	1997 09 29.71354	02 13 50.32	+08 59 07.7	16.8 T	360
132P	1997 09 29.72118	02 13 50.32	+08 59 04.9		360
132P	1997 09 30.68522	02 13 53.63	+08 53 10.0	15.7 T	402
132P	1997 09 30.68939	02 13 53.63	+08 53 08.4		402
132P	1997 09 30.69355	02 13 53.62	+08 53 06.9		402
132P	1997 10 05.05035	02 13 50.42	+08 24 45.0		118
132P	1997 10 05.05646	02 13 50.38	+08 24 42.6		118
132P	1997 10 05.05951	02 13 50.34	+08 24 41.3	16.1 T	118
132P	1997 10 06.56494	02 13 43.32	+08 14 23.6	15.7 T	867
132P	1997 10 06.56980	02 13 43.29	+08 14 21.5		867
132P	1997 10 06.57744	02 13 43.23	+08 14 18.5		867

133P/Elst-Pizarro

133P	1997 10 03.37806	03 49 13.73	+18 22 20.1	20.4 T	9 709
133P	1997 10 03.41009	03 49 13.27	+18 22 21.3	21.1 T	9 709
133P	1997 10 04.28390	03 48 58.99	+18 21 05.6	19.3 T	709
133P	1997 10 04.31407	03 48 58.46	+18 21 02.9	19.5 T	709
133P	1997 10 04.33008	03 48 58.13	+18 21 01.8	19.7 T	709

133P	1997 10 04.34522	03 48 57.88	+18 21 00.6	19.7 T	709
133P	1997 10 04.36384	03 48 57.56	+18 20 59.0	19.7 T	709
133P	1997 10 10.46401	03 46 48.56	+18 11 00.6	21.3 T	691
133P	1997 10 10.47843	03 46 48.22	+18 10 59.7	20.8 T	691
133P	1997 10 10.48916	03 46 47.96	+18 10 58.1	20.3 T	691
133P	1997 10 12.73822	03 45 48.65	+18 06 40.3	19.8 T	867
133P	1997 10 12.79308	03 45 47.11	+18 06 34.3		867

Note 1: bad seeing. 2: near edge of frame. 3: faint image. 4: poor image. 5: poor distribution of reference stars. 6: time corrected from *IAUC* 6751. 7: right ascension uncertain. 8: involved with star. 9: position uncertain.

OBSERVATIONS OF MINOR PLANETS**012 Uccle**

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Observers E. Elst, T. Pauwels

Measurer T. Pauwels

0.85-m *f*/2.5 Schmidt + CCD

GSC 1.2

1986 RJ₄, 6, 2, 1; 1988 BJ, 3, 1, 0; 1996 HQ₂₃, 6, 2, 2; 1997 RG₉ *, 15, 5, 17; 1997 RT₉ *, 9, 3, 14; 1997 RU₉ *, 9, 3, 14; 1997 RY₉ *, 6, 2, 2; 1997 SA₁₀ *, 6, 2, 2; 1997 SR₃₀ *, 6, 2, 9; 1997 SS₃₀ *, 5, 2, 9; [71, 10, 1997/09/07–1997/10/04]

033 Tautenburg

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1.3-m Schmidt telescope

PPM

1988 RV₁, 2, 2, 1; 1992 CN₈ *, 5, 3, 22; 1992 EL₃₆ *, 3, 2, 1; 1995 QK₁₀ *, 2, 2, 1; [12, 4, 1992/02/09–1995/08/24]

046 Kleť

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

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

Measurer M. Tichý

0.57-m reflector + CCD

GSC

1980 SM, 6, 2, 1; 1982 UD₂, 6, 2, 1; 1985 HH, 6, 2, 1; 1985 UY, 6, 2, 6; 1986 TR₃, 6, 2, 5; 1986 XF₅, 6, 2, 2; 1987 VR, 6, 2, 5; 1988 AA₂, 6, 2, 1; 1990 VD₇, 6, 2, 1; 1992 LR, 3, 1, 0; 1992 TB, 6, 2, 1; 1993 PB, 4, 2, 4; 1993 PC, 8, 2, 1; 1995 DA₁, 6, 2, 2; 1996 DK₂, 9, 2, 1; 1996 DV₂, 6, 2, 2; 1996 LA, 7, 2, 1; 1997 CU₂₆, 21, 4, 9; 1997 LY₄, 8, 2, 1; 1997 NV, 4, 2, 3; 1997 PX₁, 6, 2, 1; 1997 PY₁, 9, 3, 14; 1997 PT₂, 9, 3, 14; 1997 PU₂, 13, 5, 18; 1997 PE₃, 9, 3, 14; 1997 PL₄, 14, 5, 6; 1997 QB, 31, 10, 31; 1997 QD, 35, 12, 42; 1997 QF, 26, 9, 43; 1997 QK, 28, 10, 25; 1997 QL, 21, 7, 27; 1997 QM, 27, 9, 44; 1997 QT, 21, 7, 37; 1997 QB₁, 18, 7, 26; 1997 QK₁, 21, 4, 10; 1997 QL₁, 12, 3, 9; 1997 QM₁, 19, 7, 35; 1997 QS₂, 19, 6, 34; 1997 QT₂, 4, 1, 0; 1997 QU₂, 19, 6, 34; 1997 QB₃, 14, 3, 4; 1997 QR₃, 9, 2, 1; 1997 QX₃, 10, 2, 1; 1997 RB, 18, 6, 34; 1997 RC, 15, 5, 33; 1997 RT, 10, 3, 14; 1997 RW, 5, 1, 0; 1997 RD₁, 6, 2, 10; 1997 RL₇, 18, 6, 27; 1997 SE *, 7, 2, 1; 1997 SF *, 8, 2, 1; 1997 SG *, 9, 2, 1; 1997 SH₁ *, 11, 2, 1; 1997 SJ₁ *, 8, 2, 1; 1997 SK₁ *, 29, 9, 14; 1997 SU₁ *, 8, 2, 2; 1997 SV₁ *, 7, 2, 2; 1997 SW₁ *, 8, 2, 1; 1997 SK₂ *, 8, 2, 1; 1997 SL₂ *, 8, 2, 1; 1997 SF₃ *, 8, 2, 1; 1997 SG₃ *, 7, 2, 1; 1997 SH₃ *, 8, 2, 1; 1997 SJ₃ *, 6, 2, 1; 1997 SX₃ *, 10, 2, 1; 1997 SQ₄, 5, 1, 0; 1997 SE₅, 22, 6, 8; 1997 TD, 15, 3, 3; 1997 TX₇ *, 9, 2, 1; 1997 TY₇ *, 9, 2, 1; 1997 TY₈ *, 8, 2, 1; 1997 TB₁₂ *, 8, 2, 3; 1997 TY₁₆ *, 9, 2, 1; 1997 TZ₁₆, 4, 1, 0; (433), 10, 3, 16; (1011), 3, 1, 0; (1373), 3, 1, 0; (1620), 3, 1, 0; (1943), 3, 1, 0; (2100), 9, 3, 10; (3102), 9, 3, 10; (3200), 3, 1, 0; (3978), 3, 1, 0; (5143), 3, 1, 0; (5786), 10, 3, 7; (5836), 3, 1, 0; (6411), 3, 1, 0; [906, 87, 1997/08/23–1997/10/10]

1997 OCT. 16

M.P.C. 30727

069 Baldone

M. Dirikis and L. Laucenijs, Astronomical Observatory of the Latvian University,
LV-1098 Riga, Latvia

Observer L. Začs

Measurers I. Rudzinska, I. Jumare

0.8-m Schmidt telescope

PPM

(4179), 1, 1, 0; [1, 1, 1992/12/30]

071 Bulgarian National Observatory

V. Radeva, Astronomical Observatory and Planetarium, Varna, Bulgaria

[astro@oulit-1.tu-varna.acad.bg]

Observers V. Radeva, V. Baeva, G. Apostolovska

0.50-m $f/1.4$ Schmidt

1992 WC₂, 5, 1, 0; [5, 1, 1988/01/18–1988/01/19]

091 Aurec-sur-Loire

R. Chanal, Observatoire de Nurol, F-43110 Aurec-sur-Loire, France

0.41-m reflector

1997 SE₅, 2, 1, 0; [2, 1, 1997/10/04]

094 Simeïs

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

Sumskaya Str. 35, UA-310022 Kharkov, Ukraine

[krugly@astron.kharkov.ua]

Observer N. M. Gaftonyuk

Measurer Yu. N. Krugly

1-m Ritchey-Chrétien relector + CCD

GSC

1997 RT, 4, 1, 0; [4, 1, 1997/09/03]

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

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

0.40-m $f/5$ reflector + CCD

GSC

1979 MX₅, 6, 2, 2; 1994 BT, 6, 2, 2; 1995 DU₃, 10, 3, 8; 1996 CJ₇, 2, 1, 0; 1996 CN₇, 3, 1, 0;
1996 CW₇, 2, 1, 0; 1996 GJ₂, 9, 3, 8; 1997 NM₁₀, 12, 4, 18; 1997 PP₄, 17, 5, 30; 1997 PQ₄, 11, 4,
33; 1997 QK₁, 5, 2, 11; 1997 RX, 6, 2, 2; 1997 RZ, 5, 2, 37; 1997 RV₆, 12, 4, 11; 1997 RD₇, 7, 2,
3; 1997 SE₁ *, 20, 6, 15; 1997 SK₁₇ *, 7, 2, 2; 1997 SL₁₇ *, 16, 5, 8; 1997 TD, 7, 2, 1; 4082 P-L,
2, 1, 0; 3437 T-3, 2, 1, 0; (5249), 6, 2, 2; [173, 22, 1994/11/30–1997/10/08]

106 Crni vrh

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

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

GSC

1997 ST₃₀ *, 4, 2, 3; 1997 SU₃₀ *, 3, 2, 3; 1997 SV₃₀ *, 3, 2, 3; 1997 SW₃₀ *, 4, 3, 8; 1997 SX₃₀ *,
3, 2, 6; [17, 5, 1997/09/26–1997/10/05]

108 Montelupo

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

[iau@arcetri.astro.it]

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

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

GSC

1994 BT, 2, 1, 0; 1996 CJ₇, 3, 1, 0; 1996 CW₇, 3, 1, 0; 1997 PQ₄, 2, 1, 0; 1997 RZ, 2, 1, 0;
1997 RV₆, 2, 1, 0; 1997 SE₅, 4, 1, 0; 1997 SL₁₇, 2, 1, 0; (89), 3, 1, 0; (5649), 3, 1, 0; [26, 10,
1997/09/02–1997/10/04]

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 *, 26, 11, 15; (5240), 2, 1, 0; [28, 2, 1997/09/12–1997/10/07]

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, P. Zigo

Measurer A. Galád

0.6-m $f/5.5$ reflector + CCD

GSC

1974 FD, 10, 3, 5; 1985 SM₂, 12, 4, 5; 1990 WS₂, 8, 3, 2; 1992 AB, 9, 3, 8; 1993 FW₂₄, 3, 1, 0;
1993 FX₅₂, 10, 4, 25; 1994 TF₂, 6, 2, 1; 1996 DW, 2, 1, 0; 1996 HO, 5, 2, 12; 1997 LY₄, 15, 7,
21; 1997 NL₆, 2, 1, 0; 1997 PZ₁, 3, 1, 0; 1997 QA, 8, 3, 12; 1997 QG, 8, 3, 5; 1997 QS, 6, 2, 4;
1997 QK₁, 24, 7, 14; 1997 RT, 17, 7, 24; 1997 RD₁, 12, 5, 13; 1997 RH₉ *, 28, 10, 24; 1997 RN₉ *,
15, 7, 20; 1997 SA *, 12, 6, 7; 1997 SB *, 25, 11, 25; 1997 SC *, 6, 2, 4; 1997 SJ₂ *, 6, 2, 3;
1997 SW₄ *, 6, 2, 4; 1997 SE₅, 8, 3, 7; 1997 SL₅ *, 9, 4, 7; 1997 TR *, 5, 2, 1; 1997 TS *, 6, 2,
1; 1997 TA₁₂ *, 5, 2, 2; (395), 3, 1, 0; (1943), 6, 3, 12; (1959), 5, 2, 12; (1980), 4, 2, 14; (2100),
5, 2, 2; (3066), 2, 1, 0; (3200), 6, 2, 2; (3288), 2, 1, 0; (3691), 2, 1, 0; (3753), 5, 3, 3; (4486), 3, 1,
0; (4680), 2, 1, 0; (5143), 4, 2, 4; (5786), 5, 2, 1; (5870), 6, 3, 3; (6411), 2, 1, 0; (6542), 2, 1, 0;
(7888), 2, 1, 0; [357, 48, 1997/09/03–1997/10/13]

121 Kharkov University, Chuguevskaya Station

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

Sumskaya Str. 35, UA-310022 Kharkov, Ukraine

[krugly@astron.kharkov.ua]

0.70-m $f/4$ reflector + CCD

GSC

1997 RT, 4, 1, 0; (1980), 3, 1, 0; (2100), 4, 1, 0; (7092), 4, 1, 0; [15, 4, 1996/05/19–1997/09/15]

122 Pises Observatory

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

[observatoire.pises@hol.fr]

Observers B. Gaillard, J. N. Lopez

Measurer B. Gaillard

0.40-m $f/4.7$ reflector + CCD

USNO-SA1.0

1997 PY₃, 3, 1, 0; 1997 PN₄, 2, 1, 0; 1997 RA₃, 2, 1, 0; 1997 RC₃, 3, 1, 0; 1997 RE₃, 3, 1, 0;
3459 T-3, 4, 1, 0; [17, 6, 1997/09/19]

124 Castres

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

0.20-m $f/6.15$ reflector + CCD

USNO-SA1.0, GSC

1977 RD₂, 2, 1, 0; 1979 MD₂, 5, 2, 1; 1981 RF₇, 1, 1, 0; 1983 WJ, 3, 1, 0; 1989 PU, 2, 1, 0;
1992 SS₂₆, 3, 1, 0; 1994 XE₁, 2, 1, 0; 1997 QY, 2, 1, 0; 1997 RR₁, 2, 1, 0; 1997 RC₃, 3, 1, 0;
1997 RE₃, 2, 1, 0; 1997 TD, 2, 1, 0; 4034 T-1, 3, 1, 0; (7872), 3, 1, 0; [35, 14, 1997/09/08–
1997/10/02]

126 Monte Viseggi

P. Pietrapiana, Associazione Astrofilo Spezzini, Casella Postale 11, I-19100 La

Spezia, Italy [MC7316@mcmlink.it]

Observers P. Pietrapiana, G. Scarfi, L. Zannoni
 Measurer P. Pietrapiana
 0.40-m $f/5$ reflector + CCD
 USNO-SA1.0, GSC

1994 WU₁, 4, 1, 0; 1997 RG₃, 13, 5, 17; [17, 2, 1997/09/16–1997/10/03]

127 Bornheim

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

0.19-m $f/4$ FFC + CCD
 GSC

1986 WM₅, 5, 2, 2; 1987 VD, 7, 3, 3; 1988 MJ, 4, 2, 2; 1989 SU, 6, 3, 3; 1989 WU₁, 4, 2, 1; 1992 DC₁₀, 4, 2, 1; 1992 UG₄, 4, 2, 2; (385), 3, 1, 0; (6975), 4, 2, 3; [41, 9, 1997/09/21–1997/09/24]

132 Bedoin

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

0.16-m $f/3.3$ reflector + CCD, 0.26-m $f/6.2$ reflector + CCD
 GSC

1997 PF₁, 2, 2, 1; 1997 PJ₄, 3, 3, 12; 1997 QE, 1, 1, 0; 1997 QY, 4, 3, 12; 1997 QZ, 2, 1, 0; 1997 RR₁, 2, 1, 0; 1997 SO₃ *, 6, 2, 2; 1997 TB₁₈, 3, 1, 0; [23, 8, 1997/09/18–1997/10/08]

138 Village-Neuf

C. Demeautis, 9 rue de Huningue, F-68300 Saint-Louis, France
 [Sky.walker@wanadoo.fr]

Observers C. Demeautis, D. Matter

Measurer C. Demeautis

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

1978 UW₇, 4, 1, 0; 1987 VD, 4, 1, 0; 1989 UK₁, 4, 1, 0; 1989 WS, 4, 1, 0; 1989 WU₁, 4, 1, 0; 1991 AU₁, 7, 2, 4; 1995 AW, 4, 1, 0; 1995 BU₂, 7, 2, 6; 1996 BD₁, 2, 1, 0; [40, 9, 1997/09/27–1997/10/03]

140 Augerolles

D. Romeuf, 30 rue du torpilleur sirocco, F-63100 Clermont-Ferrand, France
 [romeuf@rockefeller.univ-lyon1.fr]

Observers M. Gouttesolard, F. Guillaumont, D. Romeuf

Measurers M. Gouttesolard, D. Romeuf

0.37-m $f/5.5$ reflector + CCD
 GSC

(3750), 3, 1, 0; (5819), 4, 1, 0; [7, 2, 1997/09/27–1997/09/28]

141 Hottviller

P. Buttani, 2 Allee Blaise Pascal, F-67800 Bischheim, France
 [philippe.buttani@hol.fr]

Observers P. Buttani, R. Philipps

Measurer P. Buttani

0.31-m $f/6$ Newton + CCD
 GSC, USNO-SA1.0

1978 VL₁₀, 3, 1, 0; 1992 QL₂, 9, 3, 8; 1997 TB₁₈ *, 3, 1, 0; (2498), 2, 1, 0; [17, 4, 1997/09/25–1997/10/04]

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 J. Zhu, X. Zhou, H. J. Yan, Y. J. Chen, X. Y. Li, C. M. Ma, L. C. Deng,
 R. Chen, H. T. Zhang

Measurers Y. J. Chen, X. Y. Li, C. M. Ma, J. Zhu

0.60-m Schmidt + CCD

1977 DT₂, 6, 2, 3; 1978 SA₈, 6, 2, 1; 1979 MV₁, 3, 1, 0; 1980 FX₃, 6, 2, 1; 1981 EX₃₀, 6, 2, 7; 1981 EH₃₅, 3, 1, 0; 1982 RF, 10, 3, 16; 1985 RV₄, 3, 1, 0; 1986 RD₅, 12, 4, 13; 1990 QT₂, 7, 2, 1; 1993 OQ₄, 3, 1, 0; 1993 YH, 3, 1, 0; 1994 LE₃, 3, 1, 0; 1996 GA₁₉, 6, 2, 6; 1996 GO₂₁ *, 3, 1, 0; 1996 HC₁₉, 3, 1, 0; 1996 SD₁, 4, 1, 0; 1997 CY₂₉ *, 3, 1, 0; 1997 FD₅, 3, 1, 0; 1997 NZ, 4, 1, 0; 1997 OT, 6, 2, 2; 1997 PN₃, 3, 1, 0; 1997 PW₃, 3, 1, 0; 1997 PO₄, 10, 3, 3; 1997 PA₅, 3, 1, 0; 1997 PC₅, 6, 2, 13; 1997 PD₅, 6, 2, 13; 1997 PE₅, 3, 1, 0; 1997 PF₅, 3, 1, 0; 1997 PL₅, 6, 2, 7; 1997 PB₆ *, 3, 1, 0; 1997 PC₆ *, 3, 1, 0; 1997 QC₁, 9, 3, 41; 1997 QF₄, 3, 1, 0; 1997 QY₄ *, 7, 2, 7; 1997 RA₁, 6, 2, 9; 1997 RW₁, 3, 1, 0; 1997 RQ₈, 3, 1, 0; 1997 RR₈, 6, 2, 26; 1997 RV₈, 6, 2, 22; 1997 RX₈, 9, 3, 11; 1997 RY₈, 7, 2, 3; 1997 RQ₉ *, 9, 3, 16; 1997 RR₉ *, 10, 3, 10; 1997 RS₉ *, 7, 2, 3; 1997 RZ₉ *, 6, 2, 19; 1997 RA₁₀ *, 20, 6, 29; 1997 RC₁₀ *, 8, 2, 13; 1997 RD₁₀ *, 12, 4, 28; 1997 RE₁₀ *, 6, 2, 10; 1997 RF₁₀ *, 7, 2, 14; 1997 RG₁₀ *, 15, 5, 27; 1997 RH₁₀ *, 7, 2, 16; 1997 RJ₁₀ *, 13, 4, 26; 1997 SS *, 6, 2, 1; 1997 ST *, 6, 2, 1; 1997 SU *, 6, 2, 1; 1997 SV *, 10, 3, 14; 1997 SW *, 7, 2, 1; 1997 SX *, 9, 3, 10; 1997 SY *, 7, 2, 1; 1997 SZ *, 7, 2, 1; 1997 SA₁ *, 6, 2, 1; 1997 SB₁ *, 6, 2, 1; 1997 SC₁ *, 6, 2, 1; 1997 SD₁ *, 11, 3, 10; 1997 SF₁ *, 10, 3, 8; 1997 SC₂, 3, 1, 0; 1997 SV₂ *, 8, 2, 4; 1997 SQ₃, 9, 3, 11; 1997 SB₁₀ *, 9, 3, 8; 1997 SC₁₀ *, 6, 2, 6; 1997 SD₁₀ *, 21, 5, 28; 1997 SE₁₀ *, 7, 2, 3; 1997 SF₁₀ *, 14, 4, 16; 1997 SG₁₀ *, 9, 3, 2; 1997 SH₁₀ *, 6, 2, 3; 1997 SJ₁₀ *, 6, 2, 2; 1997 SK₁₀ *, 12, 3, 3; 1997 SL₁₀ *, 9, 3, 13; 1997 SM₁₀ *, 6, 2, 3; 1997 SN₁₀ *, 12, 4, 14; 1997 SO₁₀ *, 19, 6, 27; 1997 SP₁₀ *, 9, 3, 13; 1997 SQ₁₀ *, 15, 5, 14; 1997 SR₁₀ *, 9, 3, 4; 1997 SS₁₀ *, 15, 5, 14; 1997 ST₁₀ *, 9, 3, 10; 1997 SU₁₀ *, 6, 2, 1; 1997 SV₁₀ *, 6, 2, 1; 1997 SW₁₀ *, 6, 2, 1; 1997 SL₁₁, 3, 1, 0; 1997 SM₁₁, 3, 1, 0; 1997 SK₁₅ *, 9, 3, 2; 1997 SM₁₆ *, 6, 2, 4; 1997 SN₁₆ *, 6, 2, 1; 1997 SO₁₆ *, 12, 4, 11; 1997 SE₂₅ *, 6, 2, 6; 1997 ST₃₁ *, 6, 2, 11; 1997 SU₃₁ *, 7, 2, 8; 1997 SV₃₁ *, 6, 2, 5; 1997 SM₃₂ *, 6, 2, 10; 1997 SN₃₂ *, 6, 2, 10; 1997 SO₃₂ *, 6, 2, 10; 1997 SP₃₂ *, 9, 3, 10; 1997 SQ₃₂ *, 6, 2, 9; 1997 SR₃₂ *, 12, 4, 11; 1997 SJ₃₃ *, 7, 2, 12; 1997 SK₃₃ *, 6, 2, 10; 1997 TC, 3, 1, 0; 1997 TF₆, 3, 1, 0; 1997 TW₁₁ *, 14, 4, 4; 1997 TX₁₁ *, 14, 4, 3; 1997 TY₁₁ *, 9, 3, 2; 1997 TJ₁₈ *, 6, 2, 6; 1997 TK₁₈ *, 9, 3, 7; 1997 TL₁₈ *, 9, 3, 8; 1997 TM₁₈ *, 9, 3, 8; 1997 TN₁₈ *, 12, 3, 7; 1997 TO₁₈ *, 9, 3, 7; 1997 TP₁₈ *, 12, 3, 7; 1997 TQ₁₈ *, 16, 3, 7; 1997 TR₁₈ *, 6, 2, 4; 1997 TS₁₈ *, 6, 2, 3; 1997 TT₁₈ *, 6, 2, 3; 1997 TU₁₈ *, 6, 2, 3; 1997 TV₁₈ *, 14, 4, 4; 1997 TW₁₈ *, 9, 3, 4; 1997 TX₁₈ *, 6, 2, 1; 1997 TY₁₈ *, 9, 3, 3; 1997 TZ₁₈ *, 6, 2, 1; 1997 TA₁₉ *, 13, 2, 1; 1997 TB₁₉ *, 9, 2, 1; 1997 TC₁₉ *, 6, 2, 1; 1997 TS₂₂, 6, 2, 1; 1997 TG₂₄ *, 7, 2, 6; 1997 TH₂₄ *, 7, 2, 6; 1997 TJ₂₄ *, 7, 2, 6; 1997 TK₂₄ *, 7, 2, 6; 1997 TL₂₄ *, 6, 2, 4; 1997 TM₂₄ *, 6, 2, 2; 1997 TN₂₄ *, 7, 2, 4; 1997 TO₂₄ *, 7, 2, 4; 1997 TP₂₄ *, 6, 2, 1; 1997 TQ₂₄ *, 6, 2, 1; 1997 TR₂₄ *, 6, 2, 1; 1997 TS₂₄ *, 6, 2, 1; 1997 TT₂₄ *, 6, 2, 1; 1997 TU₂₄ *, 6, 2, 2; 1997 TV₂₄ *, 6, 2, 2; (180), 3, 1, 0; (419), 3, 1, 0; (589), 3, 1, 0; (1001), 3, 1, 0; (1073), 3, 1, 0; (1121), 9, 2, 3; (1557), 3, 1, 0; (1590), 3, 1, 0; (2293), 8, 2, 4; (2360), 7, 2, 1; (2708), 3, 1, 0; (2850), 3, 1, 0; (2930), 3, 1, 0; (3709), 3, 1, 0; (4138), 3, 1, 0; (4139), 6, 1, 0; (4426), 3, 1, 0; (5135), 6, 2, 1; (5353), 3, 1, 0; (5766), 3, 1, 0; (5968), 4, 1, 0; (6459), 3, 1, 0; (6867), 4, 1, 0; (6942), 14, 4, 4; (7152), 6, 2, 1; (7284), 6, 2, 2; (7859), 3, 1, 0; [1225, 177, 1996/04/08–1997/10/12]

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

1977 QT₂, 4, 1, 0; 1978 UW₇, 4, 1, 0; 1997 SE₅, 4, 1, 0; 1997 SL₁₆ *, 16, 5, 10; 1997 SS₁₇, 3, 1, 0; 1997 TG₁₉, 2, 1, 0; [33, 6, 1997/09/28–1997/10/13]

358 Nanyou

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

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

1997 QB₃, 3, 1, 0; 1997 RX₆, 4, 2, 2; 1997 SH₅, 4, 2, 1; 1997 SG₁₆, 4, 2, 2; 1997 SO₁₇ *, 6, 3, 3; 1997 SP₁₇ *, 8, 4, 7; 1997 SQ₁₇ *, 8, 4, 5; 1997 SX₂₁ *, 8, 4, 6; 1997 SM₂₅ *, 4, 2, 2; 1997 SN₂₅ *, 10, 5, 5; 1997 TC₁₇ *, 8, 3, 3; [67, 11, 1997/09/10–1997/10/08]

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

1992 LR, 3, 1, 0; 1993 PC, 3, 1, 0; 1995 BH₁, 2, 1, 0; 1995 HE, 2, 1, 0; 1996 TL₆₆, 2, 1, 0; 1997 MD₁₀, 6, 2, 8; 1997 OY, 2, 1, 0; 1997 QK₁, 6, 2, 9; 1997 QK₃, 2, 1, 0; 1997 RT, 3, 1, 0; 1997 RD₁, 3, 1, 0; 1997 SE₅, 3, 1, 0; 1997 SJ₁₆ *, 9, 3, 13; 1997 TD, 3, 1, 0; 1997 TZ₁₆, 4, 1, 0; (1980), 2, 1, 0; (3290), 2, 1, 0; (3361), 2, 1, 0; (5353), 2, 1, 0; (5786), 2, 1, 0; (5889), 2, 1, 0; (5928), 2, 1, 0; (6255), 2, 1, 0; [69, 23, 1997/09/19–1997/10/12]

367 Yatsuka

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

0.26-m $f/6.0$ reflector + CCD

GSC

1977 QT₂, 2, 1, 0; 1982 BS, 2, 1, 0; 1987 RJ, 2, 1, 0; 1987 SG₁₃, 2, 1, 0; 1989 UK₁, 2, 1, 0; 1991 QE, 2, 1, 0; 1993 TE, 4, 2, 1; 1997 TC₁₁ *, 4, 2, 1; 1997 TD₁₁ *, 4, 2, 1; 1997 TG₁₉, 3, 1, 0; [27, 10, 1997/10/07–1997/10/13]

376 Uenohara

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

0.30-m reflector + CCD

GSC

1989 TM₁, 2, 1, 0; 1997 SE₁₆ *, 5, 2, 3; 1997 SF₁₆ *, 6, 3, 11; 1997 SG₁₆ *, 6, 3, 11; 1997 SB₂₅, 2, 1, 0; 1997 SD₂₅ *, 6, 3, 8; 1997 SL₃₂ *, 5, 2, 8; 1997 TD₁₉ *, 4, 2, 2; 1997 TE₁₉ *, 4, 2, 2; [40, 9, 1997/09/27–1997/10/10]

385 Nihondaira Observatory

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

0.31-m $f/4.7$ reflector + CCD

GSC, USNO-A1.0

1991 DD, 2, 1, 0; 1992 BG, 2, 1, 0; 1992 XB, 2, 1, 0; 1993 WE, 2, 1, 0; 1993 YR, 5, 2, 1; 1994 AT₁, 4, 2, 1; 1995 AL, 4, 2, 1; 1995 BU₂, 5, 2, 1; 1995 DD₂, 4, 2, 1; 1997 QW₁, 3, 2, 35; 1997 QB₂, 2, 1, 0; 1997 QF₂, 2, 1, 0; 1997 SL₂₅, 2, 1, 0; 1997 TD₁₇, 2, 1, 0; 1997 TE₁₇, 2, 1, 0; 1997 TF₁₇, 2, 1, 0; 1997 TG₁₇, 2, 1, 0; 1997 TH₁₇, 2, 1, 0; 1997 TG₁₉, 4, 1, 0; 4370 T-1, 4, 2, 2; [57, 20, 1997/09/03–1997/10/12]

388 National Observatory, Mitaka

I. Sato, National Astronomical Observatory, Mitaka, Tokyo, 181 Japan

[satoois@cc.nao.ac.jp]

0.50-m $f/12$ reflector + CCD

GSC corrected to PPM system

(10), 10, 1, 0; (68), 5, 1, 0; (163), 10, 1, 0; (441), 10, 1, 0; (516), 5, 1, 0; (1437), 8, 1, 0; (2456), 10, 1, 0; (3376), 8, 1, 0; (6345), 3, 1, 0; [69, 9, 1997/10/08]

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

1997 TR₁₇ *, 4, 2, 3; 1997 TS₁₇ *, 4, 2, 3; 1997 TT₁₇ *, 4, 2, 3; 1997 TU₁₇ *, 4, 2, 3; 1997 TV₁₇ *, 4, 2, 3; 1997 TW₁₇ *, 4, 2, 3; 1997 TX₁₇ *, 4, 2, 3; 1997 TY₁₇ *, 4, 2, 3; [32, 8, 1997/10/06–1997/10/09]

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 SU₂, 6, 2, 1; 1992 LR, 9, 3, 5; 1993 TE, 3, 1, 0; 1993 WQ, 3, 1, 0; 1996 TL₆₆, 4, 1, 0; 1997 MD₁₀, 6, 2, 5; 1997 QN, 6, 2, 4; 1997 QK₁, 9, 3, 9; 1997 QA₂, 8, 3, 11; 1997 QJ₃, 3, 1, 0; 1997 RT, 6, 2, 5; 1997 RD₁, 18, 6, 19; 1997 RG₈, 9, 3, 10; 1997 RO₉ *, 10, 3, 12; 1997 SF₂ *,

12, 4, 11; 1997 SG₂ *, 12, 4, 10; 1997 SF₄, 8, 3, 9; 1997 SE₅, 6, 2, 2; 1997 SH₁₆ *, 5, 2, 1; 1997 SK₁₆ *, 5, 2, 1; 1997 SL₁₆, 6, 2, 3; 1997 SN₁₇ *, 6, 2, 1; 1997 SR₁₇ *, 6, 2, 1; 1997 SS₁₇, 3, 1, 0; 1997 SL₃₂, 3, 1, 0; 1997 TB₁₁, 3, 1, 0; 1997 TD₁₁, 6, 2, 4; 1997 TA₁₈ *, 9, 3, 4; 1997 TG₁₉, 3, 1, 0; (2755), 3, 1, 0; [196, 30, 1997/09/12–1997/10/13]

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

1990 TH₁₂, 2, 1, 0; 1993 UV, 9, 4, 11; 1996 HT₂, 4, 2, 1; 1997 SG₄ *, 10, 5, 11; 1997 SH₄ *, 8, 4, 8; 1997 SJ₄ *, 10, 5, 11; 1997 SK₄ *, 8, 4, 8; 1997 SL₄ *, 8, 4, 8; 1997 SM₄ *, 8, 4, 8; 1997 SX₁₀ *, 8, 4, 11; 1997 SY₁₀ *, 10, 5, 11; 1997 TJ₁₇ *, 4, 2, 2; 1997 TK₁₇ *, 4, 2, 2; 1997 TL₁₇ *, 5, 2, 2; 1997 TM₁₇ *, 4, 2, 2; 1997 TN₁₇ *, 4, 2, 2; [106, 16, 1997/09/19–1997/10/10]

422 Loomberah

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

0.25-m $f/4.1$ reflector + CCD

GSC

1977 QQ₅, 3, 1, 0; 1997 RD₁, 6, 2, 5; (5), 5, 2, 15; (17), 3, 1, 0; (126), 2, 1, 0; (132), 3, 1, 0; (313), 3, 1, 0; (347), 5, 2, 20; (389), 6, 2, 15; (433), 3, 1, 0; (2100), 5, 2, 10; (2896), 3, 1, 0; (3753), 2, 1, 0; (3840), 6, 2, 15; [55, 14, 1997/09/20–1997/10/11]

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

1990 SL₂, 5, 2, 1; 1992 SU, 12, 4, 7; 1994 WG₃, 4, 1, 0; (2938), 4, 2, 15; (3568), 5, 2, 1; (3753), 2, 1, 0; (5870), 5, 2, 1; [37, 7, 1997/09/12–1997/10/01]

424 Macquarie, near Canberra

J. B. Child, 7 DeGillern Place, Macquarie, ACT 2614, Australia

[jbcchild@pcug.org.au]

Observer J. B. Child

Measurers J. B. Child, J. E. Rogers

0.32-m $f/4.8$ reflector + CCD

1991 FN, 4, 1, 0; 1992 AU₁, 4, 2, 5; [8, 2, 1997/09/30–1997/10/05]

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

1978 PO₃, 6, 2, 2; 1979 QC₁, 6, 2, 4; 1986 PW₄, 6, 2, 2; 1989 GR₄, 3, 1, 0; 1990 OW₂, 6, 2, 2; 1990 QC₆, 6, 2, 2; 1991 RK₇, 5, 2, 4; 1995 DB₁, 6, 2, 2; 1997 PO, 4, 3, 9; 1997 PR, 12, 4, 17; 1997 QP₄, 5, 2, 1; 1997 RX₂, 3, 1, 0; 1997 SR *, 18, 6, 17; 1997 SE₃ *, 12, 4, 16; 1997 SX₄ *, 10, 4, 11; 1997 SY₄ *, 15, 4, 12; 1997 SE₅, 5, 2, 7; 1997 SS₃₁ *, 9, 3, 9; 1997 SY₃₁, 3, 1, 0; (1498), 5, 2, 2; (1656), 6, 2, 2; (3747), 5, 2, 1; (5124), 6, 2, 2; (5675), 3, 1, 0; (6173), 6, 2, 7; (7907), 5, 2, 2; [176, 26, 1997/08/22–1997/10/08]

470 Ceccano

G. Masi, Via Madonna de Loco 47, 03023 Ceccano (FR), Italy

[gianmasi@fr.flashnet.it]

0.15-m $f/5$ reflector + CCD

GSC

(430), 6, 2, 8; (631), 6, 2, 8; (640), 6, 2, 8; (726), 9, 3, 9; (1305), 6, 2, 8; (2696), 6, 2, 8; (5642), 3, 1, 0; (5819), 6, 2, 8; [48, 8, 1997/09/26–1997/10/05]

473 Remanzacco

G. Sostero, via S.Stefano 31, I-33047 Remanzacco (UD), Italy
[sostero@elettra.trieste.it]

Observers P. Blasich, M. Dal Bo, L. Donato, V. Gonano, G. Sostero, F. Verlezza
Measurer F. Verlezza

0.31-m $f/2.8$ Baker-Schmidt + CCD
GSC

(1980), 5, 2, 2; [5, 1, 1997/08/02–1997/08/04]

476 Grange Observatory

P. Pognant, Via Massimo d’Azeglio 34, I-10053 Bussoleno (TO), Italy
[mc2213@mcLink.it]

0.30-m $f/4.0$ reflector + CCD
GSC

1997 SE₅, 4, 2, 2; [4, 1, 1997/09/29–1997/10/01]

491 Yebes

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

Observers J. F. Lahulla, J. García

0.40-m $f/5$ astrograph + CCD
GSC

(103), 1, 1, 0; (113), 2, 1, 0; (171), 2, 1, 0; (206), 2, 1, 0; (239), 2, 1, 0; (376), 2, 1, 0; (548), 2, 1, 0; (994), 2, 1, 0; (1466), 3, 1, 0; (1736), 2, 1, 0; (1980), 2, 1, 0; (4209), 1, 1, 0; [23, 12, 1997/10/02–1997/10/03]

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

1989 UB₃, 2, 1, 0; 1991 VP₂, 2, 1, 0; [4, 2, 1997/09/21–1997/10/05]

540 Linz

E. Meyer, F. Marklstrasse 1/62, A-4040 Linz, Austria [k3032e0@c210.edvz.uni-linz.ac.at]

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

0.30-m $f/5.2$ Schmidt Cassegrain + CCD
GSC, Tycho

1991 EO₁, 6, 2, 1; 1991 OL₁, 5, 2, 1; 1997 RF₃, 2, 1, 0; 1997 SL₁, 12, 4, 4; 1997 ST₁, 9, 3, 3; 1997 SH₂, 9, 3, 3; 1997 SP₃ *, 9, 3, 2; 1997 SE₄ *, 9, 3, 9; 1997 SE₅, 3, 1, 0; (2197), 5, 2, 1; [69, 10, 1997/09/22–1997/10/05]

552 San Vittore

E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy
[astrofil@astbo1.bo.cnr.it]

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

0.45-m $f/3.3$ reflector + CCD
GSC

1988 QU, 5, 2, 1; 1997 SW₂ *, 13, 4, 3; 1997 SP₄ *, 9, 3, 2; 1997 ST₁₇ *, 6, 2, 4; 1997 SF₁₈ *, 5, 2, 6; 1997 TE *, 5, 2, 2; (4512), 4, 2, 1; (7571), 6, 2, 4; [53, 8, 1997/09/24–1997/10/03]

557 Ondřejov

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

Observers P. Pravec, L. Šarounová, M. Wolf

0.65-m $f/3.6$ reflector + CCD

USNO-SA1.0, GSC

1973 SO₁, 5, 2, 2; 1980 FY, 5, 2, 1; 1981 EN, 5, 2, 1; 1981 XM₂, 5, 2, 2; 1983 CO₃, 5, 2, 1; 1984 CP, 6, 2, 11; 1985 CN₁, 4, 2, 2; 1985 JK, 3, 1, 0; 1987 SK₁₂, 3, 1, 0; 1988 EB₁, 5, 2, 8; 1988 RQ₂, 4, 2, 1; 1988 RU₆, 5, 2, 8; 1989 GP, 6, 2, 9; 1989 GB₁, 2, 1, 0; 1989 GF₁, 5, 2, 1; 1989 GP₄, 5, 2, 1; 1990 WX₁, 5, 2, 8; 1991 PT₈, 4, 2, 2; 1991 PB₁₂, 5, 2, 1; 1991 PQ₁₂, 5, 2, 1; 1992 BE₂, 5, 2, 8; 1992 CN₃, 4, 2, 8; 1992 EA₇, 6, 2, 8; 1992 HY, 5, 2, 1; 1992 LR, 12, 3, 12; 1992 TB, 2, 1, 0; 1992 YH₂, 4, 2, 2; 1993 SQ₂, 6, 2, 1; 1993 XF, 3, 1, 0; 1993 YH, 6, 2, 2; 1994 AH, 5, 2, 2; 1994 AX₂, 5, 2, 1; 1995 HA, 7, 3, 8; 1996 DA, 3, 1, 0; 1996 EH, 2, 1, 0; 1996 HQ, 8, 3, 20; 1996 HU, 10, 4, 9; 1996 LJ₁, 4, 2, 8; 1997 PF₂, 4, 2, 14; 1997 PC₃, 5, 2, 14; 1997 PD₃, 7, 2, 9; 1997 PM₄, 5, 2, 10; 1997 QP, 4, 2, 10; 1997 QR, 14, 5, 20; 1997 QD₁, 10, 4, 16; 1997 QK₁, 3, 1, 0; 1997 QV₂, 6, 3, 15; 1997 RT, 15, 6, 24; 1997 RA₁, 6, 3, 13; 1997 RC₁, 10, 4, 19; 1997 RO₁, 6, 3, 19; 1997 RW₁, 10, 4, 4; 1997 RS₃, 6, 2, 2; 1997 RT₃, 3, 1, 0; 1997 RE₈, 2, 1, 0; 1997 RA₉, 17, 7, 21; 1997 RM₉ *, 20, 8, 28; 1997 RW₉ *, 7, 2, 3; 1997 SH *, 11, 5, 16; 1997 SJ *, 5, 2, 1; 1997 SK *, 9, 3, 2; 1997 SL *, 15, 6, 16; 1997 SM *, 7, 2, 1; 1997 SN *, 16, 6, 20; 1997 SO *, 13, 6, 22; 1997 SP *, 11, 4, 8; 1997 SQ *, 14, 5, 14; 1997 SF₁, 5, 2, 2; 1997 SM₁ *, 15, 6, 19; 1997 SN₁ *, 14, 6, 19; 1997 SO₁ *, 4, 2, 1; 1997 SX₁ *, 14, 5, 13; 1997 SY₁ *, 16, 6, 13; 1997 SZ₁ *, 13, 5, 20; 1997 SA₂ *, 11, 6, 20; 1997 SB₂ *, 12, 5, 18; 1997 SC₂ *, 14, 6, 20; 1997 SD₂ *, 16, 6, 14; 1997 SE₂ *, 11, 5, 18; 1997 SN₂ *, 13, 5, 14; 1997 SO₂ *, 8, 3, 16; 1997 SP₂ *, 15, 5, 16; 1997 SQ₂ *, 12, 5, 16; 1997 SR₂ *, 11, 5, 16; 1997 SS₂ *, 11, 5, 16; 1997 ST₂ *, 11, 5, 16; 1997 SU₂ *, 14, 5, 16; 1997 SK₃ *, 15, 5, 15; 1997 SL₃ *, 9, 3, 9; 1997 SA₄ *, 9, 4, 10; 1997 SB₄ *, 9, 4, 10; 1997 SC₄ *, 12, 5, 10; 1997 SD₄ *, 9, 4, 10; 1997 SE₅, 4, 1, 0; 1997 SA₂₅, 10, 3, 2; 1997 SO₂₅ *, 11, 4, 8; 1997 SP₂₅ *, 13, 6, 9; 1997 TT₉ *, 10, 4, 3; 1997 TU₉ *, 6, 2, 1; 1997 TV₉ *, 9, 4, 6; 1997 TW₉ *, 9, 4, 6; 1997 TX₉ *, 9, 4, 5; 1997 TY₉ *, 10, 4, 5; 1997 TZ₉ *, 7, 3, 2; 1997 TA₁₀ *, 9, 4, 7; 1997 TB₁₀ *, 7, 3, 7; 1997 TC₁₀ *, 5, 2, 1; 1997 TD₁₀ *, 5, 2, 1; 1997 TE₁₀ *, 8, 3, 7; 1997 TF₁₀ *, 4, 2, 1; 1997 TG₁₀ *, 5, 2, 1; 1997 TH₁₀ *, 4, 2, 1; 1997 TJ₁₀ *, 5, 2, 1; 1997 TZ₁₁ *, 5, 2, 3; 1997 TW₁₂, 2, 1, 0; 1997 TZ₁₆, 4, 1, 0; 1997 TA₁₇ *, 8, 3, 3; 1997 TB₁₇ *, 5, 2, 3; 1997 TM₁₉ *, 6, 2, 2; 1997 TN₁₉ *, 6, 2, 2; 1997 TO₁₉ *, 4, 2, 2; 1997 TP₁₉ *, 4, 2, 2; 2093 P-L, 6, 2, 8; 4082 P-L, 5, 2, 2; 4805 P-L, 7, 2, 1; 9002 P-L, 7, 2, 1; 1344 T-2, 4, 2, 1; 2218 T-2, 10, 3, 2; 5493 T-2, 2, 1, 0; 2122 T-3, 4, 2, 2; (760), 2, 1, 0; (1980), 12, 3, 8; (4631), 6, 2, 1; (4960), 4, 1, 0; (5248), 5, 2, 8; (5836), 4, 1, 0; (7135), 6, 2, 1; [1031, 137, 1997/09/08–1997/10/12]

560 Madonna di Dossobuono

L. Lai, Via Mantovana 130e, I-37062 Dossobuono (Verona), Italy
[astrofil@astbo1.bo.cnr.it]

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

0.40-m $f/3.5$ reflector + CCD
GSC

1978 SE₃, 6, 2, 1; 1993 PV₆, 4, 1, 0; 1995 AZ₃, 3, 1, 0; 1996 CR₁, 3, 1, 0; 1997 ST₄ *, 9, 3, 2; 1997 SU₄ *, 9, 3, 2; 1997 SV₄ *, 9, 3, 2; [43, 7, 1997/09/24–1997/09/27]

566 Haleakala-NEAT/GEODSS

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.
[efh@ip1.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

1977 DR₂, 3, 1, 0; 1981 EQ₂₈, 3, 1, 0; 1985 RQ, 3, 1, 0; 1989 CB₈, 3, 1, 0; 1989 UJ₃, 3, 1, 0; 1989 WB₂, 3, 1, 0; 1990 WZ₁, 3, 1, 0; 1992 RB₃, 6, 1, 0; 1993 RK, 3, 1, 0; 1993 SG₁, 3, 1, 0; 1993 SQ₂, 6, 2, 561; 1995 BS₃, 3, 1, 0; 1995 CP₃, 3, 1, 0; 1996 FQ₂₃ *, 3, 1, 0; 1996 FR₂₃ *, 3, 1, 0; 1996 HT, 3, 1, 0; 1996 HR₂₁, 3, 1, 0; 1996 HQ₂₃, 3, 1, 0; 1996 JL, 3, 1, 0; 1997 AW₂₄ *, 6, 2, 23; 1997 AX₂₄ *, 3, 1, 0; 1997 JB₁₃, 3, 1, 0; 1997 LD, 3, 1, 0; 1997 PC₁, 3, 1, 0; 1997 RQ₃, 3, 1, 0; 1997 RB₉, 3, 1, 0; 1997 SH, 3, 1, 0; 1997 SR, 3, 1, 0; 1997 SN₄ *, 6, 2, 1; 1997 SE₅ *, 6, 2, 1; 1997 TD *, 3, 1, 0; 5004 P-L, 3, 1, 0; 1252 T-1, 3, 1, 0; (35), 3, 1, 0; (142), 3, 1, 0; (231), 3, 1, 0; (250), 3, 1, 0; (269), 3, 1, 0; (288), 3, 1, 0; (333), 3, 1, 0; (540), 3, 1, 0; (589), 3, 1, 0; (670), 3, 1, 0; (783), 3, 1, 0; (791), 3, 1, 0; (805), 3, 1, 0; (869), 3, 1, 0; (877), 3, 1, 0; (930), 3, 1, 0; (1150), 3, 1, 0; (1305), 3, 1, 0; (1310), 3, 1, 0; (1386), 3, 1, 0; (1630), 3, 1, 0; (1734), 3, 1, 0; (1748), 3, 1, 0; (2037), 3, 1, 0; (2069), 3, 1, 0; (2166), 3, 1, 0; (2314), 3, 1, 0; (2553), 3, 1, 0; (2564), 3, 1, 0; (2610), 3, 1, 0; (2777), 3, 1, 0; (2920), 3, 1, 0; (2956), 3, 1, 0; (3125), 3, 1, 0; (3137), 3, 1, 0; (3894), 3, 1, 0; (3901), 3, 1, 0; (4066), 6, 1, 0; (4160), 3, 1, 0; (4532), 3, 1, 0; (4872), 3, 1, 0; (5044), 3, 1, 0; (5333), 3, 1, 0; (5568), 3, 1, 0; (5621), 3, 1, 0; (5776), 3, 1,

0; (5790), 3, 1, 0; (5920), 3, 1, 0; (6121), 3, 1, 0; (6164), 3, 1, 0; (6348), 3, 1, 0; (6834), 3, 1, 0; (6975), 3, 1, 0; (7194), 3, 1, 0; (7800), 3, 1, 0; (7866), 3, 1, 0; [288, 90, 1996/02/16–1997/10/02]

568 Mauna Kea

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

C. Veillet, Canada-France-Hawaii Telescope Corporation, P.O. Box 1597, Kamuela, HI 96743, U.S.A. [veillet@cfht.hawaii.edu] (3)

Observers D. C. Jewitt (1), C. Veillet (3), R. Shanks (3)

Measurers C. Veillet (3), G. V. Williams (1)

2.24-m telescope + CCD, 3.6-m telescope + CCD

USNO-A1.0

(1) 1992 QB₁, 2, 1, 0; 1993 SC, 2, 1, 0; 1994 TB, 2, 1, 0; 1995 QY₉, 2, 1, 0; 1995 QZ₉, 2, 1, 0; 1996 RQ₂₀, 2, 1, 0; 1996 RR₂₀, 4, 2, 1; 1996 SZ₄, 2, 1, 0; 1996 TL₆₆, 4, 2, 1; 1996 TO₆₆, 4, 2, 1; 1997 CS₂₉, 4, 2, 1; 1997 CU₂₉, 4, 2, 1; 1997 QH₄, 5, 2, 1; 1997 QJ₄, 5, 2, 1; 1997 RT₅, 4, 2, 1; 1997 RY₆, 2, 1, 0; 1997 SZ₁₀ *, 2, 1, 0; [52, 17, 1997/09/23–1997/09/24]

(3) 1997 SA₁₇ *, 7, 3, 2; 1997 SB₁₇ *, 7, 3, 2; 1997 SC₁₇ *, 5, 2, 1; 1997 SD₁₇ *, 6, 2, 1; 1997 SE₁₇ *, 6, 2, 1; 1997 SF₁₇ *, 6, 2, 1; 1997 SG₁₇ *, 7, 2, 1; 1997 SH₁₇ *, 7, 2, 1; 1997 SJ₁₇ *, 6, 2, 1; 1997 SM₁₇ *, 7, 2, 3; 1997 TG *, 16, 3, 2; 1997 TH *, 16, 3, 2; 1997 TJ *, 10, 2, 1; 1997 TK *, 11, 2, 1; 1997 TL *, 11, 2, 1; 1997 TM *, 8, 4, 3; 1997 TN *, 18, 3, 2; 1997 TO *, 14, 2, 1; 1997 TP *, 16, 2, 1; 1997 TQ *, 11, 2, 1; 1997 TU₈ *, 14, 3, 2; 1997 TV₈ *, 7, 2, 1; 1997 TW₈ *, 11, 2, 1; [227, 23, 1997/09/26–1997/10/04]

587 Sormano

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

[sormano@tin.it]

Observers M. Cavagna, F. Manca, V. Giuliani, F. Manca, P. Chiavenna, P. Sicoli,

A. Testa, P. Chiavenna

0.5-m reflector + CCD

GSC

1993 OB₁₀, 2, 1, 0; 1994 YB, 6, 3, 3; 1995 GE, 4, 2, 1; 1997 OJ, 3, 2, 1; 1997 OK, 3, 2, 1; 1997 QG₁, 7, 3, 18; 1997 QH₁, 7, 3, 18; 1997 QK₁, 9, 3, 5; 1997 RT, 3, 1, 0; 1997 RD₁, 4, 2, 13; 1997 RO₇, 8, 4, 12; 1997 RP₉ *, 21, 8, 25; 1997 SE₅, 3, 1, 0; 1997 SY₉ *, 12, 5, 7; 1997 SZ₉ *, 13, 5, 7; 1997 SL₁₆, 5, 2, 1; 1997 TC *, 10, 4, 7; 1997 TV *, 6, 3, 6; 1997 TW *, 6, 3, 6; [132, 19, 1997/09/08–1997/10/08]

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, E. Gregori, F. Lombardi

0.50-m $f/2.8$ Ritchey-Chrétien + CCD

GSC

1994 WU₁, 6, 2, 2; 1995 CA, 6, 2, 2; 1996 PF₁, 3, 1, 0; 1997 NQ, 2, 1, 0; 1997 QN₁, 11, 3, 8; 1997 ST₄, 6, 2, 1; 1997 SU₄, 5, 2, 1; 1997 SV₄, 5, 2, 1; 1997 TV, 3, 1, 0; 1997 TW, 2, 1, 0; 1997 TS₁₆ *, 7, 3, 5; 1997 TT₁₆ *, 6, 2, 4; 1997 TU₁₆ *, 6, 2, 1; 1997 TV₁₆ *, 6, 2, 1; 1997 TW₁₆ *, 6, 2, 1; [80, 15, 1997/09/18–1997/10/09]

595 Farra d'Isonzo

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

[ccaf@quark.it]

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

Measurers E. Pettarin, A. Toso

0.4-m $f/4.5$ reflector + CCD

GSC

1994 CV, 2, 2, 1; 1996 PS₁, 4, 2, 11; 1997 NG₃, 3, 1, 0; 1997 NL₆, 5, 2, 2; 1997 OV₁, 2, 1, 0; 1997 OX₁, 4, 2, 1; 1997 SP₁ *, 6, 3, 7; 1997 SQ₁ *, 6, 3, 7; 1997 SR₁ *, 6, 3, 7; 1997 SX₂ *, 4, 2, 1; 1997 SY₂ *, 4, 2, 1; 1997 SZ₂ *, 4, 2, 1; 1997 SA₃ *, 8, 4, 3; 1997 SB₃ *, 4, 2, 1; 1997 SC₃ *, 8, 3, 2; 1997 SD₃ *, 6, 3, 2; 1997 SZ₄ *, 5, 2, 1; 1997 SA₅ *, 5, 2, 1; [86, 18, 1997/08/09–1997/09/29]

608 Haleakala-AMOS

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

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

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

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

1.2-m reflector + CCD

1988 NU, 2, 1, 0; 1990 KA, 4, 2, 1; 1990 OH₁, 4, 2, 1; 1991 DK₁, 4, 2, 4; 1991 JA₁, 2, 1, 0; 1991 VT₁, 2, 1, 0; 1992 LR, 8, 5, 28; 1992 NS, 4, 2, 1; 1992 TA, 2, 1, 0; 1994 LE₃, 2, 1, 0; 1994 PK, 4, 2, 6; 1994 TF₂, 2, 1, 0; 1995 AM, 4, 2, 1; 1995 UO₅, 4, 2, 1; 1996 FL₅, 3, 2, 1; 1996 KL₁, 4, 2, 1; 1997 PZ₅ *, 4, 2, 1; 1997 PA₆ *, 4, 2, 1; 1997 QW₄ *, 4, 2, 2; 1997 QX₄ *, 4, 2, 2; 1997 RC₆, 4, 2, 1; 1997 RJ₉ *, 4, 2, 1; 1997 RK₉ *, 4, 2, 1; 1997 RL₉ *, 4, 2, 1; 1997 SZ₁₇ *, 4, 2, 1; 1997 SA₁₈ *, 4, 2, 1; 1997 SB₁₈ *, 4, 2, 1; 1997 SC₁₈ *, 4, 2, 1; 1997 SD₁₈ *, 4, 2, 1; 1997 SG₃₂ *, 6, 3, 5; 1997 SH₃₂ *, 4, 2, 4; 1997 SJ₃₂ *, 4, 2, 2; 1997 SK₃₂ *, 4, 2, 2; 1997 TJ₁₁, 4, 2, 1; 1997 TZ₁₆, 5, 1, 0; 1997 TO₁₇ *, 4, 2, 1; 1997 TP₁₇ *, 4, 2, 1; 1997 TQ₁₇, 2, 1, 0; (854), 2, 1, 0; (1193), 6, 3, 17; (1580), 5, 3, 7; (1583), 3, 2, 1; (1922), 4, 2, 6; (1983), 4, 2, 6; (2100), 10, 5, 19; (2575), 2, 1, 0; (2693), 4, 2, 1; (3288), 12, 6, 29; (3361), 6, 2, 1; (3540), 4, 2, 6; (3568), 4, 2, 1; (3830), 2, 1, 0; (4183), 4, 2, 1; (4486), 6, 3, 17; (4680), 6, 3, 17; (5751), 4, 2, 1; (5786), 4, 2, 1; (5819), 4, 2, 6; (5836), 4, 2, 1; (5879), 4, 2, 1; [248, 60, 1997/08/13–1997/10/10]

610 Pianoro

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

[astrofil@astbo1.bo.cnr.it]

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

GSC

1958 TL₁, 9, 3, 13; 1975 SK, 3, 1, 0; 1975 UF, 6, 2, 2; 1977 EA₆, 3, 1, 0; 1977 RD₂, 6, 2, 11; 1977 RZ₈, 6, 2, 1; 1978 QY₁, 6, 2, 9; 1978 TU₈, 12, 4, 26; 1979 MY₅, 6, 2, 6; 1979 QC₁, 6, 2, 6; 1979 SU₂, 6, 2, 6; 1989 SN₄, 6, 2, 1; 1992 LR, 3, 1, 0; 1996 HQ₂₂, 6, 2, 5; 1997 QM, 6, 2, 1; 1997 QC₃, 6, 2, 4; 1997 RB₁, 15, 5, 17; 1997 RD₇, 3, 1, 0; 1997 SY₃ *, 6, 2, 1; 1997 SZ₃ *, 6, 2, 1; 1997 SO₄ *, 6, 2, 1; 6064 P-L, 6, 2, 8; 6065 P-L, 6, 2, 10; (27), 3, 1, 0; (1583), 3, 1, 0; (1943), 3, 1, 0; (1959), 3, 1, 0; (2100), 3, 1, 0; (7859), 6, 2, 1; (7860), 9, 3, 17; (7870), 3, 1, 0; [177, 31, 1997/08/31–1997/10/10]

611 Starkenburg Sternwarte, Heppenheim

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

Observers M. Busch, R. Stoss, W. Ernst, L. Kurtze

Measurers M. Busch, R. Stoss

0.2-m $f/6$ reflector + CCD

USNO-SA1.0, GSC

1991 AC₃, 2, 1, 0; 1991 OK₁, 2, 1, 0; 1993 XF, 2, 1, 0; 1997 PK₂, 2, 1, 0; 1997 SS₄ *, 12, 4, 8; 1997 SX₉ *, 11, 4, 8; (54), 2, 1, 0; (1418), 2, 1, 0; [35, 8, 1997/09/23–1997/10/05]

619 Sabadell

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

[astrosab@redestb.es]

Observers F. Casarramona, E. Vigil, M. Troncoso, A. Garrigos, P. Muñoz

Measurer F. Casarramona

0.51-m $f/3.9$ reflector + CCD

GSC

1983 WN, 7, 2, 4; 1997 SE₅, 6, 2, 2; [13, 2, 1997/09/29–1997/10/07]

620 Observatorio Astronómico de Mallorca

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

[astroam@dinky.bitel.es]

Observers R. Pacheco, A. Lopez

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

PPM, GSC 1.2

1997 PR₄, 3, 1, 0; 1997 PU₄, 3, 1, 0; 1997 PV₄, 6, 2, 11; 1997 QG₂, 3, 1, 0; 1997 QM₄, 3, 1, 0; 1997 QN₄, 6, 2, 18; 1997 RV₂, 6, 2, 18; 1997 RW₂, 3, 1, 0; 1997 RU₆, 6, 2, 18; 1997 SY₃₀ *, 6, 2, 7; 1997 SZ₃₀ *, 6, 2, 7; 1997 SA₃₁ *, 6, 2, 7; 1997 TE₁₈ *, 6, 2, 4; 1997 TF₁₈ *, 6, 2, 4; 1997 TG₁₈ *, 6, 2, 4; 1997 TH₁₈ *, 6, 2, 4; 1997 TD₂₄ *, 6, 2, 3; 1997 TE₂₄ *, 7, 2, 3; 1997 TF₂₄ *, 6, 2, 3; 1208 T-1, 6, 2, 3; (77), 6, 1, 0; (532), 5, 1, 0; [117, 22, 1997/09/16–1997/10/11]

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

1997 QV₄, 9, 3, 14; 1997 RB₉, 8, 3, 7; 1997 RC₉, 15, 4, 13; 1997 RD₉, 9, 3, 7; 1997 RM₁₀ *, 12, 4, 18; 1997 SC₃₂ *, 15, 4, 4; 1997 SD₃₂ *, 11, 3, 4; 1997 SE₃₂ *, 12, 3, 3; 1997 SF₃₂ *, 9, 3, 8; [100, 9, 1997/09/10–1997/10/05]

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

(561), 1, 1, 0; (1106), 2, 1, 0; (1129), 1, 1, 0; (1201), 4, 1, 0; (1262), 1, 1, 0; (1734), 3, 1, 0; [12, 6, 1997/08/13]

626 Geel

J. Van Gestel, Pas 192, B-2440 Geel, Belgium [vangestel@pophost.eunet.be]

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

GSC

(3519), 2, 1, 0; [2, 1, 1997/04/06]

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

1986 PN₄, 5, 2, 20; 1989 GB₁, 3, 1, 0; 1993 SY₃, 3, 1, 0; 1997 RC₃, 7, 2, 1; 1997 TB₁₈, 3, 1, 0; (2100), 5, 1, 0; (7850), 3, 1, 0; [29, 7, 1997/09/08–1997/10/09]

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

(1959), 4, 1, 0; [4, 1, 1997/09/13]

631 Hamburg-Georgswerder

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

[th.buck@hamburg.netsurf.de]

0.15-m $f/8$ refractor + CCD

GSC

(1386), 2, 1, 0; (1583), 4, 2, 3; (1943), 6, 3, 32; (1980), 6, 3, 6; (2100), 2, 1, 0; (2693), 2, 1, 0; [22, 6, 1997/08/21–1997/09/25]

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

Measurer D. D. Balam

1.82-m Plaskett telescope + CCD

GSC, USNO-A1.0

1973 SP₁, 3, 1, 0; 1996 RJ, 3, 1, 0; 1997 LY₄, 4, 1, 0; 1997 MV₁, 2, 1, 0; 1997 MD₁₀, 4, 1, 0; 1997 RT, 3, 1, 0; 1997 RD₁, 3, 1, 0; 1997 TZ₁₆, 3, 1, 0; 1997 TQ₁₇, 3, 1, 0; (2100), 2, 1, 0; (3361), 3, 1, 0; [33, 11, 1997/09/19–1997/10/12]

670 Camarillo

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

[72401.3174@compuserve.com]

0.25-m Schmidt-Cassegrain + CCD

GSC

1997 SE₅, 16, 5, 13; 1997 TD, 3, 1, 0; [19, 2, 1997/09/29–1997/10/12]

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

1997 TD, 3, 1, 0; [3, 1, 1997/10/02]

675 Palomar

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

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

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

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C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands [vanhouten@rulhl1.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), E. F. Helin (2, S), H. E. Holt (3, S), K. Lawrence (2, S), P. Nicholson (8, H), C. M. Olmstead (3, S), D. K. Williams (3, S)

Measurers B. Gladman (8), B. L. Cummings (6), K. J. Lawrence (2), 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

(2) 1995 WY₂, 3, 3, 2; 1996 FL₂, 3, 2, 1; 1996 RR₂₀, 3, 1, 0; 1997 QH₄, 3, 1, 0; 1997 QJ₄, 2, 1, 0; 1997 RT₅, 3, 1, 0; 1997 RY₆, 3, 1, 0; 1997 RX₉, 6, 2, 1; 1997 TX₈ *, 4, 2, 1; (1383), 5, 3, 28; [35, 10, 1991/02/18–1997/10/06]

(4) 1997 GX₁₆, 3, 2, 2; 1997 PJ₂, 3, 2, 1; 2042 P-L *, 6, 6, 28; 2698 P-L *, 6, 6, 28; 4070 P-L *, 9, 8, 32; 4090 P-L *, 8, 8, 32; 4634 P-L *, 8, 8, 32; 4715 P-L *, 9, 5, 28; 4886 P-L *, 7, 4, 4; 6014 P-L *, 6, 3, 4; 6113 P-L *, 7, 7, 32; 6128 P-L *, 6, 6, 32; 6224 P-L *, 4, 4, 4; 6274 P-L *, 7, 7, 32; 3078 T-1 *, 10, 8, 51; 4640 T-1 *, 3, 3, 3; 1314 T-2 *, 14, 7, 16; 2090 T-2 *, 15, 8, 16; 4197 T-2 *, 15, 8, 16; 5192 T-2 *, 11, 6, 11; 1179 T-3 *, 6, 3, 6; 2316 T-3 *, 25, 7, 15; 2343 T-3 *, 21, 7, 15; 3152 T-3 *, 13, 7, 15; 3231 T-3 *, 13, 7, 15; 4165 T-3 *, 19, 7, 15; [254, 26, 1960/09/24–1977/10/22]

(6) 1981 DQ₁, 2, 1, 0; [2, 1, 1978/07/09]

(8) 1996 TK₆₆, 3, 1, 0; 1996 TR₆₆, 4, 2, 1; 1997 RX₉ *, 4, 2, 1; 1997 SZ₁₀, 2, 1, 0; [13, 4, 1997/09/05–1997/09/08]

(9) 1979 MG₆, 2, 1, 0; 1996 HD₂₄, 2, 1, 0; [4, 2, 1993/10/14]

683 Goodricke-Pigott Observatory, Tucson

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

GSC

1997 SW₉ *, 6, 2, 1; [6, 1, 1997/09/29-1997/09/30]**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

1975 SK, 6, 2, 1; 1978 PO₃, 6, 2, 1; 1981 EG₅, 6, 2, 1; 1981 EX₂₆, 6, 2, 1; 1981 EZ₂₇, 6, 2, 1; 1990 SK₆, 6, 2, 1; 1994 PW₁₆, 5, 2, 1; 1996 DD, 5, 2, 1; 1996 HX, 5, 2, 1; 1997 OO₁, 6, 2, 1; 1997 PK₁, 5, 2, 1; 1997 PM₁, 8, 3, 10; 1997 PJ₂, 4, 2, 1; 1997 PY₂, 11, 4, 11; 1997 QJ, 6, 2, 8; 1997 QK₁, 6, 2, 1; 1997 RW₁, 5, 2, 1; 1997 RF₃, 3, 1, 0; 1997 RQ₅, 9, 4, 6; 1997 RX₆, 6, 2, 7; 1997 RV₉ *, 8, 3, 14; 1997 SD *, 10, 4, 8; 1997 SL₁, 6, 2, 1; 1997 SS₁ *, 6, 2, 1; 1997 ST₁ *, 11, 4, 6; 1997 SH₂ *, 8, 3, 9; 1997 SF₅ *, 6, 2, 1; 1997 SG₅ *, 5, 2, 1; 1997 SH₅ *, 11, 4, 5; 1997 SJ₅ *, 5, 2, 1; 1997 SK₅ *, 5, 2, 1; 1997 SG₁₁ *, 4, 2, 1; 1997 SH₁₁ *, 7, 3, 4; 1997 SJ₁₁ *, 11, 4, 5; 1997 TA *, 6, 2, 1; 1997 TB *, 6, 2, 1; 1997 TF *, 5, 2, 1; (5372), 2, 1, 0; (5848), 2, 1, 0; [244, 39, 1997/09/10-1997/10/05]

691 Kitt Peak, Steward Observatory

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

0.91-m Spacewatch telescope + CCD

GSC

1942 TB, 2, 1, 0; 1977 DR₂, 3, 1, 0; 1978 SR₄, 6, 2, 1; 1978 TD₂, 3, 1, 0; 1979 MK, 3, 1, 0; 1979 MR₅, 9, 2, 5; 1980 EB, 9, 3, 11; 1980 FX₃, 3, 1, 0; 1981 EK₁₀, 6, 2, 5; 1981 EC₁₂, 3, 1, 0; 1981 EF₁₂, 3, 1, 0; 1981 EX₁₄, 3, 1, 0; 1981 EM₃₁, 6, 2, 6; 1981 EY₄₂, 3, 1, 0; 1986 PW₄, 6, 2, 6; 1986 RD₅, 3, 1, 0; 1987 SQ₁₇, 6, 2, 4; 1988 CH₅, 3, 1, 0; 1989 CB₈, 12, 4, 1067; 1989 GP, 12, 4, 1090; 1989 GR₄, 12, 4, 6; 1989 SG₁, 6, 2, 6; 1989 SN₄, 3, 1, 0; 1989 UR, 6, 2, 1; 1990 JN₁, 3, 1, 0; 1990 QM₁, 3, 1, 0; 1990 QW₁₀, 3, 1, 0; 1990 SG₃, 3, 1, 0; 1990 TJ₃, 3, 1, 0; 1991 PB, 3, 1, 0; 1991 PR₁₂, 3, 1, 0; 1991 TU₁₄ *, 3, 1, 0; 1991 TV₁₄ *, 3, 1, 0; 1992 BE₂, 6, 2, 1; 1992 BF₆ *, 5, 2, 10; 1992 NS, 3, 1, 0; 1992 WC₂, 9, 3, 12; 1993 FX₅₂, 3, 1, 0; 1993 HO₈ *, 3, 1, 0; 1993 KO, 3, 1, 0; 1993 OQ₄, 3, 1, 0; 1993 OQ₈, 3, 1, 0; 1993 PH₉ *, 2, 1, 0; 1993 RR, 9, 3, 923; 1993 RB₁₆, 17, 6, 978; 1993 TG₄₈ *, 3, 1, 0; 1993 VB₂, 3, 1, 0; 1994 EE₉ *, 3, 1, 0; 1994 LR, 3, 1, 0; 1994 PM₂₁, 3, 1, 0; 1994 UO₁, 6, 2, 1056; 1994 VR₁, 6, 2, 5; 1994 VF₂, 3, 1, 0; 1994 YS₄ *, 3, 1, 0; 1995 BS₃, 3, 1, 0; 1995 CP₃, 3, 1, 0; 1995 CW₁₀ *, 2, 1, 0; 1995 DU₃, 3, 1, 0; 1995 KV₅ *, 3, 1, 0; 1995 OK₈, 6, 2, 9; 1995 YV₂₅ *, 6, 2, 11; 1995 YW₂₅ *, 6, 2, 35; 1996 CR₁, 3, 1, 0; 1996 CK₉, 3, 1, 0; 1996 DW, 6, 2, 2; 1996 EH, 3, 1, 0; 1996 FP₃, 3, 1, 0; 1996 GV₂₀, 6, 2, 6; 1996 HM₁₁, 3, 1, 0; 1996 HJ₁₅, 3, 1, 0; 1996 PS₁, 3, 1, 0; 1996 TO₆₆, 2, 1, 0; 1996 TP₆₆, 3, 1, 0; 1996 VG₂, 3, 1, 0; 1997 AF₈, 3, 1, 0; 1997 HE₁₄, 2, 1, 0; 1997 LB₄, 3, 1, 0; 1997 OT, 2, 1, 0; 1997 OF₁, 3, 1, 0; 1997 PQ, 2, 1, 0; 1997 PC₁, 2, 1, 0; 1997 PK₁, 3, 1, 0; 1997 PX₁, 3, 1, 0; 1997 PY₁, 3, 1, 0; 1997 PN₃, 3, 1, 0; 1997 PP₃, 9, 3, 11; 1997 PS₃, 6, 2, 6; 1997 PW₃, 9, 3, 13; 1997 PP₄, 3, 1, 0; 1997 PB₆, 3, 1, 0; 1997 PC₆, 3, 1, 0; 1997 QS, 3, 1, 0; 1997 QT, 3, 1, 0; 1997 QY, 3, 1, 0; 1997 QN₁, 2, 1, 0; 1997 QB₂, 3, 1, 0; 1997 QC₃, 3, 1, 0; 1997 QQ₄, 3, 1, 0; 1997 RG, 3, 1, 0; 1997 RJ₁, 3, 1, 0; 1997 RW₁, 3, 1, 0; 1997 RG₃, 6, 2, 6; 1997 RS₃, 6, 2, 11; 1997 RT₃, 6, 2, 11; 1997 RN₇, 9, 3, 8; 1997 RF₈, 2, 1, 0; 1997 RO₉, 3, 1, 0; 1997 RP₉, 6, 2, 6; 1997 RN₁₀, 3, 1, 0; 1997 SO₁, 5, 2, 1; 1997 SX₁, 6, 2, 6; 1997 SY₁, 3, 1, 0; 1997 SZ₁, 3, 1, 0; 1997 SA₂, 3, 1, 0; 1997 SB₂, 9, 3, 11; 1997 SC₂, 3, 1, 0; 1997 SD₂, 6, 2, 6; 1997 SE₂, 3, 1, 0; 1997 SR₂, 6, 2, 11; 1997 SS₂, 3, 1, 0; 1997 ST₂, 3, 1, 0; 1997 ST₃ *, 6, 2, 4; 1997 SU₃ *, 6, 2, 4; 1997 SV₃ *, 15, 5, 8; 1997 SW₃ *, 12, 4, 12; 1997 SD₄, 3, 1, 0; 1997 SR₄ *, 9, 3, 4; 1997 SU₄, 6, 2, 5; 1997 SV₄, 6, 2, 5; 1997 SY₄, 6, 2, 9; 1997 SQ₅ *, 6, 2, 6; 1997 SR₅ *, 6, 2, 6; 1997 SS₅ *, 6, 2, 6; 1997 ST₅ *, 6, 2, 6; 1997 SU₅ *, 6, 2, 6; 1997 SV₅ *, 6, 2, 6; 1997 SW₅ *, 6, 2, 6; 1997 SX₅ *, 6, 2, 6; 1997 SY₅ *, 6, 2, 6; 1997 SZ₅ *, 6, 2, 6; 1997 SA₆ *, 9, 3, 12; 1997 SB₆ *, 9, 3, 12; 1997 SC₆ *, 9, 3, 13; 1997 SD₆ *, 6, 2, 6; 1997 SE₆ *, 9, 3, 12; 1997 SF₆ *, 6, 2, 6; 1997 SG₆ *, 9, 3, 12; 1997 SH₆ *, 6, 2, 6; 1997 SJ₆ *, 6, 2, 6; 1997 SK₆ *, 6, 2, 6; 1997 SL₆ *, 6, 2, 6; 1997 SM₆ *, 6, 2, 6; 1997 SN₆ *, 6, 2, 6; 1997 SO₆ *, 9, 3, 13; 1997 SP₆ *, 6, 2, 6; 1997 SQ₆ *, 9, 3, 12; 1997 SR₆ *, 6, 2, 6; 1997 SS₆ *, 6, 2, 6; 1997 ST₆ *, 9, 3, 12; 1997 SU₆ *, 6, 2, 6; 1997 SV₆ *, 9, 3, 12; 1997 SW₆ *, 6, 2, 6; 1997 SX₆ *, 9, 3, 13; 1997 SY₆ *, 6, 2, 6; 1997 SZ₆ *, 8, 3, 12; 1997 SA₇ *, 6, 2, 6; 1997 SB₇ *, 5, 2, 6; 1997 SC₇ *, 9, 3, 12; 1997 SD₇ *,

8, 3, 12; 1997 SE₇ *, 6, 2, 6; 1997 SF₇ *, 6, 2, 6; 1997 SG₇ *, 9, 3, 12; 1997 SH₇ *, 6, 2, 6; 1997 SJ₇ *, 6, 2, 6; 1997 SK₇ *, 5, 2, 6; 1997 SL₇ *, 9, 3, 13; 1997 SM₇ *, 9, 3, 12; 1997 SN₇ *, 6, 2, 6; 1997 SO₇ *, 6, 2, 6; 1997 SP₇ *, 6, 2, 6; 1997 SQ₇ *, 9, 3, 12; 1997 SR₇ *, 6, 2, 6; 1997 SS₇ *, 6, 2, 6; 1997 ST₇ *, 6, 2, 6; 1997 SU₇ *, 6, 2, 6; 1997 SV₇ *, 6, 2, 6; 1997 SW₇ *, 6, 2, 6; 1997 SX₇ *, 6, 2, 6; 1997 SY₇ *, 9, 3, 11; 1997 SZ₇ *, 9, 3, 11; 1997 SA₈ *, 9, 3, 11; 1997 SB₈ *, 6, 2, 6; 1997 SC₈ *, 6, 2, 6; 1997 SD₈ *, 6, 2, 6; 1997 SE₈ *, 5, 2, 6; 1997 SF₈ *, 6, 2, 6; 1997 SG₈ *, 6, 2, 6; 1997 SH₈ *, 9, 3, 11; 1997 SJ₈ *, 6, 2, 6; 1997 SK₈ *, 6, 2, 6; 1997 SL₈ *, 6, 2, 6; 1997 SM₈ *, 6, 2, 6; 1997 SN₈ *, 6, 2, 6; 1997 SO₈ *, 9, 3, 11; 1997 SP₈ *, 6, 2, 6; 1997 SQ₈ *, 9, 3, 9; 1997 SR₈ *, 9, 3, 9; 1997 SS₈ *, 9, 3, 8; 1997 ST₈ *, 6, 2, 2; 1997 SU₈ *, 6, 2, 2; 1997 SV₈ *, 6, 2, 2; 1997 SW₈ *, 6, 2, 2; 1997 SX₈ *, 6, 2, 2; 1997 SY₈ *, 6, 2, 2; 1997 SZ₈ *, 6, 2, 2; 1997 SA₉ *, 6, 2, 2; 1997 SB₉ *, 11, 4, 7; 1997 SC₉ *, 12, 4, 7; 1997 SD₉ *, 9, 3, 3; 1997 SE₉ *, 9, 3, 3; 1997 SF₉ *, 6, 2, 2; 1997 SG₉ *, 5, 2, 2; 1997 SH₉ *, 9, 3, 3; 1997 SJ₉ *, 9, 3, 3; 1997 SK₉ *, 12, 4, 8; 1997 SL₉ *, 9, 3, 7; 1997 SM₉ *, 8, 3, 7; 1997 SN₉ *, 6, 2, 2; 1997 SO₉ *, 6, 2, 1; 1997 SP₉ *, 12, 4, 5; 1997 SQ₉ *, 12, 4, 5; 1997 SR₉ *, 9, 3, 3; 1997 SS₉ *, 9, 3, 3; 1997 ST₉ *, 9, 3, 5; 1997 SU₉ *, 12, 4, 5; 1997 SV₉ *, 12, 4, 7; 1997 SM₁₀, 6, 2, 58; 1997 SO₁₀, 3, 1, 0; 1997 SP₁₀, 3, 1, 0; 1997 SR₁₀, 3, 1, 0; 1997 SF₁₁, 3, 1, 0; 1997 SK₁₁ *, 9, 3, 16; 1997 SL₁₁ *, 9, 3, 10; 1997 SM₁₁ *, 15, 5, 12; 1997 SN₁₁ *, 9, 3, 9; 1997 SO₁₁ *, 9, 3, 3; 1997 SP₁₁ *, 6, 2, 3; 1997 SQ₁₁ *, 9, 3, 9; 1997 SR₁₁ *, 6, 2, 3; 1997 SS₁₁ *, 6, 2, 3; 1997 ST₁₁ *, 6, 2, 3; 1997 SU₁₁ *, 6, 2, 3; 1997 SV₁₁ *, 9, 3, 8; 1997 SW₁₁ *, 9, 3, 8; 1997 SX₁₁ *, 6, 2, 3; 1997 SY₁₁ *, 5, 2, 3; 1997 SZ₁₁ *, 6, 2, 3; 1997 SA₁₂ *, 6, 2, 3; 1997 SB₁₂ *, 9, 3, 7; 1997 SC₁₂ *, 9, 3, 7; 1997 SD₁₂ *, 6, 2, 3; 1997 SE₁₂ *, 6, 2, 3; 1997 SF₁₂ *, 6, 2, 3; 1997 SG₁₂ *, 9, 3, 7; 1997 SH₁₂ *, 9, 3, 8; 1997 SJ₁₂ *, 9, 3, 7; 1997 SK₁₂ *, 6, 2, 3; 1997 SL₁₂ *, 6, 2, 3; 1997 SM₁₂ *, 5, 2, 3; 1997 SN₁₂ *, 8, 3, 8; 1997 SO₁₂ *, 6, 2, 2; 1997 SP₁₂ *, 6, 2, 2; 1997 SQ₁₂ *, 6, 2, 2; 1997 SR₁₂ *, 6, 2, 2; 1997 SS₁₂ *, 9, 3, 7; 1997 ST₁₂ *, 6, 2, 2; 1997 SU₁₂ *, 6, 2, 2; 1997 SV₁₂ *, 9, 3, 8; 1997 SW₁₂ *, 6, 2, 2; 1997 SX₁₂ *, 6, 2, 2; 1997 SY₁₂ *, 6, 2, 2; 1997 SZ₁₂ *, 6, 2, 2; 1997 SA₁₃ *, 9, 3, 8; 1997 SB₁₃ *, 5, 2, 2; 1997 SC₁₃ *, 6, 2, 2; 1997 SD₁₃ *, 9, 3, 8; 1997 SE₁₃ *, 6, 2, 2; 1997 SF₁₃ *, 6, 2, 2; 1997 SG₁₃ *, 6, 2, 2; 1997 SH₁₃ *, 6, 2, 2; 1997 SJ₁₃ *, 6, 2, 2; 1997 SK₁₃ *, 6, 2, 2; 1997 SL₁₃ *, 6, 2, 2; 1997 SM₁₃ *, 6, 2, 2; 1997 SN₁₃ *, 9, 3, 6; 1997 SO₁₃ *, 6, 2, 2; 1997 SP₁₃ *, 6, 2, 2; 1997 SQ₁₃ *, 8, 3, 7; 1997 SR₁₃ *, 6, 2, 2; 1997 SS₁₃ *, 9, 3, 7; 1997 ST₁₃ *, 6, 2, 2; 1997 SU₁₃ *, 9, 3, 7; 1997 SV₁₃ *, 9, 3, 7; 1997 SW₁₃ *, 9, 3, 7; 1997 SX₁₃ *, 9, 3, 7; 1997 SY₁₃ *, 6, 2, 2; 1997 SZ₁₃ *, 6, 2, 2; 1997 SA₁₄ *, 6, 2, 2; 1997 SB₁₄ *, 6, 2, 2; 1997 SC₁₄ *, 9, 3, 7; 1997 SD₁₄ *, 12, 4, 7; 1997 SE₁₄ *, 6, 2, 2; 1997 SF₁₄ *, 6, 2, 2; 1997 SG₁₄ *, 9, 3, 7; 1997 SH₁₄ *, 9, 3, 7; 1997 SJ₁₄ *, 6, 2, 2; 1997 SK₁₄ *, 6, 2, 2; 1997 SL₁₄ *, 6, 2, 2; 1997 SM₁₄ *, 9, 3, 7; 1997 SN₁₄ *, 5, 2, 2; 1997 SO₁₄ *, 9, 3, 7; 1997 SP₁₄ *, 6, 2, 2; 1997 SQ₁₄ *, 6, 2, 2; 1997 SR₁₄ *, 9, 3, 7; 1997 SS₁₄ *, 6, 2, 2; 1997 ST₁₄ *, 8, 3, 7; 1997 SU₁₄ *, 6, 2, 2; 1997 SV₁₄ *, 9, 3, 7; 1997 SW₁₄ *, 9, 3, 7; 1997 SX₁₄ *, 8, 3, 7; 1997 SY₁₄ *, 9, 3, 6; 1997 SZ₁₄ *, 6, 2, 2; 1997 SA₁₅ *, 6, 2, 2; 1997 SB₁₅ *, 6, 2, 2; 1997 SC₁₅ *, 6, 2, 2; 1997 SD₁₅ *, 6, 2, 2; 1997 SE₁₅ *, 8, 3, 7; 1997 SF₁₅ *, 5, 2, 2; 1997 SG₁₅ *, 8, 3, 7; 1997 SH₁₅ *, 8, 3, 6; 1997 SJ₁₅ *, 9, 3, 5; 1997 SK₁₅ *, 6, 2, 3; 1997 SL₁₅ *, 6, 2, 3; 1997 SM₁₅ *, 6, 2, 3; 1997 SN₁₅ *, 9, 3, 5; 1997 SO₁₅ *, 6, 2, 3; 1997 SP₁₅ *, 6, 2, 3; 1997 SQ₁₅ *, 6, 2, 3; 1997 SR₁₅ *, 6, 2, 3; 1997 SS₁₅ *, 9, 3, 5; 1997 ST₁₅ *, 9, 3, 5; 1997 SU₁₅ *, 6, 2, 3; 1997 SV₁₅ *, 11, 4, 5; 1997 SW₁₅ *, 9, 3, 5; 1997 SX₁₅ *, 9, 3, 5; 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1997 SO₁₉ *, 9, 3, 12; 1997 SP₁₉ *, 6, 2, 3; 1997 SQ₁₉ *, 6, 2, 3; 1997 SR₁₉ *, 9, 3, 12; 1997 SS₁₉ *, 6, 2, 3; 1997 ST₁₉ *, 6, 2, 3; 1997 SU₁₉ *, 6, 2, 3; 1997 SV₁₉ *, 6, 2, 3; 1997 SW₁₉ *, 6, 2, 3; 1997 SX₁₉ *, 6, 2, 3; 199

1997 SB₂₃ *, 6, 2, 5; 1997 SC₂₃ *, 6, 2, 5; 1997 SD₂₃ *, 6, 2, 5; 1997 SE₂₃ *, 6, 2, 5; 1997 SF₂₃ *, 6, 2, 5; 1997 SG₂₃ *, 6, 2, 5; 1997 SH₂₃ *, 6, 2, 5; 1997 SJ₂₃ *, 9, 3, 11; 1997 SK₂₃ *, 9, 3, 11; 1997 SL₂₃ *, 6, 2, 5; 1997 SM₂₃ *, 6, 2, 5; 1997 SN₂₃ *, 6, 2, 5; 1997 SO₂₃ *, 6, 2, 5; 1997 SP₂₃ *, 9, 3, 11; 1997 SQ₂₃ *, 6, 2, 5; 1997 SR₂₃ *, 6, 2, 5; 1997 SS₂₃ *, 6, 2, 5; 1997 ST₂₃ *, 6, 2, 5; 1997 SU₂₃ *, 6, 2, 5; 1997 SV₂₃ *, 9, 3, 11; 1997 SW₂₃ *, 8, 3, 11; 1997 SX₂₃ *, 9, 3, 11; 1997 SY₂₃ *, 6, 2, 5; 1997 SZ₂₃ *, 5, 2, 5; 1997 SA₂₄ *, 6, 2, 4; 1997 SB₂₄ *, 6, 2, 4; 1997 SC₂₄ *, 6, 2, 4; 1997 SD₂₄ *, 6, 2, 4; 1997 SE₂₄ *, 6, 2, 4; 1997 SF₂₄ *, 5, 2, 4; 1997 SG₂₄ *, 6, 2, 4; 1997 SH₂₄ *, 6, 2, 4; 1997 SJ₂₄ *, 6, 2, 4; 1997 SK₂₄ *, 6, 2, 4; 1997 SL₂₄ *, 6, 2, 4; 1997 SM₂₄ *, 6, 2, 4; 1997 SN₂₄ *, 6, 2, 4; 1997 SO₂₄ *, 6, 2, 4; 1997 SP₂₄ *, 9, 3, 11; 1997 SQ₂₄ *, 9, 3, 11; 1997 SR₂₄ *, 6, 2, 4; 1997 SS₂₄ *, 6, 2, 4; 1997 ST₂₄ *, 6, 2, 4; 1997 SU₂₄ *, 6, 2, 4; 1997 SV₂₄ *, 9, 3, 10; 1997 SW₂₄ *, 9, 3, 11; 1997 SX₂₄ *, 9, 3, 10; 1997 SY₂₄ *, 6, 2, 4; 1997 SZ₂₄ *, 6, 2, 4; 1997 SA₂₅ *, 6, 2, 4; 1997 SB₂₅ *, 6, 2, 4; 1997 SC₂₅ *, 6, 2, 4; 1997 SD₂₅ *, 6, 2, 4; 1997 SE₂₅ *, 6, 2, 8; 1997 SF₂₅ *, 6, 2, 8; 1997 SG₂₅ *, 6, 2, 8; 1997 SH₂₅ *, 6, 2, 8; 1997 SJ₂₅ *, 6, 2, 8; 1997 SK₂₅ *, 6, 2, 8; 1997 SL₂₅ *, 6, 2, 8; 1997 SM₂₅ *, 6, 2, 8; 1997 SN₂₅ *, 6, 2, 8; 1997 SO₂₅ *, 6, 2, 8; 1997 SP₂₅ *, 6, 2, 8; 1997 SQ₂₅ *, 6, 2, 8; 1997 SR₂₅ *, 6, 2, 8; 1997 SS₂₅ *, 6, 2, 8; 1997 ST₂₅ *, 6, 2, 8; 1997 SU₂₅ *, 6, 2, 8; 1997 SV₂₅ *, 6, 2, 8; 1997 SW₂₅ *, 6, 2, 8; 1997 SX₂₅ *, 6, 2, 8; 1997 SY₂₅ *, 6, 2, 7; 1997 SZ₂₅ *, 6, 2, 7; 1997 SA₂₆ *, 6, 2, 7; 1997 SB₂₆ *, 6, 2, 7; 1997 SC₂₆ *, 6, 2, 7; 1997 SD₂₆ *, 6, 2, 7; 1997 SE₂₆ *, 6, 2, 7; 1997 SF₂₆ *, 6, 2, 7; 1997 SG₂₆ *, 6, 2, 7; 1997 SH₂₆ *, 6, 2, 7; 1997 SJ₂₆ *, 6, 2, 7; 1997 SK₂₆ *, 6, 2, 7; 1997 SL₂₆ *, 6, 2, 7; 1997 SM₂₆ *, 6, 2, 7; 1997 SN₂₆ *, 6, 2, 7; 1997 SO₂₆ *, 6, 2, 7; 1997 SP₂₆ *, 6, 2, 7; 1997 SQ₂₆ *, 6, 2, 7; 1997 SR₂₆ *, 6, 2, 6; 1997 SS₂₆ *, 6, 2, 6; 1997 ST₂₆ *, 6, 2, 6; 1997 SU₂₆ *, 6, 2, 6; 1997 SV₂₆ *, 6, 2, 6; 1997 SW₂₆ *, 6, 2, 6; 1997 SX₂₆ *, 6, 2, 6; 1997 SY₂₆ *, 6, 2, 6; 1997 SZ₂₆ *, 6, 2, 6; 1997 SA₂₇ *, 6, 2, 6; 1997 SB₂₇ *, 6, 2, 6; 1997 SC₂₇ *, 6, 2, 6; 1997 SD₂₇ *, 6, 2, 6; 1997 SE₂₇ *, 6, 2, 6; 1997 SF₂₇ *, 6, 2, 6; 1997 SG₂₇ *, 6, 2, 6; 1997 SH₂₇ *, 6, 2, 6; 1997 SJ₂₇ *, 6, 2, 6; 1997 SK₂₇ *, 6, 2, 6; 1997 SL₂₇ *, 6, 2, 6; 1997 SM₂₇ *, 6, 2, 5; 1997 SN₂₇ *, 6, 2, 5; 1997 SO₂₇ *, 6, 2, 5; 1997 SP₂₇ *, 6, 2, 5; 1997 SQ₂₇ *, 6, 2, 5; 1997 SR₂₇ *, 6, 2, 5; 1997 SS₂₇ *, 6, 2, 5; 1997 ST₂₇ *, 6, 2, 5; 1997 SU₂₇ *, 6, 2, 5; 1997 SV₂₇ *, 6, 2, 5; 1997 SW₂₇ *, 6, 2, 5; 1997 SX₂₇ *, 6, 2, 5; 1997 SY₂₇ *, 6, 2, 5; 1997 SZ₂₇ *, 6, 2, 5; 1997 SA₂₈ *, 6, 2, 5; 1997 SB₂₈ *, 6, 2, 5; 1997 SC₂₈ *, 6, 2, 5; 1997 SD₂₈ *, 6, 2, 5; 1997 SE₂₈ *, 6, 2, 5; 1997 SF₂₈ *, 6, 2, 5; 1997 SG₂₈ *, 6, 2, 5; 1997 SH₂₈ *, 6, 2, 5; 1997 SJ₂₈ *, 6, 2, 5; 1997 SK₂₈ *, 6, 2, 5; 1997 SL₂₈ *, 6, 2, 5; 1997 SM₂₈ *, 6, 2, 5; 1997 SN₂₈ *, 6, 2, 5; 1997 SO₂₈ *, 6, 2, 5; 1997 SP₂₈ *, 8, 3, 13; 1997 SQ₂₈ *, 6, 2, 13; 1997 SR₂₈ *, 6, 2, 8; 1997 SS₂₈ *, 6, 2, 8; 1997 ST₂₈ *, 6, 2, 8; 1997 SU₂₈ *, 6, 2, 8; 1997 SV₂₈ *, 6, 2, 8; 1997 SW₂₈ *, 6, 2, 8; 1997 SX₂₈ *, 9, 3, 8; 1997 SY₂₈ *, 6, 2, 7; 1997 SZ₂₈ *, 6, 2, 7; 1997 SA₂₉ *, 6, 2, 7; 1997 SB₂₉ *, 6, 2, 7; 1997 SC₂₉ *, 6, 2, 7; 1997 SD₂₉ *, 6, 2, 7; 1997 SE₂₉ *, 6, 2, 6; 1997 SF₂₉ *, 6, 2, 6; 1997 SG₂₉ *, 6, 2, 6; 1997 SH₂₉ *, 6, 2, 6; 1997 SJ₂₉ *, 6, 2, 6; 1997 SK₂₉ *, 6, 2, 6; 1997 SL₂₉ *, 6, 2, 6; 1997 SM₂₉ *, 6, 2, 6; 1997 SN₂₉ *, 6, 2, 6; 1997 SO₂₉ *, 6, 2, 6; 1997 SP₂₉ *, 6, 2, 6; 1997 SQ₂₉ *, 5, 2, 6; 1997 SR₂₉ *, 6, 2, 6; 1997 SS₂₉ *, 6, 2, 6; 1997 ST₂₉ *, 6, 2, 6; 1997 SU₂₉ *, 6, 2, 6; 1997 SV₂₉ *, 6, 2, 6; 1

1997 TU₁₂ *, 9, 3, 9; 1997 TV₁₂ *, 6, 2, 7; 1997 TW₁₂ *, 6, 2, 7; 1997 TX₁₂ *, 6, 2, 6; 1997 TY₁₂ *, 6, 2, 6; 1997 TZ₁₂ *, 6, 2, 6; 1997 TA₁₃ *, 6, 2, 6; 1997 TB₁₃ *, 6, 2, 6; 1997 TC₁₃ *, 6, 2, 6; 1997 TD₁₃ *, 6, 2, 6; 1997 TE₁₃ *, 6, 2, 6; 1997 TF₁₃ *, 6, 2, 6; 1997 TG₁₃ *, 6, 2, 6; 1997 TH₁₃ *, 6, 2, 6; 1997 TJ₁₃ *, 6, 2, 6; 1997 TK₁₃ *, 6, 2, 6; 1997 TL₁₃ *, 6, 2, 6; 1997 TM₁₃ *, 6, 2, 6; 1997 TN₁₃ *, 6, 2, 6; 1997 TO₁₃ *, 6, 2, 6; 1997 TP₁₃ *, 6, 2, 6; 1997 TQ₁₃ *, 6, 2, 6; 1997 TR₁₃ *, 6, 2, 6; 1997 TS₁₃ *, 6, 2, 6; 1997 TT₁₃ *, 6, 2, 6; 1997 TU₁₃ *, 6, 2, 6; 1997 TV₁₃ *, 6, 2, 6; 1997 TW₁₃ *, 6, 2, 6; 1997 TX₁₃ *, 6, 2, 6; 1997 TY₁₃ *, 6, 2, 6; 1997 TZ₁₃ *, 6, 2, 6; 1997 TA₁₄ *, 6, 2, 6; 1997 TB₁₄ *, 6, 2, 5; 1997 TC₁₄ *, 6, 2, 5; 1997 TD₁₄ *, 6, 2, 5; 1997 TE₁₄ *, 6, 2, 5; 1997 TF₁₄ *, 6, 2, 5; 1997 TG₁₄ *, 6, 2, 5; 1997 TH₁₄ *, 6, 2, 5; 1997 TJ₁₄ *, 6, 2, 5; 1997 TK₁₄ *, 6, 2, 5; 1997 TL₁₄ *, 6, 2, 5; 1997 TM₁₄ *, 6, 2, 5; 1997 TN₁₄ *, 9, 2, 5; 1997 TO₁₄ *, 8, 2, 5; 1997 TP₁₄ *, 6, 2, 5; 1997 TQ₁₄ *, 8, 2, 5; 1997 TR₁₄ *, 9, 2, 5; 1997 TS₁₄ *, 9, 2, 5; 1997 TT₁₄ *, 9, 2, 5; 1997 TU₁₄ *, 9, 2, 5; 1997 TV₁₄ *, 9, 2, 5; 1997 TW₁₄ *, 6, 2, 5; 1997 TX₁₄ *, 9, 2, 5; 1997 TY₁₄ *, 9, 2, 5; 1997 TZ₁₄ *, 8, 2, 5; 1997 TA₁₅ *, 9, 2, 5; 1997 TB₁₅ *, 9, 2, 5; 1997 TC₁₅ *, 8, 2, 5; 1997 TD₁₅ *, 6, 2, 5; 1997 TE₁₅ *, 9, 2, 5; 1997 TF₁₅ *, 9, 2, 5; 1997 TG₁₅ *, 9, 2, 5; 1997 TH₁₅ *, 6, 2, 5; 1997 TJ₁₅ *, 6, 2, 5; 1997 TK₁₅ *, 6, 2, 5; 1997 TL₁₅ *, 6, 2, 5; 1997 TM₁₅ *, 6, 2, 5; 1997 TN₁₅ *, 6, 2, 5; 1997 TO₁₅ *, 6, 2, 5; 1997 TP₁₅ *, 6, 2, 5; 1997 TQ₁₅ *, 6, 2, 5; 1997 TR₁₅ *, 6, 2, 5; 1997 TS₁₅ *, 6, 2, 5; 1997 TT₁₅ *, 6, 2, 5; 1997 TU₁₅ *, 6, 2, 5; 1997 TV₁₅ *, 6, 2, 5; 1997 TW₁₅ *, 6, 2, 5; 1997 TX₁₅ *, 5, 2, 5; 1997 TY₁₅ *, 6, 2, 5; 1997 TZ₁₅ *, 5, 2, 5; 1997 TA₁₆ *, 6, 2, 5; 1997 TB₁₆ *, 6, 2, 5; 1997 TC₁₆ *, 6, 2, 5; 1997 TD₁₆ *, 6, 2, 2; 1997 TE₁₆ *, 6, 2, 2; 1997 TF₁₆ *, 6, 2, 2; 1997 TG₁₆ *, 6, 2, 2; 1997 TH₁₆ *, 6, 2, 2; 1997 TJ₁₆ *, 6, 2, 2; 1997 TK₁₆ *, 6, 2, 2; 1997 TL₁₆ *, 6, 2, 1; 1997 TM₁₆ *, 6, 2, 1; 1997 TN₁₆ *, 6, 2, 1; 1997 TO₁₆ *, 6, 2, 1; 1997 TP₁₆ *, 6, 2, 1; 1997 TQ₁₆ *, 6, 2, 1; 1997 TR₁₆ *, 6, 2, 1; 1997 TS₁₆ *, 3, 1, 0; 1997 TU₁₆ *, 3, 1, 0; 1997 TV₁₆ *, 8, 2, 1; 1997 TZ₁₆ *, 8, 2, 1; 1997 TA₁₇ *, 11, 4, 3; 1997 TB₁₇ *, 3, 1, 0; 1997 TC₁₇ *, 3, 1, 0; 1997 TD₁₇ *, 6, 2, 9; 1997 TE₁₇ *, 6, 2, 9; 1997 TF₁₇ *, 6, 2, 9; 1997 TG₁₇ *, 6, 2, 9; 1997 TH₁₇ *, 6, 2, 9; 1997 TJ₁₇ *, 6, 2, 9; 1997 TK₁₇ *, 6, 2, 9; 1997 TL₁₇ *, 6, 2, 9; 1997 TM₁₇ *, 6, 2, 9; 1997 TN₁₇ *, 6, 2, 9; 1997 TO₁₇ *, 6, 2, 9; 1997 TP₁₇ *, 6, 2, 9; 1997 TQ₁₇ *, 6, 2, 9; 1997 TR₁₇ *, 6, 2, 9; 1997 TS₁₇ *, 6, 2, 9; 1997 TT₁₇ *, 6, 2, 9; 1997 TU₁₇ *, 6, 2, 9; 1997 TV₁₇ *, 6, 2, 9; 1997 TW₁₇ *, 6, 2, 9; 1997 TX₁₇ *, 6, 2, 9; 1997 TY₁₇ *, 6, 2, 9; 1997 TZ₁₇ *, 6, 2, 9; 1997 TA₁₈ *, 6, 2, 9; 1997 TB₁₈ *, 6, 2, 9; 1997 TC₁₈ *, 6, 2, 9; 1997 TD₁₈ *, 6, 2, 9; 1997 TE₁₈ *, 6, 2, 9; 1997 TF₁₈ *, 6, 2, 9; 1997 TG₁₈ *, 6, 2, 9; 1997 TH₁₈ *, 6, 2, 9; 1997 TJ₁₈ *, 6, 2, 9; 1997 TK₁₈ *, 6, 2, 9; 1997 TL₁₈ *, 6, 2, 9; 1997 TM₁₈ *, 6, 2, 9; 1997 TN₁₈ *, 6, 2, 9; 1997 TO₁₈ *, 6, 2, 9; 1997 TP₁₈ *, 6, 2, 9; 1997 TQ₁₈ *, 6, 2, 9; 1997 TR₁₈ *, 6, 2, 9; 1997 TS₁₈ *, 6, 2, 9; 1997 TT₁₈ *, 6, 2, 9; 1997 TU₁₈ *, 6, 2, 9; 1997 TV₁₈ *, 6, 2, 9; 1997 TW₁₈ *, 6, 2, 9; 1997 TX₁₈ *, 6, 2, 9; 1997 TY₁₈ *, 6, 2, 9; 1997 TZ₁₈ *, 6, 2, 9; 1997 TA₁₉ *, 6, 2, 9; 1997 TB₁₉ *, 6, 2, 9; 1997 TC₁₉ *, 6, 2, 9; 1997 TD₁₉ *, 6, 2, 9; 1997 TE₁₉ *, 6, 2, 9; 1997 TF₁₉ *, 6, 2, 9; 1997 TG₁₉ *, 6, 2, 9; 1997 TH₁₉ *, 6, 2, 9; 1997 TJ₁₉ *, 6, 2, 9; 1997 TK₁₉ *, 6, 2, 9; 1997 TL₁₉ *, 6, 2, 9; 1997 TM₁₉ *, 6, 2, 9; 1997 TN₁₉ *, 6, 2, 9; 1997 TO₁₉ *, 6, 2, 9; 1997 TP₁₉ *, 6, 2, 9; 1997 TQ₁₉ *, 6, 2, 9; 1997 TR₁₉ *, 6, 2, 9; 1997 TS₁₉ *, 6, 2, 9; 1997 TT<

696 F. L. Whipple Observatory, Mount Hopkins

J. X. Luu, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street,
Cambridge, MA 02138, U.S.A. [jlui@cfa.harvard.edu]

Observer C. W. Hergenrother

1.2-m $f/8$ reflector + CCD

USNO-A1.0

1996 RQ₂₀, 3, 1, 0; 1996 TL₆₆, 3, 1, 0; 1997 QJ₄, 2, 1, 0; 1997 RT₅, 2, 1, 0; 1997 SQ₄ *, 4, 1, 0; 1997 SB₅ *, 5, 1, 0; 1997 SC₅ *, 2, 1, 0; 1997 SD₅ *, 3, 1, 0; 1997 SO₅ *, 2, 1, 0; 1997 SZ₁₀, 2, 1, 0; [28, 10, 1997/09/27]

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

1997 RD₁, 16, 6, 11; 1997 SE₅, 8, 2, 5; 1997 SD₁₆ *, 5, 2, 1; 1997 TD, 3, 1, 0; 1997 TZ₇ *, 25, 7, 6; (1943), 11, 3, 9; (2100), 3, 1, 0; (3568), 3, 1, 0; (3750), 11, 4, 7; (5786), 3, 1, 0; [88, 10, 1997/09/24–1997/10/10]

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, J. Sharma

1.0-m $f/2.15$ reflector + CCD

USNO-SA1.0

1997 CY₂₉, 2, 1, 0; 1997 MK₁₂ *, 7, 2, 1; 1997 ML₁₂ *, 7, 2, 1; 1997 SE₅, 16, 3, 4; [32, 4, 1997/03/06–1997/07/02]

709 W & B Observatory, Cloudcroft

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

[offutt@galileo.apo.nmsu.edu]

0.60-m $f/7$ Ritchey-Chrétien + CCD

USNO-SA1.0

1996 TO₆₆, 4, 1, 0; 1997 QX, 5, 1, 0; 1997 QE₁, 3, 1, 0; 1997 QO₁, 9, 2, 12; 1997 SB₅, 2, 1, 0; 1997 SC₅, 4, 1, 0; 1997 SD₅, 3, 1, 0; 1997 SO₅, 5, 1, 0; 1997 SP₅ *, 15, 3, 7; 1997 TR₈ *, 13, 2, 1; 1997 TS₈ *, 12, 2, 1; 1997 TT₈ *, 12, 2, 1; (536), 9, 1, 0; [96, 13, 1997/09/18–1997/10/06]

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

1997 SE₅, 4, 2, 1; (1264), 4, 2, 1; (1980), 4, 2, 1; (3152), 4, 2, 1; (3345), 4, 2, 1; (5682), 3, 2, 1; (6420), 4, 2, 1; (7353), 4, 2, 1; (7778), 4, 2, 1; [35, 9, 1997/10/05–1997/10/06]

721 Lime Creek

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

[lindh@cscb.cambridge.ne.us]

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

GSC

1997 SM₂ *, 4, 2, 1; [4, 1, 1997/09/25–1997/09/26]

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

1997 RJ₇, 14, 6, 17; 1997 SD₁₁ *, 8, 3, 3; 1997 SE₁₁ *, 8, 3, 3; (1959), 5, 2, 4; (2220), 9, 3, 4; (2650), 6, 2, 1; (2755), 6, 2, 4; [56, 7, 1997/09/15–1997/10/02]

734 Farpoint Observatory, Eskridge

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

Observers G. Hug, D. Guzek

Measurer G. Hug

0.45 $f/4.5$ reflector + CCD

GSC

1996 CK₉, 6, 2, 1; [6, 1, 1997/09/29–1997/09/30]

735 George Observatory, Needville

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

[bdillon@houston.geoquest.slb.com]

Observers W. G. Dillon, R. Pepper, L. Binder, S. Charles

Measurer W. G. Dillon

0.46-m reflector + CCD

GSC

1997 SM₅ *, 4, 2, 1; 1997 SN₅ *, 4, 2, 1; 1997 SY₁₇ *, 5, 2, 2; [13, 3, 1997/09/28–1997/10/01]

748 Van Allen Observatory

R. DeMartino, 138 Harding Ave., West Haven, CT 06516, U.S.A.

[rdemart@ibm.net]

Observers J. Kazmerzak, B. Nellermeoe, L. Reitzler, J. Armstrong

Measurer R. DeMartino

0.178-m $f/7$ refractor + CCD

GSC

(252), 2, 2, 3; (258), 2, 1, 0; (631), 2, 1, 0; (714), 1, 1, 0; (726), 1, 1, 0; (854), 1, 1, 0; (1748), 1, 1, 0; (1965), 2, 1, 0; (2144), 2, 1, 0; (2903), 1, 1, 0; (3469), 1, 1, 0; (5358), 1, 1, 0; [17, 12, 1997/09/12–1997/10/07]

750 Hobbs Observatory, Fall Creek

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

[elliottb@uwec.edu]

0.60-m $f/5$ reflector + CCD

GSC

1980 PB₂, 4, 2, 6; 1986 RX₂, 4, 2, 1; 1992 BM₂, 4, 2, 1; 1993 SY₃, 6, 3, 6; (1583), 2, 1, 0; (1959), 5, 2, 9; (2100), 4, 2, 9; (2693), 4, 2, 9; [33, 8, 1997/09/03–1997/09/12]

758 BCC Observatory, Cocoa

I. 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

1986 WM₅, 2, 1, 0; 1991 DK, 14, 3, 5; 1992 SS₂₆, 2, 1, 0; 1994 TD₂, 2, 1, 0; 1995 GE, 6, 3, 3; (1), 1, 1, 0; (433), 16, 5, 10; (704), 5, 2, 1; (1983), 2, 1, 0; (2100), 16, 5, 5; (3568), 4, 2, 8; [70, 11, 1997/09/18–1997/10/06]

784 Alfred University Observatory

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

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

Observers D. R. DeGraff, J. S. Weaver, A. M. Robbins

Measurer A. M. Robbins

0.81-m $f/4$ reflector + CCD

USNO-A1.0

1997 QC, 3, 1, 0; 1997 RH₃, 9, 3, 5; 1997 RJ₃, 5, 2, 3; [17, 3, 1997/09/17–1997/09/22]

809 European Southern Observatory

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

H. Böhnhardt, ESO La Silla Observatory, Alonso de Cordova 3107, Vitacura, Santiago 19001, Chile [hboehna@eso.org] (5)

Observers G. Pizarro (4), O. Pizarro (4), H. Böhnhardt (5)

Measurers E. W. Elst (4), G. V. Williams (5)

1.0-m Schmidt, 2.2-m reflector + CCD

(4) 1981 ED12, 6, 2, 2; 1981 EL₁₃, 3, 1, 0; 1981 EW₃₀, 6, 2, 2; 1985 QP, 6, 2, 2; 1988 TL₁, 6, 2, 2; 1990 QA₂, 6, 2, 2; 1990 WZ, 3, 1, 0; 1991 CE₁, 6, 2, 2; 1991 EA₄, 6, 2, 2; 1991 PJ₁₃, 6, 2, 2; 1991 RV₁₃, 6, 2, 2; 1993 OX₁₁, 6, 2, 2; 1993 RR₇, 3, 1, 0; 1994 PB₃₀, 3, 1, 0; 1995 UU₁₄, 6, 2, 2; 1995 UB₄₅, 3, 1, 0; 1995 XP₂, 6, 2, 2; 1995 YZ₁, 6, 2, 2; 1996 AJ, 6, 2, 2; 1996 HK₁, 3, 1, 0; 1996 JR₅, 3, 1, 0; 1997 EQ₄₆, 6, 2, 2; 1997 ES₄₆, 3, 1, 0; 1997 ET₄₆, 3, 1, 0; 1997 EU₄₆, 6, 2, 2; 1997 EL₄₉, 3, 1, 0; 1997 EM₄₉, 6, 2, 2; 1997 EO₄₉, 6, 2, 2; 1997 EB₅₉ *, 6, 2, 2; 1997 EC₅₉ *, 6, 2, 2; 1997 ED₅₉ *, 6, 2, 2; 1997 EE₅₉ *, 6, 2, 2; 1997 FY₁, 6, 2, 2; 1997 FU₂, 6, 2, 2; 1997 FX₂, 6, 2, 2; 1997 FY₂, 6, 2, 2; 1997 FZ₂, 3, 1, 0; 1997 FC₃, 3, 1, 0; 1997 FQ₃, 6, 2, 2; 1997 FT₃, 6, 2, 2; 1997 FV₃, 6, 2, 2; 1997 FW₃, 6, 2, 2; 1997 FX₃, 3, 1, 0; 1997 FG₄, 6, 2, 2; 1997 FK₄, 6, 2, 2; 1997 FM₄, 6, 2, 2; 1997 FR₄, 6, 2, 2; 1997 FD₅, 3, 1, 0; 1997 GT₃, 3, 1, 0; 1997 GB₉, 6, 2, 2; 1997 GH₉, 6, 2, 2; 1997 GN₉, 6, 2, 2; 1997 GR₉, 6, 2, 2; 1997 GF₁₁, 3, 1, 0; 1997 GL₁₁, 6, 2, 2; 1997 GM₁₁, 3, 1, 0; 1997 GQ₁₁, 6, 2, 2; 1997 GT₁₁, 3, 1, 0; 1997 GA₁₂, 3, 1, 0; 1997 GB₁₂, 6, 2, 2; 1997 GY₁₂, 3, 1, 0; 1997 GF₁₃, 3, 1, 0; 1997 GK₁₃, 6, 2, 2; 1997 GM₁₃, 6, 2, 2; 1997 GP₁₃, 6, 2, 2; 1997 GW₁₃, 6, 2, 2; 1997 GA₁₄, 6, 2, 2; 1997 GF₁₄, 6, 2, 2; 1997 GH₁₄, 6, 2, 2; 1997 GK₁₄, 6, 2, 2; 1997 GN₁₄, 3, 1, 0; 1997 GW₁₄, 6, 2, 2; 1997 GX₁₄, 6, 2, 2; 1997 GY₁₄, 3, 1, 0; 1997 GZ₁₄, 6, 2, 2; 1997 GC₁₅, 6, 2, 2; 1997 GD₁₅, 6, 2, 2; 1997 GE₁₅, 6, 2, 2; 1997 GG₁₅, 6, 2, 2; 1997 GH₁₅, 6, 2, 2; 1997 GJ₁₅, 3, 1, 0; 1997 GL₁₅, 6, 2, 2; 1997 GU₁₅, 3, 1, 0; 1997 GS₁₆, 6, 2, 2; 1997 GV₁₆, 6, 2, 2; 1997 GX₁₆, 6, 2, 2; 1997 GZ₁₆, 6, 2, 2; 1997 GB₁₇, 6, 2, 2; 1997 GC₁₇, 3, 1, 0; 1997 GE₁₇, 3, 1, 0; 1997 GL₁₇, 6, 2, 2; 1997 GM₁₇, 6, 2, 2; 1997 GZ₁₇, 6, 2, 2; 1997 GC₁₈, 3, 1, 0; 1997 GO₁₈, 3, 1, 0; 1997 GV₁₈, 3, 1, 0; 1997 GW₁₈, 3, 1, 0; 1997 GO₁₉, 6, 2, 2; 1997 GW₁₉, 6, 2, 2; 1997 GU₂₀, 6, 2, 2; 1997 GV₂₀, 6, 2, 2; 1997 GE₂₁, 6, 2, 2; 1997 GT₃₂, 6, 2, 2; 1997 GX₃₂, 6, 1, 0; 1997 GZ₃₂, 12, 3, 2; 1997 GK₃₃, 6, 2, 2; 1997 GM₃₃, 3, 1, 0; 1997 GA₃₇, 3, 1, 0; 1997 GD₄₃, 6, 2, 2; 2100 P-L, 3, 1, 0; 2839 P-L, 3, 1, 0; 1290 T-1, 6, 2, 2; 2071 T-2, 6, 2, 2; 2077 T-3, 6, 2, 2; (73), 6, 2, 2; (359), 6, 2, 2; (557), 6, 2, 2; (847), 6, 2, 2; (902), 6, 2, 2; (1651), 6, 2, 2; (2240), 3, 1, 0; (2810), 6, 2, 2; (2890), 6, 2, 2; (3634), 6, 2, 2; (3943), 6, 2, 2; (4135), 6, 2, 2; (4372), 6, 2, 2; (5020), 6, 2, 2; (5311), 6, 2, 2; (5498), 6, 2, 2; (6937), 3, 1, 0; (7158), 6, 2, 2; (7570), 6, 2, 2; (7633), 6, 2, 2; (7767), 6, 2, 2; [705, 135, 1993/09/18–1997/03/13]

(5) 1996 TK₆₆, 3, 1, 0; [3, 1, 1997/09/21]

816 Rand Observatory

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0.37-m $f/6$ reflector + CCD

GSC, USNO-SA1.0

1996 OH, 11, 4, 6; 1996 OJ, 7, 2, 1; 1997 OF₁, 6, 2, 1; 1997 PA₄, 6, 2, 1; 1997 QB₂, 5, 1, 0; 1997 RF₃, 12, 4, 6; 1997 RZ₆, 14, 4, 6; 1997 SL₁ *, 14, 5, 6; 1997 ST₁, 5, 1, 0; 1997 SH₂, 7, 2, 2; 1997 SP₃, 4, 2, 1; 1997 SQ₃ *, 11, 3, 3; 1997 SR₃ *, 11, 3, 3; 1997 SS₃ *, 10, 3, 3; 1997 SE₄, 7, 3, 3; 1997 SA₁₁ *, 7, 2, 3; 1997 SB₁₁ *, 5, 2, 1; 1997 SC₁₁ *, 6, 2, 1; 1997 TX₁₆ *, 15, 4, 5; 1997 TC₁₈ *, 8, 2, 1; 1997 TD₁₈ *, 8, 2, 1; (77), 5, 1, 0; [184, 22, 1997/09/09–1997/10/12]

817 Sudbury

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

[dicicco@skypub.com]

0.41-m Schmidt-Cassegrain + CCD

GSC

1991 VP₂, 2, 1, 0; [2, 1, 1997/10/01]

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

1981 EJ₂₂, 3, 1, 0; 1993 RQ₅, 6, 2, 3; 1997 PE₂, 3, 1, 0; 1997 PP₂, 2, 1, 0; 1997 QU, 6, 2, 3; 1997 QV, 3, 1, 0; [23, 6, 1997/09/19–1997/09/22]

828 Assonet

T. R. Perry, 2 Ken Street, Assonet MA 02702, U.S.A. [trperry@sprynet.com]

0.20-m $f/4.86$ Schmidt-Cassegrain + CCD

USNO-SA1.0

(1983), 4, 2, 3; [4, 1, 1997/10/09–1997/10/12]

844 Los Molinos

N. Sosa, Departamento de Astronomia, Facultad de Ciencias, Montevideo, Uruguay

[nsosa@fisica.edu.uy]

Observers N. Sosa, O. Mendez, J. Scheck

0.35-m reflector + CCD

GSC

(1386), 2, 1, 0; (1943), 7, 1, 0; (2938), 4, 2, 2; [13, 3, 1997/09/06–1997/09/16]

861 Barão Geraldo

P. R. Holvorcem, Departamento de Matematica/IMECC, Universidade Estadual de

Campiñas, Campiñas, SP, BR-13081-970, Brazil [holvorcem@ime.unicamp.br]

Observers P. R. Holvorcem, F. Giroto

Measurer P. R. Holvorcem

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

GSC

1991 NE₁, 6, 2, 1; 1993 KP, 6, 2, 21; 1994 XK, 5, 2, 21; 1997 RD₁, 6, 2, 10; 1997 SE₅, 5, 2, 1; 1997 TD, 7, 2, 1; (1373), 3, 1, 0; [38, 7, 1997/08/02–1997/10/05]

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

1997 SF₁₁ *, 11, 3, 2; 1997 SN₁₇, 6, 2, 1; 1997 TS₉ *, 6, 2, 4; [23, 3, 1997/09/28–1997/10/06]

886 Susono

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

0.25-m $f/6.3$ reflector + CCD

GSC

1977 QT₂, 4, 2, 6; 1978 TU₈, 2, 1, 0; 1980 FY, 4, 2, 6; 1989 TL₁₅, 4, 2, 5; 1989 UN₁, 4, 2, 5; 1993 TE, 4, 2, 5; 1995 GE, 2, 1, 0; 1997 TZ₁₇ *, 4, 2, 2; 4034 T-1, 4, 2, 5; (7865), 4, 2, 6; [36, 10, 1997/09/04–1997/10/10]

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

1997 RP₁, 4, 2, 2; 1997 RZ₇, 4, 2, 1; 1997 RF₈, 4, 2, 5; 1997 RP₉, 4, 2, 2; 1997 TF₁₉ *, 4, 2, 3; 1997 TG₁₉ *, 6, 3, 3; 1997 TH₁₉ *, 4, 2, 2; 1997 TJ₁₉ *, 4, 2, 2; [34, 8, 1997/09/28–1997/10/11]

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 BR, 2, 1, 0; 1997 SE₅, 3, 1, 0; (2043), 3, 1, 0; (4575), 3, 1, 0; [11, 4, 1997/06/29–1997/10/01]

900 Moriyama

Y. Ikari, Katsube 626, Moriyama, Shiga-Ken, 524 Japan [ikari@mx.biwa.or.jp]

0.25-m $f/6.3$ reflector + CCD

GSC

1977 QT₂, 2, 1, 0; 1989 UK₁, 2, 1, 0; 1991 QE, 2, 1, 0; 1991 RO₂₃, 2, 1, 0; 1997 QA₂, 2, 1, 0; 1997 SF₂, 4, 2, 4; 1997 SG₂, 4, 2, 4; 1997 SF₄ *, 12, 6, 18; 1997 SE₅, 2, 1, 0; 1997 SL₁₆, 2, 1, 0; 1997 SS₁₇ *, 7, 3, 11; 1997 SL₃₂, 2, 1, 0; 1997 TB₁₁ *, 4, 2, 2; 1997 TD₁₁, 4, 2, 1; (163), 3, 1, 0; (3750), 2, 1, 0; (5819), 2, 1, 0; [58, 17, 1997/09/24–1997/10/12]

905 Nachi-Katsuura Observatory

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

Observer Y. Shimizu

Measurer T. Urata

0.40-m *f*/3.3 Baker-Schmidt

1981 TH₃, 2, 1, 0; 1988 TQ₄, 2, 1, 0; 1993 OQ₈, 4, 2, 1; 1997 QW₁, 3, 1, 0; 1997 QB₂, 2, 1, 0; 1997 QC₂, 2, 1, 0; 1997 RP₃, 6, 3, 7; 1997 RQ₃, 6, 3, 7; 1997 RR₃, 3, 1, 0; 1997 SB₂₅ *, 4, 2, 2; 1997 SC₂₅ *, 4, 2, 2; 1997 SF₂₅ *, 6, 3, 6; 1997 SG₂₅ *, 5, 2, 1; 1997 SH₂₅ *, 5, 2, 1; 1997 SJ₂₅ *, 4, 2, 1; 1997 SK₂₅ *, 5, 2, 1; 1997 SL₂₅ *, 4, 2, 1; 1997 TD₁₇ *, 2, 1, 0; 1997 TE₁₇ *, 2, 1, 0; 1997 TF₁₇ *, 2, 1, 0; 1997 TG₁₇ *, 4, 2, 7; 1997 TH₁₇ *, 2, 1, 0; [79, 22, 1997/08/27–1997/10/06]

910 Caussols-ODAS

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[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, M. Hoffmann, G. Hahn

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

0.90-m Schmidt + CCD

1978 RE₃, 3, 1, 0; 1979 MS₂, 3, 1, 0; 1979 MM₆, 3, 1, 0; 1982 UD₂, 3, 1, 0; 1986 WV₁, 3, 1, 0; 1990 EZ₅, 3, 1, 0; 1991 AP₁, 3, 1, 0; 1991 RA₁₅, 3, 1, 0; 1991 RO₂₃, 3, 1, 0; 1991 VP₂, 3, 1, 0; 1992 EV₁₅, 3, 1, 0; 1994 YT, 3, 1, 0; 1995 DZ₈, 3, 1, 0; 1996 FQ₄, 3, 1, 0; 1996 HU, 3, 1, 0; 1996 HY₁₇, 3, 1, 0; 1997 OG₂, 3, 1, 0; 1997 OH₂, 6, 2, 2; 1997 OF₃, 6, 2, 2; 1997 PF₁, 3, 1, 0; 1997 QV, 3, 1, 0; 1997 QB₃, 3, 1, 0; 1997 QZ₄ *, 3, 1, 0; 1997 RO, 6, 2, 1; 1997 RH₃, 3, 1, 0; 1997 RH₄, 9, 3, 8; 1997 RT₈, 6, 2, 1; 1997 RX₈, 6, 2, 1; 1997 RA₁₀, 3, 1, 0; 1997 RN₁₀ *, 3, 1, 0; 1997 SL, 3, 1, 0; 1997 SX, 3, 1, 0; 1997 SZ₁, 3, 1, 0; 1997 SA₂, 3, 1, 0; 1997 SR₂, 3, 1, 0; 1997 SA₄, 6, 2, 1; 1997 SD₁₀, 6, 2, 1; 1997 SF₁₀, 6, 2, 1; 1997 ST₁₀, 3, 1, 0; 1997 SL₁₅ *, 6, 2, 4; 1997 SM₁₅ *, 6, 2, 4; 1997 SN₁₅ *, 6, 2, 4; 1997 SO₁₅ *, 6, 2, 4; 1997 SP₁₅ *, 6, 2, 4; 1997 SQ₁₅ *, 6, 2, 4; 1997 SR₁₅ *, 6, 2, 4; 1997 SS₁₅ *, 6, 2, 4; 1997 ST₁₅ *, 6, 2, 4; 1997 SU₁₅ *, 6, 2, 4; 1997 SV₁₅ *, 6, 2, 4; 1997 SW₁₅ *, 6, 2, 4; 1997 SX₁₅ *, 6, 2, 4; 1997 SY₁₅ *, 6, 2, 4; 1997 SZ₁₅ *, 6, 2, 4; 1997 SA₁₆ *, 6, 2, 4; 1997 SB₁₆ *, 6, 2, 4; 1997 SC₁₆ *, 4, 2, 4; 1997 SQ₁₇, 9, 3, 2; 1997 SN₂₅, 3, 1, 0; 1997 TX *, 6, 2, 1; 1997 TY *, 6, 2, 1; 1997 TZ *, 6, 2, 1; 1997 TA₁ *, 6, 2, 1; 1997 TB₁ *, 6, 2, 1; 1997 TC₁ *, 6, 2, 1; 1997 TD₁ *, 6, 2, 1; 1997 TE₁ *, 6, 2, 1; 1997 TF₁ *, 6, 2, 1; 1997 TG₁ *, 6, 2, 1; 1997 TH₁ *, 6, 2, 1; 1997 TJ₁ *, 6, 2, 1; 1997 TK₁ *, 6, 2, 1; 1997 TL₁ *, 6, 2, 1; 1997 TM₁ *, 6, 2, 1; 1997 TN₁ *, 6, 2, 1; 1997 TO₁ *, 6, 2, 1; 1997 TP₁ *, 6, 2, 1; 1997 TQ₁ *, 6, 2, 1; 1997 TR₁ *, 6, 2, 1; 1997 TS₁ *, 6, 2, 1; 1997 TT₁ *, 6, 2, 1; 1997 TU₁ *, 6, 2, 1; 1997 TV₁ *, 6, 2, 1; 1997 TW₁ *, 6, 2, 1; 1997 TX₁ *, 6, 2, 1; 1997 TY₁ *, 6, 2, 1; 1997 TZ₁ *, 6, 2, 1; 1997 TA₂ *, 6, 2, 1; 1997 TB₂ *, 6, 2, 1; 1997 TC₂ *, 6, 2, 1; 1997 TD₂ *, 6, 2, 1; 1997 TE₂ *, 6, 2, 1; 1997 TF₂ *, 6, 2, 1; 1997 TG₂ *, 6, 2, 1; 1997 TH₂ *, 6, 2, 1; 1997 TJ₂ *, 6, 2, 1; 1997 TK₂ *, 6, 2, 1; 1997 TL₂ *, 6, 2, 1; 1997 TM₂ *, 6, 2, 1; 1997 TN₂ *, 6, 2, 1; 1997 TO₂ *, 6, 2, 1; 1997 TP₂ *, 6, 2, 1; 1997 TQ₂ *, 6, 2, 1; 1997 TR₂ *, 6, 2, 1; 1997 TS₂ *, 6, 2, 1; 1997 TT₂ *, 6, 2, 1; 1997 TU₂ *, 6, 2, 1; 1997 TV₂ *, 6, 2, 1; 1997 TW₂ *, 6, 2, 1; 1997 TX₂ *, 6, 2, 1; 1997 TY₂ *, 6, 2, 1; 1997 TZ₂ *, 6, 2, 1; 1997 TA₃ *, 6, 2, 1; 1997 TB₃ *, 6, 2, 1; 1997 TC₃ *, 6, 2, 1; 1997 TD₃ *, 6, 2, 1; 1997 TE₃ *, 6, 2, 1; 1997 TF₃ *, 6, 2, 1; 1997 TG₃ *, 6, 2, 1; 1997 TH₃ *, 6, 2, 1; 1997 TJ₃ *, 6, 2, 1; 1997 TK₃ *, 6, 2, 1; 1997 TL₃ *, 6, 2, 1; 1997 TM₃ *, 6, 2, 1; 1997 TN₃ *, 6, 2, 1; 1997 TO₃ *, 6, 2, 1; 1997 TP₃ *, 6, 2, 1; 1997 TQ₃ *, 6, 2, 1; 1997 TR₃ *, 6, 2, 1; 1997 TS₃ *, 6, 2, 1; 1997 TT₃ *, 6, 2, 1; 1997 TU₃ *, 6, 2, 1; 1997 TV₃ *, 6, 2, 1; 1997 TW₃ *, 6, 2, 1; 1997 TX₃ *, 6, 2, 1; 1997 TY₃ *, 6, 2, 1; 1997 TZ₃ *, 6, 2, 1; 1997 TA₄ *, 6, 2, 1; 1997 TB₄ *, 6, 2, 1; 1997 TC₄ *, 6, 2, 1; 1997 TD₄ *, 6, 2, 1; 1997 TE₄ *, 6, 2, 1; 1997 TF₄ *, 6, 2, 1; 1997 TG₄ *, 6, 2, 1; 1997 TH₄ *, 6, 2, 1; 1997 TJ₄ *, 6, 2, 1; 1997 TK₄ *, 6, 2, 1; 1997 TL₄ *, 6, 2, 1; 1997 TM₄ *, 6, 2, 1; 1997 TN₄ *, 6, 2, 1; 1997 TO₄ *, 6, 2, 1; 1997 TP₄ *, 6, 2, 1; 1997 TQ₄ *, 6, 2, 1; 1997 TR₄ *, 6, 2, 1; 1997 TS₄ *, 6, 2, 1; 1997 TT₄ *, 6, 2, 1; 1997 TU₄ *, 6, 2, 1; 1997 TV₄ *, 6, 2, 1; 1997 TW₄ *, 6, 2, 1; 1997 TX₄ *, 6, 2, 1; 1997 TY₄ *, 6, 2, 1; 1997 TZ₄ *, 6, 2, 1; 1997 TA₅ *, 6, 2, 3; 1997 TB₅ *, 9, 3, 4; 1997 TC₅ *, 6, 2, 2; 1997 TD₅ *, 6, 2, 3; 1997 TE₅ *, 9, 3, 4; 1997 TF₅ *, 9, 3, 4; 1997 TG₅ *, 6, 2, 2; 1997 TH₅ *, 6, 2, 3; 1997 TJ₅ *, 6, 2, 1; 1997 TK₅ *, 6, 2, 1; 1997 TL₅ *, 6, 2, 1; 1997 TM₅ *, 6, 2, 1; 1997 TN₅ *, 6, 2, 1; 1997 TO₅ *, 6, 2, 1; 1997 TP₅ *, 6, 2, 1; 1997 TQ₅ *, 6, 2, 1; 1997 TR₅ *, 6, 2, 1; 1997 TS₅ *,

6, 2, 1; 1997 TT₅ *, 6, 2, 1; 1997 TU₅ *, 6, 2, 1; 1997 TV₅ *, 6, 2, 1; 1997 TW₅ *, 6, 2, 1; 1997 TX₅ *, 6, 2, 1; 1997 TY₅ *, 6, 2, 1; 1997 TZ₅ *, 6, 2, 1; 1997 TA₆ *, 6, 2, 1; 1997 TB₆ *, 6, 2, 1; 1997 TC₆ *, 6, 2, 1; 1997 TD₆ *, 6, 2, 1; 1997 TE₆ *, 6, 2, 1; 1997 TF₆ *, 6, 2, 1; 1997 TG₆ *, 6, 2, 1; 1997 TH₆ *, 6, 2, 1; 1997 TJ₆ *, 6, 2, 1; 1997 TK₆ *, 6, 2, 1; 1997 TL₆ *, 6, 2, 1; 1997 TM₆ *, 6, 2, 1; 1997 TN₆ *, 6, 2, 1; 1997 TO₆ *, 6, 2, 1; 1997 TP₆ *, 6, 2, 1; 1997 TQ₆ *, 6, 2, 1; 1997 TR₆ *, 6, 2, 1; 1997 TS₆ *, 6, 2, 1; 1997 TT₆ *, 6, 2, 1; 1997 TU₆ *, 6, 2, 1; 1997 TV₆ *, 6, 2, 1; 1997 TW₆ *, 6, 2, 1; 1997 TX₆ *, 6, 2, 1; 1997 TY₆ *, 6, 2, 1; 1997 TZ₆ *, 6, 2, 1; 1997 TA₇ *, 6, 2, 1; 1997 TB₇ *, 6, 2, 1; 1997 TC₇ *, 6, 2, 1; 1997 TD₇ *, 6, 2, 1; 1997 TE₇ *, 6, 2, 1; 1997 TF₇ *, 6, 2, 1; 1997 TG₇ *, 6, 2, 1; 1997 TH₇ *, 6, 2, 1; 1997 TJ₇ *, 6, 2, 1; 1997 TK₇ *, 6, 2, 1; 1997 TL₇ *, 6, 2, 1; 1997 TM₇ *, 6, 2, 1; 1997 TN₇ *, 6, 2, 1; 1997 TO₇ *, 6, 2, 1; 1997 TP₇ *, 6, 2, 1; 1997 TQ₇ *, 6, 2, 1; 1997 TR₇ *, 6, 2, 1; 1997 TS₇ *, 6, 2, 1; 1997 TT₇ *, 6, 2, 1; 1997 TU₇ *, 6, 2, 1; 1997 TV₇ *, 6, 2, 1; 1997 TW₇ *, 6, 2, 1; 1997 TK₁₀ *, 6, 2, 4; 1997 TL₁₀ *, 6, 2, 4; 1997 TM₁₀ *, 6, 2, 4; 1997 TN₁₀ *, 6, 2, 4; 1997 TO₁₀, 3, 1, 0; 1997 TX₁₀, 3, 1, 0; 1997 TB₁₇, 3, 1, 0; 2723 P-L, 6, 2, 3; 4581 P-L, 3, 1, 0; 6038 P-L, 9, 3, 2; 6065 P-L, 3, 1, 0; 1344 T-2, 3, 1, 0; 4196 T-2, 3, 1, 0; 5187 T-2, 3, 1, 0; 3437 T-3, 3, 1, 0; (187), 6, 2, 1; (309), 6, 2, 2; (314), 3, 1, 0; (855), 3, 1, 0; (1043), 6, 2, 2; (1328), 3, 1, 0; (1673), 6, 2, 1; (1699), 3, 1, 0; (1956), 3, 1, 0; (3268), 3, 1, 0; (3894), 3, 1, 0; (4196), 3, 1, 0; (4492), 3, 1, 0; (4607), 6, 2, 4; (4671), 3, 1, 0; (5458), 6, 2, 4; (5630), 9, 3, 3; (5633), 6, 2, 4; (6320), 3, 1, 0; (6457), 6, 2, 1; (6856), 6, 2, 1; (6966), 6, 2, 1; (7150), 6, 2, 4; (7455), 6, 2, 2; [1504, 273, 1997/07/01–1997/10/05]

949 Durtal

S. Charbonnel, La Cesvrie, F-49430 Durtal, France [scharbonnel@oceanet.fr]

0.20-m *f*/6.3 reflector + CCD

1997 SO₃, 5, 2, 2; (1264), 3, 1, 0; [8, 2, 1997/09/28–1997/10/04]

951 Highworth

J. W. Rock, 2 Spa Close, Highworth, Swindon, Wiltshire SN6 7PJ, England

[0C34@dia1.pipex.com]

0.30-m Newtonian reflector + CCD

(683), 4, 2, 4; (726), 4, 2, 4; (1306), 4, 2, 1; [12, 3, 1997/09/13–1997/09/22]

966 Church Stretton

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England [100336.3635@compuserve.com]

0.25-m Schmidt Cassegrain + focal reducer + CCD

1976 GD₂, 5, 2, 1; 1979 MA₆, 4, 2, 9; 1989 TL₁₅, 4, 2, 1; 1991 FB₄, 4, 2, 1; 1996 FL₅, 6, 2, 1; 1997 RB₇, 5, 2, 1; 1997 SM₃ *, 5, 2, 1; 1997 SN₃ *, 10, 4, 10; 3006 T-3, 4, 2, 9; (3299), 5, 2, 1; [52, 10, 1997/09/21–1997/10/03]

ORBITAL ELEMENTS

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C/1995 O1 (Hale-Bopp)

Epoch 1997 Mar. 13.0 TT = JDT 2450520.5

<i>T</i>	1997 Apr. 1.1371 TT		Nakano	
<i>q</i>	0.914163	(2000.0)	P	Q
<i>z</i>	+0.005334	ω 130.5878	−0.1331128	−0.1703081
	±0.000000	Ω 282.4706	+0.2822788	+0.9378096
<i>e</i>	0.995124	<i>i</i> 89.4298	+0.9500525	−0.3025032

From 2328 observations 1993 Apr. 27–1997 Oct. 12, mean residual 1''0.

C/1997 J1 (Mueller)

Epoch 1997 Apr. 22.0 TT = JDT 2450560.5

<i>T</i>	1997 May 3.8027 TT		Nakano	
<i>q</i>	2.302179	(2000.0)	P	Q
<i>z</i>	+0.003928	ω 98.9550	−0.5526230	−0.0376153
	±0.000017	Ω 277.0755	−0.2486781	+0.9609170
<i>e</i>	0.990956	<i>i</i> 122.9684	+0.7954665	+0.2742692

From 342 observations 1997 May 3–Oct. 12, mean residual 0''6.

C/1997 J2 (Meunier-Dupouy)

Epoch 1998 Mar. 8.0 TT = JDT 2450880.5

<i>T</i>	1998 Mar. 10.4514 TT		Marsden	
<i>q</i>	3.050994	(2000.0)	P	Q
<i>z</i>	−0.000275	ω 122.6796	+0.4717301	+0.7140814
	±0.000008	Ω 148.8428	−0.5763521	−0.1942471
<i>e</i>	1.000840	<i>i</i> 91.2731	+0.6672997	−0.6725740

From 570 observations 1997 May 5–Oct. 14, mean residual 0''6.

C/1997 L1 (Xinglong)

Epoch 1996 Nov. 13.0 TT = JDT 2450400.5

<i>T</i>	1996 Nov. 22.7006 TT		Nakano	
<i>q</i>	4.898999	(2000.0)	P	Q
<i>z</i>	+0.000448	ω 346.3418	−0.6361422	+0.0868778
	±0.000029	Ω 233.2990	−0.5870985	−0.6992316
<i>e</i>	0.997804	<i>i</i> 72.9836	−0.5006381	+0.7095967

From 164 observations 1997 June 3–Sept. 19, mean residual 0''7.

C/1997 P2 (Spacewatch)

Epoch 1997 Aug. 20.0 TT = JDT 2450680.5

<i>T</i>	1997 Aug. 31.1595 TT		Nakano	
<i>q</i>	4.263334	(2000.0)	P	Q
<i>z</i>	−0.006663	ω 24.5019	+0.8314103	+0.5138881
	±0.000033	Ω 302.9167	−0.5422610	−0.6673419
<i>e</i>	1.028407	<i>i</i> 14.5834	−0.1212847	+0.5390490

From 90 observations 1997 Aug. 12–Sept. 30, mean residual 0''6.

C/1997 R1 (SOHO)*T* 1997 Sept. 8.88 TT

<i>q</i>	0.0059	(2000.0)	P	Q
	ω 66.35		+0.22002	−0.96637
	Ω 346.77		−0.96163	−0.19193
<i>e</i>	1.0	<i>i</i> 144.43	+0.16391	+0.17115

From 14 observations 1997 Sept. 8.

C/1997 R2 (SOHO)*T* 1997 Sept. 15.72 TT

<i>q</i>	0.0058	(2000.0)	P	Q
	ω 79.79		+0.10793	−0.99292
	Ω 355.08		−0.97413	−0.09566
<i>e</i>	1.0	<i>i</i> 144.63	+0.19856	+0.07041

From 19 observations 1997 Sept. 14–15.

C/1997 R3 (SOHO)*T* 1997 Sept. 17.05 TT

<i>q</i>	0.0057	(2000.0)	P	Q
	ω 86.25		+0.10488	−0.99408
	Ω 2.79		−0.97221	−0.10846
<i>e</i>	1.0	<i>i</i> 144.55	+0.20931	−0.00569

From 23 observations 1997 Sept. 15–16.

C/1997 S1 (SOHO)*T* 1997 Sept. 30.83 TT

<i>q</i>	0.0068	(2000.0)	P	Q
	ω 77.84		+0.19866	−0.98003
	Ω 359.13		−0.95856	−0.19242
<i>e</i>	1.0	<i>i</i> 144.43	+0.20419	+0.05016

From 25 observations 1997 Sept. 29–30.

C/1997 T1 (Utsunomiya)*T* 1997 Dec. 10.0570 TT

<i>q</i>	1.359850	(2000.0)	P	Q
	ω 95.8952		+0.4326826	−0.6397543
	Ω 53.7059		−0.7203029	−0.6690368
<i>e</i>	1.0	<i>i</i> 127.9898	+0.5421711	−0.3782911

From 185 observations 1997 Oct. 5–13.

C/1997 T2 (SOHO)*T* 1997 Oct. 4.38 TT

<i>q</i>	0.0082	(2000.0)	P	Q
	ω 78.19		+0.27942	−0.95858
	Ω 5.45		−0.93599	−0.28476
<i>e</i>	1.0	<i>i</i> 144.48	+0.21411	+0.00613

From 30 observations 1997 Oct. 3–4.

P/1997 T3*T* 1998 Jan. 24.8092 TT

<i>q</i>	4.192442	(2000.0)	P	Q
<i>n</i>	0.0557993	ω 327.4510	+0.8476256	−0.5253988
<i>a</i>	6.782406	Ω 64.4172	+0.5026964	+0.7505204
<i>e</i>	0.381865	<i>i</i> 4.7108	+0.1697860	+0.4008433
<i>P</i>	17.7			

From 57 observations 1997 Oct. 5–12.

69P/Taylor

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

1997 Dec. 12.2607 TT				Nakano			
<i>q</i>	1.947834	(2000.0)		P		Q	
<i>n</i>	0.1414849	ω	355.3724	−0.2506692		−0.9093139	
<i>a</i>	3.647506	Ω	108.8575	+0.8990729		−0.3458792	
<i>e</i>	0.465982	<i>i</i>	20.5468	+0.3589329		+0.2313347	
<i>P</i>	6.97						

From 53 observations 1990–1997, mean residual 1″.1.

129P/Shoemaker-Levy 3

Epoch 1998 Mar. 8.0 TT = JDT 2450880.5

1998 Mar. 4.8901 TT				Nakano			
<i>q</i>	2.817340	(2000.0)		P		Q	
<i>n</i>	0.1359413	ω	181.3813	−0.5748215		−0.8150499	
<i>a</i>	3.746005	Ω	303.7112	+0.7515908		−0.4907983	
<i>e</i>	0.247908	<i>i</i>	5.0084	+0.3235607		−0.3079136	
<i>P</i>	7.25						

From 52 observations 1991–1997, mean residual 0″.6.

133P/Elst-Pizarro

Epoch 1996 Apr. 27.0 TT = JDT 2450200.5

1996 Apr. 18.4794 TT				Marsden			
<i>q</i>	2.627698	(2000.0)		P		Q	
<i>n</i>	0.1757755	ω	133.3321	+0.4003412		+0.9163298	
<i>a</i>	3.156195	Ω	160.2629	−0.8475863		+0.3736630	
<i>e</i>	0.167447	<i>i</i>	1.3846	−0.3483163		+0.1439295	
<i>P</i>	5.61						

From 164 observations 1979–1997, mean residual 0″.6.

(7909)* 1975 SK = 1981 WZ₈ = 1986 RG₁₃ = 1991 NB₅

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

Id. G. V. Williams (*MPC* 19855)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

1997 Dec. 18.0 TT				Williams			
<i>M</i>	335.87470	(2000.0)		P		Q	
<i>n</i>	0.17527278	ω	324.08580	+0.83082585		−0.55513647	
<i>a</i>	3.1622271	Ω	69.68051	+0.51990948		+0.74895217	
<i>e</i>	0.1900686	<i>i</i>	2.40762	+0.19855111		+0.36179298	
<i>P</i>	5.62	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 09 30	675	0.4+	1.0−	1992 09 30	801	1.2−	0.1−	1994 02 11	675	0.5+	0.5−
1975 10 01	675	0.4+	0.1−	1992 10 21	675	0.2+	1.2+	1994 02 11	675	1.0−	0.9+
1975 10 02	675	0.0	0.1+	1992 10 21	675	0.2+	0.2+	1997 08 31	610	0.4+	0.4−
1981 11 25	095	(2.9+	2.8+)	1992 10 22	675	0.4−	0.4+	1997 08 31	610	0.1−	0.2−
1986 09 09	095	1.8−	0.3+	1992 10 22	675	0.1+	0.4−	1997 08 31	610	0.4−	0.1−
1991 07 10	809	0.2−	0.2−	1992 10 29	801	0.2−	0.3+	1997 09 28	684	0.1−	0.1−
1991 07 10	809	0.3+	0.2+	1992 11 21	801	0.6+	0.1+	1997 09 28	684	0.0	0.1−
1991 07 10	809	0.5+	0.2+	1992 11 21	801	0.7+	0.1−	1997 09 28	684	0.0	0.1−
1991 07 11	809	0.1−	0.5+	1992 11 27	675	0.4+	0.5−	1997 09 29	684	0.0	0.2−
1991 07 11	809	0.3+	0.7+	1992 11 27	675	0.1+	1.0+	1997 09 29	684	0.1+	0.1−
1991 07 11	809	0.2+	0.4+	1992 11 29	801	0.3−	0.0	1997 09 29	684	0.1+	0.4−
1992 09 30	801	0.5+	0.1−	1992 11 29	801	0.3−	0.0				

(7910)* 1976 GD₂ = A908 AD = 1986 EC₂

Discovered 1976 Apr. 1 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. E. Bowell (*MPC* 10830), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

1997 Dec. 18.0 TT				Williams			
<i>M</i>	136.46405	(2000.0)		P		Q	
<i>n</i>	0.29242844	ω	22.60344	−0.70168321		+0.71022535	
<i>a</i>	2.2479655	Ω	202.96247	−0.67391993		−0.68744144	
<i>e</i>	0.1384528	<i>i</i>	8.36429	−0.23124141		−0.15167143	
<i>P</i>	3.37	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1908 01 05	024	(12.1+	3.9+)	1990 07 28	675	(3.1+	0.5−)	1996 03 22	801	0.5−	0.8−
1953 09 06	675	0.7−	0.9−	1990 07 30	675	0.6+	1.8−	1996 03 22	801	0.1−	0.6−
1953 09 06	675	0.4+	0.2+	1990 07 30	675	0.1+	1.5−	1996 03 22	566	0.9−	1.3−
1976 04 01	095	0.4−	0.7+	1991 12 02	675	0.1−	1.0+	1996 03 22	566	0.9−	0.9−
1976 04 04	095	(2.0−	8.5−)	1991 12 02	675	0.2+	0.4−	1996 03 22	566	0.6−	1.1−
1976 04 24	808	0.5−	1.3−	1993 04 23	675	0.6−	2.3+	1996 03 24	801	0.1−	0.4−
1976 04 25	808	0.3+	0.8−	1993 04 23	675	0.9−	2.1+	1996 03 24	801	0.1−	0.8−
1976 04 29	808	1.6+	0.1−	1993 04 25	675	(0.5−	5.2+)	1996 04 07	689	0.3−	0.2+
1976 04 29	808	0.9+	0.3−	1993 04 25	675	(0.0	4.3+)	1997 08 08	587	1.1+	0.5+
1976 05 02	808	0.9−	0.8−	1993 05 17	675	0.6−	0.5+	1997 08 08	587	0.9+	0.6+
1976 05 02	808	(2.8−	3.4−)	1993 05 17	675	0.8−	1.1+	1997 08 12	587	0.5+	1.0−
1976 05 02	095	0.9−	0.2−	1993 05 19	675	0.1−	1.2+	1997 08 13	587	1.0+	0.3+
1976 05 03	808	0.1+	0.8−	1993 05 19	675	0.6+	0.7+	1997 08 14	587	0.7+	0.6+
1976 05 03	808	1.9−	0.2−	1993 05 24	801	0.3+	0.1−	1997 09 21	966	0.0	1.5−
1986 03 06	688	2.2+	0.2−	1993 05 24	801	0.4+	0.1−	1997 09 21	966	0.4−	0.1+
1986 03 06	688	1.8+	0.6+	1993 05 26	801	0.2+	0.2−	1997 09 21	966	0.4+	0.2−
1986 05 10	801	(5.4+	1.8+)	1993 05 26	801	0.3+	0.1−	1997 09 22	966	0.5−	0.7+
1987 09 02	095	(1.2+	3.2−)	1994 10 08	691	0.8−	0.4+	1997 09 22	966	0.5−	0.5+
1990 07 25	675	0.7+	0.9−	1994 10 08	691	0.9−	0.2+				
1990 07 28	675	0.0	1.0−	1994 10 08	691	0.8−	0.1+				

(7911)* 1977 RZ₈ = 1987 SS₁₉

Discovered 1977 Sept. 8 by E. Bowell at Palomar.

Id. A. Lowe (*MPC* 15875)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

1997 Dec. 18.0 TT				Williams			
<i>M</i>	100.62157	(2000.0)		P		Q	
<i>n</i>	0.19966025	ω	277.03516	−0.19331776		+0.97741211	
<i>a</i>	2.8991786	Ω	341.15149	−0.76303164		−0.20449288	
<i>e</i>	0.1618535	<i>i</i>	15.32853	−0.61677464		−0.05336890	
<i>P</i>	4.94	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 09 08	675	0.2−	0.3+	1991 05 08	474	0.2−	0.1+	1997 08 31	587	0.9−	0.9−
1977 09 09	675	0.0	0.5−	1991 05 08	474	0.1−	0.3+	1997 08 31	587	0.5−	0.8−
1982 09 14	675	0.4+	0.1+	1991 06 11	474	0.4−	0.1−	1997 09 25	610	0.4+	0.8−
1987 09 17	095	(0.2−	2.8−)	1991 06 11	474	0.2+	0.4−	1997 09 25	610	0.5+	0.5−
1987 09 23	095	(2.8−	3.0+)	1993 11 16	675	0.5+	1.0−	1997 09 25	610	0.4+	0.3−
1990 01 26	675	0.3+	1.1−	1993 11 16	675	1.6−	0.5+	1997 09 26	610	0.9+	1.1+
1990 01 26	675	0.4+	1.4−	1993 12 13	675	0.5−	0.3+	1997 09 26	610	0.8+	0.6+
1990 02 20	675	0.5+	0.9+	1997 08 29	587	1.0−	1.2+	1997 09 26	610	0.7+	0.2+
1990 02 20	675	0.5−	0.8+	1997 08 29	587	1.1−	0.6+				

(7912)* 1978 PO₃ = 1986 UN

Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical

Observatory.

Id. B. G. Marsden (*MPC* 11504)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

1997 Dec. 18.0 TT				Marsden			
<i>M</i>	50.93718	(2000.0)		P		Q	
<i>n</i>	0.25805794	ω	272.92550	+0.48957195		+0.87193227	
<i>a</i>	2.4433812	Ω	26.39090	−0.79333596		+0.44888905	
<i>e</i>	0.1318678	<i>i</i>	0.94220	−0.36185267		+0.19553195	
<i>P</i>	3.82	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 04 17	675	(34.3−	13.1+)	1990 11 20	801	1.4+	0.2−	1996 03 23	566	0.0	0.6+
1978 08 08	095	0.2+	0.9+	1990 11 20	801	1.3+	0.1−	1996 03 23	566	0.1+	0.6+

1978 09 03	095	0.6−	0.1+	1992 02 04	675	0.4+	1.2+	1997 08 04	691	0.9−	0.0
1978 09 06	809	(3.9+	0.7−)	1992 02 04	675	(2.7+	2.2−)	1997 08 04	691	0.8−	0.1+
1978 09 28	095	1.8+	0.0	1992 02 27	675	0.1+	1.2−	1997 08 04	691	0.9−	0.2+
1982 09 21	095	0.0	1.7−	1992 04 06	809	0.4+	1.3−	1997 09 26	426	0.4+	0.2+
1982 09 27	095	(3.2+	1.4+)	1994 11 28	010	0.1+	1.1+	1997 09 26	426	0.4+	0.5−
1986 10 07	675	(11.2−	0.0)	1994 11 28	010	0.8+	0.7+	1997 09 26	426	0.3+	0.1+
1986 10 07	675	(11.9−	0.3−)	1994 11 29	010	0.2−	1.5+	1997 09 28	426	0.5+	0.0
1986 10 08	675	(13.6−	0.3+)	1996 03 18	691	0.5−	0.1+	1997 09 28	426	0.4+	0.0
1986 10 08	675	(12.6−	0.8+)	1996 03 18	691	0.6−	0.0	1997 09 28	426	0.8+	0.1+
1986 10 28	046	(1.4−	2.8−)	1996 03 18	691	0.4−	0.2+	1997 10 02	684	0.1+	0.1−
1986 10 28	046	1.7−	1.8−	1996 03 19	566	0.5+	1.3−	1997 10 02	684	0.2+	0.1−
1986 11 03	046	1.4−	0.1+	1996 03 19	566	0.6+	0.9−	1997 10 02	684	0.4+	0.1−
1986 11 03	046	1.1−	1.2+	1996 03 19	566	0.2+	0.6−	1997 10 03	684	0.2+	0.2+
1986 11 07	046	1.4−	1.8−	1996 03 20	566	0.6−	0.4+	1997 10 03	684	0.1−	0.1+
1986 11 07	046	2.5+	2.1−	1996 03 20	566	0.9−	0.1−	1997 10 03	684	0.2−	0.2+
1986 11 09	046	0.6+	1.1+	1996 03 20	566	0.8−	0.2+				
1986 11 09	046	1.0−	0.6+	1996 03 23	566	0.3+	0.3+				

(7913)* 1978 TU₈ = 1981 JC₅ = 1990 EN₇ = 1992 PF₄

Discovered 1978 Oct. 9 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. E. Bowell (*MPC* 20806), A. Lowe (*ibid.*), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	333.82389		(2000.0)	P		Q
<i>n</i>	0.20037821	ω	176.45450	+0.85510416	−0.51821499	
<i>a</i>	2.8922493	Ω	214.77276	+0.47498959	+0.79527480	
<i>e</i>	0.0619209	<i>i</i>	1.58896	+0.20780222	+0.31462870	
<i>P</i>	4.92	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1978 10 09	095	0.0	0.0	1990 03 04	809	0.5+	0.4−	1997 09 04	886	0.4+	0.7−
1978 10 28	675	2.1−	1.5+	1992 08 02	675	1.5−	0.4−	1997 09 04	886	0.4−	0.6−
1978 10 29	675	0.1−	1.4+	1992 08 02	675	1.1−	1.0−	1997 09 06	610	1.8+	1.3+
1978 11 01	095	1.5+	0.5−	1992 08 06	675	0.6−	1.7−	1997 09 06	610	1.4+	1.3+
1981 05 08	675	2.2+	0.8−	1992 08 06	675	(0.7−	2.4−)	1997 09 06	610	0.9+	1.3+
1981 05 09	675	0.4−	0.6+	1993 11 13	033	0.6−	0.5−	1997 09 25	610	1.4−	0.4−
1990 03 03	809	0.4−	0.2+	1993 11 13	033	0.3−	0.8−	1997 09 25	610	1.3−	0.4−
1990 03 03	809	0.3−	0.3+	1996 05 07	689	1.9−	1.5+	1997 09 25	610	1.3−	0.5−
1990 03 03	809	0.0	0.3+	1997 08 31	610	0.2+	0.2+	1997 09 26	610	1.5+	0.5+
1990 03 04	809	0.2+	0.1+	1997 08 31	610	0.1+	0.4+	1997 09 26	610	1.8+	0.2−
1990 03 04	809	0.5+	0.3−	1997 08 31	610	0.1+	0.6+	1997 09 26	610	(2.1+	0.8−)

(7914)* 1978 UW₇ = 1988 BY₄

Discovered 1978 Oct. 27 by C. M. Olmstead at Palomar.

Id. S. Nakano (*MPC* 20921)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	74.24948		(2000.0)	P		Q
<i>n</i>	0.25803062	ω	71.39788	+0.32990847	+0.93519879	
<i>a</i>	2.4435537	Ω	218.63843	−0.92507285	+0.29309852	
<i>e</i>	0.2175596	<i>i</i>	11.89486	−0.18815052	+0.19873724	
<i>P</i>	3.82	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1954 03 28	675	0.1+	0.3+	1988 01 27	413	(4.0−	0.4+)	1997 09 27	138	0.6+	0.4+
1954 03 28	675	0.9−	0.4−	1988 01 27	413	1.9+	0.6−	1997 09 28	138	0.9+	0.1+
1978 10 27	675	0.4+	0.1+	1990 11 16	675	0.9−	1.5+	1997 09 28	138	0.7+	0.6+
1978 10 28	675	0.9+	0.7−	1990 11 16	675	0.2−	0.1−	1997 09 28	138	0.6+	0.6+
1978 10 29	675	0.5−	0.3−	1997 08 08	587	0.2−	0.2+	1997 09 28	355	0.3−	0.7−
1978 11 28	675	0.2+	0.4+	1997 08 08	587	0.3−	0.2−	1997 09 28	355	0.6−	0.5−
1978 11 29	675	0.3+	0.2+	1997 08 13	587	0.7−	0.3−	1997 09 28	355	0.0	0.4−
1988 01 26	413	0.8+	1.1−	1997 08 14	587	0.4−	0.1+	1997 09 28	355	0.6−	0.3−
1988 01 26	413	1.8−	0.1+	1997 08 14	587	0.4−	0.6−				

(7915)* 1979 MA₆ = 1990 SX₇

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

Id. B. G. Marsden (*MPC* 17426)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	280.89072		(2000.0)	P		Q
<i>n</i>	0.28061197	ω	329.89863	−0.29323600	−0.95352207	
<i>a</i>	2.3106381	Ω	137.04687	+0.89620052	−0.29941536	
<i>e</i>	0.0590462	<i>i</i>	5.84076	+0.33292232	−0.03385413	
<i>P</i>	3.51	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1979 06 23	413	1.7+	0.1+	1990 09 25	809	0.4−	0.9−	1996 04 08	608	0.0	0.4−
1979 06 24	413	0.0	0.0	1990 09 25	809	0.3−	0.6−	1996 04 08	608	0.2−	0.7−
1979 06 25	413	0.6+	0.3+	1990 09 25	809	1.1−	0.3−	1996 04 09	608	0.4+	0.4−
1979 06 29	413	0.6−	0.5+	1992 02 25	675	0.1−	0.6−	1996 04 09	608	0.7+	0.4−
1979 07 24	413	0.7+	1.1−	1992 02 25	675	0.3+	0.4+	1997 08 06	557	0.1−	0.3+
1979 07 25	675	0.8+	1.9+	1992 03 02	809	0.3−	0.1−	1997 08 06	557	0.1+	0.4+
1979 07 27	675	1.2−	0.8−	1992 03 05	809	1.2−	0.1+	1997 08 08	557	0.2+	0.0
1990 09 14	809	0.0	1.8−	1992 03 07	809	0.9−	0.6−	1997 08 08	557	1.4+	0.3−
1990 09 14	809	(0.4+	2.3−)	1992 04 04	809	1.0−	0.1+	1997 09 22	966	(3.6−	0.8+)
1990 09 14	809	(0.3−	2.6−)	1994 11 04	675	1.5+	1.4+	1997 09 22	966	0.9+	1.1−
1990 09 22	809	0.3+	0.3−	1994 11 04	675	1.4+	0.4+	1997 10 01	966	0.3−	1.0+
1990 09 22	809	0.5+	1.0−	1994 11 05	675	0.9+	1.2−	1997 10 01	966	0.8+	1.9+
1990 09 22	809	0.8−	2.0−	1994 11 05	675	(0.9+	2.8−)				

(7916)* 1981 EN = 1981 EG₃₅

Discovered 1981 Mar. 1 by H. Debehogne and G. DeSanctis at the European Southern Observatory.

Id. A. Lowe (*MPC* 8665), W. Landgraf (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	231.18905		(2000.0)	P		Q
<i>n</i>	0.27088231	ω	350.91463	−0.90725132	−0.41811845	
<i>a</i>	2.3656416	Ω	164.13164	+0.39558494	−0.88506307	
<i>e</i>	0.1624075	<i>i</i>	9.58301	+0.14285517	−0.20454907	
<i>P</i>	3.64	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1978 07 05	675	1.1−	0.3+	1981 03 07	809	0.8−	0.7−	1996 06 06	327	0.5+	0.1+
1978 07 06	675	0.5+	0.4+	1981 03 07	809	0.6−	0.8−	1996 06 06	327	0.3+	0.7+
1981 02 09	413	1.4−	0.7+	1981 03 07	809	0.5−	1.0−	1996 06 07	684	0.4+	0.3−
1981 02 13	413	0.8−	0.0	1981 03 07	413	0.6−	1.9+	1996 06 07	684	0.1−	0.0
1981 03 01	809	1.2−	0.8−	1981 03 07	413	0.3+	0.2+	1996 06 07	327	0.6−	0.2−
1981 03 01	809	0.3−	0.8−	1981 03 08	809	0.8+	0.7+	1996 06 07	327	0.7−	0.0
1981 03 01	809	0.6+	0.6−	1981 03 08	809	1.2+	0.6+	1996 06 07	327	0.5+	0.1+
1981 03 02	809	0.9−	0.2+	1981 03 08	809	1.1+	0.8+	1996 06 07	327	0.3+	0.1+
1981 03 02	809	0.5−	0.1−	1981 03 09	809	0.6+	1.3+	1996 06 08	684	0.2−	0.1−
1981 03 02	809	0.3−	0.1−	1981 03 09	809	0.5+	1.3+	1996 06 08	684	0.1−	0.2−
1981 03 02	413	0.1−	0.3+	1981 03 09	809	0.5+	1.4+	1996 06 08	684	0.3−	0.1−
1981 03 03	809	0.1+	0.2+	1981 03 09	809	1.2+	1.4+	1996 06 09	684	0.2−	0.2−
1981 03 03	809	0.6−	0.3+	1981 03 10	809	0.8+	1.0−	1996 06 09	684	0.2−	0.2−
1981 03 03	809	1.5−	0.1+	1981 03 10	809	1.0+	0.9−	1996 06 09	684	0.1−	0.0
1981 03 03	413	1.8−	0.7+	1981 03 10	809	1.3+	0.9−	1997 08 07	557	0.9+	0.4−
1981 03 03	413	0.2−	0.4−	1981 03 16	809	0.1−	0.0	1997 08 08	557	0.5+	0.1−
1981 03 04	809	0.4+	1.4−	1981 03 16	809	0.1+	0.1+	1997 08 09	557	0.2+	0.8−
1981 03 04	809	0.7+	1.1−	1981 03 16	809	0.4+	0.1+	1997 08 09	557	0.5+	0.7−
1981 03 04	809	1.2+	1.0−	1981 03 17	809	2.2−	0.6−	1997 09 20	557	0.8−	0.8−
1981 03 05	809	0.4+	0.1+	1981 03 17	809	0.6−	1.7−	1997 09 20	557	0.3−	0.6−
1981 03 05	809	0.1−	0.1−	1993 08 18	010	(2.9+	0.2−)	1997 09 20	557	0.1−	0.1−
1981 03 05	809	0.5−	0.4−	1993 08 18	010	1.5+	0.1−	1997 09 21	557	0.3−	0.1+
1981 03 06	809	0.3+	0.3+	1993 08 18	010	(2.6+	0.2−)	1997 09 21	557	0.4−	0.2+
1981 03 06	809	0.6+	0.1−	1996 06 06	327	0.0	0.1+				
1981 03 06	809	0.8+	0.6−	1996 06 06	327	0.2+	0.1+				

1997 OCT. 16

M.P.C. 30741

Id. G. V. Williams (d, *MPC* 18666; *MPC* 23856)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	23.78110		(2000.0)	P		Q	
<i>n</i>	0.26297740	ω	11.67999	+0.88760580	+0.45075353		
<i>a</i>	2.4128136	Ω	321.07542	-0.43381028	+0.74896003		
<i>e</i>	0.1281535	<i>i</i>	8.67337	-0.15480497	+0.48567492		
<i>P</i>	3.75	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 02 12	413	0.7+	0.7+	1981 04 09	413	0.8-	1.4-	1997 08 02	124	0.4-	0.8+
1981 02 14	413	0.9-	0.8+	1981 04 09	413	0.1-	0.5-	1997 08 03	124	0.6-	0.3-
1981 03 01	413	0.9-	2.3+	1981 04 29	413	0.1-	0.2-	1997 08 03	124	0.9-	0.2+
1981 03 02	413	(4.0-	0.9-)	1986 09 11	095	1.8-	0.5+	1997 08 03	124	0.8-	0.3+
1981 03 02	413	1.0+	1.2-	1986 09 11	054	2.2+	1.0-	1997 08 12	355	0.3-	0.4+
1981 03 07	413	1.4-	0.7+	1992 02 25	675	1.2+	1.4+	1997 08 12	355	0.5+	0.6-
1981 03 07	413	0.9+	0.5+	1992 02 25	675	0.0	0.3-	1997 08 12	355	0.0	0.2+
1981 03 10	413	0.1-	0.7-	1992 02 29	809	0.1-	0.3+	1997 08 12	355	0.3-	1.0-
1981 03 10	413	2.1+	0.5-	1992 03 03	809	0.4+	0.4-	1997 08 12	355	0.1+	0.2-
1981 03 12	413	1.0-	0.8-	1992 03 08	809	0.9-	0.3-	1997 09 28	684	0.1+	0.0
1981 03 12	413	2.1-	0.5+	1997 07 27	610	0.7+	0.3+	1997 09 28	684	0.3+	0.1+
1981 04 07	413	(2.9-	0.5+)	1997 07 27	610	0.4+	0.4+	1997 09 28	684	0.3+	0.1+
1981 04 07	413	0.6+	0.1-	1997 07 27	610	0.1-	0.5+	1997 09 29	684	0.5+	0.2-
1981 04 08	413	(2.7+	1.2-)	1997 08 02	124	0.0	0.4-	1997 09 29	684	0.5+	0.1-
1981 04 08	413	1.2+	1.1-	1997 08 02	124	0.0	0.1+	1997 09 29	684	0.1+	0.1-

(7918)* 1981 EJ₂₂

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

<i>M</i>	50.44173		(2000.0)	P		Q	
<i>n</i>	0.25818347	ω	104.30442	+0.38413342	+0.92315988		
<i>a</i>	2.4425892	Ω	188.33077	-0.88146674	+0.36194027		
<i>e</i>	0.2262616	<i>i</i>	5.84014	-0.27469603	+0.12951861		
<i>P</i>	3.82	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 09 01	675	0.3+	0.0	1981 03 11	413	0.3+	0.1+	1993 06 18	801	0.0	0.5+
1978 09 02	675	0.4-	0.5+	1981 03 11	413	1.0+	0.3+	1993 06 18	801	0.2+	0.3+
1981 02 09	413	(2.2+	2.6-)	1981 03 16	413	1.9-	0.5-	1993 07 17	801	0.2-	0.1+
1981 02 12	413	0.2+	1.7-	1981 03 29	413	1.4+	0.1-	1993 07 17	801	0.1+	0.0
1981 02 13	413	1.4+	0.7-	1981 03 29	413	0.9+	0.4+	1993 07 22	801	0.1+	0.7-
1981 03 01	413	(4.9+	1.9-)	1981 04 08	413	0.3+	0.2+	1993 07 22	801	0.2-	0.3-
1981 03 02	413	1.2-	0.2+	1981 04 08	413	(4.0+	2.4-)	1997 09 01	566	0.1+	0.2-
1981 03 02	413	0.6+	1.0-	1981 04 11	413	1.0+	0.2-	1997 09 01	566	0.1-	0.2-
1981 03 03	413	(2.8-	0.7+)	1981 04 11	413	(2.8+	1.2-)	1997 09 01	566	0.3-	0.0
1981 03 03	413	1.7-	0.9+	1981 04 26	413	(1.9+	3.5-)	1997 09 22	824	0.3+	0.1+
1981 03 07	413	0.1+	0.4+	1981 04 30	413	1.4-	0.2+	1997 09 22	824	0.1-	0.0
1981 03 07	413	1.5-	2.0+	1981 05 02	413	0.8+	0.9-	1997 09 22	824	0.2+	0.2-

(7919)* 1981 EZ₂₇ = 1978 NV₆ = 1988 DZ₂

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

Id. D. W. E. Green (*MPC* 12706), S. Nakano (*MPC* 21932)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	36.43238		(2000.0)	P		Q	
<i>n</i>	0.25835592	ω	239.13290	+0.48017818	+0.87698944		
<i>a</i>	2.4415021	Ω	59.57449	-0.79755779	+0.44497464		
<i>e</i>	0.1192082	<i>i</i>	1.18579	-0.36514448	+0.18134798		
<i>P</i>	3.81	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 07 10	675	(0.1-	3.7-)	Y 1981 04 10	413	1.6-	0.5+	1988 02 23	809	0.2-	0.3-
1978 07 11	675	(3.7+	3.0+)	Y 1981 04 10	413	1.2+	0.9-	1989 05 30	675	(3.2-	0.6+)
1978 07 13	675	(7.0-	0.1+)	Y 1981 04 26	413	(4.8+	1.8-)	1989 05 30	675	0.5-	0.6+

1981 02 09	413	0.1+	0.5-	1981 05 01	413	1.5+	0.1-	1994 11 28	675	1.3+	0.2+
1981 02 12	413	0.4-	0.4-	1983 12 30	675	0.2+	1.3-	1994 11 28	675	0.6+	0.5+
1981 02 13	413	1.1-	0.7+	1983 12 30	675	1.6-	1.2-	1996 02 15	691	0.4-	0.2-
1981 03 02	413	(4.3+	3.3-)	1988 02 15	809	1.0+	1.4+	1996 02 15	691	0.3-	0.4-
1981 03 02	413	0.8+	1.3-	1988 02 16	809	0.9-	1.4+	1996 02 15	691	0.4-	0.2-
1981 03 06	413	(2.5-	0.6-)	1988 02 16	809	0.1-	0.8+	1996 02 20	566	0.5+	0.2+
1981 03 11	413	0.4-	1.1-	1988 02 16	809	1.2-	1.5+	1996 02 20	566	0.4+	0.0
1981 03 15	413	1.0-	0.0	1988 02 17	809	1.1+	0.2-	1996 02 20	566	0.4+	0.1+
1981 03 15	413	0.7+	0.5-	1988 02 17	809	1.3+	0.1-	1997 07 09	689	0.8+	0.8+
1981 04 05	413	(3.8+	0.8-)	1988 02 17	809	1.2+	0.0	1997 09 21	684	0.9+	0.1-
1981 04 05	413	2.1+	0.4-	1988 02 21	809	0.7-	0.1+	1997 09 21	684	0.2-	0.3-
1981 04 06	413	1.6-	1.2+	1988 02 21	809	0.9-	0.1+	1997 09 21	684	1.6-	0.3-
1981 04 06	413	0.6+	0.2+	1988 02 21	809	1.7-	0.6+	1997 09 22	684	1.1-	0.5+
1981 04 07	413	0.7-	0.8+	1988 02 23	809	0.1+	0.6-	1997 09 22	684	0.1-	0.2-
1981 04 07	413	0.8+	0.6-	1988 02 23	809	0.4-	0.6+	1997 09 22	684	0.0	0.1-

(7920)* 1981 XM₂ = 1981 YK = 1991 CN₂

Discovered 1981 Dec. 3 at the Purple Mountain Observatory.

Id. S. Nakano (d, *MPC* 10752), G. V. Williams (*MPC* 17957)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	305.76553		(2000.0)	P		Q	
<i>n</i>	0.23518910	ω	173.21035	+0.31164965	-0.93227835		
<i>a</i>	2.5993091	Ω	258.50714	+0.86273794	+0.35862825		
<i>e</i>	0.1071771	<i>i</i>	10.80222	+0.39819310	-0.04735887		
<i>P</i>	4.19	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1951 08 11	675	0.2-	0.4-	1982 01 20	095	(1.6+	2.7-)	1997 10 10	557	0.1+	0.4-
1951 08 11	675	0.0	0.9+	1991 02 11	413	0.8+	0.7+	1997 10 10	557	0.2+	0.3-
1981 12 03	330	2.0+	0.9+	1991 02 12	413	0.4-	0.3+	1997 10 12	557	0.6+	0.5+
1981 12 30	801	0.9-	0.6-	1993 11 11	801	0.2-	0.1-	1997 10 12	557	0.3+	0.2-
1981 12 31	801	0.5-	1.0-	1993 11 12	801	0.1+	0.1-	1997 10 12	557	0.2-	0.1+
1981 12 31	801	0.7-	0.8+	1997 08 25	367	0.5-	0.2+				
1982 01 19	095	(3.9+	4.3-)	1997 08 25	367	0.4-	0.6+				

(7921)* 1982 RF = 1993 OY₁ = 1995 AY₄

Discovered 1982 Sept. 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. G. V. Williams (*MPC* 25423)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	22.93255		(2000.0)	P		Q	
<i>n</i>	0.26388887	ω	188.16083	+0.99890974	-0.04652475		
<i>a</i>	2.4072544	Ω	174.50142	+0.04477628	+0.93155903		
<i>e</i>	0.2269878	<i>i</i>	2.29898	+0.01320648	+0.36060119		
<i>P</i>	3.73	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1955 04 16	675	0.3-	0.5-	1993 07 21	010	(0.8-	3.4-)	1996 03 26	809	0.1+	0.3-
1982 09 15	688	0.1+	2.1-	1993 07 23	010	(2.2-	3.2-)	1996 03 26	809	0.2-	0.9+
1982 09 15	688	0.1+	1.7-	1993 07 23	010	(1.6-	2.6-)	1996 03 26	809	0.7+	0.7+
1982 09 15	704	0.6+	2.2+	1993 07 23	010	(0.2-	2.2-)	1996 03 26	809	1.4+	0.6+
1982 09 16	095	2.1-	1.4+	1993 07 25	303	(5.5+	1.2-)	1997 08 08	124	1.1-	0.7+
1982 09 18	704	(1.9-	2.9+)	1993 07 25	303	0.6+	0.1-	1997 08 08	124	0.1-	0.1-
1982 09 19	095	0.1-	0.5+	1993 07 25	303	0.7+	0.1-	1997 08 08	124	0.1-	0.1+
1982 09 21	688	2.2+	0.3-	1995 01 08	691	0.5-	0.1+	1997 09 13	327	0.6+	0.7-
1982 09 21	095	2.1-	1.5+	1995 01 08	691	0.4-	0.0	1997 09 13	327	0.6+	0.5-
1982 09 22	688	0.2-	0.7-	1995 01 08	691	0.3-	0.0	1997 09 13	327	0.7+	0.6-
1982 09 22	688	1.6+	0.3+	1995 02 03	691	0.1+	0.3+	1997 09 13	327	0.7+	0.5-
1982 09 23	704	(2.1-	3.0+)	1995 02 03	691	0.1+	0.2+	1997 09 23	327	0.5-	0.2+
1982 09 24	704	(3.1+	0.4-)	1995 02 03	691	0.2-	0.6+	1997 09 23	327	0.2+	0.6+
1993 07 15	010	1.6-	0.1-	1996 03 24	809	1.5+	0.3+	1997 09 23	327	0.1+	0.5+
1993 07 16	010	(2.3-	0.3-)	1996 03 24	809	0.8+	0.4-	1997 09 29	327	1.0-	0.1-
1993 07 16	010	1.1-	0.3+	1996 03 24	809	1.1+	0.6-	1997 09 29	327	0.1-	0.1+
1993 07 20	010	(1.3-	3.5-)	1996 03 26	809	1.8-	0.0	1997 09 29	327	0.3+	0.7+
1993 07 20	010	(1.1-	4.1-)	1996 03 26	809	1.0-	0.4-				

(7922)* 1983 CO₃ = 1972 AJ

Discovered 1983 Feb. 12 by H. Debehogne and G. DeSanctis at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 11242)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		252.29563		(2000.0)		P		Q	
<i>n</i>	0.18179884	ω	224.32818	−0.82107018	−0.51878127				
<i>a</i>	3.0860904	Ω	282.99374	+0.56766745	−0.69824283				
<i>e</i>	0.1655045	<i>i</i>	14.14614	+0.05997857	−0.49327776				
<i>P</i>	5.42	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1972 01 14	029	0.5+	1.2−	1983 02 20	809	0.8−	0.4+	1994 03 15	675	(1.9+	2.3−)
1972 01 15	029	0.6−	0.7−	1983 02 20	809	0.7−	0.4+	1997 08 09	557	0.2−	0.5+
1972 01 16	029	2.2+	1.0−	1989 03 12	808	0.4−	0.2+	1997 08 09	557	0.7−	0.6+
1972 01 17	029	0.6+	1.5+	1989 03 12	808	(3.9−	1.8+)	1997 08 11	557	0.9−	0.4+
1983 02 12	809	0.5+	0.9+	1989 04 01	474	1.9+	1.2+	1997 08 11	557	0.7−	0.8+
1983 02 12	809	0.6+	1.0+	1989 04 01	474	1.8+	0.7+	1997 09 26	557	0.4−	0.7+
1983 02 12	809	0.8+	1.1+	1989 04 03	474	0.4−	1.9+	1997 09 26	557	0.3−	0.9+
1983 02 18	809	1.8−	0.2−	1989 04 03	474	0.0	1.1+	1997 09 26	557	0.1−	0.6+
1983 02 18	809	1.6−	0.1+	1994 02 11	675	1.5+	0.8−	1997 09 27	557	0.7−	0.9+
1983 02 18	809	1.4−	0.0	1994 02 11	675	0.4+	0.4−	1997 09 27	557	0.4−	0.9+
1983 02 20	809	0.8−	0.6+	1994 03 15	675	1.1+	0.4−				

(7923)* 1983 WJ = 1988 XO₂

Discovered 1983 Nov. 28 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. H. Kaneda (*MPC* 14348)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		312.24541		(2000.0)		P		Q	
<i>n</i>	0.20042515	ω	326.30701	+0.44238379	−0.89504160				
<i>a</i>	2.8917977	Ω	97.37973	+0.83489097	+0.38799002				
<i>e</i>	0.0871753	<i>i</i>	3.26851	+0.32749604	+0.21991878				
<i>P</i>	4.92	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1962 08 03	760	(16.1+	4.4+)	1988 12 02	399	0.4−	0.2+	1990 03 19	046	0.0	0.4+
1978 11 30	675	0.4−	0.8+	1988 12 02	399	0.9+	0.1−	1993 12 17	801	0.3+	1.1+
1978 12 01	675	0.8+	0.6+	1988 12 02	399	0.5−	0.2+	1993 12 17	801	0.1+	0.9+
1983 11 28	688	1.8+	0.5−	1988 12 02	399	0.4+	1.8+	1997 08 01	688	0.7+	0.1−
1983 11 28	688	(3.3+	2.6−)	1988 12 16	400	(0.9+	3.1+)	1997 08 01	688	0.7+	0.0
1983 12 06	688	0.1+	1.5−	1988 12 16	400	0.7−	0.6−	1997 09 04	124	1.5+	0.9+
1983 12 06	688	1.1−	0.2−	1990 03 17	046	(4.8−	0.4+)	1997 09 04	124	1.0−	0.5+
1983 12 08	046	1.7−	0.3−	1990 03 17	046	(5.4−	1.3+)	1997 09 04	124	0.4−	0.3−
1983 12 08	046	0.8+	0.3−	1990 03 18	046	(0.1−	2.4+)	1997 09 08	124	0.5−	0.5+
1983 12 09	688	(1.5+	2.5−)	1990 03 18	046	0.7+	1.9+	1997 09 08	124	0.8−	0.2−
1983 12 09	688	(3.1−	2.7−)	1990 03 18	046	(2.6−	1.1+)	1997 09 08	124	0.5−	0.3−
1984 01 04	688	0.3−	0.3−	1990 03 18	046	(4.7−	2.0+)				
1984 01 04	688	0.3+	1.7−	1990 03 19	046	0.4−	1.6−				

(7924)* 1986 PW₄ = 1981 TV₃ = 1989 AL₄

Discovered 1986 Aug. 6 at the Crimean Astrophysical Observatory.

Id. S. Nakano (*MPC* 14618)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		47.09604		(2000.0)		P		Q	
<i>n</i>	0.18094623	ω	115.85372	+0.60290098	+0.79780634				
<i>a</i>	3.0957771	Ω	191.22680	−0.73902003	+0.55660612				
<i>e</i>	0.1692645	<i>i</i>	1.15700	−0.30059907	+0.23172110				
<i>P</i>	5.45	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1952 05 24	675	1.1−	0.9+	1992 10 22	675	1.2+	0.1−	1996 04 21	809	0.3−	1.0−
1952 05 24	675	0.7+	0.5+	1992 10 23	010	1.8+	0.5−	1996 04 21	809	(1.2−	2.4−)

1953 09 07	675	0.1+	0.0	1992 10 23	010	0.6+	0.1−	1996 04 21	809	1.8−	0.7−
1953 09 07	675	0.3−	1.2−	1992 10 25	691	0.5−	0.6−	1997 08 12	691	0.5−	0.4+
1981 10 07	095	0.5−	1.3−	1992 10 25	691	0.7−	0.2+	1997 08 12	691	0.6−	0.6+
1986 08 06	095	2.1+	0.3+	1992 10 25	691	0.6−	0.1+	1997 08 12	691	0.3−	0.6+
1986 08 08	095	0.0	0.4+	1992 10 29	801	0.4+	0.1−	1997 09 26	426	0.5+	0.4−
1986 08 31	095	0.4+	1.1+	1992 11 02	010	1.2−	1.4−	1997 09 26	426	0.6+	0.3−
1986 09 08	095	1.2+	1.0+	1992 11 02	010	0.9−	1.0−	1997 09 26	426	0.7+	0.3−
1989 01 04	413	(2.4+	0.0)	1992 11 02	010	1.1−	0.9−	1997 09 28	426	0.7+	0.5−
1989 01 04	413	1.8+	0.2−	1992 11 03	010	0.9+	0.7+	1997 09 28	426	0.4+	0.6−
1989 01 08	675	0.9+	0.1+	1992 11 03	010	0.3−	0.5+	1997 09 28	426	0.8+	0.2−
1989 01 08	675	0.1−	0.9+	1992 11 03	010	0.2−	0.6−	1997 09 30	691	1.0−	0.3+
1989 01 10	413	0.3+	0.7+	1995 03 04	033	0.1−	0.1+	1997 09 30	691	1.0−	0.1+
1989 01 10	413	(2.9+	0.7−)	1995 03 04	033	0.7−	0.0	1997 09 30	691	0.9−	0.3+
1990 03 27	675	0.7+	2.1−	1995 03 23	033	0.7−	0.5+	1997 10 06	691	0.9−	0.0
1990 03 27	675	(0.3+	2.7−)	1995 03 23	033	0.3−	0.2−	1997 10 06	691	0.8−	0.2+
1992 10 22	675	0.6+	2.1+	1996 04 08	689	1.0+	1.1+	1997 10 06	691	0.7−	0.2+

(7925)* 1986 RX₂ = 1964 TD₁ = 1975 TR₁ = 1991 NK₅

Discovered 1986 Sept. 6 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. G. V. Williams (*MPC* 19861)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		13.18437		(2000.0)		P		Q	
<i>n</i>	0.17780708	ω	15.14761	+0.99986588	+0.01444381				
<i>a</i>	3.1321077	Ω	344.01880	−0.01635295	+0.90628410				
<i>e</i>	0.1981002	<i>i</i>	1.60678	+0.00089613	+0.42242219				
<i>P</i>	5.54	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1950 04 17	675	0.3+	0.0	1986 10 01	046	0.6+	0.9+	1994 01 18	691	0.7−	0.2+
1964 10 08	330	0.0	1.1+	1986 10 06	095	(2.6+	3.1−)	1994 01 18	691	0.9−	0.3+
1975 10 03	095	0.5−	1.3−	1986 10 10	095	2.6−	1.4−	1994 02 15	675	0.8+	2.2−
1986 09 06	688	(4.1−	1.5−)	1991 07 10	809	0.1−	0.3−	1997 08 01	688	0.4+	0.1−
1986 09 06	688	(3.6−	1.1−)	1991 07 10	809	0.2+	0.2−	1997 08 01	688	0.4+	0.1−
1986 09 12	688	(3.6+	0.6−)	1991 07 10	809	0.5+	0.1−	1997 09 09	138	0.9+	0.4−
1986 09 12	688	2.1−	1.7−	1991 07 11	809	0.2−	0.8−	1997 09 09	138	0.0	0.3+
1986 09 29	046	(2.1−	2.6+)	1991 07 11	809	0.2+	0.6−	1997 09 11	750	0.0	0.7+
1986 09 29	046	(7.1−	3.1+)	1991 07 11	809	0.7+	0.3−	1997 09 11	750	0.3−	0.9+
1986 09 30	046	2.2+	0.7+	1992 11 28	675	1.7+	1.3−	1997 09 12	750	0.7−	0.1−
1986 09 30	046	1.6+	1.2+	1992 11 28	675	0.1−	0.1−	1997 09 12	750	1.2−	0.5−
1986 10 01	046	(8.0−	0.4+)	1994 01 18	691	0.6−	0.3+				

(7926)* 1986 RD₅ = 1982 YY

Discovered 1986 Sept. 3 by H. Debehogne at the European Southern Observatory.

Id. H. Kaneda (*MPC* 16872)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		28.42087		(2000.0)		P		Q	
<i>n</i>	0.18351383	ω	357.99016	+0.97404289	+0.22603713				
<i>a</i>	3.0668334	Ω	348.92335	−0.20679214	+0.86670845				
<i>e</i>	0.1297938	<i>i</i>	3.62643	−0.09207315	+0.44466131				
<i>P</i>	5.37	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1982 12 22	511	0.1−	0.0	1992 10 31	033	0.0	0.2+	1997 09 03	557	0.3−	0.3+
1982 12 23	511	0.5−	0.8+	1992 11 01	033	0.1−	0.5+	1997 09 03	557	1.1+	0.6−
1986 09 03	809	1.5+	1.6+	1992 11 23	033	0.7+	0.8+	1997 09 03	557	1.3+	0.4−
1986 09 03	809	1.5+	1.7+	1992 11 23	033	0.4−	0.4+	1997 09 03	557	0.4+	0.2−
1986 09 03	809	1.7+	1.7+	1993 01 18	801	0.4−	0.2−	1997 09 04	557	0.4+	0.2−
1986 09 05	809	1.5−	0.2−	1993 01 19	801	1.1+	0.1+	1997 09 04	557	0.4+	0.1−
1986 09 05	809	1.3−	0.1−	1993 01 26	801	0.5+	0.1+	1997 09 26	327	0.2−	0.1−
1986 09 05	809	1.2−	0.2−	1993 01 26	801	0.2+	0.2+	1997 09 26	327	0.1−	0.0
1986 09 06	809	0.9−	0.8+	1994 01 17	691	0.6+	0.3+	1997 09 26	327	0.1−	0.1−
1986 09 06	809	0.9−	0.6+	1994 01 17	691	0.1−	0.3+	1997 09 29	327	0.6−	0.5−
1986 09 06	809	0.7−	0.2+	1994 01 17	691	1.4−	0.6−	1997 09 29	327	0.5−	0.8−

1986 09 08	095	1.0–	1.2–	1994 02 12	675	0.3–	0.3–	1997 09 29	327	0.3–	0.5–
1992 09 23	033	0.9+	0.3–	1994 02 12	675	(2.4+	0.6+)	1997 09 30	327	0.3+	1.2–
1992 09 25	033	0.2+	0.6–	1994 02 14	675	0.7–	1.0+	1997 09 30	327	0.5+	0.9–
1992 09 25	033	0.0	0.0	1994 02 14	675	0.0	1.0+	1997 09 30	327	0.3+	1.0–
1992 09 27	033	0.2+	0.2–	1995 03 28	691	0.6+	1.2–	1997 10 09	327	0.4+	0.0
1992 09 28	033	0.0	0.0	1995 03 28	691	0.2+	0.5–	1997 10 09	327	0.5+	0.6+
1992 09 29	033	0.2–	0.4–	1995 03 28	691	0.1+	0.5–	1997 10 09	327	0.4+	0.1+
1992 10 26	400	(1.9+	4.3+)	1997 09 02	557	0.4+	0.0	1997 10 10	691	1.4–	0.2–
1992 10 26	400	(1.8–	2.5+)	1997 09 02	557	0.4+	0.2–	1997 10 10	691	1.6–	0.2–
1992 10 28	400	0.1–	1.2+	1997 09 02	557	0.6+	0.0	1997 10 10	691	1.6–	0.2–
1992 10 28	400	(0.5+	2.8+)	1997 09 02	557	0.6+	0.1+				
1992 10 31	033	0.6+	0.4+	1997 09 02	557	0.5+	0.1–				

(7927)* 1986 WV₁ = 1969 VY = 1993 BK₃

Discovered 1986 Nov. 29 by A. Mrkos at Kletř.

Id. K. Kinoshita (*MPC* 23858)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	333.16680		(2000.0)				
<i>n</i>	0.17693735	ω	297.23293	–0.06731866	–0.99766446		
<i>a</i>	3.1423632	Ω	156.61845	+0.92540196	–0.06676849		
<i>e</i>	0.1628330	<i>i</i>	1.67044	+0.37296033	–0.01440835		
<i>P</i>	5.57	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1969 11 11	095	(1.5–	3.5+)	1993 01 28	675	(0.7+	2.7–)	1996 08 09	809	0.3+	0.4–
1969 11 13	095	0.3–	1.5+	1993 01 28	877	1.7–	2.0–	1997 08 01	688	1.1+	0.4–
1986 11 29	046	1.4+	1.3–	1993 01 28	877	(3.8+	0.3+)	1997 08 01	688	0.3+	0.1–
1986 11 29	046	(1.0–	3.6–)	1996 07 14	809	(3.2–	0.5+)	1997 09 07	910	0.4–	0.5–
1986 11 30	046	0.9+	1.0+	1996 07 14	809	(3.3–	0.2+)	1997 09 07	910	0.5–	0.6–
1986 11 30	046	0.4–	0.9+	1996 07 14	809	(4.4–	0.3+)	1997 09 07	910	0.5–	0.5–
1986 12 01	046	0.4–	1.4+	1996 08 08	809	0.4+	0.1–	1997 10 05	910	0.3+	0.0
1986 12 01	046	2.1–	0.0	1996 08 08	809	0.6–	0.2–	1997 10 05	910	0.5+	0.1–
1993 01 17	877	1.8+	1.0–	1996 08 08	809	0.8–	0.7–	1997 10 05	910	0.3+	0.2–
1993 01 17	877	0.0	0.1+	1996 08 09	809	1.1+	1.3–				
1993 01 28	675	0.7–	1.2–	1996 08 09	809	0.2+	0.2–				

(7928)* 1986 WM₅ = 1991 NO₃

Discovered 1986 Nov. 27 at Caussols.

Id. G. V. Williams (*MPC* 19861)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	64.74907		(2000.0)				
<i>n</i>	0.18172204	ω	0.01924	+0.40574871	+0.89379684		
<i>a</i>	3.0869599	Ω	293.91924	–0.83859245	+0.28092979		
<i>e</i>	0.1835341	<i>i</i>	12.06289	–0.36349784	+0.34957927		
<i>P</i>	5.42	<i>H</i>	11.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1953 08 15	675	0.5–	0.9+	1991 07 12	809	0.5–	0.0	1997 08 25	587	0.4–	1.1+
1953 08 15	675	0.6–	0.2+	1991 07 12	809	0.0	0.2–	1997 08 25	587	0.9–	1.1+
1986 09 09	095	0.5–	0.8+	1991 07 12	809	0.3+	0.3–	1997 08 25	587	0.4–	1.6+
1986 09 29	095	0.2–	0.2–	1991 07 14	809	0.5–	0.6+	1997 08 29	587	0.4–	0.0
1986 10 03	095	0.7+	1.6–	1991 07 14	809	0.4–	0.5+	1997 08 29	587	0.0	0.2+
1986 11 27	010	2.0+	1.3–	1991 07 14	809	0.4–	0.7+	1997 09 22	127	0.4–	1.2–
1989 01 08	675	0.4–	0.6–	1992 10 01	801	0.1–	0.9+	1997 09 22	127	0.5–	0.9–
1989 01 08	675	0.3–	0.2+	1992 10 01	801	0.3+	0.2+	1997 09 22	127	0.1+	1.1–
1991 07 06	809	0.9+	0.5+	1992 10 22	801	0.7+	0.4+	1997 09 24	127	0.8+	0.7–
1991 07 06	809	1.0+	0.7+	1992 10 22	801	0.1–	0.6+	1997 09 24	127	0.6+	1.0–
1991 07 06	809	1.4+	0.8+	1992 10 28	801	0.9+	0.3+	1997 10 04	758	0.2+	0.1–
1991 07 07	809	0.1+	1.8–	1992 10 28	801	0.6+	0.3+	1997 10 04	758	1.4–	0.7–
1991 07 07	809	0.3+	1.3–	1996 03 08	689	1.5–	0.3–				

(7929)* 1987 SK₁₂ = 1979 BP₁ = 1996 FK₅

Discovered 1987 Sept. 16 by H. Debehogne at the European Southern Observatory.

Id. S. Nakano (*MPC* 27102)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
				P	Q		
<i>M</i>	198.12871		(2000.0)				
<i>n</i>	0.29607361	ω	95.20139	–0.99566157	–0.08922857		
<i>a</i>	2.2294766	Ω	79.68123	+0.07115240	–0.91285246		
<i>e</i>	0.0970689	<i>i</i>	1.53692	+0.05996137	–0.39842018		
<i>P</i>	3.33	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 01 24	095	0.6+	0.0	1991 12 14	691	0.2–	0.2–	1996 04 13	400	0.0	0.1–
1987 09 16	809	1.8–	0.1+	1994 10 08	691	0.1+	0.3+	1996 04 14	400	0.2–	0.6–
1987 09 16	809	1.8–	0.0	1994 10 08	691	0.1–	0.2+	1996 04 14	400	0.3–	0.6–
1987 09 16	809	0.3–	1.7+	1994 10 08	691	0.2–	0.2+	1997 09 01	540	0.5+	0.3–
1987 09 18	809	0.0	0.3+	1996 03 19	566	0.2+	0.5+	1997 09 01	540	0.3+	0.1+
1987 09 18	809	0.1+	0.4+	1996 03 19	566	0.1–	0.5+	1997 09 01	540	0.0	0.6–
1987 09 18	809	0.1+	0.3+	1996 03 19	566	0.0	0.7+	1997 09 08	540	0.4+	0.6+
1987 09 19	809	0.6+	0.5–	1996 03 20	400	1.1+	0.0	1997 09 08	540	0.7–	0.0
1987 09 19	809	0.8+	0.5–	1996 03 20	400	(3.1+	1.5–)	1997 09 08	540	0.5+	0.3+
1987 09 19	809	0.7+	0.6–	1996 03 27	400	0.4+	0.2–	1997 10 05	557	0.3+	0.2–
1991 12 14	691	0.1–	0.2–	1996 03 27	400	0.8–	0.5+	1997 10 05	557	0.5+	0.5–
1991 12 14	691	0.1–	0.3–	1996 04 13	400	0.3–	0.3–	1997 10 05	557	0.1+	0.3–

(7930)* 1987 VD = 1970 TC = 1994 YH

Discovered 1987 Nov. 15 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 24560)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
				P	Q		
<i>M</i>	34.01744		(2000.0)				
<i>n</i>	0.29110985	ω	66.60078	+0.96088895	+0.26232417		
<i>a</i>	2.2547486	Ω	278.09718	–0.27533763	+0.87058597		
<i>e</i>	0.2531626	<i>i</i>	5.14373	–0.02969189	+0.41625245		
<i>P</i>	3.39	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 09 16	675	0.4+	0.6+	1987 12 12	399	0.4–	0.1+	1997 09 21	127	0.1–	0.6–
1953 09 16	675	0.6–	0.7+	1987 12 12	399	1.0+	0.2–	1997 09 21	127	0.5–	0.5–
1970 10 02	095	0.8–	0.6–	1993 05 28	691	0.3–	0.3–	1997 09 22	127	0.1–	1.0–
1987 11 15	399	1.9–	1.5–	1993 05 28	691	0.0	0.3–	1997 09 22	127	0.0	1.0–
1987 11 15	399	0.6–	0.1–	1993 05 28	691	0.1+	0.0	1997 09 22	127	0.3–	1.0–
1987 11 15	399	1.4+	0.1–	1994 12 22	399	0.8–	1.4+	1997 09 24	127	0.1+	0.3–
1987 11 22	399	1.0+	0.6–	Y 1994 12 22	399	0.7–	0.4+	1997 09 24	127	0.2–	0.4–
1987 11 22	399	0.9+	0.2–	1994 12 25	399	1.0+	1.4+	1997 09 27	138	0.3+	0.5+
1987 11 22	399	1.5+	0.7+	1994 12 25	399	0.5+	0.2–	1997 09 27	138	0.4+	0.5+
1987 11 28	399	0.5–	0.7–	1997 08 08	124	0.6–	1.5+	1997 09 27	138	0.6+	0.7+
1987 11 28	399	0.2–	1.1+	1997 08 08	124	0.2–	0.7+	1997 09 27	138	0.3+	0.5+
1987 12 12	399	0.7–	0.3–	1997 08 08	124	0.0	1.0+				

(7931)* 1988 EB₁ = 1986 TH₇

Discovered 1988 Mar. 13 by P. Jensen at Brorfelde.

Id. S. Nakano (*MPC* 13161)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
				P	Q		
<i>M</i>	201.74766		(2000.0)				
<i>n</i>	0.26004938	ω	129.05936	–0.99638488	+0.07253069		
<i>a</i>	2.4308911	Ω	55.14318	–0.08447640	–0.90102400		
<i>e</i>	0.1390979	<i>i</i>	3.08992	+0.00899490	–0.42766231		
<i>P</i>	3.79	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1954 04 08	675	0.5+	0.2−	1992 04 24	809	0.5+	0.7+	1993 07 26	675	0.6−	0.0
1954 04 08	675	0.0	1.1+	1992 04 24	809	0.8+	0.9+	1993 07 26	675	0.5+	0.4+
1986 10 07	675	0.1+	0.6−	1992 04 24	691	1.2−	0.5+	1997 08 11	557	0.1+	0.4−
1986 10 07	675	0.5−	0.4+	1992 04 24	691	1.3−	0.3+	1997 08 11	557	0.2+	0.4+
1986 10 08	675	(6.4−	0.9−)	1992 04 24	691	1.6−	0.1+	1997 08 13	557	0.2+	0.5−
1986 10 08	675	1.5−	1.0+	1992 04 25	809	0.6−	1.3+	1997 08 13	557	0.2+	0.4+
1988 03 13	054	0.8+	0.2+	1992 04 25	809	0.3−	0.8+	1997 09 26	557	0.1+	0.3+

1988 03 13	054	0.5+	0.3-	1992 05 01	809	0.6+	1.3-	1997 09 26	557	0.0	0.2+
1988 03 14	054	0.5-	0.3-	1992 05 01	809	1.0+	1.3-	1997 09 26	557	0.0	0.5+
1988 03 18	675	0.3-	0.6+	1992 05 01	809	1.2+	1.8-	1997 10 04	557	0.2+	0.2-
1988 03 18	675	0.2+	0.1+	1992 05 04	809	(0.3+	3.6+)	1997 10 04	557	0.3+	0.2+
1988 03 18	054	0.3+	0.5-	1992 05 04	809	(0.6+	3.7+)				
1992 04 24	809	0.1+	0.7+	1992 05 04	809	(0.8+	3.7+)				

(7932)* 1989 GP = 1997 PR₂

Discovered 1989 Apr. 7 by E. F. Helin at Palomar.

Id. B. G. Marsden (*MPC* 30652)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
<i>M</i>	91.21056		(2000.0)	P	Q		
<i>n</i>	0.26739716	ω	119.14025	-0.15704339	+0.98708835		
<i>a</i>	2.3861525	Ω	141.78368	-0.92288284	-0.13531349		
<i>e</i>	0.1766093	<i>i</i>	2.92121	-0.35160296	-0.08571374		
<i>P</i>	3.69	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 04 07	675	0.4-	0.2+	1995 02 03	691	0.2-	0.9+	1997 08 23	046	0.2+	0.2+
1989 04 07	675	0.1-	0.7-	1997 08 10	046	0.2-	0.1-	1997 08 23	046	0.0	0.3+
1989 04 08	675	0.2+	0.5-	1997 08 10	046	0.2-	0.1+	1997 08 25	046	0.0	0.0
1989 04 08	675	0.2-	0.7-	1997 08 10	046	0.4-	0.3+	1997 08 25	046	0.1-	0.0
1989 04 30	675	1.3-	1.5-	1997 08 10	046	0.4-	0.0	1997 08 25	046	0.0	0.2-
1989 04 30	675	0.2-	2.0-	1997 08 11	046	0.1-	0.6+	1997 08 31	046	0.6+	1.4-
1989 05 02	675	0.4-	1.4-	1997 08 11	046	0.1-	0.4+	1997 08 31	046	0.3+	1.3-
1989 05 02	675	0.4+	0.2+	1997 08 11	046	0.0	0.2+	1997 08 31	046	0.6+	1.3-
1992 02 09	691	0.1-	0.5-	1997 08 11	046	0.4-	0.3+	1997 09 11	046	0.2+	1.1-
1992 02 09	691	0.0	0.7-	1997 08 13	046	0.1+	0.2-	1997 09 11	046	0.3+	1.1-
1992 02 09	691	0.4-	0.6-	1997 08 13	046	0.0	0.0	1997 09 11	046	0.2+	1.1-
1994 12 03	691	0.3+	0.7-	1997 08 13	046	0.0	0.2+	1997 09 26	557	0.3+	0.5-
1994 12 03	691	0.5+	0.7-	1997 08 14	046	0.1-	0.3+	1997 09 26	557	0.3+	0.0
1994 12 03	691	0.6+	0.4-	1997 08 14	046	0.1-	0.3+	1997 09 26	557	0.2-	0.6-
1995 01 07	691	0.1+	0.7-	1997 08 14	046	0.2+	0.4+	1997 10 05	557	0.0	0.6-
1995 01 07	691	0.0	1.0-	1997 08 14	046	0.3+	0.8+	1997 10 05	557	0.3-	0.4-
1995 01 07	691	0.2-	0.7-	1997 08 15	046	0.2+	0.3+	1997 10 05	557	0.1+	0.7-
1995 02 03	691	0.1+	0.7-	1997 08 15	046	0.6+	0.3+				
1995 02 03	691	0.2-	0.9-	1997 08 23	046	0.1+	0.2+				

(7933)* 1989 GP₄ = 1976 UJ₈

Discovered 1989 Apr. 3 by E. W. Elst at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 14956)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	109.86787		(2000.0)	P	Q		
<i>n</i>	0.27748260	ω	50.80150	-0.27394856	+0.96072282		
<i>a</i>	2.3279780	Ω	203.41354	-0.91319142	-0.27429777		
<i>e</i>	0.0838922	<i>i</i>	6.40312	-0.30171777	-0.04209979		
<i>P</i>	3.55	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 10 22	381	0.3-	0.4+	1990 09 19	675	0.4-	0.4-	1994 11 08	411	0.2-	0.7+
1976 10 22	381	0.7+	0.5+	1992 01 30	809	1.5+	1.7-	1994 11 08	411	0.3-	0.6+
1976 10 24	381	0.2-	0.2-	1992 01 30	809	0.8-	1.4-	1997 08 01	557	1.0+	0.3-
1989 04 03	809	1.2-	0.4+	1992 01 30	809	1.6-	1.1-	1997 08 01	557	0.9+	0.3-
1989 04 03	809	0.7-	0.4+	1992 02 02	809	1.2+	0.4-	1997 08 01	557	0.4+	0.0
1989 04 03	809	0.5-	0.1+	1992 02 02	809	0.6+	0.5-	1997 08 02	557	0.7+	0.1-
1989 04 05	809	1.0+	1.0-	1992 02 02	809	0.2+	1.9-	1997 08 02	557	0.8+	0.0
1989 04 05	809	0.1-	0.3+	1992 02 06	809	0.3-	1.4+	1997 09 20	557	0.5-	0.6-
1989 04 10	809	(2.2+	3.7-)	1992 02 06	809	0.1+	1.1+	1997 09 20	557	0.4-	0.4-
1989 04 10	809	0.1-	0.6-	1992 02 06	809	0.3-	0.8+	1997 09 20	557	0.6-	0.5-
1989 04 10	809	0.1+	0.9-	1993 06 18	801	0.5+	0.3-	1997 09 21	557	0.4-	0.5-
1990 09 19	675	0.0	1.5-	1993 06 18	801	0.2+	0.1+	1997 09 21	557	0.3-	0.3-

(7934)* 1989 SG₁ = 1991 CJ₂

Discovered 1989 Sept. 26 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (*MPC* 17961)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	247.01944		(2000.0)	P	Q		
<i>n</i>	0.23831013	ω	331.06345	-0.73887223	-0.67309055		
<i>a</i>	2.5765647	Ω	166.48216	+0.64152450	-0.71712482		
<i>e</i>	0.1456479	<i>i</i>	7.84110	+0.20618956	-0.18077917		
<i>P</i>	4.14	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 08 04	675	0.3-	1.5-	1991 02 10	675	1.7+	1.7-	1993 09 21	675	(2.4+	0.3+)
1980 08 05	675	0.4+	0.3+	1991 02 10	675	(1.5+	2.3-)	1993 09 21	675	1.1+	0.5+
1989 09 26	809	0.6-	0.7-	1991 02 12	372	0.2+	0.4+	1993 10 13	675	0.2-	1.2+
1989 09 26	809	0.5-	0.7-	1991 02 12	372	0.4-	1.6+	1993 10 13	675	1.6+	0.5+
1989 09 26	809	0.4-	1.1-	1991 02 16	372	1.2-	0.6+	1997 08 04	557	1.3+	0.4-
1989 09 28	809	2.0+	1.4-	1991 02 16	372	1.2+	0.7+	1997 08 04	557	1.1+	0.3-
1989 09 28	809	0.9+	1.7-	1991 02 19	372	1.1-	1.0-	1997 08 08	557	1.2+	0.7-
1989 09 28	809	(1.5+	2.7-)	1991 02 19	372	(2.5+	3.4-)	1997 08 08	557	0.8+	0.1-
1989 10 07	809	0.9-	0.7-	1991 02 19	372	(4.0+	1.0-)	1997 09 29	691	1.1-	0.9+
1989 10 07	809	0.2+	0.3+	1991 02 20	372	0.4+	1.1-	1997 09 29	691	0.8-	0.6+
1989 10 07	809	0.1-	0.2+	1991 02 20	372	0.4-	1.3-	1997 09 29	691	0.8-	0.8+
1989 10 08	809	0.2+	0.4+	1991 03 06	372	(0.7+	2.6-)	1997 10 05	691	1.4+	0.6+
1989 10 08	809	0.3-	0.3+	1991 03 06	372	(3.8+	0.6-)	1997 10 05	691	1.2-	0.8+
1989 10 08	809	0.4-	0.5-	1991 03 15	809	0.2+	0.9+	1997 10 05	691	1.2-	0.5+
1989 11 02	675	0.2-	1.5+	1991 03 15	809	0.2-	0.4+				
1989 11 05	675	(2.8-	0.1+)	1991 03 15	809	0.5-	0.3+				

(7935)* 1990 EZ₅ = 1990 GL = 1990 HG₇ = 1976 UZ₉ = 1981 SO₄ = 1986 PA₂

Discovered 1990 Mar. 1 by H. Debehogne at the European Southern Observatory.

Id. G. V. Williams (*MPC* 17210; d, *MPC* 21940)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	96.44333		(2000.0)	P	Q		
<i>n</i>	0.18139907	ω	340.47942	-0.45599458	+0.88997901		
<i>a</i>	3.0906228	Ω	262.39157	-0.81620580	-0.41931763		
<i>e</i>	0.1280250	<i>i</i>	0.14521	-0.35479154	-0.17919288		
<i>P</i>	5.43	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 10 22	381	0.5-	0.5-	1990 03 09	809	1.0+	0.4+	1996 05 14	566	0.1+	0.2+
1976 10 22	381	0.7+	0.0	1990 04 04	809	0.1+	0.4+	1996 05 15	801	0.1+	0.2-
1976 10 24	381	0.3-	0.7-	1990 04 04	809	0.9-	1.7+	1996 05 15	801	0.3-	0.2+
1981 09 25	095	1.0+	0.9+	1990 04 04	809	1.0-	1.8+	1996 05 18	801	0.4-	0.6-
1984 01 25	675	0.3+	0.5-	1990 04 15	809	0.8+	0.6+	1996 05 18	801	0.4-	0.3-
1984 01 26	675	0.6+	0.6-	1990 04 16	809	0.2-	1.1+	1996 05 22	566	0.2-	0.7-
1986 08 01	675	(17.7-	2.7-)	1990 04 16	809	0.7-	0.3+	1996 05 22	566	0.1+	0.2-
1986 08 01	675	(15.1-	1.2-)	1990 04 16	809	0.8-	1.2+	1996 05 22	566	0.2-	0.3-
1986 08 02	675	0.5-	0.6-	1990 04 17	809	1.2-	0.7+	1997 08 11	118	0.0	0.3+
1986 08 02	675	(4.2+	1.4+)	1990 04 17	809	(2.4-	0.8+)	1997 08 11	118	0.1+	0.5+
1990 03 01	809	0.1+	0.9-	1992 09 30	691	1.1-	0.1+	1997 08 11	118	0.3+	0.3+
1990 03 01	809	0.4+	1.0-	1992 09 30	691	1.3-	0.2+	1997 08 11	691	0.4-	0.1+
1990 03 01	809	0.6+	0.9-	1992 09 30	691	1.4-	0.1-	1997 08 12	118	0.1+	0.4+
1990 03 02	809	0.4+	0.1-	1996 05 13	566	0.1+	0.1+	1997 08 12	118	0.1+	0.4+
1990 03 02	809	0.7+	0.3-	1996 05 13	566	0.0	0.2-	1997 08 12	118	0.0	0.2+
1990 03 02	809	0.8+	0.4-	1996 05 13	566	0.1-	0.0	1997 09 26	910	0.6+	0.6+
1990 03 09	809	0.8+	0.4+	1996 05 14	566	0.1-	0.1-	1997 09 26	910	0.6+	0.7+
1990 03 09	809	0.9+	0.3+	1996 05 14	566	0.1-	0.1+	1997 09 26	910	0.4+	0.7+

(7936)* 1990 OW₂ = 1990 RZ₁₀ = 1992 AF₅ = 1993 MV₁ = 1994 XB₃

Discovered 1990 July 30 by H. E. Holt at Palomar.

Id. S. Nakano (d, *MPC* 20912), G. V. Williams (*MPC* 24562)

1997 OCT. 16

M.P.C. 30745

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	341.13953		(2000.0)	P	Q
n	0.27872841	ω	300.73384	+0.91465093	-0.37787568
a	2.3210361	Ω	81.79995	+0.40240398	+0.81723289
e	0.1348872	i	8.34265	+0.03853210	+0.43513260
P	3.54	H	13.8	G 0.15	U 1

Residuals in seconds of arc

1954 05 28	675	0.1+	1.3-	1993 06 17	809	0.3-	0.3+	1994 12 04	691	0.4-	0.1+
1955 10 23	675	0.4-	0.9-	1993 06 17	809	1.2-	0.4-	1995 01 30	801	1.6+	0.0
1955 10 23	675	0.8+	0.1-	1994 11 27	675	1.0+	0.5-	1995 01 30	801	0.7+	0.4-
1990 07 28	675	0.0	0.9-	1994 11 27	675	1.5+	0.4+	1997 07 08	689	1.0+	0.6+
1990 07 28	675	0.9-	1.6+	1994 12 01	691	0.6-	0.3-	1997 07 09	689	1.2+	0.7+
1990 07 30	675	0.1+	1.1+	1994 12 01	691	0.7-	0.3-	1997 09 26	426	0.7-	0.5+
1990 07 30	675	1.2-	0.4-	1994 12 01	691	0.5-	0.4+	1997 09 26	426	0.6-	0.6+
1990 09 14	675	0.4+	1.7-	1994 12 04	691	0.1-	0.1+	1997 09 26	426	0.3-	0.4+
1990 09 14	675	0.6+	1.7-	1994 12 04	691	0.3-	0.1+	1997 09 28	426	0.4+	0.5+
1992 01 03	033	0.1+	0.9+	1994 12 04	691	0.2-	0.0	1997 09 28	426	0.0	0.5+
1992 01 03	033	0.1+	0.6+	1994 12 04	691	0.3-	0.1+	1997 09 28	426	0.0	0.2+
1993 06 17	809	0.5+	0.4-	1994 12 04	691	0.4-	0.1+				

(7937)* 1990 QA₂ = 1976 JR₆ = 1981 NE₁

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

Id. R. Nagata (*MPC* 17447)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	174.73089		(2000.0)	P	Q
n	0.23105575	ω	114.09854	+0.26508001	-0.96406468
a	2.6302167	Ω	320.51645	+0.87426980	+0.24803395
e	0.0628869	i	1.59151	+0.40667544	+0.09517585
P	4.27	H	13.7	G 0.15	U 1

Residuals in seconds of arc

1976 05 03	809	0.2+	0.7-	1991 12 31	691	0.7-	0.3-	1997 03 13	809	0.8-	1.0-
1981 07 02	805	(1.8+	5.4-)	1991 12 31	691	0.4-	0.2+	1997 03 13	809	0.4-	1.5-
1981 07 02	805	0.1+	0.4-	1991 12 31	691	0.6-	0.5-	1997 03 13	809	1.1-	1.4-
1990 08 22	675	0.6+	0.8-	1992 01 02	801	0.4+	0.6-	1997 04 03	704	0.7-	0.6+
1990 08 22	675	0.4+	1.0-	1992 01 02	801	0.5+	0.6-	1997 04 03	704	0.2-	0.8+
1990 08 27	372	(0.2-	2.6+)	1993 04 19	675	0.9-	0.7+	1997 04 05	704	0.4-	1.6-
1990 08 27	372	(1.2-	2.2+)	1993 04 19	675	1.5-	1.2-	1997 04 05	704	0.8+	0.1+
1990 08 28	675	0.6+	1.9-	1994 08 01	689	0.5-	0.9+	1997 04 05	704	0.4+	1.3-
1990 08 28	675	0.7+	0.3-	1994 08 02	689	0.1-	0.7+	1997 04 05	704	0.4+	0.0
1990 09 14	675	0.1+	0.4-	1994 08 03	689	0.4-	1.0+	1997 04 06	704	0.2+	0.3+
1990 09 14	675	0.6+	0.3-	1995 11 26	411	0.6+	0.7-	1997 04 06	704	1.0+	0.1-
1990 09 14	675	0.7+	0.9-	1995 11 26	411	0.7-	0.1+	1997 04 07	704	0.3-	0.1-
1990 09 14	675	0.1-	0.1-	1997 03 11	809	1.5+	0.0	1997 04 07	704	1.0-	0.2-
1990 09 19	675	0.2+	1.9-	1997 03 11	809	1.1+	0.1-	1997 04 08	689	0.7-	0.2+
1990 09 19	675	(0.1+	2.5-)	1997 03 11	809	1.2+	0.2-	1997 04 09	689	0.8-	0.1+

(7938)* 1990 SL₂ = 1993 MP₁

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

Id. G. V. Williams (*MPC* 23781)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	46.13159		(2000.0)	P	Q
n	0.27855605	ω	251.20609	+0.81566366	+0.56869418
a	2.3219934	Ω	74.00252	-0.48043562	+0.76812568
e	0.2037087	i	6.34326	-0.32229553	+0.29422759
P	3.54	H	14.1	G 0.15	U 2

Residuals in seconds of arc

1989 03 07	675	1.1-	1.1-	1990 09 30	809	0.4+	0.6+	1993 06 20	675	0.5+	0.6-
1989 03 07	675	0.6-	0.2+	1990 10 01	809	0.8+	1.1-	1994 12 12	104	0.1+	0.4+
1989 03 29	675	0.4-	1.5-	1990 10 01	809	1.2+	1.0-	1994 12 12	104	0.0	0.4+
1989 03 29	675	0.3+	1.5-	1990 10 01	809	1.9+	1.1-	1994 12 12	104	0.1-	0.4+
1989 05 09	675	0.1-	0.6-	1993 05 23	809	(4.2-	3.3-)	1997 08 23	689	1.4-	0.2-

1989 05 09	675	1.2-	0.3+	1993 05 23	809	(3.2-	3.3-)	1997 09 30	423	0.0	0.7+
1990 09 17	675	0.4-	1.5-	1993 05 23	809	(3.6-	3.1-)	1997 09 30	423	0.3+	0.7+
1990 09 17	675	0.4-	1.4-	1993 06 16	675	1.2-	0.1+	1997 09 30	423	0.1+	0.3+
1990 09 19	675	(0.2-	2.6-)	1993 06 17	809	(4.2-	0.3+)	1997 10 01	423	0.1+	0.1+
1990 09 19	675	0.1-	1.2-	1993 06 17	809	(4.3-	0.4+)	1997 10 01	423	0.3-	0.2+
1990 09 30	809	0.4-	0.6+	1993 06 17	809	(3.9-	0.7-)				
1990 09 30	809	0.0	0.5+	1993 06 20	675	1.5+	0.5+				

(7939)* 1991 AP₁ = 1968 UW = 1986 SK

Discovered 1991 Jan. 14 by E. F. Helin at Palomar.

Id. H. Kaneda (*MPC* 17967)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	1.27048		(2000.0)	P	Q
n	0.27142829	ω	84.54926	+0.54569802	-0.83789369
a	2.3624682	Ω	332.36752	+0.75807960	+0.49979664
e	0.2131173	i	1.50222	+0.35711202	+0.21940256
P	3.63	H	14.4	G 0.15	U 1

Residuals in seconds of arc

1968 10 22	095	(3.2+	3.0+)	1993 08 23	675	0.2+	1.6-	1995 03 24	608	0.3+	1.8-
1968 10 26	095	0.1+	1.2-	1993 09 14	691	0.2-	0.1-	1995 03 29	608	0.7+	0.2+
1986 09 30	046	(3.4+	3.5-)	1993 09 14	691	0.2-	0.2-	1995 03 29	608	0.6+	0.2+
1986 09 30	046	(3.0+	3.2-)	1993 09 14	691	0.3-	0.5-	1995 03 29	608	0.4+	0.1+
1986 10 01	046	1.0+	2.2-	1995 02 25	098	0.4-	0.2+	1995 03 30	608	(2.2-	3.4+)
1986 10 01	046	2.0+	1.0-	1995 02 25	098	0.9-	1.0-	1995 03 30	608	(3.5-	1.0+)
1986 10 03	046	(0.3+	3.7-)	1995 02 26	098	1.9-	1.2+	1995 03 31	608	1.5-	1.7-
1986 10 03	046	(1.2+	3.2-)	1995 02 26	098	0.8-	0.3-	1995 04 20	608	0.0	0.0
1991 01 05	399	(4.6+	1.2+)	1995 02 27	098	0.5-	1.4+	1995 04 20	608	0.1+	0.0
1991 01 05	399	0.3-	1.0+	1995 02 27	098	0.4+	0.4-	1995 04 21	608	0.4-	0.5-
1991 01 05	399	0.2+	0.5+	1995 03 17	608	1.9+	0.6-	1995 04 21	608	0.4-	0.3-
1991 01 14	675	0.1+	0.7-	1995 03 17	608	0.2-	0.7-	1997 08 28	608	0.2-	0.2+
1991 01 14	675	1.3-	0.5-	1995 03 23	608	0.7-	0.1+	1997 09 02	608	0.3-	0.8+
1991 01 15	675	0.5+	0.3+	1995 03 23	608	1.2-	0.1+	1997 10 01	910	0.1-	0.4+
1993 08 20	675	(4.0-	3.0-)	1995 03 24	608	1.2+	0.4-	1997 10 01	910	0.1-	0.5+
1993 08 20	675	(2.6+	4.4-)	1995 03 24	608	0.5+	1.5-	1997 10 01	910	0.1-	0.4+
1993 08 23	675	(2.7-	5.7-)	1995 03 24	608	1.3+	0.2+				

(7940)* 1991 EO₁

Discovered 1991 Mar. 13 at the Oak Ridge Observatory.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	351.46051		(2000.0)	P	Q
n	0.23023777	ω	278.16754	+0.80953635	-0.58423967
a	2.6364427	Ω	117.60053	+0.56096549	+0.74089153
e	0.0864623	i	3.72506	+0.17311449	+0.33127593
P	4.28	H	14.0	G 0.15	U 1

Residuals in seconds of arc

1954 07 29	675	0.2-	0.1+	1991 04 12	801	0.5+	0.2+	1996 06 14	566	0.1-	0.3-
1954 07 29	675	0.0	0.3+	1991 04 14	801	0.1+	0.0	1996 06 15	566	0.0	0.3+
1991 03 13	801	0.3-	0.2-	1991 04 14	801	0.2+	0.1-	1996 06 15	566	0.2+	0.2+
1991 03 13	801	0.4-	0.4-	1991 05 11	801	0.3+	0.3+	1996 06 15	566	0.0	0.2+
1991 03 13	801	0.3-	0.8+	1991 05 11	801	0.1+	0.5+	1997 08 15	118	0.5-	0.4-
1991 03 13	801	0.4-	0.5-	1993 11 20	670	0.6+	1.4+	1997 08 16	118	0.0	0.3-
1991 03 16	801	0.0	1.1-	1993 11 20	670	0.4-	0.7-	1997 09 22	540	0.2-	0.2-
1991 03 16	801	0.1+	0.0	1993 11 20	670	1.1+	0.5+	1997 09 22	540	0.1-	0.1+
1991 03 17	801	0.1-	0.4-	1993 11 24	670	(2.5+	1.2+)	1997 09 22	540	0.5+	0.2-
1991 03 17	801	0.2-	0.1-	1993 11 24	670	1.4-	0.3-	1997 09 23	540	0.1+	0.1-
1991 03 18	801	0.3+	0.2-	1993 11 24	670	0.4-	0.4-	1997 09 23	540	0.6+	0.1+
1991 03 18	801	0.1-	0.5+	1996 06 14	566	0.0	0.1-	1997 09 23	540	0.3+	0.3-
1991 04 12	801	0.1+	0.1+	1996 06 14	566	0.3-	0.2-				

(7941)* 1991 NE₁

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

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	350.65933		(2000.0)	P	Q
<i>n</i>	0.17427324	ω	73.29412	+0.94000436	-0.31892767
<i>a</i>	3.1743069	Ω	305.14721	+0.22819894	+0.85175035
<i>e</i>	0.0541674	<i>i</i>	8.52043	+0.25360808	+0.41570000
<i>P</i>	5.66	<i>H</i>	12.3	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1953 12 07	675	0.8+	0.9+	1991 08 03	894	0.5-	0.4-	1997 08 29	587	(1.5+	2.6+)
1953 12 07	675	0.4-	0.6+	1991 08 05	675	0.9+	0.1-	1997 08 29	587	(2.5+	0.9+)
1955 04 18	675	1.2-	1.6-	1991 08 05	675	0.2+	0.8-	1997 08 29	587	(1.5+	2.2-)
1955 04 18	675	1.1+	0.4+	1991 08 08	675	0.4+	0.6+	1997 08 30	587	0.5+	1.1+
1989 03 07	675	0.2-	0.5+	1991 08 08	675	0.5+	0.4+	1997 08 30	587	0.8+	1.4+
1989 03 07	675	0.7+	0.4+	1991 09 13	675	0.2-	1.3-	1997 10 04	861	0.7+	0.2-
1991 07 12	675	0.5-	0.2-	1991 09 13	675	0.6-	0.4+	1997 10 04	861	0.8-	0.1+
1991 07 12	675	0.1-	1.4-	1991 09 14	675	0.5-	1.1-	1997 10 04	861	0.8-	1.0+
1991 07 14	675	0.4-	0.3+	1991 09 14	675	0.1-	0.5+	1997 10 05	861	0.0	0.3+
1991 07 14	675	0.3+	0.4-	1992 11 28	675	0.3-	1.4-	1997 10 05	861	0.1+	0.4+
1991 07 17	675	0.8+	0.1+	1992 11 28	675	0.4-	1.8-	1997 10 05	861	0.3+	0.3+
1991 07 17	675	0.2+	0.8-	1994 02 11	675	0.4+	0.8-				
1991 08 03	894	0.8-	0.1+	1994 02 11	675	0.6-	0.6-				

(7942)* 1991 OK₁ = 1986 RO₉ = 1989 AA₇

Discovered 1991 July 18 by H. Debehogne at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 20930)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	104.92942		(2000.0)	P	Q
<i>n</i>	0.17406286	ω	296.56264	-0.45249378	+0.88163951
<i>a</i>	3.1768642	Ω	305.89026	-0.74798229	-0.45705436
<i>e</i>	0.0376776	<i>i</i>	9.52204	-0.48556345	-0.11752908
<i>P</i>	5.66	<i>H</i>	12.3	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1986 09 08	095	1.1+	0.8-	1991 07 19	809	0.2+	0.5-	1997 08 29	611	0.4+	0.8+
1986 09 11	095	0.3-	0.6-	1991 07 19	809	0.3+	0.5-	1997 08 31	611	0.0	0.8+
1989 01 10	033	0.3-	0.2+	1991 08 05	809	0.3+	0.4-	1997 09 01	611	0.8+	0.4+
1989 01 11	033	0.3-	0.1-	1991 08 05	809	0.6-	0.9-	1997 09 01	611	0.2+	0.6+
1989 01 12	033	0.2+	0.6-	1991 08 05	809	0.8-	0.5-	1997 09 09	611	0.1-	0.0
1991 07 18	809	0.2+	0.4+	1997 08 23	367	0.1-	0.2+	1997 09 23	611	0.4-	0.1-
1991 07 18	809	0.5+	0.5+	1997 08 23	367	0.3-	0.0	1997 09 23	611	1.4-	0.7-
1991 07 18	809	0.5+	0.4+	1997 08 29	611	0.4-	0.1+				

(7943)* 1991 PQ₁₂ = 1995 DF₁

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

Id. S. Nakano (*MPC* 24897)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	104.82329		(2000.0)	P	Q
<i>n</i>	0.17681781	ω	88.62437	-0.13708150	+0.99055745
<i>a</i>	3.1437793	Ω	173.49546	-0.91618729	-0.12596542
<i>e</i>	0.1248561	<i>i</i>	1.08537	-0.37657604	-0.05411705
<i>P</i>	5.57	<i>H</i>	12.6	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1991 08 05	675	0.7+	0.1-	1992 11 27	675	0.1-	1.3-	1995 03 07	033	1.2-	0.7-
1991 08 07	809	(0.0	2.8+)	1994 01 07	675	0.8+	0.1-	1997 08 27	557	0.1-	0.4+
1991 08 07	809	0.2+	1.0+	1994 01 07	675	0.1+	1.3+	1997 08 28	557	0.1+	0.2+
1991 08 07	809	1.3-	1.1-	1995 02 21	372	0.5+	0.7-	1997 08 31	557	0.4+	0.7+
1991 08 08	675	0.5+	0.0	1995 02 21	372	0.5+	1.8+	1997 08 31	557	0.4+	0.5+
1991 08 08	675	0.2-	0.0	1995 02 22	372	1.2+	0.5+	1997 09 20	557	0.0	0.1+
1991 09 12	675	0.3+	0.7+	1995 02 22	372	1.4-	0.6-	1997 09 20	557	0.2-	0.3-
1991 09 12	675	0.1+	0.5-	1995 02 22	372	0.8+	0.3+	1997 09 21	557	0.3-	0.1-
1992 10 21	675	0.1+	0.1+	1995 02 24	033	0.2-	0.7-	1997 09 21	557	0.6-	0.1-

1992 10 21	675	0.3+	0.1+	1995 03 05	033	0.8-	0.2+	1997 09 21	557	0.0	0.1-
1992 11 27	675	0.4-	0.9-	1995 03 05	033	0.2+	0.1-				

(7944)* 1991 PR₁₂ = 1979 MS = 1980 TU₈

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

Id. S. Nakano (*MPC* 20338)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	47.71773		(2000.0)	P	Q
<i>n</i>	0.17214295	ω	78.60714	+0.74541157	+0.66657662
<i>a</i>	3.2004415	Ω	239.58914	-0.61432227	+0.68336775
<i>e</i>	0.1496995	<i>i</i>	0.40520	-0.25878513	+0.29779879
<i>P</i>	5.73	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1979 06 22	805	(8.3-	1.5+)	1991 09 12	675	0.4+	1.3+	1997 09 02	557	0.7+	0.0
1979 06 22	805	0.2+	0.4-	1991 09 12	675	0.0	1.2-	1997 09 02	557	0.4+	0.2+
1979 06 25	805	0.6-	0.1-	1992 11 25	675	1.0+	0.9-	1997 09 03	557	0.6+	0.2+
1980 10 13	095	(1.8-	3.2+)	1992 11 25	675	(0.5+	2.7-)	1997 09 03	557	0.7+	0.2+
1991 08 05	675	0.9+	0.3+	1992 11 28	675	0.0	1.3-	1997 09 03	557	0.9+	0.0
1991 08 07	809	0.3+	0.9+	1992 11 28	675	0.0	1.1-	1997 09 28	691	1.7-	0.3+
1991 08 07	809	0.3+	0.2-	1994 01 16	691	0.0	0.3+	1997 09 28	691	1.5-	0.1+
1991 08 07	809	0.5-	1.1-	1994 01 16	691	0.2+	0.0	1997 09 28	691	1.5-	0.3+
1991 08 08	675	0.1-	0.1-	1994 01 16	691	0.3-	0.0				
1991 08 08	675	0.2-	0.3-	1996 06 05	689	0.0	1.7-				

(7945)* 1991 RK₇ = 1981 QZ₄

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

Id. E. Bowell (*MPC* 20640)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	102.85382		(2000.0)	P	Q
<i>n</i>	0.30711712	ω	321.31797	-0.33541323	+0.93974888
<i>a</i>	2.1757051	Ω	288.99639	-0.84602188	-0.33134206
<i>e</i>	0.1224157	<i>i</i>	4.00903	-0.41442122	-0.08416937
<i>P</i>	3.21	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1981 08 30	675	0.7-	0.2-	1991 10 09	033	0.3+	0.3+	1997 08 25	134	0.1-	0.2-
1981 08 31	675	0.9+	0.3-	1991 10 10	033	1.6+	0.4+	1997 08 26	134	1.3-	1.0-
1991 09 10	033	0.8-	0.3-	1996 01 27	691	0.1+	0.2-	1997 08 30	566	0.3-	0.1+
1991 09 11	033	0.5+	0.3-	1996 01 27	691	0.0	0.4-	1997 08 30	566	0.1-	0.4+
1991 09 13	033	0.2-	0.9-	1996 01 27	691	0.4-	0.0	1997 08 30	566	0.3-	0.2+
1991 09 13	033	0.3-	0.9-	1997 08 09	611	1.2+	0.0	1997 08 31	611	0.0	0.4-
1991 09 14	033	0.4-	0.3-	1997 08 09	611	1.2+	0.4+	1997 08 31	611	0.4-	0.2-
1991 09 15	033	0.0	0.3-	1997 08 10	611	0.5+	0.1+	1997 09 21	426	0.3-	0.0
1991 10 05	033	0.8-	0.3+	1997 08 10	611	0.3+	0.0	1997 09 21	426	0.3-	0.1-
1991 10 06	033	0.5-	0.3+	1997 08 10	611	0.3+	0.2+	1997 09 21	426	0.3-	0.1+
1991 10 06	033	0.6-	0.5+	1997 08 10	611	0.6-	0.1+	1997 09 25	426	0.1-	0.3+
1991 10 09	033	1.0+	0.8+	1997 08 25	134	0.0	0.1+	1997 09 25	426	0.4+	0.2+

(7946)* 1991 RV₁₃ = 1984 WM

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

Id. S. Nakano (*MPC* 26170)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	234.33164		(2000.0)	P	Q
<i>n</i>	0.27029647	ω	171.13005	+0.88315082	-0.46514041
<i>a</i>	2.3690586	Ω	216.78692	+0.42392082	+0.84683014
<i>e</i>	0.1206186	<i>i</i>	5.82123	+0.20083766	+0.25792076
<i>P</i>	3.65	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1984 11 18	688	1.5+	1.6-	1991 10 07	691	1.1-	0.3+	1997 03 13	809	1.5-	1.6-
1984 11 18	688	1.2-	0.3-	1995 11 20	411	0.0	0.3+	1997 03 31	704	0.5+	0.2-
1991 09 11	095	(3.3+	4.0+)	1995 11 20	411	0.4-	0.5+	1997 03 31	704	0.5+	0.0
1991 09 11	095	0.4-	0.6+	1995 11 21	411	0.4-	0.5+	1997 04 03	704	0.1-	0.2-

1991 09 13	675	1.0+	1.1-	1995 11 21	411	0.9-	1.4+	1997 04 03	704	0.6+	0.5+
1991 09 13	675	0.7+	0.8-	1995 12 18	801	0.6+	0.1-	1997 04 05	704	0.2-	1.2+
1991 09 15	675	0.8+	0.9-	1995 12 18	801	1.4+	1.2-	1997 04 05	704	0.7+	0.8+
1991 09 15	675	0.5+	0.9-	1997 03 11	809	0.4-	0.8-	1997 04 06	704	0.3-	0.0
1991 10 04	303	1.5+	0.5-	1997 03 11	809	0.3+	0.6-	1997 04 06	704	0.0	0.8+
1991 10 05	303	(3.3+	1.1-)	1997 03 11	809	0.0	0.9-	1997 04 07	704	0.8+	0.0
1991 10 07	691	1.3-	0.2+	1997 03 13	809	1.7-	1.1-	1997 04 07	704	0.3+	0.2+
1991 10 07	691	1.0-	0.3+	1997 03 13	809	0.9-	2.1-				

(7947)* 1992 BE₂ = 1977 RW₁₆ = 1996 HV₂₃

Discovered 1992 Jan. 30 by E. W. Elst at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 27712)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
<i>M</i>	296.87681	(2000.0)		P		Q	
<i>n</i>	0.29603617	ω	263.69272	-0.12682426		-0.99169612	
<i>a</i>	2.2296645	Ω	193.64879	+0.94205412		-0.11369157	
<i>e</i>	0.0750696	<i>i</i>	5.18306	+0.31056342		-0.06010853	
<i>P</i>	3.33	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 09 09	675	0.0	2.1-	1996 04 18	691	0.2-	1.3-	1997 08 12	557	1.0+	0.5-
1977 09 10	675	1.4+	1.4-	1996 04 20	809	0.1-	0.6-	1997 08 13	557	0.8+	1.3-
1989 03 07	675	0.7-	0.8-	1996 04 20	809	0.9-	0.7-	1997 09 26	557	1.2+	0.6-
1989 03 07	675	0.5-	1.1+	1996 04 20	809	0.3-	1.3-	1997 09 26	557	1.1+	0.7-
1992 01 30	809	0.5+	2.0-	1996 04 21	809	1.0+	0.6+	1997 09 28	691	1.1-	0.6-
1992 01 30	809	1.2-	1.4-	1996 04 21	809	0.5+	0.2-	1997 09 28	691	1.1-	0.5-
1992 01 30	809	1.8-	1.0-	1996 04 21	809	0.2+	1.1-	1997 09 28	691	0.9-	0.2-
1992 02 02	809	1.4+	0.2+	1996 05 22	809	(0.5-	4.0-)	1997 09 29	691	1.0-	0.3+
1992 02 02	809	0.4+	0.4+	1996 05 22	809	(1.0+	4.0-)	1997 09 29	691	0.7-	0.0
1992 02 02	809	0.7+	0.0	1996 05 22	809	(0.3+	3.8-)	1997 09 29	691	0.8-	0.1-
1992 02 06	809	0.1-	0.3-	1996 05 23	809	(0.5+	2.8-)	1997 10 04	557	0.6+	0.3+
1992 02 06	809	0.1+	1.2-	1996 05 23	809	(1.4+	2.9-)	1997 10 04	557	0.5+	0.6+
1992 02 06	809	0.1-	0.9-	1996 05 23	809	(0.7+	2.5-)	1997 10 04	557	0.5+	0.2+
1996 04 18	691	0.3-	1.0-	1997 08 11	557	0.4+	0.7-				
1996 04 18	691	0.5-	0.9-	1997 08 11	557	1.1+	0.8-				

(7948)* 1992 HY = 1986 WU₈

Discovered 1992 Apr. 24 by Spacewatch at Kitt Peak.

Id. A. Lowe (*MPC* 20825)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	244.68211	(2000.0)		P		Q	
<i>n</i>	0.25842501	ω	306.56742	-0.75528162		-0.65539731	
<i>a</i>	2.4410670	Ω	192.48322	+0.60425317		-0.69514732	
<i>e</i>	0.0468236	<i>i</i>	0.53341	+0.25382630		-0.29533807	
<i>P</i>	3.81	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 11 30	381	(9.4+	1.5+)	1992 04 25	809	(2.8+	0.4-)	1997 08 26	557	0.5+	0.0
1986 11 30	381	0.9+	0.7-	1992 04 25	809	(2.9+	0.2+)	1997 08 26	557	0.6+	0.1+
1986 12 01	381	0.1+	0.2+	1992 04 25	809	(2.9+	0.3-)	1997 08 26	557	0.2+	0.1-
1986 12 01	381	0.1+	0.6-	1992 05 08	691	0.6-	1.0-	1997 08 27	557	0.6+	0.1+
1992 04 04	809	(3.6+	0.6+)	1992 05 08	691	0.6-	0.1-	1997 08 27	557	0.7+	0.2+
1992 04 04	809	(2.9+	0.5+)	1992 05 08	691	0.4-	0.2-	1997 08 27	557	0.7+	0.3+
1992 04 04	809	(2.9+	0.6-)	1994 12 09	411	0.3+	0.2+	1997 09 20	557	0.5-	0.2-
1992 04 06	809	(3.6+	0.2-)	1994 12 09	411	0.6-	1.2+	1997 09 20	557	0.8-	0.2-
1992 04 06	809	(3.6+	1.1-)	1995 01 19	411	0.2+	0.1+	1997 09 20	557	0.6-	0.4-
1992 04 06	809	(3.4+	1.0-)	1995 01 19	411	0.4+	0.2-	1997 09 21	557	1.0-	0.4-
1992 04 24	691	0.3-	0.2-	1996 06 12	566	0.8+	0.5+	1997 09 21	557	0.8-	0.2-
1992 04 24	691	0.6-	0.3-	1996 06 12	566	0.8+	0.3+				
1992 04 24	691	0.5-	0.2-	1996 06 12	566	1.2+	0.8+				

(7949)* 1992 SU = 1994 EP₅

Discovered 1992 Sept. 23 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 23340)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	327.51856	(2000.0)		P		Q	
<i>n</i>	0.19210285	ω	263.40333	+0.17067591		-0.98516514	
<i>a</i>	2.9747252	Ω	176.60979	+0.98045431		+0.16800231	
<i>e</i>	0.2674003	<i>i</i>	17.59018	+0.09787276		+0.03499816	
<i>P</i>	5.13	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 03 07	675	0.9+	0.0	1994 03 10	675	0.3-	1.0-	1997 09 04	608	0.4-	0.1-
1989 03 07	675	1.1+	0.8+	1994 03 10	675	1.9-	0.8-	1997 09 04	608	0.3-	0.3+
1989 03 29	675	0.1-	0.2+	1994 03 11	675	0.9-	0.1+	1997 09 22	423	0.8+	0.2+
1989 03 29	675	0.2+	0.2-	1994 04 03	033	0.4+	0.7-	1997 09 22	423	0.1+	0.1+
1989 05 09	675	0.8+	0.8+	1994 04 03	033	0.7+	0.3+	1997 09 22	423	0.6+	0.2+
1989 05 09	675	1.2-	0.3-	1994 04 03	033	1.5+	0.6-	1997 09 25	423	0.3+	0.1+
1992 09 23	675	(0.7+	2.3-)	1994 04 04	033	0.1-	0.2+	1997 09 25	423	0.2+	0.4-
1992 09 23	675	(0.6-	2.3-)	1995 05 06	691	0.7-	0.2-	1997 09 25	423	0.4-	0.4-
1992 09 25	675	0.6-	0.9-	1995 05 06	691	0.8-	0.8-	1997 09 25	423	0.2+	0.1+
1992 09 25	675	0.5-	1.9-	1995 05 06	691	1.0-	1.4-	1997 09 27	423	0.0	0.3+
1992 09 30	675	0.6+	0.4-	1996 06 27	608	0.3+	0.1+	1997 09 27	423	0.1+	0.2+
1992 09 30	675	0.1+	0.1+	1996 06 27	608	0.1-	0.1+	1997 09 29	423	0.3-	0.0
1992 10 01	675	1.3-	0.5-	1996 06 28	608	0.9+	0.3-	1997 09 29	423	0.2+	0.1+
1992 10 01	675	(4.3+	1.9+)	1996 06 28	608	0.4+	0.2+	1997 09 29	423	0.5+	0.2+
1992 10 03	675	0.6+	0.4-	1997 09 02	608	0.3-	0.2+				
1992 10 03	675	0.4+	0.1-	1997 09 02	608	0.9-	0.6+				

(7950)* 1992 SS₂₆ = 1959 SE = 1982 YF₁ = 1983 AP₃ = 1989 BB₂
= 1995 DB

Discovered 1992 Sept. 28 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 29300)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	23.10743	(2000.0)		P		Q	
<i>n</i>	0.18056503	ω	335.89214	+0.84654053		+0.53154471	
<i>a</i>	3.1001327	Ω	351.81605	-0.44960847		+0.68498929	
<i>e</i>	0.1082784	<i>i</i>	11.67177	-0.28499361		+0.49824682	
<i>P</i>	5.46	<i>H</i>	11.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1959 09 29	024	0.3-	0.0	1992 10 20	095	1.0-	0.8-	1995 03 20	411	0.5-	0.2+
1982 12 23	095	1.3+	1.3-	1992 10 28	095	(6.6-	1.6+)	1997 08 27	629	0.0	1.6+
1983 01 14	095	0.1-	0.3+	1995 02 20	411	1.1-	0.2-	1997 08 27	629	0.6+	0.2+
1989 01 29	399	1.2+	1.5-	1995 02 20	411	(2.1-	0.5+)	1997 08 27	629	(3.1+	0.3-)
1989 01 29	399	0.8+	0.8+	1995 02 21	411	1.2-	0.9+	1997 08 30	566	0.0	0.0
1989 01 29	399	(2.7+	0.7-)	1995 02 21	411	0.5-	0.2+	1997 08 30	566	0.2+	0.1+
1989 01 29	399	(4.3+	1.6-)	1995 02 26	411	0.9+	1.1+	1997 08 30	566	0.0	0.1+
1992 09 27	046	(2.5+	2.5-)	1995 02 26	411	0.6+	1.1+	1997 10 02	124	0.2+	0.1-
1992 09 27	046	0.8-	1.1-	1995 03 05	411	0.4-	0.4+	1997 10 02	124	0.1-	0.6-
1992 09 27	046	(0.5+	3.1-)	1995 03 05	411	0.0	0.2+	1997 10 02	124	0.7+	0.3-
1992 09 27	046	1.1-	1.0+	1995 03 11	411	0.0	0.0	1997 10 06	758	0.3-	0.3+
1992 09 28	095	0.1-	0.8+	1995 03 11	411	0.0	0.7-	1997 10 06	758	0.4+	0.1-
1992 09 28	095	(3.1+	3.8+)	1995 03 20	411	1.0+	0.2-				

(7951)* 1992 WC₂ = 1964 TG₁ = 1975 TZ₁ = 1988 CL₇

Discovered 1992 Nov. 18 by S. Ueda and H. Kaneda at Kushiro.

Id. T. Kobayashi (*MPC* 22238)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	337.92713	(2000.0)		P		Q	
<i>n</i>	0.17683944	ω	326.34301	+0.73743221		-0.67539134	
<i>a</i>	3.1435229	Ω	76.14288	+0.62111895		+0.67442316	
<i>e</i>	0.1694952	<i>i</i>	0.37453	+0.26533939		+0.29832859	
<i>P</i>	5.57	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1964 10 08	330	0.9+	1.6-	1988 02 23	809	0.6+	0.2+	1994 02 14	675	2.0-	0.4+
1975 10 03	095	(0.2+	2.5-)	1988 02 23	809	0.2-	0.2+	1994 02 14	675	0.2-	0.4-
1988 01 18	071	(7.2+	3.0+)	1988 02 23	809	0.9-	0.8+	1994 02 15	675	1.6+	1.1-
1988 01 18	071	(3.7+	4.9+)	1992 10 25	675	0.9-	0.4-	1994 02 15	675	2.0+	0.4+
1988 01 18	071	2.1+	0.8+	1992 10 25	675	0.6-	1.2-	1997 08 11	691	0.1+	0.8+
1988 01 19	071	(3.4+	0.4-)	1992 11 16	400	0.5+	0.1-	1997 08 11	691	0.1-	0.4+
1988 01 19	071	(2.5+	3.0+)	1992 11 16	400	0.4+	0.2-	1997 08 11	691	0.2+	0.3-
1988 02 15	809	0.4-	1.1+	1992 11 18	399	0.0	0.1-	1997 09 23	691	0.1-	0.3+
1988 02 16	809	0.4+	0.7+	1992 11 18	399	0.7-	2.2+	1997 09 23	691	0.2-	0.0
1988 02 16	809	0.7-	0.3-	1992 11 21	399	1.7-	1.7+	1997 09 23	691	0.2-	0.1+
1988 02 16	809	1.4-	0.9+	1992 11 21	399	(3.2-	2.8+)	1997 09 29	691	0.0	0.6+
1988 02 17	809	0.5-	0.4-	1992 11 25	675	1.2+	0.8-	1997 09 29	691	0.2-	0.4+
1988 02 17	809	0.6-	0.0	1992 11 25	675	0.8+	0.9-	1997 09 29	691	0.0	0.4+
1988 02 17	809	0.7-	0.4-	1992 11 27	399	(2.6-	0.2+)	1997 10 05	691	0.5-	0.0
1988 02 21	809	1.0+	0.7-	1992 11 27	399	(2.5-	1.5+)	1997 10 05	691	0.6-	0.1+
1988 02 21	809	0.1+	0.6-	1992 11 28	675	1.5+	0.1+	1997 10 05	691	0.5-	0.1+
1988 02 21	809	0.9-	0.4+	1992 11 28	675	0.7+	0.9-				

(7952)* 1992 XB = 1962 CB = 1976 SE₁₁ = 1987 YL₂ = 1991 NZ₃

Discovered 1992 Dec. 3 by A. Natori and T. Urata at the JCPM Yakiimo

Station.

Id. S. Nakano (*MPC* 21598)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Nakano			
<i>M</i>	7.70237	(2000.0)	P	Q	
<i>n</i>	0.18730677	ω 140.77390	+0.76602747	-0.61895653	
<i>a</i>	3.0252904	Ω 258.34658	+0.53618501	+0.76411244	
<i>e</i>	0.2455538	<i>i</i> 10.20260	+0.35455259	+0.18172781	
<i>P</i>	5.26	<i>H</i> 12.5	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1962 02 04	760	0.7-	1.9-	1991 07 10	809	1.0+	1.2-	1992 12 03	885	0.2-	0.8-
1962 02 04	760	2.1+	1.3-	1991 07 10	809	1.4+	1.1-	1992 12 03	885	0.3-	0.7+
1976 09 23	033	2.1-	0.2+	1991 07 10	809	1.8+	1.2-	1992 12 04	894	(2.9-	1.7-)
1976 09 24	033	0.6+	0.6+	1991 07 11	809	0.5+	0.1-	1992 12 04	894	(3.5-	1.6-)
1987 12 20	010	1.1-	2.2-	1991 07 11	809	0.4+	0.0	1992 12 16	885	1.1+	1.1-
1987 12 20	010	1.9-	0.6-	1991 07 11	809	0.7+	0.1+	1992 12 16	885	0.5-	1.4-
1987 12 20	010	1.9-	0.0	1991 07 12	809	1.8-	1.1-	1992 12 23	885	0.4+	0.5+
1988 01 10	399	2.1-	0.3-	1991 07 12	809	1.9-	0.9-	1992 12 23	885	0.0	0.2+
1988 01 10	399	0.2+	0.9-	1991 07 12	809	1.6-	0.9-	1997 07 19	385	0.9+	0.9-
1988 01 11	399	1.3+	0.8+	1992 11 23	385	0.0	0.5+	1997 07 19	385	0.7+	0.0
1988 01 11	399	0.3+	0.1-	1992 11 23	385	1.0-	0.4+	1997 07 19	385	0.1-	0.0
1991 07 08	809	0.9+	0.7-	1992 11 26	885	1.2+	0.1-	1997 10 11	385	0.4+	0.3+
1991 07 08	809	0.9+	0.8-	1992 11 26	885	0.6+	0.0	1997 10 11	385	0.5+	0.2+

(7953)* 1993 KP = 1953 RQ = 1975 RS = 1978 EO₂ = 1978 GA₁

Discovered 1993 May 20 by S. Otomo at Kiyosato.

Id. K. Ichikawa (*MPC* 22412)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Nakano			
<i>M</i>	72.40023	(2000.0)	P	Q	
<i>n</i>	0.26816010	ω 78.66533	-0.10756820	+0.99418159	
<i>a</i>	2.3816244	Ω 185.16957	-0.93491188	-0.10308914	
<i>e</i>	0.1908789	<i>i</i> 3.60248	-0.33818466	-0.03123461	
<i>P</i>	3.68	<i>H</i> 13.9	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1953 09 06	675	0.3+	1.9-	1993 05 23	894	0.5-	0.1-	1997 09 01	367	0.0	0.0
1953 09 06	675	0.2-	0.3+	1993 05 23	894	0.2-	0.9-	1997 09 02	566	0.3-	0.4-
1953 09 09	760	0.3-	0.7+	1993 05 25	361	(3.0+	0.4-)	1997 09 02	566	0.1-	0.3-
1953 09 09	760	0.6+	0.2-	1993 05 25	361	(3.5+	0.5-)	1997 09 02	566	0.1-	0.4-
1975 09 03	095	(4.1-	5.1+)	1993 05 25	361	(0.5+	2.7+)	1997 09 03	861	0.0	0.0
1975 09 06	095	(2.6-	3.3+)	1993 05 27	361	0.5+	1.2+	1997 09 03	861	0.1+	0.3-
1978 03 05	095	0.5-	1.8-	1993 05 27	361	(0.1-	2.8+)	1997 09 03	861	0.2-	0.1+
1978 04 07	095	0.3-	0.6-	1993 05 27	361	0.1+	0.2+	1997 09 24	861	0.2-	0.4+

1993 05 20	894	0.2+	0.2+	1997 09 01	367	0.2+	0.2+	1997 09 24	861	0.2+	0.0
1993 05 20	894	0.1+	0.3+	1997 09 01	367	0.2+	0.1-	1997 09 24	861	0.5+	0.0

(7954)* 1993 SQ₂ = 1975 GF

Discovered 1993 Sept. 19 by K. Endate and K. Watanabe at Kitami.

Id. K. Ichikawa (*MPC* 25642)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Nakano			
<i>M</i>	29.46397	(2000.0)	P	Q	
<i>n</i>	0.23395135	ω 140.73854	+0.75436139	+0.65641466	
<i>a</i>	2.6084690	Ω 178.17932	-0.64648853	+0.74487902	
<i>e</i>	0.1898287	<i>i</i> 13.95157	-0.11398014	+0.11947815	
<i>P</i>	4.21	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1975 04 15	805	0.4+	0.8-	1993 09 22	809	1.0+	0.8-	1997 08 12	587	0.3+	0.1+
1975 04 18	805	0.5-	0.1+	1993 09 22	809	0.1+	2.1-	1997 08 13	587	0.7-	0.2+
1989 11 22	675	1.8+	1.5+	1993 10 10	675	0.7-	0.5-	1997 08 14	587	0.0	0.3-
1989 11 22	675	1.0+	0.1+	1993 10 10	675	0.4-	0.6+	1997 08 14	587	0.2-	0.3+
1993 09 15	809	1.0+	0.5+	1996 03 16	566	0.7-	1.1-	1997 09 20	557	0.3+	0.1+
1993 09 15	809	0.0	0.1+	1996 03 16	566	0.6-	0.9-	1997 09 20	557	0.4+	0.0
1993 09 15	809	0.2-	0.4-	1996 03 16	566	0.5-	0.7-	1997 09 20	557	0.2+	0.0
1993 09 19	675	0.1-	0.1-	1996 06 13	566	0.6-	0.4-	1997 09 21	557	0.4+	0.1-
1993 09 19	675	0.7-	0.4-	1996 06 13	566	0.6+	0.8-	1997 09 21	557	0.4+	0.1-
1993 09 19	400	0.1+	0.8-	1996 06 13	566	1.0+	0.4+	1997 09 21	557	0.4+	0.1-
1993 09 19	400	1.4-	0.5-	1997 08 08	587	0.3+	0.1-	1997 09 28	566	0.2+	0.8+
1993 09 21	400	1.4-	1.1-	1997 08 08	587	0.0	0.0	1997 09 28	566	0.2-	0.9+
1993 09 21	400	(2.8-	2.6-)	1997 08 12	587	0.1+	0.2+	1997 09 28	566	0.2-	0.8+
1993 09 22	809	0.1-	1.3-	1997 08 12	587	0.4+	0.1+				

(7955)* 1993 WE = 1990 CN = 1995 GL

Discovered 1993 Nov. 18 by T. Urata at the Nihondaira Observatory.

Id. T. Urata (*MPC* 25217)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Williams			
<i>M</i>	251.60891	(2000.0)	P	Q	
<i>n</i>	0.21512723	ω 211.14516	-0.78340543	-0.62098308	
<i>a</i>	2.7584967	Ω 290.44498	+0.57570102	-0.70951874	
<i>e</i>	0.1214662	<i>i</i> 1.56627	+0.23418854	-0.33311136	
<i>P</i>	4.58	<i>H</i> 13.4	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1988 10 07	675	0.0	1.3-	1993 11 21	385	0.4+	0.3+	1993 12 18	385	0.2-	0.3-
1988 10 13	675	0.6+	0.3+	1993 11 21	385	0.1+	0.7+	1993 12 18	385	0.3+	0.6-
1988 10 13	675	0.3+	2.2-	1993 11 23	385	0.4+	0.7+	1995 04 01	905	0.5-	1.2-
1990 02 01	399	1.1-	0.9+	1993 11 23	385	0.5+	1.0+	1995 04 01	905	1.6-	0.0
1990 02 01	399	0.6+	0.1-	1993 11 23	385	1.0+	1.1+	1995 04 03	905	1.5+	0.5-
1990 02 01	399	1.1+	0.8-	1993 12 05	385	0.0	0.2-	1995 04 03	905	0.5-	0.0
1993 11 12	033	0.9-	0.4-	1993 12 05	385	0.2+	0.2-	1997 08 11	557	0.6-	0.2-
1993 11 12	033	1.3-	0.0	1993 12 05	385	0.2-	0.3-	1997 08 11	557	0.7-	0.3+
1993 11 18	385	0.0	1.0+	1993 12 11	385	0.3+	0.2-	1997 08 11	557	0.2-	0.1+
1993 11 18	385	0.4-	0.6+	1993 12 11	385	0.4+	0.6-	1997 08 12	557	0.5+	0.2+
1993 11 18	385	0.4-	0.3+	1993 12 11	385	0.1+	1.7-	1997 10 10	385	0.5+	0.3+
1993 11 21	385	0.1-	0.2+	1993 12 18	385	0.6-	0.5-	1997 10 10	385	0.7+	0.2-

(7956)* 1993 YH = 1989 EK₆

Discovered 1993 Dec. 17 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 22965)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

		Nakano			
<i>M</i>	136.99083	(2000.0)	P	Q	
<i>n</i>	0.18146492	ω 143.73689	-0.48022248	+0.87610161	
<i>a</i>	3.0898751	Ω 97.52745	-0.81458422	-0.42733911	
<i>e</i>	0.1125323	<i>i</i> 2.47469	-0.32532894	-0.22322021	
<i>P</i>	5.43	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1989 02 02	675	0.4+	1.0+	1993 12 23	411	0.5-	0.5-	1996 07 21	566	0.7+	0.3+
1989 02 02	675	0.3-	0.5-	1994 01 04	411	0.1-	0.8+	1996 07 21	566	1.1+	0.9+
1989 03 07	033	0.5+	0.9+	1994 01 04	411	0.4-	0.6+	1996 07 21	566	0.4-	0.6-
1989 03 10	033	0.3+	0.3-	1994 01 04	411	0.4+	0.5-	1996 07 21	566	1.2+	0.6+
1989 03 10	033	1.7+	1.0+	1994 01 07	675	0.5+	1.3-	1996 07 21	566	0.2-	1.0-
1992 10 22	675	1.0-	0.1-	1994 01 07	675	1.0+	0.2+	1996 07 21	566	0.3-	0.6-
1992 10 22	675	1.5+	0.3-	1995 03 28	411	0.1-	0.3+	1997 09 01	327	0.5+	0.2-
1992 11 18	691	1.6-	0.3+	1995 03 28	411	1.6-	0.4-	1997 09 01	327	0.4+	0.2+
1992 11 18	691	1.3-	0.2+	1995 04 01	411	0.0	0.5+	1997 09 01	327	0.5+	0.5+
1992 11 18	691	0.8-	0.1+	1995 04 01	411	0.6+	0.4-	1997 09 23	557	0.2+	0.0
1993 12 17	411	0.9-	1.3+	1995 04 03	411	0.6+	0.5-	1997 09 23	557	0.0	0.3-
1993 12 17	411	0.5-	0.2-	1995 04 03	411	0.2-	0.1-	1997 09 23	557	0.2+	0.2-
1993 12 18	411	0.4-	0.8+	1995 04 19	411	0.6-	0.2-	1997 09 23	557	0.5+	0.0
1993 12 18	411	0.8+	0.9-	1995 04 19	411	0.2-	0.2-	1997 09 25	557	0.1+	0.2-
1993 12 18	411	0.1-	1.4-	1996 07 15	566	1.2-	0.9+	1997 09 25	557	0.3+	0.1-
1993 12 23	411	0.9-	1.8+	1996 07 15	566	0.9-	1.2+				
1993 12 23	411	0.7+	0.4-	1996 07 15	566	0.4-	1.0+				

(7957)* 1994 BT = 1981 KD₁ = 1992 TV₁

Discovered 1994 Jan. 17 by A. Boattini and M. Tombelli at Cima Ekar.

Id. G. V. Williams (*MPC* 23243)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	319.94030	(2000.0)	
<i>n</i>	0.21356849	ω	111.26481
<i>a</i>	2.7719023	Ω	6.53522
<i>e</i>	0.1162164	<i>i</i>	9.02815
<i>P</i>	4.61	<i>H</i>	13.5

Residuals in seconds of arc

1981 05 28	809	1.4+	0.1-	1994 02 12	108	0.3+	0.9+	1996 10 31	104	0.3-	0.2-
1992 10 05	372	0.7-	0.2+	1994 02 12	108	1.0+	0.7+	1996 10 31	104	0.2+	0.1-
1992 10 05	372	(0.2+ 2.5+)		1994 02 12	108	(2.4- 0.9+)		1996 10 31	104	0.4-	0.8-
1992 10 21	691	1.2-	0.7+	1994 02 12	108	(2.6- 0.5+)		1996 10 31	104	0.0	1.0-
1992 10 21	691	1.2-	1.0+	1994 03 05	108	0.1-	0.0	1996 10 31	104	(2.4- 1.3-)	
1992 10 21	691	1.0-	0.6+	1994 03 05	108	0.6+	0.2-	1997 08 15	104	0.4-	0.4-
1994 01 17	098	0.8+	0.5-	1994 03 05	108	0.1-	1.3+	1997 08 15	104	0.5+	0.1-
1994 01 17	098	0.4+	0.3-	1994 03 05	108	0.0	1.2-	1997 09 28	104	0.2+	0.7-
1994 01 18	098	1.6-	0.3-	1994 03 05	108	0.5+	0.5+	1997 09 28	104	0.4+	0.2+
1994 01 19	098	0.8+	0.8-	1996 09 08	104	0.3-	0.2-	1997 09 28	104	1.0+	0.7+
1994 01 22	108	0.9-	1.9-	1996 09 08	104	0.3-	0.1-	1997 09 30	104	0.4-	0.3-
1994 01 22	108	1.4-	0.6-	1996 09 08	104	0.9-	0.1-	1997 09 30	104	0.3+	0.1-
1994 01 22	108	0.0	0.8+	1996 10 30	104	0.8+	0.2-	1997 09 30	104	0.1+	0.7-
1994 01 22	108	1.2-	1.5+	1996 10 30	104	0.6+	0.0	1997 10 04	108	1.9+	0.4+
1994 01 22	108	0.7-	0.7+	1996 10 30	104	0.1+	0.5+	1997 10 04	108	0.9+	1.0-
1994 02 12	108	0.5+	1.2+	1996 10 30	104	0.7+	1.1+				

(7958)* 1994 LE₃ = 1991 GT

Discovered 1994 June 5 by C. S. Shoemaker at Palomar.

Id. G. V. Williams (*MPC* 25430)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	57.55217	(2000.0)	
<i>n</i>	0.38326031	ω	153.74268
<i>a</i>	1.8770398	Ω	195.84538
<i>e</i>	0.0768668	<i>i</i>	21.96937
<i>P</i>	2.57	<i>H</i>	13.8

Residuals in seconds of arc

1986 05 05	675	(0.8+ 2.6+)		1994 06 07	675	0.2+	1.7-	1997 08 14	608	0.1-	0.1-
1986 05 05	675	0.5+	0.1+	1994 07 09	675	0.0	0.2+	1997 08 14	608	0.2-	0.3-
1991 04 10	675	0.3-	0.9-	1994 07 09	675	1.7+	0.3+	1997 08 15	608	0.6-	0.0
1991 04 10	675	0.8-	0.5-	1994 07 11	675	1.1-	0.3+	1997 08 15	608	0.6-	0.0
1991 04 12	675	(0.9- 2.5-)		1994 07 11	675	1.4-	1.5+	1997 09 12	608	0.1+	0.2-
1994 06 05	675	0.2-	0.6+	1994 07 13	675	0.8-	1.1+	1997 09 12	608	0.1+	0.1-
1994 06 05	675	0.6+	0.3-	1996 03 22	801	0.1+	0.2+	1997 09 16	327	0.2+	0.7-

1994 06 06	675	1.0+	0.5-	1996 03 24	801	0.3+	0.3+	1997 09 16	327	0.2+	0.4-
1994 06 07	675	0.5-	1.9-	1996 03 24	801	0.2+	0.6-	1997 09 16	327	0.2+	0.5-

(7959)* 1994 PK

Discovered 1994 Aug. 2 by C. W. Hergenrother at the University of Arizona's Catalina Station.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	69.26901	(2000.0)	
<i>n</i>	0.36398007	ω	100.18635
<i>a</i>	1.9427533	Ω	235.92075
<i>e</i>	0.0855186	<i>i</i>	19.25973
<i>P</i>	2.71	<i>H</i>	14.5

Residuals in seconds of arc

1951 12 01	675	0.0	0.3-	1994 08 05	693	0.5-	0.5+	1996 05 20	693	0.9-	0.2-
1951 12 01	675	0.1+	0.6+	1994 08 07	693	0.3+	1.4-	1996 05 20	693	1.2-	0.3-
1989 11 03	675	0.7-	0.6-	1994 08 07	693	1.7+	0.9-	1996 05 20	693	0.7-	0.1-
1989 11 03	675	0.2-	0.2+	1994 12 01	693	0.6+	0.1+	1997 07 12	696	0.3-	0.1+
1989 11 05	675	0.3-	0.1-	1994 12 01	693	0.3+	0.1+	1997 07 12	696	0.2-	0.2+
1989 11 05	675	0.2+	0.3-	1994 12 01	693	0.3+	0.1-	1997 07 12	696	0.3-	0.2+
1994 07 06	693	1.0-	0.3+	1994 12 01	693	1.0+	0.1+	1997 09 12	608	0.3+	0.4+
1994 07 06	693	1.0-	0.5+	1994 12 01	693	0.5+	0.2+	1997 09 12	608	0.1+	0.4+
1994 07 08	693	0.7-	0.5+	1996 01 21	691	0.5+	0.1+	1997 09 18	608	0.2-	0.1+
1994 08 02	693	0.3-	0.1-	1996 01 21	691	0.5+	0.1+	1997 09 18	608	0.0	0.2+
1994 08 02	693	0.3+	0.3+	1996 02 04	608	0.9+	0.1+				
1994 08 05	693	0.6+	0.1-	1996 02 04	608	0.7+	0.2+				

(7960)* 1994 PW₁₆ = 1991 TP₂ = 1993 DM₁

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

Id. G. V. Williams (*MPC* 24901, *MPC* 25070)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	108.58327	(2000.0)	
<i>n</i>	0.30506419	ω	296.41217
<i>a</i>	2.1854551	Ω	294.19865
<i>e</i>	0.0732079	<i>i</i>	3.24519
<i>P</i>	3.23	<i>H</i>	14.3

Residuals in seconds of arc

1991 10 07	033	1.3-	0.6+	1994 08 10	809	(2.4- 3.2-)		1994 09 06	809	0.9+	1.4-
1991 10 07	033	1.9-	0.3+	1994 08 10	809	(3.4- 2.8-)		1994 09 06	809	0.4+	1.3-
1991 10 08	033	1.2-	0.5+	1994 08 10	809	(3.4- 2.9-)		1995 11 18	327	0.6+	0.1+
1991 10 09	033	0.2-	0.6+	1994 08 11	809	(2.5- 0.3-)		1995 11 18	327	0.4-	0.6+
1993 02 19	511	1.4-	0.7-	1994 08 11	809	(2.5- 0.5-)		1995 11 18	327	0.1+	0.3-
1993 02 19	511	1.4+	1.4-	1994 08 11	809	(2.4- 0.0)		1997 07 08	689	1.0-	0.7+
1993 02 19	511	(2.8- 1.5-)		1994 08 12	809	1.3+	0.1-	1997 07 09	689	0.7-	0.5+
1993 02 19	511	(3.9+ 2.7-)		1994 08 12	809	1.8+	0.5+	1997 07 15	104	0.2-	0.3-
1993 02 20	511	(1.8- 2.9-)		1994 08 12	809	0.9+	0.3+	1997 07 15	104	0.3-	0.4-
1993 02 20	511	(1.6- 4.3-)		1994 08 13	809	0.5-	0.3+	1997 07 23	689	0.6-	0.7+
1993 02 21	511	(3.2- 1.8+)		1994 08 13	809	1.0+	0.4+	1997 09 21	684	0.1+	0.8+
1993 02 22	511	(3.1- 0.1-)		1994 08 13	809	0.6+	1.1+	1997 09 21	684	0.0	0.1-
1993 02 22	511	(0.9- 2.4-)		1994 09 05	809	0.3+	0.7-	1997 09 22	684	0.4-	0.7+
1993 02 22	511	(5.0- 0.7+)		1994 09 05	809	0.1+	0.4-	1997 09 22	684	0.7-	0.8+
1993 02 25	511	0.4+	2.0+	1994 09 05	809	0.1+	0.3-	1997 09 22	684	0.1-	0.4+
1993 02 25	511	0.3+	0.5+	1994 09 06	809	0.6+	1.3-				

(7961)* 1994 TD₂ = 1955 OF = 1978 WL₁₆ = 1993 FL₁₆

Discovered 1994 Oct. 10 by V. S. Casulli and S. Valentini at Colleverde di Guidonia.

Id. G. V. Williams (*MPC* 24234)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	35.07704	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.30605144	ω 277.41847	+0.92000763	+0.38442908
<i>a</i>	2.1807528	Ω 60.00011	-0.31585875	+0.84239708
<i>e</i>	0.1902920	<i>i</i> 5.04517	-0.23198967	+0.37759959
<i>P</i>	3.22	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1955 07 22	839	(3.4+ 3.7-)	1994 10 14	596	0.5+	1.4-	1994 11 08	596	0.1-	0.1+
1978 11 30	675	0.8- 1.3+	1994 10 14	596	1.3+	1.4-	1994 11 08	596	0.4+	0.0
1978 12 01	675	0.0 1.3+	1994 10 14	596	0.4-	1.3-	1994 11 30	675	1.8+	0.5-
1993 03 17	809	0.9- 1.5+	1994 10 27	596	0.8-	0.7+	1994 11 30	675	0.1+	1.2-
1993 03 18	809	0.4+ 0.7+	1994 10 27	596	0.6-	0.5+	1994 12 03	675	0.3+	1.9-
1993 03 19	809	(5.8+ 5.2-)	1994 10 27	596	0.7-	0.3+	1994 12 03	675	0.2+	0.8-
1993 03 23	809	1.1+ 0.7-	1994 10 31	596	0.4-	0.8+	1994 12 09	689	0.7-	0.5+
1994 10 10	596	0.1- 0.2-	1994 10 31	596	0.0	0.2+	1994 12 10	689	0.2+	1.2+
1994 10 10	596	0.5+ 0.3-	1994 10 31	596	0.7-	0.8+	1997 08 22	689	0.1+	0.0
1994 10 10	596	0.6- 0.3-	1994 11 04	675	0.2+	0.3-	1997 08 23	689	0.2+	0.0
1994 10 11	596	1.1- 1.2+	1994 11 04	675	0.4-	0.5-	1997 08 26	367	0.0	0.3-
1994 10 11	596	0.5+ 1.0+	1994 11 06	675	0.1-	0.8-	1997 08 26	367	0.1+	0.1-
1994 10 11	596	0.4+ 0.6-	1994 11 06	675	0.1+	0.2-	1997 10 06	758	0.5-	1.1+
1994 10 12	596	1.1+ 0.6+	1994 11 07	399	(3.1- 0.5+)		1997 10 06	758	0.8-	1.4+
1994 10 12	596	0.9+ 0.3+	1994 11 07	399	(1.5- 2.2+)					
1994 10 12	596	0.0 0.2+	1994 11 08	596	0.2-	0.4+				

(7962)* 1994 WG₃ = 1981 UY₂₁

Discovered 1994 Nov. 28 by S. Ueda and H. Kaneda at Kushiro.

Id. K. Kinoshita (*MPC* 24575)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	24.94092	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.30531646	ω 255.95881	+0.99759802	+0.00679332
<i>a</i>	2.1842511	Ω 103.61793	+0.02006550	+0.92417027
<i>e</i>	0.2214575	<i>i</i> 4.06735	-0.06629903	+0.38192035
<i>P</i>	3.23	<i>H</i> 14.8	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 10 24	675	0.1- 0.1+	1994 11 28	399	2.2-	1.8+	1996 03 12	691	0.4-	0.7-
1981 10 25	675	0.8+ 0.2-	1994 11 28	399	1.2-	0.2-	1996 03 12	691	0.3-	1.0-
1981 10 26	675	0.6- 0.1+	1994 11 29	399	0.3+	0.5-	1997 08 07	124	0.6-	0.2+
1994 10 05	033	0.4+ 0.8-	1994 11 29	399	2.1+	1.5-	1997 08 07	124	0.2+	1.2+
1994 10 05	033	0.7+ 0.3-	1994 12 02	905	0.3+	0.2-	1997 08 07	124	0.1-	0.1+
1994 10 06	033	0.1+ 0.6-	1994 12 02	905	0.5+	1.6-	1997 09 12	423	0.6+	0.2-
1994 10 28	033	0.3- 0.8-	1994 12 09	399	1.2-	1.3+	1997 09 12	423	0.1+	0.6-
1994 10 28	033	0.7+ 0.8-	1994 12 09	399	0.3-	1.8+	1997 09 12	423	0.3-	0.1-
1994 11 01	033	0.8+ 0.5-	1994 12 10	399	1.4-	1.1+	1997 09 12	423	0.1+	0.7-
1994 11 02	033	0.6+ 0.8-	1994 12 10	399	0.6-	1.9+				
1994 11 27	675	0.8+ 0.3-	1996 03 12	691	0.3-	0.9-				

(7963)* 1995 CA = 1988 NB₁ = 1993 VZ

Discovered 1995 Feb. 1 by A. Vagnozzi at Stroncone.

Id. G. V. Williams (*MPC* 24906, *MPC* 30664)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	71.40104	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23680894	ω 61.50681	+0.67041263	+0.71150230
<i>a</i>	2.5874422	Ω 252.21190	-0.73429303	+0.59544638
<i>e</i>	0.1809672	<i>i</i> 12.77197	-0.10658635	+0.37310601
<i>P</i>	4.16	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1988 07 13	071	(8.6- 2.7+)	1995 02 21	589	0.2+	0.3-	1996 05 22	566	0.6+	0.9-
1988 07 13	071	0.1- 0.2+	1995 02 21	589	0.3+	0.3-	1996 05 22	566	0.6+	0.6-
1993 11 09	675	0.6+ 1.5-	1995 02 22	589	0.4+	0.6-	1996 05 22	566	0.8+	0.7-
1993 11 09	675	0.8+ 0.4+	1995 02 22	589	0.3-	0.4-	1996 05 22	589	0.1-	0.6-
1993 11 10	675	1.2- 0.9-	1995 02 22	589	0.2+	1.1-	1996 05 22	589	0.2+	0.7-

1995 01 29	691	0.6- 0.1+	1995 02 27	589	0.1-	0.5-	1996 05 22	589	0.1-	0.5-
1995 01 29	691	0.4- 0.7+	1995 02 27	589	0.6+	0.7-	1996 06 16	589	0.1-	0.3-
1995 01 29	691	0.5- 0.5+	1995 02 28	589	0.7+	0.2-	1996 06 16	589	0.8-	0.7-
1995 02 01	589	0.1- 0.3+	1995 02 28	589	0.2-	0.8-	1997 08 27	589	0.4+	0.3+
1995 02 01	589	0.3- 0.2-	1995 03 21	589	1.0+	0.7+	1997 08 28	589	0.2+	0.3-
1995 02 01	589	0.6- 0.3-	1995 03 21	589	1.3+	1.5+	1997 08 28	589	0.0	0.3-
1995 02 01	589	0.4- 0.3+	1995 03 28	589	0.5+	1.2+	1997 08 29	589	1.1-	0.3-
1995 02 02	589	0.4- 0.4+	1995 03 28	589	0.6+	0.4+	1997 08 29	589	0.2+	0.3-
1995 02 02	589	0.7- 1.1+	1995 04 02	589	(2.7+ 0.3+)		1997 08 29	589	0.9+	0.4-
1995 02 02	589	0.4+ 0.1+	1995 04 02	589	0.7+	0.4+	1997 09 05	589	0.3-	0.1+
1995 02 03	589	0.5- 0.3-	1995 04 02	589	0.2-	0.9+	1997 09 05	589	0.4-	0.5-
1995 02 03	589	0.6- 0.2-	1996 04 15	589	0.1-	0.1+	1997 09 05	589	0.0	0.3-
1995 02 06	589	0.5- 0.6-	1996 04 15	589	0.4-	0.3+	1997 09 24	589	1.5+	0.4+
1995 02 06	589	0.1- 0.2-	1996 05 06	589	0.5-	0.5+	1997 09 24	589	0.8+	0.2-
1995 02 20	589	0.1- 0.7-	1996 05 06	589	0.6-	0.4-	1997 09 24	589	1.1-	0.5-
1995 02 20	589	0.2+ 0.5-	1996 05 13	589	0.2-	0.3-	1997 09 26	589	0.4-	0.1-
1995 02 20	589	0.3- 1.3-	1996 05 13	589	0.1+	0.1-	1997 09 26	589	0.1-	0.1-
1995 02 21	589	0.1- 0.2-	1996 05 13	589	0.5-	0.2+	1997 09 26	589	0.3-	0.3-

(7964)* 1995 DD₂ = 1977 EG₄ = 1982 JP₄ = 1986 EY

Discovered 1995 Feb. 23 by Y. Shimizu and T. Urata at Nachi-Katsuura

Observatory.

Id. T. Urata (*MPC* 25072)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	137.65230	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21506732	ω 81.12652	-0.42142708	+0.90547800
<i>a</i>	2.7590089	Ω 163.66774	-0.88621588	-0.39948533
<i>e</i>	0.0876400	<i>i</i> 10.26015	-0.19240746	-0.14325173
<i>P</i>	4.58	<i>H</i> 12.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1977 03 15	381	1.2- 1.0-	1995 03 05	905	0.4-	0.3-	1996 07 16	108	0.7+	0.9-
1977 03 15	381	0.2- 1.1-	1995 03 06	399	0.4+	0.8-	1996 07 16	108	1.2-	0.0
1982 05 15	095	(0.1+ 3.6+)	1995 03 11	385	0.2+	0.7+	1996 07 18	801	0.1-	0.9-
1986 03 05	688	0.2+ 2.0-	1995 03 11	385	0.1+	0.4+	1996 07 18	801	0.1-	0.8-
1986 03 05	688	1.3+ 0.8-	1995 03 22	905	1.3-	0.0	1997 07 02	704	1.3-	0.9+
1988 10 07	675	0.3- 0.1-	1995 03 22	905	1.0+	0.5-	1997 07 02	704	0.3-	1.6+
1988 10 07	675	0.1+ 1.3-	1995 04 03	905	1.8-	1.8+	1997 07 02	704	0.8+	1.3-
1995 02 23	905	1.2+ 0.7-	1995 04 03	905	1.4+	0.8+	1997 07 02	704	0.3-	0.1+
1995 02 24	905	0.6- 0.4+	1996 07 11	385	0.7-	0.1-	1997 07 02	704	0.9+	0.6+
1995 02 24	905	0.0 0.2+	1996 07 11	385	0.2-	0.4+	1997 10 10	385	0.1+	1.2-
1995 03 05	399	0.6- 0.1+	1996 07 11	385	0.5-	0.5+	1997 10 10	385	0.1-	0.7-
1995 03 05	399	0.8- 1.2-	1996 07 12	801	(2.3+ 2.2-)		1997 10 11	385	0.8+	1.1-
1995 03 05	905	0.2- 0.6-	1996 07 12	801	1.0+	0.8-	1997 10 11	385	0.7+	1.1-
1995 03 05	905	0.2+ 0.5+	1996 07 16	108	0.8+	0.3+				

(7965)* 1996 BD₁ = 1978 QL = 1986 RK₂ = 1992 BP₁

Discovered 1996 Jan. 17 by K. Endate and K. Watanabe at Kitami.

Id. S. Nakano (*MPC* 26751)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	110.52339	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.25906060	ω 280.92119	-0.55801715	+0.76423829
<i>a</i>	2.4370726	Ω 310.14137	-0.49392944	-0.61900658
<i>e</i>	0.2897818	<i>i</i> 25.02309	-0.66682124	-0.18102677
<i>P</i>	3.80	<i>H</i> 12.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1978 08 27	095	0.7- 0.6+	1992 03 01	033	0.0	0.6-	1996 01 30	400	0.2+	0.1-
1986 09 06	675	0.5- 1.7+	1992 03 01	033	0.3+	0.2+	1996 02 11	400	0.8+	0.1+
1986 09 06	675	0.2+ 1.1+	1996 01 17	400	1.2+	0.5+	1996 02 11	400	0.5+	0.4+
1986 10 07	010	(4.8- 2.5-)	1996 01 17	400	1.0+	1.1-	1997 08 31	127	0.1-	1.8-
1986 10 07	010	(6.3- 9.3-)	1996 01 19	400	(9.5- 1.6-)		1997 08 31	127	0.5+	1.4-
1986 10 07	010	(4.0- 6.1-)	1996 01 19	400	(7.9- 4.0-)		1997 09 06	127	0.7-	0.1+
1992 01 31	675	0.2- 1.5-	1996 01 21	894	0.0	1.2+	1997 09 06	127	0.8-	0.1-
1992 02 01	675	1.1- 1.9-	1996 01 21	894	0.0	0.9+	1997 09 27	138	1.5+	0.9+

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1992 02 01	675	1.1-	1.3-	1996 01 28	894	0.3-	0.9+	1997 09 27	138	0.7+	0.8+
1992 02 05	675	0.2-	0.4+	1996 01 28	894	0.2-	0.6+				
1992 02 05	675	1.2-	0.6+	1996 01 30	400	0.4+	0.4-				

(7966)* 1996 DA = 1988 AN₅ = 1993 NP₂

Discovered 1996 Feb. 18 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 27112)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	103.23428		(2000.0)		P		Q
<i>n</i>	0.26997156	ω	160.54870	-0.20181454			+0.97780369
<i>a</i>	2.3709590	Ω	97.77701	-0.90596414			-0.16452317
<i>e</i>	0.1868200	<i>i</i>	3.25804	-0.37215570			-0.12973845
<i>P</i>	3.65	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 01 11	033	0.5+	0.5+	1995 04 01	691	0.8-	0.8+	1996 03 22	411	0.3-	0.0
1988 01 11	033	0.1+	0.8+	1996 02 18	411	0.3-	0.5-	1997 08 08	557	0.2+	0.3+
1993 07 13	809	0.8+	0.4+	1996 02 18	411	0.3-	0.5-	1997 08 08	557	0.2+	0.0
1993 07 13	809	0.8+	0.6+	1996 02 19	411	0.3-	0.8-	1997 08 11	557	0.5+	0.2-
1993 07 13	809	0.6-	0.1+	1996 02 19	411	0.0	0.1+	1997 08 11	557	0.5+	0.1+
1993 07 20	809	1.6-	0.5+	1996 02 27	411	0.3-	0.7+	1997 10 10	557	0.1+	0.6-
1993 07 20	809	(2.6-	0.9+)	1996 02 27	411	0.4+	0.3+	1997 10 10	557	0.3-	0.2-
1993 07 20	809	(3.0-	1.0+)	1996 03 09	411	0.3+	0.2+	1997 10 10	557	0.1+	0.4-
1995 04 01	691	0.8-	0.1-	1996 03 09	411	0.4+	0.0				
1995 04 01	691	0.8-	0.6+	1996 03 22	411	0.5+	0.1-				

(7967)* 1996 DV₂ = 1983 HW₁ = 1984 SG₄

Discovered 1996 Feb. 28 at Klet.

Id. G. V. Williams (*MPC* 27451)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	79.00248		(2000.0)		P		Q
<i>n</i>	0.30224019	ω	150.15132	+0.51148869			+0.85877276
<i>a</i>	2.1990473	Ω	150.58168	-0.79991144			+0.48852949
<i>e</i>	0.1856299	<i>i</i>	3.47949	-0.31388056			+0.15442888
<i>P</i>	3.26	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1983 04 16	033	0.5+	0.4+	1996 02 28	046	0.5-	0.3-	1997 08 12	046	0.0	0.4+
1983 04 16	033	0.3+	0.1+	1996 02 28	046	0.0	0.4-	1997 08 12	046	0.2+	0.4+
1984 09 28	033	0.7-	0.2+	1996 02 28	046	0.3-	0.3-	1997 08 13	046	0.0	0.1+
1984 09 28	033	0.3+	0.3-	1996 02 28	046	0.5-	0.1-	1997 08 13	046	0.1-	0.1+
1994 11 27	675	1.1+	1.0+	1996 05 19	327	0.5+	0.0	1997 08 13	046	0.0	0.0
1994 12 01	691	0.3-	0.2-	1996 05 19	327	1.4+	0.9+	1997 09 21	046	0.6-	0.0
1994 12 01	691	0.2-	0.0	1996 05 19	327	1.3-	1.9+	1997 09 21	046	0.4-	0.2-
1994 12 01	691	0.3-	0.3-	1996 05 20	327	0.4+	0.5-	1997 09 21	046	0.4-	0.0
1996 02 28	046	0.1+	0.1+	1996 05 20	327	0.2+	0.2+	1997 09 23	046	0.2+	0.1+
1996 02 28	046	0.1+	0.2+	1996 05 20	327	0.4-	0.6+	1997 09 23	046	0.4+	0.2+
1996 02 28	046	0.2+	0.1-	1997 08 12	046	0.1+	0.4+	1997 09 23	046	0.3+	0.2+

(7968)* 1996 N2 = 1979 OW₇

Discovered 1996 July 14 by E. W. Elst and G. Pizarro at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 27749)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	107.20529		(2000.0)		P		Q
<i>n</i>	0.17599594	ω	133.22662	+0.39849507			+0.91713410
<i>a</i>	3.1535589	Ω	160.25301	-0.84833960			+0.37195968
<i>e</i>	0.1666029	<i>i</i>	1.38536	-0.34859948			+0.14321676
<i>P</i>	5.60	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 07 24	413	0.1+	1.4-	1996 08 24	658	0.3-	0.4-	1996 09 18	118	0.5+	0.2+
1979 07 25	675	1.0+	0.2+	1996 08 24	372	(3.6-	1.0-)	1996 09 19	691	0.3-	0.2+

1985 09 15	413	1.8-	0.2+	1996 08 24	422	1.3-	0.9-	1996 09 19	691	0.7-	0.3+
1985 09 15	413	(6.9-	2.7-)	1996 08 24	422	(3.9-	1.6-)	1996 09 19	381	0.6+	0.1-
1996 07 14	809	1.2+	1.4-	1996 08 24	422	0.1-	0.5-	1996 09 19	046	0.8+	0.6+
1996 07 14	809	0.4+	1.6-	1996 08 25	763	1.5-	0.6+	1996 09 19	046	1.0+	0.4+
1996 07 14	809	(0.1-	2.0-)	1996 08 25	817	0.4-	0.2+	1996 09 19	046	0.6+	0.2-
1996 07 16	809	1.4+	0.3+	1996 08 25	817	0.5-	0.0	1996 09 19	046	1.1+	0.4+
1996 07 16	809	0.8+	0.0	1996 08 25	763	0.9-	0.7-	1996 09 21	691	0.4-	0.1+
1996 07 16	809	0.2-	0.7-	1996 08 25	763	(3.8-	1.5-)	1996 09 21	691	0.3-	0.2+
1996 08 08	809	0.1+	0.2-	1996 08 25	658	0.1+	0.4-	1996 09 21	691	0.5-	0.2+
1996 08 08	809	0.1+	0.4-	1996 08 25	658	0.4-	0.2-	1996 09 21	696	0.8+	0.1+
1996 08 08	809	0.6-	0.1-	1996 08 25	658	0.3-	0.3-	1996 09 21	696	0.8+	0.0
1996 08 08	010	1.1+	1.2+	1996 08 26	763	0.5-	0.4+	1996 09 21	696	0.9+	0.2+
1996 08 08	010	(0.8+	2.2+)	1996 08 30	046	0.7-	0.2+	1996 09 30	118	1.9+	0.2-
1996 08 09	010	(2.6-	1.1+)	1996 08 30	046	0.4-	0.2+	1996 10 01	372	1.8-	1.1+
1996 08 09	809	1.0+	0.2+	1996 08 30	046	0.4-	0.3-	1996 10 01	413	0.7+	0.1+
1996 08 09	809	0.6+	0.9+	1996 09 02	372	1.0-	0.2-	1996 10 01	413	0.8+	0.4+
1996 08 09	809	0.1-	0.2+	1996 09 02	360	0.7-	0.4-	1996 10 01	413	0.6+	0.1+
1996 08 17	010	(1.0-	2.0-)	1996 09 02	360	0.7-	0.4-	1996 10 03	118	0.9+	0.4+
1996 08 17	010	0.4+	0.6-	1996 09 02	360	0.4-	0.5-	1996 10 03	118	1.2+	0.7+
1996 08 17	010	0.5-	0.7+	1996 09 03	372	0.3-	0.2-	1996 10 03	118	1.0+	0.6+
1996 08 20	012	(2.5-	1.5-)	Y 1996 09 06	421	0.2-	0.5-	1996 10 03	046	0.2+	0.1+
1996 08 20	046	0.1+	0.3-	1996 09 06	421	0.7-	0.2+	1996 10 03	046	0.5+	0.6+
1996 08 20	046	0.3+	0.5-	1996 09 06	421	0.5-	0.1-	1996 10 03	046	0.2+	0.4+
1996 08 20	046	0.4+	0.1-	1996 09 06	587	0.6-	0.1-	1996 10 04	360	0.8+	0.4+
1996 08 20	046	0.1+	0.3-	1996 09 06	587	1.4-	0.6+	1996 10 04	372	0.2-	1.1+
1996 08 21	046	0.0	0.1-	1996 09 07	046	0.4-	0.0	1996 10 04	360	0.6+	0.3+
1996 08 21	046	0.2-	0.2-	1996 09 07	046	0.3+	0.0	1996 10 04	360	0.1-	0.2+
1996 08 21	046	0.1-	0.2-	1996 09 08	809	(2.2+	2.5+)	1996 10 13	801	1.3+	1.3-
1996 08 21	709	0.6+	0.0	1996 09 08	809	(1.8+	2.5+)	1996 10 13	801	1.9-	0.2+
1996 08 21	709	0.3+	0.2-	1996 09 08	809	1.3+	1.9+	1996 10 14	046	0.5-	0.2+
1996 08 21	709	0.3-	0.3-	1996 09 08	587	0.0	0.2-	1996 10 14	046	0.3+	0.3+
1996 08 21	709	0.1-	0.3-	1996 09 09	709	0.2+	0.4+	1996 10 14	046	0.3-	0.6+
1996 08 21	709	0.0	0.4-	1996 09 09	709	0.5+	0.5+	1996 10 15	372	1.2-	0.5+
1996 08 21	557	0.1+	0.6-	1996 09 09	709	0.7+	0.5+	1996 10 16	360	0.6+	0.7+
1996 08 21	557	0.0	0.3-	1996 09 09	709	0.2+	0.4+	1996 10 16	360	0.6+	0.6+
1996 08 22	046	0.5-	0.5-	1996 09 09	557	0.3-	0.2+	1996 10 18	691	0.8-	0.2+
1996 08 22	046	0.1-	0.6-	1996 09 09	557	0.3-	0.2-	1996 10 18	691	0.7-	0.4+
1996 08 22	046	0.1-	0.5-	1996 09 10	372	1.3-	0.8-	1996 11 08	587	0.2+	0.3-
1996 08 22	587	0.4-	0.5-	1996 09 13	422	0.1+	0.3+	1996 12 14	691	0.8+	0.8+
1996 08 22	557	0.2-	0.4-	1996 09 13	422	0.2-	0.1+	1996 12 14	691	0.7+	0.6+
1996 08 22	557	0.3-	0.4-	1996 09 13	422	0.6-	0.0	1996 12 14	691	1.0+	0.8+
1996 08 22	587	0.7-	0.9-	1996 09 14	360	0.2+	1.1+	1996 12 15	691	0.6+	0.1-
1996 08 22	587	1.0-	0.9-	1996 09 14	360	0.2-	1.1+	1996 12 15	691	0.1+	0.2-
1996 08 23	817	0.7-	0.2-	1996 09 14	360	0.4+	1.3+	1996 12 15	691	0.3+	0.1-
1996 08 23	817	0.2+	0.7-	1996 09 14	372	0.0	0.1+	1997 10 03	709	0.3-	1.8-
1996 08 23	817	0.7+	0.4-	1996 09 17	540	0.8+	0.5+	1997 10 03	709	(1.0+	2.0+)
1996 08 23	817	0.4-	0.1-	1996 09 17	540	1.2-	0.1-	1997 10 04	709	0.4+	0.2-
1996 08 23	046	0.2-	0.0	1996 09 18	381	0.5+	0.0	1997 10 04	709	0.6+	0.4-
1996 08 23	046	0.6+	0.1+	1996 09 18	381	0.6+	0.0	1997 10 04	709	0.0	0.2-
1996 08 23	046	0.5+	0.0	1996 09 18	381	0.1-	0.4-	1997 10 04	709	0.4+	0.1-
1996 08 23	046	0.2+	0.0	1996 09 18	381	0.6+	0.0	1997 10 04	709	0.7+	0.2-
1996 08 23	587	1.0-	0.5-	1996 09 18	381	0.2+	0.1-	1997 10 10	691	0.8-	0.5-
1996 08 23	587	0.9-	0.1-	1996 09 18	381	0.4+	0.1+	1997 10 10	691	0.2-	0.2+
1996 08 23	587	1.0-	0.3+	1996 09 18	381	0.8+	0.0	1997 10 10	691	0.1+	0.2-
1996 08 23	587	0.8-	0.2-	1996 09 18	372	0.2+	0.8+	1997 10 12	867	0.2-	0.7-
1996 08 24	658	0.2-	0.5-	1996 09 18	118	0.2+	0.6+	1997 10 12	867	0.5+	0.1-
1996 08 24	658	0.8-	0.5-	1996 09 18	118	0.7+	0.1+				

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5					Nakano				
M	344.91900	(2000.0)		P		Q			
n	0.17307859	ω	275.94458	+0.64998925		−0.75932181			
a	3.1888970	Ω	133.46581	+0.71291477		+0.59526175			
e	0.1687141	i	2.42669	+0.26318530		+0.26285706			
P	5.69 <th>H</th> <td>12.6<th>G</th><td>0.15<th>U</th><td colspan="3">1</td></td></td>	H	12.6 <th>G</th> <td>0.15<th>U</th><td colspan="3">1</td></td>	G	0.15 <th>U</th> <td colspan="3">1</td>	U	1		
Residuals in seconds of arc									
1969 11 15	095	(5.2− 6.9+)	1992 12 17	399	0.5+ 0.7+	1997 09 04	905	0.6+ 0.0	
1980 10 03	046	(0.7− 2.4−)	1992 12 17	399	0.7+ 0.5+	1997 09 05	905	0.7+ 0.1+	
1980 10 03	046	0.7+ 1.6−	1993 01 13	399	1.0+ 1.3+	1997 09 05	905	0.9− 0.9+	
1980 10 05	046	0.5− 2.1−	1993 01 13	399	0.7− 0.9+	1997 09 09	905	0.3+ 0.1−	
1980 10 05	046	1.5+ 0.7−	1994 04 03	033	(2.7− 0.4+)	1997 09 09	905	1.6− 0.3−	
1982 01 30	675	1.0− 0.6−	1994 04 03	033	0.9− 0.2+	1997 09 11	385	0.3+ 0.3+	
1982 01 31	675	0.8− 0.5−	1994 04 03	033	1.8− 0.3+	1997 09 11	385	0.3+ 0.2+	
1988 02 14	809	0.7+ 0.4+	1994 04 04	033	(3.1− 0.0)	1997 09 11	385	0.2+ 0.3+	
1988 02 14	809	0.8+ 0.5+	1996 05 22	867	0.2− 0.3+	1997 09 29	905	0.1+ 0.2+	
1988 02 14	809	1.6+ 1.2+	1996 05 22	867	0.4− 0.2+	1997 09 29	905	0.3+ 1.0+	
1988 02 15	809	0.8+ 0.2−	1996 05 23	867	1.6+ 0.2−	1997 09 30	905	0.3− 1.0−	
1988 02 15	809	0.4− 0.0	1996 05 24	867	0.1− 0.9+	1997 09 30	905	0.3− 0.4+	
1991 09 14	675	0.4− 0.3−	1996 05 24	867	0.4+ 0.5+	1997 10 06	905	1.5− 0.4+	
1991 09 14	675	0.4− 0.8+	1996 05 24	867	0.3− 1.0+	1997 10 06	905	0.9− 0.6+	
1991 09 16	675	0.0 0.6+	1996 05 25	867	(8.6− 3.4−)				
1991 09 16	675	0.4+ 0.9+	1997 09 04	905	(2.3− 0.6+)				

(7970)* 6065 P-L = 1992 GK₅ = 1993 RX₁₇

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 25435)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Williams					
<i>M</i>	61.97097		(2000.0)		P		Q				
<i>n</i>	0.23839804		ω	289.79478		+0.14149187		+0.98983029			
<i>a</i>	2.5759312		Ω	348.31033		−0.87893777		+0.11878108			
<i>e</i>	0.2446858		<i>i</i>	4.16025		−0.45546509		+0.07827551			
<i>P</i>	4.13		<i>H</i>	14.6		<i>G</i>	0.15		<i>U</i>	2	
Residuals in seconds of arc											
1960 09 24	675	0.1−	0.0	1993 09 19	675	1.5−	0.5+	1997 09 01	610	0.5+	0.2+
1960 09 25	675	0.4−	0.6−	1993 09 19	675	1.9−	0.6+	1997 09 03	886	1.4−	0.0
1960 09 26	675	0.8+	0.9+	1993 09 22	809	0.0	1.8+	1997 09 03	886	1.5−	1.0−
1960 09 28	675	0.4+	0.6+	1993 09 22	809	0.9+	1.4+	1997 09 09	610	1.0+	0.3−
1960 10 17	675	0.5+	0.1+	1993 09 22	809	0.2+	0.5+	1997 09 09	610	0.7+	0.5−
1960 10 22	675	0.1+	0.8−	1993 09 23	675	0.3+	0.6−	1997 09 09	610	0.3+	0.8−
1960 10 24	675	0.4+	1.1−	1993 09 23	675	1.1−	0.1−	1997 09 10	610	1.5+	0.2+
1960 10 26	675	0.4−	1.5−	1993 10 10	675	0.2+	0.2−	1997 09 10	610	1.1+	0.2−
1992 04 03	033	1.1−	0.4+	1993 10 10	675	1.5−	0.6−	1997 09 10	610	0.7+	0.6−
1992 04 03	033	1.2−	0.3+	1996 02 20	566	0.1+	1.5−	1997 09 11	610	0.9−	0.3−
1993 09 15	809	0.9+	0.2−	1996 02 20	566	0.1+	1.2−	1997 09 11	610	0.4−	0.3−
1993 09 15	809	1.0+	0.0	1996 02 20	566	0.2+	1.7−	1997 09 11	610	0.5+	0.2−
1993 09 15	809	0.5−	1.1−	1997 08 27	886	0.3−	0.1+	1997 09 26	910	0.5+	0.2+
1993 09 19	809	(2.6−	0.2−)	1997 08 27	886	0.3−	0.8−	1997 09 26	910	0.5+	0.4+
1993 09 19	809	(3.3−	0.2−)	1997 09 01	610	0.8+	0.4−	1997 09 26	910	1.0−	0.5+
1993 09 19	809	(4.5−	0.7−)	1997 09 01	610	0.8+	0.1−				

(7971)* 9002 P-L = 1981 VD₂ = 1992 HP₄

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. K. Kinoshita (*MPC* 23680)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5					Williams					
M	143.59184	(2000.0)		$\mathbf{P}$	$\mathbf{Q}$					
n	0.23841151	ω	11.29970	−0.85866554		+0.50599703				
a	2.5758342	Ω	199.75162	−0.48705693		−0.85514883				
e	0.1060995	i	13.97484	−0.15959024		−0.11263876				
P	4.13 <th>H</th> <td>13.9<th>G</th><td>0.15<th>U</th><td>2</td><td colspan="2"></td></td></td>	H	13.9 <th>G</th> <td>0.15<th>U</th><td>2</td><td colspan="2"></td></td>	G	0.15 <th>U</th> <td>2</td> <td colspan="2"></td>	U	2			
Residuals in seconds of arc										
1960 10 17	675	0.2−	0.6−	1996 03 24	809	(1.3+ 2.6+)	1997 08 16	557	1.0−	0.6+
1960 10 22	675	0.4−	1.3−	1996 03 26	809	1.2− 1.1−	1997 08 16	557	1.1−	0.4+
1960 10 24	675	0.1+ 1.2−		1996 03 26	809	1.2− 0.8−	1997 08 30	566	0.7−	0.1−
1981 11 03	033	0.8+ 0.6+		1996 03 26	809	1.1− 1.2−	1997 08 30	566	0.1−	0.3+
1981 11 03	033	0.6+ 0.2−		1996 05 10	691	0.7+ 0.2+	1997 08 30	566	0.6+ 1.2+	
1992 04 08	675	1.1+ 0.8+		1996 05 10	691	0.7+ 0.1+	1997 09 20	557	0.5+ 0.3−	
1992 04 08	675	0.4+ 0.1+		1996 05 10	691	0.4+ 0.2−	1997 09 20	557	0.5+ 0.6−	
1992 04 30	033	0.2− 0.1+		1996 05 15	691	0.1− 0.3−	1997 09 20	557	0.5+ 0.5−	
1992 05 01	033	0.0 0.0		1996 05 15	691	0.4− 0.2−	1997 09 21	557	0.2+ 0.5−	
1992 05 04	033	0.2+ 0.1+		1996 05 15	691	0.3− 0.2−	1997 09 21	557	0.3+ 0.5−	
1992 05 05	033	0.8+ 0.3+		1997 08 12	557	0.1− 0.5+	1997 09 21	557	0.3+ 0.3−	
1992 05 06	033	0.2+ 0.2+		1997 08 12	557	0.4− 0.1+	1997 09 21	557	0.2+ 0.2−	
1996 03 24	809	(2.8+ 2.0+)		1997 08 12	557	0.3− 0.2+				
1996 03 24	809	(2.0+ 2.3+)		1997 08 16	557	0.3− 0.2−				

(7972)* 1174 T-1 = 1982 BC₁₄ = 1990 HL₅

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. T. Kobayashi (*MPC* 23986)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Williams					
<i>M</i>	303.22066		(2000.0)		P		Q				
<i>n</i>	0.16909725		ω	135.31090		+0.23833543		−0.97115821			
<i>a</i>	3.2387569		Ω	300.89962		+0.88877008		+0.22097965			
<i>e</i>	0.1277599		<i>i</i>	0.46240		+0.39151496		+0.08955293			
<i>P</i>	5.83		<i>H</i>	13.5		<i>G</i>	0.15		<i>U</i>	2	
Residuals in seconds of arc											
1971 03 24	675	0.2+	1.1−	1982 01 31	675	0.5−	0.3−	1997 08 12	691	1.0−	0.6+
1971 03 25	675	1.3−	0.2−	1990 04 29	413	0.1−	0.3+	1997 08 12	691	0.5−	0.7+
1971 03 25	675	0.9−	0.7−	1990 05 01	413	0.1+	0.1+	1997 09 06	126	0.4+	0.8−
1971 03 26	675	1.0+	0.6−	1990 05 02	413	0.1+	0.0	1997 09 06	126	0.9+	0.5−
1971 03 27	675	0.8−	1.2+	1991 09 05	691	0.5+	1.4−	1997 09 06	126	0.7+	0.5−
1971 04 02	675	(1.5−	3.4+)	1991 09 05	691	0.4+	0.4−	1997 10 06	691	0.1−	0.1−
1971 04 02	675	0.8+	0.6−	1991 09 05	691	0.8+	1.5−	1997 10 06	691	0.0	0.2+
1982 01 30	675	0.2+	1.1−	1997 08 12	691	0.8−	0.3+	1997 10 06	691	0.1−	0.1+

(7973)* 1344 T-2 = 1990 EO₅

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

Id. G. V. Williams (*MPC* 17220)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5										Williams	
<i>M</i>	273.81940			(2000.0)		P		Q			
<i>n</i>	0.20255307		ω	316.05118		−0.06852953		−0.99727796			
<i>a</i>	2.8715088		Ω	137.85635		+0.92615570		−0.07373364			
<i>e</i>	0.0840109		<i>i</i>	2.32408		+0.37086295		−0.00014603			
<i>P</i>	4.87		<i>H</i>	14.4		<i>G</i>	0.15		<i>U</i>	1	
Residuals in seconds of arc											
1951 02 04	675	1.0−	0.4+	1973 10 04	675	1.4−	1.4−	1992 07 26	809	0.1+	1.0−
1951 02 04	675	0.8+	0.4−	1973 10 04	675	0.3+	0.7+	1992 07 26	809	0.2−	1.2+
1973 09 19	675	0.5−	2.3−	1973 10 04	675	(2.9−	0.5+)	1993 12 15	691	0.2+	1.4+
1973 09 19	675	1.5−	0.2−	1973 10 04	675	0.2−	0.1+	1993 12 15	691	0.2−	0.9+
1973 09 20	675	0.9−	0.8−	1973 10 04	675	0.9−	0.4−	1993 12 15	691	0.4−	0.5+
1973 09 24	675	1.1+	0.6−	1973 10 04	675	1.7−	0.5+	1995 03 09	691	0.0	0.8−
1973 09 24	675	0.3−	0.6−	1973 10 05	675	1.8+	1.2−	1995 03 09	691	0.5+	1.0−
1973 09 25	675	0.1−	0.1+	1973 10 05	675	1.8+	0.1+	1995 03 09	691	0.4+	0.7−

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1973 09 25	675	0.4+	0.0	1973 10 05	675	1.1-	0.1+	1977 08 03	557	0.3+	0.1-
1973 09 29	675	0.5+	0.2-	1973 10 05	675	1.8+	1.4-	1977 08 03	557	0.3+	0.1-
1973 09 29	675	(1.4+ 2.9+)		1973 10 05	675	0.7+	0.3+	1977 08 04	557	0.4+	0.2+
1973 09 29	675	(0.6+ 2.8-)		1973 10 05	675	1.4-	0.2-	1977 08 04	557	0.0	0.1-
1973 09 29	675	0.0	1.8-	1988 11 06	675	0.8-	0.3+	1977 09 26	557	0.1+	0.0
1973 09 29	675	(0.3- 2.8+)		1988 11 06	675	0.7+	0.6-	1977 09 26	557	0.2-	0.2+
1973 09 30	675	1.0+	0.3+	1990 03 02	809	0.1+	0.5-	1977 09 26	910	0.3-	0.0
1973 09 30	675	0.9+	0.1+	1990 03 02	809	0.7+	0.6-	1977 09 26	910	0.5-	0.1+
1973 09 30	675	1.5+	1.1+	1990 03 02	809	1.2+	0.7-	1977 09 27	910	0.0	0.1+
1973 09 30	675	0.2-	0.2-	1990 03 04	809	1.9-	0.3-	1977 09 27	557	0.5-	0.4+
1973 09 30	675	0.9+	0.8+	1990 03 04	809	1.6-	0.0	1977 09 27	557	0.8-	0.5+
1973 09 30	675	0.9+	0.7+	1990 03 04	809	1.1-	0.2-				

(7974)* 2218 T-2 = 1990 UV₆ = 1992 EK₃₆ = 1996 HE₁₇

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

Id. B. G. Marsden (*MPC* 27322), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	42.75824		(2000.0)	<i>P</i>		<i>Q</i>
<i>n</i>	0.28902388	ω	196.98933	+0.99999957	-0.00041351	
<i>a</i>	2.2655843	Ω	163.03430	+0.00070888	+0.91856384	
<i>e</i>	0.0979764	<i>i</i>	0.16346	-0.00060121	+0.39527245	
<i>P</i>	3.41	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1973 09 19	675	0.3-	0.5+	1990 10 22	675	0.6-	0.1-	1997 09 09	910	0.9+	0.4+
1973 09 19	675	0.5+	0.4-	1992 03 02	809	0.0	0.1-	1997 09 09	910	0.8+	0.5+
1973 09 20	675	0.7-	0.4-	1992 04 06	809	0.5-	0.6-	1997 10 04	557	0.4-	0.1-
1973 09 24	675	1.5-	1.0+	1996 04 18	809	0.0	0.5+	1997 10 04	557	0.4+	0.0
1973 09 24	675	1.6-	0.1+	1996 04 18	809	0.1+	0.2-	1997 10 05	557	0.1+	0.0
1973 09 25	675	0.6+	1.4-	1996 04 18	809	0.0	0.3-	1997 10 05	557	0.1+	0.4+
1973 09 25	675	0.8+	1.8-	1996 04 20	809	0.7+	1.6+	1997 10 05	557	0.1+	0.4+
1973 09 29	675	0.0	0.7+	1996 04 20	809	0.1-	0.2+	1997 10 05	557	0.3+	0.2+
1973 09 29	675	0.2+	0.6+	1996 04 20	809	0.5+	0.8+	1997 10 06	557	0.3+	0.3+
1973 09 30	675	0.1+	0.4-	1997 09 03	910	0.4-	0.3+	1997 10 06	557	0.3+	0.3+
1973 09 30	675	0.1-	1.0-	1997 09 04	910	0.2-	0.2+	1997 10 07	557	0.4+	0.2+
1973 10 04	675	1.7+	0.5-	1997 09 04	910	0.1-	0.3+	1997 10 07	557	0.3+	0.4+
1973 10 04	675	0.4+	0.3+	1997 09 05	910	0.1+	0.1+	1997 10 10	691	1.6-	0.5+
1973 10 05	675	0.2-	0.3-	1997 09 05	910	0.0	0.1+	1997 10 10	691	1.6-	0.5+
1973 10 05	675	1.7+	0.5-	1997 09 05	910	0.1-	0.1+	1997 10 10	691	1.6-	0.5+
1990 10 22	675	0.1-	0.3-	1997 09 09	910	0.9+	0.4+				

1979 MX₁ = 1995 YW₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	76.15749		(2000.0)	<i>P</i>		<i>Q</i>
<i>n</i>	0.21245157	ω	294.70053	-0.90952844	+0.41111725	
<i>a</i>	2.7816090	Ω	269.62369	-0.35581788	-0.84619820	
<i>e</i>	0.0438055	<i>i</i>	3.50651	-0.21482935	-0.33901507	
<i>P</i>	4.64	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1979 06 24	413	0.4-	0.1+	1979 07 25	675	0.1-	0.1+	1995 12 25	691	0.5-	0.2-
1979 06 25	413	0.3+	0.8+	1979 07 27	675	(3.4+ 0.3+)		1996 01 29	691	0.4+	0.0
1979 06 29	413	0.6-	1.3-	1979 08 23	675	0.3+	0.5+	1996 01 29	691	0.3+	0.2-
1979 07 24	675	0.1-	0.0	1995 12 25	691	0.4-	0.1+	1996 01 29	691	0.3+	0.2+
1979 07 24	413	0.7+	0.2-	1995 12 25	691	0.3-	0.0				

1979 MH₂ = 1991 TU₁₄ = 1995 KV₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	85.89598		(2000.0)	<i>P</i>		<i>Q</i>
<i>n</i>	0.17608319	ω	122.65253	+0.80838439	+0.58815517	
<i>a</i>	3.1525171	Ω	201.35217	-0.55993183	+0.75557437	
<i>e</i>	0.1316126	<i>i</i>	3.81924	-0.18163429	+0.28841094	
<i>P</i>	5.60	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1979 06 23	413	1.5-	0.2+	1979 07 25	675	2.9+	1.7+	1991 10 13	691	0.2+	0.0
1979 06 24	413	1.8-	0.2-	1979 07 26	675	0.1+	0.2-	1995 05 31	691	0.2+	0.5+
1979 06 25	413	1.1-	0.4+	1979 07 28	413	0.3+	1.4-	1995 05 31	691	0.6-	0.7+
1979 06 29	413	0.4+	0.2-	1979 08 23	675	1.3-	0.6-	1995 05 31	691	0.7+	0.2-
1979 07 24	675	0.7+	1.3+	1991 10 13	691	0.2-	0.4+				
1979 07 24	413	0.8+	1.5-	1991 10 13	691	0.3-	0.6+				

1979 MP₄ = 1997 TM₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	92.41306		(2000.0)	<i>P</i>		<i>Q</i>
<i>n</i>	0.22748499	ω	80.82850	+0.42424445	+0.90474441	
<i>a</i>	2.6576690	Ω	214.35495	-0.85510246	+0.38639660	
<i>e</i>	0.0786555	<i>i</i>	3.87474	-0.29802084	+0.17926300	
<i>P</i>	4.33	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1979 06 24	413	2.3-	0.3-	1979 07 28	413	(6.2+ 0.0)		1997 10 04	910	0.1+	0.1-
1979 06 25	413	0.4-	0.7+	1979 08 23	675	0.0	0.3+	1997 10 04	910	0.0	0.1+
1979 06 29	413	2.8+	1.1+	1997 10 03	910	0.1-	0.1+	1997 10 04	910	0.1-	0.0
1979 07 24	413	1.1-	0.2+	1997 10 03	910	0.0	0.0				
1979 07 26	675	0.9+	1.8-	1997 10 03	910	0.1-	0.1+				

1979 MG₆ = 1989 NQ₁

Id. E. Bowell (1993 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	143.39267		(2000.0)	<i>P</i>		<i>Q</i>
<i>n</i>	0.28865141	ω	42.57558	+0.45806163	+0.88347564	
<i>a</i>	2.2675329	Ω	254.90524	-0.84050159	+0.39448328	
<i>e</i>	0.1367761	<i>i</i>	5.83976	-0.28937280	+0.25269295	
<i>P</i>	3.41	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1979 06 23	413	0.9+	0.9-	1979 07 24	413	2.0-	1.5-	1989 07 01	675	0.7+	0.8-
1979 06 24	413	0.1+	0.5-	1979 07 26	675	1.2+	0.2-	1989 07 01	675	0.6-	2.2+
1979 06 25	413	0.8+	0.2-	1979 07 28	413	0.0	1.0+	1993 10 14	675	0.4-	0.7-
1979 06 29	413	0.9+	0.6+	1979 08 22	675	1.6-	0.8+	1993 10 14	675	0.3+	1.0+

1980 FX₃ = 1993 QH₆Id. T. Kobayashi (*MPC* 23969)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	286.00900		(2000.0)	<i>P</i>		<i>Q</i>
<i>n</i>	0.25726432	ω	112.73477	-0.32755476	-0.94481063	
<i>a</i>	2.4484036	Ω	356.36762	+0.82569645	-0.28296195	
<i>e</i>	0.0830179	<i>i</i>	5.78305	+0.45927471	-0.16512241	
<i>P</i>	3.83	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1980 03 16	809	0.1-	0.2-	1993 08 15	809	1.2+	0.9-	1997 10 09	327	0.7+	0.1+
1980 03 16	809	0.0	0.3-	1993 08 15	809	1.5+	0.3-	1997 10 09	327	0.4+	0.0
1980 03 16	809	0.0	0.1+	1993 08 15	809	1.5+	1.3-	1997 10 09	327	0.5+	0.0
1980 03 16	809	0.3+	0.4-	1993 08 20	809	0.2+	1.1+	1997 10 10	691	1.2-	0.1-
1980 03 17	809	0.4+	0.3-	1993 08 20	809	0.9-	1.7+	1997 10 10	691	1.2-	0.2-
1980 03 17	809	0.7-	0.0	1993 08 20	809	1.3-	0.8+	1997 10 10	691	1.3-	0.1-
1980 03 17	809	0.3+	0.1+	1993 08 24	809	(3.2- 0.7-)		1997 10 10	327	0.6+	0.3+
1980 03 17	809	0.1+	0.4+	1993 08 24	809	1.1-	0.6-	1997 10 10	327	0.8+	0.2+
1980 03 23	809	0.2-	0.8+	1993 08 24	809	0.9-	0.5-	1997 10 10	327	0.6+	0.2-

1980 UF₁ = 1997 TO₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28899650	ω	347.56894	+0.99513174	+0.09698714		
<i>a</i>	2.2657274	Ω	6.93702	-0.07336408	+0.84758893		
<i>e</i>	0.1714249	<i>i</i>	8.33206	-0.06580680	+0.52171496		
<i>P</i>	3.41	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 10 14	675	0.1+	0.0	1997 10 03	910	0.4-	0.0	1997 10 04	910	0.5+	0.1+
1980 10 31	675	0.0	0.4-	1997 10 03	910	0.4-	0.0	1997 10 04	910	0.4+	0.1-
1980 11 02	675	0.1-	0.4+	1997 10 03	910	0.4-	0.0	1997 10 04	910	0.3+	0.0

1981 DQ₁ = 1997 TO

Id. G. V. Williams, S. J. Bus (1978 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21188450	ω	164.27353	-0.11009534	-0.98464934		
<i>a</i>	2.7865698	Ω	291.89202	+0.89544427	-0.03912262		
<i>e</i>	0.1618274	<i>i</i>	8.39338	+0.43134508	-0.17010320		
<i>P</i>	4.65	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1978 07 09	675	0.8-	0.2-	1981 04 07	413	0.8+	0.3+	1997 10 02	568	0.3-	0.1+
1978 07 09	675	0.9+	0.0	1981 04 07	413	0.4-	0.8+	1997 10 02	568	0.1-	0.5+
1981 02 09	413	0.9-	0.4+	1981 04 08	413	0.8-	0.7+	1997 10 02	568	0.0	0.1-
1981 02 12	413	0.7+	1.3-	1981 04 08	413	0.3+	0.3-	1997 10 02	568	0.1+	0.2+
1981 02 28	413	1.6-	0.4+	1981 04 09	413	1.4-	0.3+	1997 10 03	568	0.1+	0.1+
1981 02 28	413	2.9+	0.3-	1981 04 09	413	0.2+	0.3-	1997 10 03	568	0.0	0.1-
1981 03 06	413	1.4-	1.3+	1981 05 01	413	0.8+	0.2-	1997 10 03	568	0.1+	0.3-
1981 03 06	413	0.7-	0.9-	1981 05 02	413	0.0	0.2-	1997 10 03	568	0.2+	0.1-
1981 03 08	413	0.9+	0.5-	1997 10 02	568	0.4-	0.0	1997 10 03	568	0.1-	0.1-
1981 03 12	413	0.7-	0.1+	1997 10 02	568	0.1+	0.1+	1997 10 03	568	0.2+	0.2+
1981 03 12	413	1.4+	0.4-	1997 10 02	568	0.1+	0.1+	1997 10 03	568	0.0	0.6-

1981 DJ₂ = 1997 TE₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21236723	ω	150.54435	+0.98794379	-0.06159021		
<i>a</i>	2.7823454	Ω	213.90621	+0.03373186	+0.98105208		
<i>e</i>	0.1461811	<i>i</i>	14.75088	+0.15109346	+0.18369393		
<i>P</i>	4.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 04	413	0.1-	0.1-	1981 03 08	413	0.4+	0.9-	1997 10 06	557	0.3-	0.1-
1981 02 08	413	(3.7-	1.8-)	1981 03 12	413	1.1-	0.0	1997 10 06	557	0.2-	0.0
1981 02 09	413	0.2+	0.7+	1981 03 12	413	0.2+	0.6-	1997 10 06	557	0.1-	0.0
1981 02 12	413	(2.9+	2.9+)	1981 04 08	413	1.0-	0.1+	1997 10 07	557	0.1-	0.2-
1981 02 28	413	(4.0-	1.5+)	1981 04 08	413	1.4+	1.3-	1997 10 12	557	0.1+	0.1-
1981 02 28	413	0.0	0.3+	1981 04 09	413	1.4-	0.9+	1997 10 12	557	0.3+	0.1+
1981 03 06	413	1.3+	0.6+	1981 04 09	413	0.3+	0.5-	1997 10 12	557	0.2+	0.0
1981 03 06	413	(3.8+	1.7-)	1981 05 01	413	1.4+	0.3+				
1981 03 08	413	1.5-	0.5+	1997 10 06	557	0.1-	0.0				

1981 ED₃ = 1995 SG₂₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17251711	ω	252.78517	-0.22923911	-0.96728581		
<i>a</i>	3.1958123	Ω	211.11758	+0.95372271	-0.20089129		
<i>e</i>	0.1813825	<i>i</i>	12.13773	+0.19458267	-0.15492209		
<i>P</i>	5.71	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 02	413	0.2-	0.8-	1981 03 10	413	0.7-	1.0+	1995 09 20	691	0.4-	0.4-
1981 02 14	413	0.6+	0.7-	1981 03 10	413	1.0-	0.6-	1995 09 20	691	0.6-	0.2+
1981 03 02	413	1.0-	1.6+	1981 03 12	413	1.4-	0.9+	1995 09 30	691	0.3+	0.1-
1981 03 07	413	0.4+	1.3+	1981 04 09	413	0.9-	0.5+	1995 09 30	691	0.3+	0.3+
1981 03 07	413	2.6+	2.1-	1981 04 09	413	1.6+	1.3-	1995 09 30	691	0.4+	0.2-

1981 EB₁₀ = 1993 RG₁₉ = 1997 TB₁₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27552203	ω	340.14257	-0.99675596	+0.07376538		
<i>a</i>	2.3390086	Ω	204.15624	-0.05902524	-0.94189042		
<i>e</i>	0.1004342	<i>i</i>	4.51163	-0.05471352	-0.32772109		
<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 09	413	0.1+	0.8+	1981 04 07	413	1.5-	1.2+	1993 09 22	809	0.7+	1.6+
1981 02 13	413	1.7+	0.0	1981 04 07	413	2.2+	0.6-	1997 10 05	910	0.9+	0.4-
1981 03 01	413	1.5-	0.7+	1981 04 12	413	0.3-	0.8+	1997 10 05	910	0.6+	0.4-
1981 03 01	413	0.5-	0.0	1981 04 12	413	1.5+	0.9-	1997 10 05	910	0.9+	0.5-
1981 03 07	413	0.2-	0.6+	1981 04 26	413	1.3+	2.2-	1997 10 07	557	0.6-	0.2+
1981 03 11	413	0.5-	0.0	1981 05 02	413	0.5-	2.3-	1997 10 07	557	0.0	0.2-
1981 03 11	413	0.9+	0.5-	1993 09 15	809	1.3-	0.2+	1997 10 10	557	0.6-	0.0
1981 03 15	413	1.5-	1.2+	1993 09 15	809	(2.6-	2.4-)	1997 10 10	557	0.5-	0.4-
1981 04 05	413	0.9-	1.0+	1993 09 15	809	(3.6-	1.4-)	1997 10 10	557	0.4-	0.1-
1981 04 05	413	1.4+	0.4-	1993 09 22	809	(0.1-	3.5+)				
1981 04 06	413	1.3-	0.6+	1993 09 22	809	(0.8+	2.1+)				

1981 EN₁₄ = 1993 PH₉ = 1997 TK₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26950825	ω	258.62263	-0.98065607	-0.19261816		
<i>a</i>	2.3736754	Ω	270.26477	+0.19041159	-0.89754730		
<i>e</i>	0.0717092	<i>i</i>	1.99504	+0.04535520	-0.39661959		
<i>P</i>	3.66	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 12	413	0.2+	0.8-	1981 03 08	413	1.3+	0.3+	1981 05 01	413	0.6+	1.7-
1981 02 12	413	0.0	1.6+	1981 03 12	413	1.4-	1.0+	1981 05 03	413	0.2+	1.2-
1981 03 01	413	0.1+	1.1+	1981 03 12	413	1.0+	0.2+	1993 08 14	691	0.1-	1.7+
1981 03 01	413	0.3-	1.0+	1981 04 08	413	0.8-	0.3+	1993 08 14	691	0.7-	0.1+
1981 03 06	413	0.2+	0.3+	1981 04 08	413	0.1-	0.6-	1997 10 10	691	0.2+	0.0
1981 03 06	413	0.8+	0.1-	1981 04 09	413	0.8-	0.1-	1997 10 10	691	0.1+	0.1+
1981 03 08	413	0.9-	0.8+	1981 04 09	413	0.5+	0.8-	1997 10 10	691	0.2-	0.1+

1981 EZ₂₁ = 1997 TJ₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20617845	ω	55.04368	-0.18185713	+0.98326232		
<i>a</i>	2.8377483	Ω	204.48547	-0.91068903	-0.17267075		
<i>e</i>	0.0426375	<i>i</i>	1.53459	-0.37090897	-0.05813800		
<i>P</i>	4.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	1.0-	0.9-	1981 03 11	413	1.4+	0.1+	1981 05 02	413	1.4-	0.2-
1981 02 13	413	0.2+	0.4+	1981 03 16	413	0.2-	0.7+	1997 10 08	691	0.1-	0.8+
1981 03 02	413	1.6-	0.8+	1981 03 29	413	0.7-	0.9+	1997 10 08	691	0.0	0.2-
1981 03 02	413	(6.2+	2.9-)	1981 03 29	413	0.9+	0.9+	1997 10 08	691	0.1-	0.2+
1981 03 03	413	1.0-	1.3+	1981 04 08	413	1.1-	0.0	1997 10 09	691	0.0	0.5+
1981 03 03	413	2.1+	0.1+	1981 04 08	413	0.8-	0.5+	1997 10 09	691	0.2-	0.4+
1981 03 07	413	1.8+	0.8-	1981 04 26	413	2.1+	1.6-	1997 10 09	691	0.5-	0.6+

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1981 EG₂₆ = 1997 SW₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	267.89473		(2000.0)	P	Q
<i>n</i>	0.21543460	ω	145.52586	-0.76623536	-0.64237080
<i>a</i>	2.7558722	Ω	354.42760	+0.54745455	-0.63992754
<i>e</i>	0.1331447	<i>i</i>	9.24042	+0.33641774	-0.42172562
<i>P</i>	4.57	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1981 02 09	413	0.2+	0.5-	1981 03 11	413	1.2+	0.5+	1981 05 01	413	1.2+	2.0-
1981 02 12	413	0.7+	0.1+	1981 03 15	413	0.2-	0.0	1981 05 03	413	(4.2+	2.8+)
1981 02 13	413	0.7-	0.4-	1981 04 05	413	0.2+	0.7+	1997 09 23	691	0.3+	0.2+
1981 03 02	413	0.9-	0.5-	1981 04 05	413	(4.5+	0.1-)	1997 09 23	691	0.2+	0.2+
1981 03 02	413	0.4-	0.4-	1981 04 06	413	1.2-	0.4+	1997 09 23	691	0.2+	0.1+
1981 03 06	413	0.5-	0.2+	1981 04 06	413	1.9+	0.3-	1997 09 29	691	0.1+	0.1+
1981 03 06	413	0.0	0.6+	1981 04 07	413	(4.3+	0.7-)	1997 09 29	691	0.9-	0.1-
1981 03 11	413	0.4-	0.2+	1981 04 10	413	0.7-	1.7+	1997 09 29	691	0.1-	0.1+

1981 EX₂₇ = 1997 RN₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	193.55676		(2000.0)	P	Q
<i>n</i>	0.27112322	ω	57.93897	-0.82695250	+0.56226783
<i>a</i>	2.3642401	Ω	156.27361	-0.51762448	-0.75981858
<i>e</i>	0.1611708	<i>i</i>	0.30020	-0.21957790	-0.32639027
<i>P</i>	3.64	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1981 02 09	413	0.5+	1.1-	1981 03 15	413	1.1+	0.9-	1981 05 01	413	0.9+	0.1+
1981 02 12	413	0.6+	0.2-	1981 04 05	413	1.9-	0.2+	1981 05 01	413	0.0	0.4+
1981 02 13	413	0.0	1.0+	1981 04 05	413	(3.3+	1.5-)	1997 09 12	910	0.7+	0.5-
1981 03 02	413	0.2-	0.4+	1981 04 06	413	1.3-	0.9+	1997 09 12	910	0.6+	0.5-
1981 03 02	413	0.5-	1.1+	1981 04 06	413	1.1+	1.2-	1997 09 12	910	0.3+	0.7-
1981 03 06	413	(3.1-	0.1+)	1981 04 07	413	1.7+	0.0	1997 10 10	691	0.3-	0.5+
1981 03 11	413	1.9-	0.1+	1981 04 07	413	0.1+	0.5+	1997 10 10	691	0.4-	0.4+
1981 03 11	413	1.1+	0.2+	1981 04 10	413	0.2+	0.0	1997 10 10	691	0.5-	0.3+
1981 03 15	413	0.6-	0.4-	1981 04 10	413	0.7-	1.4-				

1981 EO₂₉ = 1995 YV₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	25.10661		(2000.0)	P	Q
<i>n</i>	0.12416957	ω	292.81970	-0.89591248	+0.43565460
<i>a</i>	3.9791710	Ω	273.10075	-0.36898298	-0.83867874
<i>e</i>	0.1963210	<i>i</i>	4.99073	-0.24737095	-0.32683795
<i>P</i>	7.94	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 03 01	413	0.3+	0.3-	1981 03 12	413	0.1-	0.3-	1995 12 29	691	0.5-	0.4+
1981 03 06	413	1.7-	0.1+	1981 05 01	413	0.2+	0.2+	1995 12 29	691	0.0	0.1-
1981 03 08	413	0.4+	0.4-	1995 12 18	691	0.4+	0.1+	1995 12 29	691	0.5-	0.2-
1981 03 08	413	2.5+	0.2-	1995 12 18	691	0.5+	0.1-				
1981 03 12	413	1.5-	1.0+	1995 12 18	691	0.1+	0.0				

1982 QA₂ = 1978 OE = 1986 VJ₃ = 1997 QW₁

Id. T. Urata, S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	43.28846		(2000.0)	P	Q
<i>n</i>	0.25947611	ω	5.34751	+0.47463046	+0.87523102
<i>a</i>	2.4344702	Ω	293.01652	-0.81126375	+0.39390388
<i>e</i>	0.2466748	<i>i</i>	5.81527	-0.34143382	+0.28073189
<i>P</i>	3.80	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1978 07 30	414	0.0	0.1-	1982 08 26	561	1.1-	1.8+	1997 08 30	905	0.1+	1.4-
1978 07 30	414	0.4+	0.7-	1986 11 04	010	0.2+	1.3-	1997 09 03	385	1.0+	0.7-

1982 08 23	561	0.7-	1.5+	1986 11 04	010	2.1+	1.3-	1997 09 28	905	0.0	0.3+
1982 08 23	561	0.1+	0.1+	1986 11 04	010	0.7-	1.3-	1997 09 28	905	1.1+	0.3+
1982 08 24	561	0.3-	1.5+	1997 08 22	905	1.2+	0.3+	1997 09 28	905	1.8-	0.8-
1982 08 24	561	0.3-	1.4+	1997 08 22	905	1.6-	0.1-	1997 10 08	385	1.9+	0.4-
1982 08 25	561	0.2-	0.1-	1997 08 27	905	0.2+	0.1-	1997 10 08	385	0.3+	1.3-
1982 08 25	561	0.7-	1.2+	1997 08 27	905	0.5+	0.2-				
1982 08 25	561	0.7-	0.8+	1997 08 30	905	0.5-	1.5-				

1988 AA₂ = 1995 AF₁Id. G. V. Williams (*MPC* 24736)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	319.84041		(2000.0)	P	Q
<i>n</i>	0.28122331	ω	356.81199	+0.01314412	-0.99560524
<i>a</i>	2.3072882	Ω	92.42115	+0.91944357	-0.02441217
<i>e</i>	0.1676360	<i>i</i>	5.32501	+0.39300224	+0.09041160
<i>P</i>	3.50	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1988 01 14	046	(2.2+	3.6-)	1988 01 20	046	1.5-	0.7+	1997 09 25	046	0.2+	0.1-
1988 01 14	046	0.0	2.3-	1995 01 06	408	0.2-	1.5+	1997 09 25	046	0.1+	0.0
1988 01 15	046	0.9+	1.1-	1995 01 06	408	0.5+	0.2+	1997 09 25	046	0.0	0.0
1988 01 15	046	0.4-	0.1+	1995 01 07	408	0.1-	0.6+	1997 09 26	046	0.1-	0.1+
1988 01 16	046	1.2+	0.9-	1995 01 07	408	0.6-	0.6+	1997 09 26	046	0.0	0.0
1988 01 16	046	0.4+	0.4-	1995 02 01	409	0.7+	1.0+	1997 09 26	046	0.2-	0.0
1988 01 20	046	1.3-	0.3-	1995 02 01	409	0.3+	0.2+				

1988 CZ₂ = 1997 TQ₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	239.84990		(2000.0)	P	Q
<i>n</i>	0.27461123	ω	40.10212	-0.97557810	-0.21248386
<i>a</i>	2.3441777	Ω	127.54219	+0.17922468	-0.91653453
<i>e</i>	0.1722228	<i>i</i>	4.02530	+0.12698773	-0.33884373
<i>P</i>	3.59	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1988 02 11	809	0.6-	0.0	1988 02 17	809	0.3+	0.0	1997 10 02	910	0.0	0.3+
1988 02 15	809	0.5+	0.3+	1988 02 17	809	0.2+	0.2-	1997 10 02	910	0.1+	0.1+
1988 02 16	809	(5.1-	4.5+)	1988 02 23	809	1.4+	0.7-	1997 10 04	910	0.2-	0.1+
1988 02 16	809	(7.0-	4.6+)	1988 02 23	809	0.0	0.4+	1997 10 04	910	0.2-	0.1-
1988 02 16	809	(7.0-	4.3+)	1988 02 23	809	1.8-	0.5+	1997 10 04	910	0.1-	0.2-
1988 02 17	809	0.1+	0.3-	1997 10 02	910	0.4+	0.1-				

1988 RJ₆ = 1997 AW₂₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	157.09918		(2000.0)	P	Q
<i>n</i>	0.26819148	ω	70.14160	+0.80093885	-0.59737866
<i>a</i>	2.3814387	Ω	326.50478	+0.51826887	+0.72552609
<i>e</i>	0.2381792	<i>i</i>	4.20271	+0.29982385	+0.34168790
<i>P</i>	3.68	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1988 09 06	809	0.7-	0.5-	1988 09 14	807	1.0+	0.1+	1988 09 20	809	0.6-	0.1-
1988 09 06	809	0.4-	0.7-	1988 09 14	809	0.0	0.1-	1988 09 20	809	0.2-	0.3-
1988 09 06	809	0.0	0.8-	1988 09 14	809	0.4+	0.1-	1988 10 05	807	0.5+	0.0
1988 09 08	809	0.2+	0.7+	1988 09 14	809	0.7+	0.1-	1988 11 03	807	0.9+	0.1-
1988 09 08	809	0.5+	0.5+	1988 09 15	807	0.9+	0.2+	1988 11 05	807	0.6-	0.4-
1988 09 08	809	0.7+	0.2+	1988 09 16	675	0.1+	0.5+	1997 01 15	566	0.7+	0.3+
1988 09 10	809	0.8-	0.4-	1988 09 16	675	0.9-	0.1+	1997 01 15	566	0.1+	0.2+
1988 09 10	809	0.5-	0.5-	1988 09 18	809	0.8-	0.6+	1997 01 15	566	0.6-	0.2-
1988 09 10	809	0.2-	0.7-	1988 09 18	809	0.8-	0.5+	1997 02 07	566	0.5-	0.1-
1988 09 11	675	0.8+	0.1+	1988 09 18	809	1.0-	0.4+	1997 02 07	566	0.2-	0.2-
1988 09 11	675	1.8+	0.8+	1988 09 20	809	0.7-	0.1-	1997 02 07	566	0.5+	0.0

1989 TY = 1997 CY₂₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	335.53229		(2000.0)	P	Q
n	0.19184294	ω	265.75962	−0.49450949	+0.86638472
a	2.9774113	Ω	334.23410	−0.72042220	−0.45333477
e	0.1320111	i	9.20739	−0.48626353	−0.20943999
P	5.14	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1989 10 02	697	0.7+	0.2+	1989 11 29	688	0.6−	0.5−	1997 02 02	327	1.0−	0.3−
1989 10 03	697	0.7−	0.3−	1989 11 29	688	0.1+	0.2−	1997 02 02	327	0.1+	0.5−
1989 10 05	807	1.2+	0.5+	1989 12 01	688	0.8−	0.2+	1997 03 06	704	1.1+	0.3+
1989 10 06	807	0.2+	0.5+	1989 12 01	688	1.0−	0.1+	1997 03 06	704	0.4+	0.8+
1989 10 29	807	0.4+	0.6−	1997 02 02	327	0.5−	0.2−				

1989 UN = 1991 GM₂ = 1991 GE₁₃

Id. A. Gnädig

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	212.49778		(2000.0)	P	Q		
n	0.30978275	ω	6.57896	+0.94149932	−0.33673293		
a	2.1632061	Ω	13.12430	+0.30637297	+0.83814252		
e	0.1240935	i	3.47991	+0.14040880	+0.42910145		
P	3.18	H	14.0	G	0.15	U	5

Residuals in seconds of arc

1989 10 02	809	0.3−	0.5−	1989 10 23	403	2.2−	0.8+	1989 11 04	364	0.0	0.4+
1989 10 02	809	0.1+	0.4−	1989 10 23	095	(4.4+	0.1+)	1989 11 04	095	1.2+	0.9−
1989 10 02	809	0.3+	0.5−	1989 10 23	095	2.3+	1.7−	1989 11 04	095	0.4+	1.8−
1989 10 03	809	0.8−	0.4+	1989 10 26	403	1.8−	1.9+	1991 04 08	809	0.8+	0.3+
1989 10 03	809	0.2−	0.5+	1989 10 26	403	0.3+	0.0	1991 04 08	809	0.2−	0.0
1989 10 03	809	0.6+	0.6+	1989 11 02	364	(1.0−	3.0+)	1991 04 08	809	1.0−	1.7−
1989 10 04	809	0.2−	0.0	1989 11 02	364	0.8+	0.7−	1991 04 10	809	1.7+	0.5+
1989 10 04	809	0.2+	0.1+	1989 11 04	403	2.2−	1.5+	1991 04 10	809	0.4+	0.3+
1989 10 04	809	0.5+	0.2+	1989 11 04	403	(4.5−	0.1−)	1991 04 10	809	1.6−	0.6+
1989 10 23	403	0.3+	1.0−	1989 11 04	364	0.7+	1.2+				

1989 UR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	357.40536		(2000.0)	P	Q
n	0.87835999	ω	289.26205	−0.94825375	−0.28194636
a	1.0798274	Ω	234.62106	+0.31383303	−0.90208981
e	0.3558684	i	10.31662	−0.04820428	−0.32671121
P	1.12	H	18.5	G 0.15	U 5

Residuals in seconds of arc

1989 10 25	010	1.4−	0.9+	1989 10 31	010	0.8+	0.1+	1989 11 28	010	(3.8+	10.2+)
1989 10 26	010	1.8−	1.3−	1989 10 31	010	(2.9+	2.6+)	1997 10 09	691	(2.9+	1.0−)
1989 10 28	675	1.7−	1.6−	1989 11 01	675	1.9+	0.0	1997 10 09	691	0.3−	0.3−
1989 10 28	675	(2.1+	1.8+)	1989 11 01	675	1.4+	1.5+	1997 10 09	691	2.0+	0.5−
1989 10 29	675	1.7−	1.1−	1989 11 27	010	0.7+	0.6+	1997 10 10	691	0.6−	0.0
1989 10 29	675	1.6+	1.2+	1989 11 27	010	1.1−	0.4−	1997 10 10	691	0.5−	0.4−
1989 10 31	010	0.1−	0.4−	1989 11 27	010	0.7−	0.5−	1997 10 10	691	1.1−	0.1+
1989 10 31	010	1.0+	0.9+	1989 11 28	010	0.5+	0.4+				

1990 RR₅ = 1973 SH₄ = 1973 UU = 1997 SS

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	28.29723		(2000.0)	P	Q
n	0.28922393	ω	175.35725	+0.90307572	−0.42923129
a	2.2645395	Ω	210.07508	+0.39309397	+0.83982664
e	0.1437686	i	1.67564	+0.17300684	+0.33234275
P	3.41	H	14.0	G 0.15	U 4

Residuals in seconds of arc

1973 09 26	095	1.8+	1.3+	1990 09 23	095	0.8+	1.9+	1997 09 16	327	0.3+	0.2+
1973 10 26	095	1.3−	2.8−	1990 10 11	095	0.4−	0.6−	1997 09 16	327	0.3+	0.1+
1990 09 15	675	0.9−	1.1−	1990 10 15	095	1.1+	1.2+	1997 09 17	327	0.5−	0.4+
1990 09 17	675	0.1−	0.3−	1990 10 15	095	(2.0+	4.8+)	1997 09 17	327	0.4−	0.1+
1990 09 17	675	0.6−	0.8−	1997 09 16	327	0.3+	0.4+	1997 09 17	327	0.3−	0.3+

1990 SU₉ = 1997 TQ₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	292.25441		(2000.0)	P	Q
n	0.28581178	ω	60.64084	−0.39614887	−0.91603787
a	2.2825272	Ω	52.83156	+0.81274967	−0.38164782
e	0.1074848	i	4.51830	+0.42720493	−0.12336757
P	3.45	H	14.5	G 0.15	U 6

Residuals in seconds of arc

1990 09 14	809	1.0+	0.7−	1997 10 03	327	0.3−	0.2+	1997 10 10	327	0.2+	0.4+
1990 09 14	809	0.2+	0.3−	1997 10 03	327	0.4−	0.3+	1997 10 10	327	0.2+	0.2−
1990 09 14	809	0.1+	0.9−	1997 10 03	327	0.1−	0.3+	1997 10 10	327	0.2+	0.1−
1990 09 22	809	0.3+	1.2+	1997 10 09	327	0.0	0.2+	1997 10 10	327	0.1−	0.0
1990 09 22	809	0.4+	0.1−	1997 10 09	327	0.2+	0.3+	1997 10 10	327	0.2+	0.1−
1990 09 22	809	0.4+	0.6+	1997 10 09	327	0.1−	0.0	1997 10 10	327	0.2−	0.1−
1990 09 25	809	1.1−	0.2−	1997 10 10	327	0.1+	0.4−	1997 10 10	327	0.1−	0.1+
1990 09 25	809	0.4−	0.3+	1997 10 10	327	0.6+	0.1+				
1990 09 25	809	0.8−	0.3+	1997 10 10	327	0.3−	1.2−				

1990 TK₄ = 1997 TR₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	305.78623		(2000.0)	P	Q
n	0.27838105	ω	237.93561	−0.28664900	−0.95725190
a	2.3229665	Ω	228.77245	+0.89543313	−0.25331956
e	0.1248874	i	2.95292	+0.34063450	−0.13963521
P	3.54	H	15.5	G 0.15	U 7

Residuals in seconds of arc

1990 10 11	033	0.5−	0.4−	1990 10 14	033	1.1−	0.3+	1997 10 03	910	0.3+	0.1−
1990 10 12	033	0.8+	0.7−	1990 10 18	033	0.5+	0.8+	1997 10 04	910	0.4−	0.3+
1990 10 12	033	0.4−	0.5−	1997 10 03	910	0.3+	0.3−	1997 10 04	910	0.3−	0.2+
1990 10 13	033	0.8+	0.3+	1997 10 03	910	0.3+	0.1−	1997 10 04	910	0.2−	0.2+

1990 TG₈ = 1992 CN₈

Id. F. Börngen

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

M	71.39841		(2000.0)	P	Q
n	0.18093397	ω	61.67055	−0.15197739	−0.97071722
a	3.0959170	Ω	38.52482	+0.76957029	−0.23432937
e	0.2235881	i	17.37894	+0.62021322	+0.05289447
P	5.45	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1990 10 13	033	0.7+	0.8+	1990 11 11	675	0.3−	0.2−	1992 03 01	033	0.3−	0.0
1990 10 13	033	0.1−	0.2+	1990 11 13	675	0.1+	0.8−	1992 03 01	033	0.1+	0.0
1990 10 14	033	0.3−	0.6−	1990 11 13	675	0.3+	0.0	1992 03 02	033	0.6+	0.1−
1990 10 18	033	0.2−	0.6−	1992 02 09	033	0.3−	0.1+				
1990 11 11	675	0.2−	1.2+	1992 02 09	033	0.1−	0.0				

1991 AU₁ = 1954 RA₁

Id. E. Bowell

1997 OCT. 16

M.P.C. 30757

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	292.94763	(2000.0)	P	Q
<i>n</i>	0.38989738	ω	138.66768	-0.41977631
<i>a</i>	1.8556775	Ω	334.83092	+0.70051422
<i>e</i>	0.0544222	<i>i</i>	22.32310	+0.57712016
<i>P</i>	2.53	<i>H</i>	13.5	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1954 09 04	675	0.6-	0.5+	1991 02 16	675	0.6-	0.9-	1991 03 16	413	(3.2-	1.8+)
1954 09 04	675	0.6-	0.8+	1991 02 16	675	0.8+	0.2-	1997 09 27	138	0.5+	0.2-
1991 01 12	675	0.4+	0.5+	1991 02 19	675	0.3+	1.0-	1997 09 27	138	0.2+	0.0
1991 01 12	675	1.4+	0.4+	1991 02 19	675	1.3+	0.3-	1997 09 27	138	0.3+	0.1-
1991 01 14	675	(0.7+	2.5-)	1991 03 09	675	1.3-	0.5-	1997 09 27	138	0.1+	0.2-
1991 01 14	675	(1.1-	4.6-)	1991 03 11	413	0.6+	1.4+	1997 10 01	138	0.4-	0.2-
1991 02 13	675	0.4-	0.5-	1991 03 11	413	0.2-	1.7+	1997 10 01	138	0.2+	0.3-
1991 02 13	675	0.5-	0.5-	1991 03 12	675	1.0-	0.1+	1997 10 01	138	0.1+	0.1-

1991 PT₄ = 1997 TO₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	353.99988	(2000.0)	P	Q
<i>n</i>	0.16255181	ω	130.46941	+0.99938321
<i>a</i>	3.3251266	Ω	227.64411	-0.03507653
<i>e</i>	0.2611573	<i>i</i>	0.93463	-0.00168229
<i>P</i>	6.06	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1991 08 03	809	0.6-	0.6+	1991 09 04	809	0.5+	0.7+	1997 07 01	910	0.0	0.0
1991 08 03	809	1.0-	0.4+	1991 09 04	809	0.2-	0.4+	1997 07 01	910	0.1+	0.1+
1991 08 03	809	1.0-	0.6+	1991 09 04	809	0.2-	0.3+	1997 07 01	910	0.0	0.1+
1991 08 04	809	1.4-	0.4+	1991 09 05	809	0.5-	0.5-	1997 10 01	691	0.3-	0.6-
1991 08 05	809	1.3+	0.2-	1991 09 05	809	0.2+	0.8+	1997 10 01	691	0.2-	0.0
1991 08 05	809	0.7+	0.3+	1991 09 05	809	0.9+	0.3+	1997 10 01	691	0.3-	0.2-
1991 08 05	675	0.0	1.8-	1991 09 06	809	1.7+	0.4+	1997 10 07	691	0.2+	0.6-
1991 08 05	809	0.5+	0.6+	1991 09 06	809	0.4+	1.1+	1997 10 07	691	0.1+	0.0
1991 08 05	675	0.3+	0.3-	1991 09 06	809	0.1-	0.8+	1997 10 07	691	0.5+	0.0
1991 08 07	675	1.5+	1.2-	1991 09 07	809	1.0-	1.1-				
1991 08 07	675	0.5-	0.4-	1991 09 07	809	1.6-	0.9-				

1992 AU₁

Id. J. B. Child (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	251.46033	(2000.0)	P	Q
<i>n</i>	0.28789586	ω	45.91060	-0.62502433
<i>a</i>	2.2714984	Ω	87.76048	+0.54204073
<i>e</i>	0.2533371	<i>i</i>	24.66728	+0.56172630
<i>P</i>	3.42	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1991 12 09	399	0.2-	1.2-	1992 01 10	675	1.0-	0.8+	1997 09 30	424	1.0+	0.7-
1991 12 09	399	0.6-	1.2+	1992 01 11	675	0.7+	0.1+	1997 09 30	424	0.2+	0.2+
1991 12 14	399	0.6+	0.5-	1992 01 11	675	0.5-	0.0	1997 10 05	424	0.5-	0.2-
1991 12 14	399	0.5-	0.3+	1992 01 30	675	0.4-	0.1+	1997 10 05	424	0.8-	0.8+
1992 01 09	675	1.6+	0.3-	1992 01 30	675	0.3+	0.0				
1992 01 09	675	0.9+	0.0	1992 02 01	675	1.2-	0.5-				

1992 EG₁₄ = 1997 SM₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	269.34482	(2000.0)	P	Q
<i>n</i>	0.27431632	ω	144.10858	-0.25202998
<i>a</i>	2.3458574	Ω	320.43809	+0.87128266
<i>e</i>	0.1022992	<i>i</i>	3.89270	+0.42112638
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1992 03 02	809	0.2+	1.0+	1997 06 15	691	0.1-	0.4+	1997 09 26	327	0.3+	0.4-
1992 03 05	809	0.6+	0.4-	1997 08 12	691	0.3-	0.1+	1997 09 29	327	0.1-	0.9+
1992 03 09	809	0.5-	0.4-	1997 08 12	691	0.0	0.0	1997 09 29	327	0.3-	0.5+
1992 04 07	809	0.4-	0.3-	1997 08 12	691	0.7+	1.7-	1997 09 29	327	0.3-	0.4+
1997 06 15	691	0.3-	0.5+	1997 09 26	327	0.1+	0.3-				
1997 06 15	691	0.2-	0.4+	1997 09 26	327	0.3+	0.4-				

1992 EH₂₄ = 1990 VT = 1997 MQ₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	352.73423	(2000.0)	P	Q
<i>n</i>	0.26011027	ω	226.47390	+0.98270888
<i>a</i>	2.4305117	Ω	124.40422	-0.11250238
<i>e</i>	0.1885496	<i>i</i>	7.14419	-0.14705942
<i>P</i>	3.79	<i>H</i>	15.6	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1990 11 08	413	2.8+	0.3+	1997 06 28	704	0.9-	1.2+	1997 07 02	704	0.8+	0.6-
1990 11 09	413	1.7-	1.0-	1997 06 29	704	0.2+	0.0	1997 07 02	704	0.2-	0.4-
1990 11 09	413	1.1-	0.8+	1997 06 29	704	0.2-	0.2+	1997 07 02	704	0.4+	0.3-
1992 03 02	809	1.0+	1.1-	1997 06 29	704	0.2-	0.2+	1997 07 03	704	1.1+	0.1+
1992 03 05	809	0.8+	0.1-	1997 06 29	704	0.4+	0.1+	1997 07 03	704	0.7+	0.1+
1992 03 07	809	1.9-	1.2+	1997 06 29	704	1.1-	0.4+	1997 07 03	704	0.2-	0.4-
1997 06 28	704	0.1-	0.6+	1997 07 02	704	0.9-	0.5+	1997 07 03	704	0.2+	0.3-
1997 06 28	704	0.1-	0.4+	1997 07 02	704	0.8+	1.5-	1997 07 03	704	0.5-	0.3-

1992 RA₂ = 1997 SY₉

Id. G. V. Williams, G. Forti

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	3.51022	(2000.0)	P	Q
<i>n</i>	0.20522084	ω	50.10820	+0.88192140
<i>a</i>	2.8465692	Ω	336.83870	+0.31938791
<i>e</i>	0.1558839	<i>i</i>	14.41878	+0.34670738
<i>P</i>	4.80	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1992 09 02	809	0.8+	0.7+	1992 09 23	809	0.9+	0.1-	1997 09 30	587	0.1+	0.1-
1992 09 02	809	0.1+	0.0	1992 09 23	809	0.5+	0.5-	1997 09 30	587	0.4+	0.0
1992 09 02	809	1.2-	0.5-	1997 09 27	587	0.2-	0.8-	1997 10 01	587	0.7+	0.9+
1992 09 03	809	1.5-	0.2-	1997 09 27	587	0.2-	0.2-	1997 10 01	587	0.1+	0.0
1992 09 22	809	0.5-	0.3+	1997 09 27	587	0.1-	1.0-	1997 10 04	587	0.2+	1.2+
1992 09 22	809	0.4+	0.0	1997 09 29	587	0.4+	0.5+	1997 10 04	587	0.7-	0.5+
1992 09 22	809	0.5-	0.1+	1997 09 29	587	0.6-	0.7-				
1992 09 23	809	1.2+	0.1-	1997 09 29	587	0.0	0.2-				

1992 RO₃ = 1997 TT₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	49.48498	(2000.0)	P	Q
<i>n</i>	0.18657157	ω	82.16451	+0.19665367
<i>a</i>	3.0332328	Ω	199.17738	-0.90253281
<i>e</i>	0.1374639	<i>i</i>	0.43516	-0.38309510
<i>P</i>	5.28	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1992 09 02	809	2.4+	1.3-	1992 09 22	809	0.1+	0.2-	1997 10 01	691	0.2-	0.2+
1992 09 02	809	0.6-	1.8-	1992 09 22	809	0.6-	0.6+	1997 10 01	691	0.1-	0.2+
1992 09 02	809	0.9+	1.8-	1992 09 23	809	0.2+	1.1+	1997 10 01	691	0.3-	0.0
1992 09 03	809	1.3-	0.9-	1992 09 23	809	0.5-	0.9+	1997 10 07	691	0.3+	0.8+
1992 09 22	809	1.0+	0.4+	1992 09 23	809	1.1-	1.9+	1997 10 07	691	0.1-	0.4+

1992 SF = 1975 TH₂ = 1994 EE₉ = 1997 AX₂₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	182.15777	ω	17.07689	+0.93835138	-0.34563734		
<i>a</i>	0.28945570	Ω	3.16054	+0.30407747	+0.81758202		
<i>e</i>	2.2633305	<i>i</i>	5.84327	+0.16441889	+0.46053715		
<i>P</i>	0.1870678	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1992 10 03	095	0.2+	0.3-	1992 10 01	400	2.0-	0.8+
1992 09 21	400	0.2+	0.8-	1992 10 01	400	0.6+	0.1+
1992 09 21	400	0.1+	2.0-	1992 10 02	400	1.0-	0.2-
1992 09 23	400	2.5+	0.1-	1992 10 02	400	1.9-	1.1+
1992 09 23	400	3.8+	0.9-	1992 10 18	400	1.2-	0.3-
1992 09 28	400	0.6+	0.2-	1992 10 18	400	0.6+	0.4+
1992 09 28	400	0.1+	0.0	1992 11 21	801	0.7-	0.0
1992 09 30	400	0.3+	1.5+	1992 11 21	801	0.8-	0.1-
1992 09 30	400	0.4-	1.1-	1992 11 28	801	0.4-	0.2+

1993 FN₅₀ = 1997 SQ₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	71.84323	ω	107.91734	+0.48650688	+0.87340276		
<i>a</i>	0.30381430	Ω	191.27059	-0.83797222	+0.45939277		
<i>e</i>	2.1914450	<i>i</i>	6.42733	-0.24721167	+0.16163507		
<i>P</i>	0.1879191	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 19	809	1.2+	0.5+	1997 09 29	327	0.2-	0.1-
1993 03 20	809	0.6+	0.4-	1997 09 29	327	0.0	0.5+
1993 03 24	809	1.2-	0.9+	1997 09 29	327	0.2-	0.0
1993 04 17	413	0.2-	0.3+	1997 09 30	327	0.2+	0.2+
1997 09 26	327	0.3+	0.1+	1997 09 30	327	0.3+	0.4+
1997 09 26	327	0.2+	0.6+	1997 09 30	327	0.0	0.4-
1997 09 26	327	0.2+	0.0	1997 10 09	327	0.1-	0.2+

1993 KO = 1987 SF₂₃ = 1996 HH₂₂Id. G. V. Williams (*MPC* 27311, unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	150.23072	ω	25.50143	-0.71684402	+0.69649263		
<i>a</i>	0.29771894	Ω	198.76095	-0.65559197	-0.68900444		
<i>e</i>	2.2212549	<i>i</i>	5.73437	-0.23734745	-0.20042681		
<i>P</i>	0.1187980	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1987 09 23	095	0.6+	2.0-	1993 05 26	894	0.5+	0.8+
1993 05 20	894	1.8-	0.1-	1993 05 27	894	0.6+	0.9+
1993 05 20	894	1.2-	0.6-	1993 05 27	894	0.4-	0.4+
1993 05 23	894	1.7-	0.8+	1993 05 27	361	1.1+	1.0-
1993 05 23	894	0.8-	0.6-	1993 05 27	361	2.6+	1.0-
1993 05 25	894	0.3+	1.1+	1993 05 27	361	1.1+	0.3-
1993 05 25	361	1.2-	1.7-	1993 05 27	361	0.2+	0.0
1993 05 25	361	1.1+	0.5+	1993 05 28	894	0.6-	0.1-
1993 05 25	894	0.2-	0.4+	1993 05 28	894	0.2-	0.4+
1993 05 25	361	1.5+	0.5-	1993 06 14	894	0.2-	0.5+
1993 05 26	894	0.4+	0.0	1993 06 14	894	1.2-	0.6+

1993 NJ₁ = 1997 QK₃Id. S. Nakano; 1997 QK₃ = 1990 WF₃ (*MPC* 30679) is invalid

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	64.04122	ω	170.08687	+0.54567433	+0.83694793		
<i>a</i>	0.26669286	Ω	132.96974	-0.77271789	+0.52189556		
<i>e</i>	2.3903516	<i>i</i>	3.28466	-0.32426314	+0.16475188		
<i>P</i>	0.1723100	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 07 12	809	0.8+	0.9+	1993 07 26	809	0.2+	0.2-
1993 07 12	809	0.3+	0.7+	1993 07 26	809	0.7-	0.2+
1993 07 12	809	0.8+	1.4+	1993 07 26	809	(4.1-	0.1-)
1993 07 19	809	1.5-	1.5-	1993 07 26	809	(2.8-	0.5+)
1993 07 19	809	1.5-	1.6-	1993 07 26	809	(3.6-	0.2-)
1993 07 19	809	1.5-	1.5-	1997 08 31	360	0.0	0.4-
1993 07 23	809	0.7+	0.2+	1997 08 31	360	0.1-	0.7-
1993 07 23	809	1.3+	0.6+	1997 08 31	360	0.5-	0.3-
1993 07 23	809	1.0+	1.2+	1997 09 02	360	0.0	0.0
1993 07 26	809	0.2+	0.2-	1997 09 02	360	0.2-	0.0

1993 OQ₈ = 1984 BM₅Id. E. Bowell (*MPC* 25067)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	28.98103	ω	247.20737	+0.99701722	+0.06777413		
<i>a</i>	0.26745818	Ω	108.89044	-0.04833516	+0.92128108		
<i>e</i>	2.3857895	<i>i</i>	2.23655	-0.06016954	+0.38294626		
<i>P</i>	0.1983786	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1984 01 25	675	0.0	0.4-	1993 07 20	809	0.9-	1.2+
1984 01 26	675	0.3+	0.9-	1993 07 20	809	1.4-	1.0+
1993 07 12	809	0.5+	0.2+	1993 07 20	809	1.5-	1.4+
1993 07 12	809	0.1-	0.3+	1993 07 23	809	0.5+	0.0
1993 07 12	809	0.4+	0.0	1993 07 23	809	1.1+	1.7-
1993 07 13	809	(0.6+	3.9+)	1993 07 23	809	1.8+	0.6+
1993 07 13	809	(0.4+	3.6+)	1993 07 24	809	(0.8+	2.9+)
1993 07 13	809	(0.0	3.3+)	1993 07 26	809	(0.9+	2.7-)
1993 07 19	809	(2.6-	1.4-)	1993 07 26	809	0.3+	1.7-
1993 07 19	809	(2.3-	1.0-)	1993 07 26	809	0.3+	1.5-
1993 07 19	809	1.5-	1.6-	1995 02 06	691	0.9-	0.1-

1993 QA₉ = 1997 TY₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	97.85706	ω	132.70159	+0.06377004	+0.99736695		
<i>a</i>	0.25808385	Ω	140.91471	-0.93088117	+0.07192062		
<i>e</i>	2.4432177	<i>i</i>	3.13986	-0.35971326	-0.00930580		
<i>P</i>	0.1797027	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 08 15	809	1.3+	1.3+	1993 08 24	809	0.3-	0.2-
1993 08 15	809	0.0	0.0	1993 09 10	691	0.3+	0.0
1993 08 15	809	0.7-	0.2+	1993 09 10	691	0.1+	0.0
1993 08 20	809	0.5+	0.8-	1993 09 10	691	0.3+	0.1+
1993 08 20	809	0.2+	0.4-	1993 09 21	675	(3.2+	2.3+)
1993 08 20	809	0.1-	0.8-	1993 09 21	675	(4.7+	3.9+)
1993 08 24	809	0.2-	0.8+	1997 10 08	327	0.0	0.5+
1993 08 24	809	1.3-	0.2-	1997 10 08	327	0.1-	0.2-

1997 OCT. 16

M.P.C. 30759

1993 RR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23947351	ω	36.82480	+0.75684459	−0.65353097		
<i>a</i>	2.5682131	Ω	4.01982	+0.56427420	+0.64629301		
<i>e</i>	0.3467366	<i>i</i>	7.49176	+0.32981949	+0.39395764		
<i>P</i>	4.12	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1993 09 16	691	0.2+	0.3+	1993 10 22	385	0.3+	0.4−	1993 11 20	670	1.8−	1.3+
1993 09 16	691	0.1−	0.4+	1993 10 26	657	0.0	0.6−	1993 11 20	670	0.5−	0.1+
1993 09 16	691	0.3−	0.3+	1993 10 26	657	0.1+	0.4−	1994 01 14	658	(3.5−	0.1+)
1993 09 17	691	0.1+	0.3+	1993 10 26	657	0.5−	0.2−	1994 01 14	658	(2.8−	0.4−)
1993 09 17	691	0.0	0.3+	1993 11 07	658	1.2−	0.2−	1994 01 14	658	(3.5−	0.2−)
1993 09 17	691	0.1+	0.2+	1993 11 07	658	1.1−	0.2−	1994 02 05	658	0.3+	1.2+
1993 09 19	691	0.1−	0.4+	1993 11 07	658	1.1−	0.2−	1994 02 05	658	0.5−	1.1+
1993 09 19	691	0.0	0.2+	1993 11 08	786	0.1+	0.2−	1994 02 05	658	0.0	1.0+
1993 09 19	691	0.2−	0.3+	1993 11 08	786	0.1+	0.3−	1994 02 08	658	(2.8−	0.6+)
1993 09 20	691	0.0	0.2+	1993 11 08	786	0.1+	0.2−	1994 02 08	658	(2.4−	0.4+)
1993 09 20	691	0.1−	0.2+	1993 11 08	786	0.1−	0.2−	1994 02 08	658	(3.4−	0.2+)
1993 09 20	691	0.4−	0.1+	1993 11 08	658	0.5−	0.0	1995 03 28	691	1.0−	0.3−
1993 09 24	657	(3.2−	2.6+)	1993 11 08	658	0.4−	0.1−	1995 03 28	691	0.0	0.3−
1993 09 24	657	(1.3−	2.2+)	1993 11 08	658	0.5−	0.1−	1995 03 28	691	0.1+	0.7−
1993 09 25	385	1.2+	0.9−	1993 11 08	658	0.5−	0.1−	1997 09 29	691	0.1−	0.2+
1993 09 25	385	1.0+	0.1−	1993 11 09	786	1.5+	0.0	1997 09 29	691	0.1+	0.2+
1993 09 25	385	1.0+	1.1−	1993 11 09	786	1.5+	0.0	1997 09 29	691	0.2−	0.4+
1993 10 10	691	1.1−	0.3+	1993 11 09	786	1.2+	0.0	1997 10 06	691	0.1−	0.1+
1993 10 10	691	1.0−	0.2−	1993 11 09	786	1.4+	0.0	1997 10 06	691	0.3−	0.1+
1993 10 10	691	1.1−	0.1−	1993 11 09	786	1.3+	0.0	1997 10 06	691	0.1−	0.0
1993 10 22	385	0.2+	0.7−	1993 11 09	786	1.3+	0.0				
1993 10 22	385	0.3+	0.2−	1993 11 20	670	0.5+	0.3−				

1993 RB₁₆ = 1980 FU₂Id. T. Kobayashi (*MPC* 25642)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26232953	ω	102.71556	−0.38659631	−0.92220704		
<i>a</i>	2.4167845	Ω	10.04080	+0.82535106	−0.35022048		
<i>e</i>	0.1471942	<i>i</i>	2.89373	+0.41150811	−0.16395058		
<i>P</i>	3.76	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 03 16	809	0.2−	0.0	1993 09 20	691	0.0	0.9+	1995 03 31	691	0.3−	0.5−
1980 03 16	809	0.4+	0.5+	1993 09 20	691	0.5−	0.3−	1995 03 31	691	0.3−	0.2−
1980 03 16	809	0.5−	0.3+	1993 09 22	809	1.2−	0.2+	1995 03 31	691	0.8−	0.6−
1980 03 16	809	0.0	0.0	1993 09 22	809	0.5−	1.6−	1997 09 28	691	0.5+	0.0
1980 03 17	809	0.9+	0.1+	1993 09 22	809	1.6+	1.5−	1997 09 28	691	0.7+	0.2+
1980 03 17	809	0.5−	0.6+	1993 09 23	675	0.7+	0.2+	1997 09 28	691	0.5+	0.1+
1980 03 17	809	0.4+	0.2+	1993 09 23	675	1.3+	1.1+	1997 10 03	691	0.0	0.0
1980 03 17	809	0.5+	0.4+	1995 02 05	691	0.4−	0.3−	1997 10 03	691	0.0	0.0
1993 09 15	809	(1.3−	2.6−)	1995 02 05	691	0.2−	0.4−	1997 10 03	691	0.2−	0.3+
1993 09 15	809	(2.4−	4.1−)	1995 02 05	691	0.1−	0.4−	1997 10 10	691	0.7−	0.3+
1993 09 15	809	(2.0−	2.5−)	1995 02 23	691	0.6+	0.5−	1997 10 10	691	0.6−	0.0
1993 09 20	691	0.8−	0.0	1995 02 23	691	0.3+	0.2+	1997 10 10	691	0.6−	0.2−

1993 TL₂₅ = 1997 RX₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24295780	ω	150.42564	−0.13145447	+0.98996395		
<i>a</i>	2.5436000	Ω	111.97928	−0.92015022	−0.10237912		
<i>e</i>	0.1082151	<i>i</i>	3.20690	−0.36884046	−0.09741613		
<i>P</i>	4.06	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 09	809	0.7−	1.9−	1997 09 12	327	0.4−	0.7+	1997 10 02	910	0.5+	0.1+
1993 10 09	809	1.1−	1.5−	1997 09 13	327	0.1+	0.3+	1997 10 02	910	0.5+	0.1+
1993 10 09	809	(1.6−	2.7−)	1997 09 13	327	0.4−	0.3−	1997 10 02	910	0.6+	0.1+
1993 10 11	809	1.5+	0.6+	1997 09 13	327	0.2+	0.3−	1997 10 03	910	0.4+	0.4+
1993 10 11	809	1.4+	0.7+	1997 09 13	327	0.6+	0.1+	1997 10 04	910	0.6+	0.3+
1993 10 11	809	1.4+	0.1+	1997 09 23	327	0.5−	0.2−	1997 10 04	910	0.4+	0.2+
1993 10 20	809	0.9−	0.9+	1997 09 23	327	0.1−	0.1−	1997 10 04	327	0.1+	0.1−
1993 10 20	809	0.5−	0.3+	1997 09 23	327	0.2−	0.3−	1997 10 04	327	0.5−	1.0+
1993 10 20	809	1.0−	0.2+	1997 09 29	327	0.7−	0.8−	1997 10 04	327	0.1−	1.5+
1997 09 12	327	0.3+	0.3+	1997 09 29	327	1.5−	1.3−				
1997 09 12	327	0.0	0.4+	1997 09 29	327	0.1−	1.2−				

1993 TG₃₁ = 1997 TD₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26024308	ω	170.81921	−0.49457759	+0.86691955		
<i>a</i>	2.4296847	Ω	69.51729	−0.80155567	−0.42738420		
<i>e</i>	0.1450339	<i>i</i>	3.79461	−0.33600820	−0.25650192		
<i>P</i>	3.79	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 09	809	0.2+	1.0−	1993 10 21	809	0.4−	0.7−	1997 10 11	816	0.0	0.2−
1993 10 09	809	0.3+	0.2−	1993 10 21	809	0.8+	0.3+	1997 10 11	816	0.2−	0.4−
1993 10 09	809	0.8−	0.9−	1993 10 21	809	0.6−	0.2−	1997 10 12	816	0.2+	0.4−
1993 10 11	809	0.6+	0.4+	1997 10 11	816	0.5−	0.1−	1997 10 12	816	0.4+	0.9+
1993 10 11	809	0.3+	1.4+	1997 10 11	816	0.1−	0.2−	1997 10 12	816	0.2+	0.4+
1993 10 11	809	0.3−	0.8+	1997 10 11	816	0.0	0.1+				

1993 UV

Id. T. Kobayashi (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22509177	ω	191.89858	+0.64957803	−0.74655504		
<i>a</i>	2.6764736	Ω	217.85690	+0.71537477	+0.66424198		
<i>e</i>	0.2375159	<i>i</i>	13.56004	+0.25746325	+0.03792308		
<i>P</i>	4.38	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 10 23	411	0.0	0.0	1993 10 26	411	0.3+	0.1−	1997 09 19	411	0.3−	0.6+
1993 10 23	411	0.6−	0.3−	1993 11 14	411	0.0	0.1−	1997 09 19	411	0.2−	0.4−
1993 10 24	411	1.7−	0.7−	1993 11 14	411	0.2+	0.0	1997 09 27	411	0.0	0.5−
1993 10 24	411	1.2−	0.6−	1993 11 14	411	0.4+	0.0	1997 09 27	411	0.4+	0.1−
1993 10 24	411	0.6−	0.1+	1993 11 22	411	0.1−	0.0	1997 09 28	411	0.5−	0.6+
1993 10 25	411	0.5+	0.0	1993 11 22	411	1.0+	0.2+	1997 09 28	411	0.2+	0.3−
1993 10 25	411	0.1−	0.1−	1993 12 07	411	0.1+	0.9+	1997 09 30	411	0.0	0.3+
1993 10 25	411	0.1+	0.0	1993 12 07	411	0.2+	0.3−	1997 09 30	411	0.1−	0.0
1993 10 26	411	0.5−	0.2+	1993 12 07	411	0.8+	0.8+				
1993 10 26	411	1.0+	0.2−	1997 09 19	411	0.3+	0.4+				

1993 UC₈ = 1997 TC₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24191089	ω	220.34526	+0.99661661	−0.06763271		
<i>a</i>	2.5509333	Ω	143.45249	+0.07949590	+0.93751378		
<i>e</i>	0.2226811	<i>i</i>	4.49819	−0.02087423	+0.34131178		
<i>P</i>	4.07	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 10	809	0.6+	0.2−	1993 10 20	809	1.2−	0.8−	1997 10 02	910	0.4+	0.0
1993 10 10	809	0.4−	0.2+	1993 10 21	809	1.1+	1.0+	1997 10 02	910	0.4+	0.1−
1993 10 10	809	0.0	0.4+	1993 10 21	809	0.5+	1.2+	1997 10 04	910	0.2−	0.0
1993 10 20	809	0.4−	1.7−	1993 10 21	809	0.7+	1.1+	1997 10 04	910	0.2−	0.1+
1993 10 20	809	0.9−	1.1−	1997 10 02	910	0.0	0.1−	1997 10 04	910	0.3−	0.0

1993 VM₂ = 1976 US₈ = 1997 SR₂

Id. G. V. Williams, S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23572770	ω	114.03247	−0.58640496	−0.81000257		
<i>a</i>	2.5953483	Ω	11.87377	+0.73405788	−0.53401726		
<i>e</i>	0.2293309	<i>i</i>	1.39421	+0.34247373	−0.24232501		
<i>P</i>	4.18	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 10 22	381	0.0	0.2+	1993 12 12	385	0.0	0.6−	1997 09 28	557	0.2+	0.0
1976 10 22	381	0.4−	0.7+	1993 12 12	385	0.0	0.7−	1997 09 28	557	0.7+	0.2−
1993 11 12	033	0.9−	0.2+	1993 12 12	385	0.9−	1.4−	1997 09 30	691	0.7−	0.3−
1993 11 12	033	0.5−	0.3+	1993 12 18	385	0.6+	0.5+	1997 09 30	691	0.9−	0.0
1993 11 15	385	0.0	0.0	1993 12 18	385	0.0	0.2−	1997 09 30	691	0.7−	0.0
1993 11 15	385	0.3−	0.1−	1993 12 18	385	1.2+	0.2−	1997 10 05	557	0.1+	0.3−
1993 11 15	385	0.2−	0.5+	1997 09 01	910	0.6+	0.1+	1997 10 05	557	0.3+	1.1−
1993 11 18	385	0.7+	0.4−	1997 09 01	910	0.1+	0.2−	1997 10 11	557	0.4+	0.6+
1993 11 18	385	0.1−	0.1+	1997 09 01	910	0.4+	0.3−	1997 10 11	557	0.4+	0.6+
1993 11 18	385	0.0	0.4−	1997 09 25	557	0.7+	0.1−	1997 10 11	691	0.8−	0.2−
1993 11 21	385	1.2+	1.3+	1997 09 25	557	0.3+	0.1+	1997 10 11	691	0.8−	0.2−
1993 11 21	385	0.2+	0.2+	1997 09 25	557	0.6+	0.0	1997 10 11	691	0.8−	0.1−
1993 12 05	385	0.4−	0.4+	1997 09 26	557	0.2+	0.2+				
1993 12 05	385	0.5−	0.7+	1997 09 26	557	0.5+	0.1−				

1993 YR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23241789	ω	196.24848	+0.61498799	−0.77950314		
<i>a</i>	2.6199299	Ω	216.04730	+0.74411302	+0.62363775		
<i>e</i>	0.3173940	<i>i</i>	11.66863	+0.26093216	+0.05874363		
<i>P</i>	4.24	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 12 18	905	0.6−	0.5−	1994 01 06	385	0.5−	0.4+	1994 01 29	385	0.4+	0.6+
1993 12 18	905	0.7+	0.1+	1994 01 06	385	0.1+	0.7+	1994 02 02	887	0.3+	0.9−
1993 12 23	385	0.1−	0.1−	1994 01 14	385	0.3−	0.2+	1994 02 02	887	0.5−	0.2−
1993 12 23	385	0.2+	0.4+	1994 01 14	385	0.0	0.2+	1997 10 10	385	0.4−	0.1−
1993 12 23	385	0.1−	0.5+	1994 01 14	385	0.1+	0.7+	1997 10 10	385	0.5+	0.1−
1994 01 04	905	0.5+	1.5−	1994 01 15	905	0.3+	0.0	1997 10 11	385	0.1−	0.1+
1994 01 04	898	0.4−	1.6−	1994 01 15	905	0.8+	0.4−	1997 10 11	385	0.0	0.1+
1994 01 06	385	0.5+	0.6+	1994 01 29	385	0.5−	0.2−	1997 10 11	385	0.0	0.0
1994 01 06	385	0.8−	0.5+	1994 01 29	385	0.0	0.5+				

1994 AT₁ = 1933 DL = 1975 VV₅

Id. G. V. Williams, T. Urata

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22805827	ω	328.60490	+0.89793118	−0.39387250		
<i>a</i>	2.6532133	Ω	55.85514	+0.43673746	+0.74199122		
<i>e</i>	0.2242365	<i>i</i>	13.72964	+0.05458926	+0.54250667		
<i>P</i>	4.32	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1933 02 18	754	3.4+	5.2−	1994 01 11	385	0.8+	0.3+	1994 01 21	898	0.9−	1.4−
1975 11 05	095	1.1+	3.5−	1994 01 11	385	0.2+	0.4+	1994 02 07	385	0.0	0.1+
1991 05 13	675	0.3+	0.6−	1994 01 14	385	0.3+	0.5+	1994 02 07	385	0.1−	0.1−
1991 05 13	675	1.8−	1.6−	1994 01 14	385	0.2−	0.5+	1994 02 07	385	0.1+	0.1−
1991 05 15	675	0.0	0.6−	1994 01 14	385	0.2+	0.0	1997 10 11	385	0.3−	0.3+
1991 05 15	675	0.1−	1.5−	1994 01 19	385	0.1−	0.0	1997 10 12	385	0.5+	1.4+
1994 01 09	898	0.3−	0.2+	1994 01 19	385	0.4−	0.1+	1997 10 12	385	0.5+	1.1+
1994 01 09	898	0.1+	0.2+	1994 01 19	385	0.2+	0.1−	1997 10 12	385	0.5+	1.0+
1994 01 11	385	0.6+	0.5+	1994 01 21	898	1.7−	0.3−				

1994 QA₁ = 1997 MK₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23595868	ω	304.61967	−0.10676075	−0.99380143		
<i>a</i>	2.5936542	Ω	151.46121	+0.93216123	−0.11088881		
<i>e</i>	0.1839882	<i>i</i>	3.72011	+0.34594447	−0.00789934		
<i>P</i>	4.18	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	0.2−	0.6−	1994 09 03	809	0.6+	0.4−	1997 06 08	809	0.6+	0.8+
1994 08 10	809	0.4−	1.2−	1994 09 04	809	0.5+	0.6+	1997 06 08	809	0.5−	0.4+
1994 08 10	809	0.9−	1.7−	1994 09 04	809	0.4+	0.7−	1997 06 08	809	0.5−	0.4+
1994 08 11	809	0.8+	0.8−	1994 09 04	809	0.3+	0.3−	1997 06 09	809	1.6+	0.0
1994 08 11	809	1.1+	0.1−	1994 09 05	809	1.6+	0.4+	1997 06 09	809	1.1+	0.2+
1994 08 11	809	1.5+	0.3−	1994 09 05	809	1.0+	0.5+	1997 06 09	809	0.7+	0.6+
1994 08 27	112	0.1+	1.1+	1994 09 05	809	1.4+	1.2+	1997 06 30	910	0.5−	0.1−
1994 08 27	112	0.6+	1.0+	1994 09 06	809	(3.7+	3.9+)	1997 06 30	910	0.7−	0.0
1994 08 27	112	0.1−	1.8+	1994 09 06	809	(3.8+	3.4+)	1997 06 30	910	0.6−	0.4−
1994 09 01	691	1.8−	0.1−	1994 09 06	809	(4.6+	4.0+)	1997 07 01	910	0.5−	0.8−
1994 09 01	691	1.8−	0.4+	1994 09 09	112	1.4−	1.0−	1997 07 01	910	0.5−	0.6−
1994 09 01	691	0.9−	1.8+	1994 09 09	112	0.3+	1.1−	1997 07 01	910	0.5−	0.3−
1994 09 03	809	0.1−	0.3+	1994 09 09	112	1.1−	0.5−				
1994 09 03	809	0.9−	0.1+	1994 09 09	112	0.5−	0.1−				

1994 VC = 1997 SY₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.31184507	ω	51.22614	+0.80535460	−0.59276115		
<i>a</i>	2.1536583	Ω	345.12374	+0.53614004	+0.73279459		
<i>e</i>	0.1421673	<i>i</i>	1.37927	+0.25289884	+0.33413516		
<i>P</i>	3.16	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 11 01	411	0.1+	0.0	1994 11 07	675	0.5+	1.0+	1994 12 03	675	0.2+	2.3−
1994 11 01	411	0.3−	0.3+	1994 11 08	411	0.7+	0.2+	1994 12 03	675	0.5−	1.2−
1994 11 02	411	0.6−	1.0+	1994 11 08	411	0.7+	0.6+	1997 09 28	691	0.1−	0.2−
1994 11 02	411	0.2−	0.8+	1994 11 23	411	0.3+	1.1+	1997 09 28	691	0.2−	0.4−
1994 11 04	675	0.4−	1.3−	1994 11 23	411	0.7+	1.4+	1997 09 28	691	0.1−	0.2−
1994 11 04	675	0.9−	1.2−	1994 11 28	675	1.8+	3.0−	1997 10 03	691	0.3+	0.2+
1994 11 06	675	0.4−	0.9−	1994 11 30	675	0.2+	0.9+	1997 10 03	691	0.1+	0.0
1994 11 06	675	0.1+	0.4−	1994 12 02	675	0.8−	1.3+	1997 10 03	691	0.2+	0.1+
1994 11 07	675	0.5−	1.1+	1994 12 02	675	0.8−	0.8+				

1994 WL₁ = 1982 BA₁₂ = 1997 SK₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29376488	ω	272.21841	−0.99776358	+0.03297412		
<i>a</i>	2.2411425	Ω	269.67497	−0.00721126	−0.91787608		
<i>e</i>	0.1012704	<i>i</i>	3.33325	−0.06645177	−0.39549490		
<i>P</i>	3.36	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 01 20	095	0.1−	0.1−	1994 12 21	411	1.1+	1.2−	1997 09 26	557	0.4+	0.1+
1994 11 27	411	0.3−	0.1−	1997 09 25	557	0.0	0.0	1997 09 26	557	0.1+	0.3+
1994 11 27	411	1.1−	1.5−	1997 09 25	557	0.3+	0.1−	1997 10 02	557	0.5−	0.1+
1994 11 28	411	0.3+	0.1+	1997 09 26	557	0.1−	0.0	1997 10 02	557	0.5−	0.0
1994 11 28	411	0.8+	1.2+	1997 09 26	557	0.2+	0.1−	1997 10 05	557	0.2−	0.3+
1994 12 06	411	0.1−	0.7+	1997 09 26	557	0.3+	0.2+	1997 10 05	557	0.1−	0.1+
1994 12 06	411	0.6−	0.5+	1997 09 26	557	0.1−	0.0	1997 10 10	557	0.1−	0.5−
1994 12 21	411	0.0	0.6+	1997 09 26	557	0.3+	0.1−	1997 10 11	557	0.2+	0.6−

1997 OCT. 16

M.P.C. 30761

1994 YZ = 1997 MX₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	354.88771		(2000.0)	P	Q
<i>n</i>	0.23476492	ω	54.64968	+0.94406896	+0.25377343
<i>a</i>	2.6024392	Ω	289.82990	-0.32455983	+0.82794553
<i>e</i>	0.1980091	<i>i</i>	12.93383	+0.05826423	+0.50010524
<i>P</i>	4.20	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 12 28	411	0.2+	0.0	1995 01 23	411	0.5+	0.2+	1997 06 29	704	0.0	0.0
1994 12 28	411	0.2+	0.1+	1997 06 28	704	0.2-	0.1+	1997 06 29	704	0.0	0.0
1994 12 29	411	0.0	0.2+	1997 06 28	704	0.2-	0.1-	1997 07 02	704	1.0+	0.5-
1994 12 29	411	0.3-	0.1-	1997 06 28	704	0.1-	0.4-	1997 07 02	704	0.2-	0.3+
1995 01 05	411	0.3-	0.0	1997 06 29	704	0.2-	0.0	1997 07 02	704	0.2-	0.3-
1995 01 05	411	0.1+	0.2-	1997 06 29	704	0.0	0.1-	1997 07 02	704	0.2+	0.6+
1995 01 23	411	0.4-	0.2-	1997 06 29	704	0.2+	0.1+	1997 07 02	704	0.3-	0.4+

1994 YV₃ = 1973 UF₄ = 1997 SF₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	351.35863		(2000.0)	P	Q
<i>n</i>	0.28626710	ω	118.95667	+0.63395096	-0.77162620
<i>a</i>	2.2801063	Ω	291.60688	+0.68868749	+0.59382203
<i>e</i>	0.1716375	<i>i</i>	3.20337	+0.35187459	+0.22796578
<i>P</i>	3.44	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1973 10 29	095	0.8+	2.0-	1995 01 09	691	0.2-	0.4+	1997 09 28	900	1.3-	0.2+
1994 12 31	691	0.1+	0.4+	1995 01 09	691	0.5-	0.0	1997 09 28	900	0.2-	0.3+
1994 12 31	691	0.1+	0.5+	1997 09 19	402	0.3+	0.5+	1997 09 29	402	1.2-	0.0
1994 12 31	691	0.1+	0.3+	1997 09 19	402	0.1-	0.0	1997 09 29	402	1.1-	0.1-
1995 01 05	905	1.6+	1.1-	1997 09 19	402	0.3+	0.2+	1997 09 29	402	1.2-	0.1-
1995 01 05	905	0.4-	0.3-	1997 09 24	402	0.8+	0.2-	1997 09 30	402	0.1+	0.1+
1995 01 05	905	0.2+	0.5+	1997 09 24	402	0.8+	0.1+	1997 09 30	402	0.1+	0.1+
1995 01 07	691	0.1-	0.1+	1997 09 24	402	0.8+	0.0	1997 09 30	402	0.0	0.1+
1995 01 07	691	0.1+	0.2+	1997 09 24	900	0.3+	0.4+				
1995 01 09	691	0.7-	0.0	1997 09 24	900	0.7+	0.4+				

1995 BU₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	139.02662		(2000.0)	P	Q
<i>n</i>	0.23831664	ω	311.16017	-0.31396295	+0.92536760
<i>a</i>	2.5765178	Ω	299.34348	-0.78169435	-0.37892479
<i>e</i>	0.0970861	<i>i</i>	14.10413	-0.53887031	+0.01052615
<i>P</i>	4.14	<i>H</i>	12.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 01 27	905	0.9+	1.1+	1995 03 05	905	1.1-	0.4+	1997 09 28	138	0.3+	0.8+
1995 01 27	905	0.8+	0.3+	1995 03 05	905	0.5+	0.1+	1997 10 03	138	0.0	0.3-
1995 01 28	905	0.5-	1.0-	1995 03 05	905	0.5-	0.0	1997 10 03	138	0.1-	0.5-
1995 01 28	905	1.5+	0.4-	1995 04 02	801	0.0	0.1+	1997 10 03	138	0.6-	0.3+
1995 01 31	905	0.3-	0.2-	1995 04 02	801	0.2-	0.2-	1997 10 10	385	0.6-	0.4-
1995 01 31	905	0.1-	0.5+	1995 04 03	801	0.1+	0.6+	1997 10 10	385	0.4-	0.2-
1995 02 11	887	0.4-	0.5-	1997 09 28	138	0.7+	0.1-	1997 10 11	385	0.0	0.1+
1995 02 11	887	0.3-	0.6-	1997 09 28	138	0.5-	0.6+	1997 10 11	385	0.4+	0.3-
1995 02 11	887	0.5-	0.1-	1997 09 28	138	0.5+	0.2+	1997 10 11	385	0.4+	0.1-

1995 CD₃ = 1997 TG₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	196.85536		(2000.0)	P	Q
<i>n</i>	0.22660295	ω	7.67187	-0.99843126	-0.05477967
<i>a</i>	2.6645610	Ω	169.16759	+0.04753965	-0.93868917
<i>e</i>	0.0159317	<i>i</i>	3.53418	+0.02958055	-0.34038483
<i>P</i>	4.35	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 02 01	691	0.4+	0.2+	1995 02 04	691	0.1+	0.1-	1997 10 07	691	0.1+	0.4-
1995 02 01	691	0.2+	0.1+	1995 02 07	691	0.1+	0.0	1997 10 07	691	0.1+	0.3+
1995 02 01	691	0.4-	0.2+	1995 02 07	691	0.0	0.1+	1997 10 09	691	0.3-	0.1+
1995 02 04	691	0.2-	0.2+	1995 02 07	691	0.2-	0.6-	1997 10 09	691	0.3+	0.2-
1995 02 04	691	0.1+	0.1-	1997 10 07	691	0.5+	0.2+	1997 10 09	691	0.7-	0.1-

1995 FP₁₄ = 1997 TK₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	26.28415		(2000.0)	P	Q
<i>n</i>	0.19600148	ω	277.44079	+0.99755598	-0.02649153
<i>a</i>	2.9351467	Ω	84.09286	+0.05039126	+0.91377921
<i>e</i>	0.0878467	<i>i</i>	3.72686	-0.04840230	+0.40534646
<i>P</i>	5.03	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 03 27	691	0.1-	0.1-	1995 04 08	691	0.1+	0.3-	1997 10 04	910	0.0	0.0
1995 03 27	691	0.1+	0.0	1995 04 08	691	0.1-	0.2+	1997 10 04	910	0.0	0.1-
1995 03 27	691	0.2-	0.0	1997 10 02	910	0.2+	0.0	1997 10 04	910	0.2-	0.2-
1995 04 01	691	0.4+	0.0	1997 10 02	910	0.0	0.2+				
1995 04 01	691	0.3-	0.1+	1997 10 02	910	0.0	0.1+				

1995 SX₁₂ = 1972 GA₂ = 1996 XS₃₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	275.40548		(2000.0)	P	Q
<i>n</i>	0.18544791	ω	17.85078	-0.75256333	+0.65851610
<i>a</i>	3.0454730	Ω	203.33647	-0.60486507	-0.69258203
<i>e</i>	0.1009118	<i>i</i>	0.32280	-0.26035875	-0.29442603
<i>P</i>	5.31	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1972 04 09	805	0.6-	0.6+	1995 09 19	809	1.0+	0.3-	1995 09 27	691	1.4-	0.1+
1972 04 09	805	0.9+	1.2-	1995 09 20	809	1.0+	0.2-	1995 09 27	691	1.0-	0.2+
1972 04 10	805	0.1-	1.3+	1995 09 22	809	(2.0-	3.1-)	1996 12 14	691	0.3+	0.1-
1972 04 10	805	0.1+	0.2-	1995 09 22	809	1.0+	1.1-	1996 12 14	691	0.3+	0.2+
1995 09 18	691	1.1-	0.3+	1995 09 22	691	0.3-	0.3+	1996 12 14	691	0.3+	0.2-
1995 09 18	691	1.3-	0.5+	1995 09 22	691	0.9-	0.2+	1996 12 17	691	0.3-	0.0
1995 09 18	809	1.5+	0.4+	1995 09 22	691	1.0-	0.2+	1996 12 17	691	0.4-	0.1+
1995 09 18	691	1.3-	0.3+	1995 09 23	809	0.6+	1.2-	1996 12 17	691	0.2-	0.1+
1995 09 19	809	1.6+	0.1+	1995 09 24	809	1.3+	0.6+				

1996 CJ₇

Id. A. Boattini (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	88.06815		(2000.0)	P	Q
<i>n</i>	0.27350949	ω	120.81635	-0.22632124	+0.96986027
<i>a</i>	2.3504686	Ω	135.80634	-0.93207198	-0.18871903
<i>e</i>	0.0924657	<i>i</i>	7.44098	-0.28287899	-0.15413040
<i>P</i>	3.60	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 02 14	098	1.0-	0.9+	1996 02 24	098	(3.8+	0.7-)	1997 09 02	108	0.9+	1.0+
1996 02 14	098	0.8-	0.1-	1996 03 14	098	0.7+	0.2-	1997 09 02	108	1.3-	0.8-
1996 02 15	098	0.2+	0.6-	1996 03 14	098	0.4+	0.3+	1997 09 02	108	(3.1+	1.2+)
1996 02 15	098	1.7+	1.6-	1997 09 01	104	0.2+	0.1-				
1996 02 24	098	1.3-	0.8+	1997 09 01	104	0.3+	0.7-				

1996 DW

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	141.04832		(2000.0)	P	Q
<i>n</i>	0.28477281	ω	226.56657	-0.75195928	+0.65909564
<i>a</i>	2.2880756	Ω	354.62223	-0.56073590	-0.64929442
<i>e</i>	0.1642731	<i>i</i>	7.51336	-0.34660134	-0.37948609
<i>P</i>	3.46	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 02 21	411	0.1-	0.8-	1996 03 12	691	0.6+	0.1-	1996 04 19	566	0.0	0.1-
1996 02 21	411	0.0	0.1-	1996 03 17	691	0.2+	0.5-	1996 04 19	566	0.2+	0.2+
1996 02 22	411	0.0	0.4+	1996 03 17	691	0.7+	0.0	1997 10 06	118	0.5+	0.8-
1996 02 22	411	0.8-	0.1-	1996 03 17	691	0.6+	0.1-	1997 10 06	118	0.3+	0.7-
1996 02 22	411	0.3+	0.5+	1996 03 22	411	1.2+	0.3+	1997 10 07	691	0.2-	0.3+
1996 02 27	411	0.1-	0.3+	1996 03 22	411	0.1+	0.3-	1997 10 07	691	0.1+	0.4+
1996 02 27	411	0.5-	0.5+	1996 03 22	411	0.3+	0.1+	1997 10 07	691	0.1+	0.3+
1996 03 09	411	0.5+	1.2-	1996 03 24	691	1.7-	0.0	1997 10 09	691	0.4-	0.1+
1996 03 09	411	0.4+	0.4-	1996 03 24	691	1.6-	0.2-	1997 10 09	691	0.3-	0.3+
1996 03 12	691	0.1-	1.2+	1996 03 24	691	1.5-	0.0	1997 10 09	691	0.3-	0.2+
1996 03 12	691	0.9+	0.3+	1996 04 19	566	0.4+	0.2+				

1996 EP₇ = 1997 SD₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	107.79803		(2000.0)	P	Q
<i>n</i>	0.28433313	ω	265.11189	-0.06621847	+0.99780472
<i>a</i>	2.2904338	Ω	1.09259	-0.89509282	-0.05899094
<i>e</i>	0.1604117	<i>i</i>	2.79025	-0.44093532	-0.03009679
<i>P</i>	3.47	<i>H</i>	17.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 03 11	691	0.2-	0.2+	1996 03 18	691	1.0+	0.3+	1997 09 27	696	0.5+	0.1+
1996 03 11	691	0.0	0.0	1996 03 27	691	0.4-	0.0	1997 09 27	696	0.3-	0.3+
1996 03 11	691	0.3-	0.3-	1996 03 27	691	0.1-	0.0	1997 09 29	709	0.0	0.0
1996 03 18	691	0.1-	0.0	1996 03 27	691	0.1+	0.0	1997 09 29	709	0.4-	0.3-
1996 03 18	691	0.1+	0.0	1997 09 27	696	0.3+	0.3+	1997 09 29	709	0.2-	0.4-

1996 FJ₉ = 1997 RO₉

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	74.64622		(2000.0)	P	Q
<i>n</i>	0.29414660	ω	112.00712	+0.42247881	+0.90636996
<i>a</i>	2.2392031	Ω	182.98696	-0.84682206	+0.39382682
<i>e</i>	0.0851997	<i>i</i>	2.49703	-0.32311616	+0.15295074
<i>P</i>	3.35	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 19	566	0.8+	0.4-	1996 03 27	691	0.1-	0.2+	1997 09 24	402	0.6+	0.2-
1996 03 19	566	0.6+	0.0	1997 09 12	402	0.2-	0.1+	1997 09 24	402	0.7+	0.2-
1996 03 19	566	0.6+	0.3-	1997 09 12	402	0.3-	0.2+	1997 09 24	402	0.6+	0.0
1996 03 20	691	0.7-	0.0	1997 09 12	402	0.2-	0.2+	1997 09 30	691	0.4-	0.2+
1996 03 20	691	0.8-	0.1+	1997 09 12	402	0.2-	0.2+	1997 09 30	691	0.4-	0.1+
1996 03 20	691	0.7-	0.2+	1997 09 19	402	0.1+	0.3-	1997 09 30	691	0.5-	0.1+
1996 03 27	691	0.1+	0.4-	1997 09 19	402	0.0	0.2-				
1996 03 27	691	0.1-	0.1+	1997 09 19	402	0.3+	0.3-				

1996 GP₉ = 1997 RC₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	57.84004		(2000.0)	P	Q
<i>n</i>	0.22939188	ω	114.37651	+0.46159160	+0.88708776
<i>a</i>	2.6429200	Ω	183.11795	-0.83207919	+0.43182408
<i>e</i>	0.0893325	<i>i</i>	3.07272	-0.30753442	+0.16310508
<i>P</i>	4.30	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 04 13	691	0.1-	0.5+	1997 09 01	557	0.2-	0.4-	1997 09 16	557	0.6-	0.8-
1996 04 13	691	0.1+	0.6+	1997 09 02	557	0.6-	0.0	1997 09 16	557	1.4-	1.3-
1996 04 13	691	0.1+	0.3+	1997 09 02	557	0.1+	0.1+	1997 09 20	557	0.2-	0.3-
1996 04 19	691	0.0	0.0	1997 09 03	910	1.3+	0.6+	1997 09 20	557	0.2-	0.7+
1996 04 19	691	0.1+	0.0	1997 09 03	910	1.2+	0.5+	1997 09 25	557	0.2-	0.0
1996 04 19	691	0.3-	0.1-	1997 09 03	910	1.1+	0.7+	1997 09 25	557	0.0	0.1-
1996 04 24	691	0.1+	0.4-	1997 09 08	557	0.3+	0.3-	1997 09 25	557	0.1+	0.4+
1996 04 24	691	0.1-	0.5-	1997 09 08	557	0.1+	0.4-	1997 10 05	557	0.7+	1.0+
1996 04 24	691	0.2+	0.2-	1997 09 08	557	0.6-	0.3-	1997 10 05	557	0.1+	0.9+
1997 09 01	557	0.6-	0.5-	1997 09 16	557	0.5-	0.3-				

1996 GB₁₈ = 1981 UJ₁₅ = 1997 TL₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	359.34955		(2000.0)	P	Q
<i>n</i>	0.30484069	ω	359.52396	+0.78984304	-0.61063237
<i>a</i>	2.1865232	Ω	38.30314	+0.56300479	+0.68487946
<i>e</i>	0.0534525	<i>i</i>	5.29850	+0.24325621	+0.39757797
<i>P</i>	3.23	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1981 10 23	095	0.1-	0.1+	1996 04 15	809	(2.7-	2.3-)	1997 10 09	327	0.1-	0.3-
1996 03 24	809	(2.3+	3.1+)	1996 04 15	809	(3.4-	1.9-)	1997 10 09	327	0.0	0.1+
1996 03 24	809	(0.9+	3.1+)	1996 04 17	809	0.5+	0.7+	1997 10 09	327	0.0	0.1+
1996 03 24	809	(1.3+	3.1+)	1996 04 17	809	0.8-	0.5+	1997 10 11	327	0.1+	0.1+
1996 03 27	809	1.0+	0.1+	1996 04 17	809	1.4-	1.0-	1997 10 11	327	0.3+	0.0
1996 03 27	809	0.7+	0.1+	1997 10 03	327	0.0	0.1-	1997 10 11	327	0.1+	0.0
1996 03 27	809	0.4+	0.1-	1997 10 03	327	0.3-	0.1+				
1996 04 15	809	(2.6-	2.3-)	1997 10 03	327	0.2-	0.1+				

1996 HQ

Id. L. Šarounová (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	181.05921		(2000.0)	P	Q
<i>n</i>	0.28395398	ω	147.27284	-0.87732552	+0.46717858
<i>a</i>	2.2924722	Ω	60.95614	-0.46286661	-0.76338986
<i>e</i>	0.1022360	<i>i</i>	7.21145	-0.12670608	-0.44607185
<i>P</i>	3.47	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 04 18	557	0.1-	0.2-	1996 05 22	809	(1.1+	2.8+)	1996 06 07	557	0.5-	1.2-
1996 04 18	557	0.0	0.1+	1996 05 22	809	1.0+	1.8+	1996 06 07	557	0.4-	0.5-
1996 04 19	557	0.3-	0.3-	1996 05 22	557	1.1+	0.6-	1997 09 15	557	0.7+	0.0
1996 04 20	557	0.1-	0.6-	1996 05 22	557	0.8+	0.8-	1997 09 15	557	0.1+	0.4-
1996 04 20	557	0.1-	0.0	1996 05 22	557	1.1+	1.3-	1997 09 15	557	0.3+	0.2+
1996 04 21	557	0.2+	0.3+	1996 05 23	809	0.1-	1.2+	1997 09 21	557	0.0	0.1+
1996 04 27	557	0.4-	0.1-	1996 05 23	809	0.2-	1.6+	1997 09 21	557	0.4+	0.2+
1996 04 27	557	0.0	0.5-	1996 05 23	809	1.2-	1.7+	1997 09 21	557	0.1-	0.4-
1996 05 16	557	0.7-	0.3-	1996 06 05	557	0.1+	0.8-	1997 10 05	557	1.1-	0.3+
1996 05 16	557	0.1+	0.3-	1996 06 05	557	1.4-	1.0-	1997 10 05	557	0.3-	0.2+
1996 05 22	809	1.1+	1.6+	1996 06 05	557	0.2-	0.1+				

1996 HU

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	27.87542		(2000.0)	P	Q
<i>n</i>	0.25999888	ω	192.47776	+0.99116557	-0.13242542
<i>a</i>	2.4312058	Ω	175.11398	+0.12790800	+0.93970046
<i>e</i>	0.2023046	<i>i</i>	4.96431	+0.03507648	+0.31531977
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1996 04 13	691	1.9-	0.4+	1996 05 18	557	0.2-	0.5-	1997 09 27	557	0.3+	0.1-
1996 04 13	691	2.0-	0.1+	1996 05 22	557	0.1-	0.5-	1997 09 27	557	0.3+	0.1-
1996 04 13	691	1.6-	0.3-	1996 05 22	557	0.9-	1.0+	1997 09 27	557	0.5+	0.0
1996 04 20	557	0.6+	0.1-	1996 06 05	557	0.1-	0.4+	1997 09 28	557	0.3+	0.0

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1996 04 21	557	1.3+	0.1-	1996 06 05	557	0.1+	0.0	1997 09 28	557	0.4+	0.2-
1996 04 21	557	0.3+	0.2-	1996 06 05	557	0.1-	0.2+	1997 10 05	557	0.3-	0.0
1996 04 21	557	0.9+	0.4-	1996 06 07	557	0.7+	0.1+	1997 10 05	557	0.3-	0.1-
1996 04 21	557	1.8+	0.4+	1996 06 07	557	0.4-	0.2+	1997 10 05	557	0.3-	0.1+
1996 04 24	557	1.2+	0.5-	1996 06 07	557	0.0	0.0	1997 10 05	557	0.3-	0.1+
1996 04 24	557	0.4+	0.0	1997 08 04	910	0.2+	0.3-	1997 10 05	557	0.3-	0.0
1996 05 16	557	0.3+	0.4-	1997 08 05	910	0.3+	0.4+				
1996 05 18	557	0.5-	0.1+	1997 08 05	910	0.8-	0.2+				

1996 HK₁ = 1997 TS₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	20.23388	(2000.0)		P		Q	
<i>n</i>	0.29725108	ω	342.74607	+0.91932482		-0.38582867	
<i>a</i>	2.2235851	Ω	40.22491	+0.37368136		+0.79443461	
<i>e</i>	0.0937492	<i>i</i>	6.87633	+0.12330500		+0.46905211	
<i>P</i>	3.32	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 17	867	1.4+	0.7-	1996 04 22	867	0.2-	0.3+	1996 05 22	867	0.4-	0.2-
1996 04 17	867	1.5+	2.0-	1996 04 22	867	0.3-	0.2-	1996 05 22	867	1.0+	0.3+
1996 04 17	867	0.1-	0.5-	1996 04 22	867	0.2+	0.9+	1996 05 22	867	0.3+	0.1-
1996 04 18	809	0.7+	1.1+	1996 04 26	867	0.5+	0.0	1996 05 24	867	0.3-	0.7+
1996 04 18	809	1.4-	1.6+	1996 04 26	867	0.1+	0.2-	1996 05 24	867	0.3-	0.4+
1996 04 18	809	1.5-	0.1+	1996 04 26	867	0.1-	0.2-	1996 05 24	867	0.1-	0.3+
1996 04 20	809	(0.4+	4.9+)	1996 05 12	867	0.2+	1.1-	1997 10 02	867	0.8-	0.7+
1996 04 20	809	(1.0+	4.2+)	1996 05 12	867	1.3+	0.2-	1997 10 02	867	0.8-	0.7+
1996 04 20	809	(2.2+	4.3+)	1996 05 12	867	(4.9+	0.2+)	1997 10 02	867	0.9-	0.6+
1996 04 21	867	0.4-	0.2+	1996 05 22	809	0.5-	0.2+	1997 10 06	867	0.9+	0.7-
1996 04 21	867	0.2-	0.1+	1996 05 22	809	1.0-	1.0-	1997 10 06	867	0.9+	0.7-
1996 04 21	867	0.6-	0.1+	1996 05 22	809	(2.8-	1.8-)	1997 10 06	867	0.9+	0.7-

1996 HE₂ = 1997 SX₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	55.93353	(2000.0)		P		Q	
<i>n</i>	0.17909451	ω	205.45678	+0.13357440		+0.97682122	
<i>a</i>	3.1170794	Ω	72.58675	-0.87665613		+0.19517827	
<i>e</i>	0.0293700	<i>i</i>	10.09615	-0.46220332		-0.08789620	
<i>P</i>	5.50	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 24	358	1.5-	1.9+	1996 05 14	358	0.5+	0.4+	1997 09 28	426	0.0	0.6+
1996 04 24	358	0.3+	0.1+	1996 05 14	358	0.5-	1.9-	1997 09 30	426	1.0-	0.0
1996 04 25	358	1.5+	0.8-	1997 09 26	426	0.6-	0.7-	1997 09 30	426	0.2-	0.3-
1996 04 25	358	0.1-	0.2-	1997 09 26	426	0.1+	0.3+	1997 10 07	426	0.0	0.3+
1996 05 13	358	0.2+	0.0	1997 09 28	426	0.3+	0.2-	1997 10 07	426	0.2+	0.6+
1996 05 13	358	0.4-	0.4+	1997 09 28	426	0.1+	0.5-	1997 10 07	426	1.0+	0.0

1996 HT₂

Id. T. Kobayashi (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	97.34923	(2000.0)		P		Q	
<i>n</i>	0.26075824	ω	85.02173	+0.23526318		+0.96909101	
<i>a</i>	2.4264836	Ω	199.08762	-0.95722350		+0.21778478	
<i>e</i>	0.0955679	<i>i</i>	13.12469	-0.16844706		+0.11589827	
<i>P</i>	3.78	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 24	809	0.9-	0.8+	1996 04 17	691	0.3-	0.6-	1997 09 27	411	0.5+	0.5-
1996 03 24	809	0.4-	0.4+	1996 04 17	691	0.4-	0.3-	1997 09 27	411	0.1-	0.3+
1996 03 24	809	0.4-	0.6+	1996 04 17	691	0.2-	0.1-	1997 09 28	411	0.5+	0.3-
1996 03 27	809	1.1+	0.8-	1996 04 19	691	0.2+	0.4+	1997 09 28	411	1.0-	0.5+
1996 03 27	809	0.3+	0.3-	1996 04 19	691	0.2+	0.4+				
1996 03 27	809	0.6+	0.7-	1996 04 19	691	0.2+	0.3+				

M.P.C. 30763

1996 HC₁₉ = 1997 SN₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	14.05679	(2000.0)		P		Q	
<i>n</i>	0.26534025	ω	174.21298	+0.97085572		-0.23926886	
<i>a</i>	2.3984682	Ω	199.64697	+0.21821292		+0.90625444	
<i>e</i>	0.1060153	<i>i</i>	2.34704	+0.09910750		+0.34850152	
<i>P</i>	3.71	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 18	809	0.2+	0.6-	1996 05 19	809	0.3-	0.5+	1997 09 29	327	0.3-	0.5+
1996 04 18	809	1.3-	0.5-	1996 05 22	809	1.0+	1.7+	1997 09 29	327	0.7-	0.6-
1996 04 18	809	0.3-	1.8-	1996 05 22	809	(1.0-	2.3+)	1997 09 30	327	0.1-	0.0
1996 04 20	809	0.1-	0.3-	1996 05 22	809	0.1-	1.3+	1997 09 30	327	0.0	0.2-
1996 04 20	809	0.8+	0.1+	1996 05 23	809	(0.8-	2.1-)	1997 09 30	327	0.2-	0.3-
1996 04 20	809	0.2+	1.0-	1996 05 23	809	1.7-	1.2-	1997 10 10	327	0.8+	0.1+
1996 05 19	809	0.5+	1.1+	1996 05 23	809	(2.8-	1.7-)	1997 10 10	327	0.7+	0.1+
1996 05 19	809	1.1+	0.0	1997 09 29	327	0.6-	0.1-	1997 10 10	327	0.6+	0.2-

1996 HQ₂₂ = 1997 TC₁₁

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
<i>M</i>	25.23326	(2000.0)		P		Q	
<i>n</i>	0.22739032	ω	140.45303	+0.99625657		+0.07288861	
<i>a</i>	2.6584066	Ω	215.44967	-0.08431956		+0.93786309	
<i>e</i>	0.2096187	<i>i</i>	4.59629	+0.01905433		+0.33926402	
<i>P</i>	4.33	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 20	809	0.2-	0.3-	1996 05 22	809	0.8+	0.1+	1997 10 07	367	0.5-	1.3-
1996 04 20	809	0.5-	0.3+	1996 05 23	809	1.1+	0.3+	1997 10 08	367	0.3-	0.3-
1996 04 20	809	0.1-	1.0-	1996 05 23	809	0.1-	0.2+	1997 10 08	367	0.2-	0.4-
1996 04 21	809	0.9+	1.8+	1996 05 23	809	0.3-	0.8-	1997 10 10	610	0.6-	1.0+
1996 04 21	809	0.4-	0.5+	1997 10 05	610	1.2+	0.2+	1997 10 10	610	0.3-	0.8+
1996 04 21	809	0.6+	0.0	1997 10 05	610	0.9+	0.3+	1997 10 10	610	0.1-	0.5+
1996 05 22	809	0.8-	1.1-	1997 10 05	610	0.6+	0.4+				
1996 05 22	809	1.0-	0.2+	1997 10 07	367	0.8-	1.2-				

1996 HC₂₄ = 1997 TE₁₇

Id. T. Urata, S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	35.31674	(2000.0)		P		Q	
<i>n</i>	0.26801636	ω	291.75261	+0.99357305		+0.02574212	
<i>a</i>	2.3824759	Ω	66.91308	+0.02531211		+0.89860878	
<i>e</i>	0.1036173	<i>i</i>	6.88190	-0.11032631		+0.43799497	
<i>P</i>	3.68	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 20	809	0.7+	0.3-	1996 05 19	809	2.0-	0.2-	1996 05 23	809	0.3+	0.1+
1996 04 20	809	0.6-	0.8-	1996 05 19	809	(2.0-	2.8-)	1997 10 06	905	0.6-	0.7-
1996 04 20	809	0.2-	0.3-	1996 05 22	809	0.1+	0.6-	1997 10 06	905	0.8+	0.6+
1996 04 21	809	0.9+	0.1+	1996 05 22	809	0.2+	0.3+	1997 10 10	385	0.3+	0.3+
1996 04 21	809	0.3-	0.9+	1996 05 22	809	0.2-	1.0-	1997 10 10	385	0.4-	0.3-
1996 04 21	809	0.5-	0.3+	1996 05 23	809	0.7+	0.2+				
1996 05 19	809	0.6+	1.1+	1996 05 23	809	0.1+	0.1+				

1996 HD₂₄ = 1997 QZ₄

Id. E. Bowell (1993 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	104.63503	(2000.0)		P		Q	
<i>n</i>	0.25818167	ω	89.37268	+0.42705257		+0.90298061	
<i>a</i>	2.4426005	Ω	206.07091	-0.86662624		+0.39375312	
<i>e</i>	0.2050096	<i>i</i>	6.19904	-0.25804082		+0.17200146	
<i>P</i>	3.82	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

M.P.C. 30764

Residuals in seconds of arc

1993 10 14	675	0.3−	0.1+	1996 04 21	809	2.5−	1.6+	1996 05 23	809	(4.4−	2.7−)
1993 10 14	675	0.1−	1.3+	1996 04 21	809	0.6−	1.0+	1996 05 24	809	2.0+	0.4−
1996 03 16	566	0.1+	0.6−	1996 04 21	809	1.7−	0.8+	1996 05 24	809	1.8+	0.6−
1996 03 16	566	0.4−	0.6−	1996 05 22	809	1.2−	0.5−	1996 05 24	809	2.2+	0.4−
1996 03 16	566	0.2+	0.3−	1996 05 22	809	0.6−	1.1−	1997 08 31	910	0.0	0.7+
1996 04 20	809	0.5+	1.6+	1996 05 22	809	0.9−	1.3−	1997 08 31	910	0.0	0.4+
1996 04 20	809	0.4+	1.7+	1996 05 23	809	(4.5−	2.8−)	1997 08 31	910	0.1−	0.6+
1996 04 20	809	0.8+	1.0+	1996 05 23	809	(4.4−	2.6−)				

1996 KL₁ = 1991 PG₂₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	84.61095		(2000.0)	P	Q
<i>n</i>	0.18061403	ω	142.15569	−0.01236512	+0.96807036
<i>a</i>	3.0995720	Ω	125.74395	−0.97611187	+0.04263228
<i>e</i>	0.2987272	<i>i</i>	17.96766	−0.21691639	−0.24702687
<i>P</i>	5.46	<i>H</i>	14.0	<i>G</i>	0.15

Residuals in seconds of arc

1991 08 07	809	0.5−	0.9−	1996 05 27	658	0.6−	0.3−	1996 06 12	658	1.2+	0.3+
1991 08 07	809	0.5+	0.4−	1996 05 28	658	1.1−	0.2+	1996 09 20	696	0.2+	0.8+
1991 08 07	809	0.0	0.4+	1996 05 28	658	0.5−	0.4+	1996 09 20	696	0.4+	0.6+
1996 05 22	693	0.4−	0.6−	1996 05 28	658	0.0	0.4+	1997 09 11	608	0.2−	0.2−
1996 05 22	693	1.0−	0.9−	1996 05 28	658	0.1−	0.1+	1997 09 11	608	0.6+	0.1+
1996 05 27	658	0.6−	0.3−	1996 06 07	658	0.8+	0.1+	1997 09 12	608	0.2−	0.2+
1996 05 27	658	0.4−	0.3−	1996 06 07	658	0.9+	0.2+	1997 09 12	608	0.2−	0.1+
1996 05 27	658	0.3−	0.3−	1996 06 12	658	1.4+	0.5+				
1996 05 27	658	0.5−	0.3−	1996 06 12	658	1.4+	0.5+				

1996 PF₁ = 1989 EG₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	137.75056		(2000.0)	P	Q
<i>n</i>	0.18022496	ω	256.04774	−0.24320362	+0.96997524
<i>a</i>	3.1040313	Ω	359.87611	−0.85373224	−0.21414812
<i>e</i>	0.1305090	<i>i</i>	4.89655	−0.46042726	−0.11527626
<i>P</i>	5.47	<i>H</i>	14.0	<i>G</i>	0.15

Residuals in seconds of arc

1989 03 05	033	0.8+	0.4+	1996 08 19	589	0.3+	0.7−	1996 09 30	589	1.2−	0.2+
1989 03 05	033	0.5−	0.0	1996 08 19	589	0.7+	0.0	1996 09 30	589	1.3−	0.6+
1996 08 09	589	0.5−	0.1+	1996 08 20	589	0.4−	0.2−	1996 09 30	589	0.4−	0.2−
1996 08 09	589	0.4−	0.7+	1996 08 20	589	0.4−	0.8−	1996 10 09	589	1.0+	1.0+
1996 08 09	589	1.5+	0.4−	1996 09 04	589	1.8+	0.2+	1996 10 09	589	0.9−	0.3+
1996 08 09	589	0.7−	0.8−	1996 09 04	589	0.7+	0.0	1996 10 09	589	0.6+	0.7+
1996 08 12	596	0.2−	0.9+	1996 09 04	589	0.4−	0.3−	1997 09 26	589	0.2+	0.1−
1996 08 12	596	0.4−	0.6+	1996 09 04	589	0.1+	0.2−	1997 09 26	589	0.2−	0.3+
1996 08 12	596	0.1+	0.3+	1996 09 06	589	0.7+	0.2+	1997 09 26	589	0.0	0.4−
1996 08 19	589	0.2+	0.3−	1996 09 14	589	0.3−	0.1+				
1996 08 19	589	0.1+	0.8−	1996 09 14	589	0.6−	0.3−				

1996 PS₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	349.04173		(2000.0)	P	Q
<i>n</i>	0.08370129	ω	184.81462	+0.89755486	−0.42013752
<i>a</i>	5.1758453	Ω	201.61955	+0.41567043	+0.90746015
<i>e</i>	0.0861781	<i>i</i>	21.27968	+0.14701486	−0.00073381
<i>P</i>	11.78	<i>H</i>	10.5	<i>G</i>	0.15

Residuals in seconds of arc

1993 06 16	691	0.2+	0.2−	1996 08 18	595	0.4−	0.1+	1996 10 11	595	0.2+	0.1+
1993 06 16	691	0.0	0.4+	1996 08 18	595	0.1+	0.4−	1996 11 09	595	0.4+	0.1−
1993 06 16	691	0.3−	0.4+	1996 09 04	595	0.0	0.9−	1996 11 09	595	0.3+	0.3+
1996 08 12	595	0.1−	0.1−	1996 09 04	595	0.4−	0.5−	1996 12 04	595	0.3−	0.6+
1996 08 12	595	0.1−	0.2+	1996 09 10	595	0.3+	0.3−	1996 12 04	595	0.7+	1.2+
1996 08 13	595	0.5+	0.1+	1996 09 10	595	0.0	0.5−	1996 12 05	595	0.5+	0.4+

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1996 08 14	595	0.1−	0.5−	1996 10 09	595	0.6−	0.1−	1996 12 05	595	0.2−	0.1+
1996 08 14	595	0.2−	0.3+	1996 10 09	595	0.1−	0.1+	1997 09 10	595	0.5+	0.4+
1996 08 14	595	0.2−	0.6+	1996 10 09	595	0.3−	0.3−	1997 09 10	595	0.5+	0.7+
1996 08 16	595	0.6+	0.0	1996 10 11	595	0.3−	0.1−	1997 09 21	595	0.7−	0.3−
1996 08 16	595	0.2+	0.3−	1996 10 11	595	0.1−	0.1+	1997 09 21	595	0.3−	0.1−

1996 RD₁₂ = 1997 TF₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	313.09594		(2000.0)	P	Q
<i>n</i>	0.08215965	ω	76.53733	+0.16994912	−0.98539367
<i>a</i>	5.2403904	Ω	3.72885	+0.82767845	+0.13678354
<i>e</i>	0.0817283	<i>i</i>	9.55808	+0.53485109	+0.10143757
<i>P</i>	12.00	<i>H</i>	12.5	<i>G</i>	0.15

Residuals in seconds of arc

1996 09 08	691	0.7−	0.5+	1996 09 13	809	0.5+	0.1−	1996 09 21	691	0.6−	0.2+
1996 09 08	691	0.8−	0.1+	1996 09 14	809	(4.6+	3.2+)	1996 09 21	691	0.7−	0.0
1996 09 08	691	0.8−	0.2−	1996 09 15	809	(3.9+	3.6+)	1997 10 03	910	0.0	0.1+
1996 09 11	691	0.5−	0.2−	1996 09 17	809	0.7+	0.3−	1997 10 03	910	0.0	0.1+
1996 09 11	809	2.2+	0.1+	1996 09 17	691	0.9−	0.1−	1997 10 03	910	0.0	0.1+
1996 09 11	691	0.2−	0.1+	1996 09 17	691	0.4−	0.2−	1997 10 04	910	0.0	0.2−
1996 09 12	809	0.4+	0.2−	1996 09 21	809	0.7+	0.1+	1997 10 04	910	0.1−	0.0
1996 09 12	809	0.5+	0.2−	1996 09 21	691	0.8−	0.3+	1997 10 04	910	0.1+	0.2−
1996 09 13	809	0.6+	0.0	1996 09 21	809	0.7+	0.1+				

1996 TN₄₉ = 1996 RW₃₃ = 1997 QX₃

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Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	324.17371		(2000.0)	P	Q
<i>n</i>	0.08417969	ω	242.28521	+0.02180277	−0.99620478
<i>a</i>	5.1562170	Ω	206.86755	+0.97033478	+0.04138483
<i>e</i>	0.0974657	<i>i</i>	10.74610	+0.24078011	−0.07657239
<i>P</i>	11.71	<i>H</i>	12.5	<i>G</i>	0.15

Residuals in seconds of arc

1996 09 10	809	0.0	0.0	1997 08 30	910	0.5+	0.8+	1997 09 28	046	0.1−	0.6−
1996 09 12	809	0.5−	0.8−	1997 08 30	910	0.3+	0.5+	1997 09 28	046	0.1−	0.3−
1996 09 14	809	0.4−	0.2+	1997 09 01	910	0.3−	0.0	1997 09 28	046	0.3+	0.7−
1996 10 04	809	0.2−	0.5−	1997 09 01	910	0.3−	0.1−	1997 09 29	046	0.1+	0.1−
1996 10 04	809	0.3+	1.5−	1997 09 01	910	0.0	0.2−	1997 09 29	046	0.1−	0.6−
1996 10 04	809	0.4−	0.9−	1997 09 09	910	0.2+	0.5+	1997 09 29	046	0.2−	0.3+
1996 10 05	809	1.0+	1.5+	1997 09 09	910	0.4+	0.4+	1997 09 29	046	0.2−	0.1−
1996 10 05	809	0.0	0.7+	1997 09 09	910	0.1+	0.4+	1997 09 29	046	0.3−	0.1+
1996 10 05	809	0.2+	1.2+	1997 09 28	046	0.1+	0.3−				
1997 08 30	910	0.2+	0.4+	1997 09 28	046	0.5−	0.2−				

1996 TK₆₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	347.02763		(2000.0)	P	Q
<i>n</i>	0.00349117	ω	334.48838	+0.94411035	−0.32712227
<i>a</i>	43.0350384	Ω	44.66997	+0.31145666	+0.84496427
<i>e</i>	0.0038235	<i>i</i>	3.30901	+0.10793701	+0.42311511
<i>P</i>	282	<i>H</i>	7.0	<i>G</i>	0.15

Residuals in seconds of arc

1996 10 09	807	0.4+	0.6−	1996 10 12	568	1.7−	0.1+	1997 09 07	675	1.4−	0.0
1996 10 09	807	0.8+	0.5−	1996 10 12	568	1.6−	0.0	1997 09 21	809	0.1−	0.6−
1996 10 10	807	0.8+	0.3−	1997 09 07	675	1.4−	0.0	1997 09 21	809	0.2+	0.4−
1996 10 12	568	1.9−	0.1−	1997 09 07	675	1.3−	0.1+	1997 09 21	809	0.2−	0.7−

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1996 TR₆₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	326.67931		(2000.0)		P		Q
<i>n</i>	0.00354025	ω	73.31220		+0.54994214		-0.83283340
<i>a</i>	42.6363583	Ω	342.87741		+0.66159113		+0.48033255
<i>e</i>	0.2220456	<i>i</i>	12.32917		+0.50976545		+0.27508030
<i>P</i>	278	<i>H</i>	7.5	<i>G</i>	0.15		

Residuals in seconds of arc

1996 10 08	568	0.4-	0.4-	1996 10 12	568	0.2-	0.0	1997 09 06	675	0.0	0.1+
1996 10 08	568	0.5+	0.2-	1996 10 12	568	0.0	0.2+	1997 09 06	675	0.1+	0.2+
1996 10 08	568	0.1+	0.2+	1997 09 05	675	0.1+	0.1-				
1996 10 12	568	0.1-	0.2+	1997 09 05	675	0.2-	0.2-				

1997 CU₂₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	324.50042		(2000.0)		P		Q
<i>n</i>	0.01577254	ω	243.17753		-0.93458293		+0.09577969
<i>a</i>	15.7471374	Ω	300.47646		+0.11686748		-0.82696031
<i>e</i>	0.1731867	<i>i</i>	23.42406		-0.33600110		-0.55404232
<i>P</i>	62.49	<i>H</i>	6.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 02 15	691	1.3-	0.1+	1997 03 02	046	0.0	0.1-	1997 03 08	696	0.7+	0.0
1997 02 15	691	1.2-	0.0	1997 03 02	046	0.0	0.4-	1997 03 08	696	0.4+	0.0
1997 02 15	691	1.0-	0.2-	1997 03 02	046	0.6-	0.2+	1997 03 08	696	0.5+	0.0
1997 02 16	691	0.6-	0.4-	1997 03 02	046	0.4-	0.1+	1997 03 08	696	0.3+	0.0
1997 02 16	691	0.9-	0.4-	1997 03 02	108	0.5+	0.9+	1997 03 08	402	0.2-	0.3-
1997 02 16	691	0.7-	0.4-	1997 03 02	587	0.3-	0.2-	1997 03 08	402	0.1-	0.1-
1997 02 17	327	1.0+	0.3-	1997 03 02	587	0.3+	0.3+	1997 03 08	402	0.6-	0.2-
1997 02 17	327	0.4+	0.3-	1997 03 03	696	0.3-	0.2-	1997 03 09	046	0.3-	0.3+
1997 02 17	327	0.1+	0.5-	1997 03 03	696	0.1-	0.4-	1997 03 09	046	0.4-	0.4+
1997 02 17	046	0.4+	0.6-	1997 03 03	360	0.1+	0.2-	1997 03 09	046	0.2-	0.2+
1997 02 17	046	0.9+	0.6-	1997 03 03	118	0.2-	0.0	1997 03 11	402	0.1-	0.2+
1997 02 17	557	0.2+	0.1-	1997 03 03	118	0.0	0.0	1997 03 11	402	0.3-	0.2+
1997 02 17	046	0.3+	0.2+	1997 03 04	897	0.3-	0.4+	1997 03 11	402	0.0	0.1+
1997 02 17	046	0.4+	0.3-	1997 03 04	897	0.3+	1.0-	1997 03 15	691	0.2+	0.0
1997 02 17	557	0.4+	0.0	1997 03 04	897	0.8-	0.2-	1997 03 15	711	0.4-	0.2+
1997 02 17	557	0.3+	0.3-	1997 03 04	402	0.1-	0.0	1997 03 15	711	0.4-	0.2+
1997 02 17	557	0.3+	0.5-	1997 03 04	402	0.3-	0.0	1997 03 16	711	0.1-	0.2+
1997 02 22	046	0.4-	0.3-	1997 03 04	402	0.2-	0.1-	1997 03 16	711	0.3-	0.3+
1997 02 22	046	0.1-	0.1-	1997 03 04	360	0.4-	0.1+	1997 03 16	587	0.1-	0.1-
1997 02 22	046	0.0	0.4-	1997 03 04	360	0.2-	0.0	1997 03 16	587	0.3-	0.4-
1997 02 22	046	0.0	0.4+	1997 03 05	402	1.5-	0.7-	1997 03 17	711	0.3-	0.3+
1997 02 22	046	0.1+	0.3-	1997 03 05	402	0.0	0.9+	1997 03 17	711	0.2-	0.3+
1997 02 22	046	0.0	0.2-	1997 03 05	402	0.0	0.3-	1997 03 27	658	0.2-	0.1+
1997 02 23	658	(0.7+	4.8-)	1997 03 05	046	0.3-	0.1-	1997 03 27	658	0.2-	0.4+
1997 02 23	658	(1.2+	4.8-)	1997 03 05	046	0.0	0.0	1997 03 27	658	0.9-	0.4-
1997 02 23	658	(0.9+	5.1-)	1997 03 05	046	0.3-	0.1-	1997 04 01	046	0.3-	0.3+
1997 02 23	046	0.1-	0.6+	1997 03 05	046	0.1-	0.0	1997 04 01	046	0.3-	0.5+
1997 02 23	046	0.0	0.0	1997 03 06	696	0.3+	0.3+	1997 04 01	046	0.4-	0.4+
1997 02 23	046	0.3+	0.1-	1997 03 06	696	0.2+	0.1+	1997 04 07	587	0.2-	0.6+
1997 02 23	046	0.2+	0.1-	1997 03 06	696	0.4+	0.2+	1997 04 08	587	0.1-	0.4+
1997 02 23	046	0.5+	0.1+	1997 03 06	696	0.3+	0.0	1997 04 30	587	0.6+	0.4+
1997 02 23	046	0.1+	0.9-	1997 03 06	696	0.2+	0.2+	1997 05 01	691	0.8-	0.1-
1997 02 24	557	0.2+	0.2-	1997 03 06	696	0.2+	0.2+	1997 05 01	691	0.8-	0.3-
1997 02 24	046	0.3+	0.1+	1997 03 06	696	0.4+	0.2+	1997 05 01	691	0.9-	0.2+
1997 02 24	046	0.0	0.0	1997 03 06	696	0.3+	0.2+	1997 05 01	118	0.5+	0.0
1997 02 24	046	0.1+	0.6+	1997 03 06	696	0.3+	0.1+	1997 05 01	587	0.6+	0.2+
1997 02 24	046	0.7-	0.0	1997 03 06	696	0.3+	0.2+	1997 05 02	118	0.5+	0.3+
1997 02 24	557	0.1-	0.2-	1997 03 06	696	0.3+	0.1+	1997 05 03	118	0.8+	0.0
1997 02 26	817	0.0	0.2-	1997 03 06	696	0.2+	0.2+	1997 05 04	360	0.7+	0.3+
1997 02 26	046	0.3+	0.2+	1997 03 06	696	0.5+	0.2+	1997 05 04	360	0.7+	0.0
1997 02 26	046	0.4+	0.2-	1997 03 06	696	0.7+	0.2-	1997 05 04	360	0.3+	0.2+
1997 02 26	046	0.2+	0.0	1997 03 06	696	0.7+	0.4-	1997 05 11	046	0.8-	0.2-
1997 02 26	046	0.0	0.6-	1997 03 06	696	1.0+	0.0	1997 05 11	046	1.2-	0.5+

1997 02 27	402	0.3-	0.2-	1997 03 06	696	0.0	0.1+	1997 05 14	711	0.4+	0.2+
1997 02 27	402	0.4-	0.2+	1997 03 06	696	0.2+	0.1+	1997 05 14	711	0.5+	0.1+
1997 02 27	402	0.3-	0.1-	1997 03 06	696	0.2+	0.2+	1997 05 17	046	0.5-	0.0
1997 02 27	360	0.1+	0.0	1997 03 06	696	0.3+	0.1+	1997 05 17	046	0.6-	0.6-
1997 02 27	360	0.3+	0.1-	1997 03 06	696	0.3+	0.2+	1997 05 26	360	0.4+	0.2-
1997 02 27	360	0.0	0.2-	1997 03 08	696	0.5+	0.0	1997 05 26	360	0.6+	0.4-
1997 02 27	587	0.3-	0.2-	1997 03 08	696	0.8+	0.0	1997 05 28	587	(2.2+	0.0)
1997 02 27	046	0.3-	1.0+	1997 03 08	696	0.4+	0.0	1997 09 28	046	0.3-	1.2-
1997 02 27	046	0.2-	0.3+	1997 03 08	696	0.2+	0.1+	1997 09 28	046	0.5-	0.5-
1997 02 27	046	0.7-	0.3+	1997 03 08	696	0.5+	0.1+	1997 09 28	046	0.4+	0.8-
1997 02 27	046	0.1-	0.8+	1997 03 08	696	0.3+	0.0	1997 09 28	046	0.1-	0.9-
1997 02 27	587	0.0	0.2-	1997 03 08	696	0.3+	0.0	1997 09 28	046	0.2+	0.2-
1997 02 28	046	0.2+	0.1-	1997 03 08	696	0.4+	0.1-	1997 09 28	046	0.1+	0.1+
1997 02 28	046	0.0	0.1+	1997 03 08	696	0.2+	0.1-	1997 09 28	046	0.3+	0.6+
1997 02 28	046	0.3+	0.1+	1997 03 08	696	0.3+	0.0	1997 09 28	046	0.5+	0.3+
1997 02 28	046	0.1-	0.1+	1997 03 08	696	0.3+	0.0	1997 09 28	046	0.7+	0.8+
1997 02 28	108	0.1+	1.7+	1997 03 08	696	0.5+	0.0	1997 09 29	046	0.2-	0.1-
1997 03 01	402	0.1-	0.3-	1997 03 08	696	0.3+	0.1+	1997 09 29	046	0.0	0.3-
1997 03 01	402	0.3-	0.3+	1997 03 08	696	0.3+	0.1-	1997 09 29	046	0.4+	0.2-
1997 03 01	402	0.7-	0.4-	1997 03 08	696	0.3+	0.0	1997 09 29	046	0.8+	0.3-
1997 03 02	118	0.2+	0.0	1997 03 08	696	0.4+	0.1-	1997 09 29	046	0.7-	0.5-
1997 03 02	118	0.1-	0.0	1997 03 08	696	0.4+	0.0	1997 09 29	046	0.2-	0.4-
1997 03 02	118	0.2+	0.2-	1997 03 08	696	0.2+	0.0	1997 10 06	046	0.1+	0.8+
1997 03 02	691	1.7-	0.1-	1997 03 08	696	0.5+	0.0	1997 10 06	046	0.3-	0.2+
1997 03 02	691	1.7-	0.1+	1997 03 08	696	0.3+	0.0	1997 10 06	046	0.6-	0.3+
1997 03 02	700	0.6-	0.8-	1997 03 08	696	0.4+	0.0	1997 10 07	046	0.2-	0.7+
1997 03 02	700	0.3+	0.8-	1997 03 08	696	0.2+	0.1-	1997 10 07	046	0.2-	0.1+
1997 03 02	691	1.8-	0.1-	1997 03 08	696	0.2+	0.0	1997 10 07	046	0.5-	0.3+
1997 03 02	700	0.6+	0.9+	1997 03 08	696	0.4+	0.0				

1997 CS₂₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	292.90824		(2000.0)		P		Q
<i>n</i>	0.00341131	ω	238.56464		-0.99819766		+0.05045557
<i>a</i>	43.7040565	Ω	304.30835		-0.03229469		-0.90795994
<i>e</i>	0.0058634	<i>i</i>	2.25430		-0.05058156		-0.41600839
<i>P</i>	289	<i>H</i>	5.0	<i>G</i>	0.15		

Residuals in seconds of arc

1997 02 03	568	0.3-	0.1+	1997 03 03	696	0.1+	0.3+	1997 03 30	696	0.3-	0.4+
1997 02 03	568	0.3-	0.1-	1997 03 06	709	0.3+	0.1-	1997 04 01	696	0.2-	0.0
1997 02 03	568	0.1-	0.1-	1997 03 06	709	0.7+	0.0	1997 05 02	696	0.8-	0.2-
1997 02 06	568	0.1-	0.1-	1997 03 06	709	0.1-	0.1+	1997 05 02	696	0.4-	0.3-
1997 02 06	568	0.2-	0.1-	1997 03 06	709	0.2+	0.1+	1997 05 03	696	0.1+	0.2+
1997 02 09	568	0.2+	0.1+	1997 03 06	709	0.7+	0.1+	1997 09 23	568	0.3-	0.1+
1997 02 09	568	0.2-	0.0	1997 03 06	709	0.1+	0.0	1997 09 23	568	0.2+	0.0
1997 02 09	568	0.0	0.0	1997 03 06	696	0.4-	0.5-	1997 09 24	568	0.0	0.1-
1997 02 09	568	0.1-	0.0	1997 03 06	696	0.1+	0.0	1997 09 24	568	0.2+	0.0
1997 03 03	696	0.0	0.1+	1997 03 29	696	0.2+	0.0				
1997 03 03	696	0.0	0.3+	1997 03 29	696	0.5+	0.4-				

1997 EW₄₇ = 1978 EJ₇ = 1989 TP₁₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	7.26867		(2000.0)	P		Q	
<i>n</i>	0.21232843	ω	65.95146	−0.13864105	+0.98934883		
<i>a</i>	2.7826843	Ω	196.26602	−0.95640723	−0.14538047		
<i>e</i>	0.1531695	<i>i</i>	9.11191	−0.25702894	+0.00730880		
<i>P</i>	4.64	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1978 03 05	095	0.2+	0.7+	1989 10 06	809	1.4−	0.4+	1997 03 12	809	1.3−	0.1+
1989 10 03	809	0.6−	0.7−	1989 10 06	809	1.3−	0.4+	1997 03 13	809	0.6−	0.8+
1989 10 03	809	0.3−	0.6−	1989 10 07	809	0.7+	0.5+	1997 03 13	809	0.0	0.4+
1989 10 03	809	0.1+	0.6−	1989 10 07	809	0.9+	0.5+	1997 03 13	809	1.3−	1.7+
1989 10 05	809	0.6+	1.5+	1989 10 07	809	1.1+	0.6+	1997 04 01	809	1.7+	0.5+
1989 10 05	809	0.8+	2.0+	1997 03 12	809	0.1−	0.1+	1997 04 01	809	1.6+	0.6+
1989 10 06	809	1.7−	0.4+	1997 03 12	809	0.9−	0.8−	1997 04 01	809	1.3+	0.2+

1997 EB₅₄ = 1979 ST₃ = 1994 PM₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	340.30662		(2000.0)	P		Q	
<i>n</i>	0.26183741	ω	298.85760	+0.50254201	+0.86455230		
<i>a</i>	2.4198118	Ω	1.31180	−0.77850290	+0.45298755		
<i>e</i>	0.1985469	<i>i</i>	2.31080	−0.37601165	+0.21760424		
<i>P</i>	3.76	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1979 09 24	095	0.2−	0.4+	1997 03 08	809	1.0+	0.6−	1997 03 09	809	0.3+	0.1−
1994 08 09	675	0.6+	0.0	1997 03 08	809	1.7+	0.6−	1997 03 10	809	1.1−	0.9+
1994 08 09	675	0.8+	1.0+	1997 03 08	809	1.5+	0.8−	1997 03 10	809	1.8−	0.7+
1994 08 11	675	0.3−	1.1−	1997 03 09	809	0.0	0.1−	1997 03 10	809	1.7−	0.2+
1994 08 11	675	1.0−	0.1+	1997 03 09	809	0.2+	0.7+				

1997 FU₂ = 1988 SS

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Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	268.82542		(2000.0)	P		Q	
<i>n</i>	0.18535121	ω	341.89318	+0.94419629	+0.32936215		
<i>a</i>	3.0465322	Ω	358.85643	−0.27432260	+0.78003521		
<i>e</i>	0.0949913	<i>i</i>	10.78492	−0.18231972	+0.53203915		
<i>P</i>	5.32	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 09 19	809	0.1+	0.4−	1997 03 11	809	0.3−	0.2+	1997 04 03	704	0.3−	0.4+
1988 09 19	809	0.4+	0.4−	1997 03 11	809	0.3+	0.6+	1997 04 03	704	0.9−	0.1+
1988 09 19	809	0.6+	0.5−	1997 03 13	809	0.7+	0.6−	1997 04 05	704	0.6−	1.4−
1988 09 20	809	0.1+	0.6+	1997 03 13	809	0.5−	0.1−	1997 04 05	704	1.7+	1.8+
1988 09 20	809	0.4−	0.4+	1997 03 13	809	0.6−	0.3−	1997 04 06	704	0.4+	0.7−
1988 09 20	809	0.7−	0.4+	1997 03 31	704	0.6+	0.4−	1997 04 06	704	0.6−	0.0
1997 03 11	809	0.1+	0.4+	1997 03 31	704	(2.4+	0.0)				

1997 FK₄ = 1997 GW₂₀ = 1985 SN₄ = 1992 DTId. G. V. Williams (d, *MPC* 30432), B. G. Marsden

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	171.54750		(2000.0)	P		Q	
<i>n</i>	0.21200447	ω	61.48620	+0.41587519	−0.90936035		
<i>a</i>	2.7855184	Ω	3.98406	+0.77218647	+0.34695860		
<i>e</i>	0.1432939	<i>i</i>	8.74480	+0.48039138	+0.22952883		
<i>P</i>	4.65	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 09 20	095	0.1+	0.2−	1997 03 13	809	1.9−	0.4−	1997 04 03	704	0.3+	0.1+
1992 02 25	399	0.1+	1.1+	1997 03 13	809	1.3−	0.0	1997 04 05	704	1.0+	0.1+
1992 02 25	399	0.6+	0.3−	1997 03 13	809	1.6−	0.1+	1997 04 05	704	0.3+	0.4+
1992 02 26	399	0.8−	0.6−	1997 03 31	704	0.0	0.7−	1997 04 06	704	0.5−	0.3−

1992 02 26	399	0.1−	0.6−	1997 03 31	704	1.5−	1.3+	1997 04 06	704	0.9+	0.3−
1997 03 11	809	0.9+	1.5+	1997 04 03	704	1.1+	0.3−	1997 04 07	704	0.7−	0.0
1997 03 11	809	1.1+	1.1+	1997 04 03	704	0.8+	1.1−	1997 04 07	704	0.3−	0.6−
1997 03 11	809	1.1+	0.7+	1997 04 03	704	0.0	1.3−				

1997 GO₁ = 1972 TN₁ = 1976 YK₅ = 1987 QN₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	238.15743		(2000.0)	P		Q	
<i>n</i>	0.26072168	ω	73.49757	+0.93322004	−0.35826661		
<i>a</i>	2.4267104	Ω	307.48802	+0.31514095	+0.85264429		
<i>e</i>	0.1933457	<i>i</i>	1.97180	+0.17258774	+0.38031927		
<i>P</i>	3.78	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1972 10 07	095	0.4−	0.9+	1997 04 05	704	1.0+	0.4−	1997 04 08	557	0.6−	0.0
1976 12 18	095	0.1+	0.7−	1997 04 06	704	0.8+	1.5−	1997 04 08	557	0.6−	0.1+
1987 08 28	095	1.2+	0.4−	1997 04 06	704	1.2+	1.3−	1997 04 08	557	0.8−	0.1−
1987 09 16	095	0.7−	0.6−	1997 04 07	704	0.5+	0.2+	1997 04 08	557	0.8−	0.0
1997 03 31	704	2.0+	0.4−	1997 04 07	704	0.1−	1.3+	1997 04 08	557	0.9−	0.0
1997 03 31	704	0.5+	0.2−	1997 04 07	566	2.7+	0.4+	1997 04 08	557	0.5−	0.1+
1997 04 03	704	1.2+	0.6−	1997 04 07	566	0.8−	0.2+	1997 04 08	557	0.5−	0.2+
1997 04 03	704	0.2+	0.5+	1997 04 07	566	2.6−	0.1−	1997 04 08	557	0.4−	0.0
1997 04 03	704	0.0	0.2−	1997 04 07	046	0.6−	0.0	1997 04 10	910	0.6−	0.1+
1997 04 03	704	0.0	0.3−	1997 04 07	046	0.7−	0.1−	1997 04 10	910	0.5−	0.3+
1997 04 05	704	2.4+	1.1+	1997 04 08	046	0.9−	0.0	1997 04 10	910	0.7−	0.1+

1997 GX₇ = 1997 GT₂₁ = 1997 JP₁₈ = 1973 AJ₁ = 1996 JZ₁Id. B.G. Marsden (d, *MPC* 30037), G.V. Williams (*MPC* 30462), K. Ichikawa

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	178.59500		(2000.0)	P		Q	
<i>n</i>	0.17464340	ω	329.37689	+0.33741691	−0.94044818		
<i>a</i>	3.1698200	Ω	100.87657	+0.87197757	+0.29571084		
<i>e</i>	0.1902904	<i>i</i>	2.41127	+0.35468992	+0.16766728		
<i>P</i>	5.64	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 01 01	095	0.4+	2.7+	1997 04 06	704	0.1−	0.1+	1997 04 08	704	0.6+	0.1−
1996 02 14	691	0.4−	0.3−	1997 04 06	704	0.3+	0.8−	1997 04 08	704	0.1−	1.3−
1996 02 14	691	0.3−	1.1−	1997 04 06	704	0.5+	0.4−	1997 04 30	704	1.4+	1.1−
1996 02 14	691	0.6−	0.3−	1997 04 06	704	0.5+	0.8−	1997 04 30	704	0.7+	0.7−
1996 05 10	327	0.3−	0.7−	1997 04 07	809	0.3+	2.0+	1997 04 30	704	0.5+	0.3−
1996 05 10	327	0.0	0.3−	1997 04 07	809	1.9−	2.5+	1997 04 30	704	0.4+	0.2−
1996 05 10	327	0.8+	0.1−	1997 04 07	809	0.3−	1.4+	1997 04 30	704	0.4−	0.1+
1996 05 11	327	0.4−	0.1−	1997 04 08	809	0.2+	2.5+	1997 05 05	704	0.7+	1.1−
1996 05 11	327	0.3+	1.2−	1997 04 08	809	0.0	0.9+	1997 05 05	704	0.1+	0.5−
1996 05 11	327	0.2−	0.1−	1997 04 08	809	0.1−	1.7+	1997 05 05	704	1.0−	1.9−
1997 04 02	704	0.3−	0.4+	1997 04 08	704	0.1−	0.0	1997 05 05	704	0.5+	1.4−
1997 04 02	064	0.6−	1.5+	1997 04 08	704	0.8+	0.4+	1997 05 05	704	1.9−	0.3+

1997 GL₁₁ = 1991 RU₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	359.99928		(2000.0)	P		Q	
<i>n</i>	0.28606649	ω	276.35077	+0.14199948	+0.98986093		
<i>a</i>	2.2811722	Ω	1.82321	−0.86084943	+0.12518141		
<i>e</i>	0.0818045	<i>i</i>	6.11654	−0.48864548	+0.06711898		
<i>P</i>	3.45	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 09 13	675	0.7+	0.6−	1997 03 13	809	0.5−	0.7−	1997 04 06	704	0.2+	0.1+
1991 09 13	675	2.2−	0.1+	1997 03 13	809	0.9−	0.6−	1997 04 06	704	1.0+	0.5−
1991 09 16	675	0.6+	0.1+	1997 03 31	704	0.4+	0.7+	1997 04 07	704	0.2−	0.4+
1991 09 16	675	0.9+	0.5+	1997 03 31	704	0.3+	0.3−	1997 04 07	704	0.0	0.0
1997 03 11	809	0.9+	0.3+	1997 04 03	704	0.0	0.3+	1997 04 07	566	0.2+	0.1−
1997 03 11	809	0.7+	0.8+	1997 04 03	704	0.2+	0.5+	1997 04 07	566	0.9−	1.8−

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1997 03 11	809	0.5+	0.1+	1997 04 05	704	0.2−	0.4+	1997 04 07	566	1.5−	0.3−
1997 03 13	809	0.9−	0.1−	1997 04 05	704	0.5+	0.9+				

1997 GM₁₃ = 1994 TM₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	33.44973		(2000.0)	P		Q	
<i>n</i>	0.21802835	ω	26.55882	−0.73032270		+0.67729659	
<i>a</i>	2.7339720	Ω	197.04274	−0.66819568		−0.73534457	
<i>e</i>	0.1063557	<i>i</i>	17.65149	−0.14192704		−0.02318807	
<i>P</i>	4.52	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 09	691	0.4−	0.4+	1994 10 11	691	0.2−	0.0	1997 04 03	704	0.3−	0.9−
1994 10 09	691	0.6+	1.2−	1994 10 12	691	0.3+	0.1−	1997 04 05	704	0.0	0.0
1994 10 09	691	0.2−	0.1+	1994 10 12	691	0.3+	0.2−	1997 04 05	704	0.3+	0.0
1994 10 10	691	0.1−	0.3+	1994 10 12	691	0.2+	0.1−	1997 04 06	704	0.7−	0.2−
1994 10 10	691	0.0	0.0	1997 03 11	809	0.6+	0.7+	1997 04 06	704	0.2+	0.2−
1994 10 10	691	0.1+	0.1+	1997 03 11	809	0.4+	0.3−	1997 04 06	704	0.3+	1.1+
1994 10 10	691	0.1−	0.0	1997 03 11	809	0.2−	0.6−	1997 04 06	704	0.4+	0.6+
1994 10 10	691	0.0	0.0	1997 03 13	809	0.1−	0.3+	1997 04 07	704	0.4+	0.1−
1994 10 10	691	0.0	0.1+	1997 03 13	809	0.4−	0.0	1997 04 07	704	0.5−	0.1+
1994 10 11	691	0.2−	0.2−	1997 03 13	809	0.2−	0.0				
1994 10 11	691	0.2−	0.7+	1997 04 03	704	0.0	0.6−				

1997 GA₁₄ = 1994 NF₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	283.80122		(2000.0)	P		Q	
<i>n</i>	0.26053409	ω	63.93150	+0.98754201		+0.15506014	
<i>a</i>	2.4278751	Ω	287.13865	−0.15252475		+0.90141615	
<i>e</i>	0.2010003	<i>i</i>	1.60585	−0.03869077		+0.40423418	
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1994 07 11	809	0.6+	0.0	1997 03 11	809	0.3−	0.7+	1997 04 03	704	0.3+	0.9+
1994 07 11	809	0.3−	0.2+	1997 03 11	809	0.4−	1.2+	1997 04 03	704	0.9+	0.5+
1994 07 11	809	0.5+	0.6−	1997 03 11	809	0.6−	0.6+	1997 04 05	704	1.3−	1.0+
1994 07 12	809	0.1−	0.6+	1997 03 13	809	0.9+	1.1−	1997 04 05	704	0.5−	1.3−
1994 07 12	809	0.8−	0.4−	1997 03 13	809	0.1+	1.7−	1997 04 07	704	0.7+	0.3+
1994 07 12	809	0.1+	0.1+	1997 03 13	809	0.2−	2.0−	1997 04 07	704	0.4+	0.7+

1997 GX₁₆

Id. B. G. Marsden (1971 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	57.62499		(2000.0)	P		Q	
<i>n</i>	0.22788241	ω	186.15351	−0.95190395		+0.30344600	
<i>a</i>	2.6545782	Ω	11.77781	−0.27150830		−0.77123142	
<i>e</i>	0.1323263	<i>i</i>	11.99451	−0.14199333		−0.55957361	
<i>P</i>	4.33	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 05 14	675	0.4−	0.3+	1997 03 12	809	(4.0+	2.9+)	1997 04 03	704	0.3−	1.4+
1971 05 14	675	0.1+	0.4−	1997 03 13	809	0.4−	0.2+	1997 04 05	704	0.1−	0.2−
1971 05 16	675	0.3+	0.0	1997 03 13	809	1.1+	1.2+	1997 04 05	704	0.3−	0.1−
1997 03 11	809	1.1−	1.4−	1997 03 13	809	0.3+	0.3−	1997 04 06	704	0.3−	0.0
1997 03 11	809	0.5+	0.0	1997 03 13	809	(3.3+	3.5+)	1997 04 06	704	0.5+	0.4−
1997 03 11	809	0.3−	0.1+	1997 03 13	809	(3.2+	3.3+)	1997 04 07	704	0.2+	0.5−
1997 03 12	809	(5.7+	3.2+)	1997 03 13	809	(2.0+	3.5+)	1997 04 07	704	0.1+	0.6−
1997 03 12	809	(4.8+	3.0+)	1997 04 03	704	0.1+	0.6+				

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1997 GD₁₇ = 1980 VL₃ = 1984 YW₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	181.56514		(2000.0)	P		Q	
<i>n</i>	0.26229862	ω	149.13150	+0.41600909		−0.90885876	
<i>a</i>	2.4169744	Ω	276.27079	+0.82799825		+0.39231078	
<i>e</i>	0.1860657	<i>i</i>	1.74116	+0.37597253		+0.14166160	
<i>P</i>	3.76	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 11 01	675	0.1−	0.7+	1997 03 13	809	0.3−	0.1−	1997 04 04	566	2.2−	0.7−
1980 11 02	675	0.3−	0.5+	1997 03 13	809	1.4+	0.0	1997 04 04	566	2.1−	0.7−
1984 12 27	095	0.1−	0.9−	1997 03 13	809	0.1−	0.3+	1997 04 05	704	0.5+	0.2+
1997 03 12	809	0.4+	1.3+	1997 04 03	704	0.4+	0.8−	1997 04 05	704	0.2−	1.0−
1997 03 12	809	0.3−	2.2+	1997 04 03	704	0.3+	0.1+	1997 04 07	704	0.2+	0.0
1997 03 12	809	0.9+	1.6+	1997 04 04	566	0.3+	0.9−	1997 04 07	704	1.4+	0.2−

1997 GD₂₀ = 1967 RJ = 1978 WO₁₄ = 1978 WO₁₉ = 1988 PW₄= 1992 GV₂ = 1994 YR₄Id. K. Ichikawa, S. Nakano (d, *MPC* 19982; unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	253.93102		(2000.0)	P		Q	
<i>n</i>	0.18757753	ω	264.85724	+0.99957119		−0.02355446	
<i>a</i>	3.0223784	Ω	96.49167	+0.02851878		+0.91785065	
<i>e</i>	0.2794744	<i>i</i>	1.00320	−0.00664171		+0.39622641	
<i>P</i>	5.25	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1967 09 08	095	0.2+	0.1+	1992 04 06	809	0.3−	1.8+	1997 04 06	327	0.9−	0.6−
1978 11 28	330	(4.7+	3.8−)	1992 04 06	809	0.8+	1.6+	1997 04 06	327	0.7−	0.5−
1978 11 30	675	0.1−	0.5−	1994 12 25	399	1.2−	1.2+	1997 04 06	327	1.0−	0.3−
1978 12 01	675	0.4+	1.0−	1994 12 25	399	0.5+	0.5+	1997 04 07	704	0.7+	0.0
1988 08 09	095	0.7−	0.3+	1997 04 03	704	0.8+	0.6−	1997 04 07	704	1.0+	0.6−
1988 08 09	095	0.9+	0.4−	1997 04 03	704	0.3+	0.5−	1997 04 10	327	0.5−	0.5−
1992 04 04	809	1.4−	1.1+	1997 04 03	704	0.7+	1.1−	1997 04 10	327	0.0	0.4−
1992 04 04	809	1.5−	0.8−	1997 04 03	704	2.1+	0.4+	1997 04 10	327	0.4−	0.5−
1992 04 04	809	0.0	0.8−	1997 04 05	704	1.2+	0.5−	1997 04 10	327	0.3−	0.2−
1992 04 06	809	1.0−	2.2+	1997 04 05	704	0.2+	0.1−				

1997 GD₂₄ = 1993 FB₃₈ = 6014 P-L

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

<i>M</i>	92.29841		(2000.0)	P		Q	
<i>n</i>	0.25796570	ω	347.84218	−0.99963820		+0.00956136	
<i>a</i>	2.4439636	Ω	192.78590	−0.00176039		−0.95593901	
<i>e</i>	0.0923529	<i>i</i>	6.52292	−0.02683988		−0.29340959	
<i>P</i>	3.82	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.2−	0.1−	1993 03 21	809	0.8−	0.0	1997 04 02	704	0.2+	1.1+
1960 09 24	675	0.4+	0.2+	1993 03 22	809	0.2−	0.8−	1997 04 06	704	0.1+	0.4−
1960 09 26	675	0.2+	0.7−	1993 03 24	809	1.0+	1.2+	1997 04 06	704	0.5−	0.3+
1960 09 26	675	0.2−	0.8+	1997 04 02	704	0.4−	0.4−	1997 04 08	704	0.4−	0.0
1960 09 28	675	0.7−	0.1−	1997 04 02	704	1.5+	1.2−	1997 04 08	704	0.6−	0.8+
1960 09 28	675	0.5+	0.3+	1997 04 02	704	0.1+	0.4−				

1997 GZ₃₂ = 1993 OZ₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	32.97876		(2000.0)	P		Q	
<i>n</i>	0.21423541	ω	296.06243	−0.64890523		+0.76053265	
<i>a</i>	2.7661467	Ω	293.45957	−0.68897294		−0.59994899	
<i>e</i>	0.1786715	<i>i</i>	1.41355	−0.32285957		−0.24829680	
<i>P</i>	4.60	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

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Residuals in seconds of arc

1993 07 20	809	0.9+	0.1+	1997 03 12	809	0.7+	1.7-	1997 03 13	809(10.6+	1.2-)	
1993 07 20	809	0.0	0.3+	1997 03 12	809	0.6+	0.5-	1997 03 13	809	1.3+	0.5+
1993 07 20	809	0.1-	0.0	1997 03 12	809	0.1+	1.4-	1997 04 03	704	0.1+	0.0
1993 07 24	809	0.8-	0.4-	1997 03 13	809	1.1-	0.9+	1997 04 03	704	0.1-	0.6-
1997 03 11	809	0.8+	0.0	1997 03 13	809	1.4-	1.0+	1997 04 11	704	0.4-	0.4-
1997 03 11	809	0.6+	1.1+	1997 03 13	809	0.9-	0.9+	1997 04 11	704	0.2+	0.2+
1997 03 11	809	0.4-	0.1+	1997 03 13	809(12.2+	1.3-)					

1997 HR₉ = 1979 SC₁₅ = 1995 YM₁₆

Id. K. Ichikawa, S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	294.42056		(2000.0)	P	Q
n	0.26055903	ω	301.14321	+0.99958571	+0.01181390
a	2.4277202	Ω	58.19190	+0.00006512	+0.91094749
e	0.1517868	i	1.76980	-0.02878195	+0.41235313
P	3.78	H	15.2	G 0.15	U 4

Residuals in seconds of arc

1979 09 20	675	0.1-	0.6-	1997 04 30	704	0.4-	0.0	1997 05 05	704	0.1-	0.0
1979 09 21	675	0.6+	0.5-	1997 04 30	704	0.3+	0.3-	1997 05 05	704	0.8+	1.4-
1995 12 20	691	0.4-	0.2-	1997 04 30	704	0.1+	0.1-	1997 05 05	704	0.3+	0.2+
1995 12 20	691	0.4-	0.3-	1997 04 30	704	0.1+	0.0	1997 05 05	704	0.5+	0.0
1995 12 20	691	0.5-	0.3-	1997 04 30	704	0.8+	0.2+	1997 05 05	704	0.1-	0.1-
1995 12 27	691	0.2+	0.1-	1997 05 01	704	0.0	0.3+	1997 05 05	704	0.3-	0.6-
1995 12 27	691	0.3+	0.1-	1997 05 01	704	0.2-	0.6+	1997 05 05	704	0.0	0.4-
1995 12 27	691	0.4+	0.0	1997 05 01	704	0.1-	0.3+	1997 05 05	704	0.2+	0.9-
1997 04 06	704	0.5-	0.3+	1997 05 01	704	0.4-	1.3+	1997 05 05	704	0.9-	0.6-
1997 04 06	704	0.0	0.1+	1997 05 01	704	0.5-	0.1-				

1997 ME₃ = 1991 UD₄

Id. K. Ichikawa

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	4.31965		(2000.0)	P	Q
n	0.30612268	ω	312.09919	+0.96543143	+0.26031903
a	2.1804144	Ω	32.81829	-0.23133861	+0.87919094
e	0.1756820	i	1.40327	-0.12010248	+0.39907053
P	3.22	H	15.5	G 0.15	U 6

Residuals in seconds of arc

1991 10 29	399	0.9+	0.3+	1997 06 29	704	0.1+	0.2-	1997 07 03	704	0.7+	0.4+
1991 10 29	399	0.3+	0.6-	1997 06 29	704	0.2+	0.3-	1997 07 03	704	0.4-	0.3-
1991 10 31	399	0.5-	0.9-	1997 06 29	704	0.4-	0.3-	1997 07 03	704	0.3+	0.3+
1991 10 31	399 (2.9+	0.0)		1997 07 02	704	0.4-	0.2-	1997 07 03	704 (2.8-	0.6-)	
1991 11 09	399	1.1-	0.1-	1997 07 02	704	0.1-	0.3+	1997 07 03	704	0.0	0.7+
1991 11 09	399	0.3+	1.3+	1997 07 02	704	0.1+	0.5-	1997 07 03	704 (2.3-	0.6+)	
1997 06 28	704	0.6+	0.1+	1997 07 02	704	0.2-	0.2-	1997 07 03	422	0.3-	0.3+
1997 06 28	704	0.1-	0.1+	1997 07 02	704	0.2+	0.1+	1997 07 03	422	0.6-	0.1+
1997 06 28	704	0.2+	0.1+	1997 07 03	704	0.9+	0.6-	1997 07 03	422	0.8-	0.4+
1997 06 29	704	0.9-	0.5-	1997 07 03	704	0.3+	0.4+	1997 07 03	422	0.7-	0.2+
1997 06 29	704	0.1+	0.3-	1997 07 03	704	1.3+	0.1+				

1997 PJ = 1993 RR₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

M	25.00468		(2000.0)	P	Q
n	0.21705270	ω	116.41156	+0.57108253	+0.82068114
a	2.7421587	Ω	188.48805	-0.79095098	+0.54403604
e	0.1220449	i	7.25252	-0.21968453	+0.17466328
P	4.54	H	14.4	G 0.15	U 5

Residuals in seconds of arc

1993 09 15	809	1.6+	0.4-	1993 09 18	691	1.6-	0.1-	1997 08 03	122	0.0	0.3-
1993 09 15	809	0.5+	0.3+	1993 09 22	809	1.3+	2.4+	1997 08 03	122	0.6+	0.1+
1993 09 15	809	0.5-	0.7-	1993 09 22	809	1.4+	0.9+	1997 08 03	122	0.8+	0.4+
1993 09 17	809	1.2+	1.5+	1993 09 22	809	1.1+	1.8+	1997 08 03	122	0.1+	0.1+

1993 09 17	809	0.1+	0.4+	1993 09 24	809	0.1-	0.1+	1997 08 03	122	0.1+	0.3+
1993 09 17	809	0.1+	1.2+	1993 09 24	809	1.2-	1.7-	1997 08 03	122	0.0	0.1+
1993 09 18	809	1.1+	1.3-	1993 09 24	809	2.3-	2.8-	1997 08 03	122	0.5+	0.1-
1993 09 18	809	0.9+	0.9-	1997 08 01	122	0.2-	0.3-	1997 08 03	122	0.0	0.4+
1993 09 18	809	0.8+	1.9-	1997 08 01	122	0.5-	0.4-	1997 08 11	122	0.1+	0.0
1993 09 18	691	2.4-	0.8+	1997 08 01	122	0.6-	0.4-	1997 08 11	122	0.7-	0.4+
1993 09 18	691	1.9-	0.4+	1997 08 02	122	0.2-	0.2-				

1997 PS = 1993 UA₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Ichikawa

M	354.30373		(2000.0)	P	Q
n	0.22497640	ω	65.70082	+0.96731408	-0.20567819
a	2.6773886	Ω	305.83888	+0.10894293	+0.86525600
e	0.2107483	i	10.54252	+0.22898669	+0.45719639
P	4.38	H	15.2	G 0.15	U 6

Residuals in seconds of arc

1993 10 19	675	0.6+	0.8+	1997 08 02	910	0.0	0.2-	1997 08 04	910	0.1-	0.3-
1993 10 19	675	0.3-	1.2-	1997 08 02	910	0.1+	0.2+	1997 08 04	910	0.3-	0.1+
1993 10 21	675	0.1+	0.9+	1997 08 03	910	0.2-	0.3+	1997 08 04	910	0.2-	0.1-
1993 10 21	675	0.4-	0.5-	1997 08 03	910	0.2-	0.1+				
1997 08 01	910	0.1+	0.3-	1997 08 03	910	0.8+	0.2+				

1997 PX = 1996 JR₅

Id. K. Ichikawa

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	301.77029		(2000.0)	P	Q
n	0.28012324	ω	263.62675	+0.29101330	-0.95665715
a	2.3133248	Ω	169.43539	+0.89956085	+0.26973772
e	0.1537520	i	3.40181	+0.32573231	+0.10976640
P	3.52	H	16.2	G 0.15	U 5

Residuals in seconds of arc

1996 05 11	691	0.5-	0.7-	1996 06 08	809	0.7+	0.6+	1997 08 06	910	0.2-	0.1+
1996 05 11	691	0.6-	0.2-	1996 06 08	809	0.1-	0.5+	1997 08 06	910	0.0	0.0
1996 05 11	691	0.8-	0.1-	1996 06 08	809	0.2+	1.6+	1997 08 06	910	0.1-	0.1+
1996 05 15	691	0.3+	0.3-	1997 08 04	910	0.8+	0.1+	1997 08 10	658	0.6-	0.5-
1996 05 15	691	0.5+	0.4-	1997 08 04	910	0.3+	0.4+	1997 08 10	658	0.0	0.4-
1996 05 15	691	0.5+	0.8-	1997 08 04	910	0.3+	0.5+	1997 08 10	658	0.4-	0.5-

1997 PJ₂

Id. B. G. Marsden (1973 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

M	16.15223		(2000.0)	P	Q
n	0.24440930	ω	221.09591	+0.96597110	+0.24946407
a	2.5335194	Ω	124.33203	-0.21037036	+0.91143228
e	0.1852075	i	4.74566	-0.15047974	+0.32719852
P	4.03	H	16.0	G 0.15	U 4

Residuals in seconds of arc

1973 09 29	675	1.0+	1.0-	1997 08 10	684	0.1-	0.1-	1997 09 01	684	0.4+	0.3-
1973 09 30	675	0.4-	1.0+	1997 08 10	684	0.3+	0.2+	1997 09 01	566	0.4-	0.0
1973 09 30	675	0.8-	0.5+	1997 08 11	684	0.1+	0.1-	1997 09 01	566	0.0	0.0
1997 07 31	691	0.3-	0.7+	1997 08 11	684	0.3+	0.0	1997 09 01	566	0.2-	0.5-
1997 07 31	691	0.5-	0.7+	1997 08 11	684	0.1+	0.0	1997 09 28	684	0.1-	0.0
1997 07 31	691	0.4-	0.7+	1997 08 27	684	0.1-	0.6-	1997 09 28	684	0.0	0.1+
1997 08 07	684	0.3+	0.1+	1997 08 27	684	0.2+	0.6-	1997 09 29	684	0.1-	0.0
1997 08 07	684	0.1-	0.3+	1997 08 27	684	0.2-	0.5-	1997 09 29	684	0.3-	0.2+
1997 08 07	684	0.5+	0.1+	1997 09 01	684	0.2+	0.3-				
1997 08 10	684	0.2+	0.1-	1997 09 01	684	0.3+	0.4-				

1997 OCT. 16

M.P.C. 30769

1997 PS₃ = 1992 BF₆ = 1996 GO₂₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28227555	ω	211.87790	-0.69815757	+0.71585825		
<i>a</i>	2.3015507	Ω	13.85358	-0.64675325	-0.62396676		
<i>e</i>	0.0347602	<i>i</i>	2.65455	-0.30706064	-0.31338867		
<i>P</i>	3.49	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 01 30	691	0.9-	1.3+	1996 04 08	327	0.2+	0.1+	1997 09 23	691	0.3-	0.5+
1992 01 30	691	0.0	0.2-	1997 08 05	327	0.8+	0.7-	1997 09 23	691	0.6-	0.6+
1992 01 30	691	0.5+	0.5-	1997 08 05	327	0.6+	0.4-	1997 09 23	691	0.3-	0.8+
1992 02 09	691	0.2+	0.3-	1997 08 05	327	0.9+	0.7-	1997 09 29	691	0.8-	0.5+
1992 02 09	691	0.1+	0.6-	1997 08 10	327	0.2+	0.4-	1997 09 29	691	0.6-	0.5+
1996 04 08	327	0.2-	0.6+	1997 08 10	327	0.3+	0.2-	1997 09 29	691	0.7-	0.4+
1996 04 08	327	0.6+	0.6+	1997 08 10	327	0.4+	0.3-				

1997 PU₄ = 1993 TG₄₈ = 1995 CW₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21434420	ω	70.49471	+0.99762284	-0.00845702		
<i>a</i>	2.7652107	Ω	289.94219	-0.02106394	+0.90751591		
<i>e</i>	0.0588977	<i>i</i>	4.17208	+0.06561237	+0.41993255		
<i>P</i>	4.60	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 10 13	691	0.0	0.1-	1997 08 13	620	0.3-	0.6+	1997 09 02	566	0.4+	0.6-
1993 10 13	691	0.1+	0.1-	1997 08 14	620	0.5+	0.1+	1997 09 02	566	0.3+	0.7-
1993 10 13	691	0.0	0.1-	1997 08 14	620	1.1+	0.4-	1997 09 22	620	0.1+	0.9-
1995 02 08	691	0.1+	0.3+	1997 08 25	620	0.7-	0.9-	1997 09 22	620	0.8-	0.3+
1995 02 08	691	0.1-	0.2-	1997 08 25	620	0.3-	0.3+	1997 09 22	620	2.1-	2.2+
1997 08 11	620	0.2+	0.2+	1997 08 25	620	0.2-	0.5+				
1997 08 12	620	0.8+	0.2-	1997 09 02	566	0.6+	0.2-				

1997 QB₁ = 1996 HO₂₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28622089	ω	77.63281	-0.79317409	-0.60464347		
<i>a</i>	2.2803517	Ω	65.11907	+0.52298552	-0.73742609		
<i>e</i>	0.1173432	<i>i</i>	4.59469	+0.31202726	-0.30101335		
<i>P</i>	3.44	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	0.9+	0.7-	1997 08 30	046	0.6-	0.2-	1997 09 02	046	0.1+	0.4-
1996 04 17	809	1.6+	0.8-	1997 08 30	046	0.1+	0.0	1997 09 02	046	0.3+	0.5-
1996 04 17	809	1.3+	0.7-	1997 08 30	046	0.3+	0.5+	1997 09 10	046	0.1-	0.3+
1996 04 18	691	1.2-	0.8+	1997 08 31	046	0.0	0.2-	1997 09 10	046	0.3-	0.2+
1996 04 18	691	1.4-	0.6+	1997 08 31	046	0.1+	0.4-	1997 09 10	046	0.9-	0.3-
1996 04 18	691	1.1-	1.0+	1997 08 31	046	0.2-	0.4+	1997 09 23	046	0.3-	0.2-
1997 08 28	046	0.0	0.3-	1997 08 31	046	0.2-	0.7+	1997 09 23	046	0.1+	0.4+
1997 08 28	046	0.8+	0.4+	1997 09 01	046	0.4-	0.7-	1997 09 25	046	0.5+	0.6-
1997 08 28	046	0.7+	0.1+	1997 09 01	046	0.2-	0.0	1997 09 26	046	0.6+	2.2+
1997 08 28	046	0.6+	0.0	1997 09 01	046	0.2+	0.7-	1997 09 26	046	1.0-	0.8+
1997 08 30	046	1.3-	0.2-	1997 09 02	046	0.7+	0.0	1997 09 26	046	0.5+	0.9-

1997 QD₁ = 1985 XA₁ = 1991 TV₁₄ = 1996 FR₂₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.31376324	ω	84.25834	+0.68423192	-0.72808633		
<i>a</i>	2.1448718	Ω	322.45607	+0.63928866	+0.62618362		
<i>e</i>	0.0586572	<i>i</i>	3.89906	+0.35090837	+0.27889850		
<i>P</i>	3.14	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 12 14	010	(9.5-	6.6-)	1997 08 30	557	0.5+	0.3+	1997 09 20	557	0.7-	0.1+
1985 12 14	010	(1.8+	8.3-)	1997 08 30	557	0.3+	0.2+	1997 09 20	557	0.1-	0.5+
1991 10 11	691	0.0	0.5-	1997 09 01	557	0.2+	0.3+	1997 09 20	557	0.1-	0.3+
1991 10 11	691	0.1-	0.4+	1997 09 01	557	0.4+	0.2+	1997 09 21	557	0.4-	0.1+
1991 10 11	691	0.2+	0.3-	1997 09 08	557	0.2+	1.0-	1997 09 21	557	0.2-	0.1+
1996 03 23	566	0.2+	0.1-	1997 09 08	557	0.1+	0.8-	1997 09 21	557	0.4-	0.2+
1996 03 23	566	0.3-	0.2-	1997 09 08	557	0.2+	0.7-	1997 09 28	557	0.0	0.3+
1996 03 23	566	0.1-	0.1-	1997 09 11	557	0.5-	0.7-	1997 09 28	557	0.3-	0.2+
1997 08 27	557	0.1+	0.2+	1997 09 11	557	0.1+	0.1-	1997 10 06	557	0.1+	0.4+
1997 08 27	557	0.0	0.2+	1997 09 11	557	0.1+	0.4-	1997 10 06	557	0.5+	0.2+

1997 QG₁ = 1996 FD₁₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25527813	ω	342.18246	-0.90191043	+0.42706007		
<i>a</i>	2.4610871	Ω	223.28300	-0.38392296	-0.86121195		
<i>e</i>	0.1036187	<i>i</i>	5.40931	-0.19789072	-0.27556064		
<i>P</i>	3.86	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 22	809	0.4+	0.0	1997 08 29	587	0.5-	0.9+	1997 09 08	587	0.2-	0.6+
1996 03 22	809	0.0	0.4+	1997 08 30	587	0.3+	0.9+	1997 09 08	587	0.7+	0.6+
1996 03 22	809	0.4-	0.2+	1997 08 30	587	0.3-	0.5-	1997 09 08	587	0.9+	0.4-
1996 03 26	809	0.7+	0.2+	1997 09 01	587	0.1-	1.0-	1997 09 24	587	0.5-	0.7-
1996 03 26	809	0.2+	0.6-	1997 09 01	587	0.3-	0.7-	1997 09 24	587	0.7+	0.4+
1996 03 26	809	1.0-	0.4-	1997 09 04	587	1.1-	0.7-	1997 09 26	587	0.3+	0.6-
1997 08 29	587	1.3+	1.4+	1997 09 04	587	1.2-	0.2-	1997 09 26	587	0.0	0.2-

1997 QV₃ = 1989 TO₁₇ = 1992 LC₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25285789	ω	74.46288	-0.05926614	+0.99800656		
<i>a</i>	2.4767664	Ω	192.20114	-0.95069629	-0.06305575		
<i>e</i>	0.0933259	<i>i</i>	5.89046	-0.30440776	+0.00262433		
<i>P</i>	3.90	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 10 09	809	0.5+	0.1+	1992 06 01	809	0.3-	0.1+	1997 08 30	910	0.2+	0.4+
1989 10 09	809	0.8+	0.2+	1992 06 01	809	0.4-	0.4+	1997 09 01	910	0.2-	0.3+
1989 10 09	809	1.0+	0.1+	1992 06 03	809	0.4+	0.4+	1997 09 01	910	0.2-	0.2+
1989 10 10	809	0.7-	0.9-	1992 06 03	809	0.9+	0.2+	1997 09 01	910	0.1-	0.3+
1989 10 10	809	0.5-	0.8-	1992 06 03	809	0.0	0.6-	1997 09 09	910	0.5-	0.3+
1989 10 10	809	0.4-	0.9-	1997 08 30	910	0.5+	0.8+	1997 09 09	910	0.3-	0.2+
1992 06 01	809	0.6-	0.1-	1997 08 30	910	0.3+	0.7+	1997 09 09	910	0.3-	0.1+

1997 QN₄ = 1977 RL₁₂ = 1987 SZ₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19649550	ω	235.46252	+0.76568161	-0.64311604		
<i>a</i>	2.9302250	Ω	164.55142	+0.60344133	+0.71199651		
<i>e</i>	0.1028377	<i>i</i>	2.48542	+0.22268865	+0.28189134		
<i>P</i>	5.02	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 09 09	675	1.2-	1.2-	1997 08 30	620	1.1-	1.3-	1997 09 22	620	0.2-	0.6+
1977 09 10	675	1.5+	0.0	1997 09 03	620	0.1-	0.1+	1997 09 22	620	0.0	0.4+
1987 09 16	095	0.4-	1.7+	1997 09 04	620	0.9-	0.0	1997 10 10	620	1.6+	0.3+
1997 08 29	620	0.6+	0.2-	1997 09 04	620	0.3-	0.1+	1997 10 11	620	1.0+	0.1-
1997 08 30	620	0.1-	0.5-	1997 09 22	620	0.6-	0.3+	1997 10 11	620	0.4+	0.5-

1997 RR₁ = 1993 HO₈ = 1996 FQ₂₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	65.94447	ω	242.63776	+0.63761261	+0.76944651		
<i>a</i>	2.1995922	Ω	67.02661	-0.69164309	+0.59319093		
<i>e</i>	0.0878337	<i>i</i>	2.33098	-0.33923442	+0.23680495		
<i>P</i>	3.26	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 04 21	691	0.0	0.4+	1997 09 04	132	1.4+	1.0+	1997 09 10	132	0.2+	1.4+
1993 04 21	691	0.0	0.0	1997 09 04	132	0.4+	1.1+	1997 09 10	132	0.4+	1.6-
1993 04 21	691	0.1+	0.2-	1997 09 05	132	0.6-	1.0+	1997 09 11	132	0.5+	0.5-
1996 03 25	566	0.3-	0.3-	1997 09 05	132	1.4-	0.6+	1997 09 22	132	1.8-	1.4-
1996 03 25	566	0.2-	0.3-	1997 09 06	132	1.6+	1.4-	1997 09 23	132	0.2-	0.6+
1996 03 25	566	0.0	0.7-	1997 09 08	124	0.7-	1.1-				
1997 09 03	132	2.3+	0.1-	1997 09 08	124	1.5-	0.5-				

1997 RW₂ = 1995 DX₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	348.17714	ω	50.64861	+0.82976627	-0.55777690		
<i>a</i>	2.7010871	Ω	343.22528	+0.48927223	+0.74363120		
<i>e</i>	0.1141894	<i>i</i>	3.83633	+0.26851559	+0.36864288		
<i>P</i>	4.44	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 02 25	691	0.1+	0.4-	1995 03 02	691	0.1-	0.4+	1997 09 06	620	0.2-	0.1+
1995 02 25	691	0.0	0.1-	1997 09 03	620	1.0+	0.8-	1997 09 06	620	0.5-	0.4+
1995 02 25	691	0.1+	0.4-	1997 09 03	620	0.3+	0.1+	1997 09 22	620	0.6-	0.1-
1995 03 02	691	0.2+	0.3+	1997 09 04	620	0.1-	1.0+	1997 09 22	620	0.2-	0.2+
1995 03 02	691	0.1-	0.4+	1997 09 05	620	0.8-	0.7-	1997 09 22	620	1.1+	0.1-

1997 RG₃ = 1977 EQ₅ = 1982 UM₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	82.73572	ω	98.38142	+0.02705974	+0.99962063		
<i>a</i>	2.4406324	Ω	173.16290	-0.93328371	+0.02710352		
<i>e</i>	0.1789914	<i>i</i>	2.47203	-0.35811910	+0.00489839		
<i>P</i>	3.81	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 03 12	381	(3.6-	0.9+)	1997 09 07	126	0.5+	0.1+	1997 09 20	126	0.8+	0.2+
1977 03 12	381	0.7-	0.4-	1997 09 07	126	0.3+	0.1-	1997 09 26	126	1.5+	0.6-
1977 03 14	381	0.6-	0.5-	1997 09 08	126	0.5-	0.1-	1997 09 26	126	0.3+	0.6+
1977 03 14	381	0.5+	1.2-	1997 09 08	126	0.1-	0.0	1997 09 26	126	0.4+	0.1+
1982 10 20	033	0.0	0.1+	1997 09 11	126	0.5-	0.5-	1997 09 29	691	0.7-	0.4+
1997 09 06	126	0.6+	0.3-	1997 09 11	126	0.4+	0.2-	1997 09 29	691	0.7-	0.5+
1997 09 06	126	0.1+	0.3-	1997 09 11	126	0.3+	0.1-	1997 09 29	691	0.6-	0.2+
1997 09 06	126	0.2+	0.2+	1997 09 16	126	1.4+	0.0	1997 10 03	126	0.6+	0.9-
1997 09 07	126	0.4+	0.1-	1997 09 16	126	0.4+	0.4+	1997 10 03	126	0.7+	1.4-
1997 09 07	126	0.3+	0.1-	1997 09 19	126	1.4-	1.0-	1997 10 03	126	0.6+	1.0-
1997 09 07	126	1.3-	0.7+	1997 09 19	126	0.3-	0.2+	1997 10 05	691	0.5-	0.0
1997 09 07	126	1.4-	0.3+	1997 09 19	126	0.3+	0.0	1997 10 05	691	0.6-	0.2+
1997 09 07	126	0.3+	0.1+	1997 09 20	126	0.4-	0.1-	1997 10 05	691	0.4-	0.2+

1997 RR₃ = 1970 EO₁ = 1981 TR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	302.54137	ω	283.03315	-0.18422837	-0.98282988		
<i>a</i>	2.5795067	Ω	177.51307	+0.96830732	-0.18327808		
<i>e</i>	0.1297178	<i>i</i>	13.68217	+0.16864414	-0.02132086		
<i>P</i>	4.14	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1970 03 02	805	0.2+	0.7-	1997 09 04	905	0.1+	0.2+	1997 09 11	385	0.2+	0.3+
1970 03 02	805	0.0	0.8-	1997 09 05	905	0.1+	0.1-	1997 09 29	905	0.6+	0.1-
1970 03 02	805	0.4-	0.1+	1997 09 05	905	0.5+	0.2-	1997 09 29	905	0.6+	0.1+
1981 10 09	675	0.2+	0.5+	1997 09 09	905	0.5-	0.1+	1997 09 29	905	0.7+	0.2-
1981 10 09	675	0.2-	0.4+	1997 09 09	905	1.4-	1.1-				
1997 09 04	905	1.0-	0.4-	1997 09 11	385	0.3+	0.3-				

1997 RX₆ = 1977 RE₁₁ = 1985 FA₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	278.94925	ω	101.41666	-0.45710194	-0.88937021		
<i>a</i>	2.8981757	Ω	15.79270	+0.80280813	-0.41685761		
<i>e</i>	0.0166676	<i>i</i>	1.86488	+0.38282754	-0.18775080		
<i>P</i>	4.93	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 09 09	675	1.2-	1.3-	1997 09 10	684	0.3-	0.2-	1997 09 30	684	0.0	0.1-
1977 09 10	675	0.9+	1.9+	1997 09 10	684	0.2-	0.3-	1997 09 30	358	0.6-	0.4+
1985 03 26	801	0.6+	1.3+	1997 09 23	684	0.1+	0.5+	1997 09 30	358	1.2+	2.1+
1997 09 09	684	0.3-	0.7-	1997 09 23	684	0.3+	0.5+	1997 10 02	358	0.7-	0.3+
1997 09 09	684	0.1-	0.2-	1997 09 23	684	0.1+	0.5+	1997 10 02	358	0.3+	1.6-
1997 09 09	684	0.1-	0.3-	1997 09 30	684	0.0	0.0				
1997 09 10	684	0.2-	0.2-	1997 09 30	684	0.0	0.0				

1997 RB₇ = 1992 SK₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	100.16860	ω	44.02996	-0.25255256	+0.96417319		
<i>a</i>	3.0195215	Ω	211.60154	-0.92505001	-0.26519636		
<i>e</i>	0.0708252	<i>i</i>	8.91022	-0.28372465	+0.00639876		
<i>P</i>	5.25	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 09 30	675	0.3-	0.1-	1997 09 07	966	0.5+	1.0-	1997 09 21	966	1.1-	1.6-
1992 09 30	675	0.5+	0.3+	1997 09 07	966	0.6-	0.5+	1997 09 22	966	0.4-	0.1-
1992 10 03	675	0.0	0.5+	1997 09 08	966	0.7+	0.9+	1997 09 22	966	0.3+	0.3+
1992 10 03	675	0.2-	0.7-	1997 09 09	966	0.4+	0.2+	1997 09 23	966	0.3+	0.6+
1997 09 07	966	0.0	0.4-	1997 09 21	966	0.1-	0.5+				

1997 RJ₇ = 1986 RA₈ = 1986 TW₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	44.47344	ω	352.07861	+0.69789074	+0.71361658		
<i>a</i>	3.1423804	Ω	322.14610	-0.65155116	+0.59733394		
<i>e</i>	0.1580341	<i>i</i>	5.68866	-0.29737116	+0.36598297		
<i>P</i>	5.57	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1986 09 07	095	0.1-	0.3-	1997 09 12	727	0.1-	0.3+	1997 09 29	727	0.2-	0.4+
1986 10 05	095	0.2+	0.1+	1997 09 15	727	0.4-	0.3+	1997 09 29	727	0.5-	0.8-
1997 09 09	727	0.6+	0.5-	1997 09 19	727	0.2+	0.7+	1997 09 30	727	0.1-	0.2+
1997 09 09	727	0.1+	0.5-	1997 09 19	727	0.1+	0.5+	1997 09 30	727	0.1+	0.3-
1997 09 11	727	0.1+	0.0	1997 09 19	727	0.3+	0.4+	1997 09 30	727	0.4-	0.0
1997 09 11	727	0.4+	0.0	1997 09 26	727	0.1+	0.4+	1997 10 02	727	0.1-	0.1-
1997 09 11	727	0.3+	0.1+	1997 09 26	727	0.1+	0.5+	1997 10 02	727	0.6-	0.6-
1997 09 12	727	0.4-	0.2-	1997 09 29	727	0.2+	0.6-				

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1997 RO₇ = 1991 PO₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	87.14088		(2000.0)	P			Q		
<i>n</i>	0.17517421	ω	134.14228	+0.06201665	+0.99120524				
<i>a</i>	3.1634133	Ω	138.98103	−0.95901994	+0.09162425				
<i>e</i>	0.0579034	<i>i</i>	10.26031	−0.27646825	−0.09548386				
<i>P</i>	5.63	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1991 08 02	809	(2.4− 0.2+)	1991 08 05	809	0.3+ 0.0	1997 09 19	587	1.0+ 0.1+	
1991 08 02	809	1.6− 0.1+	1991 08 05	809	0.3+ 0.1−	1997 09 24	587	0.1+ 0.1+	
1991 08 02	809	0.3+ 0.1+	1991 08 05	809	0.0 0.1+	1997 09 24	587	0.4− 0.8+	
1991 08 03	809	(4.1− 1.1−)	1991 08 05	809	0.7+ 0.4+	1997 09 24	587	0.4+ 0.8+	
1991 08 03	809	(3.4− 0.6−)	1997 09 09	587	0.1+ 0.8−	1997 09 26	587	0.6− 0.7+	
1991 08 03	809	(3.9− 0.6−)	1997 09 09	587	0.4+ 1.2+	1997 09 26	587	0.1− 0.3−	
1991 08 05	809	0.2+ 0.1−	1997 09 10	587	1.0− 1.0−	1997 10 01	587	0.5+ 1.2−	
1991 08 05	809	0.0 0.4−	1997 09 10	587	1.0− 0.5−	1997 10 01	587	0.8+ 0.1+	

1997 RA₉ = 1990 QA₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	27.49844		(2000.0)	P			Q		
<i>n</i>	0.28977766	ω	194.65539	+0.97032481	−0.24180251				
<i>a</i>	2.2616538	Ω	179.33432	+0.23060413	−0.92393856				
<i>e</i>	0.0950683	<i>i</i>	5.66826	+0.07274275	+0.29642718				
<i>P</i>	3.40	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1990 08 22	675	0.3− 0.7−	1997 09 15	557	0.2+ 0.1−	1997 10 05	557	0.2+ 0.2−	
1990 08 22	675	0.9+ 0.4+	1997 09 15	557	0.2+ 0.3−	1997 10 05	557	0.0 0.1+	
1990 08 28	675	0.4− 0.2−	1997 09 17	557	0.6− 0.4+	1997 10 05	557	0.1+ 0.1+	
1990 08 28	675	0.2+ 1.3+	1997 09 17	557	0.3− 0.2+	1997 10 05	557	0.0 0.0	
1990 09 14	675	0.5− 0.5−	1997 09 17	557	0.1− 0.1+	1997 10 06	557	0.0 0.1−	
1990 09 14	675	0.2+ 0.6−	1997 09 21	557	0.6− 0.5+	1997 10 06	557	0.2− 0.1+	
1997 09 13	557	0.2+ 0.2+	1997 09 21	557	0.5− 0.6+	1997 10 07	557	0.3− 0.2−	
1997 09 13	557	0.1− 0.5+	1997 09 29	557	0.5+ 0.2−	1997 10 07	557	0.1− 0.2−	
1997 09 15	557	0.3+ 0.1−	1997 09 29	557	0.4+ 0.1−	1997 10 07	557	0.2− 0.2−	
1997 09 15	557	0.3+ 0.2−	1997 10 05	557	0.2+ 0.3−				

1997 RP₉ = 1986 WB₇ = 1995 CL₄

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Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	6.00051		(2000.0)	P			Q		
<i>n</i>	0.25971791	ω	216.79604	+0.93742781	−0.34794151				
<i>a</i>	2.4329590	Ω	163.55109	+0.32930423	+0.87399022				
<i>e</i>	0.2094007	<i>i</i>	2.60640	+0.11308327	+0.33923120				
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1986 11 28	010	1.3− 0.3−	1997 09 16	587	0.8+ 0.1−	1997 10 01	587	0.4+ 0.6+	
1986 11 28	010	1.3+ 0.7+	1997 09 19	587	0.1− 0.7−	1997 10 01	587	0.3+ 0.7+	
1995 02 01	691	0.3− 0.0	1997 09 19	587	0.3+ 0.1−	1997 10 01	587	0.1+ 0.9+	
1995 02 01	691	0.5− 0.1−	1997 09 19	587	0.3− 0.0	1997 10 02	587	0.2+ 0.3+	
1995 02 01	691	0.2− 0.2−	1997 09 24	587	0.3+ 0.4+	1997 10 02	587	0.3+ 0.1−	
1995 02 07	691	0.3+ 0.3−	1997 09 24	587	0.4+ 0.9+	1997 10 03	888	0.2− 1.2−	
1995 02 07	691	0.1+ 0.0	1997 09 26	587	0.6+ 0.3+	1997 10 03	888	1.4+ 1.2−	
1995 02 07	691	0.3+ 0.2−	1997 09 26	587	0.7+ 0.0	1997 10 04	587	0.7+ 0.1+	
1997 09 09	587	0.4− 0.3−	1997 09 30	691	1.3− 0.1+	1997 10 04	587	0.7+ 0.3+	
1997 09 09	587	1.2− 0.3+	1997 09 30	691	1.1− 0.4+	1997 10 04	587	0.2+ 0.7−	
1997 09 16	587	0.4+ 0.2−	1997 09 30	691	1.0− 0.0	1997 10 06	691	1.0− 0.2+	
1997 09 16	587	0.4− 0.6−	1997 10 01	888	0.5+ 0.4−	1997 10 06	691	1.0− 0.1+	
1997 09 16	587	0.7+ 0.9−	1997 10 01	888	0.3+ 0.3+	1997 10 06	691	1.0− 0.0	

1997 RT₉ = 1979 SD₆ = 1982 JW₁ = 1988 RN₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	338.09899		(2000.0)	P			Q		
<i>n</i>	0.21917873	ω	240.56940	+0.49547874	−0.86861996				
<i>a</i>	2.7243973	Ω	179.72814	+0.82522857	+0.47057161				
<i>e</i>	0.2091830	<i>i</i>	5.23867	+0.27110631	+0.15511843				
<i>P</i>	4.50	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1979 09 23	095	0.4− 1.2+	1988 09 11	071	2.7+ 0.6+	1997 09 13	012	0.4+ 0.1+	
1982 05 15	675	1.0+ 0.4+	1997 09 10	012	0.3− 0.0	1997 09 25	012	0.2+ 0.4−	
1982 05 16	675	1.2− 0.4−	1997 09 11	012	0.0 0.1−	1997 09 25	012	0.1+ 0.2−	
1982 05 17	675	0.2+ 0.2+	1997 09 11	012	0.2− 0.0	1997 09 25	012	0.2+ 0.6−	
1982 05 18	675	0.0 0.3−	1997 09 13	012	0.2− 0.1−				
1988 09 11	071	2.6− 0.7−	1997 09 13	012	0.2+ 0.3+				

1997 RA₁₀ = 1988 KF₁ = 1993 QM₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	334.37713		(2000.0)	P			Q		
<i>n</i>	0.25954536	ω	300.87413	+0.29526553	−0.95438903				
<i>a</i>	2.4340372	Ω	131.88459	+0.89562624	+0.26035670				
<i>e</i>	0.1440148	<i>i</i>	3.40902	+0.33267388	+0.14613678				
<i>P</i>	3.80	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc									
1988 05 16	809	1.3− 0.5−	1997 09 12	327	0.9+ 0.3+	1997 09 26	327	0.6− 0.3−	
1988 05 16	809	0.5+ 0.9−	1997 09 13	327	0.8+ 0.7+	1997 09 29	327	0.2− 0.9−	
1988 05 16	809	0.1+ 1.2−	1997 09 13	327	1.1+ 0.3+	1997 09 29	327	0.3− 1.1−	
1993 08 20	809	1.1+ 0.5+	1997 09 13	327	1.3+ 0.6+	1997 09 29	327	0.5− 0.9−	
1993 08 20	809	0.8+ 0.9+	1997 09 13	327	0.5+ 0.3+	1997 10 02	910	0.3− 0.3−	
1993 08 20	809	0.3+ 1.6+	1997 09 23	327	0.2− 0.4+	1997 10 02	910	0.3− 0.3−	
1993 08 24	809	0.7− 0.0	1997 09 23	327	0.4− 0.2−	1997 10 02	910	0.2− 0.4−	
1993 08 24	809	1.1− 0.1+	1997 09 23	327	0.5− 0.1+	1997 10 11	327	(3.7− 1.9−)	
1993 08 24	809	1.2− 0.7−	1997 09 26	327	0.2− 0.7−	1997 10 11	327	(2.9− 1.7−)	
1997 09 12	327	0.8+ 0.2+	1997 09 26	327	0.3− 0.4−	1997 10 11	327	(3.4− 1.7−)	
1997 09 12	327	0.7+ 0.1+	1997 09 26	327	0.3− 0.9−				

1997 RD₁₀ = 1996 JC₁₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	22.69054		(2000.0)	P			Q		
<i>n</i>	0.23859525	ω	203.17534	+0.99598124	−0.08548476				
<i>a</i>	2.5745116	Ω	161.66847	+0.08953040	+0.94237318				
<i>e</i>	0.2872521	<i>i</i>	4.87269	+0.00238105	+0.32345810				
<i>P</i>	4.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1996 05 15	691	0.1− 0.2−	1997 09 13	327	0.5+ 0.4+	1997 09 29	327	0.2− 0.4−	
1996 05 15	691	0.1− 0.4−	1997 09 13	327	0.2+ 0.4+	1997 09 29	327	0.3− 0.4−	
1996 05 15	691	0.5+ 0.3+	1997 09 13	327	0.2+ 0.2+	1997 09 29	327	0.3− 0.5−	
1996 05 21	691	0.1− 0.1−	1997 09 23	327	0.2− 0.0	1997 10 11	327	0.3+ 0.2+	
1996 05 21	691	0.0 0.2+	1997 09 23	327	0.4− 0.0	1997 10 11	327	0.5+ 0.0	
1996 05 21	691	0.1− 0.0	1997 09 23	327	0.2− 0.0	1997 10 11	327	0.1− 0.2+	

1997 RJ₁₀ = 3231 T-3

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5									
<i>M</i>	326.82778		(2000.0)	P			Q		
<i>n</i>	0.19554934	ω	248.08412	+0.53998497	−0.84164759				
<i>a</i>	2.9396693	Ω	169.22556	+0.78493543	+0.50067219				
<i>e</i>	0.0363935	<i>i</i>	2.06944	+0.30379697	+0.20237760				
<i>P</i>	5.04	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1977 10 07	675	0.6− 0.8−	1977 10 21	675	1.2− 0.5−	1997 09 26	327	0.3− 0.2+	
1977 10 11	675	1.6− 1.5+	1977 10 21	675	0.2+ 0.1−	1997 09 26	327	0.1− 0.2+	

1977 10 11	675	1.5−	0.7+	1977 10 22	675	2.1+	2.2−	1977 09 30	327	0.2−	0.1+
1977 10 12	675	0.5+	0.9+	1977 10 22	675	2.4+	1.8−	1977 09 30	327	0.2−	0.1−
1977 10 12	675	0.4+	0.3+	1977 09 13	327	0.1−	0.4−	1977 09 30	327	0.3+	0.3+
1977 10 16	675	0.7+	0.9+	1977 09 13	327	0.3+	0.3−	1977 10 09	327	0.0	0.2+
1977 10 16	675	0.1−	0.3+	1977 09 13	327	0.3+	0.1−	1977 10 09	327	0.2−	0.1+
1977 10 17	675	0.5−	0.9+	1977 09 13	327	0.3+	0.3−	1977 10 09	327	0.1+	0.1−
1977 10 17	675	0.7−	0.1+	1977 09 26	327	0.2−	0.0				

1997 SH = 1179 T-3

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	80.46714	(2000.0)	
<i>n</i>	0.19262963	ω	357.79997
<i>a</i>	2.9692994	Ω	274.70382
<i>e</i>	0.0732882	<i>i</i>	9.07305
<i>P</i>	5.12	<i>H</i>	14.0

Residuals in seconds of arc

1977 10 16	675	1.3−	0.8−	1977 08 30	566	0.8−	0.1−	1977 09 24	557	0.1+	0.1+
1977 10 16	675	1.3−	0.9−	1977 08 30	566	0.9−	0.4+	1977 09 24	557	0.1+	0.1+
1977 10 17	675	1.6+	1.8+	1977 09 20	557	0.3+	0.1−	1977 09 28	557	0.3+	0.0
1977 10 17	675	1.2+	0.8+	1977 09 20	557	0.2+	0.0	1977 09 28	557	0.2+	0.1−
1977 10 22	675	0.3−	0.5−	1977 09 20	557	0.1+	0.4−	1977 10 06	557	0.0	0.2+
1977 10 22	675	0.1−	0.2−	1977 09 21	557	0.0	0.2−	1977 10 06	557	0.0	0.3+
1977 08 30	566	0.5+	0.0	1977 09 21	557	0.1+	0.3−				

1997 SQ = 1982 VA₄ = 1992 UO₇ = 1995 FF₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	20.39156	(2000.0)	
<i>n</i>	0.19263897	ω	303.83906
<i>a</i>	2.9692034	Ω	58.97205
<i>e</i>	0.1593237	<i>i</i>	0.71338
<i>P</i>	5.12	<i>H</i>	14.5

Residuals in seconds of arc

1982 11 14	381	0.6+	0.2+	1995 03 27	691	0.4−	0.7−	1997 09 21	557	0.2+	0.4−
1982 11 14	381	0.1−	0.4−	1995 04 07	691	0.2−	0.5−	1997 09 21	557	0.1+	0.4−
1992 10 18	691	0.5−	0.3−	1995 04 07	691	0.0	0.8−	1997 09 24	557	0.2+	0.2−
1992 10 18	691	0.5−	0.0	1995 04 07	691	0.0	0.5−	1997 09 24	557	0.1+	0.3−
1992 10 21	691	0.3−	0.1−	1997 09 20	557	0.4+	0.1+	1997 09 25	557	0.4+	0.2−
1992 10 21	691	0.1+	0.2+	1997 09 20	557	0.6+	0.0	1997 09 25	557	0.1+	0.2−
1992 10 21	691	0.0	0.0	1997 09 20	557	0.6−	1.2−	1997 09 25	557	0.3+	0.2+
1995 03 27	691	0.5−	0.9−	1997 09 21	557	0.1−	0.2−	1997 10 05	557	0.3+	0.0
1995 03 27	691	0.6−	0.6−	1997 09 21	557	0.0	0.3−	1997 10 05	557	0.4+	0.0

1997 SD₁ = 1996 KY₆

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	131.39687	(2000.0)	
<i>n</i>	0.22862694	ω	3.71091
<i>a</i>	2.6488119	Ω	224.04917
<i>e</i>	0.1364415	<i>i</i>	11.57591
<i>P</i>	4.31	<i>H</i>	13.5

Residuals in seconds of arc

1996 05 19	809	0.2+	1.2−	1997 09 19	327	0.1−	0.5+	1997 09 20	327	0.3−	0.1+
1996 05 19	809	0.4+	1.1−	1997 09 19	327	0.1+	0.5−	1997 09 20	327	0.1+	0.2+
1996 05 19	809	0.1−	0.8−	1997 09 19	327	0.4−	0.1+	1997 09 29	327	0.3+	0.4−
1996 05 22	809	0.0	0.9+	1997 09 19	327	0.0	0.2+	1997 09 29	327	0.6+	0.4−
1996 05 22	809	0.1+	1.2+	1997 09 20	327	0.4−	0.3+	1997 09 29	327	0.3+	0.4−
1996 05 22	809	0.6−	0.8+	1997 09 20	327	0.1−	0.2+				

1997 SG₁ = 1977 CH₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden			
<i>M</i>	276.60133	(2000.0)	
<i>n</i>	0.22561098	ω	339.70069
<i>a</i>	2.6723657	Ω	161.02132
<i>e</i>	0.1080767	<i>i</i>	13.52416
<i>P</i>	4.37	<i>H</i>	13.5

Residuals in seconds of arc

1977 02 11	675	0.0	0.0	1997 09 24	116	1.2−	0.7+	1997 10 04	116	0.7−	0.2+
1977 02 12	675	0.0	0.0	1997 09 24	116	0.1−	0.2+	1997 10 04	116	0.1−	0.1−
1997 09 22	116	1.1+	0.5−	1997 09 25	116	0.2+	0.1+	1997 10 04	116	2.0+	0.6−
1997 09 22	116	0.7+	0.1−	1997 09 26	116	0.1+	0.2+	1997 10 05	116	1.8+	0.0
1997 09 23	116	0.2+	0.4−	1997 09 27	116	0.6−	0.6−	1997 10 06	116	0.1−	0.0
1997 09 23	116	0.1−	0.2−	1997 09 27	116	0.8−	0.8−	1997 10 06	116	0.6−	0.0
1997 09 23	116	0.3+	0.1−	1997 09 28	116	0.3−	0.1+	1997 10 07	116	0.2−	0.1+
1997 09 24	116	0.5+	0.3+	1997 09 28	116	0.1−	0.7+	1997 10 07	116	0.6−	0.1−
1997 09 24	116	0.4−	0.2+	1997 09 29	116	0.5−	0.3−				
1997 09 24	116	0.3−	0.1+	1997 09 29	116	0.2−	0.8+				

1997 SZ₁ = 1991 BQ₄ = 1993 RZ₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	343.51958	(2000.0)	
<i>n</i>	0.25786415	ω	230.71497
<i>a</i>	2.4446053	Ω	200.65913
<i>e</i>	0.1185330	<i>i</i>	2.71252
<i>P</i>	3.82	<i>H</i>	14.5

Residuals in seconds of arc

1991 01 22	675	0.3+	0.7+	1993 09 18	809	0.3−	0.3−	1997 09 25	557	0.1+	0.0
1991 01 22	675	0.3−	0.9−	1993 09 19	400	1.2+	0.4+	1997 09 25	557	0.1+	0.0
1993 09 15	809	1.2+	1.3+	1993 09 19	400	0.7+	0.9−	1997 09 25	557	0.2+	0.1−
1993 09 15	809	0.2−	0.8+	1993 09 23	809	(3.6−	1.0−)	1997 09 27	557	0.2+	0.2−
1993 09 15	809	0.8−	1.1+	1993 09 23	809	(4.1−	0.6−)	1997 09 27	557	0.3+	0.2−
1993 09 16	809	(3.3−	2.3−)	1993 09 23	809	(4.3−	0.5−)	1997 10 03	691	1.1−	0.2−
1993 09 16	809	(3.6−	1.3−)	1997 09 09	910	0.3−	0.2+	1997 10 03	691	0.9−	0.1+
1993 09 16	809	(4.1−	1.1−)	1997 09 09	910	0.2−	0.3+	1997 10 03	691	1.3−	0.5−
1993 09 17	809	0.3+	1.1−	1997 09 09	910	0.2−	0.2+	1997 10 05	557	0.1+	0.2−
1993 09 17	809	0.5−	0.8−	1997 09 23	557	0.3+	0.1+	1997 10 05	557	0.3+	0.4−
1993 09 17	809	0.8−	0.9−	1997 09 23	557	0.5+	0.2−	1997 10 12	557	0.4+	0.7+
1993 09 18	809	0.6−	0.1+	1997 09 23	557	0.5+	0.0	1997 10 12	557	0.6+	1.0+
1993 09 18	809	0.0	0.1+	1997 09 25	557	0.2+	0.3−				

1997 SC₂ = 1993 RD₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	7.82862	(2000.0)	
<i>n</i>	0.25973703	ω	195.16898
<i>a</i>	2.4328395	Ω	205.31162
<i>e</i>	0.1056751	<i>i</i>	3.17815
<i>P</i>	3.79	<i>H</i>	15.0

Residuals in seconds of arc

1993 09 15	809	0.4−	0.3+	1997 09 23	557	0.5+	0.7−	1997 10 03	691	0.7−	0.3−
1993 09 15	809	0.5−	0.2+	1997 09 23	557	0.5−	0.6+	1997 10 05	557	0.2+	0.1−
1993 09 15	809	(2.8−	1.2−)	1997 09 23	557	0.4+	1.1−	1997 10 05	557	0.3+	0.4−
1993 09 22	809	0.7+	0.1+	1997 09 25	557	0.2+	0.2−	1997 10 11	557	0.0	0.6+
1993 09 22	809	0.2+	0.3+	1997 09 25	557	0.3−	0.1+	1997 10 11	557	0.1−	0.5+
1993 09 22	809	0.2−	0.6−	1997 09 27	557	0.7+	0.3−	1997 10 12	557	0.1+	0.8+
1997 09 16	327	0.0	0.6+	1997 09 27	557	0.3+	0.5−	1997 10 12	557	0.3+	0.2−
1997 09 16	327	0.1+	0.3−	1997 10 03	691	0.6−	0.2−	1997 10 12	557	0.0	0.4+
1997 09 16	327	0.2−	0.2+	1997 10 03	691	0.6−	0.2+				

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1997 SN₂ = 1990 VL₁₅ = 1993 OK₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26739411	ω	186.35393	+0.54896895	-0.83557031		
<i>a</i>	2.3861706	Ω	230.35200	+0.76808556	+0.51437174		
<i>e</i>	0.1574561	<i>i</i>	1.58807	+0.32966295	+0.19298696		
<i>P</i>	3.69	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1990 11 12	809	0.2+	1.2+	1997 09 21	557	0.4+	0.1+
1990 11 12	809	0.6-	0.8+	1997 09 21	557	0.5+	0.2-
1990 11 12	809	0.3-	0.3+	1997 09 21	557	0.8+	0.3-
1993 07 20	809	0.6+	1.0+	1997 09 24	557	0.2+	0.1-
1993 07 20	809	0.1+	1.3+	1997 09 24	557	0.2+	0.1+
1993 07 20	809	0.6-	1.0+	1997 09 24	557	0.3+	0.1-
1993 07 24	809	0.7-	0.1-	1997 09 25	557	0.3+	0.6-

1997 SZ₉ = 1992 DS₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28368628	ω	80.18119	+0.98638227	-0.12811689		
<i>a</i>	2.2939142	Ω	287.12461	+0.07281958	+0.90244413		
<i>e</i>	0.1447309	<i>i</i>	6.19517	+0.14746974	+0.41131576		
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1992 02 29	809	0.6-	0.3-	1997 09 27	587	0.9-	0.2-
1992 03 03	809	0.6+	0.3+	1997 09 29	587	0.7-	0.1-
1997 09 27	587	0.2+	0.4+	1997 09 29	587	0.5-	0.4-
1997 09 27	587	2.8+	0.3+	1997 09 29	587	0.5-	0.3-
1997 09 27	587	0.4-	0.2-	1997 09 30	587	0.3-	0.3-

1997 SD₁₀ = 1986 WT₃ = 1994 YS₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26582399	ω	259.74754	+0.99902942	-0.00737726		
<i>a</i>	2.3955575	Ω	100.66536	+0.02374530	+0.92055725		
<i>e</i>	0.1992876	<i>i</i>	2.53268	-0.03709961	+0.39053800		
<i>P</i>	3.71	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1986 11 25	010	(8.2-	1.9+)	1997 09 23	327	0.2-	0.0
1986 11 25	010	0.9-	0.7+	1997 09 23	327	0.5-	0.1-
1986 11 25	010	0.7+	0.1-	1997 09 23	327	0.7-	0.2+
1994 12 28	691	0.3+	0.2+	1997 09 23	327	0.2+	0.1+
1994 12 28	691	0.1+	0.6-	1997 09 23	327	0.2-	0.3+
1994 12 28	691	0.5-	0.1-	1997 09 26	327	0.2-	0.4-
1997 09 13	327	0.4+	0.5+	1997 09 26	327	0.4-	0.5-
1997 09 13	327	0.3+	0.5+	1997 09 26	327	0.3-	0.4-
1997 09 13	327	0.3+	0.0	1997 09 26	327	0.3-	0.3-
1997 09 13	327	0.4+	0.1-	1997 09 29	327	0.4-	0.7-
1997 09 23	327	0.1-	0.1-	1997 09 29	327	0.2-	0.6-

1997 SN₁₀ = 1991 PS₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17825724	ω	91.59858	+0.26827386	+0.96314177		
<i>a</i>	3.1268323	Ω	194.01061	-0.91301409	+0.24769044		
<i>e</i>	0.1571253	<i>i</i>	4.66122	-0.30730181	+0.10491605		
<i>P</i>	5.53	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1991 08 05	675	0.8-	0.9-	1997 09 26	327	0.1+	0.1-
1991 08 05	675	0.3-	0.4-	1997 09 29	327	0.2-	0.2-

1991 08 08	675	0.3+	0.8+	1997 09 29	327	0.2-	0.0	1997 10 10	327	0.2-	0.0
1991 08 08	675	0.9+	0.4+	1997 09 29	327	0.3-	0.0	1997 10 10	327	0.0	0.3+
1997 09 26	327	0.3+	0.1-	1997 10 09	327	0.0	0.0				
1997 09 26	327	0.3+	0.1+	1997 10 09	327	0.1+	0.1+				

1997 SJ₂₃ = 1988 CZ = 1992 JV₁ = 1993 SV₁₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26590609	ω	204.25295	-0.80545561	+0.59253989		
<i>a</i>	2.3950644	Ω	12.10582	-0.53419838	-0.71728981		
<i>e</i>	0.1598048	<i>i</i>	3.20806	-0.25665803	-0.36659489		
<i>P</i>	3.71	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1988 02 14	033	0.9-	0.9-	1992 05 04	809	1.0-	0.5-
1988 02 14	033	1.6-	0.0	1992 05 04	809	1.0-	0.5-
1988 02 15	033	1.3-	0.1+	1992 05 04	809	(7.1+	2.3-)
1988 02 15	033	2.6+	1.7-	1992 05 04	809	(7.9+	2.4-)
1992 05 02	809	0.5-	0.1+	1992 05 04	809	(8.3+	2.4-)
1992 05 02	809	0.1+	0.2+	1993 09 16	809	1.3+	2.3-
1992 05 02	809	0.3+	0.5+	1993 09 16	809	0.0	0.9-
1992 05 03	809	0.8+	0.0	1993 09 16	809	0.1+	2.6-
1992 05 03	809	1.1+	0.1+	1993 09 23	809	1.9+	1.9+
1992 05 03	809	1.5+	0.2+	1993 09 23	809	1.1+	0.1+
1992 05 04	809	1.5-	0.7-	1993 09 23	809	1.8-	1.4-

1997 SN₃₁ = 1996 FA

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28728915	ω	222.16254	-0.75510037	+0.65560626		
<i>a</i>	2.2746953	Ω	358.79790	-0.57370128	-0.66221160		
<i>e</i>	0.0897768	<i>i</i>	5.37932	-0.31731730	-0.36284464		
<i>P</i>	3.43	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1996 03 16	566	0.1+	0.9-	1996 03 20	566	0.4-	0.5+
1996 03 16	566	0.3+	1.4-	1996 03 20	566	0.4-	0.5+
1996 03 16	566	0.0	0.9-	1996 03 20	566	0.2-	0.6+
1996 03 17	566	0.1+	0.0	1997 09 28	691	0.0	0.1+
1996 03 17	566	0.2+	0.6+	1997 09 28	691	0.2+	0.0
1996 03 17	566	0.1-	0.1+	1997 09 28	691	0.2+	0.2+

1997 SR₃₁ = 1995 AO₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26168643	ω	116.95537	-0.38080518	-0.92464117		
<i>a</i>	2.4207424	Ω	355.41916	+0.82404646	-0.33685819		
<i>e</i>	0.0863472	<i>i</i>	3.66945	+0.41944587	-0.17766619		
<i>P</i>	3.77	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 01 04	010	1.3+	0.3-	1995 01 05	010	1.9-	0.1-
1995 01 04	010	1.6+	0.1+	1997 09 30	691	0.3-	0.1-
1995 01 04	010	0.2+	0.5-	1997 09 30	691	0.2+	0.3+
1995 01 04	010	1.1-	0.2+	1997 09 30	691	0.1+	0.0
1995 01 05	010	0.1-	0.5+	1997 10 07	691	0.1-	0.1+

1997 TZ₇ = 1981 UM₆ = 1996 HJ₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17960035	ω	286.31577	+0.88601089	+0.40602772		
<i>a</i>	3.1112239	Ω	50.31369	-0.22855371	+0.80257955		
<i>e</i>	0.2501853	<i>i</i>	16.91388	-0.40342026	+0.43704412		
<i>P</i>	5.49	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 10 30	381	0.2+	0.4-	1997 10 05	700	0.3+	0.5+	1997 10 07	700	0.3+	0.3-
1981 10 30	381	0.1+	0.2-	1997 10 05	700	0.6+	0.6+	1997 10 08	700	0.5-	0.8-
1996 04 20	809	1.6-	0.1-	1997 10 05	700	0.4+	0.5+	1997 10 08	700	0.3+	0.4+
1996 04 20	809	1.2+	0.7-	1997 10 05	700	0.5+	0.1+	1997 10 08	700	0.3+	0.0
1996 04 20	809	1.1+	0.3-	1997 10 06	700	0.3+	1.3-	1997 10 08	700	0.3-	0.3+
1996 04 21	809	0.5+	0.3+	1997 10 06	700	0.0	1.5+	1997 10 09	700	1.3-	0.4-
1996 04 21	809	0.0	0.5+	1997 10 06	700	0.0	0.3+	1997 10 09	700	0.6-	0.6+
1996 04 21	809	1.7-	0.4-	1997 10 06	700	0.2+	0.4+	1997 10 09	700	0.5-	0.1-
1997 10 04	700	(4.9+	1.0-)	1997 10 07	700	0.2-	0.1+	1997 10 10	700	1.7+	0.7-
1997 10 04	700	1.1-	0.4+	1997 10 07	700	0.3+	0.2+	1997 10 10	700	0.3+	1.9-
1997 10 04	700	0.6-	0.9+	1997 10 07	700	0.2-	0.6-	1997 10 10	700	0.3-	1.0-

1997 TX₁₀ = 4886 P-L

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	298.90122	(2000.0)	
<i>n</i>	0.23900783	ω	271.31806
<i>a</i>	2.5715480	Ω	177.94479
<i>e</i>	0.1348207	<i>i</i>	9.31629
<i>P</i>	4.12	<i>H</i>	16.0
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.5-	0.7+	1997 09 08	910	0.2+	0.2+	1997 10 07	691	0.4+	1.5+
1960 09 24	675	0.5+	0.6+	1997 09 08	910	0.1+	0.0	1997 10 07	691	0.2+	0.2-
1960 09 26	675	0.7+	0.2-	1997 09 08	910	0.0	0.0	1997 10 09	691	0.0	0.0
1960 09 26	675	0.2-	1.4-	1997 10 03	691	0.3-	0.5-	1997 10 09	691	0.0	0.0
1960 09 27	675	1.6-	0.3-	1997 10 03	691	0.5-	1.0-	1997 10 09	691	0.2+	0.3+
1960 09 28	675	0.9+	0.2-	1997 10 03	691	0.4-	0.2-				
1960 09 28	675	0.2+	0.6+	1997 10 07	691	0.1+	0.1-				

1997 TS₁₆ = 1996 HK₁₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	11.70609	(2000.0)	
<i>n</i>	0.26026801	ω	172.08836
<i>a</i>	2.4295295	Ω	203.02137
<i>e</i>	0.1566111	<i>i</i>	5.18736
<i>P</i>	3.79	<i>H</i>	15.0
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 18	809	0.3-	0.1+	1997 10 03	589	1.4+	0.8-	1997 10 04	589	0.9+	0.6+
1996 04 18	809	0.2+	0.4-	1997 10 03	589	1.1+	0.1-	1997 10 08	589	0.2+	0.1+
1996 04 18	809	0.5+	1.1-	1997 10 04	691	1.0-	0.3+	1997 10 08	589	0.0	0.2+
1996 04 20	809	0.5+	0.1-	1997 10 04	691	0.5-	0.1+	1997 10 08	589	0.2+	0.1-
1996 04 20	809	0.3-	0.8+	1997 10 04	691	0.8-	0.0				
1996 04 20	809	0.6-	0.7+	1997 10 04	589	1.6-	0.3-				

1997 TM₁₈ = 4640 T-1

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	96.35099	(2000.0)	
<i>n</i>	0.23833277	ω	246.64725
<i>a</i>	2.5764015	Ω	27.16045
<i>e</i>	0.1696268	<i>i</i>	10.67654
<i>P</i>	4.14	<i>H</i>	13.5
<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1971 05 13	675	0.1-	0.3-	1997 10 03	327	0.0	0.0	1997 10 09	327	0.3+	0.0
1971 05 14	675	1.0+	0.3+	1997 10 03	327	0.3-	0.2+	1997 10 11	327	0.2+	0.1+
1971 05 16	675	1.0-	0.0	1997 10 09	327	0.0	0.0	1997 10 11	327	0.2+	0.0
1997 10 03	327	0.4-	0.3-	1997 10 09	327	0.1+	0.0	1997 10 11	327	0.0	0.1-

2042 P-L = 1997 TB₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano			
<i>M</i>	259.13404	(2000.0)	
<i>n</i>	0.26610912	ω	261.58280
<i>a</i>	2.3938460	Ω	231.33952
<i>e</i>	0.0421150	<i>i</i>	4.77097
<i>P</i>	3.70	<i>H</i>	14.7
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.3-	0.4-	1960 10 22	675	0.3+	0.7+	1997 10 08	402	0.1+	0.0
1960 09 26	675	1.0-	0.5-	1997 10 06	900	0.3+	0.3-	1997 10 08	402	0.1+	0.1-
1960 09 28	675	0.1+	0.8+	1997 10 06	900	0.3-	0.5+	1997 10 08	402	0.2+	0.2-
1960 09 29	675	1.4+	0.2+	1997 10 08	900	0.3-	0.0				
1960 10 17	675	0.6-	0.9-	1997 10 08	900	0.1-	0.0				

2698 P-L = 1997 TQ₂₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	96.88782	(2000.0)	
<i>n</i>	0.29279063	ω	277.89963
<i>a</i>	2.2461113	Ω	6.05736
<i>e</i>	0.0695502	<i>i</i>	7.63871
<i>P</i>	3.37	<i>H</i>	15.5
<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.4+	2.1+	1960 10 17	675	0.9+	0.1+	1997 10 09	327	0.6-	0.0
1960 09 26	675	0.2-	0.1-	1960 10 22	675	0.3-	0.6+	1997 10 10	327	0.0	0.2-
1960 09 28	675	0.6+	0.2+	1997 10 09	327	0.2+	0.2+	1997 10 10	327	0.1+	0.0
1960 09 29	675	1.5-	2.6-	1997 10 09	327	0.4+	0.0	1997 10 10	327	0.0	0.1-

4070 P-L = 1997 SK₂₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	281.10219	(2000.0)	
<i>n</i>	0.24093118	ω	190.32230
<i>a</i>	2.5578439	Ω	300.68109
<i>e</i>	0.1204317	<i>i</i>	3.03573
<i>P</i>	4.09	<i>H</i>	14.5
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.2-	0.1+	1960 10 17	675	1.3-	1.2+	1997 09 30	691	0.2-	0.0
1960 09 25	675	0.0	0.7+	1960 10 22	675	1.0+	0.6-	1997 09 30	691	0.3-	0.0
1960 09 26	675	0.6+	0.4-	1960 10 24	675	0.3+	0.8+	1997 10 05	691	0.2+	0.0
1960 09 28	675	0.5-	0.0	1960 10 26	675	0.1-	1.1-	1997 10 05	691	0.3+	0.1-
1960 10 17	675	0.5+	1.2-	1997 09 30	691	0.5-	0.2-	1997 10 05	691	0.3+	0.8+

4090 P-L = 1996 AX₅ = 1997 GN₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden			
<i>M</i>	179.69132	(2000.0)	
<i>n</i>	0.17560543	ω	78.91107
<i>a</i>	3.1582324	Ω	336.42453
<i>e</i>	0.0981465	<i>i</i>	4.74587
<i>P</i>	5.61	<i>H</i>	14.0
<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.6-	0.7-	1996 01 12	691	0.0	0.1-	1997 03 11	809	0.7-	0.2+
1960 09 25	675	0.4+	0.8+	1996 01 12	691	0.0	0.1-	1997 04 03	704	0.6-	0.6-
1960 09 26	675	0.4+	0.4+	1996 01 12	691	0.0	0.3+	1997 04 03	704	0.2+	0.8-
1960 09 28	675	1.0+	1.5+	1996 01 18	691	0.0	0.0	1997 04 05	704	0.4+	0.8-
1960 10 17	675	0.9-	0.9-	1996 01 18	691	0.0	0.2-	1997 04 05	704	0.2-	0.4+
1960 10 22	675	0.1-	0.8-	1996 01 18	691	0.0	0.2+	1997 04 07	704	0.5+	0.4+
1960 10 24	675	0.6-	0.2+	1997 03 11	809	0.8+	1.1+	1997 04 07	704	0.8+	0.7-
1960 10 26	675	0.1+	0.1-	1997 03 11	809	1.0-	1.6+				

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4634 P-L = 1987 UC₁ = 1997 SH₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29367333	ω	306.09639	+0.78820663	+0.61498005		
<i>a</i>	2.2416082	Ω	15.99435	-0.53437138	+0.70248633		
<i>e</i>	0.1975516	<i>i</i>	4.79194	-0.30524994	+0.35820733		
<i>P</i>	3.36	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.0	0.2-	1987 10 25	399	0.3+	0.5+	1997 10 01	358	0.8-	0.9+
1960 09 26	675	0.0	0.2+	1987 10 25	399	(3.3+	1.0-)	1997 10 01	358	1.5-	0.9-
1960 09 27	675	0.1+	0.1+	1997 09 28	684	0.5+	0.5+	1997 10 02	684	0.1+	0.0
1960 09 28	675	0.1-	0.1-	1997 09 28	684	0.5+	0.4+	1997 10 02	684	0.1-	0.0
1960 10 17	675	0.1-	0.8+	1997 09 29	684	0.2+	0.1+	1997 10 02	684	0.1-	0.0
1960 10 22	675	0.3-	0.2+	1997 09 29	684	0.0	0.1+	1997 10 03	684	0.1-	0.3-
1960 10 25	675	0.3+	1.3-	1997 09 29	684	0.1+	0.4+	1997 10 03	684	0.1-	0.4-
1960 10 26	675	0.4+	0.4-	1997 09 30	358	0.1+	0.3+	1997 10 03	684	0.0	0.5-
1987 10 25	399	0.2-	0.3-	1997 09 30	358	0.9+	0.1-				

4715 P-L = 1997 SL₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26590145	ω	96.94077	-0.40905044	+0.91212959		
<i>a</i>	2.3950922	Ω	148.87196	-0.85609004	-0.37357957		
<i>e</i>	0.1375205	<i>i</i>	2.92808	-0.31589171	-0.16869472		
<i>P</i>	3.71	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.4-	0.5+	1960 09 28	675	0.1-	0.9+	1997 09 29	118	(2.8+	0.2-)
1960 09 24	675	0.7-	0.1+	1960 09 28	675	1.1+	0.1+	1997 10 04	118	0.2-	0.3-
1960 09 26	675	0.1+	0.5+	1960 10 22	675	0.4-	0.6-	1997 10 04	118	1.1-	0.7-
1960 09 26	675	0.3-	0.6-	1997 09 28	118	0.6-	0.1-	1997 10 05	118	0.8+	0.4-
1960 09 27	675	0.5+	0.2-	1997 09 28	118	0.5+	0.6+	1997 10 05	118	0.8+	0.4-
1960 09 27	675	0.2-	0.0	1997 09 29	118	0.0	0.4+	1997 10 05	118	0.1+	0.3+

6113 P-L = 1997 TU₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24092681	ω	319.49133	+0.35373763	+0.93529198		
<i>a</i>	2.5578749	Ω	331.22069	-0.85274460	+0.31811889		
<i>e</i>	0.1417476	<i>i</i>	1.18186	-0.38431281	+0.15501384		
<i>P</i>	4.09	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.2+	0.0	1960 10 24	675	0.1-	0.3+	1997 10 03	910	0.0	0.1-
1960 09 25	675	0.2-	0.8-	1960 10 26	675	0.1-	0.2+	1997 10 03	910	0.1+	0.3-
1960 09 26	675	0.5+	0.2-	1997 10 02	910	0.0	0.0	1997 10 03	910	0.1+	0.2-
1960 10 17	675	0.5-	1.4+	1997 10 02	910	0.0	0.0				
1960 10 22	675	0.1-	0.4-	1997 10 03	910	0.0	0.1+				

6128 P-L = 1997 SX₂₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24112262	ω	110.59444	+0.90824661	+0.41830626		
<i>a</i>	2.5564899	Ω	224.67956	-0.38919963	+0.83540854		
<i>e</i>	0.1621015	<i>i</i>	0.84673	-0.15366114	+0.35652832		
<i>P</i>	4.09	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.2-	0.6+	1960 10 26	675	0.1+	0.8+	1997 10 04	691	0.0	0.1-
1960 09 25	675	0.5+	0.1+	1997 09 29	691	0.0	0.2-	1997 10 04	691	0.5-	0.0
1960 09 26	675	0.3-	0.1-	1997 09 29	691	0.1+	0.0	1997 10 10	691	0.3+	0.2+
1960 09 28	675	0.2+	1.0-	1997 09 29	691	0.2+	0.0	1997 10 10	691	0.0	0.2+
1960 10 22	675	0.4-	0.2-	1997 10 04	691	0.2-	0.3-	1997 10 10	691	0.1+	0.1-

6224 P-L = 1997 TT₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21436768	ω	108.26675	+0.76484847	+0.64296368		
<i>a</i>	2.7650088	Ω	211.75587	-0.61606888	+0.71184483		
<i>e</i>	0.0419264	<i>i</i>	4.36498	-0.18832406	+0.28262103		
<i>P</i>	4.60	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.3+	0.2+	1997 10 02	910	0.2-	0.2+	1997 10 03	910	0.0	0.2-
1960 09 25	675	0.3-	0.2-	1997 10 02	910	0.2+	0.0	1997 10 03	910	0.1+	0.1+
1960 09 26	675	0.3+	0.1-	1997 10 03	910	0.0	0.1+				
1960 09 28	675	0.3-	0.1+	1997 10 03	910	0.1-	0.2-				

6274 P-L = 1997 TC₂₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23959398	ω	33.78307	-0.51719861	+0.85530443		
<i>a</i>	2.5673522	Ω	205.11454	-0.80050370	-0.49623487		
<i>e</i>	0.1829476	<i>i</i>	4.18625	-0.30281911	-0.14901441		
<i>P</i>	4.11	<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+	0.3-	1960 10 22	675	0.6+	0.2-	1997 10 10	691	0.0	0.0
1960 09 25	675	0.5-	0.0	1960 10 26	675	0.9-	1.4+	1997 10 10	691	0.2-	0.0
1960 09 26	675	0.1-	0.7-	1997 10 05	691	0.1+	0.0	1997 10 10	691	0.2-	0.1+
1960 09 28	675	0.4-	1.8+	1997 10 05	691	0.3+	0.1-				
1960 10 17	675	0.7+	1.9-	1997 10 05	691	0.1+	0.1-				

3078 T-1 = 1997 SD₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28521778	ω	229.24676	+0.28699357	-0.95749839		
<i>a</i>	2.2856952	Ω	204.12133	+0.89877854	+0.27956354		
<i>e</i>	0.2418288	<i>i</i>	4.04621	+0.33140884	+0.07100043		
<i>P</i>	3.46	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	1.6+	0.3+	1997 09 23	557	0.1-	0.6-	1997 10 05	557	0.8+	0.1-
1971 03 25	675	2.5+	1.0-	1997 09 23	557	0.4-	0.6-	1997 10 05	557	0.8+	0.0
1971 03 26	675	1.0-	0.1+	1997 09 25	557	0.1-	0.4-	1997 10 05	557	0.9+	0.0
1971 03 26	675	0.7-	0.4-	1997 09 25	557	0.1+	0.5-	1997 10 05	557	0.9+	0.0
1971 03 27	675	0.7-	0.0	1997 09 27	557	0.2+	0.4-	1997 10 05	557	0.9+	0.0
1971 04 02	675	(4.6+	3.3-)	1997 09 27	557	0.3+	0.4-	1997 10 06	557	0.7+	0.2+
1971 04 16	675	1.3-	0.9-	1997 10 04	691	1.1-	0.1+	1997 10 06	557	0.7+	0.2+
1971 04 16	675	0.5-	0.0	1997 10 04	691	1.2-	0.2+	1997 10 10	691	1.0-	0.5+
1971 05 13	675	0.1+	0.6+	1997 10 04	691	1.2-	0.3+	1997 10 10	691	1.1-	0.5+
1971 05 14	675	0.7-	0.4+	1997 10 05	557	0.8+	0.0	1997 10 10	691	1.1-	0.4+
1997 09 23	557	0.2-	0.6-	1997 10 05	557	0.7+	0.0				

4370 T-1 = 1996 GS₈Id. G. V. Williams (*MPC* 27322)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.31600600	ω	258.66548	+0.99789456	-0.04482983		
<i>a</i>	2.1347114	Ω	103.89118	+0.05950524	+0.92029286		
<i>e</i>	0.0694412	<i>i</i>	2.76740	-0.02579885	+0.38865325		
<i>P</i>	3.12	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	0.1+	0.9+	1971 05 16	675	0.8+	1.6+	1996 04 15	691	0.0	0.2-
1971 03 26	675	0.2+	0.4-	1996 04 13	691	0.1-	0.6-	1996 04 18	691	0.0	0.4-
1971 03 26	675	1.6-	0.2-	1996 04 13	691	0.2-	0.9-	1996 04 18	691	0.1-	0.6-
1971 03 27	675	0.1+	0.7+	1996 04 13	691	0.2+	0.5-	1996 04 18	691	0.2-	0.2-

1971 04 02	675	1.3-	0.2-	1996 04 14	691	0.3-	0.2-	1997 10 08	385	0.7+	0.6-
1971 04 16	675	0.5+	0.4-	1996 04 14	691	0.3-	0.0	1997 10 08	385	0.4-	0.1-
1971 04 16	675	1.3+	0.9+	1996 04 14	691	0.2-	0.1-	1997 10 10	385	0.3-	0.7-
1971 05 13	675	0.0	0.2-	1996 04 15	691	0.1-	0.2+	1997 10 10	385	0.3+	0.5+
1971 05 14	675	1.4+	0.4+	1996 04 15	691	0.0	0.1+				

1314 T-2 = 1993 SJ₁₄ = 1997 RG₁₀
Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	83.97628		(2000.0)	P	Q		
<i>n</i>	0.24640155	ω	279.69231	+0.27323932	+0.96193689		
<i>a</i>	2.5198446	Ω	6.16964	-0.86651643	+0.24802865		
<i>e</i>	0.1337522	<i>i</i>	2.24245	-0.41771947	+0.11471356		
<i>P</i>	4.00	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1973 09 19	675	0.3-	0.0	1993 09 15	809	0.7+	1.6+	1997 09 13	327	0.4-	0.1-
1973 09 19	675	0.4-	0.4-	1993 09 15	809	0.5-	1.6+	1997 09 29	327	0.1-	0.7+
1973 09 24	675	0.5+	0.5+	1993 09 15	809	1.5-	1.0+	1997 09 29	327	0.3+	0.5+
1973 09 24	675	0.5+	0.6-	1993 09 16	809	(2.6+	1.6-)	1997 09 29	327	0.1+	0.8+
1973 09 25	675	1.8+	0.5-	1993 09 16	809	1.9+	0.3-	1997 09 30	327	0.4+	0.3-
1973 09 25	675	1.8+	0.9-	1993 09 16	809	1.2+	1.2-	1997 09 30	327	0.5+	0.4+
1973 09 29	675	0.5+	0.2+	1993 09 17	809	0.1+	0.4+	1997 09 30	327	1.0-	1.6+
1973 09 29	675	0.9+	0.1+	1993 09 17	809	1.4-	0.5-	1997 10 09	327	0.5-	0.5+
1973 09 30	675	0.2-	0.2+	1993 09 17	809	1.8-	0.5-	1997 10 09	327	0.3-	0.2+
1973 09 30	675	0.7-	0.1-	1993 09 23	809	1.3+	0.8-	1997 10 09	327	0.2-	0.1-
1973 10 04	675	0.0	0.5-	1993 09 23	809	0.3+	0.4-	1997 10 10	327	0.9+	0.9+
1973 10 04	675	1.3-	1.3-	1993 09 23	809	0.5+	0.9-	1997 10 10	327	0.0	0.3-
1973 10 05	675	1.0-	0.7-	1997 09 13	327	1.0-	0.8-	1997 10 10	327	0.2-	0.1-
1973 10 05	675	0.4-	0.3+	1997 09 13	327	0.7-	0.3-				

2090 T-2 = 1997 SM₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	24.36883		(2000.0)	P	Q		
<i>n</i>	0.28667980	ω	357.44673	+0.99546678	+0.09503158		
<i>a</i>	2.2779175	Ω	357.09168	-0.08585868	+0.88044687		
<i>e</i>	0.1642195	<i>i</i>	4.36133	-0.04091670	+0.46452374		
<i>P</i>	3.44	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	0.5-	1.7-	1973 10 04	675	1.6+	1.7-	1997 09 30	691	0.2-	0.5+
1973 09 19	675	0.5-	0.2-	1973 10 04	675	(2.5+	0.2-)	1997 09 30	691	0.2-	0.5+
1973 09 20	675	(3.9-	2.2-)	1973 10 05	675	0.7+	1.0-	1997 10 07	691	0.7-	0.6+
1973 09 24	675	0.3-	0.4-	1973 10 05	675	(0.8-	3.0-)	1997 10 07	691	0.2-	0.7+
1973 09 24	675	0.7+	0.5-	1997 08 11	327	1.7+	0.5-	1997 10 07	691	0.3-	0.8+
1973 09 25	675	(2.8-	1.0-)	1997 08 11	327	0.6+	0.4-	1997 10 08	691	1.2-	0.8+
1973 09 25	675	1.7-	0.0	1997 08 11	327	1.2+	1.1-	1997 10 08	691	0.5-	0.5+
1973 09 29	675	1.2+	0.2+	1997 09 27	691	0.2+	0.6+	1997 10 08	691	0.6-	0.7+
1973 09 29	675	1.0+	0.5-	1997 09 27	691	0.1-	0.4+	1997 10 09	691	0.8-	0.5+
1973 09 30	675	1.3+	0.5-	1997 09 27	691	0.4-	0.5+	1997 10 09	691	0.7-	0.8+
1973 09 30	675	0.2+	0.6-	1997 09 30	691	0.6-	0.6+	1997 10 09	691	0.9-	0.7+

4197 T-2 = 1997 ST₃₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	0.09682		(2000.0)	P	Q		
<i>n</i>	0.28800564	ω	344.25881	+0.73444065	-0.67712105		
<i>a</i>	2.2709211	Ω	58.45291	+0.62833446	+0.65286679		
<i>e</i>	0.1419228	<i>i</i>	3.08539	+0.25650093	+0.33951737		
<i>P</i>	3.42	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.2+	1.5-	1973 09 29	675	0.2-	0.0	1973 10 05	675	0.1+	1.0+
1973 09 19	675	0.1+	1.0-	1973 09 29	675	0.4-	0.7-	1997 09 23	327	0.3-	0.3+
1973 09 20	675	0.6+	0.0	1973 09 30	675	0.6+	1.2+	1997 09 23	327	0.2-	0.5+
1973 09 24	675	0.5+	0.8+	1973 09 30	675	0.2+	0.1+	1997 09 23	327	0.2-	0.8+
1973 09 24	675	0.6+	0.2-	1973 10 04	675	0.3+	0.2+	1997 10 04	327	0.2+	0.7-

1973 09 25	675	1.4-	0.7+	1973 10 04	675	0.6-	0.8-	1997 10 04	327	0.4+	0.7-
1973 09 25	675	0.0	0.0	1973 10 05	675	0.9-	0.4+	1997 10 04	327	0.3+	0.6-

5192 T-2 = 1997 SQ₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
<i>M</i>	298.64416		(2000.0)	P	Q		
<i>n</i>	0.36881784	ω	112.90025	-0.22410548	-0.97276593		
<i>a</i>	1.9257272	Ω	349.51476	+0.73166853	-0.12782176		
<i>e</i>	0.0802917	<i>i</i>	18.98007	+0.64376851	-0.19335989		
<i>P</i>	2.67	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1973 09 24	675	1.3-	1.1+	1973 09 30	675	0.3-	0.6+	1997 09 27	696	0.2+	0.1+
1973 09 24	675	0.7-	0.6-	1973 10 04	675	(2.8+	1.0+)	1997 09 28	046	0.4-	0.1+
1973 09 25	675	0.8+	0.6-	1973 10 05	675	1.2+	0.1+	1997 09 28	046	0.1-	0.1-
1973 09 25	675	0.5+	1.5-	1973 10 05	675	0.9+	0.4-	1997 09 28	046	0.0	0.1-
1973 09 29	675	0.2-	0.7+	1997 09 27	696	0.8+	0.1-	1997 09 28	046	0.3-	0.0
1973 09 29	675	(2.2-	0.8+)	1997 09 27	696	0.2+	0.1+	1997 09 28	046	0.3-	0.2-
1973 09 30	675	1.2-	0.8+	1997 09 27	696	0.1+	0.1+				

2316 T-3 = 1997 TF₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	20.59209		(2000.0)	P	Q		
<i>n</i>	0.29608352	ω	6.25479	+0.92334079	-0.38211982		
<i>a</i>	2.2294268	Ω	16.36703	+0.34623320	+0.78600755		
<i>e</i>	0.2036945	<i>i</i>	7.70195	+0.16602517	+0.48598002		
<i>P</i>	3.33	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	1.0-	0.1+	1977 10 16	675	1.1+	3.1-	1977 10 22	675	0.6+	0.2+
1977 10 11	675	1.1+	0.9+	1977 10 16	675	0.1-	0.5-	1977 10 22	675	1.4-	1.9+
1977 10 11	675	2.0-	0.5+	1977 10 17	675	0.3-	0.8-	1977 10 22	675	0.8+	0.7-
1977 10 11	675	0.4+	0.1-	1977 10 17	675	0.4+	0.4-	1997 10 03	620	1.0-	0.0
1977 10 11	675	2.1-	1.9+	1977 10 17	675	0.0	0.3-	1997 10 03	620	0.1-	0.5+
1977 10 12	675	1.1+	0.3-	1977 10 17	675	0.1+	1.0-	1997 10 04	620	0.9+	0.4-
1977 10 12	675	0.1-	0.6-	1977 10 21	675	1.7-	1.6+	1997 10 07	620	0.8+	0.8+
1977 10 12	675	0.1-	0.5-	1977 10 21	675	1.6+	0.6-	1997 10 07	620	0.9+	0.9+
1977 10 12	675	0.0	0.0	1977 10 21	675	1.9-	1.8+	1997 10 07	620	2.8-	0.7+
1977 10 16	675	1.5+	2.5-	1977 10 21	675	2.4+	0.2-				
1977 10 16	675	0.2+	0.1+	1977 10 22	675	0.3+	0.4+				

2343 T-3 = 1997 TR₂₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	2.29714		(2000.0)	P	Q		
<i>n</i>	0.19567995	ω	37.79909	+0.93316390	-0.35939367		
<i>a</i>	2.9383611	Ω	343.26039	+0.32410921	+0.84901269		
<i>e</i>	0.1063843	<i>i</i>	1.27903	+0.15542962	+0.38731593		
<i>P</i>	5.04	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 07	675	0.1+	0.5-	1977 10 16	675	(2.1+	2.7-)	1977 10 21	675	(3.7+	0.8-)
1977 10 11	675	1.2+	0.4+	1977 10 16	675	0.4-	0.6+	1977 10 21	675	(2.8+	1.9-)
1977 10 11	675	(2.9-	2.5+)	1977 10 16	675	(1.8+	2.8-)	1977 10 22	675	0.6+	0.7-
1977 10 11	675	0.4-	0.3-	1977 10 16	675	0.4-	0.8-	1997 10 05	691	0.2-	0.0
1977 10 11	675	1.4-	1.2+	1977 10 17	675	0.8+	0.2-	1997 10 05	691	0.1-	0.2-
1977 10 12	675	0.6+	0.3+	1977 10 17	675	0.1-	1.1+	1997 10 05	691	0.4+	0.1+
1977 10 12	675	1.2+	0.6+	1977 10 17	675	0.3-	0.6-	1997 10 10	691	0.0	0.0
1977 10 12	675	0.4-	0.7-	1977 10 17	675	0.2-	1.0-	1997 10 10	691	0.1-	0.1+
1977 10 12	675	0.3-	0.4-	1977 10 21	675	0.7-	1.0+	1997 10 10	691	0.0	0.1+

3152 T-3 = 1982 UP₄ = 1997 TE₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	86.18751			(2000.0)		P			Q		
<i>n</i>	0.19802614			ω	250.30078	+0.51831407			+0.85432990		
<i>a</i>	2.9151061			Ω	50.97822	−0.76497476			+0.48321868		
<i>e</i>	0.1013544			<i>i</i>	2.82962	−0.38231419			+0.19136387		
<i>P</i>	4.98			<i>H</i>	13.2	<i>G</i>	0.15		<i>U</i>	5	
Residuals in seconds of arc											
1977 10 07	675	1.2+	0.7−	1977 10 16	675	0.6+	0.1+	1977 10 22	675	0.1+	1.9−
1977 10 11	675	1.1−	0.3+	1977 10 17	675	0.2−	0.0	1982 10 20	033	0.4−	0.9+
1977 10 11	675	1.4−	0.5+	1977 10 17	675	0.4−	0.7+	1997 10 08	376	0.3−	0.5+
1977 10 12	675	0.5+	0.7−	1977 10 21	675	1.8−	1.9+	1997 10 08	376	0.4−	0.2+
1977 10 12	675	1.1+	0.1−	1977 10 21	675	0.1+	0.9+	1997 10 10	376	0.9+	0.6+
1977 10 16	675	0.7+	0.4+	1977 10 22	675	0.9+	2.3−	1997 10 10	376	0.1−	1.5−

4165 T-3 = 1997 SJ₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	74.92122	(2000.0)		P			Q				
<i>n</i>	0.29458056	ω	235.42007	+0.40812725			+0.90490787				
<i>a</i>	2.2370035	Ω	59.10892	−0.78475104			+0.41531419				
<i>e</i>	0.1808545	<i>i</i>	8.08710	−0.46647396			+0.09303694				
<i>P</i>	3.35	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>			6		
Residuals in seconds of arc											
1977 10 07	675	0.2+	0.2−	1977 10 16	675	0.7−	1.3+	1977 10 22	675	1.8+	0.3−
1977 10 11	675	0.1−	1.7−	1977 10 16	675	0.6+	1.6+	1997 09 21	118	0.1−	0.2+
1977 10 11	675	0.5+	2.0+	1977 10 16	675	1.1−	0.2−	1997 09 21	118	0.3+	0.3+
1977 10 11	675	1.3+	1.1−	1977 10 16	675	1.0−	1.1+	1997 09 21	118	0.1+	0.3+
1977 10 11	675	(0.4−	3.2+)	1977 10 17	675	0.1+	1.3−	1997 09 24	118	0.2+	0.4−
1977 10 12	675	0.4+	0.7−	1977 10 17	675	0.7−	0.8−	1997 09 24	118	0.2−	0.2−
1977 10 12	675	0.0	1.1+	1977 10 21	675	1.3+	0.2+	1997 09 24	118	0.3−	0.2−
1977 10 12	675	0.2+	1.6−	1977 10 21	675	1.2−	0.4−				
1977 10 12	675	1.5−	1.0+	1977 10 22	675	(3.1+	1.7+)				

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
(39)	6.1	0.15	19971218	73.94000	208.18918	157.25097	10.37020	0.1116924	2.7689379	3843	90 1856-1996	0.52	M-v	0	Goffin	30647	(39)
(89)	6.60	0.15	19971218	51.43258	44.49524	311.71775	16.14119	0.1818719	2.5504438	722	59 1866-1995	0.54	M-v	0	Goffin	29939	(89)
(147)	8.27	0.15	19971218	311.73158	114.57585	249.27710	1.92886	0.0369871	3.1399171	238	61 1875-1997	0.56	M-v	0	Goffin	28083	(147)
(205)	9.23	0.15	19971218	191.20032	176.48492	212.12973	10.69835	0.0356914	2.7765633	95	38 1879-1995	0.56	M-v	0	Goffin	30468	(205)
(226)	9.7	0.15	19971218	315.64536	152.98212	135.34556	15.92088	0.2017341	2.7131596	116	37 1882-1997	0.57	M-v	1	Goffin	25728	(226)
(250)	7.58	0.15	19971218	300.29482	74.12511	24.14336	12.84426	0.1238198	3.1494794	240	51 1885-1996	0.56	M-v	0	Goffin	27725	(250)
(269)	9.5	0.15	19971218	75.15773	120.30759	156.84609	5.47813	0.2146215	2.6154982	134	38 1887-1994	0.56	M-v	0	Goffin	24893	(269)
(276)	8.56	0.15	19971218	59.74773	270.76063	211.43171	21.65130	0.0726917	3.1140511	203	43 1888-1997	0.56	M-v	0	Goffin	28610	(276)
(356)	8.22	0.15	19971218	4.33297	78.94124	354.92516	8.22729	0.2382059	2.7569068	302	48 1893-1996	0.56	M-v	0	Goffin	26187	(356)
(358)	9.1	0.15	19971218	249.23418	251.41324	172.55472	3.54699	0.1514739	2.8783853	210	45 1893-1996	0.56	M-v	0	Goffin	22429	(358)
(450)	10.28	0.15	19971218	284.21003	357.69885	14.79647	10.16685	0.1056753	3.0131901	96	21 1899-1996	0.56	M-v	0	Goffin	30685	(450)
(569)	10.12	0.15	19971218	25.19600	142.10023	302.06368	1.29562	0.1823089	2.6573002	163	38 1905-1996	0.56	M-v	0	Goffin	26915	(569)
(578)	9.2	0.15	19971218	172.02413	260.27999	29.91906	6.15276	0.1953175	2.7489769	147	39 1905-1994	0.56	M-v	0	Goffin	26915	(578)
(1116)	9.7	0.15	19971218	7.39217	83.36918	356.66021	16.52282	0.2275690	2.9248869	54	22 1908-1992	0.56	M-v	1	Goffin	26921	(1116)
(1127)	10.95	0.15	19971218	225.10630	281.37941	128.97874	14.76494	0.2633361	2.5940127	54	21 1929-1997	0.56	M-v	1	Goffin	30075	(1127)
(1498)	11.7	0.15	19971218	303.38106	97.30316	265.49818	12.66430	0.2461748	3.0906461	29	9 1938-1997	1.11	M-v	2	Williams	26578	(1498)
(1983)	12.6	0.15	19971218	30.49136	344.96885	23.81436	9.39752	0.0981590	2.6209769	40	9 1950-1997	1.08	M-v	1	Williams	23513	(1983)
(2189)	12.8	0.15	19971218	336.30085	216.98352	128.95818	13.92261	0.2247458	2.4036523	50	12 1955-1997	0.78	M-v	1	Sicoli	30686	(2189)
(2220)	10.9	0.15	19971218	8.10109	276.91085	95.11428	2.58683	0.1672532	3.1483734	57	11 1975-1997	1.03	M-v	1	Williams	20016	(2220)
(3028)	10.7	0.15	19971218	92.57425	355.24197	189.94543	9.50381	0.0241991	3.0188896	57	11 1931-1997	0.97	M-v	1	Sicoli	30687	(3028)
(3202)	10.7	0.15	19971218	104.06699	271.47415	205.57802	11.04319	0.1014279	3.9473119	73	11 1908-1997	0.98	M-v	1	Sicoli	25215	(3202)
(3271)	16.7	0.15	19971218	14.99168	158.70294	159.03494	25.00898	0.3953424	2.1022010	43	6 1982-1997	0.70	M-v	2	Sicoli	29943	(3271)
(3568)	12.1	0.15	19971218	33.48306	280.44632	58.49546	19.46290	0.2471358	3.1335232	32	7 1936-1997	0.88	M-v	1	Williams	30688	(3568)
(3747)	11.1	0.15	19971218	207.85959	101.20491	38.63961	24.34298	0.1132258	3.1976021	21	5 1930-1997	0.97	M-v	3	Williams	21977	(3747)
(4512)	11.9	0.15	19971218	285.57092	357.36175	119.75534	10.32086	0.2066441	2.7659183	36	8 1939-1997	0.76	M-v	1	Forti	29619	(4512)
(5249)	12.1	0.15	19971218	233.83248	58.61961	123.02012	2.16627	0.1410973	3.1694153	36	8 1954-1997	0.85	M-v	1	Williams	26423	(5249)
(7571)	13.0	0.15	19971218	100.03819	157.54109	117.35908	2.18090	0.1511236	3.1014553	22	5 1981-1997	0.64	M-v	1	Marsden	27692	(7571)
1942 TB	13.0	0.15	19971218	212.56421	221.15956	151.10275	9.38792	0.2752265	2.5450392	12	3 1942-1997	0.45	M-v	3	Williams	30647	1942 TB
1958 TL ₁	12.5	0.15	19971218	7.71521	161.92583	203.76008	17.69073	0.1896004	3.1575912	39	2 1996-1997	0.62	M-v	4	Marsden	30684	1958 TL ₁
1973 SO ₁	11.0	0.15	19971218	307.00744	272.11740	176.67814	8.46821	0.1288698	5.2285915	43	5 1973-1997	0.83	M-v	1	Williams	29652	1973 SO ₁
1973 SP ₁	11.0	0.15	19971218	277.93405	310.37326	156.07204	4.14914	0.0577441	5.2218436	35	5 1973-1997	0.67	M-v	1	Williams	30089	1973 SP ₁
1974 FD	12.5	0.15	19971218	128.74025	273.78479	356.15476	10.22350	0.0752163	2.9956614	16	5 1950-1997	0.68	M-v	1	Marsden	30445	1974 FD
1975 UF	13.5	0.15	19971218	344.71996	265.27827	115.45310	2.23464	0.1929686	3.1688511	28	4 1975-1997	0.77	M-v	2	Marsden	30684	1975 UF
1977 DR ₂	14.5	0.15	19971218	240.94374	251.86310	344.72693	6.73493	0.0848637	2.3230494	25	4 1970-1996	0.92	M-v	2	Williams	30648	1977 DR ₂
1977 DT ₂	13.5	0.15	19971218	99.21518	211.17337	56.94581	1.45864	0.0359866	2.7392198	28	3 1977-1997	0.53	M-v	4	Williams	30684	1977 DT ₂

1977 EA ₆	14.5	0.15	19971218	317.92935	111.47343	307.58578	4.10735	0.1043905	2.3980918	18	5	1977–1997	0.73	M-v	2	Marsden	22823	1977 EA ₆
1977 QT ₂	14.0	0.15	19971218	358.29192	90.77336	307.17359	2.20469	0.0967630	2.2254792	19	4	1977–1997	0.46	M-v	2	Williams	28313	1977 QT ₂
1977 QQ ₅	15.5	0.15	19971218	25.55559	247.71704	134.51315	25.19583	0.4659759	2.2260999	106	4	1977–1997	0.52	M-v	1	Williams	30684	1977 QQ ₅
1977 RD ₂	12.5	0.15	19971218	344.38035	337.56884	50.40561	3.20362	0.1870737	2.9451786	34	8	1977–1997	0.77	M-v	1	Marsden	30684	1977 RD ₂
1978 QY ₁	14.0	0.15	19971218	337.55238	223.72048	168.49298	4.67373	0.1008141	2.4460535	28	5	1954–1997	0.86	M-v	1	Marsden	30684	1978 QY ₁
1978 RE ₃	15.0	0.15	19971218	349.03666	81.80688	302.36434	1.56012	0.1874899	2.4425438	24	4	1978–1997	0.56	M-v	1	Williams	22967	1978 RE ₃
1978 SE ₃	14.0	0.15	19971218	65.37906	97.25954	210.22330	3.03151	0.1129978	2.4330350	23	7	1978–1997	0.82	M-v	1	Marsden	28610	1978 SE ₃
1978 SR ₄	15.0	0.15	19971218	42.03235	145.07584	214.05469	1.02826	0.1494327	2.1523789	23	5	1978–1997	0.79	M-v	2	Williams	28610	1978 SR ₄
1978 SF ₅	15.5	0.15	19971218	241.03965	307.97813	32.36826	6.47501	0.1974369	2.2736120	5	1	62 days	0.29	M-v	6	Williams		1978 SF ₅
1978 SH ₇	14.0	0.15	19971218	190.76819	29.01288	347.71923	5.66925	0.2399930	2.6168860	5	1	63 days	0.42	M-v	6	Williams		1978 SH ₇
1978 SO ₇	13.5	0.15	19971218	8.82620	32.71043	334.20694	2.69948	0.1963624	2.4488121	6	1	63 days	0.65	M-v	5	Williams		1978 SO ₇
1978 SW ₇	13.5	0.15	19971218	352.34746	47.67963	333.00977	4.55164	0.1397476	2.4565196	7	1	63 days	0.41	M-v	5	Williams		1978 SW ₇
1978 SA ₈	14.0	0.15	19971218	32.61175	163.53676	211.98774	2.61459	0.1895326	2.4234089	22	3	1978–1997	0.60	M-v	3	Williams	28610	1978 SA ₈
1978 TD ₂	13.5	0.15	19971218	37.63501	356.66386	2.96728	1.64687	0.0795761	2.8172034	22	4	1978–1997	0.66	M-v	1	Williams	28882	1978 TD ₂
1978 VL ₁₀	13.5	0.15	19971218	339.37880	242.77651	161.38805	1.96313	0.1035262	2.8886246	21	5	1953–1997	0.84	M-v	1	Williams	30684	1978 VL ₁₀
1979 MK	13.0	0.15	19971218	344.46515	170.33965	163.86146	6.35659	0.1329997	2.3719598	27	3	1979–1997	0.56	M-v	4	Williams	30649	1979 MK
1979 MQ ₁	15.0	0.15	19971218	91.28049	344.93933	281.87095	12.33757	0.1378754	2.6826521	7	1	60 days	0.56	M-v	6	Williams		1979 MQ ₁
1979 MV ₁	15.0	0.15	19971218	79.67546	136.39349	133.61021	6.75111	0.0803361	2.3359645	18	3	1979–1997	0.77	M-v	4	Williams	30649	1979 MV ₁
1979 MW ₁	14.0	0.15	19971218	47.06734	125.62210	245.14827	4.64063	0.1785128	2.6442338	10	1	61 days	0.85	M-v	6	Williams		1979 MW ₁
1979 MD ₂	14.0	0.15	19971218	340.10534	248.34214	186.20708	3.38218	0.1802461	2.2984570	18	6	1954–1997	0.80	M-v	2	Williams	29132	1979 MD ₂
1979 ME ₂	16.5	0.15	19971218	170.47693	218.44741	127.14817	7.93087	0.2972517	2.5422811	8	1	61 days	0.65	M-v	6	Williams		1979 ME ₂
1979 ML ₂	13.0	0.15	19971218	177.83257	146.88147	130.64551	12.87974	0.2004561	3.0525111	10	1	61 days	0.58	M-v	5	Williams		1979 ML ₂
1979 MM ₂	16.0	0.15	19971218	327.07912	43.72581	263.00365	5.63986	0.1083584	2.4068510	8	1	60 days	0.81	M-v	6	Williams		1979 MM ₂
1979 MO ₂	16.5	0.15	19971218	262.81697	66.51631	226.44450	4.03942	0.1823892	2.1802617	7	1	60 days	0.38	M-v	5	Williams		1979 MO ₂
1979 MQ ₂	15.5	0.15	19971218	339.33481	74.33486	162.42430	5.05774	0.1561655	2.4450760	9	1	61 days	0.86	M-v	6	Williams		1979 MQ ₂
1979 MS ₂	16.5	0.15	19971218	88.28555	35.78709	216.56754	2.32959	0.1399655	2.3383611	17	3	1979–1997	0.57	M-v	4	Williams	24383	1979 MS ₂
1979 MT ₂	14.5	0.15	19971218	221.89798	296.26320	285.16729	9.94333	0.1815324	3.0478460	5	1	60 days	0.58	M-v	6	Williams		1979 MT ₂
1979 MC ₃	16.0	0.15	19971218	236.11077	88.17785	172.94652	2.11602	0.1201237	2.5301871	9	1	61 days	1.04	M-v	6	Williams		1979 MC ₃
1979 MF ₃	15.5	0.15	19971218	65.94879	108.78145	195.73157	2.49352	0.1483652	2.6787257	8	1	60 days	0.81	M-v	6	Williams		1979 MF ₃
1979 MG ₃	13.5	0.15	19971218	146.99829	45.00085	271.15765	8.47604	0.0848407	3.0571124	11	1	61 days	1.08	M-v	6	Williams		1979 MG ₃
1979 MM ₃	13.5	0.15	19971218	220.50124	254.58428	120.06880	17.70849	0.1157408	2.8660020	8	1	61 days	0.37	M-v	5	Williams		1979 MM ₃
1979 MT ₃	17.5	0.15	19971218	291.95298	72.63954	263.94557	3.24428	0.2084836	2.1396346	7	1	61 days	0.88	M-v	6	Williams		1979 MT ₃
1979 MV ₃	16.5	0.15	19971218	253.82903	159.41685	185.34396	3.93837	0.2632338	2.4573853	9	1	61 days	0.53	M-v	5	Williams		1979 MV ₃
1979 MX ₃	17.0	0.15	19971218	138.14814	92.31162	250.06632	3.05605	0.2190152	2.2483532	8	1	60 days	0.65	M-v	6	Williams		1979 MX ₃
1979 MY ₃	15.0	0.15	19971218	135.38506	232.17567	123.60665	6.53021	0.1659877	2.5611317	8	1	61 days	0.73	M-v	6	Williams		1979 MY ₃
1979 ME ₄	14.0	0.15	19971218	23.17586	270.71030	120.37365	15.19235	0.2088490	2.6554860	8	1	61 days	0.60	M-v	6	Williams		1979 ME ₄
1979 MJ ₄	14.5	0.15	19971218	140.49501	194.57230	124.23503	12.87789	0.1878606	2.5855905	9	1	61 days	0.76	M-v	6	Williams		1979 MJ ₄
1979 MK ₄	16.5	0.15	19971218	133.34631	155.17113	136.08719	4.14005	0.1359559	2.2778442	9	1	61 days	0.93	M-v	6	Williams		1979 MK ₄
1979 MM ₄	15.5	0.15	19971218	269.73837	55.26105	202.75784	2.97772	0.1672460	2.1938240	10	1	61 days	0.64	M-v	5	Williams		1979 MM ₄
1979 MQ ₄	13.0	0.15	19971218	354.42249	202.83260	260.26456	8.90417	0.0354505	3.0636441	10	1	60 days	0.80	M-v	5	Williams		1979 MQ ₄
1979 MU ₄	15.5	0.15	19971218	351.08253	106.99418	150.51654	2.25923	0.1482678	2.4195339	8	1	61 days	0.66	M-v	6	Williams		1979 MU ₄
1979 MV ₄	15.5	0.15	19971218	154.84837	324.25558	258.76456	3.43316	0.1587331	2.3022963	8	1	61 days	0.64	M-v	6	Williams		1979 MV ₄
1979 MZ ₄	15.0	0.15	19971218	158.94942	197.59785	123.49113	8.61850	0.1976556	2.5651925	9	1	61 days	0.79	M-v	6	Williams		1979 MZ ₄
1979 MB ₅	15.0	0.15	19971218	101.13425	125.69844	202.24000	3.47302	0.2000537	2.6227389	9	1	61 days	0.50	M-v	5	Williams		1979 MB ₅
1979 MC ₅	16.0	0.15	19971218	13.49189	203.03984	177.18034	4.54407	0.2481259	2.3264350	9	1	60 days	0.82	M-v	6	Williams		1979 MC ₅
1979 MD ₅	14.5	0.15	19971218	36.62467	137.32718	117.05636	10.13314	0.1102944	2.7675379	8	1	61 days	0.75	M-v	6	Williams		1979 MD ₅
1979 MF ₅	14.5	0.15	19971218	252.18806	65.07001	282.43930	5.54620	0.0628325	2.8517154	7	1	60 days	0.80	M-v	6	Williams		1979 MF ₅
1979 MR ₅	15.5	0.15	19971218	33.39019	80.22338	267.37370	1.94722	0.1365973	2.3236613	24	4	1978–1997	0.85	M-v	4	Williams	30684	1979 MR ₅
1979 MS ₅	15.5	0.15	19971218	56.00550	109.21263	119.05047	6.48342	0.0964799	2.3885013	8	1	61 days	0.70	M-v	6	Williams		1979 MS ₅
1979 MX ₅	14.5	0.15	19971218	209.55931	38.15201	165.07765	2.45997	0.1019111	2.2793716	28	5	1979–1997	0.73	M-v	2	Williams	25647	1979 MX ₅
1979 MY ₅	13.0	0.15	19971218	79.00594	347.43705	278.07430	11.77882	0.1100830	2.7043239	22	4	1979–1997	0.83	M-v	3	Marsden	30287	1979 MY ₅
1979 MZ ₅	15.5	0.15	19971218	71.12187	14.74458	248.94289	2.92347	0.1632759	2.7120326	5	1	60 days	0.54	M-v	6	Williams		1979 MZ ₅
1979 MM ₆	14.5	0.15	19971218	194.96095	340.60497	233.52582	4.25463	0.1070410	3.1218194	13	3	1979–1997	0.63	M-v	5	Williams	26394	1979 MM ₆

1979 MQ ₆	15.0	0.15	19971218	246.89107	305.94103	272.87163	4.50718	0.1069120	2.2393088	8	1	60 days	1.10	M-v	6	Williams	1979 MQ ₆
1979 MY ₆	16.5	0.15	19971218	17.50568	140.37784	169.44910	2.76940	0.1697482	2.3622751	7	1	60 days	0.62	M-v	6	Williams	1979 MY ₆
1979 MA ₇	15.0	0.15	19971218	352.14742	54.48965	239.90887	3.37192	0.0312091	2.7802769	7	1	60 days	0.70	M-v	6	Williams	1979 MA ₇
1979 MG ₇	15.5	0.15	19971218	98.58068	106.91099	180.69063	2.75617	0.0803481	2.6561868	7	1	60 days	0.39	M-v	5	Williams	1979 MG ₇
1979 ML ₇	16.5	0.15	19971218	115.17278	157.92590	125.62905	3.23829	0.1592183	2.2956528	6	1	60 days	0.42	M-v	6	Williams	1979 ML ₇
1979 MM ₇	16.5	0.15	19971218	255.63376	100.82087	161.19703	3.46084	0.1877010	2.2006197	7	1	61 days	0.87	M-v	6	Williams	1979 MM ₇
1979 MN ₇	15.0	0.15	19971218	132.26889	247.22135	150.91818	6.55114	0.2285741	2.5304900	9	1	61 days	0.90	M-v	6	Williams	1979 MN ₇
1979 MS ₇	15.5	0.15	19971218	355.96477	76.07939	252.45870	4.46762	0.1352746	2.7434970	9	1	61 days	1.00	M-v	6	Williams	1979 MS ₇
1979 MU ₇	17.0	0.15	19971218	152.16990	66.46421	246.18128	4.51630	0.2353202	2.2533052	8	1	60 days	0.63	M-v	5	Williams	1979 MU ₇
1979 MX ₇	15.5	0.15	19971218	116.75450	82.47050	279.08594	7.53099	0.1796494	2.5778743	6	1	60 days	1.08	M-v	6	Williams	1979 MX ₇
1979 MY ₇	15.5	0.15	19971218	29.38845	343.24738	284.70851	7.94213	0.1149352	2.7623267	5	1	60 days	0.62	M-v	6	Williams	1979 MY ₇
1979 MZ ₇	17.0	0.15	19971218	77.52231	175.78592	160.36789	3.01755	0.1921142	2.2978609	6	1	60 days	0.49	M-v	6	Williams	1979 MZ ₇
1979 MC ₈	16.5	0.15	19971218	353.39616	54.00562	233.86075	1.69362	0.2216842	2.3961643	8	1	60 days	0.89	M-v	6	Williams	1979 MC ₈
1979 MG ₈	14.0	0.15	19971218	56.55403	294.25034	124.61427	15.04786	0.1860404	3.0621838	4	1	60 days	0.63	M-v	6	Williams	1979 MG ₈
1979 MJ ₈	15.5	0.15	19971218	69.72105	159.65575	231.90597	4.06848	0.2781238	2.6141615	7	1	60 days	0.83	M-v	6	Williams	1979 MJ ₈
1979 MO ₈	14.5	0.15	19971218	223.51609	7.95733	285.46035	9.36329	0.0699797	2.9680269	8	1	61 days	0.84	M-v	6	Williams	1979 MO ₈
1979 MQ ₈	15.0	0.15	19971218	196.73194	289.62239	132.52303	3.77654	0.1272583	2.4318088	6	1	60 days	0.94	M-v	6	Williams	1979 MQ ₈
1979 QC ₁	14.0	0.15	19971218	351.36538	60.45104	326.46231	11.68522	0.1734650	2.3469473	30	4	1954–1997	0.78	M-v	3	Marsden	30685 1979 QC ₁
1979 SU ₂	14.0	0.15	19971218	341.30608	154.16977	238.08160	5.39611	0.1320513	2.3690495	40	3	1979–1997	0.52	M-v	3	Marsden	30685 1979 SU ₂
1980 EB	14.0	0.15	19971218	190.37001	210.93132	2.70300	2.03841	0.0942031	2.4487565	20	5	1954–1997	0.69	M-v	2	Williams	27725 1980 EB
1980 FY	14.5	0.15	19971218	152.43257	277.16087	321.11883	1.89904	0.0388796	2.1606655	46	8	1950–1997	0.56	M-v	1	Williams	29132 1980 FY
1980 PB ₂	12.5	0.15	19971218	53.24526	113.76294	190.17790	10.51574	0.1018045	3.1828833	50	7	1955–1997	0.70	M-v	1	Marsden	30685 1980 PB ₂
1980 SM	13.5	0.15	19971218	8.82411	27.16156	340.51271	9.07512	0.1984366	2.6326424	35	4	1980–1997	0.73	M-v	3	Marsden	30685 1980 SM
1981 DN ₃	16.0	0.15	19971218	213.74043	72.69741	254.61709	5.21856	0.2192557	2.2559767	7	1	64 days	0.83	M-v	6	Williams	1981 DN ₃
1981 DP ₃	14.0	0.15	19971218	2.58157	65.67535	220.29038	10.55165	0.2006206	2.9978736	5	1	62 days	0.33	M-v	6	Williams	1981 DP ₃
1981 DS ₃	14.5	0.15	19971218	162.40285	143.14424	296.99314	9.85506	0.0778000	3.0208511	8	1	63 days	1.12	M-v	6	Williams	1981 DS ₃
1981 EG ₂	16.0	0.15	19971218	270.42697	244.58442	237.17352	9.51400	0.1982385	2.7628607	5	1	66 days	1.01	M-v	6	Williams	1981 EG ₂
1981 EH ₂	15.0	0.15	19971218	99.20534	264.41540	222.13466	10.06780	0.1333826	3.0359736	8	1	66 days	1.01	M-v	6	Williams	1981 EH ₂
1981 EL ₂	15.0	0.15	19971218	205.83311	97.38122	228.12461	10.78084	0.1621230	2.6192606	8	1	66 days	0.77	M-v	6	Williams	1981 EL ₂
1981 ET ₂	15.5	0.15	19971218	32.96720	252.29719	249.40800	8.72039	0.1889727	3.1337427	10	1	66 days	1.11	M-v	5	Williams	1981 ET ₂
1981 EB ₃	15.0	0.15	19971218	26.41175	292.15786	229.39527	8.60685	0.1740953	3.1207235	11	1	66 days	0.86	M-v	5	Williams	1981 EB ₃
1981 EC ₃	16.0	0.15	19971218	156.64407	40.90872	233.62497	7.73804	0.2433218	2.3585795	7	1	74 days	1.01	M-v	6	Williams	1981 EC ₃
1981 EB ₄	15.5	0.15	19971218	351.58268	259.45553	306.57699	8.45787	0.0998858	3.1244447	10	1	66 days	0.97	M-v	5	Williams	1981 EB ₄
1981 EU ₅	17.0	0.15	19971218	239.45768	252.69138	252.39700	6.03868	0.1328115	2.3677333	7	1	66 days	1.12	M-v	6	Williams	1981 EU ₅
1981 EY ₅	14.0	0.15	19971218	152.69189	61.15536	317.23939	11.73286	0.1801806	3.1466987	7	1	66 days	0.55	M-v	5	Williams	1981 EY ₅
1981 EB ₆	14.0	0.15	19971218	161.25471	59.17062	324.60051	12.16088	0.2120606	3.1111990	6	1	66 days	0.94	M-v	6	Williams	1981 EB ₆
1981 EC ₆	15.0	0.15	19971218	54.73192	16.66418	304.60024	8.90211	0.2285889	2.4040254	4	1	74 days	0.08	M-v	4	Williams	1981 EC ₆
1981 EG ₆	17.0	0.15	19971218	161.36077	194.30543	295.79798	6.53664	0.3011184	2.9157703	5	1	66 days	1.22	M-v	6	Williams	1981 EG ₆
1981 EK ₁₀	15.0	0.15	19971218	307.38843	158.94302	309.73404	3.03761	0.1440212	2.3317566	38	6	1981–1997	0.82	M-v	2	Williams	24580 1981 EK ₁₀
1981 EC ₁₂	16.5	0.15	19971218	210.50504	247.50064	263.83601	5.24782	0.0763873	2.3965697	21	3	1981–1997	0.89	M-v	4	Williams	30649 1981 EC ₁₂
1981 ED ₁₂	14.5	0.15	19971218	78.25642	337.78043	201.31515	11.40958	0.0804074	2.5080919	41	4	1981–1997	0.98	M-v	3	Marsden	30468 1981 ED ₁₂
1981 EF ₁₂	15.5	0.15	19971218	260.84652	327.15583	267.58398	5.09270	0.1273622	2.2873070	16	4	1979–1997	1.27	M-v	3	Williams	21966 1981 EF ₁₂
1981 EL ₁₃	14.5	0.15	19971218	252.73756	153.81250	201.87544	9.51485	0.1217598	3.0241111	18	3	1981–1997	0.92	M-v	4	Marsden	29940 1981 EL ₁₃
1981 EX ₁₄	15.5	0.15	19971218	131.00310	55.06427	206.76208	8.63312	0.1077799	2.8098239	17	3	1978–1997	0.95	M-v	4	Williams	22270 1981 EX ₁₄
1981 EF ₁₅	14.5	0.15	19971218	299.57345	321.37548	326.53353	9.01476	0.0572197	3.0782050	10	1	63 days	0.97	M-v	6	Williams	1981 EF ₁₅
1981 EE ₁₆	16.5	0.15	19971218	32.92223	301.58593	265.32690	3.30172	0.1838729	2.5389067	6	1	61 days	0.44	M-v	5	Williams	1981 EE ₁₆
1981 EX ₂₆	15.0	0.15	19971218	90.40829	79.05477	199.27106	2.98257	0.2506961	2.4227224	32	3	1981–1997	0.82	M-v	4	Marsden	28882 1981 EX ₂₆
1981 EQ ₂₈	13.5	0.15	19971218	346.27678	257.99641	157.54726	3.38817	0.1973960	2.7540249	32	5	1981–1997	0.80	M-v	1	Williams	29653 1981 EQ ₂₈
1981 EL ₃₀	15.5	0.15	19971218	336.60936	271.75814	306.80972	10.24982	0.1550634	3.1442098	6	1	61 days	0.74	M-v	6	Williams	1981 EL ₃₀
1981 EW ₃₀	15.0	0.15	19971218	300.99688	174.90888	171.18647	0.92454	0.1736341	2.1574453	23	3	1981–1997	0.83	M-v	5	Williams	29940 1981 EW ₃₀
1981 EX ₃₀	15.0	0.15	19971218	19.77166	224.15548	150.49287	2.93547	0.2174885	2.3599617	27	8	1977–1997	0.60	M-v	1	Williams	28314 1981 EX ₃₀
1981 EM ₃₁	16.0	0.15	19971218	64.55120	139.61870	162.64836	1.31134	0.1109072	2.4069213	23	4	1978–1997	0.81	M-v	4	Williams	22074 1981 EM ₃₁
1981 ET ₃₃	15.0	0.15	19971218	280.79218	358.36878	296.31140	3.07783	0.1732534	3.1149029	5	1	63 days	0.30	M-v	5	Williams	1981 ET ₃₃

1981 ER ₃₄	14.5	0.15	19971218	335.79994	309.61466	247.03335	8.13026	0.0389746	3.1644649	10	1	74 days	1.03	M-v	5	Williams		1981 ER ₃₄
1981 EH ₃₅	16.0	0.15	19971218	331.21143	113.26020	325.48945	3.21996	0.2232477	2.3273314	16	3	1981–1997	0.65	M-v	4	Williams	21967	1981 EH ₃₅
1981 EO ₃₆	17.0	0.15	19971218	79.74903	319.53968	313.16688	8.23055	0.2206436	2.4333921	5	1	74 days	0.54	M-v	5	Williams		1981 EO ₃₆
1981 ET ₃₇	16.5	0.15	19971218	260.35003	60.49908	219.33670	3.59468	0.2434564	2.2615993	8	1	62 days	0.82	M-v	6	Williams		1981 ET ₃₇
1981 EA ₃₈	16.5	0.15	19971218	12.24271	277.69357	323.44377	5.59447	0.1647013	3.0414488	6	1	63 days	0.79	M-v	6	Williams		1981 EA ₃₈
1981 EB ₃₈	15.5	0.15	19971218	191.40158	258.04718	328.41710	3.96109	0.0648157	2.7607302	9	1	63 days	0.83	M-v	6	Williams		1981 EB ₃₈
1981 EN ₃₈	15.5	0.15	19971218	299.63411	24.63700	197.97705	12.42805	0.0925055	3.2040633	9	1	61 days	1.03	M-v	6	Williams		1981 EN ₃₈
1981 EU ₄₂	14.5	0.15	19971218	213.56593	154.11834	206.54728	0.78240	0.1595064	3.0858892	4	1	60 days	0.46	M-v	7	Williams		1981 EU ₄₂
1981 EY ₄₂	16.5	0.15	19971218	137.06181	11.04595	212.20062	0.63084	0.1367659	2.4119328	20	4	1977–1997	0.92	M-v	2	Williams	21968	1981 EY ₄₂
1981 EO ₄₇	15.0	0.15	19971218	271.14462	137.48818	165.20420	4.38609	0.2407723	2.5898013	4	1	60 days	0.62	M-v	6	Williams		1981 EO ₄₇
1981 RF ₇	13.5	0.15	19971218	354.07523	28.00301	350.85059	9.00261	0.3269271	3.0703263	19	4	1954–1997	0.74	M-v	2	Williams	30685	1981 RF ₇
1981 TH ₃	14.5	0.15	19971218	26.93162	163.55437	171.49820	4.46704	0.2354324	2.1940295	12	2	1981–1997	0.75	M-v	5	Williams	30650	1981 TH ₃
1981 WL ₂	15.5	0.15	19971218	212.00245	339.57898	43.22670	26.90491	0.0928193	1.8254292	12	1	66 days	0.75	M-v	5	Williams		1981 WL ₂
1982 BS	13.0	0.15	19971218	352.47178	119.23110	296.38029	12.75415	0.1677234	2.5914917	18	5	1953–1997	0.84	M-v	2	Williams	22823	1982 BS
1982 UD ₂	12.5	0.15	19971218	33.24880	326.99406	42.87369	2.59979	0.1304163	2.9253949	73	8	1982–1997	0.89	M-v	1	Marsden	28612	1982 UD ₂
1983 WN	14.5	0.15	19971218	23.29346	110.80671	251.78585	9.32808	0.2490780	2.3308062	23	5	1951–1997	0.68	M-v	2	Williams	30685	1983 WN
1984 CP	14.0	0.15	19971218	184.58701	79.03594	125.48295	7.45136	0.1049610	2.4360040	44	6	1950–1997	0.66	M-v	2	Williams	29654	1984 CP
1985 CN ₁	14.0	0.15	19971218	242.79850	144.43704	13.08182	3.17841	0.1002949	2.2986567	70	6	1978–1997	0.57	M-v	1	Williams	29133	1985 CN ₁
1985 HH	14.0	0.15	19971218	140.24140	80.18221	157.47889	2.46681	0.1797082	2.3760733	26	4	1982–1997	0.68	M-v	2	Marsden	27305	1985 HH
1985 JK	14.0	0.15	19971218	171.06676	135.74985	108.73763	5.57284	0.1196600	2.3466627	34	7	1985–1997	0.80	M-v	1	Williams	30288	1985 JK
1985 QP	15.0	0.15	19971218	283.67276	0.74885	357.86055	3.14735	0.1772806	2.1855973	35	3	1971–1997	1.09	M-v	4	Williams	29655	1985 QP
1985 RQ	15.0	0.15	19971218	24.63693	329.64421	18.44828	6.38690	0.2965533	2.5220822	25	6	1973–1997	0.85	M-v	3	Williams	30685	1985 RQ
1985 RV ₄	13.0	0.15	19971218	69.11685	333.59944	8.84777	0.31043	0.1928548	3.1886593	37	7	1962–1997	0.76	M-v	2	Williams	30288	1985 RV ₄
1985 SM ₂	12.5	0.15	19971218	159.59199	303.96044	235.59650	11.10556	0.1065084	2.6100290	38	7	1981–1997	0.64	M-v	1	Marsden	27324	1985 SM ₂
1985 UY	12.0	0.15	19971218	321.21572	219.62109	177.92560	9.95214	0.0901706	3.4340849	20	4	1985–1997	0.83	M-v	3	Marsden	30685	1985 UY
1986 PN ₄	11.5	0.15	19971218	43.22063	13.25241	310.87202	15.48512	0.1947782	3.0692990	21	3	1981–1997	0.88	M-v	3	Williams	30651	1986 PN ₄
1986 RJ ₄	14.0	0.15	19971218	359.61841	66.18606	333.19751	25.58661	0.2267904	2.3550972	34	3	1977–1997	0.76	M-v	2	Marsden	30685	1986 RJ ₄
1986 TR ₃	13.5	0.15	19971218	67.15721	292.57374	8.70220	0.68797	0.1716545	3.1304541	38	8	1981–1997	0.87	M-v	1	Marsden	29655	1986 TR ₃
1986 XF ₅	15.0	0.15	19971218	17.29955	195.36650	183.95137	1.86721	0.1790492	2.4068919	34	6	1982–1997	0.71	M-v	1	Marsden	30686	1986 XF ₅
1987 RJ	14.0	0.15	19971218	34.17502	287.15792	74.02268	2.84577	0.1197358	2.2226324	36	6	1956–1997	0.94	M-v	2	Williams	25338	1987 RJ
1987 SG ₁₃	14.5	0.15	19971218	352.17668	28.08648	22.43785	4.72349	0.1138775	2.2210480	27	5	1954–1997	0.79	M-v	2	Williams	22078	1987 SG ₁₃
1987 SQ ₁₇	14.0	0.15	19971218	18.11085	0.73871	345.25925	5.40767	0.2047344	2.2576429	18	4	1943–1997	0.72	M-v	2	Williams	30651	1987 SQ ₁₇
1987 UA ₁	13.0	0.15	19971218	312.40356	122.72695	235.95267	11.36945	0.1414021	2.3618441	15	1	60 days	0.64	M-v	5	Williams		1987 UA ₁
1987 UT ₁	16.0	0.15	19971218	343.85108	42.09829	298.04124	6.03175	0.3159499	2.3019980	9	1	65 days	0.94	M-v	6	Williams		1987 UT ₁
1987 VR	13.0	0.15	19971218	296.67851	218.29579	212.52711	9.00193	0.0757021	3.0618825	44	3	1987–1997	0.55	M-v	4	Marsden	30686	1987 VR
1988 BJ	14.5	0.15	19971218	192.87274	234.27805	309.92520	22.82612	0.0637725	1.9306898	40	4	1988–1997	0.84	M-v	2	Marsden	22079	1988 BJ
1988 CH ₅	15.5	0.15	19971218	237.16888	212.13624	270.69024	5.45299	0.0864244	2.4338852	47	2	1988–1997	0.55	M-v	4	Williams	30652	1988 CH ₅
1988 MJ	13.0	0.15	19971218	79.40513	165.59882	140.51101	6.79511	0.1530126	2.5486561	27	7	1987–1997	0.70	M-v	1	Williams	28613	1988 MJ
1988 NU	14.5	0.15	19971218	55.30851	95.59067	229.53822	4.68966	0.2098258	2.6375068	19	3	1988–1997	0.85	M-v	4	Williams	27454	1988 NU
1988 QU	13.0	0.15	19971218	81.42081	146.79998	149.32114	15.27128	0.0332384	2.6590272	54	4	1988–1997	0.73	M-v	1	Marsden	30686	1988 QU
1988 RV ₁	14.5	0.15	19971218	116.80076	91.54924	11.21856	4.55740	0.0812441	2.3259299	28	4	1983–1997	0.69	M-v	2	Marsden	29656	1988 RV ₁
1988 RQ ₂	12.5	0.15	19971218	152.12877	252.42466	311.54915	10.90729	0.0698185	2.7811791	29	7	1954–1997	0.68	M-v	1	Williams	29133	1988 RQ ₂
1988 RV ₄	13.5	0.15	19971218	65.34403	22.18296	303.39040	1.64079	0.1792811	2.6584695	45	1	65 days	0.63	M-v	5	Williams		1988 RV ₄
1988 RZ ₅	14.0	0.15	19971218	200.61854	165.43568	170.79029	3.37185	0.1132413	2.3633091	27	1	63 days	0.92	M-v	6	Williams		1988 RZ ₅
1988 RU ₆	13.5	0.15	19971218	166.53412	25.64258	198.62162	1.81697	0.1429300	2.6338658	69	7	1950–1997	0.73	M-v	1	Williams	29656	1988 RU ₆
1988 RQ ₈			19971218	309.57491	288.56917	37.92616	4.93100	0.1808652	2.2258136	8	1	61 days	1.00	M-v	6	Williams		1988 RQ ₈
1988 TL ₁	14.0	0.15	19971218	232.18447	175.99965	214.60347	4.86825	0.1399948	2.2808559	38	3	1988–1997	0.84	M-v	4	Williams	30288	1988 TL ₁
1988 TQ ₄	12.5	0.15	19971218	3.17417	256.62470	128.23096	1.34527	0.0795920	2.7798169	38	9	1974–1997	0.70	M-v	1	Williams	29656	1988 TQ ₄
1988 XE	13.0	0.15	19971218	42.42768	169.49772	252.75030	12.71075	0.2946739	2.6444083	13	1	60 days	0.97	M-v	6	Williams		1988 XE
1989 CB ₈	14.5	0.15	19971218	175.24202	208.06254	347.20402	2.27090	0.0952133	2.2613725	46	5	1955–1997	0.50	M-v	2	Williams	30652	1989 CB ₈
1989 GB ₁	12.0	0.15	19971218	271.86971	251.53109	222.52790	5.51720	0.0996955	3.1675712	46	8	1951–1997	0.82	M-v	1	Williams	30686	1989 GB ₁
1989 GF ₁	14.5	0.15	19971218	252.71503	150.95032	338.40264	3.74237	0.1045762	2.2778691	31	4	1989–1997	0.60	M-v	2	Williams	30686	1989 GF ₁
1989 GR ₄	14.5	0.15	19971218	256.38139	303.02571	186.65966	4.09364	0.1133958	2.2663140	53	4	1989–1997	0.66	M-v	1	Williams	30686	1989 GR ₄

1989 HA	12.5	0.15	19971218	357.15827	125.11156	143.02321	15.09105	0.1626131	2.5811931	8	1	68 days	0.52	M-v	5	Williams	1989 HA
1989 OC	14.5	0.15	19971218	95.84275	326.59285	307.21621	7.99303	0.2983985	2.3907460	10	1	64 days	0.77	M-v	6	Williams	1989 OC
1989 PU	14.0	0.15	19971218	18.44408	193.93909	138.05150	29.67756	0.2454909	2.5386315	38	3	1989-1997	0.84	M-v	3	Williams	30686 1989 PU
1989 RJ ₂	14.0	0.15	19971218	105.14654	131.38115	250.16271	21.59621	0.2544210	2.3243381	6	1	61 days	0.71	M-v	5	Williams	1989 RJ ₂
1989 SU	13.0	0.15	19971218	43.56609	31.75241	292.30276	4.10794	0.2372873	2.5314203	22	3	1989-1997	0.85	M-v	5	Williams	30469 1989 SU
1989 SN ₄	13.5	0.15	19971218	152.29818	52.66421	157.28990	4.25431	0.1287194	2.6008275	35	5	1979-1997	1.04	M-v	3	Marsden	30686 1989 SN ₄
1989 TM ₁	13.5	0.15	19971218	321.61290	38.24000	21.95989	9.92526	0.1659579	2.5959888	20	3	1989-1997	0.72	M-v	4	Williams	30448 1989 TM ₁
1989 TL ₁₅	14.0	0.15	19971218	347.02813	87.52755	322.59468	1.42360	0.1504072	2.5252780	29	7	1969-1997	0.71	M-v	4	Williams	23991 1989 TL ₁₅
1989 UF ₁	14.0	0.15	19971218	61.26227	122.79696	270.00968	1.78726	0.2157407	2.4116737	26	1	69 days	0.67	M-v	5	Williams	1989 UF ₁
1989 UK ₁	14.0	0.15	19971218	332.05008	225.08174	217.77039	11.60837	0.2740144	2.5576296	27	3	1989-1997	0.84	M-v	4	Williams	22812 1989 UK ₁
1989 UN ₁	14.5	0.15	19971218	1.49459	184.74783	213.77992	4.80396	0.2850489	2.5497303	23	4	1985-1997	0.85	M-v	5	Williams	22969 1989 UN ₁
1989 UB ₃	14.0	0.15	19971218	328.65139	19.61585	61.46639	5.42432	0.2585752	2.5708301	35	4	1989-1997	0.94	M-v	3	Williams	30470 1989 UB ₃
1989 UJ ₃	13.5	0.15	19971218	68.97684	291.25845	359.67519	13.10378	0.1837462	2.5571999	19	4	1989-1997	0.82	M-v	3	Williams	30470 1989 UJ ₃
1989 WS	13.0	0.15	19971218	353.56545	158.87366	237.64520	8.73678	0.1906724	2.5691630	22	3	1989-1997	0.92	M-v	3	Williams	23246 1989 WS
1989 WU ₁	13.5	0.15	19971218	33.91497	110.77241	227.15812	9.93694	0.2789232	2.5893635	38	3	1972-1997	1.04	M-v	3	Williams	30289 1989 WU ₁
1989 WB ₂	13.5	0.15	19971218	310.00739	173.98808	292.60382	5.06126	0.2409122	2.6038554	25	6	1951-1997	0.84	M-v	2	Williams	28884 1989 WB ₂
1990 JN ₁	13.5	0.15	19971218	209.45972	29.11547	239.30067	1.21759	0.0169734	2.8303033	17	5	1953-1997	0.80	M-v	2	Williams	29134 1990 JN ₁
1990 KA	16.5	0.15	19971218	111.15076	146.55611	105.74592	7.56404	0.4329383	2.1979150	65	6	1951-1997	0.89	M-v	2	Williams	30686 1990 KA
1990 OH ₁	12.5	0.15	19971218	119.45396	39.87503	239.38142	27.46332	0.2966408	3.1316929	16	3	1990-1997	0.64	M-v	3	Williams	28071 1990 OH ₁
1990 QM ₁	13.0	0.15	19971218	67.56612	245.78352	147.28600	2.52633	0.1784378	3.1775849	42	3	1990-1997	0.87	M-v	3	Williams	29134 1990 QM ₁
1990 QT ₂	14.5	0.15	19971218	4.40906	36.37038	27.59605	0.82604	0.1501073	2.2439203	31	7	1975-1997	0.90	M-v	2	Williams	21974 1990 QT ₂
1990 QC ₆	15.0	0.15	19971218	331.07476	316.42916	92.15916	0.68691	0.1847012	2.3286448	36	3	1990-1997	0.56	M-v	4	Williams	30686 1990 QC ₆
1990 QW ₁₀	14.5	0.15	19971218	88.65277	277.18072	3.75172	4.93148	0.1575134	2.2708791	22	4	1990-1997	0.63	M-v	2	Williams	28885 1990 QW ₁₀
1990 SG ₃	14.0	0.15	19971218	59.98996	197.48451	131.18843	4.04501	0.1906305	2.2874394	15	4	1983-1996	0.79	M-v	2	Williams	30654 1990 SG ₃
1990 SK ₆	14.0	0.15	19971218	157.46018	175.19055	30.04973	7.71343	0.0618930	2.3544262	23	6	1978-1997	0.75	M-v	2	Marsden	27119 1990 SK ₆
1990 TJ ₃	14.0	0.15	19971218	66.55941	305.61769	90.36809	4.73663	0.1294949	2.2055976	19	5	1954-1997	0.77	M-v	2	Williams	27933 1990 TJ ₃
1990 TH ₁₂	14.0	0.15	19971218	293.82639	231.46123	245.22862	4.15775	0.1463486	2.3692425	21	4	1990-1997	0.72	M-v	2	Williams	29134 1990 TH ₁₂
1990 UQ ₂	13.0	0.15	19971218	358.31953	325.51498	43.78972	8.48144	0.2257125	2.3918579	16	1	66 days	0.92	M-v	5	Williams	1990 UQ ₂
1990 VD ₇	13.5	0.15	19971218	160.41698	267.30122	346.80460	3.42365	0.0039319	2.2900599	30	4	1990-1997	0.57	M-v	1	Marsden	27454 1990 VD ₇
1990 WZ	14.0	0.15	19971218	168.13342	246.13816	190.63877	8.91493	0.0580990	2.7898116	18	2	1990-1997	0.46	M-v	5	Marsden	29942 1990 WZ
1990 WX ₁	15.0	0.15	19971218	91.92422	136.69504	146.64175	6.78840	0.1069847	2.3928742	25	5	1990-1997	0.88	M-v	1	Williams	27454 1990 WX ₁
1990 WZ ₁	15.0	0.15	19971218	61.20544	146.01102	160.29666	5.31509	0.1949721	2.3832127	19	4	1949-1997	0.76	M-v	2	Williams	26901 1990 WZ ₁
1990 WS ₂	14.0	0.15	19971218	327.51606	279.38967	149.99249	2.65176	0.1795431	2.3919901	23	5	1975-1997	0.87	M-v	1	Marsden	29658 1990 WS ₂
1990 WF ₃	14.4	0.15	19901125	39.77396	212.06143	145.42735	2.64515	0.2444790	2.3321711	8	1	7 days	0.69			Nakano	1990 WF ₃
1990 YY	11.0	0.15	19971218	160.46561	44.88096	67.67733	3.84423	0.0656313	5.3116236	9	1	62 days	0.24	M-v	6	Williams	1990 YY
1991 AC ₃	14.0	0.15	19971218	106.45385	119.28826	136.06710	4.52360	0.1579751	2.6441331	44	4	1991-1997	0.74	M-v	2	Williams	30687 1991 AC ₃
1991 CE ₁	12.5	0.15	19971218	50.56846	332.79100	217.25987	5.48766	0.0711332	3.1667133	21	5	1969-1997	0.62	M-v	2	Williams	30091 1991 CE ₁
1991 DD	14.0	0.15	19971218	300.68863	93.68318	35.49322	2.47727	0.1319025	2.4362989	41	6	1989-1997	0.75	M-v	1	Williams	28885 1991 DD
1991 DK	11.5	0.15	19971218	18.18094	19.51798	357.18455	15.64942	0.1430092	2.5786995	36	5	1972-1997	0.59	M-v	2	Williams	25440 1991 DK
1991 DK ₁	12.5	0.15	19971218	166.88435	179.15154	29.26767	6.64493	0.0384344	5.1950828	25	4	1991-1997	0.51	M-v	1	Williams	29942 1991 DK ₁
1991 EA ₄	13.5	0.15	19971218	122.62220	120.35875	343.03278	0.60112	0.1545578	3.1066896	23	2	1991-1997	0.72	M-v	5	Williams	29942 1991 EA ₄
1991 FN	14.5	0.15	19971218	180.28292	161.30597	8.76001	20.34528	0.0581357	1.9673920	26	4	1991-1997	0.62	M-v	2	Williams	26420 1991 FN
1991 FM ₂	15.0	0.15	19971218	117.02425	311.17935	172.29870	21.85220	0.3983051	3.0534538	12	1	65 days	0.58	M-v	5	Williams	1991 FM ₂
1991 FB ₄	13.0	0.15	19971218	127.18138	261.76388	352.43859	4.40842	0.1127672	2.7403252	32	6	1974-1997	0.74	M-v	1	Williams	29135 1991 FB ₄
1991 GW ₁	14.0	0.15	19971218	356.84082	334.97361	219.59688	24.53920	0.1937246	2.2718457	16	1	64 days	0.59	M-v	5 D	Williams	1991 GW ₁
1991 JA ₁	14.5	0.15	19971218	44.89077	145.47096	217.82739	19.93165	0.0749357	1.9250133	21	5	1989-1997	0.88	M-v	2	Williams	30687 1991 JA ₁
1991 NA	15.0	0.15	19971218	255.05267	40.34042	278.03982	11.76590	0.3319657	2.3840674	22	1	63 days	0.64	M-v	5	Williams	1991 NA
1991 OL ₁	13.0	0.15	19971218	2.67682	246.66345	113.53473	2.77944	0.1941997	3.2076551	20	5	1986-1997	0.55	M-v	1	Williams	30470 1991 OL ₁
1991 PA	13.5	0.15	19971218	62.74465	16.74629	311.56148	4.42504	0.3186551	3.0600553	33	1	64 days	0.78	M-v	5	Williams	1991 PA
1991 PB	13.5	0.15	19971218	269.98626	182.21253	150.21699	2.58243	0.2462874	2.3386562	36	4	1984-1995	0.80	M-v	2	Williams	30655 1991 PB
1991 PT ₈	13.5	0.15	19971218	336.19317	280.90097	154.87446	11.80623	0.1152445	2.9824199	18	5	1991-1997	0.67	M-v	1	Williams	29659 1991 PT ₈
1991 PX ₁₀	15.0	0.15	19971218	327.26248	166.15190	185.14076	8.49020	0.2002480	2.2103330	17	1	63 days	0.83	M-v	5	Williams	1991 PX ₁₀
1991 PB ₁₂	12.0	0.15	19971218	82.79227	26.89203	256.48452	7.67512	0.1667532	3.1880669	20	6	1974-1997	0.71	M-v	1	Williams	27935 1991 PB ₁₂

1991 PJ ₁₃	15.5	0.15	19971218	329.67860	344.76624	333.52746	2.65766	0.1537717	2.2394473	21	3	1991–1997	0.66	M-v	4	Williams	29942	1991 PJ ₁₃
1991 QE	12.5	0.15	19971218	36.99920	310.03428	22.11740	23.38423	0.2195255	3.1064052	17	5	1981–1997	0.70	M-v	1	Williams	22084	1991 QE
1991 RA ₁₅	13.5	0.15	19971218	98.37233	134.06179	146.01169	0.08382	0.1545735	3.1630559	31	6	1984–1997	0.85	M-v	1	Williams	25214	1991 RA ₁₅
1991 RO ₂₃	11.5	0.15	19971218	33.96980	351.28071	8.32405	16.03051	0.1377593	3.1664479	20	4	1972–1997	0.64	M-v	2	Williams	30656	1991 RO ₂₃
1991 TB	15.0	0.15	19971218	235.75627	9.34855	28.13591	7.88467	0.1910839	2.3172744	8	1	60 days	0.54	M-v	5	Williams		1991 TB
1991 VT ₁	14.0	0.15	19971218	329.82851	143.68443	262.49690	2.94787	0.1161361	2.1855335	30	2	1991–1997	0.74	M-v	5	Williams	30656	1991 VT ₁
1991 VP ₂	16.0	0.15	19971218	328.06669	348.11764	71.13777	0.29421	0.1515090	2.1551999	38	5	1989–1997	0.62	M-v	3	Williams	30687	1991 VP ₂
1991 VD ₅	14.0	0.15	19971218	356.66532	239.74186	118.07373	3.59228	0.1834971	2.1587305	9	1	60 days	0.38	M-v	6	Williams		1991 VD ₅
1992 AB	14.0	0.15	19971218	344.11718	55.61000	88.90039	40.75553	0.5526003	3.2875594	41	6	1992–1997	0.61	M-v	1	Marsden	28615	1992 AB
1992 BG	13.5	0.15	19971218	168.29966	58.41041	147.14181	9.89566	0.1537134	2.3295134	27	4	1985–1997	0.63	M-v	2	Williams	27325	1992 BG
1992 BM ₂	14.0	0.15	19971218	318.42910	208.19416	213.72944	3.91567	0.0991743	2.2491491	39	7	1977–1997	0.91	M-v	1	Marsden	30687	1992 BM ₂
1992 CN ₃	14.0	0.15	19971218	229.74726	332.36211	213.98020	3.29480	0.0854189	2.2193743	17	5	1969–1997	0.85	M-v	2	Williams	30450	1992 CN ₃
1992 DC ₁₀	13.5	0.15	19971218	29.05223	95.57162	261.99064	3.66953	0.0717538	2.3178779	23	5	1976–1997	0.75	M-v	2	Williams	27120	1992 DC ₁₀
1992 EP ₄	14.5	0.15	19971218	194.32746	166.27404	101.58713	2.60519	0.0229870	2.1480242	10	1	60 days	0.67	M-v	6	Williams		1992 EP ₄
1992 EB ₅	11.0	0.15	19971218	339.58805	28.77217	151.50491	22.47939	0.0415922	3.2160096	10	1	60 days	0.55	M-v	6	Williams		1992 EB ₅
1992 EA ₇	14.0	0.15	19971218	106.40023	249.70701	31.38433	6.90386	0.1616321	2.3791857	17	6	1952–1997	0.61	M-v	1	Williams	29943	1992 EA ₇
1992 EV ₁₅	15.0	0.15	19971218	258.48146	309.28365	164.25891	2.15000	0.1623484	2.3446844	15	3	1992–1997	0.69	M-v	3	Williams	27729	1992 EV ₁₅
1992 EH ₁₈	14.0	0.15	19971218	131.58934	252.10817	192.17666	8.45511	0.1137280	2.8742508	12	1	70 days	0.63	M-v	5	Williams		1992 EH ₁₈
1992 LR	18.0	0.15	19971218	64.29827	67.76556	233.20777	2.02355	0.4091107	1.8303547	257	2	1992–1997	0.60	M-v	0	Williams	30688	1992 LR
1992 NS	13.5	0.15	19971218	90.48916	64.23535	218.36319	10.89498	0.1805511	2.6627798	24	3	1992–1997	0.98	M-v	3	Williams	30688	1992 NS
1992 OC	15.5	0.15	19971218	113.98428	292.06885	2.97721	15.86837	0.3012159	2.5829573	11	1	72 days	0.62	M-v	4	Williams		1992 OC
1992 OW	15.0	0.15	19971218	64.03587	309.62197	47.36138	13.64624	0.2744138	2.6436630	10	1	72 days	0.66	M-v	5	Williams		1992 OW
1992 QB ₁	7.0	0.15	19971218	5.05206	2.03997	359.38507	2.17937	0.0769910	44.2978808	72	6	1992–1997	0.65	M-v	4	Marsden	28086	1992 QB ₁
1992 QL ₂	12.0	0.15	19971218	15.25102	77.31829	242.37397	9.37288	0.1019065	3.0072801	26	6	1935–1997	0.80	M-v	2	Williams	30688	1992 QL ₂
1992 RV	13.5	0.15	19971218	44.24387	0.99308	16.15910	8.66625	0.1663622	2.7420464	21	1	61 days	0.73	M-v	5	Williams		1992 RV
1992 RO ₁	14.5	0.15	19971218	158.20167	181.73571	136.04869	12.77812	0.2567495	2.4067469	13	1	63 days	0.77	M-v	5	Williams		1992 RO ₁
1992 RB ₃	14.0	0.15	19971218	1.87129	109.52664	246.40666	0.54173	0.1111752	2.9704601	34	3	1987–1997	0.46	M-v	5	Williams	30657	1992 RB ₃
1992 SC ₁	13.5	0.15	19971218	121.34055	209.76567	145.14035	5.09246	0.2073971	2.5210164	15	1	66 days	0.69	M-v	5	Williams		1992 SC ₁
1992 SY ₂₄	13.5	0.15	19971218	4.94284	9.72045	350.70718	10.30678	0.1092858	2.9973854	7	1	61 days	0.39	M-v	5	Williams		1992 SY ₂₄
1992 TA	17.0	0.15	19971218	340.54723	80.54335	355.39339	26.00701	0.2888701	1.8501614	35	3	1992–1997	0.65	M-v	2	Williams	27729	1992 TA
1992 TB	17.5	0.15	19971218	280.04202	5.91339	185.71120	28.31082	0.4623524	1.3418102	103	4	1992–1997	0.71	M-v	2	Marsden	26190	1992 TB
1992 UG ₄	12.5	0.15	19971218	46.21893	270.89841	62.28214	6.76387	0.1612536	3.0046678	21	7	1971–1997	0.75	M-v	1	Williams	29136	1992 UG ₄
1992 YH ₂	13.0	0.15	19971218	356.73552	322.58881	86.81211	10.48846	0.0644200	3.1763320	21	4	1982–1997	0.61	M-v	2	Williams	25530	1992 YH ₂
1993 EM	15.0	0.15	19971218	264.28479	285.97868	264.61793	18.25771	0.0579942	1.9692016	8	1	69 days	0.31	M-v	5	Williams		1993 EM
1993 FW ₂₄	15.0	0.15	19971218	62.18852	19.02483	287.15306	1.18284	0.1797920	2.2069952	17	5	1981–1997	0.49	M-v	1	Marsden	30688	1993 FW ₂₄
1993 FX ₅₂	16.0	0.15	19971218	136.61630	89.32386	137.16078	4.51654	0.0922170	2.1723787	31	3	1993–1997	0.42	M-v	4	Williams	30659	1993 FX ₅₂
1993 LW ₁	14.0	0.15	19971218	53.56155	205.37292	62.21940	12.33662	0.2416667	2.4283974	7	1	61 days	0.36	M-v	5	Williams		1993 LW ₁
1993 OQ ₄	15.5	0.15	19971218	114.22553	98.19863	144.19473	2.65451	0.1751003	2.3754700	22	3	1993–1997	0.45	M-v	3	Williams	27106	1993 OQ ₄
1993 OB ₁₀	15.5	0.15	19971218	30.99872	45.17535	295.89183	5.08304	0.1608787	2.4130209	24	2	1993–1997	0.61	M-v	5	Williams	30661	1993 OB ₁₀
1993 OX ₁₁	13.0	0.15	19971218	177.83866	113.88390	297.96756	2.86445	0.1494344	3.1533348	31	2	1993–1997	0.74	M-v	5	Williams	30661	1993 OX ₁₁
1993 PB	16.5	0.15	19971218	299.53213	212.22409	316.02859	40.87479	0.6070757	1.4236339	71	3	1993–1997	0.55	M-v	4	Marsden	30688	1993 PB
1993 PC	18.0	0.15	19971218	4.24628	168.12300	337.56563	4.15859	0.4745987	1.1543497	42	3	1993–1997	0.60	M-v	3	Williams	23992	1993 PC
1993 PV ₆	14.5	0.15	19971218	17.79402	50.78977	317.28948	3.76308	0.1973890	2.4761778	19	3	1991–1997	0.76	M-v	4	Marsden	29137	1993 PV ₆
1993 QY	13.0	0.15	19971218	343.66582	235.73035	156.31787	28.34086	0.3242820	2.5968313	24	1	62 days	0.73	M-v	5	Williams		1993 QY
1993 RC	14.0	0.15	19971218	295.92671	131.68934	187.34071	17.18945	0.1382841	3.2074833	25	1	60 days	0.66	M-v	5	Williams		1993 RC
1993 RK	13.5	0.15	19971218	10.28431	11.28303	343.98496	12.32180	0.2667417	2.5825768	28	2	1993–1997	0.86	M-v	4	Williams	30661	1993 RK
1993 RQ ₅	14.5	0.15	19971218	228.53461	300.63746	183.36093	7.05990	0.0501281	2.7025159	45	4	1979–1997	0.78	M-v	4	Williams	30688	1993 RQ ₅
1993 SC	7.0	0.15	19971218	37.57186	318.44465	354.61586	5.14258	0.1914939	39.8818303	75	5	1993–1997	0.52	M-v	3	Marsden	30092	1993 SC
1993 SG ₁	14.0	0.15	19971218	13.67562	175.38890	174.75331	13.86465	0.2923338	2.5824687	33	3	1989–1997	0.50	M-v	2	Williams	30688	1993 SG ₁
1993 SY ₃	13.5	0.15	19971218	350.79329	194.03418	207.90231	5.88138	0.1717411	2.5480450	29	7	1955–1997	0.67	M-v	2	Williams	30688	1993 SY ₃
1993 TE	14.5	0.15	19971218	26.82460	161.46475	192.43117	8.68748	0.2738065	2.5422783	64	6	1985–1997	0.65	M-v	2	Williams	30688	1993 TE
1993 UT ₆	13.5	0.15	19971218	271.81196	307.07109	178.91111	11.13009	0.1771167	2.6601122	21	3	1982–1997	0.70	M-v	4	Marsden	23784	1993 UT ₆
1993 VY	13.5	0.15	19971218	51.78371	30.23880	26.26404	25.09048	0.1925750	2.2762532	11	1	66 days	0.81	M-v	5	Williams		1993 VY

1993 VB ₂	14.0	0.15	19971218	55.21505	167.89078	246.74976	2.06467	0.0874359	2.3111125	16	4	1991–1997	0.95	M-v	2	Williams	28616	1993 VB ₂
1993 VB ₈	14.5	0.15	19971218	68.10779	334.51902	104.23686	7.05432	0.0704053	2.3099667	8	1	67 days	0.37	M-v	6	Williams		1993 VB ₈
1993 WQ	13.5	0.15	19971218	12.06448	359.63283	47.58659	5.06078	0.2231204	2.5533301	25	4	1985–1997	0.58	M-v	3	Williams	29137	1993 WQ
1993 XF	13.5	0.15	19971218	357.92808	268.48327	115.31205	3.30445	0.0832848	2.7574123	44	7	1979–1997	0.65	M-v	1	Williams	30688	1993 XF
1994 AH	12.5	0.15	19971218	71.87688	174.20211	136.45996	2.75435	0.0737753	2.9326434	28	3	1994–1997	0.61	M-v	3	Williams	25228	1994 AH
1994 AX ₂	12.5	0.15	19971218	199.76011	263.51741	295.90758	11.51237	0.1056679	3.0131249	40	6	1984–1997	0.78	M-v	1	Williams	27730	1994 AX ₂
1994 CV	14.5	0.15	19971218	4.17944	224.44502	183.85222	3.75157	0.1892441	2.5900453	12	3	1976–1997	0.67	M-v	3	Williams	23676	1994 CV
1994 EW ₇	13.5	0.15	19971218	5.64089	29.36833	134.21049	24.91011	0.2334831	2.4415089	12	1	66 days	0.62	M-v	6	Williams		1994 EW ₇
1994 LR	12.0	0.15	19971218	256.43320	129.43062	95.01934	12.66779	0.0532923	3.0785340	13	3	1972–1994	0.46	M-v	4	Williams	30662	1994 LR
1994 PD ₂	14.0	0.15	19971218	279.74672	7.53309	331.97280	13.23521	0.2111056	2.6071283	18	1	63 days	0.66	M-v	5	Williams		1994 PD ₂
1994 PM ₂₁	15.0	0.15	19971218	268.69005	219.30962	154.91466	7.45642	0.2492432	2.5703925	17	3	1990–1997	0.54	M-v	4	Williams	30662	1994 PM ₂₁
1994 PB ₃₀	14.5	0.15	19971218	352.10568	61.32126	222.37076	4.74222	0.1332294	2.4524680	25	3	1991–1997	0.90	M-v	4	Marsden	30472	1994 PB ₃₀
1994 RN	14.5	0.15	19971218	302.90634	71.26607	168.83407	9.56500	0.0480978	3.1733119	17	1	60 days	0.53	M-v	5	Williams		1994 RN
1994 RY ₁	12.5	0.15	19971218	270.09032	180.84819	169.77658	16.43034	0.2893867	2.6274704	14	1	66 days	0.70	M-v	5	Williams		1994 RY ₁
1994 TB	7.0	0.15	19971218	330.31910	98.02182	317.29729	12.11096	0.3210434	39.8420000	77	4	1994–1997	0.76	M-v	3	Marsden	30689	1994 TB
1994 TF ₂	19.0	0.15	19971218	305.46510	349.60226	175.32232	23.75542	0.2838917	0.9932022	112	4	1994–1997	0.70	M-v	3	Williams	30689	1994 TF ₂
1994 TV ₁₅	13.0	0.15	19971218	84.22803	149.65530	190.97161	22.03488	0.0798672	1.9483943	10	1	60 days	0.94	M-v	5	Williams		1994 TV ₁₅
1994 UO ₁	15.0	0.15	19971218	7.36479	172.60658	204.62975	1.59070	0.1567510	2.1723393	22	5	1978–1996	0.67	M-v	2	Williams	30663	1994 UO ₁
1994 VR ₁	14.5	0.15	19971218	6.42979	82.35387	302.52678	1.76364	0.1019349	2.2151432	28	4	1992–1997	0.80	M-v	3	Williams	28854	1994 VR ₁
1994 VF ₂	13.0	0.15	19971218	208.36757	67.75004	55.78435	13.08263	0.2250757	2.6324222	28	4	1970–1996	0.77	M-v	2	Williams	30663	1994 VF ₂
1994 WU ₁	14.5	0.15	19971218	54.75332	123.33113	172.91533	14.82625	0.1607348	2.4461017	96	3	1994–1997	0.64	M-v	2	Williams	30689	1994 WU ₁
1994 WA ₄	13.0	0.15	19971218	219.41743	251.39227	209.19341	11.69140	0.0848150	2.7055147	13	1	66 days	0.48	M-v	5	Williams		1994 WA ₄
1994 XK	14.0	0.15	19971218	359.05983	295.54918	56.99375	5.39678	0.2081456	2.4460958	22	4	1982–1997	0.54	M-v	2	Williams	30292	1994 XK
1994 XE ₁	13.5	0.15	19971218	333.97273	343.86390	74.47294	8.44588	0.0959705	2.3330837	28	5	1951–1997	0.66	M-v	1	Williams	30689	1994 XE ₁
1994 YB	13.5	0.15	19971218	137.95694	296.43787	296.28085	9.69931	0.2204067	2.4095656	41	4	1989–1997	0.66	M-v	2	Williams	26760	1994 YB
1994 YT	13.5	0.15	19971218	163.67162	319.22379	281.53532	2.50818	0.1336309	2.3963011	23	6	1977–1997	0.82	M-v	2	Williams	30472	1994 YT
1995 AL	14.0	0.15	19971218	93.11282	192.72451	100.86820	7.04534	0.0965324	2.4617905	34	4	1993–1997	0.59	M-v	1	Williams	30292	1995 AL
1995 AM	16.5	0.15	19971218	37.16134	257.39145	108.95400	4.78379	0.3597963	2.1571151	61	3	1994–1997	0.61	M-v	2	Williams	30689	1995 AM
1995 AW	12.0	0.15	19971218	204.73420	248.23428	295.66870	11.99520	0.1351570	2.5994668	41	6	1949–1997	0.57	M-v	2	Williams	25539	1995 AW
1995 AZ ₃	14.0	0.15	19971218	93.40183	321.86996	322.02622	4.98863	0.0641522	2.4560019	16	4	1976–1997	0.82	M-v	3	Marsden	28617	1995 AZ ₃
1995 BH ₁	15.5	0.15	19971218	353.44053	75.75406	309.31770	1.51593	0.2067660	2.3841750	54	3	1995–1997	0.50	M-v	4	Williams	30689	1995 BH ₁
1995 BS ₃	13.5	0.15	19971218	291.00403	281.13269	165.01054	2.50549	0.0261566	2.6757100	25	4	1977–1997	0.59	M-v	1	Williams	30664	1995 BS ₃
1995 CP ₃	16.0	0.15	19971218	88.27727	124.51953	175.59736	2.86151	0.1749979	2.6010376	23	4	1993–1997	0.35	M-v	1	Williams	30664	1995 CP ₃
1995 DA ₁	14.5	0.15	19971218	198.26143	103.98526	104.00608	9.06746	0.1290774	2.6230321	60	3	1995–1997	0.55	M-v	2	Marsden	27568	1995 DA ₁
1995 DB ₁	12.5	0.15	19971218	258.48981	54.58593	30.41383	10.01873	0.0702282	3.0059173	73	4	1970–1997	0.47	M-v	1	Williams	27456	1995 DB ₁
1995 DU ₃	15.5	0.15	19971218	251.00510	139.98284	31.40405	0.36463	0.1657712	2.3954960	52	3	1995–1997	0.64	M-v	3	Williams	27717	1995 DU ₃
1995 DZ ₈	15.5	0.15	19971218	318.29556	101.05285	5.90261	2.62481	0.1247956	2.4022053	19	4	1984–1997	0.66	M-v	2	Williams	27937	1995 DZ ₈
1995 FW	16.5	0.15	19971218	354.49561	213.00232	345.44273	18.92664	0.0656607	1.9283766	15	1	69 days	0.77	M-v	5	Williams		1995 FW
1995 GE	14.0	0.15	19971218	357.60654	225.22813	174.93546	13.76774	0.1831091	2.6471067	35	5	1954–1997	0.52	M-v	1	Williams	28302	1995 GE
1995 HA	15.0	0.15	19971218	108.99407	76.62654	212.85954	8.79444	0.0819277	3.0747903	36	3	1995–1997	0.44	M-v	3	Williams	27731	1995 HA
1995 HE	14.0	0.15	19971218	311.01935	58.53941	28.12631	4.36660	0.1777617	2.7988051	32	3	1960–1997	0.44	M-v	3	Williams	30665	1995 HE
1995 KM ₁	16.5	0.15	19971218	229.63184	182.40660	117.86596	4.00345	0.2211786	2.3045559	32	1	62 days	0.50	M-v	5	Williams		1995 KM ₁
1995 OK ₈	11.0	0.15	19971218	12.84821	150.77778	231.22299	5.91278	0.0556282	5.2565965	21	3	1995–1997	0.55	M-v	3	Williams	29664	1995 OK ₈
1995 QS	13.5	0.15	19971218	287.68316	213.61519	59.23404	5.17973	0.1581069	2.2502106	11	1	66 days	0.52	M-v	6	Williams		1995 QS
1995 QY ₉	7.5	0.15	19971218	348.47889	24.42143	342.06134	4.82313	0.2711316	40.1176122	53	3	1995–1997	0.62	M-v	4	Marsden	30689	1995 QY ₉
1995 QZ ₉	7.5	0.15	19971218	31.54090	143.72319	187.98628	19.50911	0.1528124	39.7689730	37	3	1995–1997	0.43	M-v	4	Marsden	30689	1995 QZ ₉
1995 SK	16.5	0.15	19971218	247.29417	350.17283	350.76142	23.86739	0.1814092	2.2868335	22	1	73 days	0.40	M-v	4	Williams		1995 SK
1995 SO	15.0	0.15	19971218	68.06956	284.84615	190.11743	10.10328	0.0929552	2.9945587	18	1	65 days	0.34	M-v	5	Williams		1995 SO
1995 SB ₁	14.5	0.15	19971218	192.56395	167.78192	231.80211	24.32991	0.2539975	2.3948964	17	1	64 days	0.58	M-v	5	Williams		1995 SB ₁
1995 SM ₁	16.0	0.15	19971218	205.55179	269.69895	84.74359	1.14412	0.0827605	2.6359646	14	1	60 days	0.47	M-v	5	Williams		1995 SM ₁
1995 SH ₂	15.5	0.15	19971218	161.22432	156.03381	212.53032	1.40334	0.0790619	2.8897009	35	1	62 days	0.70	M-v	5	Williams		1995 SH ₂
1995 SO ₂	16.0	0.15	19971218	223.67964	82.90873	232.98901	4.11312	0.2935519	2.5735227	25	1	64 days	0.32	M-v	5	Williams		1995 SO ₂
1995 SS ₅	15.0	0.15	19971218	267.25748	91.79755	207.70361	13.39401	0.1653213	2.5612757	24	1	62 days	0.37	M-v	4 D	Williams		1995 SS ₅

1995 SX ₄₈	15.0	0.15	19971218	82.92420	309.06453	299.44736	21.99330	0.0225994	1.8442170	12	1	74 days	0.67	M-v	5	Williams	1995 SX ₄₈
1995 TP ₂	14.0	0.15	19971218	93.40755	67.67388	32.20270	12.58034	0.1939996	2.9064178	24	1	65 days	0.77	M-v	5	Williams	1995 TP ₂
1995 UG	14.5	0.15	19971218	186.80278	141.73193	242.32608	3.71299	0.3198993	2.6017960	14	1	60 days	0.54	M-v	4	Williams	1995 UG
1995 UR	14.0	0.15	19971218	183.09758	155.21081	297.89168	25.33639	0.2069695	2.3002269	11	1	69 days	0.53	M-v	5	Williams	1995 UR
1995 UO ₅	17.0	0.15	19971218	289.18548	150.88040	38.80533	36.14102	0.6440584	1.5599213	48	3	1995–1997	0.67	M-v	3	Williams	27568 1995 UO ₅
1995 UE ₁₁	15.0	0.15	19971218	106.48896	215.81795	200.84431	8.06295	0.0801802	3.0725346	11	1	61 days	0.20	M-v	5	Williams	1995 UE ₁₁
1995 UG ₁₁	16.0	0.15	19971218	189.04779	143.68807	205.59148	5.34454	0.0939098	2.7687779	12	1	61 days	0.15	M-v	5	Williams	1995 UG ₁₁
1995 UP ₁₁	15.5	0.15	19971218	175.36913	166.60653	201.26777	6.69166	0.1544731	2.7565413	10	1	60 days	0.20	M-v	5	Williams	1995 UP ₁₁
1995 UU ₁₄	16.0	0.15	19971218	87.75582	220.90071	309.80943	1.55394	0.1358024	2.3847494	30	2	1995–1997	0.53	M-v	4	Williams	30473 1995 UU ₁₄
1995 UN ₁₅	16.0	0.15	19971218	306.21734	214.64925	64.86760	7.92704	0.2234334	2.4217166	11	1	69 days	0.16	M-v	5	Williams	1995 UN ₁₅
1995 UE ₁₈	18.0	0.15	19971218	198.49483	180.78723	223.50985	2.63626	0.1939969	2.3419075	11	1	71 days	0.17	M-v	5	Williams	1995 UE ₁₈
1995 UB ₄₅	14.5	0.15	19971218	248.82994	111.63139	269.07929	2.89774	0.1509697	2.2257598	21	4	1988–1997	0.60	M-v	3	Marsden	29665 1995 UB ₄₅
1995 VZ ₆	16.0	0.15	19971218	187.00508	206.88840	216.92220	1.75124	0.1804934	2.4785034	15	1	71 days	0.17	M-v	4	Williams	1995 VZ ₆
1995 VG ₁₀	17.0	0.15	19971218	0.14172	49.96658	178.69521	0.92413	0.1402961	2.4366064	12	1	60 days	0.40	M-v	7	Williams	1995 VG ₁₀
1995 VJ ₁₆	15.5	0.15	19971218	234.66485	90.80688	234.87238	4.12969	0.1619379	2.7841576	18	1	70 days	0.33	M-v	5	Williams	1995 VJ ₁₆
1995 WC	15.0	0.15	19971218	235.92032	152.08850	227.54926	5.97104	0.2104019	2.3322734	15	1	60 days	0.37	M-v	5	Williams	1995 WC
1995 WQ ₂	14.0	0.15	19971218	115.65965	1.78177	71.10503	17.41421	0.0792048	3.1504359	15	1	67 days	0.50	M-v	6	Williams	1995 WQ ₂
1995 WY ₂	7.0	0.15	19971218	266.34275	109.84240	78.74010	1.65349	0.1263215	46.4315876	18	3	1995–1997	0.44	M-v	5	Marsden	29319 1995 WY ₂
1995 WH ₁₇	14.0	0.15	19971218	189.55171	304.90978	70.97821	11.03036	0.2781121	2.7231756	21	1	62 days	0.72	M-v	5	Williams	1995 WH ₁₇
1995 WD ₃₂	14.5	0.15	19971218	139.78466	352.65395	134.93272	3.51487	0.1093725	2.9737814	15	1	60 days	0.39	M-v	5	Williams	1995 WD ₃₂
1995 XP ₂	14.5	0.15	19971218	232.62964	180.16828	210.41258	2.43563	0.1837621	2.2651050	44	3	1978–1997	0.71	M-v	3	Williams	30473 1995 XP ₂
1995 YS	14.5	0.15	19971218	181.09280	41.83810	70.09677	25.49514	0.1760216	2.2701140	20	1	66 days	0.46	M-v	5	Williams	1995 YS
1995 YM ₁	15.0	0.15	19971218	211.24824	181.55384	272.52093	6.60155	0.1292593	2.3110348	15	1	67 days	0.58	M-v	5	Williams	1995 YM ₁
1995 YZ ₁	14.0	0.15	19971218	158.79728	58.61816	11.81177	7.19888	0.1779637	2.8975774	38	3	1992–1997	0.63	M-v	3	Williams	29946 1995 YZ ₁
1995 YY ₅	15.5	0.15	19971218	300.01501	227.42824	95.08968	3.96616	0.1754367	2.2341053	15	1	68 days	0.16	M-v	5	Williams	1995 YY ₅
1995 YC ₈	17.0	0.15	19971218	279.01448	122.38584	216.46979	2.03372	0.1582625	2.2777494	16	1	71 days	0.24	M-v	5	Williams	1995 YC ₈
1996 AJ	14.5	0.15	19971218	341.07766	358.23839	304.59697	1.77389	0.1954322	2.4492455	30	3	1990–1997	0.56	M-v	4	Williams	30473 1996 AJ
1996 AR	16.0	0.15	19971218	192.72116	21.24509	87.06566	3.93905	0.1854504	2.4193913	49	1	69 days	0.43	M-v	4	Williams	1996 AR
1996 AH ₁	14.0	0.15	19971218	181.66055	115.48151	301.39159	12.43478	0.1716578	3.1798059	27	1	68 days	0.42	M-v	5	Williams	1996 AH ₁
1996 CE ₁	14.5	0.15	19971218	238.46008	92.85044	352.51469	5.70432	0.1513577	2.3177370	25	1	64 days	0.66	M-v	5	Williams	1996 CE ₁
1996 CR ₁	14.5	0.15	19971218	83.97080	91.13721	196.16659	5.70340	0.1284543	2.2704421	40	4	1980–1997	0.60	M-v	2	Williams	27123 1996 CR ₁
1996 CE ₃	13.0	0.15	19971218	233.36872	79.52752	358.38329	21.89643	0.0553248	2.6696753	29	1	68 days	0.63	M-v	5	Williams	1996 CE ₃
1996 CL ₇	15.0	0.15	19971218	235.28573	117.29424	338.89114	9.36506	0.1494097	2.2644111	20	1	62 days	0.54	M-v	5	Williams	1996 CL ₇
1996 CN ₇	14.5	0.15	19971218	72.87622	253.09002	17.11729	2.41305	0.1462716	2.4119003	26	2	1996–1997	0.84	M-v	4	Williams	30689 1996 CN ₇
1996 CW ₇	15.0	0.15	19971218	93.47459	154.02397	125.35343	5.66993	0.2080411	2.2169413	25	4	1977–1997	0.77	M-v	2	Williams	30689 1996 CW ₇
1996 CW ₈	15.5	0.15	19971218	128.85163	215.10683	359.18022	6.73679	0.0662617	2.3320378	10	1	64 days	0.72	M-v	5	Williams	1996 CW ₈
1996 CK ₉	14.5	0.15	19971218	28.19009	174.35624	152.14117	6.58046	0.1557389	2.3070305	41	4	1962–1997	0.80	M-v	2	Williams	30689 1996 CK ₉
1996 DD	14.5	0.15	19971218	268.76868	41.11234	53.58929	2.26391	0.0018795	2.1880919	30	3	1991–1997	0.55	M-v	3	Marsden	30689 1996 DD
1996 DL ₁	15.5	0.15	19971218	177.67439	167.82974	317.48099	4.64157	0.1565658	2.5331216	45	1	63 days	0.50	M-v	4	Williams	1996 DL ₁
1996 DS ₁	16.0	0.15	19971218	218.14286	328.85742	153.50163	5.46422	0.0741719	2.2600188	13	1	65 days	0.51	M-v	5	Williams	1996 DS ₁
1996 DK ₂	15.0	0.15	19971218	108.23394	103.71401	131.71066	5.27926	0.1964439	2.5658267	26	3	1992–1997	0.55	M-v	3	Marsden	30668 1996 DK ₂
1996 EG	13.5	0.15	19971218	235.71515	175.62625	205.94407	9.42241	0.1046716	3.1680852	25	1	68 days	0.66	M-v	6	Williams	1996 EG
1996 EH	13.5	0.15	19971218	129.22883	342.72533	246.44097	7.85871	0.1538019	2.3627651	18	5	1982–1997	0.65	M-v	2	Williams	27123 1996 EH
1996 FE	15.5	0.15	19971218	341.07331	245.84211	206.39395	22.68489	0.0943096	1.9275527	19	1	67 days	0.32	M-v	4	Williams	1996 FE
1996 FL ₂	12.5	0.15	19971218	31.41584	285.80023	340.77555	1.15564	0.0348737	2.8998309	26	6	1978–1996	0.67	M-v	1	Williams	30689 1996 FL ₂
1996 FP ₃	16.5	0.15	19971218	293.25509	315.51675	123.16505	5.28038	0.0968601	2.2128855	38	3	1993–1997	0.55	M-v	3	Williams	30689 1996 FP ₃
1996 FQ ₄	14.5	0.15	19971218	230.63137	318.82169	173.60792	3.93231	0.0768996	2.2876149	31	2	1996–1997	0.60	M-v	4	Williams	30668 1996 FQ ₄
1996 FL ₅	14.0	0.15	19971218	158.32074	189.20669	28.47112	7.32719	0.1435405	2.3178914	37	4	1978–1997	0.56	M-v	2	Williams	30458 1996 FL ₅
1996 GJ ₂	15.0	0.15	19971218	115.57907	86.43999	185.08238	4.28334	0.2110191	2.3889827	26	3	1993–1997	0.73	M-v	4	Williams	27938 1996 GJ ₂
1996 GA ₁₉	15.0	0.15	19971218	163.40408	177.76850	48.64357	4.38361	0.0571303	2.2663067	24	3	1989–1997	0.54	M-v	4	Williams	29630 1996 GA ₁₉
1996 GV ₂₀	15.5	0.15	19971218	205.53055	81.02933	91.40613	0.37700	0.1387588	2.2641324	19	3	1989–1997	0.64	M-v	4	Williams	28319 1996 GV ₂₀
1996 HO	15.5	0.15	19971218	313.12176	298.07460	123.48285	7.88923	0.0941814	2.3762448	63	2	1996–1997	0.68	M-v	4	Marsden	30690 1996 HO
1996 HT	13.5	0.15	19971218	149.84376	294.31439	288.21396	3.82404	0.0441799	2.4895140	28	5	1984–1997	0.61	M-v	3	Williams	28890 1996 HT

1996 HX	14.0	0.15	19971218	37.71321	316.50215	2.70981	6.22331	0.1697819	3.0173749	38	2	1996–1997	0.30	M-v	3	Marsden	30690	1996 HX
1996 HM ₁₁	14.5	0.15	19971218	48.50425	126.12641	191.67865	3.68720	0.0685499	2.6148766	23	5	1976–1997	0.80	M-v	2	Williams	30690	1996 HM ₁₁
1996 HJ ₁₅	14.5	0.15	19971218	142.44493	86.64838	139.27841	1.11388	0.0381552	2.5201200	24	3	1993–1997	0.93	M-v	5	Williams	27731	1996 HJ ₁₅
1996 HY ₁₇	14.5	0.15	19971218	21.72562	186.14987	147.40979	2.32270	0.2085220	3.0767809	20	2	1996–1997	0.83	M-v	4	Williams	30084	1996 HY ₁₇
1996 HR ₂₁	13.5	0.15	19971218	60.52007	107.96729	175.44506	1.21000	0.1642611	3.1757338	26	4	1991–1997	0.95	M-v	1	Williams	30669	1996 HR ₂₁
1996 HQ ₂₃	15.0	0.15	19971218	356.03385	266.54272	139.29501	1.10304	0.1471151	2.2277590	19	4	1977–1997	0.71	M-v	4	Williams	27720	1996 HQ ₂₃
1996 HC ₂₆	15.5	0.15	19971218	125.98403	200.65894	80.86180	3.33410	0.2160141	2.3531430	36	1	61 days	0.51	M-v	5	Williams		1996 HC ₂₆
1996 JL	13.0	0.15	19971218	344.70839	175.84338	208.66898	8.94668	0.1636940	2.7814226	25	3	1993–1997	0.47	M-v	5	Williams	30690	1996 JL
1996 KW	13.0	0.15	19971218	41.10199	278.19628	54.00056	13.52029	0.2562590	2.6741488	20	1	66 days	0.74	M-v	5	Williams		1996 KW
1996 LA	13.5	0.15	19971218	143.23752	320.83275	223.18239	7.66984	0.1098215	3.0869440	69	4	1987–1997	0.52	M-v	2	Marsden	30690	1996 LA
1996 LJ ₁	14.5	0.15	19971218	116.91463	49.07597	219.32490	14.37389	0.1267796	2.7729351	37	2	1996–1997	0.28	M-v	3	Williams	30669	1996 LJ ₁
1996 MN	16.5	0.15	19971218	134.05182	48.95066	263.72695	5.93645	0.1461447	2.2697153	32	1	74 days	0.42	M-v	4	Williams		1996 MN
1996 MU	17.0	0.15	19971218	137.20049	204.41654	92.84107	26.36718	0.1832595	2.1770030	15	1	72 days	0.54	M-v	4	Williams		1996 MU
1996 NS	14.0	0.15	19971218	104.60312	158.52634	135.73948	9.83242	0.0941016	3.0422131	29	1	67 days	0.53	M-v	4	Williams		1996 NS
1996 OB	16.0	0.15	19971218	143.28828	62.30680	240.56754	3.05417	0.0381165	2.2861437	20	1	61 days	0.36	M-v	5	Williams		1996 OB
1996 OH	13.5	0.15	19971218	242.99461	13.28677	126.66748	6.53212	0.0257750	3.4986548	38	3	1995–1997	0.55	M-v	4	Williams	27938	1996 OH
1996 OJ	14.5	0.15	19971218	108.88342	159.56187	126.64562	2.15289	0.1753840	3.1058048	39	3	1991–1997	0.35	M-v	3	Williams	29140	1996 OJ
1996 OM ₂	14.5	0.15	19971218	51.90882	126.66574	260.72343	7.93577	0.2245386	2.7370926	17	1	63 days	0.43	M-v	6	Williams		1996 OM ₂
1996 PQ	14.5	0.15	19971218	50.03124	273.40334	147.83425	7.16892	0.1068264	2.3307489	26	1	62 days	0.63	M-v	5	Williams		1996 PQ
1996 PG ₁	15.0	0.15	19971218	160.99254	297.07877	356.68706	3.35575	0.1503098	2.2839884	39	1	69 days	0.88	M-v	5	Williams		1996 PG ₁
1996 PJ ₂	17.0	0.15	19971218	103.83187	15.17950	320.71695	12.11716	0.1639567	2.5968341	20	1	61 days	0.37	M-v	5	Williams		1996 PJ ₂
1996 PW ₂	16.5	0.15	19971218	144.21368	217.59789	85.34509	2.12419	0.2013912	2.4199676	22	1	65 days	0.40	M-v	5	Williams		1996 PW ₂
1996 PB ₅	14.5	0.15	19971218	94.67749	85.42340	305.73120	3.33188	0.1712511	2.2589415	18	1	61 days	0.45	M-v	5	Williams		1996 PB ₅
1996 RJ	9.5	0.15	19971218	12.38761	114.90121	259.55439	30.49687	0.0486582	5.2005192	29	3	1986–1997	0.54	M-v	2	Williams	30459	1996 RJ
1996 RR ₂	14.5	0.15	19971218	327.48927	257.46427	308.32078	22.63659	0.0746970	1.9059017	15	1	71 days	0.55	M-v	5	Williams		1996 RR ₂
1996 RG ₅	14.0	0.15	19971218	96.95487	274.06461	124.02892	8.60867	0.1969017	2.2774578	12	1	72 days	0.55	M-v	5	Williams		1996 RG ₅
1996 RQ ₂₀	7.0	0.15	19971218	16.97320	340.10066	11.53701	31.57949	0.1147040	44.2909387	34	2	1996–1997	0.61	M-v	6	Marsden	30670	1996 RQ ₂₀
1996 RR ₂₀	7.0	0.15	19971218	110.06827	52.80392	163.53310	5.29899	0.1799100	39.9362484	44	2	1996–1997	0.40	M-v	6	Marsden	30690	1996 RR ₂₀
1996 SD ₁	13.0	0.15	19971218	142.65502	289.39332	21.69493	10.44963	0.1155092	3.0310444	51	6	1974–1997	0.64	M-v	1	Williams	29319	1996 SD ₁
1996 SZ ₄	8.0	0.15	19971218	342.84602	26.90372	15.96643	4.72525	0.2573977	39.8171559	24	2	1996–1997	0.63	M-v	6	Marsden	30670	1996 SZ ₄
1996 TQ	15.5	0.15	19971218	73.10375	357.04539	86.92185	3.06871	0.1796753	2.3461549	14	1	63 days	0.43	M-v	5	Williams		1996 TQ
1996 TO ₃	14.0	0.15	19971218	121.64194	18.69101	300.91042	9.06449	0.0617311	2.9594600	48	1	65 days	0.23	M-v	5	Williams		1996 TO ₃
1996 TF ₅	16.0	0.15	19971218	101.58385	211.25712	195.22831	4.12042	0.1413009	2.2850439	28	1	65 days	0.34	M-v	5	Williams		1996 TF ₅
1996 TH ₅	16.0	0.15	19971218	68.11530	52.50777	16.98096	2.64138	0.1817029	2.4045828	27	1	70 days	0.29	M-v	5	Williams		1996 TH ₅
1996 TX ₇	15.0	0.15	19971218	216.67942	128.32360	147.83617	4.15704	0.1402719	2.2456614	10	1	62 days	0.76	M-v	6	Williams		1996 TX ₇
1996 TM ₉	15.5	0.15	19971218	157.73547	356.24420	0.48351	0.88198	0.0268979	2.1913073	35	1	60 days	0.41	M-v	5	Williams		1996 TM ₉
1996 TG ₁₅	14.5	0.15	19971218	105.51553	332.70809	65.78027	3.29325	0.1994774	2.3676062	14	1	64 days	0.72	M-v	5	Williams		1996 TG ₁₅
1996 TL ₆₆	5.0	0.15	19971218	358.50124	184.05980	217.76161	23.95249	0.5854428	84.5407140	83	2	1996–1997	0.52	M-v	5	Williams	30690	1996 TL ₆₆
1996 TO ₆₆	4.5	0.15	19971218	108.90662	243.98784	355.19877	27.32733	0.1191143	43.5804398	50	2	1996–1997	0.71	M-v	6	Williams	30690	1996 TO ₆₆
1996 TP ₆₆	6.5	0.15	19971218	356.92236	74.66164	316.64306	5.68499	0.3357627	39.7107951	30	2	1996–1997	0.59	M-v	5	Williams	30690	1996 TP ₆₆
1996 UU ₁	13.5	0.15	19971218	6.22719	90.81002	10.60859	4.96035	0.1391145	3.1686073	20	1	60 days	0.23	M-v	5	Williams		1996 UU ₁
1996 UA ₃	16.0	0.15	19971218	156.99035	275.45312	66.53170	8.22567	0.1435742	2.3268807	42	1	67 days	0.56	M-v	5	Williams		1996 UA ₃
1996 US ₃	17.0	0.15	19971218	77.93498	23.90802	30.85088	4.16374	0.2097760	2.6982795	34	1	62 days	0.66	M-v	5	Williams		1996 US ₃
1996 VK	13.5	0.15	19971218	77.69956	356.24019	59.12406	7.38158	0.0615717	2.6852992	16	1	67 days	0.55	M-v	5	Williams		1996 VK
1996 VV	13.5	0.15	19971218	192.17575	233.91610	57.08316	4.13933	0.1351190	2.5227913	33	1	70 days	0.74	M-v	6	Williams		1996 VV
1996 VW	14.5	0.15	19971218	101.98293	199.91474	220.70764	3.47991	0.1212174	2.2463974	20	1	67 days	0.36	M-v	5	Williams		1996 VW
1996 VF ₁	16.5	0.15	19971218	80.40328	40.84078	31.24328	3.78839	0.1550724	2.4079172	30	1	62 days	0.37	M-v	5	Williams		1996 VF ₁
1996 VR ₁	14.5	0.15	19971218	154.80954	271.11179	58.63882	15.38244	0.0527057	2.6733695	21	1	69 days	0.41	M-v	5	Williams		1996 VR ₁
1996 VG ₂	14.5	0.15	19971218	115.37713	209.55288	192.43839	1.89991	0.2047686	2.4080884	14	3	1981–1996	0.55	M-v	4	Williams	30670	1996 VG ₂
1996 VN ₃	13.5	0.15	19971218	57.49545	5.60209	72.80400	2.12475	0.2215402	3.1946349	14	1	70 days	0.44	M-v	5	Williams		1996 VN ₃
1996 VH ₄	13.5	0.15	19971218	9.92431	93.60930	77.54001	13.69722	0.1240418	2.6894591	29	1	64 days	0.53	M-v	5 D	Williams		1996 VH ₄
1996 VB ₅	13.5	0.15	19971218	176.45187	287.24401	51.36340	6.42291	0.0461748	2.2288930	48	1	60 days	0.55	M-v	5	Williams		1996 VB ₅
1996 VT ₈	13.5	0.15	19971218	134.36599	281.43279	62.89839	13.47519	0.1878527	2.6905227	13	1	69 days	0.70	M-v	5	Williams		1996 VT ₈

1996 WS ₂	15.5	0.15	19971218	117.82695	189.52997	205.99884	1.66112	0.2334286	2.3070821	18	1	67 days	0.38	M-v	5	Williams	1996 WS ₂
1996 WE ₃	14.5	0.15	19971218	291.46011	11.51467	238.87662	5.37440	0.0904007	2.2855002	18	1	71 days	0.51	M-v	5	Williams	1996 WE ₃
1996 XF ₂	14.5	0.15	19971218	83.48958	350.48013	75.08685	14.71691	0.1466250	2.7823410	22	1	67 days	0.36	M-v	4	Williams	1996 XF ₂
1996 XN ₂	15.5	0.15	19971218	122.31994	78.87612	288.03785	2.64449	0.2524556	2.5566661	30	1	61 days	0.36	M-v	5	Williams	1996 XN ₂
1996 XL ₄	16.0	0.15	19971218	106.48303	115.25260	269.37847	10.04422	0.3120476	2.6115836	14	1	66 days	0.23	M-v	4	Williams	1996 XL ₄
1996 XH ₆	13.0	0.15	19971218	143.81432	244.40440	109.85328	3.20519	0.1071708	2.9015255	13	1	63 days	0.55	M-v	6	Williams	1996 XH ₆
1996 XE ₉	15.5	0.15	19971218	115.22695	162.03308	263.04074	5.47303	0.1779367	2.3575579	33	1	66 days	0.35	M-v	4	Williams	1996 XE ₉
1996 XG ₉	13.5	0.15	19971218	298.53099	168.55739	60.80483	9.10684	0.1637129	2.7917918	21	1	70 days	0.44	M-v	5	Williams	1996 XG ₉
1996 XY ₁₂	15.5	0.15	19971218	76.57628	340.48875	80.53997	11.86075	0.0776912	2.9394132	11	1	60 days	0.24	M-v	4	Williams	1996 XY ₁₂
1996 XQ ₁₃	13.5	0.15	19971218	178.70458	90.50834	241.18810	11.53656	0.1157118	2.6316262	41	1	62 days	0.32	M-v	6	Williams	1996 XQ ₁₃
1996 XJ ₁₈	16.5	0.15	19971218	350.57923	91.56784	124.69363	12.05722	0.1077392	2.7405237	11	1	61 days	0.21	M-v	5	Williams	1996 XJ ₁₈
1996 XY ₁₈	14.0	0.15	19971218	91.43311	210.21975	231.36904	2.89323	0.1665928	2.4462238	16	1	60 days	0.62	M-v	5	Williams	1996 XY ₁₈
1996 XL ₁₉	15.5	0.15	19971218	109.65422	127.74615	312.77732	0.65592	0.1521212	2.3820704	15	1	67 days	0.60	M-v	5	Williams	1996 XL ₁₉
1996 XS ₂₅	13.0	0.15	19971218	275.45708	155.78331	101.73373	20.27584	0.1861414	3.1136711	17	1	60 days	0.39	M-v	5	Williams	1996 XS ₂₅
1996 XZ ₂₆	15.5	0.15	19971218	57.53571	164.63736	8.32349	2.83619	0.1541216	2.3739518	11	1	66 days	0.30	M-v	5	Williams	1996 XZ ₂₆
1996 XY ₂₈	15.0	0.15	19971218	16.24804	92.02949	66.25655	1.77402	0.1143204	2.4549565	12	1	60 days	0.14	M-v	5	Williams	1996 XY ₂₈
1996 XL ₂₉	16.5	0.15	19971218	116.36201	323.74384	64.87782	1.87354	0.1862391	2.5421655	17	1	60 days	0.20	M-v	5	Williams	1996 XL ₂₉
1996 XX ₂₉	16.5	0.15	19971218	61.94707	39.50211	73.04641	2.39861	0.1498425	2.4282708	15	1	60 days	0.25	M-v	5	Williams	1996 XX ₂₉
1996 YD ₃	13.0	0.15	19971218	269.69193	273.77295	351.51635	9.46517	0.0763712	3.0299017	19	1	61 days	0.67	M-v	5	Williams	1996 YD ₃
1997 AH ₁	14.5	0.15	19971218	337.75676	141.38487	100.36812	8.19762	0.1440868	2.5123257	16	1	61 days	0.70	M-v	5	Williams	1997 AH ₁
1997 AQ ₂	13.5	0.15	19971218	130.72734	93.44278	317.86690	9.14073	0.1362476	2.6685777	16	1	63 days	0.67	M-v	5	Williams	1997 AQ ₂
1997 AF ₅	14.5	0.15	19971218	236.03898	234.17110	97.13409	7.56765	0.1604758	2.2804149	12	1	60 days	0.58	M-v	6	Williams	1997 AF ₅
1997 AX ₅	15.5	0.15	19971218	145.63559	121.35829	299.93233	5.27653	0.1776971	2.2453763	18	1	66 days	0.30	M-v	5	Williams	1997 AX ₅
1997 AY ₅	14.5	0.15	19971218	62.78869	183.82069	276.96113	5.88925	0.1491879	2.5644019	16	1	74 days	0.24	M-v	5	Williams	1997 AY ₅
1997 AL ₆	15.0	0.15	19971218	115.31523	138.66636	286.76073	21.32675	0.0444112	2.6236245	18	1	72 days	0.38	M-v	5	Williams	1997 AL ₆
1997 AV ₇	16.5	0.15	19971218	99.92303	180.54469	275.87326	3.24787	0.0642780	2.7537809	12	1	66 days	0.22	M-v	5	Williams	1997 AV ₇
1997 AY ₇	14.5	0.15	19971218	245.51927	31.64283	299.11024	6.37978	0.1280742	2.3385245	12	1	67 days	0.09	M-v	4	Williams	1997 AY ₇
1997 AC ₈	14.5	0.15	19971218	138.15087	112.41142	293.84394	8.18101	0.0800524	2.9672577	12	1	70 days	0.15	M-v	5	Williams	1997 AC ₈
1997 AF ₈	16.0	0.15	19971218	35.29310	257.62316	273.55700	2.85247	0.2380641	3.0544935	15	1	67 days	0.28	M-v	4	Williams	1997 AF ₈
1997 AG ₈	14.5	0.15	19971218	343.67905	332.36145	279.95386	3.66435	0.1161679	2.2687948	15	1	66 days	0.27	M-v	4	Williams	1997 AG ₈
1997 AQ ₁₁	15.5	0.15	19971218	84.77362	195.65432	278.79103	4.11782	0.0375604	2.7818864	12	1	68 days	0.15	M-v	4	Williams	1997 AQ ₁₁
1997 AO ₁₇	16.0	0.15	19971218	69.70546	50.98384	97.51191	10.32354	0.1392369	2.3460357	16	1	66 days	0.53	M-v	5	Williams	1997 AO ₁₇
1997 AU ₁₉	15.5	0.15	19971218	108.18373	135.66305	287.85879	3.76023	0.1740031	3.1408748	15	1	66 days	0.13	M-v	4	Williams	1997 AU ₁₉
1997 BR	17.5	0.15	19971218	124.54260	133.67812	116.77865	17.24050	0.3056718	1.3353947	397	3	1980-1997	0.59	M-v	1	Williams	1997 BR
1997 BR ₆	14.0	0.15	19971218	138.95876	98.93594	336.30735	4.88804	0.1478107	2.3242164	19	1	61 days	0.43	M-v	5	Williams	1997 BR ₆
1997 BO ₉	15.0	0.15	19971218	55.44481	33.69187	146.27909	4.47518	0.0580125	2.2702228	20	1	68 days	0.63	M-v	5	Williams	1997 BO ₉
1997 CB	14.5	0.15	19971218	251.56595	191.26607	156.59187	11.34282	0.2792223	2.3483002	17	1	72 days	0.26	M-v	5	Williams	1997 CB
1997 CT ₅	14.0	0.15	19971218	117.71976	131.33440	325.19693	6.96227	0.0562212	2.2722815	31	1	60 days	0.21	M-v	4	Williams	1997 CT ₅
1997 CU ₅	15.5	0.15	19971218	64.71341	22.09462	137.10136	5.39986	0.0921304	2.3497279	39	1	97 days	0.33	M-v	4 D	Williams	1997 CU ₅
1997 CC ₆	16.0	0.15	19971218	63.71102	2.40331	126.18103	8.01308	0.3257058	3.0369364	22	1	64 days	0.55	M-v	4	Williams	1997 CC ₆
1997 CG ₆	13.5	0.15	19971218	72.31666	146.45771	55.74425	8.10012	0.1215414	2.2181827	19	1	73 days	0.37	M-v	5	Williams	1997 CG ₆
1997 CF ₂₂	14.0	0.15	19971218	248.76786	173.56259	158.95080	5.70359	0.0298525	2.7901256	25	1	72 days	0.17	M-v	4	Williams	1997 CF ₂₂
1997 CK ₂₂	14.5	0.15	19971218	87.55968	335.74902	148.44548	13.68325	0.1144783	2.6937910	24	1	71 days	0.18	M-v	4	Williams	1997 CK ₂₂
1997 EL	12.0	0.15	19971218	216.84660	215.32093	148.50114	10.96033	0.1205095	3.0028233	13	1	63 days	0.34	M-v	5	Williams	1997 EL
1997 EJ ₆	13.0	0.15	19971218	4.07177	149.17621	52.30876	11.32374	0.1438072	3.1965362	30	1	60 days	0.38	M-v	5	Williams	1997 EJ ₆
1997 ED ₈	15.5	0.15	19971218	71.83305	157.32552	6.22853	3.59761	0.1654614	2.5857913	23	1	63 days	0.42	M-v	4	Williams	1997 ED ₈
1997 EO ₁₇	14.5	0.15	19971218	226.47457	320.35945	63.74837	7.47361	0.1668038	2.2808852	10	1	65 days	0.23	M-v	5	Williams	1997 EO ₁₇
1997 EJ ₂₆	17.0	0.15	19971218	357.21887	270.08297	354.09001	6.25477	0.0796599	2.4055968	13	1	65 days	0.25	M-v	6	Williams	1997 EJ ₂₆
1997 ER ₄₀	15.5	0.15	19971218	357.72562	78.01872	181.64586	14.35097	0.0777855	2.6747990	64	1	68 days	0.31	M-v	5	Williams	1997 ER ₄₀
1997 EQ ₄₆	14.5	0.15	19970221	57.95552	112.21748	4.08110	15.54318	0.1029481	2.4113657	12	1	2 days	0.88			Marsden	1997 EQ ₄₆
1997 ET ₄₆	14.0	0.15	19970313	287.53160	76.03766	200.94811	9.80642	0.0978599	3.0297809	17	1	30 days	1.12			Marsden	1997 ET ₄₆
1997 EU ₄₆	14.5	0.15	19970313	310.72068	6.21491	247.52847	1.51984	0.1415301	2.4604281	18	1	31 days	1.60			Marsden	1997 EU ₄₆
1997 EM ₄₉	15.5	0.15	19970221	46.50760	233.19933	238.57077	1.83799	0.2089842	2.2302883	12	1	2 days	1.17		E	Marsden	1997 EM ₄₉

1997 EO ₄₉	15.5	0.15	19970221	44.44094	242.01622	232.01490	2.29103	0.2097684	2.1877549	12	1	2 days	1.01	E	Marsden	1997 EO ₄₉	
1997 FQ ₁	16.0	0.15	19971218	31.77657	292.75908	315.59658	3.46512	0.1221746	2.3414844	20	1	65 days	0.52	M-v	5	Williams	1997 FQ ₁
1997 FY ₁	14.5	0.15	19970313	271.24819	289.38898	12.45547	13.23720	0.1983055	2.7281487	22	1	27 days	0.53			Marsden	1997 FY ₁
1997 FX ₂	17.0	0.15	19970313	23.16817	273.65994	240.54504	2.22389	0.1639924	2.3417507	26	1	30 days	1.26		D	Williams	1997 FX ₂
1997 FY ₂	15.5	0.15	19970313	323.40644	236.18443	355.15305	5.50586	0.0973374	2.3091323	12	1	25 days	0.37			Marsden	1997 FY ₂
1997 FZ ₂	14.5	0.15	19970313	339.64852	234.39807	343.68926	3.83437	0.1693163	3.1977974	15	1	27 days	0.61			Marsden	1997 FZ ₂
1997 FC ₃	14.0	0.15	19970313	155.33862	171.47468	219.54443	0.80820	0.0991987	2.9540457	13	1	27 days	0.55			Marsden	1997 FC ₃
1997 FQ ₃	15.5	0.15	19970313	226.38526	332.34820	1.76655	2.42431	0.1537968	2.2500294	16	1	27 days	1.22		D	Marsden	1997 FQ ₃
1997 FT ₃	15.5	0.15	19971218	78.24655	336.23926	212.01316	4.51361	0.0991116	2.2994382	29	3	1991–1997	0.62	M-v	4	Williams	30690 1997 FT ₃
1997 FV ₃	15.0	0.15	19970313	174.94814	13.71686	0.67538	7.42545	0.1359758	2.3094959	18	1	27 days	0.69			Marsden	1997 FV ₃
1997 FW ₃	16.0	0.15	19970313	250.58100	323.28521	347.41940	4.15286	0.1158795	2.2485094	18	1	27 days	0.56			Marsden	1997 FW ₃
1997 FX ₃	14.0	0.15	19970313	254.25093	104.06410	224.08573	2.22063	0.3259559	2.6368671	19	1	25 days	0.63			Marsden	1997 FX ₃
1997 FG ₄	14.5	0.15	19970402	220.46125	140.41564	195.97968	4.52545	0.0315268	2.6835490	21	1	59 days	0.44			Marsden	1997 FG ₄
1997 FM ₄	15.0	0.15	19970402	77.11900	258.12132	202.59590	12.41995	0.1487049	2.5361307	22	1	58 days	0.57			Marsden	1997 FM ₄
1997 FR ₄	15.5	0.15	19970313	11.74472	169.94562	2.37121	2.35713	0.1311062	2.4613517	20	1	27 days	0.73			Marsden	1997 FR ₄
1997 FD ₅	15.5	0.15	19970313	33.63205	310.24044	186.26817	9.66152	0.2018542	2.4045434	18	1	36 days	0.67			Marsden	1997 FD ₅
1997 GB	15.0	0.15	19971218	99.99241	126.39309	29.15752	6.50655	0.0844286	2.3647454	25	1	60 days	0.43	M-v	5	Williams	1997 GB
1997 GT ₃	13.5	0.15	19970313	263.21606	283.16763	17.55671	9.96664	0.0991397	3.0674190	18	1	34 days	1.09			Marsden	1997 GT ₃
1997 GB ₉	16.5	0.15	19970313	347.10380	295.33893	267.57032	1.37846	0.1044624	2.3513321	10	1	25 days	1.28			Marsden	1997 GB ₉
1997 GH ₉	15.5	0.15	19970313	266.48675	309.11432	349.86786	6.00857	0.1436426	2.4227872	10	1	25 days	0.59			Marsden	1997 GH ₉
1997 GN ₉	15.0	0.15	19970313	252.20387	303.15386	5.11922	15.24403	0.0913600	2.6377714	12	1	27 days	0.59			Marsden	1997 GN ₉
1997 GR ₉	15.5	0.15	19970313	345.40831	204.37348	3.19029	7.83732	0.1212966	2.6937030	16	1	27 days	1.03			Marsden	1997 GR ₉
1997 GF ₁₁	14.5	0.15	19970313	28.43847	150.97169	5.34101	6.32539	0.0953881	3.1041016	11	1	27 days	0.39			Marsden	1997 GF ₁₁
1997 GM ₁₁	14.5	0.15	19970313	235.30236	316.57850	4.74123	9.05906	0.0540162	3.0871371	11	1	25 days	0.47			Marsden	1997 GM ₁₁
1997 GQ ₁₁	15.5	0.15	19970313	112.85882	67.84567	359.04883	6.79981	0.1028650	2.2777776	12	1	27 days	0.86			Marsden	1997 GQ ₁₁
1997 GT ₁₁	16.0	0.15	19970313	215.13586	107.20558	235.47669	2.08178	0.1358936	2.1810375	9	1	27 days	0.53			Marsden	1997 GT ₁₁
1997 GA ₁₂	16.5	0.15	19970313	321.00209	36.00896	203.46126	4.16313	0.1423330	2.5887183	11	1	27 days	0.58			Marsden	1997 GA ₁₂
1997 GB ₁₂	16.5	0.15	19970313	28.90015	303.08538	204.68233	1.70940	0.1615104	2.3801574	16	1	27 days	0.78			Marsden	1997 GB ₁₂
1997 GY ₁₂	15.0	0.15	19970313	177.02396	193.64379	180.08403	2.64354	0.1309522	2.6527794	9	1	27 days	0.44			Marsden	1997 GY ₁₂
1997 GF ₁₃	16.0	0.15	19970402	21.81531	117.90215	50.24900	0.34660	0.1045028	2.9987642	10	1	55 days	0.49			Marsden	1997 GF ₁₃
1997 GK ₁₃	15.0	0.15	19970313	248.61608	312.06188	13.31329	7.49235	0.2447773	2.3969066	14	1	27 days	0.56			Marsden	1997 GK ₁₃
1997 GP ₁₃	15.5	0.15	19970313	343.34833	2.00506	205.35687	3.49743	0.0506617	2.3495929	14	1	27 days	0.50			Marsden	1997 GP ₁₃
1997 GW ₁₃	16.0	0.15	19970313	73.31613	102.34063	2.62302	6.54022	0.1009685	2.3391405	10	1	27 days	0.71			Marsden	1997 GW ₁₃
1997 GF ₁₄	15.0	0.15	19970313	85.99712	165.93482	281.76991	1.98513	0.1511650	2.4387791	16	1	27 days	0.61			Marsden	1997 GF ₁₄
1997 GH ₁₄	14.0	0.15	19970313	136.59733	31.91232	11.06445	23.16138	0.2340474	3.0529524	12	1	27 days	0.62			Marsden	1997 GH ₁₄
1997 GK ₁₄	15.0	0.15	19970313	278.59280	298.73417	6.44663	13.34005	0.2873743	2.3821376	14	1	27 days	0.54			Marsden	1997 GK ₁₄
1997 GW ₁₄	16.0	0.15	19970313	314.88389	23.63796	228.90424	3.01979	0.2003880	2.3044832	16	1	27 days	0.91			Marsden	1997 GW ₁₄
1997 GX ₁₄	15.0	0.15	19970313	268.56877	299.10646	6.43129	11.47185	0.1970708	2.6180942	14	1	27 days	0.66			Marsden	1997 GX ₁₄
1997 GY ₁₄	15.5	0.15	19970313	167.81404	16.76941	4.76270	7.35025	0.1243633	2.4189317	11	1	25 days	0.48			Marsden	1997 GY ₁₄
1997 GZ ₁₄	16.0	0.15	19970313	0.05457	204.60615	344.06547	2.48253	0.0991698	2.3453858	16	1	27 days	0.50			Marsden	1997 GZ ₁₄
1997 GC ₁₅	16.0	0.15	19970313	263.39244	304.97840	355.51721	4.03739	0.1201909	2.3216006	14	1	27 days	0.96			Marsden	1997 GC ₁₅
1997 GD ₁₅	14.5	0.15	19970313	212.05724	78.30944	267.13506	1.55370	0.0939512	2.7268351	14	1	27 days	0.63			Marsden	1997 GD ₁₅
1997 GE ₁₅	16.0	0.15	19970313	20.33918	186.34542	334.01026	1.55068	0.1556028	2.4073779	16	1	27 days	0.58			Marsden	1997 GE ₁₅
1997 GG ₁₅	16.0	0.15	19970313	44.93783	137.42444	355.36630	1.90955	0.1259089	2.3840675	12	1	27 days	0.86			Marsden	1997 GG ₁₅
1997 GH ₁₅	14.5	0.15	19970313	292.40098	53.89622	210.83911	3.61995	0.0591923	2.5640826	16	1	27 days	0.82			Marsden	1997 GH ₁₅
1997 GJ ₁₅	14.5	0.15	19970313	206.71822	148.16118	201.48797	9.50515	0.0770851	2.9872836	7	1	27 days	0.40			Marsden	1997 GJ ₁₅
1997 GL ₁₅	14.5	0.15	19970313	174.87886	7.79825	8.49407	5.71245	0.2127081	2.5332326	14	1	27 days	0.72			Marsden	1997 GL ₁₅
1997 GU ₁₅	16.5	0.15	19970313	268.24330	99.77152	184.02662	6.28245	0.0296670	2.1955497	11	1	27 days	0.54			Marsden	1997 GU ₁₅
1997 GS ₁₆	13.5	0.15	19970313	61.24302	315.67599	172.05831	1.96108	0.0276694	2.9293020	21	1	30 days	0.96			Marsden	1997 GS ₁₆
1997 GV ₁₆	14.0	0.15	19970313	231.50483	135.70927	194.44418	9.99213	0.1072923	2.9858710	23	1	30 days	1.11			Marsden	1997 GV ₁₆
1997 GZ ₁₆	15.0	0.15	19970313	204.72979	147.24549	205.86116	7.18241	0.1584069	2.1656336	20	1	27 days	0.91			Marsden	1997 GZ ₁₆
1997 GB ₁₇	16.5	0.15	19970313	332.42028	17.22177	208.74911	3.77046	0.1423970	2.5220115	17	1	27 days	0.72			Marsden	1997 GB ₁₇
1997 GC ₁₇	16.0	0.15	19970313	23.07951	160.96157	1.80742	5.21967	0.0909640	2.5843978	11	1	27 days	0.59			Marsden	1997 GC ₁₇

1997 GE ₁₇	15.5	0.15	19971218	131.71654	138.35045	358.18955	5.23045	0.0531596	2.2214582	22	2	1977–1997	0.78	M-v	5	Marsden	29933	1997 GE ₁₇
1997 GL ₁₇	15.0	0.15	19970313	359.40358	218.26878	331.52669	2.02056	0.1457747	2.4218685	18	1	27 days	0.51			Marsden		1997 GL ₁₇
1997 GM ₁₇	15.5	0.15	19970313	12.11705	303.11099	226.05404	2.49291	0.2273502	2.6223818	18	1	31 days	0.71			Marsden		1997 GM ₁₇
1997 GZ ₁₇	15.0	0.15	19970313	136.21675	217.45910	183.77723	4.75396	0.2206673	2.3289316	14	1	27 days	0.55			Marsden		1997 GZ ₁₇
1997 GC ₁₈	16.5	0.15	19970313	349.14666	17.43882	186.53009	6.56169	0.1524525	2.6285124	11	1	29 days	0.49			Marsden		1997 GC ₁₈
1997 GO ₁₈	15.5	0.15	19971218	349.61298	95.61238	187.64081	11.65166	0.1348010	2.5832328	15	2	1994–1997	0.54	M-v	4	Marsden	29933	1997 GO ₁₈
1997 GV ₁₈	13.5	0.15	19971218	140.69678	236.63672	208.35789	4.06600	0.1457565	3.2078848	13	2	1977–1997	0.69	M-v	5	Marsden	29933	1997 GV ₁₈
1997 GW ₁₈	16.0	0.15	19970313	323.35071	34.45205	205.71485	4.31985	0.1616350	2.6152532	9	1	31 days	0.55			Marsden		1997 GW ₁₈
1997 GO ₁₉	16.0	0.15	19970313	39.07155	200.13033	304.03796	1.40017	0.0658320	2.4010665	12	1	27 days	1.19			Marsden		1997 GO ₁₉
1997 GW ₁₉	16.5	0.15	19970313	4.66503	340.16481	201.20256	1.98828	0.1219884	2.3490279	16	1	27 days	0.68			Marsden		1997 GW ₁₉
1997 GU ₂₀	15.5	0.15	19970313	320.01428	24.89416	221.78098	3.55183	0.2140205	2.4153693	22	1	27 days	0.58			D Marsden		1997 GU ₂₀
1997 GV ₂₀	15.0	0.15	19970313	26.34445	279.64104	231.92853	2.87275	0.1638029	2.5243709	22	1	27 days	0.93			D Marsden		1997 GV ₂₀
1997 GE ₂₁	14.0	0.15	19970313	205.15601	155.56044	198.09583	17.08551	0.1311030	3.0750709	21	1	27 days	0.80			Marsden		1997 GE ₂₁
1997 GX ₂₇	17.5	0.15	19971218	64.09772	162.68494	38.75854	29.23634	0.3507934	2.2888916	32	1	60 days	0.39	M-v	4	Williams		1997 GX ₂₇
1997 GT ₃₂	13.5	0.15	19971218	244.79701	15.20253	351.60483	1.39292	0.0993490	2.8955522	26	2	1992–1997	0.81	M-v	5	Williams	30094	1997 GT ₃₂
1997 GX ₃₂	14.0	0.15	19970313	355.45324	208.30829	349.04573	2.17750	0.0203061	2.7263465	12	1	29 days	0.95			Marsden		1997 GX ₃₂
1997 GK ₃₃	13.0	0.15	19970313	129.48295	217.72618	199.72296	7.89613	0.0880634	3.0356995	16	1	31 days	0.76			Marsden		1997 GK ₃₃
1997 GM ₃₃	14.0	0.15	19970313	253.16432	113.01261	197.55976	13.14440	0.1068621	2.5958067	19	1	32 days	0.68			Marsden		1997 GM ₃₃
1997 GA ₃₇	15.0	0.15	19971218	206.39694	210.71153	207.38064	5.38080	0.1069838	2.2349078	21	2	1995–1997	0.68	M-v	5	Marsden	30462	1997 GA ₃₇
1997 GD ₄₃	16.0	0.15	19970313	28.41546	235.44023	275.82691	1.26046	0.1296018	2.3834393	14	1	25 days	0.70			Marsden		1997 GD ₄₃
1997 HE ₁₄	13.0	0.15	19971218	232.57115	56.75311	313.84852	1.23508	0.0892354	2.9111585	15	5	1974–1997	0.69	M-v	4	Williams	30672	1997 HE ₁₄
1997 JA	13.5	0.15	19971218	100.13606	66.82994	85.28190	2.30345	0.0942062	3.1321474	55	1	66 days	0.60	M-v	5	Williams		1997 JA
1997 JU ₃	15.0	0.15	19971218	62.04787	153.13446	56.79570	8.90141	0.1488581	2.8130910	21	1	60 days	0.65	M-v	5	Williams		1997 JU ₃
1997 JB ₈	16.0	0.15	19971218	7.76691	96.34782	217.95342	4.97587	0.2195819	2.2151446	27	1	62 days	0.59	M-v	6	Williams		1997 JB ₈
1997 JB ₁₃	14.0	0.15	19971218	59.79143	54.14025	145.81816	0.93718	0.1235984	3.1951302	19	3	1991–1997	0.71	M-v	5	Williams	30673	1997 JB ₁₃
1997 KS	14.0	0.15	19971218	33.58455	73.96277	225.22453	5.72367	0.1361998	2.4578230	20	1	65 days	0.40	M-v	4	Williams		1997 KS
1997 LD	14.0	0.15	19971218	27.84237	179.03684	178.82157	4.92306	0.2015257	2.2634958	26	4	1973–1997	0.50	M-v	2	Williams	30673	1997 LD
1997 LB ₄	15.0	0.15	19971218	41.59363	5.06757	310.09771	1.33838	0.2070885	2.5775988	24	3	1993–1997	0.51	M-v	3	Williams	30673	1997 LB ₄
1997 LY ₄	17.0	0.15	19971218	57.96500	51.10902	252.91521	8.35972	0.2717023	1.8032425	193	1	118 days	0.45	M-v	3	Marsden	30691	1997 LY ₄
1997 LA ₅	15.5	0.15	19971218	359.97217	234.07630	109.53508	15.77637	0.1507637	2.5626895	23	1	60 days	0.31	M-v	4	Williams		1997 LA ₅
1997 MV ₁	18.5	0.15	19971218	41.17357	112.73771	196.00629	6.48083	0.3236847	2.3354540	17	1	84 days	0.44	M-v	4	Williams	30691	1997 MV ₁
1997 MD ₁₀	16.0	0.15	19971218	0.26448	68.92405	281.66330	59.12737	0.9430514	26.9718662	100	1	99 days	0.71	M-v	2	Williams	30692	1997 MD ₁₀
1997 NQ	14.0	0.15	19971218	359.27015	136.12524	212.57029	12.23074	0.1937169	2.6903928	20	1	89 days	0.60	M-v	5	Williams	30692	1997 NQ
1997 NV	14.5	0.15	19971218	347.51171	98.46621	263.36693	5.35503	0.1286852	2.3480653	45	3	1983–1997	0.56	M-v	4	Marsden	30692	1997 NV
1997 NZ	12.5	0.15	19971218	34.28529	8.19787	284.77705	12.06471	0.1631923	2.6073781	36	4	1972–1997	0.45	M-v	2	Williams	30692	1997 NZ
1997 NG ₃	12.5	0.15	19971218	13.63440	162.89162	158.54617	10.86536	0.0996452	3.0031266	24	3	1987–1997	0.83	M-v	3	Williams	30674	1997 NG ₃
1997 NL ₆	15.5	0.15	19971218	60.41424	85.50862	192.78248	4.42021	0.1894252	2.1920002	30	5	1977–1997	0.69	M-v	2	Marsden	30692	1997 NL ₆
1997 NM ₁₀	16.0	0.15	19971218	24.00628	42.38927	282.88799	11.06898	0.1885875	2.2878124	37	1	84 days	0.61	M-v	4	Williams		1997 NM ₁₀
1997 OJ	14.0	0.15	19971218	33.70124	230.78347	58.62342	1.26677	0.1667291	3.1789526	19	1	63 days	0.55	M-v	5	Williams		1997 OJ
1997 OK	15.5	0.15	19971218	18.39460	18.71752	305.02742	11.81756	0.2387704	2.7261223	19	1	63 days	0.44	M-v	4	Williams		1997 OK
1997 OT	15.0	0.15	19971218	26.45657	357.81000	326.19751	7.52575	0.1175118	3.1677191	12	1	64 days	0.17	M-v	5	Williams		1997 OT
1997 OY	14.0	0.15	19971218	236.91331	148.35700	318.93937	8.21919	0.1439618	2.7382191	19	1	66 days	0.21	M-v	4	Williams		1997 OY
1997 OF ₁	16.0	0.15	19971218	6.68720	67.57850	295.17021	1.59057	0.2106998	2.4016776	29	2	1994–1997	0.23	M-v	4	Williams	30675	1997 OF ₁
1997 OO ₁	15.0	0.15	19971218	263.19693	313.11477	130.49087	7.63153	0.0885953	2.2518468	31	3	1989–1997	0.59	M-v	3	Marsden	30675	1997 OO ₁
1997 OV ₁	16.5	0.15	19970731	342.30056	81.00700	247.78304	6.16123	0.0519224	2.3480983	6	1	11 days	0.27			Williams		1997 OV ₁
1997 OX ₁	17.0	0.15	19970820	357.39690	148.34170	172.69996	5.66270	0.2387880	2.2052845	10	1	54 days	0.27			Williams		1997 OX ₁
1997 OG ₂	16.5	0.15	19971218	41.46008	121.11225	188.48551	1.92766	0.2026361	2.3821026	15	1	67 days	0.10	M-v	5	Williams		1997 OG ₂
1997 OH ₂	17.5	0.15	19971218	356.25933	187.06978	185.91371	2.17890	0.1920952	2.4670114	15	1	65 days	0.21	M-v	5	Williams		1997 OH ₂
1997 OF ₃	16.0	0.15	19971218	331.62082	210.70927	205.99937	1.46943	0.3843488	3.2259049	12	1	65 days	0.22	M-v	6	Williams		1997 OF ₃
1997 PO	16.5	0.15	19971218	28.30659	161.79143	136.63645	23.60990	0.4325653	3.0560334	122	1	67 days	0.55	M-v	4	Williams	30693	1997 PO
1997 PQ	15.5	0.15	19971218	280.03190	305.81273	125.23924	4.69152	0.0801837	2.2032945	21	3	1991–1997	0.52	M-v	4	Williams	30676	1997 PQ
1997 PR	15.0	0.15	19971218	55.71208	333.97232	320.08312	8.54632	0.2109120	2.3860939	39	2	1986–1997	0.63	M-v	4	Williams	30676	1997 PR
1997 PC ₁	14.5	0.15	19971218	60.51844	225.81276	65.24236	1.50533	0.1711431	3.1012497	30	3	1995–1997	0.30	M-v	4	Williams	30676	1997 PC ₁

1997 PF ₁	15.5	0.15	19970820	334.33757	59.34092	304.61681	4.21454	0.1628510	2.3089618	25	1	49 days	1.03		Williams		1997 PF ₁
1997 PK ₁	14.5	0.15	19971218	282.77328	293.49947	143.35823	6.90840	0.0792249	2.8047854	29	3	1990–1997	0.41	M-v 3	Williams	30676	1997 PK ₁
1997 PM ₁	13.5	0.15	19971218	218.17415	5.20798	126.15833	6.67636	0.0895129	3.1718674	34	1	63 days	0.34	M-v 5 D	Marsden		1997 PM ₁
1997 PX ₁	15.0	0.15	19971218	78.37939	179.46866	93.83738	5.93294	0.1228609	2.3367020	64	4	1964–1997	0.55	M-v 1	Williams	30676	1997 PX ₁
1997 PY ₁	14.5	0.15	19971218	86.10296	286.12055	344.93777	10.12656	0.0696961	2.9886213	50	1	61 days	0.39	M-v 4	Marsden		1997 PY ₁
1997 PZ ₁	15.0	0.15	19970820	322.57973	213.44348	155.47056	2.89305	0.1022296	2.9709142	40	1	49 days	0.51		Marsden		1997 PZ ₁
1997 PE ₂	14.5	0.15	19971218	19.57430	184.40863	143.36310	18.58441	0.3101003	2.6111900	30	2	1993–1997	0.42	M-v 4	Williams	30677	1997 PE ₂
1997 PF ₂	17.0	0.15	19970820	356.49328	316.12350	33.16027	2.67286	0.2165712	2.2542449	26	1	59 days	0.33		Williams		1997 PF ₂
1997 PK ₂	14.5	0.15	19970820	13.52816	9.31544	302.53674	6.09563	0.1417220	2.3680494	30	1	45 days	0.39		Williams		1997 PK ₂
1997 PP ₂	15.0	0.15	19970820	327.79130	53.05301	310.82112	21.63286	0.0933336	3.1743124	17	1	46 days	0.49		Williams		1997 PP ₂
1997 PT ₂	16.0	0.15	19970909	16.98698	288.42230	29.07607	4.85267	0.1846990	2.5917210	35	1	56 days	0.47		Marsden		1997 PT ₂
1997 PU ₂	14.5	0.15	19970909	158.86751	5.24903	150.49661	23.01401	0.1406189	2.2806887	42	1	55 days	0.40		Marsden		1997 PU ₂
1997 PY ₂	15.5	0.15	19970820	322.22090	291.88494	83.77397	7.15535	0.0714367	2.4215657	23	1	53 days	0.17		Marsden		1997 PY ₂
1997 PC ₃	15.5	0.15	19970820	329.23369	232.87328	156.63849	14.45225	0.2340653	3.1053958	22	1	56 days	0.46		Williams		1997 PC ₃
1997 PD ₃	16.0	0.15	19970820	315.34334	247.08403	144.14214	2.53886	0.0950868	2.1464274	29	1	56 days	0.22		Williams		1997 PD ₃
1997 PE ₃	14.5	0.15	19970909	109.83612	240.52102	340.24310	9.49798	0.1944056	2.6890583	40	1	55 days	0.35		Marsden		1997 PE ₃
1997 PN ₃	14.5	0.15	19970820	7.25098	310.55633	25.51035	2.39887	0.0632499	2.8753084	21	1	48 days	0.27		Williams		1997 PN ₃
1997 PP ₃	16.0	0.15	19971218	5.26837	24.50079	351.81764	6.41366	0.1330127	2.3986113	17	1	64 days	0.22	M-v 4	Williams		1997 PP ₃
1997 PW ₃	15.0	0.15	19970820	212.03057	138.96335	354.36318	6.58929	0.0408589	2.3089424	20	1	56 days	0.25		Williams		1997 PW ₃
1997 PY ₃	15.5	0.15	19970820	68.77120	351.29529	256.35791	3.71176	0.1374802	2.3334757	21	1	39 days	0.53		Williams		1997 PY ₃
1997 PA ₄	13.5	0.15	19970820	300.33134	93.58235	308.51036	24.24647	0.2661317	3.1734267	25	1	36 days	0.33		Williams		1997 PA ₄
1997 PJ ₄	12.5	0.15	19970820	264.04165	145.80610	282.38899	12.72775	0.1363209	2.6693240	26	1	50 days	1.03		Williams		1997 PJ ₄
1997 PL ₄	15.5	0.15	19970820	105.65282	241.31589	344.75740	6.89971	0.0740777	2.3040282	40	1	46 days	0.41		Marsden		1997 PL ₄
1997 PM ₄	15.0	0.15	19970909	351.51170	55.71865	308.29421	6.53348	0.2042883	2.5772432	34	1	53 days	0.21		Williams		1997 PM ₄
1997 PN ₄	16.0	0.15	19970820	70.09593	1.44541	241.48720	3.28741	0.1654503	2.2718867	12	1	38 days	0.28		Williams		1997 PN ₄
1997 PO ₄	15.5	0.15	19970820	7.50127	357.10933	325.02602	3.66611	0.2851440	2.9856341	16	1	38 days	0.45		Williams		1997 PO ₄
1997 PP ₄	15.0	0.15	19971218	355.18950	228.93592	158.19784	5.52870	0.1408909	2.2559481	35	4	1987–1997	0.84	M-v 2	Williams	30678	1997 PP ₄
1997 PQ ₄	15.5	0.15	19971218	21.63815	200.11066	153.79137	7.71654	0.1863643	2.2707242	29	2	1996–1997	0.42	M-v 3	Williams	30678	1997 PQ ₄
1997 PR ₄	14.0	0.15	19970820	270.61132	130.21328	295.29962	5.79089	0.0835977	2.3788254	12	1	42 days	0.63		Williams		1997 PR ₄
1997 PV ₄	15.0	0.15	19970820	12.04677	155.82490	153.15289	8.27409	0.1846359	2.2716302	14	1	53 days	0.51		Williams		1997 PV ₄
1997 PA ₅	15.5	0.15	19970820	306.47172	100.92268	309.81246	3.93645	0.1916584	2.2732857	12	1	32 days	0.13		Williams		1997 PA ₅
1997 PC ₅	15.0	0.15	19970820	57.52041	46.17147	215.23256	1.63259	0.1738896	2.3590779	12	1	37 days	0.24		Williams		1997 PC ₅
1997 PD ₅	15.0	0.15	19970820	47.44499	340.09294	306.62190	3.02981	0.0328912	2.1833248	12	1	37 days	0.27		Williams		1997 PD ₅
1997 PE ₅	16.0	0.15	19970820	356.01734	164.54121	177.86931	2.05929	0.2279425	2.4021914	14	1	27 days	0.15		Williams		1997 PE ₅
1997 PF ₅	15.0	0.15	19970820	8.12828	146.39634	177.29171	2.23913	0.2064121	2.4056927	20	1	37 days	0.14		Williams		1997 PF ₅
1997 PL ₅	13.0	0.15	19970820	281.52573	87.97093	323.59726	6.54760	0.0148232	3.1673181	15	1	57 days	0.80		Williams		1997 PL ₅
1997 QA	14.0	0.15	19970820	23.46549	25.57635	317.86332	6.80794	0.0835279	2.4115875	36	1	43 days	0.48		Marsden		1997 QA
1997 QB	15.5	0.15	19970820	305.96174	121.19758	264.78926	5.08104	0.0649768	2.6208931	40	1	33 days	0.50		Marsden		1997 QB
1997 QC	14.0	0.15	19970820	221.51438	191.11312	263.80042	5.93058	0.0839943	2.3618588	28	1	31 days	0.59		Williams		1997 QC
1997 QD	15.5	0.15	19970909	21.25395	346.06473	300.57331	13.01916	0.3104529	2.6298294	43	1	44 days	0.23		Marsden		1997 QD
1997 QE	16.0	0.15	19970820	14.03281	139.91660	165.49719	6.13749	0.2293653	2.3020033	18	1	27 days	0.91		Williams		1997 QE
1997 QF	14.0	0.15	19970909	57.09067	139.17995	139.22698	14.07810	0.0673555	2.8735791	38	1	45 days	0.22		Marsden		1997 QF
1997 QG	15.0	0.15	19970909	251.54595	296.29774	150.41407	5.44172	0.0958809	2.5673261	35	1	36 days	0.40		Marsden		1997 QG
1997 QJ	16.0	0.15	19970909	325.17349	258.48007	136.86687	1.42630	0.2966919	2.3941891	20	1	40 days	0.16		Marsden		1997 QJ
1997 QK	13.5	0.15	19970820	353.58333	37.91244	296.69829	9.15739	0.1422323	3.0300537	59	1	27 days	0.36		Marsden		1997 QK
1997 QL	15.0	0.15	19970820	234.05148	162.80967	292.46967	8.55117	0.0497735	2.7404994	30	1	29 days	0.37		Marsden		1997 QL
1997 QM	14.5	0.15	19970909	117.31840	61.18969	169.47835	15.05022	0.0111605	2.5368259	40	1	46 days	0.48		Marsden		1997 QM
1997 QN	14.5	0.15	19970909	349.43540	132.24699	256.98347	5.01938	0.1013189	2.2890842	27	1	35 days	0.18		Nakano		1997 QN
1997 QP	13.5	0.15	19970909	115.14653	262.12482	328.07695	13.61628	0.0662703	2.5830072	25	1	41 days	0.14		Williams		1997 QP
1997 QR	16.5	0.15	19970909	335.83803	111.43359	281.40763	4.39317	0.2696338	2.6207058	29	1	46 days	0.28		Williams		1997 QR
1997 QS	15.0	0.15	19971218	36.75719	279.80926	30.48532	2.49671	0.0820352	2.9364113	43	4	1978–1997	0.69	M-v 1	Williams	30678	1997 QS
1997 QT	15.5	0.15	19970909	47.76582	108.63889	173.81681	7.85009	0.1923551	2.8718759	30	1	41 days	0.44		Marsden		1997 QT
1997 QU	15.5	0.15	19971218	356.39365	184.34948	196.92079	4.48184	0.2870815	2.5695073	29	2	1989–1997	0.69	M-v 4	Williams	30678	1997 QU

1997 QV	17.0	0.15	19970909	313.46381	229.04288	165.74709	10.51969	0.1767725	2.3221389	18	1	41 days	0.60		Williams	1997 QV
1997 QX	14.5	0.15	19970909	321.44208	46.50015	335.97100	8.75886	0.0678873	3.1005848	61	1	32 days	0.29		Marsden	1997 QX
1997 QY	14.0	0.15	19971218	20.70901	146.41255	183.51842	9.24997	0.1867735	2.5714181	16	1	81 days	0.72	M-v 4	Williams	1997 QY
1997 QZ	15.0	0.15	19970909	18.05663	133.65033	173.81571	4.69121	0.2272306	2.4195600	17	1	37 days	1.04		Williams	1997 QZ
1997 QC ₁	15.0	0.15	19970820	35.87661	120.09822	169.82225	3.40646	0.1415328	2.2862045	13	1	41 days	0.26		Williams	1997 QC ₁
1997 QE ₁	13.0	0.15	19970820	153.62312	1.45469	91.76764	16.30026	0.1522785	2.5926038	29	1	21 days	0.39		Marsden	1997 QE ₁
1997 QH ₁	14.0	0.15	19970909	64.67181	350.21229	277.26314	5.11320	0.1405056	2.2040259	16	1	28 days	0.30		Williams	1997 QH ₁
1997 QK ₁	20.0	0.15	19971218	26.08400	2.52878	307.14934	2.88927	0.6420711	2.7888047	120	1	43 days	0.67	M-v 6	Williams	1997 QK ₁
1997 QL ₁	17.5	0.15	19970820	31.13254	82.78973	200.69078	5.04767	0.1483654	2.3784395	22	1	11 days	0.38		Marsden	1997 QL ₁
1997 QM ₁	16.0	0.15	19970909	289.01982	45.28187	19.67709	6.87858	0.1086632	2.4034502	27	1	37 days	0.54		Marsden	1997 QM ₁
1997 QN ₁	14.5	0.15	19971218	28.57657	114.31635	223.92463	4.55519	0.2013246	2.2353198	37	3	1987–1997	0.44	M-v 3	Williams	30679 1997 QN ₁
1997 QO ₁	16.0	0.15	19970909	252.65966	117.49773	336.87982	18.82462	0.0628855	1.9058621	53	1	30 days	0.34		Marsden	1997 QO ₁
1997 QA ₂	14.5	0.15	19970929	102.19769	354.40959	266.61745	4.03197	0.0325707	2.7703726	17	1	36 days	0.37		Nakano	1997 QA ₂
1997 QB ₂	15.2	0.15	19970909	348.41027	9.61939	357.44262	7.98415	0.2697760	2.4207041	24	1	42 days	0.65		Nakano	1997 QB ₂
1997 QC ₂	14.7	0.15	19970909	20.42786	176.09178	133.24447	6.59580	0.2872943	2.6822995	12	1	32 days	0.41		Nakano	1997 QC ₂
1997 QF ₂	13.8	0.15	19970909	342.89840	5.19888	5.43584	12.94167	0.1450943	3.0629496	10	1	42 days	0.47		Nakano	1997 QF ₂
1997 QG ₂	15.0	0.15	19970909	327.71352	238.40964	158.73163	33.88915	0.3370153	2.7196463	19	1	27 days	0.54		Williams	1997 QG ₂
1997 QS ₂	14.0	0.15	19970909	280.52194	7.22607	72.12457	6.45958	0.1605890	3.1489231	27	1	36 days	0.34		Marsden	1997 QS ₂
1997 QT ₂	17.0	0.15	19970820	346.41150	358.46915	359.09809	13.83830	0.2490077	2.6307340	11	1	10 days	0.31		Marsden	1997 QT ₂
1997 QU ₂	16.0	0.15	19970909	2.40078	358.10127	344.20423	8.94345	0.1849797	2.7612310	26	1	36 days	0.36		Marsden	1997 QU ₂
1997 QV ₂	15.5	0.15	19970909	346.08424	78.40683	292.22076	4.65127	0.1829928	2.2616249	21	1	37 days	0.21		Williams	1997 QV ₂
1997 QB ₃	13.3	0.15	19970909	62.72809	90.94632	174.02498	16.50510	0.1994003	3.1630741	26	1	36 days	0.80		Nakano	1997 QB ₃
1997 QC ₃	16.0	0.15	19970820	334.58558	341.12354	17.79791	1.45639	0.0930095	2.1268928	12	1	6 days	0.64		Williams	1997 QC ₃
1997 QJ ₃	15.4	0.15	19970909	10.75540	126.15503	192.63388	6.00727	0.1193247	2.4617429	18	1	22 days	0.17		Nakano	1997 QJ ₃
1997 QR ₃	16.5	0.15	19970909	315.27087	246.89515	190.13500	5.08593	0.1248342	2.2847584	18	1	30 days	0.22		Marsden	1997 QR ₃
1997 QF ₄	14.5	0.15	19970909	200.47980	258.50343	229.97574	3.86148	0.0680434	2.1996576	10	1	23 days	0.30		Williams	1997 QF ₄
1997 QH ₄	7.0	0.15	19970909	356.23959	4.10787	355.72836	12.78297	0.0696312	44.3585599	17	1	39 days	0.34		E Marsden	1997 QH ₄
1997 QJ ₄	7.5	0.15	19970909	359.22363	10.91316	346.49653	16.01540	0.1206588	39.5681930	17	1	38 days	0.31		E Marsden	1997 QJ ₄
1997 QM ₄	16.0	0.15	19970909	11.34411	168.79281	167.26619	4.63050	0.1284783	2.3209709	9	1	24 days	0.49		Williams	1997 QM ₄
1997 QP ₄	16.0	0.15	19970820	295.39842	87.14005	311.38021	6.45696	0.0338296	2.2324327	13	1	30 days	0.44		Williams	1997 QP ₄
1997 QQ ₄	15.0	0.15	19970909	16.88752	338.09141	23.97854	2.77519	0.0810130	2.6684333	9	1	42 days	0.15		Williams	1997 QQ ₄
1997 QV ₄	17.5	0.15	19970909	136.25869	305.74303	262.88317	1.62635	0.0884686	2.3033284	30	1	35 days	0.50		Williams	1997 QV ₄
1997 RB	14.5	0.15	19970909	101.73753	258.30499	345.19477	13.10187	0.0407808	3.1075129	28	1	36 days	0.32		Marsden	1997 RB
1997 RC	13.5	0.15	19970909	283.42351	56.65509	63.31395	3.01664	0.0291514	2.8491126	22	1	35 days	0.25		Marsden	1997 RC
1997 RG	15.5	0.15	19970909	341.06908	1.67509	16.11255	3.26128	0.1891099	2.6519912	12	1	34 days	0.44		Williams	1997 RG
1997 RO	15.5	0.15	19970909	32.61861	129.83089	161.59535	5.22274	0.1020743	2.6964819	12	1	33 days	0.18		Williams	1997 RO
1997 RT	20.0	0.15	19971218	34.15145	5.98377	326.11406	6.18708	0.5240139	2.2460947	236	1	39 days	0.54	M-v 5	Williams	1997 RT
1997 RW	17.5	0.15	19970820	340.55010	237.37177	125.33942	6.45468	0.1709283	2.3267361	13	1	9 days	0.59		Marsden	1997 RW
1997 RX	16.0	0.15	19970909	322.00835	173.16918	223.61220	1.77387	0.1915432	2.4064260	16	1	29 days	0.67		Williams	1997 RX
1997 RZ	13.5	0.15	19970909	256.22858	149.90099	302.92195	4.48872	0.0673366	2.7745560	13	1	37 days	0.79		Williams	1997 RZ
1997 RA ₁	13.5	0.15	19970909	355.70348	10.12603	355.31805	8.85873	0.0310262	3.0618457	26	1	38 days	0.32		Williams	1997 RA ₁
1997 RB ₁	15.0	0.15	19970909	40.67809	13.88481	272.10978	4.57059	0.1298239	2.2835776	24	1	25 days	0.53		Williams	1997 RB ₁
1997 RD ₁	16.0	0.15	19971218	24.91886	161.70186	170.24287	13.49498	0.4041099	2.6631829	173	1	38 days	0.48	M-v 4	Williams	1997 RD ₁
1997 RJ ₁	14.0	0.15	19971218	2.86431	236.15363	128.18003	6.38012	0.1442555	3.2003902	16	4	1977–1997	0.74	M-v 2	Williams	30680 1997 RJ ₁
1997 RO ₁	17.5	0.15	19970909	6.92335	183.41196	155.53472	6.52113	0.3087737	2.4083220	19	1	37 days	0.24		Williams	1997 RO ₁
1997 RP ₁	15.7	0.15	19970909	353.13642	14.19995	346.07692	3.21846	0.2276151	2.3823835	13	1	30 days	0.50		Nakano	1997 RP ₁
1997 RW ₁	14.5	0.15	19970909	324.31782	50.88839	24.12814	10.17281	0.1996733	3.1520125	27	1	30 days	0.35		Williams	1997 RW ₁
1997 RV ₂	14.0	0.15	19970909	285.98964	268.25442	172.16634	12.30167	0.1337886	2.3917973	12	1	37 days	0.47		Williams	1997 RV ₂
1997 RX ₂	16.5	0.15	19970820	32.13944	334.05050	315.77490	7.15137	0.1184316	2.3400762	8	1	14 days	0.51		Williams	1997 RX ₂
1997 RA ₃	15.0	0.15	19970909	335.34206	47.51418	333.03667	5.95938	0.2023707	3.0460956	7	1	14 days	0.09		Williams	1997 RA ₃
1997 RC ₃	14.0	0.15	19970909	52.94620	104.00163	177.66034	11.40362	0.1685820	2.7128511	19	1	29 days	0.43		Williams	1997 RC ₃
1997 RE ₃	13.0	0.15	19970909	309.61925	107.64270	310.77216	4.73779	0.1437618	3.0792273	10	1	14 days	0.17		Williams	1997 RE ₃
1997 RF ₃	15.5	0.15	19970909	67.45028	83.21147	177.53861	5.48482	0.2300076	2.3398820	37	1	23 days	0.28		Williams	1997 RF ₃

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1997 RH ₃	15.5	0.15	19970820	0.74386	73.72243	238.84536	3.07619	0.1637480	2.2126001	20	1	56 days	0.38		Williams	1997 RH ₃
1997 RJ ₃	15.0	0.15	19970909	347.97761	121.77682	218.46397	3.28431	0.2405279	2.5983012	14	1	17 days	0.25		Williams	1997 RJ ₃
1997 RQ ₃	13.0	0.15	19971218	42.03725	194.72662	133.88813	2.43274	0.1851306	3.1725141	25	4	1980–1997	0.52	M-v 1	Williams	1997 RQ ₃
1997 RS ₃	13.5	0.15	19970909	298.22347	73.86474	22.59223	5.09404	0.0999859	3.0484893	21	1	40 days	0.27		Williams	1997 RS ₃
1997 RT ₃	15.0	0.15	19970909	100.51885	252.25175	21.47543	3.42654	0.0769966	2.6471064	18	1	40 days	0.44		Williams	1997 RT ₃
1997 RH ₄	17.0	0.15	19970909	341.16980	32.66738	12.95861	6.35260	0.2836844	2.1937683	15	1	30 days	0.35		Williams	1997 RH ₄
1997 RQ ₅	13.5	0.15	19970909	166.29754	17.11248	190.57535	0.58983	0.0991301	3.0946867	14	1	21 days	0.18		Marsden	1997 RQ ₅
1997 RT ₅	7.0	0.15	19970909	0.00000	180.08551	163.74687	12.59754	0.0000000	42.2393619	21	1	28 days	0.31	E	Marsden	1997 RT ₅
1997 RC ₆	16.5	0.15	19970820	334.28235	210.57863	170.71846	9.23441	0.2855198	2.2771803	15	1	9 days	0.72		Williams	1997 RC ₆
1997 RU ₆	15.0	0.15	19970909	45.95959	304.89173	345.94430	5.56952	0.1516376	2.4025096	13	1	35 days	0.40		Williams	1997 RU ₆
1997 RV ₆	15.5	0.15	19970909	85.50835	281.93980	327.66599	6.81342	0.0612851	2.2814816	20	1	28 days	1.06		Williams	1997 RV ₆
1997 RY ₆	7.5	0.15	19970909	0.00000	40.19708	318.32501	12.40816	0.0000000	41.3585773	14	1	28 days	0.43	E	Marsden	1997 RY ₆
1997 RZ ₆	15.0	0.15	19970909	87.27665	243.43263	13.04518	2.72699	0.1419448	2.4452242	21	1	19 days	0.28		Williams	1997 RZ ₆
1997 RD ₇	16.5	0.15	19970909	341.01690	356.69322	16.57950	0.95555	0.2698025	2.3654493	16	1	15 days	0.62		Williams	1997 RD ₇
1997 RL ₇	15.0	0.15	19970909	26.84141	304.15593	358.52935	13.00892	0.1929142	2.5395704	26	1	29 days	0.22		Marsden	1997 RL ₇
1997 RN ₇	18.0	0.15	19970909	330.54445	233.88411	175.99190	6.47771	0.3611415	2.6202595	20	1	26 days	0.21	D	Williams	1997 RN ₇
1997 RZ ₇	13.1	0.15	19970909	340.24304	42.24617	339.66959	14.77431	0.1772332	2.5948751	10	1	25 days	0.36		Nakano	1997 RZ ₇
1997 RE ₈	15.5	0.15	19970909	30.56499	282.40591	32.25542	5.70617	0.1560606	3.1661302	8	1	10 days	0.25		Williams	1997 RE ₈
1997 RF ₈	14.0	0.15	19970909	39.90533	286.06373	0.79238	13.09502	0.2493375	2.6354041	10	1	34 days	0.52		Williams	1997 RF ₈
1997 RG ₈	17.5	0.15	19970929	33.77564	128.39294	170.32113	22.33670	0.2721951	2.3138131	16	1	18 days	0.47		Nakano	1997 RG ₈
1997 RQ ₈	15.0	0.15	19970909	2.07807	95.42032	258.84233	1.79804	0.1976664	2.5312749	10	1	9 days	0.10		Williams	1997 RQ ₈
1997 RR ₈	12.5	0.15	19970909	201.45678	331.20649	192.22830	11.98616	0.0984227	2.9313489	13	1	26 days	0.50		Williams	1997 RR ₈
1997 RT ₈	15.5	0.15	19970909	33.87444	223.39631	92.31867	2.35937	0.1889774	2.3854697	12	1	21 days	0.12		Williams	1997 RT ₈
1997 RV ₈	13.0	0.15	19970909	22.03839	295.88131	36.75373	5.39673	0.1887906	2.4818125	13	1	22 days	0.11		Williams	1997 RV ₈
1997 RY ₈	12.5	0.15	19970909	235.01731	334.31464	172.57722	10.69129	0.1142380	3.0299321	13	1	14 days	0.15		Williams	1997 RY ₈
1997 RB ₉	14.5	0.15	19970909	15.94408	356.72232	332.27126	4.56884	0.1565425	2.6144583	22	1	20 days	0.31		Williams	1997 RB ₉
1997 RC ₉	17.5	0.15	19970909	3.63030	87.83112	259.58713	1.69902	0.0640238	2.8640788	24	1	25 days	0.67		Williams	1997 RC ₉
1997 RD ₉	16.5	0.15	19970909	290.01167	127.04118	318.77009	3.37223	0.2070770	3.1820522	18	1	18 days	0.53		Williams	1997 RD ₉
1997 RG ₉	13.0	0.15	19970909	70.34394	328.37222	299.65863	15.57441	0.1700922	3.1253952	15	1	17 days	0.30		Marsden	1997 RG ₉
1997 RH ₉	16.5	0.15	19970909	25.39318	331.67147	352.20186	13.64076	0.3308580	2.6210699	28	1	24 days	0.32		Marsden	1997 RH ₉
1997 RM ₉	14.5	0.15	19970929	45.76322	323.93150	356.62383	12.59019	0.1642612	2.7475236	20	1	28 days	0.30		Williams	1997 RM ₉
1997 RN ₉	16.0	0.15	19970909	332.72633	2.56601	33.19469	13.12442	0.1757243	2.5214262	15	1	20 days	0.31		Marsden	1997 RN ₉
1997 RQ ₉	15.0	0.15	19970909	67.77915	293.00114	320.37092	3.73354	0.2000330	2.4950422	9	1	16 days	0.52		Williams	1997 RQ ₉
1997 RR ₉	13.5	0.15	19970909	0.16741	175.16709	168.54247	7.57984	0.2504642	2.6878361	10	1	10 days	0.09		Williams	1997 RR ₉
1997 RU ₉	15.0	0.15	19970909	117.73321	49.90509	178.43682	3.82504	0.1224891	2.5849353	9	1	14 days	0.42		Marsden	1997 RU ₉
1997 RV ₉	16.5	0.15	19970909	28.23640	322.82493	11.72014	7.42963	0.1163119	2.4226218	8	1	14 days	0.16		Marsden	1997 RV ₉
1997 RX ₉	8.0	0.15	19970909	0.00000	179.98582	163.89539	29.84897	0.0000000	42.1350097	10	1	29 days	0.30	E	Marsden	1997 RX ₉
1997 RM ₁₀	18.0	0.15	19970909	140.40090	328.63180	236.73994	1.77140	0.0793203	2.1951752	12	1	18 days	0.47		Williams	1997 RM ₁₀
1997 SA	17.0	0.15	19970909	21.79187	118.01837	177.44361	12.96226	0.2771353	2.5795130	12	1	7 days	0.48		Marsden	1997 SA
1997 SB	16.5	0.15	19970929	319.85196	196.31710	204.45883	22.45799	0.0955672	1.9786122	25	1	25 days	0.37		Marsden	1997 SB
1997 SD	15.0	0.15	19970909	12.38069	131.75418	170.19608	3.09910	0.1587038	2.2810359	10	1	8 days	0.20		Marsden	1997 SD
1997 SK	15.0	0.15	19970909	182.43707	233.13813	312.04311	7.93801	0.1790510	2.2763996	9	1	2 days	0.50	E	Williams	1997 SK
1997 SL	15.5	0.15	19970909	333.06316	163.03850	219.54000	1.80991	0.2423037	2.8548444	18	1	33 days	0.25		Williams	1997 SL
1997 SN	15.0	0.15	19970929	132.98017	0.52584	219.49868	6.93668	0.0497445	2.2739931	16	1	20 days	0.16		Williams	1997 SN
1997 SO	16.0	0.15	19970929	26.10016	319.94079	4.26699	6.15181	0.2390821	2.4143731	13	1	22 days	0.21		Williams	1997 SO
1997 SP	16.0	0.15	19970909	342.74690	215.57433	159.93156	5.83815	0.1585996	2.5633987	11	1	8 days	0.97	E	Williams	1997 SP
1997 SR	14.0	0.15	19970909	12.74916	353.39105	324.33297	11.92556	0.1748337	2.7178138	21	1	38 days	0.19		Williams	1997 SR
1997 SV	14.0	0.15	19970909	13.71237	342.18298	32.91338	7.16272	0.1313218	2.3993273	10	1	14 days	0.16		Williams	1997 SV
1997 SX	13.0	0.15	19970909	37.43813	311.69739	46.63091	10.52506	0.1162442	3.0928660	12	1	21 days	0.17		Williams	1997 SX
1997 SE ₁	15.0	0.15	19970909	109.75661	69.33823	156.81318	6.60159	0.0592120	2.3542673	20	1	15 days	0.52		Williams	1997 SE ₁
1997 SF ₁	15.5	0.15	19970909	341.38738	204.88818	197.92574	24.14910	0.2549102	2.2800462	15	1	8 days	0.24		Williams	1997 SF ₁
1997 SK ₁	14.0	0.15	19970929	184.32449	187.22274	338.88340	4.04515	0.0938844	2.6044284	29	1	14 days	0.30		Marsden	1997 SK ₁
1997 SL ₁	15.5	0.15	19970909	213.72747	326.32192	176.39460	3.78571	0.0264394	2.2980137	32	1	6 days	0.34	E	Williams	1997 SL ₁

1997 SM ₁	13.5	0.15	19970929	143.91198	5.85457	199.19036	13.39119	0.1062628	2.6827627	15	1	19 days	0.11	Williams	1997 SM ₁
1997 SN ₁	14.0	0.15	19970929	75.75360	299.59655	336.62772	12.26818	0.1689147	2.6875449	14	1	19 days	0.16	Williams	1997 SN ₁
1997 SO ₁	17.0	0.15	19970929	353.22228	180.64702	192.58284	4.85013	0.1062675	2.1855145	9	1	13 days	0.15	Williams	1997 SO ₁
1997 SP ₁	15.0	0.15	19970909	328.96231	268.11224	138.05613	0.45232	0.1845363	2.3048261	6	1	7 days	0.35	E Williams	1997 SP ₁
1997 SQ ₁	13.0	0.15	19970909	247.78756	318.74303	176.48153	2.58132	0.1597622	2.8013155	6	1	7 days	0.40	E Williams	1997 SQ ₁
1997 SR ₁	15.5	0.15	19970909	12.04021	168.55778	179.38366	4.10767	0.1411581	2.5505727	6	1	7 days	0.31	Williams	1997 SR ₁
1997 ST ₁	14.5	0.15	19970909	50.05911	270.85293	17.73689	0.74268	0.1677718	3.0594938	25	1	6 days	0.46	Marsden	1997 ST ₁
1997 SX ₁	14.0	0.15	19970929	304.34447	247.80175	209.36366	4.40613	0.1443728	2.6355789	20	1	17 days	0.36	Williams	1997 SX ₁
1997 SY ₁	15.5	0.15	19970929	5.39701	350.75037	26.02475	1.63211	0.2033291	2.8010281	19	1	13 days	0.40	Williams	1997 SY ₁
1997 SA ₂	14.0	0.15	19970909	5.78409	351.18118	23.68173	2.74943	0.1099743	2.9858784	17	1	38 days	0.45	Williams	1997 SA ₂
1997 SB ₂	16.0	0.15	19970929	247.58828	123.11274	19.14237	3.68770	0.0520099	2.1850628	21	1	18 days	0.48	Williams	1997 SB ₂
1997 SE ₂	15.0	0.15	19970929	320.67782	170.45408	261.59351	0.97469	0.0707585	2.8472564	14	1	18 days	0.26	Williams	1997 SE ₂
1997 SG ₂	14.7	0.15	19970929	11.66778	14.93666	338.28574	7.56867	0.0739460	2.2213929	16	1	10 days	0.22	Nakano	1997 SG ₂
1997 SH ₂	17.0	0.15	19970909	11.93885	159.61472	175.83089	3.11874	0.1937561	2.4077745	24	1	9 days	0.58	Marsden	1997 SH ₂
1997 SO ₂	15.5	0.15	19970929	23.78962	266.83670	52.67386	2.22302	0.2296139	3.0381232	8	1	16 days	0.20	Williams	1997 SO ₂
1997 SP ₂	16.0	0.15	19970929	16.42189	300.79237	31.60293	2.51015	0.2373238	2.3589923	15	1	16 days	0.12	Williams	1997 SP ₂
1997 SQ ₂	17.0	0.15	19970929	49.94319	281.39771	18.81791	2.17754	0.1862306	2.2097686	12	1	16 days	0.20	Williams	1997 SQ ₂
1997 SS ₂	17.0	0.15	19970929	13.76703	349.24485	11.11285	2.15852	0.2239287	2.3921079	14	1	16 days	0.59	Williams	1997 SS ₂
1997 ST ₂	15.5	0.15	19970929	340.33012	181.00370	228.96276	1.20877	0.0613592	2.8674351	14	1	16 days	0.43	Williams	1997 ST ₂
1997 SU ₂	15.0	0.15	19970929	19.08992	94.71160	255.81818	10.89191	0.1970533	2.7049528	14	1	16 days	0.14	Williams	1997 SU ₂
1997 SW ₂	16.0	0.15	19970909	322.56069	295.22824	107.02580	7.55592	0.1135380	2.1797070	13	1	3 days	0.33	Marsden	1997 SW ₂
1997 SA ₃	14.5	0.15	19970909	272.28075	256.00816	201.55939	3.77285	0.0308551	2.6930508	8	1	3 days	0.38	E Williams	1997 SA ₃
1997 SC ₃	16.0	0.15	19970909	343.46791	26.49176	0.55862	4.48417	0.1889518	2.4920087	8	1	2 days	0.57	E Williams	1997 SC ₃
1997 SD ₃	17.0	0.15	19970909	331.51286	51.15831	354.74312	6.24022	0.2327952	2.4427962	6	1	2 days	0.52	E Williams	1997 SD ₃
1997 SE ₃	15.5	0.15	19970929	293.29089	251.48933	175.62935	13.75512	0.1741280	2.6163814	12	1	16 days	0.47	Williams	1997 SE ₃
1997 SL ₃	17.0	0.15	19970929	12.53190	11.88889	351.66175	5.50958	0.1251739	2.2257798	9	1	9 days	0.29	Williams	1997 SL ₃
1997 SN ₃	14.0	0.15	19970909	306.41771	280.52763	147.24574	5.34203	0.1470232	2.7485092	10	1	10 days	0.68	Williams	1997 SN ₃
1997 SO ₃	14.5	0.15	19970909	341.09477	262.22794	121.88780	2.32336	0.2509719	2.7972821	11	1	6 days	1.16	E Williams	1997 SO ₃
1997 SP ₃	16.5	0.15	19970909	16.94440	326.76953	1.53660	6.61839	0.1824502	2.2494196	13	1	2 days	0.37	Williams	1997 SP ₃
1997 SQ ₃	16.5	0.15	19970929	16.62360	336.70142	5.94650	8.46681	0.1456967	2.2684680	20	1	15 days	0.37	Williams	1997 SQ ₃
1997 SR ₃	15.0	0.15	19970909	12.73154	323.80734	14.87172	2.19542	0.1991153	2.5971111	11	1	3 days	0.10	E Williams	1997 SR ₃
1997 SS ₃	15.0	0.15	19970909	346.97018	332.61201	47.06311	6.21889	0.1967443	2.5014850	10	1	3 days	0.06	Williams	1997 SS ₃
1997 SV ₃	15.0	0.15	19970909	352.38652	23.68790	358.28774	8.30116	0.3612156	2.7447784	15	1	8 days	0.17	Williams	1997 SV ₃
1997 SW ₃	17.0	0.15	19970929	299.14823	76.53452	8.15160	14.97668	0.0505427	2.5642302	12	1	12 days	0.20	Williams	1997 SW ₃
1997 SA ₄	17.0	0.15	19970929	23.04161	324.40959	14.39738	10.56518	0.2249905	2.2393607	15	1	10 days	0.36	Williams	1997 SA ₄
1997 SB ₄	16.5	0.15	19970929	26.82024	168.61288	165.07226	1.35539	0.2916301	2.6444576	9	1	10 days	0.27	Williams	1997 SB ₄
1997 SC ₄	15.0	0.15	19970929	303.06308	245.96601	212.77848	1.44403	0.0998207	2.8907193	12	1	10 days	0.21	Williams	1997 SC ₄
1997 SD ₄	14.5	0.15	19970929	12.89424	162.62743	206.80004	4.74699	0.1563645	3.1093777	12	1	10 days	0.27	Williams	1997 SD ₄
1997 SE ₄	14.5	0.15	19970929	313.61470	51.30843	5.06145	1.65282	0.1134464	2.9374445	16	1	11 days	0.35	Williams	1997 SE ₄
1997 SF ₄	14.3	0.15	19970929	10.81215	141.05318	208.51291	9.66843	0.2120050	3.1694129	18	1	18 days	0.42	Nakano	1997 SF ₄
1997 SG ₄	14.7	0.15	19970929	16.77923	141.03294	205.89158	5.80954	0.1717062	2.3924804	10	1	11 days	0.30	Nakano	1997 SG ₄
1997 SH ₄	13.1	0.15	19970929	18.71548	116.93161	226.35355	3.72112	0.2040498	2.9489859	8	1	8 days	0.48	Nakano	1997 SH ₄
1997 SJ ₄	9.7	0.15	19970929	309.73304	209.24787	231.74962	5.09053	0.1672608	5.1695771	10	1	11 days	0.61	Nakano	1997 SJ ₄
1997 SK ₄	14.2	0.15	19970929	2.67052	63.17503	305.43535	2.63158	0.1169472	2.6641441	8	1	8 days	0.24	Nakano	1997 SK ₄
1997 SL ₄	13.4	0.15	19970929	331.83139	189.05325	223.47690	6.63032	0.1836295	2.6933532	8	1	8 days	0.39	Nakano	1997 SL ₄
1997 SM ₄	14.0	0.15	19970929	37.58993	92.30868	216.89859	7.86715	0.2732510	2.6988227	8	1	8 days	0.45	Nakano	1997 SM ₄
1997 SR ₄	16.5	0.15	19970929	355.25013	9.11343	335.27604	12.77120	0.2972993	2.6379704	9	1	4 days	0.42	Williams	1997 SR ₄
1997 SS ₄	14.5	0.15	19970929	45.47294	75.30496	242.74820	3.31659	0.0800119	2.7814528	12	1	8 days	0.76	Williams	1997 SS ₄
1997 ST ₄	16.0	0.15	19970929	7.66917	154.68270	197.84737	5.40298	0.1309446	2.3098976	14	1	9 days	0.73	Williams	1997 ST ₄
1997 SU ₄	16.5	0.15	19970929	30.86093	335.94515	346.04136	5.65629	0.1427024	2.2929218	20	1	13 days	0.91	Williams	1997 SU ₄
1997 SV ₄	15.0	0.15	19970929	168.95924	204.67361	345.91248	6.84842	0.1305855	2.3131206	20	1	13 days	0.87	Williams	1997 SV ₄
1997 SY ₄	15.5	0.15	19970929	45.50404	308.69308	349.64862	8.19051	0.0995805	2.7200160	21	1	13 days	0.41	Williams	1997 SY ₄
1997 SE ₅	15.5	0.15	19971218	11.65498	56.38903	288.05761	2.61419	0.6673805	3.7211808	130	1	108 days	0.46	M-v 4 Marsden	1997 SE ₅

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1997 SP ₅	14.0	0.15	19970929	77.32235	255.25792	0.30162	4.84185	0.2214425	3.2473157	15	1	7 days	0.18	Marsden	1997 SP ₅
1997 SA ₆	17.0	0.15	19970929	329.89214	48.96950	356.64889	12.17214	0.2759883	3.1769523	9	1	12 days	0.26	Williams	1997 SA ₆
1997 SB ₆	15.0	0.15	19970929	2.16773	352.77278	357.73962	10.17484	0.1254951	3.1039910	9	1	12 days	0.19	Williams	1997 SB ₆
1997 SC ₆	16.5	0.15	19970929	50.96805	286.60078	357.43226	12.80723	0.1868745	2.7215866	9	1	13 days	0.08	Williams	1997 SC ₆
1997 SE ₆	18.0	0.15	19970929	354.22050	2.00768	1.40129	8.06806	0.1272938	2.3396214	9	1	12 days	0.28	Williams	1997 SE ₆
1997 SG ₆	16.5	0.15	19970929	349.53582	6.47028	4.55114	5.80023	0.1616544	2.3534975	9	1	12 days	0.12	Williams	1997 SG ₆
1997 SO ₆	18.0	0.15	19970929	340.05302	30.77630	352.48007	3.28383	0.1708977	2.3000993	9	1	13 days	0.20	Williams	1997 SO ₆
1997 SQ ₆	16.5	0.15	19970929	82.35461	254.67649	351.13183	0.94129	0.2060887	2.7112618	9	1	12 days	0.17	Williams	1997 SQ ₆
1997 ST ₆	15.5	0.15	19970929	291.03579	75.71320	351.57675	9.40877	0.0643337	2.9948648	9	1	12 days	0.21	Williams	1997 ST ₆
1997 SV ₆	16.0	0.15	19970929	86.06668	226.92335	2.67005	0.44952	0.3204606	2.9107696	9	1	12 days	0.21	E Williams	1997 SV ₆
1997 SX ₆	17.0	0.15	19970929	34.91597	307.45953	352.25150	9.72508	0.2162462	3.1316604	9	1	13 days	0.18	Williams	1997 SX ₆
1997 SZ ₆	17.5	0.15	19970929	178.35286	177.61796	356.53844	4.55897	0.0657000	2.4416505	8	1	12 days	0.13	E Williams	1997 SZ ₆
1997 SC ₇	16.5	0.15	19970929	40.00825	285.88445	10.65178	1.54548	0.1900492	2.9128814	9	1	12 days	0.18	Williams	1997 SC ₇
1997 SD ₇	16.5	0.15	19970929	16.59924	336.74477	355.65387	9.48182	0.0966807	3.0958560	8	1	12 days	0.18	Williams	1997 SD ₇
1997 SG ₇	14.5	0.15	19970929	138.21308	183.81768	19.03224	1.25255	0.1580674	3.1397507	9	1	12 days	0.05	Williams	1997 SG ₇
1997 SL ₇	14.5	0.15	19970929	66.92986	274.08882	356.88981	10.06644	0.1354433	3.0667811	9	1	13 days	0.11	Williams	1997 SL ₇
1997 SM ₇	16.5	0.15	19970929	319.32917	43.09247	358.26993	9.27780	0.0919619	3.1492440	9	1	12 days	0.16	Williams	1997 SM ₇
1997 SQ ₇	18.0	0.15	19970929	42.47985	290.04919	5.21069	4.63201	0.1948008	2.4255347	9	1	12 days	0.26	Williams	1997 SQ ₇
1997 SQ ₈	17.5	0.15	19970929	196.43386	162.46582	357.65508	5.73367	0.0800142	2.2787459	9	1	9 days	0.14	Williams	1997 SQ ₈
1997 SR ₈	13.5	0.15	19970929	176.37543	177.89351	357.06147	5.31000	0.0984540	3.1690428	9	1	9 days	0.25	E Williams	1997 SR ₈
1997 SS ₈	16.5	0.15	19970929	150.00613	39.49284	156.01003	1.66993	0.1835615	2.2377932	9	1	8 days	0.20	E Williams	1997 SS ₈
1997 SB ₉	18.0	0.15	19970929	24.15824	35.87665	298.48216	2.87796	0.2671501	2.7574362	9	1	3 days	0.20	Williams	1997 SB ₉
1997 SC ₉	16.0	0.15	19970929	1.32126	125.52971	247.86410	3.27878	0.1482830	2.2768046	9	1	3 days	0.10	E Williams	1997 SC ₉
1997 SD ₉	17.5	0.15	19970929	68.42615	297.95110	348.29989	6.37296	0.1931620	2.3344586	9	1	3 days	0.09	Williams	1997 SD ₉
1997 SE ₉	14.5	0.15	19970929	75.65214	41.63972	245.58067	3.79130	0.1225202	2.3343792	9	1	3 days	0.09	E Williams	1997 SE ₉
1997 SH ₉	17.0	0.15	19970929	285.42164	102.37641	1.37818	10.83574	0.0944444	2.7138751	9	1	3 days	0.14	E Williams	1997 SH ₉
1997 SJ ₉	17.5	0.15	19970929	334.87450	42.02205	8.25554	17.11485	0.1162963	2.9440487	9	1	3 days	0.30	Williams	1997 SJ ₉
1997 SK ₉	17.0	0.15	19970929	200.04379	185.06741	353.15135	7.02904	0.0214594	2.2597519	12	1	8 days	0.52	Williams	1997 SK ₉
1997 SP ₉	18.0	0.15	19970929	114.15230	248.79400	353.70616	6.52824	0.0537925	2.2631436	12	1	5 days	0.28	E Williams	1997 SP ₉
1997 SQ ₉	15.0	0.15	19970929	278.40879	95.74256	356.67861	12.16331	0.0792184	3.1147224	12	1	5 days	0.20	E Williams	1997 SQ ₉
1997 SR ₉	17.0	0.15	19970929	213.14675	164.69742	349.81179	5.77655	0.1036434	2.3636737	9	1	3 days	0.14	E Williams	1997 SR ₉
1997 SS ₉	19.0	0.15	19970929	26.83433	356.36723	331.91983	1.76154	0.1277255	2.2848109	9	1	3 days	0.22	E Williams	1997 SS ₉
1997 ST ₉	17.0	0.15	19970929	287.31051	233.34365	211.54676	2.29426	0.0898629	2.7727496	9	1	5 days	0.29	E Williams	1997 ST ₉
1997 SU ₉	18.0	0.15	19970929	302.59244	103.50978	333.50815	1.65655	0.1582587	2.2785066	12	1	5 days	0.15	E Williams	1997 SU ₉
1997 SV ₉	16.5	0.15	19970929	303.89524	109.38213	330.12961	4.57420	0.0539125	2.7483588	12	1	7 days	0.23	Williams	1997 SV ₉
1997 SX ₉	15.5	0.15	19970929	71.77660	47.33514	229.66051	3.59037	0.1849989	2.2620298	11	1	8 days	0.67	Williams	1997 SX ₉
1997 SB ₁₀	13.0	0.15	19970909	293.19457	254.24768	233.03520	4.38751	0.1715372	2.5436394	9	1	8 days	0.15	Williams	1997 SB ₁₀
1997 SF ₁₀	15.0	0.15	19970909	334.04739	338.51560	64.41538	3.45871	0.1868171	2.4442314	20	1	20 days	0.26	Williams	1997 SF ₁₀
1997 SG ₁₀	15.5	0.15	19970909	54.56549	321.46767	311.89014	3.67869	0.0810879	2.6729936	9	1	2 days	0.23	E Williams	1997 SG ₁₀
1997 SK ₁₀	14.0	0.15	19970909	357.35305	134.80128	204.75071	2.31609	0.1473789	2.9976733	12	1	3 days	0.23	E Williams	1997 SK ₁₀
1997 SL ₁₀	15.0	0.15	19970929	24.14649	127.51066	184.76646	3.46131	0.1245232	2.5084982	9	1	13 days	0.34	Williams	1997 SL ₁₀
1997 SO ₁₀	15.0	0.15	19970909	19.84854	331.73266	359.17463	6.61553	0.1645573	2.5856116	22	1	27 days	0.49	Williams	1997 SO ₁₀
1997 SP ₁₀	13.5	0.15	19970929	167.42048	192.17934	0.16600	13.35382	0.2960204	2.4325849	12	1	14 days	0.22	Williams	1997 SP ₁₀
1997 SR ₁₀	14.0	0.15	19970929	72.41078	270.42165	4.75553	12.32978	0.1492620	2.5609344	12	1	14 days	0.20	Williams	1997 SR ₁₀
1997 SS ₁₀	13.5	0.15	19970929	262.62376	285.22662	185.85577	3.54518	0.0793121	2.3071937	15	1	14 days	0.31	Williams	1997 SS ₁₀
1997 ST ₁₀	14.0	0.15	19970909	4.92938	353.27384	32.71229	6.65471	0.1515119	2.3123877	12	1	30 days	0.21	Williams	1997 ST ₁₀
1997 SX ₁₀	13.6	0.15	19970929	43.26305	304.72081	358.75661	5.23609	0.2553236	3.1078383	8	1	11 days	0.39	Nakano	1997 SX ₁₀
1997 SY ₁₀	16.9	0.15	19970929	0.48132	159.60887	209.61097	5.31994	0.2576789	2.2285136	10	1	11 days	0.63	Nakano	1997 SY ₁₀
1997 SZ ₁₀	8.5	0.15	19970909	359.54531	3.48096	9.65563	12.69742	0.2013448	39.5843033	6	1	20 days	0.52	E Marsden	1997 SZ ₁₀
1997 SD ₁₁	15.5	0.15	19970929	256.08357	220.61845	243.24329	2.97944	0.0275011	2.1557243	8	1	3 days	0.21	E Williams	1997 SD ₁₁
1997 SE ₁₁	16.0	0.15	19970929	23.04583	289.52567	37.11888	4.00887	0.2343517	2.6524140	8	1	3 days	0.31	E Williams	1997 SE ₁₁
1997 SF ₁₁	14.5	0.15	19970929	302.07867	246.22619	216.83165	11.15655	0.2446262	3.1165721	14	1	2 days	0.45	E Williams	1997 SF ₁₁
1997 SH ₁₁	16.5	0.15	19970929	2.01174	349.94417	26.54265	4.74548	0.2580355	2.5852098	7	1	4 days	0.16	Marsden	1997 SH ₁₁

1997 SJ ₁₁	15.5	0.15	19970929	12.33736	328.62141	30.21260	2.61575	0.2481854	2.4500697	11	1	5 days	0.10	Marsden	1997 SJ ₁₁
1997 SK ₁₁	17.0	0.15	19970929	351.47627	19.00629	353.87982	7.20624	0.3089306	2.6238920	9	1	16 days	0.11	Williams	1997 SK ₁₁
1997 SL ₁₁	17.0	0.15	19970909	37.19540	298.62326	358.42377	2.60476	0.1745834	2.3356574	12	1	33 days	0.18	Williams	1997 SL ₁₁
1997 SN ₁₁	15.5	0.15	19970929	9.77193	292.35238	50.18625	0.27772	0.0493590	2.9242327	9	1	9 days	0.13	E Williams	1997 SN ₁₁
1997 SO ₁₁	16.5	0.15	19970929	125.31126	215.85237	2.67559	1.74008	0.1112711	2.5896640	9	1	9 days	0.18	E Williams	1997 SO ₁₁
1997 SQ ₁₁	15.5	0.15	19970929	179.18871	175.53591	357.90850	5.06328	0.0648790	3.1967587	9	1	9 days	0.26	Williams	1997 SQ ₁₁
1997 SV ₁₁	14.5	0.15	19970929	10.19329	64.98519	300.38112	4.65469	0.1607312	5.2796817	9	1	8 days	0.19	Williams	1997 SV ₁₁
1997 SW ₁₁	18.0	0.15	19970929	1.00840	28.48318	345.79174	5.83146	0.1488586	2.4348941	9	1	8 days	0.21	Williams	1997 SW ₁₁
1997 SH ₁₂	18.5	0.15	19970929	358.18553	23.59289	356.41850	5.71202	0.2766819	2.6752076	9	1	8 days	0.21	Williams	1997 SH ₁₂
1997 SN ₁₂	15.0	0.15	19970929	291.57240	106.40649	354.67536	7.98932	0.1211637	3.0515704	8	1	8 days	0.17	Williams	1997 SN ₁₂
1997 SS ₁₂	17.5	0.15	19970929	353.12126	187.86583	175.74131	15.37238	0.1747553	2.6250966	9	1	7 days	0.20	Williams	1997 SS ₁₂
1997 SV ₁₂	14.5	0.15	19970929	346.57541	193.31435	176.07141	5.82433	0.0877294	2.7430757	9	1	8 days	0.07	Williams	1997 SV ₁₂
1997 SA ₁₃	16.5	0.15	19970929	231.72234	318.41390	172.93027	13.04472	0.1147554	2.6749659	9	1	8 days	0.31	Williams	1997 SA ₁₃
1997 SD ₁₃	15.0	0.15	19970929	257.58952	291.47726	173.19404	6.89871	0.0614348	2.2952475	9	1	8 days	0.08	Williams	1997 SD ₁₃
1997 SQ ₁₃	14.0	0.15	19970929	291.81736	229.46741	238.40834	7.88228	0.1761824	5.3314959	8	1	7 days	0.20	E Williams	1997 SQ ₁₃
1997 SS ₁₃	14.0	0.15	19970929	346.07757	43.36048	350.83195	9.28281	0.0910982	2.9987512	9	1	7 days	0.56	Williams	1997 SS ₁₃
1997 SU ₁₃	16.5	0.15	19970929	213.83548	173.53486	354.64388	10.91612	0.0539477	3.0798479	9	1	7 days	0.23	Williams	1997 SU ₁₃
1997 SV ₁₃	15.5	0.15	19970929	113.91885	297.39047	321.41832	4.95729	0.0568627	3.2162211	9	1	7 days	0.21	Williams	1997 SV ₁₃
1997 SW ₁₃	16.5	0.15	19970929	21.57256	128.49706	221.25092	10.20919	0.1238415	3.2339668	9	1	7 days	0.62	E Williams	1997 SW ₁₃
1997 SX ₁₃	13.0	0.15	19970929	16.63113	79.79550	281.00828	4.62634	0.0830515	5.2001626	9	1	7 days	0.22	E Williams	1997 SX ₁₃
1997 SC ₁₄	17.0	0.15	19970929	29.82999	102.09707	226.78999	6.80862	0.2525889	3.2188059	9	1	7 days	0.23	E Williams	1997 SC ₁₄
1997 SD ₁₄	16.5	0.15	19970929	312.94942	88.71833	358.85052	10.21605	0.2138456	3.1470233	12	1	7 days	0.37	Williams	1997 SD ₁₄
1997 SG ₁₄	13.5	0.15	19970929	45.09200	323.77783	359.15082	10.29107	0.1549801	5.3769936	9	1	7 days	0.18	Williams	1997 SG ₁₄
1997 SH ₁₄	17.5	0.15	19970929	280.98046	146.54754	324.74086	3.71710	0.1306423	2.2413784	9	1	7 days	0.13	Williams	1997 SH ₁₄
1997 SM ₁₄	19.0	0.15	19970929	26.22869	26.84621	303.63634	2.35334	0.2651892	2.3270313	9	1	7 days	0.13	Williams	1997 SM ₁₄
1997 SO ₁₄	18.0	0.15	19970929	26.07948	344.93535	351.74920	6.22745	0.2061261	2.3119443	9	1	7 days	0.29	Williams	1997 SO ₁₄
1997 SR ₁₄	16.0	0.15	19970929	353.53782	155.00276	231.49321	5.14622	0.1421251	2.7160031	9	1	7 days	0.21	E Williams	1997 SR ₁₄
1997 ST ₁₄	17.0	0.15	19970929	137.57480	345.01741	251.67854	4.13888	0.0743848	2.7227539	8	1	7 days	0.22	E Williams	1997 ST ₁₄
1997 SV ₁₄	13.0	0.15	19970929	304.13099	155.31126	292.75429	3.97617	0.0936461	5.0686495	9	1	7 days	0.22	E Williams	1997 SV ₁₄
1997 SW ₁₄	19.0	0.15	19970929	346.93638	67.03473	331.45648	3.20322	0.2706716	2.3424416	9	1	7 days	0.20	Williams	1997 SW ₁₄
1997 SX ₁₄	16.5	0.15	19970929	278.24918	122.93346	6.65791	13.35954	0.2364739	3.0947088	8	1	7 days	0.23	Williams	1997 SX ₁₄
1997 SE ₁₅	15.0	0.15	19970929	335.43235	161.28011	249.49943	3.77188	0.1073917	3.1522373	8	1	7 days	0.27	E Williams	1997 SE ₁₅
1997 SG ₁₅	17.0	0.15	19970929	31.29814	342.90703	354.80748	9.93073	0.1250118	3.0508979	8	1	7 days	0.37	Williams	1997 SG ₁₅
1997 SK ₁₅	15.5	0.15	19970909	22.52699	13.01426	289.71553	1.18545	0.2177266	2.2347403	9	1	2 days	0.22	E Williams	1997 SK ₁₅
1997 SF ₁₆	13.2	0.15	19970929	88.72189	97.49906	190.84354	0.89579	0.0074297	2.9684061	6	1	11 days	0.34	Nakano	1997 SF ₁₆
1997 SG ₁₆	13.3	0.15	19970929	39.94003	145.63734	186.46710	1.62178	0.0679246	2.8859392	10	1	11 days	0.86	Nakano	1997 SG ₁₆
1997 SJ ₁₆	16.1	0.15	19970929	343.69256	337.33890	54.25177	6.76974	0.0843761	2.6654589	9	1	13 days	0.16	Nakano	1997 SJ ₁₆
1997 SL ₁₆	13.9	0.15	19971019	105.62813	108.60838	147.51509	12.28154	0.0973080	2.5655540	29	1	11 days	0.55	Nakano	1997 SL ₁₆
1997 SO ₁₆	14.0	0.15	19970929	67.29868	274.62853	6.35603	7.16454	0.1488198	2.4762999	12	1	11 days	0.30	Williams	1997 SO ₁₆
1997 SS ₁₆	15.5	0.15	19970929	62.81912	36.67789	253.60042	1.12392	0.0801381	2.9618157	9	1	5 days	0.15	E Williams	1997 SS ₁₆
1997 ST ₁₆	17.0	0.15	19970929	312.98904	80.56238	355.22636	6.08906	0.2550789	2.4242839	9	1	5 days	0.14	E Williams	1997 ST ₁₆
1997 SV ₁₆	17.5	0.15	19970929	272.97389	248.83214	218.19204	1.74835	0.1587347	2.4079458	11	1	5 days	0.16	Williams	1997 SV ₁₆
1997 SW ₁₆	19.0	0.15	19970929	2.77274	155.25395	203.13971	2.23067	0.2383610	2.3169941	9	1	5 days	0.18	E Williams	1997 SW ₁₆
1997 SX ₁₆	18.5	0.15	19970929	0.07973	14.66298	347.66463	3.75667	0.2393157	2.7947028	9	1	5 days	0.25	E Williams	1997 SX ₁₆
1997 SZ ₁₆	18.0	0.15	19970929	38.78034	305.82278	5.24823	14.93535	0.2782330	2.4090889	11	1	9 days	0.27	Williams	1997 SZ ₁₆
1997 SA ₁₇			19970929	38.54295	203.51447	137.48122	10.86039	0.2484180	2.8916357	7	1	2 days	0.66	E Williams	1997 SA ₁₇
1997 SB ₁₇			19970929	7.50009	299.83453	90.15515	14.09442	0.1692061	2.8244369	7	1	2 days	0.28	E Williams	1997 SB ₁₇
1997 SL ₁₇	15.0	0.15	19970929	309.03610	79.13746	351.17915	10.15838	0.2297618	2.4145155	18	1	8 days	0.90	Williams	1997 SL ₁₇
1997 SN ₁₇	15.5	0.15	19970929	55.04983	53.75045	257.60829	2.35351	0.1112108	2.5687334	12	1	2 days	0.80	E Nakano	1997 SN ₁₇
1997 SO ₁₇	13.7	0.15	19970929	21.90826	184.33861	163.01857	1.70546	0.1462422	2.7752690	6	1	3 days	1.08	E Nakano	1997 SO ₁₇
1997 SP ₁₇	14.1	0.15	19970929	353.29548	189.81667	198.39316	7.45827	0.3037073	2.6942544	8	1	7 days	0.76	Nakano	1997 SP ₁₇
1997 SQ ₁₇	14.3	0.15	19970929	55.74717	287.93749	13.99013	11.97539	0.1831648	2.4217516	17	1	5 days	0.78	Nakano	1997 SQ ₁₇
1997 SS ₁₇	16.0	0.15	19970929	355.26561	312.42549	71.92763	4.49708	0.1424978	2.1838709	13	1	11 days	0.53	Nakano	1997 SS ₁₇

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1997 SW ₁₇	17.0	0.15	19970929	44.41389	295.97162	20.52229	11.88092	0.2393008	2.7173702	8	1	9 days	0.15	Williams	1997 SW ₁₇
1997 SL ₁₈	17.0	0.15	19970929	290.68844	93.03229	348.92074	6.03822	0.1631916	2.3408109	9	1	11 days	0.18	Williams	1997 SL ₁₈
1997 SQ ₁₈	15.5	0.15	19970929	263.11461	106.75339	357.99064	6.08283	0.1107059	2.2783107	8	1	11 days	0.22	Williams	1997 SQ ₁₈
1997 SS ₁₈	17.0	0.15	19970929	39.76962	304.53582	357.21473	4.98619	0.1674431	2.5391076	9	1	11 days	0.19	Williams	1997 SS ₁₈
1997 ST ₁₈	16.0	0.15	19970929	102.43451	212.90924	21.30855	0.70246	0.1682513	2.7779931	12	1	11 days	0.29	Williams	1997 ST ₁₈
1997 SV ₁₈	17.0	0.15	19970929	346.86215	37.93617	350.36455	4.40078	0.3105755	2.6402725	9	1	12 days	0.12	Williams	1997 SV ₁₈
1997 SO ₁₉	15.5	0.15	19970929	81.01918	269.73107	353.35957	9.81517	0.1492084	3.1103959	9	1	12 days	0.20	E Williams	1997 SO ₁₉
1997 SR ₁₉	16.0	0.15	19970929	49.80835	317.31983	336.71097	2.44308	0.1832289	3.0150928	9	1	12 days	0.17	Williams	1997 SR ₁₉
1997 SW ₂₀	16.0	0.15	19970929	101.75242	246.14727	24.54202	12.35144	0.1239580	2.6613383	9	1	12 days	0.29	Williams	1997 SW ₂₀
1997 SQ ₂₁	15.5	0.15	19970929	114.59867	244.72820	19.69015	3.99220	0.0725863	2.7835704	9	1	11 days	0.11	Williams	1997 SQ ₂₁
1997 SU ₂₁	19.0	0.15	19970929	345.11390	50.97188	347.98205	5.83736	0.2537654	2.1986610	12	1	10 days	0.30	Williams	1997 SU ₂₁
1997 SV ₂₁	17.5	0.15	19970929	333.01078	60.59568	355.83157	9.26603	0.1943274	2.6382825	12	1	11 days	0.19	Williams	1997 SV ₂₁
1997 SX ₂₁	15.5	0.15	19970929	14.14318	167.01676	187.36952	1.51579	0.1667098	2.1637371	8	1	6 days	0.98	Nakano	1997 SX ₂₁
1997 SK ₂₃	17.0	0.15	19970929	1.76112	26.74617	352.68163	1.38481	0.1539133	2.4361725	9	1	11 days	0.12	Williams	1997 SK ₂₃
1997 SP ₂₃	18.5	0.15	19970929	11.45168	36.03125	331.42189	0.63322	0.1506637	2.5469441	9	1	11 days	0.19	Williams	1997 SP ₂₃
1997 SV ₂₃	15.5	0.15	19970929	304.43537	76.86928	17.54228	2.68984	0.1405041	2.4525704	9	1	11 days	0.36	Williams	1997 SV ₂₃
1997 SW ₂₃	16.5	0.15	19970929	340.24422	108.17185	303.39399	0.46669	0.1184830	3.0684608	8	1	11 days	0.13	Williams	1997 SW ₂₃
1997 SP ₂₄	16.0	0.15	19970929	173.36086	205.82349	4.84195	2.26830	0.1262247	2.3280479	9	1	11 days	0.11	Williams	1997 SP ₂₄
1997 SQ ₂₄	18.5	0.15	19970929	69.72401	289.82470	10.09925	2.89438	0.1184015	2.1921997	9	1	11 days	0.28	Williams	1997 SQ ₂₄
1997 SV ₂₄	18.0	0.15	19970929	25.81779	125.89716	217.52623	2.03264	0.2066186	2.4498338	9	1	10 days	0.18	Williams	1997 SV ₂₄
1997 SW ₂₄	17.0	0.15	19970929	286.87282	210.66745	269.86324	0.62940	0.1979285	2.3852245	9	1	11 days	0.17	Williams	1997 SW ₂₄
1997 SX ₂₄	16.0	0.15	19970929	325.37249	217.07385	210.41004	3.68979	0.1311743	2.3051348	9	1	10 days	0.06	Williams	1997 SX ₂₄
1997 SA ₂₅	15.0	0.15	19970929	10.60498	161.81005	206.28984	12.68108	0.1908274	2.5577208	16	1	7 days	0.35	Williams	1997 SA ₂₅
1997 SB ₂₅	14.9	0.15	19970929	358.85358	330.50076	49.69988	2.45968	0.1326981	2.2199660	6	1	10 days	0.85	E Nakano	1997 SB ₂₅
1997 SD ₂₅	12.2	0.15	19970929	313.65512	239.60935	195.13522	10.23064	0.0605727	3.0735088	6	1	8 days	0.27	Nakano	1997 SD ₂₅
1997 SF ₂₅	15.7	0.15	19970929	351.53402	357.81497	21.98687	4.93796	0.1581740	2.2183654	6	1	6 days	0.53	Nakano	1997 SF ₂₅
1997 SL ₂₅	15.2	0.15	19970929	8.43965	177.32825	178.60485	12.79388	0.2032416	2.6568572	6	1	9 days	0.61	Nakano	1997 SL ₂₅
1997 SN ₂₅	12.5	0.15	19970929	244.69962	183.40964	320.99895	1.08911	0.1032229	2.8557215	13	1	5 days	0.95	E Williams	1997 SN ₂₅
1997 SO ₂₅	16.0	0.15	19970929	289.02195	177.92804	278.12353	2.70649	0.0386557	2.2304766	11	1	8 days	0.38	Williams	1997 SO ₂₅
1997 SP ₂₅	15.0	0.15	19970929	40.12119	160.96215	171.93887	4.52943	0.1037190	2.6997325	13	1	9 days	0.24	Williams	1997 SP ₂₅
1997 SD ₂₆	16.5	0.15	19970929	315.43726	63.65017	350.16615	5.71735	0.0802569	3.0035243	9	1	12 days	0.14	Williams	1997 SD ₂₆
1997 SG ₂₆	17.5	0.15	19970929	285.47711	87.82806	355.88853	7.24704	0.0551372	2.3917603	9	1	12 days	0.23	Williams	1997 SG ₂₆
1997 SM ₂₆	13.5	0.15	19970929	239.63887	165.98513	346.67881	8.54911	0.1173292	5.1892584	8	1	7 days	0.17	Williams	1997 SM ₂₆
1997 SP ₂₈	19.5	0.15	19970929	358.37530	2.71878	355.56329	3.15394	0.1986569	2.2883855	8	1	13 days	0.20	Williams	1997 SP ₂₈
1997 SX ₂₈	18.0	0.15	19970929	349.58288	52.73470	319.43306	12.14683	0.2873845	2.7421820	9	1	8 days	0.38	E Williams	1997 SX ₂₈
1997 SE ₃₀	14.0	0.15	19970929	292.06574	222.60635	243.07454	1.80455	0.1000011	3.0248293	9	1	11 days	0.10	Williams	1997 SE ₃₀
1997 SL ₃₀	17.0	0.15	19970929	336.25424	36.17723	17.07048	6.39263	0.1213100	2.3756038	9	1	11 days	0.10	Williams	1997 SL ₃₀
1997 SN ₃₀	18.5	0.15	19970929	26.77506	54.80653	286.37308	0.45962	0.2181941	2.4052652	9	1	11 days	0.39	Williams	1997 SN ₃₀
1997 SQ ₃₀	17.0	0.15	19970929	38.45444	313.17004	25.44876	14.91205	0.1132046	2.6521623	9	1	9 days	0.14	Williams	1997 SQ ₃₀
1997 SW ₃₀	14.5	0.15	19970929	88.87077	73.38397	171.57412	9.92176	0.2188151	2.5718026	4	1	8 days	0.06	Williams	1997 SW ₃₀
1997 SH ₃₁	16.5	0.15	19970929	248.18798	186.12107	293.96546	0.49352	0.1518201	2.4674481	9	1	11 days	0.18	Williams	1997 SH ₃₁
1997 SJ ₃₁	15.5	0.15	19970929	84.43004	273.00945	336.18039	0.77544	0.1674047	3.0389933	9	1	11 days	0.24	E Williams	1997 SJ ₃₁
1997 SK ₃₁	16.5	0.15	19970929	275.38623	106.58052	351.93428	2.93527	0.1756802	2.5775427	9	1	11 days	0.33	Williams	1997 SK ₃₁
1997 SL ₃₁	16.0	0.15	19970929	59.40652	102.34694	176.18861	0.87610	0.1485786	3.0154716	9	1	11 days	0.32	E Williams	1997 SL ₃₁
1997 SM ₃₁	17.0	0.15	19970929	293.96462	91.04999	356.92698	8.31823	0.2342643	2.5364348	9	1	11 days	0.22	Williams	1997 SM ₃₁
1997 SQ ₃₁	15.5	0.15	19970929	348.41016	17.38397	352.13676	6.07474	0.1215216	2.4453853	9	1	9 days	0.15	Williams	1997 SQ ₃₁
1997 SS ₃₁	14.0	0.15	19970929	292.04788	188.27294	238.51779	4.31166	0.1897556	3.2385459	9	1	9 days	0.36	Williams	1997 SS ₃₁
1997 SY ₃₁	14.5	0.15	19970929	53.67664	295.96291	348.65716	9.57221	0.1285049	3.1363484	12	1	11 days	0.41	Williams	1997 SY ₃₁
1997 SC ₃₂	18.0	0.15	19970909	34.25339	308.05695	350.21357	14.91407	0.2268328	2.7060792	15	1	4 days	0.54	Williams	1997 SC ₃₂
1997 SD ₃₂	16.0	0.15	19970929	151.30881	229.45497	338.71714	4.31965	0.0295836	3.0918363	17	1	15 days	0.42	Williams	1997 SD ₃₂
1997 SE ₃₂	16.5	0.15	19970909	252.86601	154.84631	319.51658	2.25646	0.0956601	2.6584606	12	1	3 days	0.25	Williams	1997 SE ₃₂
1997 SF ₃₂	15.5	0.15	19970929	80.87862	66.70491	195.29537	6.24458	0.1059118	3.2273921	9	1	8 days	0.73	E Williams	1997 SF ₃₂
1997 SG ₃₂	16.0	0.15	19970929	28.21175	184.27000	146.63382	4.48796	0.0816667	2.4537758	6	1	5 days	0.34	Williams	1997 SG ₃₂

1997 SL ₃₂	15.5	0.15	19971019	6.93919	353.67894	18.88572	2.92870	0.1617899	2.7158130	10	1	12 days	0.78	Nakano	1997 SL ₃₂
1997 SP ₃₂	15.5	0.15	19970929	4.07681	8.88024	350.61918	1.58701	0.1244371	2.2947143	12	1	10 days	0.28	Williams	1997 SP ₃₂
1997 SR ₃₂	14.5	0.15	19970929	342.78179	30.60073	357.61909	3.74023	0.1476431	2.2642973	12	1	11 days	0.67	Williams	1997 SR ₃₂
1997 SU ₃₂	13.5	0.15	19970929	279.20271	91.80651	29.20035	20.83484	0.0844147	5.2730901	9	1	12 days	0.14	Williams	1997 SU ₃₂
1997 SW ₃₂	18.5	0.15	19970929	358.07177	20.97349	337.49549	15.69386	0.0752222	1.8884166	9	1	11 days	0.31	Williams	1997 SW ₃₂
1997 SX ₃₂	14.0	0.15	19970929	84.32101	75.45444	229.00979	3.17435	0.0139582	5.2043671	9	1	11 days	0.22	E Williams	1997 SX ₃₂
1997 SY ₃₂	12.5	0.15	19970929	295.47804	90.36106	22.65298	7.36501	0.1628969	5.1542478	8	1	12 days	0.28	E Williams	1997 SY ₃₂
1997 SF ₃₃	14.5	0.15	19970929	348.48098	92.05765	272.58080	8.04994	0.0953918	3.1716879	9	1	11 days	0.19	Williams	1997 SF ₃₃
1997 TC	13.5	0.15	19970909	58.05783	263.32386	21.35644	2.13849	0.0758571	2.9398296	16	1	59 days	0.50	Williams	1997 TC
1997 TD	16.5	0.15	19970929	5.22550	170.61117	159.44649	12.71775	0.4527478	2.1780972	46	1	6 days	0.79	Williams	1997 TD
1997 TG			19970929	314.38830	199.74243	221.95571	7.79024	0.2627692	2.6035468	16	1	2 days	0.48	E Williams	1997 TG
1997 TH			19970929	117.15212	17.25181	204.32832	11.90219	0.0653374	3.1125977	16	1	2 days	0.61	E Williams	1997 TH
1997 TM			19970929	25.27636	210.89921	145.43419	12.16828	0.1617205	3.2275850	8	1	3 days	0.38	E Williams	1997 TM
1997 TN			19970929	359.82813	108.91213	238.85925	7.12351	0.0904516	2.8869498	18	1	2 days	0.75	E Williams	1997 TN
1997 TV		0.15	19970929	208.34418	174.45256	5.12316	14.47351	0.3058343	2.9951391	9	1	6 days	1.08	Williams	1997 TV
1997 TW	15.0	0.15	19970929	11.36150	157.13047	196.48572	18.24468	0.2443057	3.1854224	8	1	6 days	0.29	E Williams	1997 TW
1997 TB ₅	17.0	0.15	19970929	18.83591	339.02219	327.53395	10.73189	0.1911286	2.7541109	9	1	4 days	0.17	Williams	1997 TB ₅
1997 TE ₅	17.5	0.15	19970929	348.70540	32.16421	326.22627	3.69918	0.2344073	2.4631925	9	1	4 days	0.18	Williams	1997 TE ₅
1997 TF ₅	18.0	0.15	19970929	8.12218	355.57984	333.83139	3.40221	0.2389752	2.2479234	9	1	4 days	0.18	E Williams	1997 TF ₅
1997 TF ₆	19.0	0.15	19970929	356.09247	239.06010	138.06799	2.85442	0.1619037	2.1650289	9	1	2 days	0.33	Williams	1997 TF ₆
1997 TK ₈	15.0	0.15	19970929	92.27612	61.96409	201.02850	6.20300	0.0521175	2.7040796	9	1	6 days	0.23	E Williams	1997 TK ₈
1997 TQ ₈	17.5	0.15	19970929	66.66909	64.29914	203.72705	2.22804	0.2577956	2.4706284	9	1	6 days	0.19	Williams	1997 TQ ₈
1997 TU ₈			19970929	5.39262	131.19337	213.31469	7.79731	0.1985989	2.1759868	14	1	2 days	0.35	E Williams	1997 TU ₈
1997 TX ₈	8.0	0.15	19970929	359.97579	108.51368	249.39446	8.37285	0.1863390	39.3745182	4	1	1 days	0.13	E Marsden	1997 TX ₈
1997 TE ₉	16.5	0.15	19970929	28.65994	106.31208	227.22658	3.67033	0.2744522	2.9874637	9	1	9 days	0.22	Williams	1997 TE ₉
1997 TF ₉	16.0	0.15	19970929	279.08363	238.63760	247.93370	2.33289	0.1890035	2.4857697	9	1	9 days	0.12	Williams	1997 TF ₉
1997 TH ₉	17.0	0.15	19970929	184.16576	199.15347	2.81307	3.42029	0.1185157	2.3779171	9	1	9 days	0.18	Williams	1997 TH ₉
1997 TK ₉	18.0	0.15	19970929	59.75576	85.22785	218.94741	4.83334	0.1808197	2.3754003	9	1	9 days	0.15	Williams	1997 TK ₉
1997 TM ₉	16.0	0.15	19970929	322.63153	214.60634	213.88624	10.72133	0.0598485	3.0029596	9	1	9 days	0.27	Williams	1997 TM ₉
1997 TN ₉	17.0	0.15	19970929	332.07414	201.21122	218.37257	4.01180	0.1003047	2.7169655	9	1	9 days	0.29	Williams	1997 TN ₉
1997 TO ₉	17.5	0.15	19970929	186.13865	346.78819	215.03154	5.87614	0.1042157	2.3894359	8	1	9 days	0.20	Williams	1997 TO ₉
1997 TP ₉	18.5	0.15	19970929	20.40649	355.21256	357.09162	1.26399	0.1921730	2.3572627	9	1	9 days	0.13	Williams	1997 TP ₉
1997 TR ₉	15.0	0.15	19970929	48.29317	76.57780	253.94685	0.86758	0.0851613	2.6770593	9	1	9 days	0.11	Williams	1997 TR ₉
1997 TT ₉	11.5	0.15	19970929	40.67693	292.49103	44.97155	9.84560	0.0908529	5.2124389	10	1	3 days	0.21	E Williams	1997 TT ₉
1997 TU ₉	14.5	0.15	19970929	165.58674	6.87938	212.46541	3.54562	0.2398271	2.7386002	12	1	6 days	0.29	E Williams	1997 TU ₉
1997 TV ₉	15.0	0.15	19970929	271.85626	72.67255	59.15160	4.67035	0.1950525	2.5768814	9	1	6 days	0.22	Williams	1997 TV ₉
1997 TW ₉	14.5	0.15	19970929	352.87986	301.94686	88.96982	2.97803	0.1124064	3.0537177	9	1	6 days	0.13	Williams	1997 TW ₉
1997 TX ₉	16.0	0.15	19970929	64.53376	247.85459	44.37046	5.88770	0.2033362	2.2649559	9	1	5 days	0.35	Williams	1997 TX ₉
1997 TY ₉	15.5	0.15	19970929	354.66676	301.65768	85.53499	2.41415	0.1614662	2.5666695	10	1	5 days	0.10	Williams	1997 TY ₉
1997 TZ ₉	15.0	0.15	19970929	357.17267	0.47897	28.77605	6.44453	0.1167734	2.6250449	13	1	7 days	0.15	Williams	1997 TZ ₉
1997 TA ₁₀	13.5	0.15	19970929	315.74204	46.45086	34.70276	3.86160	0.0469420	3.1515054	9	1	7 days	0.19	E Williams	1997 TA ₁₀
1997 TB ₁₀	15.0	0.15	19970929	353.42732	185.60317	219.74553	0.83154	0.2884469	3.1512628	7	1	7 days	0.11	E Williams	1997 TB ₁₀
1997 TY ₁₀	16.5	0.15	19970929	341.93421	189.44063	185.75167	2.77193	0.0810851	2.6846063	9	1	6 days	0.30	E Williams	1997 TY ₁₀
1997 TD ₁₁	15.5	0.15	19971019	0.96043	127.75206	246.10338	0.34112	0.1974662	2.4431959	14	1	5 days	0.39	Nakano	1997 TD ₁₁
1997 TE ₁₁	15.0	0.15	19970929	294.16822	251.80536	179.17337	9.32396	0.1110042	2.7503954	9	1	6 days	0.15	Williams	1997 TE ₁₁
1997 TG ₁₁	18.0	0.15	19970929	11.14821	162.47301	178.28478	5.29435	0.2064337	2.2622353	9	1	6 days	0.20	Williams	1997 TG ₁₁
1997 TJ ₁₁	14.5	0.15	19970929	45.48095	314.92098	353.78145	9.60410	0.2335596	2.7658135	18	1	8 days	0.32	Williams	1997 TJ ₁₁
1997 TK ₁₁	15.0	0.15	19970929	226.26122	158.05747	1.98768	14.09255	0.1008930	2.6109619	9	1	8 days	0.16	Williams	1997 TK ₁₁
1997 TP ₁₁	16.0	0.15	19970929	298.80709	121.52445	306.85752	0.84745	0.1413907	3.0624552	12	1	11 days	0.53	E Williams	1997 TP ₁₁
1997 TQ ₁₁	15.5	0.15	19970929	26.75561	153.16525	158.64884	2.38468	0.2290638	3.9997048	9	1	2 days	0.34	E Williams	1997 TQ ₁₁
1997 TR ₁₁	15.5	0.15	19970929	96.45948	242.78700	5.27641	4.16168	0.1036200	2.4234685	9	1	2 days	0.24	E Williams	1997 TR ₁₁
1997 TS ₁₁	16.5	0.15	19970929	327.99784	240.51911	165.43256	2.01246	0.2231755	2.7811345	9	1	2 days	0.28	E Williams	1997 TS ₁₁
1997 TT ₁₁	15.0	0.15	19970929	270.51208	86.55710	19.20960	1.97054	0.1919041	3.0647491	9	1	2 days	0.21	E Williams	1997 TT ₁₁

1997 TW ₁₁	16.0	0.15	19970929	357.36763	195.30269	180.17493	9.52894	0.2943806	2.8248331	14	1	4 days	0.48	E	Williams	1997 TW ₁₁	
1997 TX ₁₁	15.5	0.15	19970929	63.55848	155.97715	143.15360	3.22295	0.0773369	2.2285423	14	1	3 days	0.40		Williams	1997 TX ₁₁	
1997 TY ₁₁	13.5	0.15	19970929	4.28580	224.31640	138.99624	2.61565	0.2036461	2.2187461	9	1	2 days	0.19		Williams	1997 TY ₁₁	
1997 TC ₁₂	16.5	0.15	19970929	322.52601	135.14711	298.78993	1.71355	0.1559318	2.7853114	9	1	9 days	0.12		Williams	1997 TC ₁₂	
1997 TE ₁₂	14.5	0.15	19970929	307.43298	134.34503	310.53021	1.89025	0.0683253	3.0715884	9	1	9 days	0.12		Williams	1997 TE ₁₂	
1997 TJ ₁₂	16.5	0.15	19970929	8.47865	358.53217	18.99111	9.20663	0.0513932	3.2103089	8	1	9 days	0.27		Williams	1997 TJ ₁₂	
1997 TK ₁₂	15.0	0.15	19970929	321.04787	130.49202	315.53166	1.46273	0.2363654	3.1387381	12	1	10 days	0.24		Williams	1997 TK ₁₂	
1997 TN ₁₂	17.0	0.15	19970929	34.40074	329.64463	13.73343	5.68907	0.1054991	2.8295015	9	1	9 days	0.24		Williams	1997 TN ₁₂	
1997 TO ₁₂	15.5	0.15	19970929	22.24027	14.72990	336.64883	1.70282	0.1762292	2.5586925	9	1	10 days	0.10		Williams	1997 TO ₁₂	
1997 TR ₁₂	17.0	0.15	19970929	17.69388	87.95386	272.80431	1.33149	0.1598448	2.8898254	9	1	10 days	0.17		Williams	1997 TR ₁₂	
1997 TS ₁₂	17.5	0.15	19970929	337.04478	86.01250	329.20679	1.28031	0.1590008	2.5177849	9	1	10 days	0.12		Williams	1997 TS ₁₂	
1997 TU ₁₂	18.5	0.15	19970929	9.83731	17.68035	346.83919	0.90149	0.2788048	2.6232214	9	1	9 days	0.51		Williams	1997 TU ₁₂	
1997 TW ₁₂	17.5	0.15	19970929	5.11592	355.95656	19.29487	4.25364	0.2090495	2.4837744	8	1	9 days	0.27		Williams	1997 TW ₁₂	
1997 TX ₁₆	14.0	0.15	19970929	255.40387	110.27435	47.97996	12.34199	0.1623898	2.4970018	15	1	5 days	0.26	E	Williams	1997 TX ₁₆	
1997 TZ ₁₆	24.0	0.15	19970929	340.59061	66.86684	14.17027	3.82466	0.6005353	2.0316457	28	1	3 days	0.90		Williams	1997 TZ ₁₆	
1997 TA ₁₇	15.5	0.15	19970929	358.63183	75.56550	305.89281	5.38152	0.1574897	2.5237219	8	1	3 days	0.08		Williams	1997 TA ₁₇	
1997 TQ ₁₇	18.5	0.15	19970929	59.81689	298.25920	343.06354	6.19280	0.3048001	2.1443937	16	1	4 days	0.54		Williams	1997 TQ ₁₇	
1997 TA ₁₈	14.5	0.15	19970929	17.73760	223.74806	187.66212	11.44703	0.2001040	2.6941325	9	1	4 days	0.27	E	Williams	1997 TA ₁₈	
1997 TB ₁₈	12.0	0.15	19970929	245.76580	154.24094	5.47232	12.49055	0.2531049	2.8996467	9	1	6 days	1.35	E	Williams	1997 TB ₁₈	
1997 TK ₁₈	11.5	0.15	19970929	179.06184	163.90728	28.36036	14.03822	0.0159500	5.3069263	9	1	7 days	0.51	E	Williams	1997 TK ₁₈	
1997 TN ₁₈	15.0	0.15	19970929	232.36475	41.17327	110.85165	2.99062	0.1678978	2.3933579	12	1	7 days	0.26		Williams	1997 TN ₁₈	
1997 TO ₁₈	13.0	0.15	19970929	250.62809	68.68985	67.79785	3.80635	0.1562582	3.0857101	9	1	7 days	0.17		Williams	1997 TO ₁₈	
1997 TP ₁₈	14.0	0.15	19970929	158.87810	155.97974	53.93312	4.74412	0.0642953	2.7810267	12	1	7 days	0.24		Williams	1997 TP ₁₈	
1997 TV ₁₈	16.0	0.15	19970929	25.87477	224.00482	105.82651	2.02690	0.2219301	2.3002755	14	1	4 days	0.22		Williams	1997 TV ₁₈	
1997 TW ₁₈	14.5	0.15	19970929	206.58659	88.14719	81.94918	3.17187	0.1056808	2.3863349	9	1	4 days	0.31		Williams	1997 TW ₁₈	
1997 TG ₁₉	14.2	0.15	19970601	49.78476	220.76422	41.39303	3.19862	0.3151482	2.1469153	18	1	5 days	0.58		Nakano	1997 TG ₁₉	
1997 TR ₁₉	17.0	0.15	19970929	56.08413	310.75571	352.73951	2.82128	0.2187827	2.5003706	8	1	9 days	0.15		Williams	1997 TR ₁₉	
1997 TS ₂₂	14.0	0.15	19970929	272.26440	105.72524	351.89860	1.62159	0.0485027	2.9167682	12	1	5 days	0.72	E	Williams	1997 TS ₂₂	
2073 P-L	15.5	0.15	19971218	297.53704	252.76625	213.79711	2.84167	0.1851926	2.5674432	23	4	1960–1997	0.68	M-v	2	Williams	27938 2073 P-L
2093 P-L	13.0	0.15	19971218	101.49281	70.98914	214.00192	9.00686	0.0571315	3.0271682	30	6	1960–1997	0.56	M-v	1	Williams	21977 2093 P-L
2100 P-L	14.5	0.15	19971218	346.69307	74.34405	193.31680	16.80246	0.0719771	2.8567354	24	2	1960–1997	0.73	M-v	6	Marsden	30474 2100 P-L
2679 P-L	16.0	0.15	19971218	13.08584	188.89937	160.18368	3.72669	0.1955055	2.2533631	14	3	1960–1997	0.49	M-v	4	Williams	27116 2679 P-L
2723 P-L	16.5	0.15	19971218	179.81047	355.26050	178.39116	4.05901	0.0649727	2.2614281	21	3	1960–1997	0.57	M-v	4	Williams	26414 2723 P-L
2839 P-L	15.0	0.15	19971218	39.71701	226.25153	356.06787	3.20999	0.1095290	2.6296408	17	3	1960–1997	0.61	M-v	4	Marsden	29937 2839 P-L
4082 P-L	14.0	0.15	19971218	168.13036	262.08240	323.17850	1.57257	0.1641901	2.3837240	27	5	1960–1997	0.91	M-v	2	Williams	27938 4082 P-L
4581 P-L	14.0	0.15	19971218	25.05631	334.05624	54.70918	2.82388	0.1255747	2.2376777	24	6	1960–1997	0.90	M-v	2	Williams	27457 4581 P-L
4805 P-L	15.0	0.15	19971218	161.31017	198.22447	21.14022	2.31888	0.1632191	2.3887664	51	8	1950–1997	0.77	M-v	2	Williams	28620 4805 P-L
5004 P-L	13.0	0.15	19971218	39.72995	120.83964	209.21589	10.97786	0.2277469	3.0282359	20	4	1960–1997	0.60	M-v	1	Williams	29668 5004 P-L
6038 P-L	14.0	0.15	19971218	350.60521	58.70016	358.21638	6.97880	0.2074963	2.5628493	29	5	1952–1997	0.59	M-v	2	Williams	27938 6038 P-L
6064 P-L	13.0	0.15	19971218	277.66165	275.34842	193.34138	10.68529	0.1857516	2.7854677	18	3	1960–1997	0.55	M-v	4	Marsden	27724 6064 P-L
1102 T-1	15.0	0.15	19971218	131.12196	49.48396	214.29562	6.29684	0.0907192	2.3206415	23	4	1971–1997	0.63	M-v	2	Williams	28088 1102 T-1
1208 T-1	15.0	0.15	19971218	16.17976	168.81917	219.16942	4.36942	0.0569292	2.3091850	17	3	1971–1997	0.72	M-v	5	Williams	25435 1208 T-1
1252 T-1	14.5	0.15	19971218	174.87073	345.98430	198.42825	6.55058	0.0388267	2.3367331	23	4	1971–1997	0.58	M-v	2	Williams	30682 1252 T-1
1290 T-1	15.0	0.15	19971218	139.20711	281.99584	195.14412	6.18207	0.0686986	2.3935158	26	2	1971–1997	0.86	M-v	5	Williams	30682 1290 T-1
4034 T-1	12.5	0.15	19971218	122.97686	101.90114	158.98181	4.39769	0.0369844	2.8531463	21	5	1949–1997	0.81	M-v	2	Williams	27732 4034 T-1
1153 T-2	13.0	0.15	19971218	330.32321	351.90286	165.59258	1.25563	0.1178072	3.1496839	33	6	1954–1997	0.72	M-v	1	Williams	28620 1153 T-2
1211 T-2	15.5	0.15	19971218	254.72841	166.18417	348.22528	6.66535	0.1025343	2.2647829	32	4	1973–1997	0.80	M-v	4	Williams	25652 1211 T-2
2071 T-2	14.5	0.15	19971218	313.25911	116.49184	213.19943	3.05588	0.2689656	2.5889420	34	3	1973–1997	0.87	M-v	4	Williams	29668 2071 T-2
4196 T-2	13.0	0.15	19971218	73.80567	232.07923	76.52222	3.20191	0.0700773	2.8375556	29	3	1973–1997	0.58	M-v	4	Williams	30696 4196 T-2
5187 T-2	11.5	0.15	19971218	297.18157	230.76107	240.13781	8.60217	0.0308322	5.1307911	22	5	1989–1997	0.65	M-v	1	Williams	29669 5187 T-2
5493 T-2	10.5	0.15	19971218	30.22332	56.52130	323.13644	13.15808	0.0487478	5.1260518	24	7	1955–1997	0.81	M-v	1	Williams	28088 5493 T-2
2077 T-3	16.0	0.15	19971218	60.35137	209.89704	3.46133	9.06022	0.2014072	2.3184971	29	3	1977–1997	0.87	M-v	4	Williams	30683 2077 T-3
2122 T-3	16.0	0.15	19971218	194.69269	319.74982	240.14393	2.79519	0.0791628	2.2328667	19	5	1976–1997	0.66	M-v	2	Williams	28088 2122 T-3

2326 T-3	15.0	0.15	19971218	34.85683	80.70136	281.08700	2.28906	0.0438197
3006 T-3	13.5	0.15	19971218	30.89686	350.01651	32.75527	6.71779	0.1145756
3437 T-3	15.0	0.15	19971218	65.88127	272.50787	13.86825	2.62599	0.1460275
3459 T-3	16.5	0.15	19971218	355.16237	200.07494	200.80953	1.88143	0.1969430
3813 T-3	16.5	0.15	19971218	29.33484	316.26131	25.01831	1.64392	0.1564000

1991 GW₁ = 1991 JO (G. V. Williams, *MPC* 18398)
 1995 SS₅ = 1995 UZ₇ (G. V. Williams, *MPC* 26379)
 1996 VH₄ = 1996 XE₅ (S. Nakano, *MPC* 28813)
 1997 CU₅ = 1997 AE₈ (G. V. Williams)
 1997 FX₂ = 1997 GH₁₉ (G. V. Williams, *MPC* 29886)
 1997 FX₂ = 1997 EN₄₉ (G. V. Williams)
 1997 FQ₃ = 1997 GS₂₀ (B. G. Marsden)
 1997 GU₂₀ = 1997 EP₄₉ (G. V. Williams, *MPC* 30432)
 1997 GV₂₀ = 1997 EQ₄₉ (G. V. Williams, *MPC* 30432)
 1997 PM₁ = 1997 PP₅ (G. V. Williams, *MPC* 30696)
 1997 RN₇ = 1997 RL₁₀ (G. V. Williams)

NEW NAMES OF MINOR PLANETS

(3585) Goshirakawa = 1987 BE

Discovered 1987 Jan. 28 by T. Nijima and T. Urata at Ojima.

Named for the 77th emperor of Japan, Goshirakawa (1127–1192), who reigned from 1155 to 1158. He influenced five later emperors and managed to keep the authority of the imperial household during a period of increasing military power of the Genji and the Heike. Name proposed by second discoverer.

(3686) Antoku = 1987 EB

Discovered 1987 Mar. 3 by T. Nijima and T. Urata at Ojima.

Named for the 81st emperor of Japan, Antoku (1178–1185), son of Kenreimonin. He reigned from 1180 to 1185, and when the Heike was destroyed at Dannoura, he was drowned in Niinoama's arms. Name proposed by second discoverer.

(4363) Sergej = 1978 TU₇

Discovered 1978 Oct. 2 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Named in honor of Sergej Vasil'evich Ezhov (b. 1953), since 1978 a talented surgeon in the district hospital at Bakhchisaraj, Crimea.

(4849) Ardenne = 1936 QV

Discovered 1936 Aug. 17 by K. Reinmuth at Heidelberg.

Named in memory of Manfred von Ardenne (1907–1997), German inventor and researcher in various fields, especially known as a pioneer in television and radio engineering. His early interests in astronomy stimulated his enthusiasm for science and technology, and he emphasized the educational value of astronomy for young people. Ardenne established three private observatories, which were all open to the public. Name proposed and citation prepared by D. B. Herrmann, endorsed by L. D. Schmadel.

(5714) Krasinsky = 1982 PR

Discovered 1982 Aug. 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Georgij Al'bertovich Krasinskij [Krasinsky] (b. 1939), staff-member of the Institute of Theoretical Astronomy from 1964 to 1987, now chief of the Ephemeris Astronomy Laboratory of the Institute of Applied Astronomy in

2.5181332	28	4	1953–1997	0.90	M-v	5	Williams	25085	2326 T-3
2.2229608	24	5	1977–1997	1.09	M-v	2	Williams	21978	3006 T-3
2.5448446	31	3	1977–1997	0.81	M-v	4	Williams	29669	3437 T-3
2.2383372	21	2	1977–1997	0.58	M-v	5	Williams	30683	3459 T-3
2.5340188	15	3	1977–1997	0.69	M-v	6	Williams	24238	3813 T-3

St. Petersburg. He has investigated planetary motions by analytical and numerical methods, and he was one of the creators of the global relativistic theory of the inner planets and the moon in the 1970s. Name suggested by Institute of Theoretical Astronomy and the Institute of Applied Astronomy.

(6044) Hammer-Purgstall = 1991 RW₄

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

Named in memory of Joseph Freiherr von Hammer-Purgstall (1774–1856) on the occasion of the 150th anniversary of the Austrian Academy of Sciences. As a profound orientalist, poet and historian, he was the founder and first president (1847–1849) of the (then Imperial) Academy of Sciences in Vienna. His most famous work is the ten-volume *History of the Osman Empire*. Name proposed by the first discoverer following a suggestion from the presidency of the Austrian Academy of Sciences, citation prepared by H. Haupt.

(6399) Harada = 1991 GA

Discovered 1991 Apr. 3 by T. Seki at Geisei.

Named in honor of Shoji Harada (b. 1953), amateur photographer and student of the orbits of comets and minor planets.

(6497) Yamasaki = 1992 UR₃

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

Named in memory of Masamitsu Yamasaki (1886–1959), who worked at the International Latitude Observatory in Mizusawa. As a codiscoverer of comet 27P/Crommelin (then named Pons-Coggia-Winnecke-Forbes) in 1928, he was the first Japanese to receive the Astronomical Society of the Pacific's Donohoe medal.

(6644) Jugaku = 1991 AA

Discovered 1991 Jan. 5 by A. Takahashi and K. Watanabe at Kitami.

Named in honor of Jun Jugaku (b. 1927), a professor at Tokai University, formerly a professor at the Tokyo Astronomical Observatory. He is known for his work on early-type stars, particularly carbon-phosphorus stars and B stars. As an associate editor of the *Publications of the Astronomical Society of Japan* from 1965 to 1989, he made every effort to upgrade the scientific level of that journal. He served as president of IAU Commission 29 during 1982–1985. Name proposed by the second discoverer, following a suggestion by W. Liller.

(6650) Morimoto = 1991 RS₁

Discovered 1991 Sept. 7 by K. Endate and K. Watanabe at Kitami.

Named in honor of Masaki Morimoto (b. 1932), Japanese radio astronomer who started his career at Mitaka and participated in the construction of the Culgoora radioheliograph in Australia. He successfully completed and used the Mitaka 6-m millimeter-wavelength telescope, then the 45-m telescope and 10-m interferometer at Nobeyama. His ideas led to the launch of the HALKA (VSOP) satellite with an 8-m telescope for space VLBI. He is now a professor at Kogoshima University and established the astronomy program there. He has also served as president of IAU Commission 40. Name proposed by the second discoverer following a suggestion by J. Watanabe.

(6656) Yokota = 1992 FF

Discovered 1992 Mar. 23 by K. Endate and K. Watanabe at Kitami.

Named in honor of Hiroshi Yokota (b. 1927), Japanese amateur astronomer. For almost half a century he has delivered lectures on astronomy and has guided many able amateur astronomers. He organized several national astronomical gatherings in Yamaguchi, and he also played an important role in the investigation of a previously-unknown type of meteorite. Name proposed by the discoverers following a suggestion by M. Koishikawa and T. Sato.

(6660) Matsumoto = 1993 BC

Discovered 1993 Jan. 16 by T. Seki at Geisei.

Named in honor of Tatsujiro Matsumoto (b. 1930), popular Japanese telescope maker, known also for his visual observations of Mars and Jupiter.

(6835) Molino = 1994 HT₁

Discovered 1994 Apr. 30 at Stroncone.

Named in memory of Alberto Molino (1906–1977), Italian wrestler. He took part in the 1936 Berlin Olympics and won the Italian title in the 62-kg category six times, the last time being at the age of 43.

(6841) Gottfriedkirch = 2034 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Gottfried Kirch (1639–1710), who was called to Berlin in 1700 to become the first astronomer at the Berlin Academy. He was recognized as the first discoverer of the great comet of 1680, and he made the sole observation of comet 55P/Tempel-Tuttle in 1699. His wife Maria Margaretha and son Christfried were also well known as astronomers. Name suggested and citation prepared by J. Schubart.

(6842) Krosigk = 3016 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Bernhard Friedrich Baron von Krosigk (1656–1714), an enthusiastic German amateur astronomer who financed astronomical expeditions to Cape Town and to Archangelsk. He owned private observatories at Poplitz and in Berlin. The latter was well equipped and used for observations by members of the Kirch family. Name suggested by A. von Alvensleben and J. Schubart, the citation being prepared by the latter.

(6923) Borzacchini = 1993 SD

Discovered 1993 Sept. 16 at Stroncone.

Named in memory of Baconin Borzacchini (1898–1933), Italian automobile racing champion.

(6945) Dahlgren = 1980 FZ₃

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

Named in honor of Mats Dahlgren (b. 1966) in celebration of the completion of his Ph.D. thesis on Hilda-type minor planets. He has made a spectroscopic and photometric survey of a substantial fraction of the numbered Hildas and has studied the collisional evolution and population of the Hildas.

(7030) Colombini = 1993 YU

Discovered 1993 Dec. 18 at Stroncone.

Named in honor of Ermes Colombini (b. 1956), since 1974 a member of the staff at the Osservatorio San Vittore, near Bologna. He was the first Italian amateur

to obtain precise positions of comets and minor planets. He was also involved in the computation of orbits and in 1981 was awarded the Cerulli prize of the Italian Astronomical Society for his work on (2235) Vittore.

(7040) Harwood = 2642 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of the American astronomer Margaret Harwood (1885–1979). Appointed the first director of the Maria Mitchell Observatory in 1916, she maintained that post for 41 years. She had previously been an assistant at the Harvard College Observatory, where she worked again for 20 more years after her formal retirement. Known for her research on variable stars and the lightcurves of minor planets, she has been accorded only limited credit for her discovery of (886) Washingtonia four days before its official discovery at the U.S. Naval Observatory in November 1917. At that time, her mentors at Harvard did not consider it appropriate for a woman to discover a minor planet.

(7041) Nantucket = 4081 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 for the Massachusetts island and the Maria Mitchell Observatory located there. The observatory was founded by the Maria Mitchell Association, which in 1912 created an astronomical fellowship for women to work at the observatory during the summer months. Margaret Harwood was the first fellow and director and had wished to give the name of the island to minor planet (886), when she independently discovered it just 80 years ago. This belated new assignment of that name also comes on the sesquicentennial of the appearance of Nantucket on the astronomical map, when Maria Mitchell discovered a comet on 1847 Oct. 1 from the roof of her father's house.

(7047) Lundström = 1978 RZ₉

Discovered 1978 Sept. 2 by C.-I. Lagerkvist at the European Southern Observatory, La Silla.

Named in honor of Magnus Lundström (b. 1967), a former student of astronomy at Uppsala and at the German Aerospace Research Establishment (DLR), Berlin, who was involved with a numerical study of the 4:1 Jupiter resonance and with several asteroid surveys, including the Uppsala-DLR Trojan survey and the European Near-Earth Asteroids Search Observatories (EUNASO).

(7064) Montesquieu = 1992 OC₅

Discovered 1992 July 26 by E. W. Elst at the European Southern Observatory.

Named for the French philosopher and writer Charles-Louis de Secondat (1689–1755). Better known by the name of his birthplace, Montesquieu is remembered especially for his *De l'Esprit des lois* (1748), an immense work on the laws and customs of mankind.

(7106) Kondakov = 1978 PM₃

Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Aleksandr Konstantinovich Kondakov (b. 1928), researcher on agricultural chemistry and fertilizers for fruit plants, and head of the laboratory of agrochemistry at the Michurin All-Russian Research Institute of Gardening in Michurinsk. He is well known for his new concepts involving the fertilization of garden soil and for diagnostics concerning the nourishment of garden plants.

(7132) Casulli = 1993 SE

Discovered 1993 Sept. 17 at Stroncone.

Named in honor of Silvano Casulli (b.1944), who was the first amateur astronomer in the world to obtain precise astrometric positions of minor planets using a CCD camera. He lives and works near Rome, and his great enthusiasm played a significant role in organizing the amateur astrometrists in Italy.

(7142) Spinoza = 1994 PC₁₉

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

Named for the Dutch-Jewish philosopher Benedict de Spinoza (1632–1677). He incurred the disapproval of the synagogue authorities, and in 1656 he was excommunicated. Although acknowledging Descartes to be the father of modern philosophy, he did not agree with his metaphysics. In his masterpiece, *Ethica* (1663–1675), he constructed a metaphysical system entirely deductively in terms of Euclidean geometry. Spinoza was also an expert in grinding and polishing lenses, but the inhalation of glass dust contributed to his death.

(7148) Reinholdbien = 1047 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 Reinhold Bien (b.1947), astronomer at the Astronomisches Rechen-Institut in Heidelberg. Bien's fields of interest include numerical studies on celestial mechanics, stellar dynamics and involving interacting galaxies. He is known in particular for his work on the long-period evolution of Trojan orbits. Name proposed and citation prepared by J. Schubart.

(7149) Bernie = 3220 T-3

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Hans-Heinrich "Bernie" Bernstein (b.1953), senior astronomer at the Astronomisches Rechen-Institut in Heidelberg. He analyzed pulsar timing data on pulsars and was instrumental in developing an algorithm for the detection of astrometric binaries with ESA's satellite HIPPARCOS. He detected 110 new double-star systems, together with a few brown-dwarf candidates. Bernstein is an expert in numerical mathematics, with many special applications in astrometry. Name proposed and citation prepared by L. D. Schmadel.

(7207) Hammurabi = 2133 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 for the Babylonian king Hammurabi, who reigned from 1792 to 1750 B.C. and united the different small states of Ur into a single state covering much of Mesopotamia, with Babylon as its capital. Many cuneiform tablets praise his justice. Famous is the stela from Susa containing the Code of Hammurabi.

(7208) Ashurbanipal = 2645 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 for the Assyrian king Ashurbanipal (c. 693–626 B.C.), who became king in 669 B.C. and is historically important because of his collection of Babylonian and Assyrian documents and literature on clay tablets in cuneiform characters. The great epic poem of Gilgamesh is found in his library. Also impressive are the large stone reliefs at his palace, where Ashurbanipal's deeds are detailed.

(7209) Cyrus = 3523 P-L

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named for the Persian king Cyrus II, the Great, who reigned from 559 to 529 B.C. He conquered the Median capital of Ecbatana and subjugated the Lydian king Croesus and the Greek colonies of Asia Minor. In 539 B.C. he conquered Babylon, then the greatest city of the ancient world. He gave the Jews permission to return to Canaan and to rebuild their temple.

(7210) Darius = 6555 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 for the Persian king Darius I, the Great (550–486 B.C.), who became king after the death of Cambyses II and married two daughters of Cyrus II. His splendid palace at Persepolis was destroyed by Alexander the Great. Darius was defeated by the Greeks at the battle of Marathon in 490 B.C., and he died as he was preparing a new campaign against them.

(7211) Xerxes = 1240 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 for the Persian king Xerxes I (519–465 B.C.), son of Darius and Atossa. He continued the war against the Greeks but was defeated by them in naval battles at Salamis (480 B.C.) and Mycale (479 B.C.) and on land at Platea (479 B.C.). He was killed during a palace revolution. Aeschylus made him the main character in his tragedy *Persai*.

(7212) Artaxerxes = 2155 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 for the Persian kings Artaxerxes. Artaxerxes I, Macrocheir (484–424 B.C.), was the younger son of Xerxes I and the father of Xerxes II. A peace treaty with Athens in 449 B.C. marked the end of Persian expansion, with Persia recognizing the independence of the Greek cities in Asia Minor. Artaxerxes II, Mnemon, reacquired those Greek cities and also received Cyprus in a peace treaty in 386 B.C.

(7253) Nara = 1993 CL

Discovered 1993 Feb. 13 by F. Uto at Kashiwara.

Named for the prefecture and city where the oldest capital in Japan was located, and where the first Japanese astronomical observatory was established in 675. Nara held a central position in politics, economics and culture from the latter half of the sixth to the end of the eighth century.

(7265) Edithmüller = 2908 T-2

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of the Spanish-born Swiss astronomer Edith A. Müller (1918–1995). She was well known for her publications on theoretical astrophysics, including supernovae. She worked at many different observatories in Europe and the United States. Müller served as IAU General Secretary during 1976–1979 and was the first woman to hold this post.

(7266) Trefftz = 4270 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 the German astronomer Eleonore Treffitz (b. 1920). Known for her work on physical processes of astronomical interest, she worked from 1948 until her retirement at the Max Planck Institute for Physics and Astrophysics in Munich.

(7285) Seggewiss = 1990 EX₂

Discovered 1990 Mar. 2 by E. W. Elst at the European Southern Observatory

Named in honor of Wilhelm Seggewiss (b. 1937), since 1995 head of the Hoher List Observatory, on the occasion of his 60th birthday. He works mainly on Wolf-Rayet stars and related topics. In 1981 he became a professor of astronomy at the University of Bonn. Seggewiss regularly gives lectures about subjects such as the history of the calendar and astrology, in order to put them in a proper perspective. Name endorsed and citation written by M. Geffert at the request of the discoverer.

(7296) Lamarck = 1992 PW₁

Discovered 1992 Aug. 8 by E. W. Elst and C. Pollas at Caussols.

Named for Jean-Baptiste Lamarck (1744–1829), French biologist, renowned for his idea that acquired traits are inheritable. In 1778, after nine years of botanical field study, he published his three-volume *Flore française*. As a result of his urging, the Muséum National d'Histoire Naturelle was founded in 1793.

(7313) Pisano = 6207 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 for the family of Italian sculptors. Niccolò Pisano (1225–c. 1280) combined in his sculptures the Italian Romanesque and French Gothic styles. His work is found in the pulpits of the baptistery in Pisa and the dome in Siena, in the fountain of Perugia and tombs in Bologna. Giovanni Pisano (c. 1250–c. 1314), the son of Niccolò, produced work found in Siena, Pisa and Padua. Andrea Pisano (c. 1290–c. 1348) created the bronze south door of the baptistery in Florence.

(7314) Pevsner = 2146 T-1

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Antoine Pevsner (1886–1962), Russian-born French sculptor and painter. He and his brother, who used the name Naum Gabo (1890–1977) and later moved to the United States, used mathematical figures as a basis for their many modern sculptures. They worked with bronze, copper and various plastics. They were inspired by the Russian icons and later by Braque and Picasso. In turn, they had a marked influence on younger generations of sculptors.

(7315) Kolbe = 1136 T-2

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

Named in memory of the German sculptor Georg Kolbe (1877–1947). Kolbe was educated as a painter, but in 1911 he became famous for his bronze figure of the dancer. In 1947 he created the monumental statue of Beethoven in Frankfurt.

(7316) Hajdu = 3145 T-2

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Etienne Hajdu (1907–1996), Roumanian-born sculptor who studied in Budapest and Vienna and who lived and worked in Paris from 1927. His abstract sculptures are carved directly in marble of various colors, schist and onyx, and the free-standing works in stone, bronze, aluminum and wood combine a refined effect of light and shadow on the surfaces of volumes with a controlled

tension of outlines both of inner open spaces and outer contours. Reliefs stamped into thick paper, designs for coins, tapestries, stage-settings and costumes, as well as decorations for Sèvres porcelain, show Hajdu's many-sided talent. Name proposed by the discoverers following a suggestion by C. Portheine, who also prepared the citation.

(7343) Ockeghem = 1992 GE₂

Discovered 1992 Apr. 4 by E. W. Elst at the European Southern Observatory.

Named for the Flemish composer Johannes Ockeghem (1420–1497), the most renowned polyphonist of the second half of the fifteenth century. He started his career at the Antwerp cathedral and later served at the court of several French kings. Among his compositions were motets, chansons, canons and a *Deo gratias* for 36 voices. He had a great influence on his fellow musicians and still fascinates contemporary composers. Citation written by K. Leterme at the request of the discoverer.

(7365) Sejong = 1996 QV₁

Discovered 1996 Aug. 18 by K. Watanabe at the JCPM Sapporo Station.

Named on the occasion of the 600th anniversary of the birth of the Korean King Sejong (1397–1450), renowned for his many achievements in astronomy. He built the Royal Observatory of Choson in Seoul in 1437, equipping it with a whole series of astronomical instruments and installing an automatic striking clepsydra. He revised the Chinese calendar for Korean use and invented the rain gauge. He established the Hangeul alphabet, which is still used throughout Korea. Name suggested by K. Hurokawa, citation material provided by I.-S. Nha.

(7367) Giotto = 3077 T-1

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named for Giotto di Bondone (c. 1266–1337), great Italian painter and architect. Giotto liberated art in general from Byzantine art and painted mainly religious themes. His most famous works are in Assisi and Florence, and he constructed the campanile of the Florence cathedral. Giotto saw comet 1P/Halley in 1301 and is supposed to have incorporated it into his fresco, the Adoration of the Magi, in Padua. For this reason, the European spacecraft that intercepted that same comet at its return in 1986 bore his name.

(7383) Lassovszky = 1981 SE

Discovered 1981 Sept. 30 at the Oak Ridge Observatory.

Named in memory of Károly Lassovszky (1897–1961), a staff member of the Konkoly Observatory in Budapest from 1921 and director from 1938 to 1943. His main research was on variable stars, but he initiated the Konkoly observational program on minor planets that was largely carried out by G. Kulin. In 1958 Lassovszky was invited to join the staff of the Smithsonian Astrophysical Observatory (which operates the Oak Ridge Observatory), where he became chief of the Satellite Tracking Program's Photoreduction Division. Named following a proposal made at the 1997 General Assembly of the Hungarian Astronomical Association.

(7412) Linnaeus = 1990 SL₉

Discovered 1990 Sept. 22 by E. W. Elst at the European Southern Observatory.

Named in memory of the great Swedish botanist Carl von Linné (1707–1778). At an early age, Linnaeus developed a great love for flowers and herbs. This led him to develop the first major systematic system of nomenclature for the flora, and this became the internationally accepted standard. He organized the large-scale collection

of botanical specimens in far-away countries and had a lively correspondence with his contemporaries.

(7437) Torricelli = 1994 EF₃

Discovered 1994 Mar. 12 by V. Goretti and A. Boattini at Cima Ekar.

Named in memory of Evangelista Torricelli (1608–1647), mathematician and physicist. In 1641 he met and worked with Galileo in Florence. Torricelli continued Galileo's activities after the latter's death, making telescopes, microscopes and improving methods of lens-making. Torricelli is known for geometrical studies that presaged the development of calculus, for a theorem in fluid mechanics and for the invention of the barometer.

(7445) Trajanus = 4116 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 for the Roman emperor Marcus Ulpius Trajanus (53–117). Trajan was adopted by emperor Nerva and became his successor in 98. He expanded the Roman empire to Mesopotamia, Assyria and Armenia. In his time the Roman empire had its greatest expansion. The Trajan column in the Forum contains his ashes in a golden urn.

(7446) Hadrianus = 2249 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 for Publius Aelius Hadrianus (76–138), Roman emperor, who was adopted by Trajan and who became his successor in 117. Hadrian stopped the expansion of the Roman empire, putting his energy instead into the construction of excellent roads, aqueducts and new cities. He also fortified the borders of the immense empire, notably with the wall between England and Scotland and the limes in Germany. He reformed the economy, administration and the law. An admirer of Greek culture, Hadrian built the Castello de Sant' Angelo in Rome.

(7447) Marcusaurelius = 1142 T-3

Discovered 1977 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named for the Roman emperor Marcus Aurelius Antoninus (121–180), who became emperor in 161 upon the death of his adoptive father Antoninus Pius. He tried to reign with justice but could not prevent the decay of the empire. Marcus Aurelius was often far away from Rome, suppressing secessionist border lands. He died in Vienna during a fight against the Marcomanni. His equestrian statue in Rome is the only genuine bronze monument to an emperor.

(7608) Telegramia = 1995 UO₁

Discovered 1995 Oct. 22 by J. Tichá at Kleť.

Named on the 75th anniversary of the publication of the first *IAU Circular*, which was issued on 1922 Oct. 22 by the IAU Central Bureau for Astronomical Telegrams, then at the Copenhagen Observatory. The Bureau moved to the Smithsonian Astrophysical Observatory in 1965 and has now issued 6756 *IAU Circulars*, relating generally to transient astronomical objects and phenomena in urgent need of further observation. Name proposed by the discoverer and endorsed by her colleagues M. Tichý and Z. Moravec.

(7620) Willaert = 4077 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 for the Flemish composer Adrian Willaert (1485–1562). From 1527 Willaert was a musician, conductor and organist at St. Mark's cathedral in Venice. He combined Dutch polyphony with Italian concertante music and started the Venetian school. His main works are motets and madrigals.

(7621) Sweelinck = 4127 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 for the Dutch composer and organist Jan Pieterszoon Sweelinck (1562–1621). At the age of 18, Sweelinck succeeded his father as organist of the Old Church of Amsterdam, a position he held to his death. He composed many choral songs, motets and madrigals. His fantasias and variations influenced North German organ music. Praetorius was one of his pupils.

(7622) Pergolesi = 6624 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 for the Italian composer Giovanni Battista Pergolesi (1710–1736). He was a conductor in Naples and Rome and died in Pozzuoli in extreme poverty. He did not live to see the glory of his intermezzo *La serva padrona*, which especially in France became the beginning of *opera buffa*. Pergolesi's *Stabat mater* for soprano, alto, string instruments and organ shows his ability to combine large choral and instrumental components.

(7623) Stamitz = 9508 P-L

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named for the German-Bohemian violinist and composer Johann Wenzel Anton Stamitz (1717–1757). He played in the orchestra during the coronation of Karl VII in Frankfurt in 1742. The Elector Palatine Carl Theodor invited Stamitz to Mannheim to conduct his orchestra. The composer of 74 symphonies, Stamitz started the Mannheim school of musicians and influenced Haydn, Mozart and Beethoven.

(7624) Gluck = 1251 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 for the German composer Ritter Christoph Willibald von Gluck (1714–1787). After studying in Prague and Milan he traveled to London to meet Handel. He also worked with the traveling opera companies of Mingotti and Locatelli. In 1752 Gluck became conductor in Sachsen-Hildburghausen and in Vienna. He composed 17 symphonies and 107 operas, including the three Italian reform operas *Orfeo ed Euridice*, *Alceste* and *Paride ed Elena*.

(7625) Louisspohr = 2150 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 for the German composer and violinist Louis Spohr (1784–1859). At age 15 he became a violinist in the orchestra of the duke of Brunswick. He made many journeys throughout Europe to give concerts and founded a school for violinists. His eleven operas included *Faust* and *Jessonda*, and he also composed nine symphonies, 15 violin concerti and much chamber music.

(7649) Bougainville = 1990 SV₅

Discovered 1990 Sept. 22 by E. W. Elst at the European Southern Observatory.

Named in memory of the French navigator Louis-Antoine de Bougainville (1729–1811), best remembered for his circumnavigation on the *Bondeuse* (1766–1769) and his discovery of several archipelagos in Polynesia. His adventures are recounted in his *Voyage autour du monde* (1771), wherein he expounds theories about the goodness and the moral virtues of man living in harmony with nature.

(7678) Onoda = 1996 CW₂

Discovered 1996 Feb. 15 by A. Nakamura at Kuma Kogen.

Named for the city in the southwest of Yamaguchi Prefecture where the discoverer was born. Long known for its coal mines, Onoda is now famous for its chemical industry and cement production.

(7698) Schweitzer = 1989 AS₆

Discovered 1989 Jan. 11 by F. Börngen at Tautenburg.

Named in memory of Albert Schweitzer (1875–1965), German theologian, doctor and philosopher, organist and musicologist. Early in his life he felt a deep “reverence for life” and studied medicine as a professor of theology. In 1913 he founded a hospital in the jungle near Lambaréné, when he was working in Africa as a missionary-doctor. His philosophy culminated in a universal affirmative ethics of an active charity. His accomplishments involving organ music included an interpretation of Bach. Schweitzer was awarded the 1952 Nobel Peace Prize for his efforts on behalf of the Brotherhood of Nations.

(7715) Leonidarosino = 1996 CR₇

Discovered 1996 Feb. 14 by U. Munari and M. Tombelli at Cima Ekar.

Named in memory of Leonida Rosino (1915–1997), director of the Padua and Asiago Observatories from 1953 to 1985. His principal research was on globular clusters, variable stars of all kinds, and novae and supernovae. At Padua he was instrumental in establishing the first Italian department of astronomy in 1968. Rosino’s undisputed great teaching ability, keen scientific guidance and everlasting enthusiasm benefited several generations of Italian astronomers.

(7716) Ube = 1996 DA₃

Discovered 1996 Feb. 22 by A. Nakamura at Kuma Kogen.

Named for the city in Yamaguchi prefecture where the discoverer attended high school. Famous for its chemical industry, Ube is also known as a ‘sculpture city’, a large sculpture exhibition being held there every two years, after which some of the pieces are purchased by the city and displayed along the downtown sidewalks in a unique ‘open air museum’.

(7755) Taiko = 1992 XD

Discovered 1992 Dec. 4 by Y. Kushida and O. Muramatsu at Yatsugatake South Base Observatory.

Named in honor of Taiko Takeuchi, a Japanese amateur astronomer who started observing the stars more than half a century ago. She then became a schoolteacher, was active in popularizing astronomy and computed the orbits of some minor planets. Name proposed by the discoverers, following a suggestion by S. Kimura.

(7787) Annalaura = 1994 WW

Discovered 1994 Nov. 23 by L. Tesi and A. Boattini at San Marcello Pistoiese.

Named in honor of Annalaura Calvani Tesi, wife of the first discoverer.

(7788) Tsukuba = 1994 XS

Discovered 1994 Dec. 5 by A. Nakamura at Kuma Kogen.

Named for the city located in the southwest of Ibaraki prefecture. Originally a region of pastoral farms at the foot of Mt. Tsukuba, it dramatically changed with the establishment in 1973 of the University of Tsukuba, from which the discoverer

graduated. The city is now also home to 32 national laboratories and is known as the ‘academic capital’ of Japan.

(7801) Goretti = 1996 GG₂

Discovered 1996 Apr. 12 by L. Tesi and A. Boattini at San Marcello Pistoiese.

Named in honor of Vittorio Goretti (b. 1939), a high-school teacher of physics and mathematics in Bologna for almost three decades. As an amateur astronomer, he has focused primarily on the study of minor planets, and in 1976 he was one of the founders of the survey at San Vittore. In 1995 he started a new program from his home in Pianoro that is mainly devoted to follow-up observations.

(7815) Dolon = 1987 QN

Discovered 1987 Aug. 21 by E. W. Elst at the European Southern Observatory.

Named for the sad Trojan hero who figures in *Doloneia*, the tenth book of the *Iliad*. Dolon penetrated the Greeks’ camp at night to learn of their intentions but was caught and killed without pity by Ulysses and Diomedes.

(7837) Mutsumi = 1993 TX

Discovered 1993 Oct. 11 by H. Abe and S. Miyasaka at Yatsuka.

Named in honor of Mutsumi Abe (b. 1957), wife of the first discoverer.

(7848) Bernasconi = 1996 DF₁

Discovered 1996 Feb. 22 by M. Cavagna and A. Testa at Sormano.

Named in memory of the brothers Giovanni (1901–1965) and Angelo (1911–1990) Bernasconi, renowned Italian amateur astronomers. Giovanni was a codiscoverer of comets C/1941 K1 (although his discovery was not registered because of a delay in communications in wartime Europe), C/1942 C1 and C/1948 L1. Angelo developed a method for determining the real shape and orientation of cometary tails. Both brothers were active observers of comets, meteors and variable stars. In 1965 they established in Saronno a club of amateur astronomers, now named ‘Gruppo Astrofili Giovanni e Angelo Bernasconi’. Citation provided by L. Pansecchi at the request of the discoverers.

(7850) Buenos Aires = 1996 LH

Discovered 1996 June 10 by L. Macri at Mt. Hopkins.

Named for the capital city of Argentina. First founded in 1536 by Don Pedro de Mendoza, who named it Santa Maria de los Buenos Aires, the city was soon destroyed by the natives. It was founded anew in 1580 by Don Juan de Garay.

(7968) Elst-Pizarro = 1996 N2

Discovered 1996 July 14 by E. W. Elst and G. Pizarro at the European Southern Observatory.

Originally classified as a comet because of the persistent appearance of a tail, this newly-numbered Themis-family minor planet is being given the same name it has had as a comet.

EPHEMERIDES

1993 KH		$a, e, i = 1.23, 0.31, 13$				Elements <i>MPC</i> 29662		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19		17 22.55	−40 40.6	0.551	0.851	58.6	87.9	20.4
1997 10 29		18 21.38	−40 18.3	0.480	0.861	60.1	91.0	20.3
1997 11 08		19 26.35	−37 09.3	0.415	0.884	63.1	92.2	20.1
1997 11 18		20 33.92	−30 21.4	0.365	0.916	67.9	90.4	19.8
1997 11 28		21 39.68	−19 44.1	0.335	0.956	74.9	85.3	19.5
1997 12 08		22 40.47	−06 44.4	0.332	1.001	83.1	77.6	19.3

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1997 12 18	23 35.13	+05 55.7	0.357	1.050	90.5	69.6	19.3
1997 12 28	00 24.16	+16 17.7	0.406	1.100	95.6	62.8	19.5
1998 01 07	01 08.77	+23 58.3	0.472	1.151	98.3	57.7	19.8
1998 01 17	01 50.03	+29 24.4	0.551	1.201	99.0	54.0	20.1
1998 01 27	02 28.82	+33 10.3	0.638	1.249	98.4	51.3	20.4
1998 02 06	03 05.82	+35 43.4	0.733	1.296	96.7	49.1	20.7
1998 02 16	03 41.37	+37 22.7	0.832	1.340	94.4	47.3	21.0
1998 02 26	04 15.71	+38 20.2	0.935	1.381	91.6	45.8	21.3
1998 03 08	04 48.99	+38 44.5	1.041	1.419	88.5	44.4	21.5
1998 03 18	05 21.21	+38 41.2	1.148	1.454	85.1	43.0	21.8
1998 03 28	05 52.39	+38 14.2	1.256	1.486	81.6	41.6	22.0

C/1997 T1 (Utsunomiya)				Elements <i>MPC</i> 30738			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1997 10 19		19 45.59	+54 39.7	1.043	1.557	99.6	39.1
1997 10 24		19 23.66	+47 12.3	1.095	1.524	93.5	40.7
1997 10 29		19 10.12	+40 26.7	1.166	1.493	87.1	41.7
1997 11 03		19 01.45	+34 33.0	1.250	1.464	80.7	42.0
1997 11 08		18 55.77	+29 29.9	1.342	1.439	74.5	41.6
1997 11 13		18 52.02	+25 12.0	1.439	1.417	68.5	40.5
1997 11 18		18 49.57	+21 32.3	1.537	1.398	62.9	39.0
1997 11 23		18 48.03	+18 24.3	1.634	1.383	57.5	37.0
1997 11 28		18 47.14	+15 42.4	1.729	1.371	52.4	34.8
1997 12 03		18 46.71	+13 21.8	1.819	1.364	47.6	32.2
1997 12 08		18 46.62	+11 18.8	1.903	1.360	43.0	29.6
1997 12 13		18 46.77	+09 30.3	1.980	1.361	38.8	27.0
1997 12 18		18 47.08	+07 53.8	2.049	1.365	35.0	24.4
1997 12 23		18 47.50	+06 27.2	2.110	1.373	31.6	22.1
1997 12 28		18 47.99	+05 08.9	2.162	1.385	28.9	20.0

1997 TD				$a, e, i = 2.18, 0.45, 13$				Elements <i>MPC</i> 30796			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V			
1997 10 19		21 14.69	-28 25.3	0.531	1.254	106.4	49.6	17.5			
1997 10 29		21 58.56	-27 42.3	0.593	1.289	105.9	47.8	17.7			
1997 11 08		22 38.01	-25 52.5	0.668	1.331	105.0	46.0	18.0			
1997 11 18		23 12.94	-23 19.4	0.755	1.377	103.6	44.2	18.3			
1997 11 28		23 43.89	-20 21.3	0.852	1.428	101.6	42.6	18.6			
1997 12 08		00 11.71	-17 11.1	0.959	1.481	99.3	41.0	18.9			
1997 12 18		00 37.12	-13 57.9	1.076	1.537	96.4	39.5	19.2			
1997 12 28		01 00.74	-10 47.3	1.201	1.595	93.2	38.0	19.4			
1998 01 07		01 23.09	-07 43.0	1.334	1.653	89.7	36.5	19.7			
1998 01 17		01 44.51	-04 47.5	1.474	1.712	85.9	35.0	20.0			
1998 01 27		02 05.28	-02 02.3	1.619	1.771	81.8	33.4	20.2			
1998 02 06		02 25.61	+00 31.7	1.769	1.830	77.6	31.7	20.4			
1998 02 16		02 45.62	+02 53.7	1.921	1.889	73.2	30.0	20.6			
1998 02 26		03 05.40	+05 03.4	2.075	1.947	68.6	28.3	20.8			
1998 03 08		03 25.05	+07 00.8	2.229	2.004	64.0	26.4	20.9			
1998 03 18		03 44.58	+08 45.5	2.381	2.060	59.3	24.6	21.1			
1998 03 28		04 04.00	+10 17.8	2.531	2.114	54.5	22.6	21.2			
1998 04 07		04 23.33	+11 37.7	2.677	2.168	49.7	20.6	21.3			
1998 04 17		04 42.55	+12 45.5	2.816	2.220	44.8	18.6	21.4			
1998 04 27		05 01.63	+13 41.3	2.949	2.271	39.9	16.5	21.5			
1998 05 07		05 20.55	+14 25.5	3.074	2.321	35.0	14.4	21.6			
1998 05 17		05 39.26	+14 58.6	3.190	2.369	30.1	12.4	21.6			

1997 SE ₅				$a, e, i = 3.72, 0.67, 3$				Elements <i>MPC</i> 30792			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V			
1997 10 19		21 32.25	-07 08.9	0.464	1.277	117.1	44.0	16.1			
1997 10 29		22 11.19	-04 04.6	0.515	1.313	117.4	42.2	16.3			
1997 11 08		22 47.72	-01 05.0	0.582	1.358	117.1	40.5	16.6			
1997 11 18		23 21.28	+01 43.4	0.665	1.413	115.9	39.0	16.9			
1997 11 28		23 51.87	+04 17.7	0.765	1.474	113.9	37.7	17.3			
1997 12 08		00 19.89	+06 38.5	0.880	1.540	111.2	36.6	17.6			
1997 12 18		00 45.80	+08 47.0	1.010	1.611	107.8	35.6	18.0			
1997 12 28		01 10.01	+10 44.6	1.152	1.685	103.9	34.5	18.4			
1998 01 07		01 32.94	+12 32.6	1.306	1.761	99.6	33.4	18.7			
1998 01 17		01 54.87	+14 11.9	1.470	1.839	95.0	32.2	19.0			
1998 01 27		02 16.05	+15 42.9	1.643	1.918	90.2	30.9	19.3			
1998 02 06		02 36.65	+17 06.1	1.823	1.997	85.1	29.5	19.6			
1998 02 16		02 56.80	+18 21.4	2.008	2.077	80.0	27.9	19.8			
1998 02 26		03 16.57	+19 28.8	2.196	2.157	74.7	26.3	20.1			
1998 03 08		03 36.03	+20 28.4	2.385	2.237	69.3	24.5	20.3			
1998 03 18		03 55.21	+21 20.0	2.574	2.316	63.9	22.7	20.5			
1998 03 28		04 14.12	+22 03.7	2.760	2.394	58.5	20.8	20.6			
1998 04 07		04 32.76	+22 39.5	2.943	2.472	52.9	18.8	20.8			
1998 04 17		04 51.11	+23 07.5	3.119	2.549	47.4	16.8	20.9			
1998 04 27		05 09.16	+23 27.8	3.289	2.625	41.8	14.8	21.0			
1998 05 07		05 26.88	+23 40.8	3.449	2.701	36.1	12.7	21.1			
1998 05 17		05 44.23	+23 46.5	3.599	2.775	30.5	10.6	21.2			

1997 RX ₉				$a, e, i = 42.13, 0.00, 30$				Elements <i>MPC</i> 30791			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V			
1997 10 19		22 57.76	-06 42.3	41.387	42.126	137.4	0.9	24.4			
1997 10 29		22 57.32	-06 46.2	41.516	42.126	127.3	1.1	24.4			
1997 11 08		22 57.00	-06 49.3	41.663	42.126	117.2	1.2	24.4			
1997 11 18		22 56.82	-06 51.5	41.824	42.126	107.1	1.3	24.4			
1997 11 28		22 56.79	-06 52.9	41.994	42.126	97.0	1.3	24.4			
1997 12 08		22 56.91	-06 53.2	42.168	42.126	86.9	1.3	24.4			
1997 12 18		22 57.19	-06 52.7	42.340	42.126	76.8	1.3	24.4			
1997 12 28		22 57.61	-06 51.2	42.505	42.126	66.7	1.2	24.4			
1998 01 07		22 58.16	-06 48.9	42.658	42.126	56.6	1.1	24.4			
1998 01 17		22 58.84	-06 45.8	42.795	42.126	46.6	1.0	24.4			
1998 01 27		22 59.63	-06 42.0	42.911	42.126	36.7	0.8	24.4			

1997 QK ₁				$a, e, i = 2.79, 0.64, 3$				Elements <i>MPC</i> 30790			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V			
1997 10 19		23 01.40	+04 10.3	0.366	1.303	141.4	28.5	19.6			
1997 10 29		23 28.92	+05 36.9	0.472	1.384	138.8	28.2	20.3			
1997 11 08		23 50.75	+06 45.0	0.592	1.467	134.5	28.8	21.0			
1997 11 18		00 09.58	+07 47.1	0.725	1.553	129.3	29.5	21.5			
1997 11 28		00 26.77	+08 48.4	0.872	1.639	123.6	30.1	22.1			

1997 TX ₈				$a, e, i = 39.37, 0.19, 8$				Elements <i>MPC</i> 30796			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V			
1997 10 19		23 37.16	+06 25.0	31.166	32.038	150.6	0.9	23.1			
1997 10 29		23 36.46	+06 18.7	31.262	32.038	140.8	1.1	23.2			
1997 11 08		23 35.91	+06 12.8	31.381	32.038	130.8	1.3	23.2			
1997 11 18		23 35.51	+06 07.7	31.521	32.038	120.8	1.5	23.2			
1997 11 28		23 35.30	+06 03.6	31.675	32.038	110.7	1.7	23.2			

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1997 12 08	23 35.29	+06 00.6	31.841	32.038	100.7	1.7	23.3
1997 12 18	23 35.47	+05 58.8	32.012	32.038	90.6	1.8	23.3
1997 12 28	23 35.86	+05 58.3	32.183	32.038	80.6	1.7	23.3
1998 01 07	23 36.43	+05 59.2	32.350	32.038	70.7	1.7	23.3
1998 01 17	23 37.18	+06 01.4	32.507	32.038	60.8	1.5	23.3
1998 01 27	23 38.09	+06 04.9	32.649	32.038	51.0	1.4	23.3
1998 02 06	23 39.14	+06 09.6	32.773	32.038	41.3	1.2	23.3
1998 02 16	23 40.30	+06 15.4	32.874	32.038	31.7	0.9	23.3

1996 TR₆₆ $a, e, i = 42.64, 0.22, 12$ Elements *MPC* 30765

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19		00 06.04	+05 45.5	34.685	35.607	157.5	0.6	23.1
1997 10 29		00 05.29	+05 40.6	34.760	35.602	147.5	0.9	23.1
1997 11 08		00 04.65	+05 36.2	34.862	35.598	137.4	1.1	23.1
1997 11 18		00 04.15	+05 32.4	34.985	35.593	127.3	1.3	23.2
1997 11 28		00 03.79	+05 29.5	35.127	35.588	117.1	1.4	23.2
1997 12 08		00 03.61	+05 27.5	35.283	35.584	107.0	1.5	23.2
1997 12 18		00 03.60	+05 26.7	35.448	35.579	96.8	1.6	23.2
1997 12 28		00 03.77	+05 26.9	35.617	35.574	86.7	1.6	23.2
1998 01 07		00 04.11	+05 28.4	35.784	35.570	76.7	1.5	23.2
1998 01 17		00 04.63	+05 31.0	35.943	35.565	66.6	1.5	23.2
1998 01 27		00 05.30	+05 34.7	36.091	35.560	56.7	1.3	23.2
1998 02 06		00 06.12	+05 39.5	36.223	35.556	46.8	1.2	23.2
1998 02 16		00 07.05	+05 45.2	36.335	35.551	37.0	1.0	23.2

1996 TK₆₆ $a, e, i = 43.04, 0.00, 3$ Elements *MPC* 30764

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19		00 23.41	+00 13.5	41.939	42.875	159.7	0.5	23.4
1997 10 29		00 22.76	+00 09.6	42.015	42.875	149.6	0.7	23.4
1997 11 08		00 22.18	+00 06.3	42.117	42.875	139.4	0.9	23.4
1997 11 18		00 21.70	+00 03.7	42.242	42.875	129.3	1.0	23.4
1997 11 28		00 21.34	+00 01.9	42.387	42.875	119.1	1.2	23.5
1997 12 08		00 21.11	+00 01.1	42.546	42.875	108.9	1.2	23.5
1997 12 18		00 21.02	+00 01.1	42.715	42.875	98.7	1.3	23.5
1997 12 28		00 21.09	+00 02.2	42.888	42.875	88.5	1.3	23.5
1998 01 07		00 21.30	+00 04.2	43.061	42.875	78.4	1.3	23.5
1998 01 17		00 21.65	+00 07.1	43.228	42.875	68.3	1.2	23.5
1998 01 27		00 22.14	+00 10.9	43.384	42.875	58.3	1.1	23.5
1998 02 06		00 22.76	+00 15.4	43.524	42.875	48.3	1.0	23.5
1998 02 16		00 23.48	+00 20.5	43.644	42.875	38.4	0.8	23.5

1997 SZ₁₀ $a, e, i = 39.58, 0.20, 13$ Elements *MPC* 30793

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19		00 43.75	+05 26.8	30.645	31.614	166.5	0.4	23.5
1997 10 29		00 42.83	+05 21.8	30.702	31.614	156.3	0.7	23.6
1997 11 08		00 42.00	+05 17.3	30.787	31.614	146.1	1.0	23.6
1997 11 18		00 41.29	+05 13.6	30.898	31.614	135.8	1.2	23.6
1997 11 28		00 40.73	+05 10.7	31.030	31.614	125.6	1.5	23.7
1997 12 08		00 40.35	+05 08.9	31.180	31.614	115.3	1.6	23.7
1997 12 18		00 40.15	+05 08.3	31.343	31.614	105.1	1.7	23.7
1997 12 28		00 40.16	+05 08.9	31.514	31.614	94.9	1.8	23.7
1998 01 07		00 40.37	+05 10.8	31.688	31.614	84.8	1.8	23.7
1998 01 17		00 40.77	+05 14.0	31.859	31.614	74.7	1.7	23.7
1998 01 27		00 41.37	+05 18.4	32.022	31.614	64.7	1.6	23.7

1998 02 06	00 42.15	+05 23.9	32.173	31.614	54.8	1.5	23.7
1998 02 16	00 43.07	+05 30.5	32.306	31.614	44.9	1.3	23.7
1998 02 26	00 44.13	+05 37.8	32.419	31.614	35.1	1.0	23.7

P/1997 T3Elements *MPC* 30738

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 10 19		01 08.36	+02 30.5	3.238	4.223	170.0	2.3		19.4
1997 10 29		01 03.64	+02 11.0	3.273	4.217	159.4	4.7		19.6
1997 11 08		00 59.64	+01 58.1	3.334	4.212	148.6	7.0		19.8
1997 11 18		00 56.72	+01 53.3	3.421	4.207	137.9	9.1		19.9
1997 11 28		00 55.12	+01 57.5	3.529	4.203	127.5	10.7		20.0
1997 12 08		00 54.96	+02 11.2	3.653	4.200	117.5	12.0		20.2
1997 12 18		00 56.28	+02 33.9	3.790	4.197	107.8	12.9		20.3
1997 12 28		00 59.04	+03 05.1	3.936	4.195	98.5	13.4		20.4
1998 01 07		01 03.14	+03 43.8	4.086	4.193	89.5	13.6		20.5
1998 01 17		01 08.47	+04 29.0	4.236	4.193	80.8	13.4		20.5
1998 01 27		01 14.89	+05 19.7	4.383	4.192	72.4	12.9		20.6
1998 02 06		01 22.28	+06 14.8	4.524	4.193	64.3	12.2		20.6
1998 02 16		01 30.52	+07 13.4	4.658	4.194	56.5	11.3		20.7
1998 02 26		01 39.48	+08 14.4	4.780	4.196	48.9	10.2		20.7
1998 03 08		01 49.06	+09 16.9	4.891	4.198	41.4	9.0		20.7
1998 03 18		01 59.16	+10 20.2	4.987	4.201	34.2	7.6		20.7

1997 CU₂₉ $a, e, i = 43.33, 0.03, 1$ Elements *MPC* 30765

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19		07 46.99	+22 24.3	44.761	44.791	91.1	1.3	23.2
1997 10 29		07 47.02	+22 24.5	44.590	44.791	101.0	1.2	23.2
1997 11 08		07 46.89	+22 25.1	44.425	44.791	111.1	1.2	23.2
1997 11 18		07 46.60	+22 26.0	44.271	44.791	121.2	1.1	23.1
1997 11 28		07 46.16	+22 27.3	44.132	44.791	131.4	0.9	23.1
1997 12 08		07 45.60	+22 28.9	44.014	44.791	141.7	0.8	23.1
1997 12 18		07 44.92	+22 30.7	43.920	44.791	152.0	0.6	23.1
1997 12 28		07 44.17	+22 32.7	43.853	44.791	162.3	0.4	23.1
1998 01 07		07 43.36	+22 34.7	43.816	44.791	172.7	0.2	23.0
1998 01 17		07 42.52	+22 36.7	43.809	44.791	176.6	0.1	23.0
1998 01 27		07 41.70	+22 38.6	43.833	44.791	166.4	0.3	23.0
1998 02 06		07 40.92	+22 40.4	43.888	44.791	156.1	0.5	23.1
1998 02 16		07 40.20	+22 41.9	43.970	44.791	145.8	0.7	23.1
1998 02 26		07 39.58	+22 43.1	44.078	44.791	135.6	0.9	23.1
1998 03 08		07 39.08	+22 44.1	44.208	44.791	125.5	1.0	23.1
1998 03 18		07 38.72	+22 44.6	44.355	44.791	115.4	1.1	23.2
1998 03 28		07 38.51	+22 44.8	44.515	44.791	105.5	1.2	23.2
1998 04 07		07 38.46	+22 44.6	44.683	44.791	95.6	1.3	23.2
1998 04 17		07 38.57	+22 44.1	44.853	44.791	85.8	1.3	23.2
1998 04 27		07 38.83	+22 43.2	45.022	44.791	76.1	1.2	23.2
1998 05 07		07 39.25	+22 41.9	45.184	44.791	66.5	1.2	23.2
1998 05 17		07 39.81	+22 40.3	45.334	44.791	57.0	1.1	23.2
1998 05 27		07 40.49	+22 38.4	45.469	44.791	47.5	1.0	23.2
1998 06 06		07 41.29	+22 36.3	45.585	44.791	38.1	0.8	23.2

1997 CS₂₉ $a, e, i = 43.70, 0.01, 2$ Elements *MPC* 30765

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19		07 53.41	+21 15.4	43.605	43.606	89.4	1.3	21.6
1997 10 29		07 53.47	+21 15.3	43.434	43.606	99.4	1.3	21.6

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1997 11 08	07 53.36	+21 15.6	43.267	43.606	109.4	1.2	21.6
1997 11 18	07 53.09	+21 16.3	43.111	43.606	119.5	1.1	21.5
1997 11 28	07 52.68	+21 17.4	42.969	43.606	129.7	1.0	21.5
1997 12 08	07 52.12	+21 18.9	42.847	43.606	140.0	0.8	21.5
1997 12 18	07 51.46	+21 20.6	42.748	43.606	150.3	0.6	21.5
1997 12 28	07 50.70	+21 22.5	42.676	43.605	160.7	0.4	21.4
1998 01 07	07 49.89	+21 24.6	42.634	43.605	171.1	0.2	21.4
1998 01 17	07 49.05	+21 26.7	42.622	43.605	178.5	0.0	21.4
1998 01 27	07 48.21	+21 28.8	42.641	43.605	168.2	0.3	21.4
1998 02 06	07 47.41	+21 30.7	42.690	43.605	157.8	0.5	21.4
1998 02 16	07 46.67	+21 32.5	42.768	43.605	147.5	0.7	21.5
1998 02 26	07 46.03	+21 33.9	42.872	43.605	137.3	0.9	21.5
1998 03 08	07 45.51	+21 35.1	42.998	43.604	127.2	1.0	21.5
1998 03 18	07 45.12	+21 35.9	43.142	43.604	117.1	1.2	21.5
1998 03 28	07 44.89	+21 36.3	43.300	43.604	107.1	1.3	21.6
1998 04 07	07 44.81	+21 36.4	43.467	43.604	97.2	1.3	21.6
1998 04 17	07 44.90	+21 36.0	43.637	43.604	87.4	1.3	21.6
1998 04 27	07 45.15	+21 35.2	43.806	43.604	77.7	1.3	21.6
1998 05 07	07 45.56	+21 34.0	43.969	43.604	68.1	1.2	21.6
1998 05 17	07 46.11	+21 32.5	44.122	43.604	58.6	1.1	21.6
1998 05 27	07 46.79	+21 30.6	44.259	43.603	49.2	1.0	21.6
1998 06 06	07 47.58	+21 28.5	44.379	43.603	39.8	0.9	21.6
1998 06 16	07 48.48	+21 26.1	44.476	43.603	30.4	0.7	21.6

1997 CU₂₆ $a, e, i = 15.75, 0.17, 23$ Elements *MPC* 30765

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19	09 07.92	+11 23.0	14.074	13.761	69.8	3.9	17.8	
1997 10 29	09 09.18	+11 08.8	13.904	13.755	79.3	4.1	17.8	
1997 11 08	09 09.99	+10 56.3	13.730	13.749	89.0	4.1	17.8	
1997 11 18	09 10.32	+10 45.7	13.555	13.743	98.9	4.1	17.7	
1997 11 28	09 10.17	+10 37.1	13.385	13.737	109.0	3.9	17.7	
1997 12 08	09 09.54	+10 30.8	13.224	13.731	119.2	3.6	17.6	
1997 12 18	09 08.45	+10 26.8	13.079	13.726	129.5	3.2	17.6	
1997 12 28	09 06.94	+10 24.9	12.953	13.720	139.9	2.6	17.5	
1998 01 07	09 05.09	+10 25.2	12.851	13.714	150.3	2.0	17.5	
1998 01 17	09 02.96	+10 27.2	12.776	13.708	160.6	1.4	17.4	
1998 01 27	09 00.66	+10 30.8	12.731	13.703	170.1	0.7	17.3	
1998 02 06	08 58.29	+10 35.5	12.718	13.697	173.0	0.5	17.3	
1998 02 16	08 55.97	+10 40.8	12.735	13.691	164.9	1.1	17.4	
1998 02 26	08 53.80	+10 46.4	12.783	13.686	154.8	1.8	17.4	
1998 03 08	08 51.88	+10 51.7	12.859	13.680	144.6	2.4	17.5	
1998 03 18	08 50.30	+10 56.4	12.960	13.674	134.4	3.0	17.5	
1998 03 28	08 49.11	+11 00.1	13.082	13.669	124.3	3.5	17.6	
1998 04 07	08 48.38	+11 02.4	13.221	13.663	114.3	3.8	17.6	
1998 04 17	08 48.12	+11 03.3	13.372	13.658	104.5	4.1	17.7	
1998 04 27	08 48.34	+11 02.3	13.530	13.652	94.9	4.2	17.7	
1998 05 07	08 49.03	+10 59.5	13.690	13.647	85.4	4.2	17.7	
1998 05 17	08 50.18	+10 54.8	13.849	13.641	76.1	4.1	17.8	
1998 05 27	08 51.74	+10 48.1	14.000	13.636	66.9	3.9	17.8	
1998 06 06	08 53.69	+10 39.4	14.142	13.630	57.9	3.6	17.8	
1998 06 16	08 55.96	+10 28.8	14.269	13.625	49.1	3.2	17.8	
1998 06 26	08 58.53	+10 16.5	14.378	13.619	40.3	2.8	17.8	
1998 07 06	09 01.32	+10 02.4	14.468	13.614	31.7	2.2	17.7	

1989 UR

 $a, e, i = 1.08, 0.36, 10$ Elements *MPC* 30756

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19	09 17.17	+12 23.8	0.707	0.980	67.9	70.2	20.2	
1997 10 29	10 11.47	+05 21.3	0.697	0.917	62.9	74.5	20.1	
1997 11 08	11 06.16	-02 05.0	0.715	0.856	57.5	77.7	20.1	
1997 11 18	12 00.83	-09 07.5	0.760	0.798	52.3	78.7	20.2	
1997 11 28	12 55.53	-15 09.4	0.830	0.749	47.7	77.2	20.2	
1997 12 08	13 50.41	-19 51.8	0.918	0.713	43.9	73.1	20.1	
1997 12 18	14 45.42	-23 09.0	1.019	0.697	40.6	67.0	20.1	
1997 12 28	15 39.99	-25 03.6	1.125	0.701	38.1	60.0	20.1	

1995 DC₂ $a, e, i = 43.85, 0.07, 2$ Elements *MPC* 30093

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19	10 35.23	+08 59.5	45.893	45.241	48.6	0.9	23.7	
1997 10 29	10 35.82	+08 56.1	45.751	45.239	58.4	1.1	23.7	
1997 11 08	10 36.30	+08 53.3	45.594	45.238	68.3	1.2	23.7	
1997 11 18	10 36.65	+08 51.4	45.426	45.236	78.3	1.2	23.7	
1997 11 28	10 36.86	+08 50.3	45.252	45.234	88.3	1.2	23.7	
1997 12 08	10 36.92	+08 50.0	45.077	45.233	98.5	1.2	23.7	
1997 12 18	10 36.85	+08 50.5	44.907	45.231	108.6	1.2	23.7	
1997 12 28	10 36.63	+08 51.9	44.746	45.230	118.9	1.1	23.7	
1998 01 07	10 36.28	+08 54.1	44.600	45.228	129.2	1.0	23.7	
1998 01 17	10 35.81	+08 57.0	44.474	45.226	139.5	0.8	23.7	
1998 01 27	10 35.25	+09 00.4	44.371	45.225	149.8	0.6	23.6	
1998 02 06	10 34.61	+09 04.3	44.295	45.223	160.1	0.4	23.6	
1998 02 16	10 33.92	+09 08.5	44.247	45.222	170.4	0.2	23.6	
1998 02 26	10 33.20	+09 12.8	44.230	45.220	179.3	0.0	23.5	
1998 03 08	10 32.48	+09 17.1	44.244	45.219	169.1	0.2	23.6	
1998 03 18	10 31.79	+09 21.2	44.287	45.217	158.9	0.5	23.6	
1998 03 28	10 31.15	+09 25.0	44.358	45.215	148.8	0.7	23.6	
1998 04 07	10 30.60	+09 28.4	44.456	45.214	138.8	0.8	23.7	
1998 04 17	10 30.13	+09 31.2	44.575	45.212	128.9	1.0	23.7	
1998 04 27	10 29.78	+09 33.3	44.714	45.211	119.0	1.1	23.7	
1998 05 07	10 29.56	+09 34.6	44.866	45.209	109.3	1.2	23.7	
1998 05 17	10 29.46	+09 35.2	45.028	45.207	99.6	1.3	23.7	
1998 05 27	10 29.51	+09 35.0	45.195	45.206	90.0	1.3	23.7	
1998 06 06	10 29.69	+09 34.0	45.362	45.204	80.4	1.3	23.7	
1998 06 16	10 30.00	+09 32.3	45.524	45.203	71.0	1.2	23.7	
1998 06 26	10 30.44	+09 29.8	45.677	45.201	61.5	1.1	23.7	
1998 07 06	10 31.00	+09 26.6	45.816	45.200	52.1	1.0	23.7	
1998 07 16	10 31.66	+09 22.8	45.939	45.198	42.8	0.9	23.7	
1998 07 26	10 32.40	+09 18.4	46.041	45.196	33.4	0.7	23.7	

1994 ES₂ $a, e, i = 45.53, 0.11, 1$ Elements *MPC* 26581

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 10 19	10 57.95	+06 45.7	46.174	45.445	42.6	0.8	24.2	
1997 10 29	10 58.60	+06 41.8	46.042	45.442	52.4	1.0	24.3	
1997 11 08	10 59.14	+06 38.5	45.893	45.439	62.2	1.1	24.3	
1997 11 18	10 59.57	+06 35.9	45.729	45.437	72.2	1.2	24.3	
1997 11 28	10 59.86	+06 34.2	45.557	45.434	82.2	1.2	24.3	
1997 12 08	11 00.01	+06 33.3	45.380	45.431	92.3	1.2	24.2	
1997 12 18	11 00.02	+06 33.3	45.205	45.428	102.5	1.2	24.2	
1997 12 28	10 59.89	+06 34.2	45.037	45.425	112.7	1.1	24.2	
1998 01 07	10 59.63	+06 35.9	44.880	45.422	122.9	1.0	24.2	

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1998 01 17	10 59.24	+06 38.4	44.739	45.419	133.2	0.9	24.2
1998 01 27	10 58.74	+06 41.5	44.620	45.416	143.5	0.7	24.2
1998 02 06	10 58.16	+06 45.2	44.526	45.413	153.9	0.5	24.1
1998 02 16	10 57.50	+06 49.3	44.459	45.410	164.1	0.3	24.1
1998 02 26	10 56.81	+06 53.6	44.422	45.407	174.4	0.1	24.1
1998 03 08	10 56.10	+06 58.0	44.415	45.404	175.4	0.1	24.1
1998 03 18	10 55.40	+07 02.4	44.439	45.401	165.2	0.3	24.1
1998 03 28	10 54.74	+07 06.4	44.491	45.398	155.1	0.5	24.1
1998 04 07	10 54.14	+07 10.1	44.571	45.396	145.1	0.7	24.2
1998 04 17	10 53.63	+07 13.3	44.676	45.393	135.1	0.9	24.2
1998 04 27	10 53.21	+07 15.9	44.801	45.390	125.3	1.0	24.2
1998 05 07	10 52.91	+07 17.7	44.944	45.387	115.5	1.1	24.2
1998 05 17	10 52.74	+07 18.8	45.099	45.384	105.8	1.2	24.2
1998 05 27	10 52.70	+07 19.1	45.261	45.381	96.1	1.3	24.2
1998 06 06	10 52.79	+07 18.5	45.427	45.378	86.6	1.3	24.3
1998 06 16	10 53.02	+07 17.1	45.591	45.375	77.1	1.3	24.3
1998 06 26	10 53.37	+07 14.9	45.749	45.372	67.6	1.2	24.3
1998 07 06	10 53.85	+07 12.0	45.896	45.369	58.2	1.1	24.3
1998 07 16	10 54.43	+07 08.4	46.029	45.366	48.9	1.0	24.2
1998 07 26	10 55.11	+07 04.2	46.143	45.363	39.5	0.8	24.2
1998 08 05	10 55.88	+06 59.6	46.235	45.361	30.1	0.6	24.2

47P/Ashbrook-Jackson

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 16380
1997 11 08	12 38.71	-04 33.4	6.028	5.247	35.0	6.2	22.0			
1997 11 18	12 45.30	-05 23.7	5.915	5.238	43.2	7.4	22.0			
1997 11 28	12 51.42	-06 11.2	5.785	5.229	51.6	8.5	22.0			
1997 12 08	12 56.97	-06 55.3	5.639	5.219	60.2	9.4	22.0			
1997 12 18	13 01.82	-07 35.4	5.481	5.209	69.0	10.2	21.9			
1997 12 28	13 05.85	-08 10.9	5.313	5.199	78.0	10.7	21.9			
1998 01 07	13 08.91	-08 41.1	5.140	5.188	87.3	10.9	21.8			
1998 01 17	13 10.89	-09 05.4	4.965	5.176	96.9	10.9	21.7			
1998 01 27	13 11.66	-09 23.2	4.794	5.164	106.8	10.5	21.6			
1998 02 06	13 11.15	-09 34.0	4.630	5.152	117.0	9.8	21.5			
1998 02 16	13 09.33	-09 37.4	4.479	5.140	127.5	8.8	21.4			
1998 02 26	13 06.22	-09 33.3	4.345	5.127	138.2	7.4	21.3			
1998 03 08	13 01.95	-09 21.9	4.235	5.113	149.3	5.7	21.1			
1998 03 18	12 56.72	-09 04.1	4.150	5.099	160.5	3.7	21.0			
1998 03 28	12 50.84	-08 41.2	4.096	5.085	171.5	1.7	20.8			
1998 04 07	12 44.68	-08 14.9	4.072	5.070	175.3	0.9	20.7			
1998 04 17	12 38.65	-07 47.6	4.080	5.055	164.8	3.0	20.9			
1998 04 27	12 33.11	-07 21.4	4.117	5.039	153.7	5.1	21.0			
1998 05 07	12 28.39	-06 58.5	4.182	5.024	142.8	7.0	21.1			
1998 05 17	12 24.75	-06 40.8	4.271	5.007	132.3	8.6	21.2			
1998 05 27	12 22.31	-06 29.5	4.378	4.990	122.1	9.9	21.3			
1998 06 06	12 21.16	-06 25.4	4.500	4.973	112.2	10.9	21.4			
1998 06 16	12 21.29	-06 28.8	4.632	4.955	102.7	11.5	21.5			
1998 06 26	12 22.64	-06 39.6	4.768	4.937	93.6	11.9	21.6			
1998 07 06	12 25.15	-06 57.6	4.906	4.919	84.8	11.9	21.6			
1998 07 16	12 28.71	-07 22.2	5.041	4.900	76.2	11.6	21.7			
1998 07 26	12 33.21	-07 52.9	5.171	4.881	67.9	11.1	21.7			
1998 08 05	12 38.57	-08 29.2	5.290	4.861	59.9	10.4	21.7			
1998 08 15	12 44.66	-09 10.4	5.399	4.841	52.0	9.5	21.7			

1998 08 25	12 51.41	-09 55.8	5.493	4.820	44.2	8.4	21.7
1998 09 04	12 58.72	-10 44.9	5.571	4.799	36.6	7.2	21.7

69P/Taylor

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 30739
1997 11 18	08 10.98	+12 07.7	1.345	1.958	113.2	27.6	18.9	22.3		
1997 11 28	08 20.39	+13 24.7	1.246	1.952	121.4	25.6	18.7	22.1		
1997 12 08	08 27.02	+15 12.6	1.159	1.948	130.5	22.6	18.5	21.8		
1997 12 18	08 30.55	+17 34.7	1.086	1.948	140.5	18.7	18.4	21.6		
1997 12 28	08 30.77	+20 29.3	1.032	1.952	151.3	14.0	18.3	21.3		
1998 01 07	08 27.86	+23 47.6	1.000	1.960	162.4	8.7	18.3	21.1		
1998 01 17	08 22.62	+27 12.8	0.993	1.971	171.0	4.5	18.3	20.9		
1998 01 27	08 16.32	+30 24.6	1.013	1.985	167.2	6.3	18.5	21.0		
1998 02 06	08 10.64	+33 05.9	1.058	2.003	156.9	11.1	18.7	21.3		
1998 02 16	08 07.11	+35 07.9	1.126	2.024	146.3	15.7	18.9	21.6		
1998 02 26	08 06.72	+36 29.7	1.214	2.048	136.4	19.5	19.3	22.0		
1998 03 08	08 09.89	+37 15.5	1.317	2.074	127.3	22.4	19.6	22.3		
1998 03 18	08 16.45	+37 31.1	1.432	2.103	119.0	24.4	20.0	22.5		

29P/Schwassmann-Wachmann 1

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 23105
1997 11 18	13 10.20	-15 34.2	7.055	6.264	34.3	5.1	16.2	19.7		
1997 11 28	13 16.36	-16 20.4	6.953	6.263	42.6	6.1	16.2	19.7		
1997 12 08	13 22.07	-17 05.0	6.834	6.262	51.0	7.0	16.1	19.7		
1997 12 18	13 27.23	-17 47.4	6.699	6.261	59.7	7.8	16.1	19.7		
1997 12 28	13 31.73	-18 27.2	6.552	6.260	68.5	8.4	16.0	19.6		
1998 01 07	13 35.46	-19 03.7	6.396	6.258	77.6	8.8	16.0	19.6		
1998 01 17	13 38.31	-19 36.3	6.234	6.257	86.8	9.0	15.9	19.6		
1998 01 27	13 40.20	-20 04.4	6.071	6.256	96.3	9.0	15.9	19.5		
1998 02 06	13 41.05	-20 27.3	5.911	6.255	106.0	8.7	15.8	19.4		
1998 02 16	13 40.82	-20 44.3	5.759	6.254	115.8	8.2	15.8	19.4		
1998 02 26	13 39.52	-20 55.0	5.620	6.252	125.9	7.4	15.7	19.3		
1998 03 08	13 37.19	-20 58.7	5.498	6.251	136.1	6.3	15.7	19.2		
1998 03 18	13 33.98	-20 55.4	5.397	6.250	146.3	5.1	15.6	19.1		
1998 03 28	13 30.07	-20 45.2	5.322	6.248	156.3	3.7	15.6	19.0		
1998 04 07	13 25.70	-20 28.7	5.274	6.247	165.1	2.4	15.6	18.9		
1998 04 17	13 21.16	-20 07.0	5.257	6.246	169.3	1.7	15.6	18.8		
1998 04 27	13 16.74	-19 41.7	5.269	6.244	164.4	2.5	15.6	18.9		
1998 05 07	13 12.72	-19 14.5	5.310	6.243	155.5	3.8	15.6	19.0		
1998 05 17	13 09.35	-18 47.4	5.379	6.241	145.8	5.2	15.6	19.1		
1998 05 27	13 06.80	-18 22.1	5.472	6.239	135.9	6.5	15.6	19.2		
1998 06 06	13 05.20	-18 00.1	5.586	6.238	126.1	7.5	15.7	19.3		
1998 06 16	13 04.61	-17 42.7	5.715	6.236	116.6	8.4	15.7	19.3		
1998 06 26	13 05.05	-17 30.7	5.858	6.235	107.2	9.0	15.8	19.4		
1998 07 06	13 06.48	-17 24.5	6.008	6.233	98.1	9.3	15.8	19.5		
1998 07 16	13 08.87	-17 24.3	6.161	6.231	89.2	9.4	15.9	19.5		
1998 07 26	13 12.13	-17 29.8	6.315	6.230	80.6	9.3	15.9	19.6		
1998 08 05	13 16.21	-17 41.0	6.465	6.228	72.1	8.9	16.0	19.6		
1998 08 15	13 21.01	-17 57.4	6.607	6.226	63.8	8.4	16.0	19.7		
1998 08 25	13 26.46	-18 18.5	6.739	6.224	55.6	7.7	16.1	19.7		
1998 09 04	13 32.47	-18 43.7	6.858	6.222	47.6	6.9	16.1	19.7		
1998 09 14	13 38.96	-19 12.5	6.962	6.220	39.6	5.9	16.2	19.6		
1998 09 24	13 45.87	-19 44.4	7.048	6.219	31.8	4.9	16.2	19.6		

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Date	TT	α_{2000}	δ_{2000}	Δ	r	Elements <i>MPC</i> 27542			
						ϵ	ϕ	m_1	m_2
1997 11 18		13 19.04	-03 59.0	3.713	2.973	36.2	11.3	19.6	21.4
1997 11 28		13 32.17	-04 58.6	3.664	3.016	42.8	12.9	19.6	21.5
1997 12 08		13 44.61	-05 50.7	3.601	3.058	49.7	14.2	19.6	21.5
1997 12 18		13 56.23	-06 34.6	3.525	3.100	56.9	15.4	19.6	21.5
1997 12 28		14 06.91	-07 09.7	3.439	3.142	64.4	16.4	19.7	21.5
1998 01 07		14 16.49	-07 35.4	3.344	3.184	72.2	17.1	19.7	21.5
1998 01 17		14 24.78	-07 51.1	3.242	3.225	80.3	17.5	19.6	21.5
1998 01 27		14 31.62	-07 56.4	3.136	3.266	88.8	17.5	19.6	21.5
1998 02 06		14 36.79	-07 51.1	3.028	3.307	97.6	17.2	19.6	21.4
1998 02 16		14 40.12	-07 35.1	2.923	3.347	107.0	16.4	19.6	21.3
1998 02 26		14 41.46	-07 08.7	2.825	3.387	116.7	15.1	19.6	21.2
1998 03 08		14 40.74	-06 32.6	2.738	3.427	126.9	13.4	19.5	21.1
1998 03 18		14 38.00	-05 48.5	2.667	3.466	137.4	11.2	19.5	21.0
1998 03 28		14 33.43	-04 58.6	2.617	3.505	148.2	8.6	19.5	20.9
1998 04 07		14 27.38	-04 06.2	2.591	3.543	158.8	5.9	19.6	20.8
1998 04 17		14 20.39	-03 15.0	2.594	3.581	167.6	3.4	19.6	20.7
1998 04 27		14 13.05	-02 28.9	2.626	3.618	168.7	3.1	19.7	20.7
1998 05 07		14 06.02	-01 51.4	2.687	3.655	160.8	5.2	19.8	20.9
1998 05 17		13 59.85	-01 24.9	2.776	3.692	150.8	7.7	19.9	21.1
1998 05 27		13 54.96	-01 10.5	2.890	3.728	140.5	10.0	20.0	21.3
1998 06 06		13 51.62	-01 08.4	3.025	3.763	130.5	11.8	20.2	21.5
1998 06 16		13 49.93	-01 17.8	3.176	3.798	120.8	13.3	20.3	21.7
1998 06 26		13 49.86	-01 37.4	3.341	3.833	111.6	14.3	20.5	21.8
1998 07 06		13 51.36	-02 05.7	3.514	3.867	102.7	14.9	20.6	22.0
1998 07 16		13 54.28	-02 41.2	3.693	3.900	94.2	15.1	20.7	22.1
1998 07 26		13 58.48	-03 22.4	3.873	3.933	85.9	14.9	20.9	22.2
1998 08 05		14 03.82	-04 07.9	4.051	3.966	78.0	14.5	21.0	22.3
1998 08 15		14 10.13	-04 56.6	4.225	3.998	70.2	13.8	21.1	22.4
1998 08 25		14 17.32	-05 47.4	4.392	4.029	62.7	12.9	21.3	22.5

P/1996 A1 (Jedicke)

Date	TT	α_{2000}	δ_{2000}	Δ	r	Elements <i>MPC</i> 29568			
						ϵ	ϕ	m_1	m_2
1997 11 28		13 47.53	-15 28.3	6.661	5.887	35.5	5.6	18.8	21.4
1997 12 08		13 54.23	-16 05.8	6.588	5.918	43.9	6.6	18.8	21.5
1997 12 18		14 00.39	-16 40.5	6.497	5.949	52.4	7.5	18.8	21.5
1997 12 28		14 05.91	-17 11.8	6.392	5.980	61.2	8.3	18.8	21.5
1998 01 07		14 10.69	-17 39.3	6.274	6.011	70.1	8.8	18.8	21.5
1998 01 17		14 14.62	-18 02.5	6.147	6.042	79.3	9.2	18.8	21.5
1998 01 27		14 17.59	-18 21.1	6.016	6.073	88.6	9.3	18.7	21.4
1998 02 06		14 19.53	-18 34.6	5.884	6.104	98.2	9.2	18.7	21.4
1998 02 16		14 20.38	-18 42.6	5.755	6.135	108.1	8.8	18.7	21.3
1998 02 26		14 20.12	-18 44.9	5.636	6.165	118.2	8.1	18.7	21.3
1998 03 08		14 18.77	-18 41.2	5.530	6.196	128.5	7.2	18.6	21.2
1998 03 18		14 16.42	-18 31.6	5.442	6.227	139.0	6.0	18.6	21.1
1998 03 28		14 13.21	-18 16.4	5.376	6.258	149.6	4.6	18.6	21.0
1998 04 07		14 09.35	-17 56.2	5.337	6.288	160.2	3.1	18.6	20.9
1998 04 17		14 05.09	-17 32.0	5.327	6.319	170.5	1.5	18.6	20.8
1998 04 27		14 00.72	-17 05.2	5.346	6.349	174.8	0.8	18.7	20.8
1998 05 07		13 56.51	-16 37.3	5.396	6.380	165.9	2.2	18.7	20.9
1998 05 17		13 52.73	-16 10.0	5.476	6.410	155.6	3.7	18.8	21.1
1998 05 27		13 49.58	-15 44.8	5.582	6.441	145.3	5.1	18.8	21.2

1998 06 06	13 47.23	-15 23.0	5.712	6.471	135.1	6.4	18.9	21.3
1998 06 16	13 45.79	-15 05.7	5.863	6.501	125.2	7.3	19.0	21.4
1998 06 26	13 45.29	-14 53.3	6.029	6.531	115.5	8.1	19.1	21.5
1998 07 06	13 45.75	-14 46.3	6.208	6.561	106.0	8.6	19.1	21.6
1998 07 16	13 47.14	-14 44.7	6.393	6.591	96.8	8.8	19.2	21.7
1998 07 26	13 49.40	-14 48.2	6.582	6.621	87.8	8.8	19.3	21.8
1998 08 05	13 52.47	-14 56.6	6.769	6.651	79.0	8.6	19.4	21.9
1998 08 15	13 56.28	-15 09.4	6.953	6.681	70.4	8.2	19.5	21.9
1998 08 25	14 00.74	-15 26.0	7.128	6.710	61.9	7.6	19.5	21.9
1998 09 04	14 05.78	-15 46.0	7.292	6.740	53.5	6.9	19.6	22.0
1998 09 14	14 11.31	-16 08.6	7.441	6.769	45.1	6.0	19.7	22.0
1998 09 24	14 17.26	-16 33.3	7.575	6.799	36.9	5.1	19.7	22.0

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	MPC
1990 WS ₂	97 09 16.0	23 35.25	-04 43.2	16.3	-0.89	- 7.3	0.8/15.4	30781
4715 P-L	97 09 16.0	23 35.28	-04 51.7	18.9	-0.90	- 7.0	0.8/15.3	30775
1978 SV ₇	97 09 16.0	23 35.35	-00 29.6	16.3	-0.87	- 2.7	0.8/16.7	30684
1981 EY ₄₁	97 09 16.1	23 35.51	-01 44.8	20.8	-0.91	- 6.5	0.3/16.4	26922
1996 HW ₈	97 09 16.1	23 35.56	+05 48.0	16.4	-0.76	- 8.5	3.2/19.3	28863
1995 BP ₂	97 09 16.1	23 35.57	+05 43.0	18.8	-0.87	-13.5	2.9/19.3	25431
1995 BS ₃	97 09 16.1	23 35.83	-03 14.2	16.8	-0.81	- 6.2	0.2/16.0	30783
3459 T-3	97 09 16.2	23 35.94	-00 37.3	17.8	-0.86	- 7.1	1.0/16.9	30798
(6981)	97 09 16.2	23 36.11	-15 32.4	16.5	-1.04	- 0.1	4.9/12.9	27097
1993 FB ₂₆	97 09 16.4	23 36.80	-00 35.6	16.8	-1.02	- 5.7	0.8/17.1	26743
1980 FO ₁	97 09 16.4	23 36.87	-01 08.6	16.1	-0.79	- 4.7	0.5/16.9	27930
1991 PW ₉	97 09 16.5	23 36.94	-07 59.9	17.0	-0.68	- 7.4	1.7/14.5	29659
1997 QN ₄	97 09 16.6	23 37.47	-03 07.1	16.9	-0.75	- 5.9	0.2/16.4	30769
1989 UW ₅	97 09 16.6	23 37.57	-11 03.7	16.9	-0.90	- 4.5	3.7/13.9	30289
1996 GR	97 09 16.6	23 37.62	-06 59.1	18.4	-0.94	- 6.2	1.6/15.2	28618
1981 EP ₁₀	97 09 16.7	23 37.57	+05 10.1	19.6	-0.97	- 4.3	2.9/19.1	22696
1981 EU ₃₄	97 09 16.7	23 37.60	-04 17.7	19.8	-0.92	- 6.2	0.7/16.1	26921
1990 QC ₃	97 09 17.0	23 38.65	-03 49.9	16.4	-0.80	- 8.4	0.7/16.5	30470
1981 QG	97 09 17.0	23 38.69	-02 09.2	15.9	-0.76	- 4.3	0.1/17.1	28294
(7925)	97 09 17.0	23 38.75	-01 46.6	16.5	-0.75	- 4.0	0.2/17.2	30742
(7866)	97 09 17.2	23 39.49	-10 01.7	15.1	-0.83	- 4.4	3.7/14.7	30635
1989 CL ₁	97 09 17.2	23 39.69	-05 21.9	18.1	-0.72	- 4.6	0.8/16.2	30686
1993 TO ₂₄	97 09 17.3	23 39.85	-06 59.7	18.1	-0.82	- 5.5	1.5/15.7	25083
1993 FW ₂₄	97 09 17.3	23 39.95	+00 20.9	16.4	-0.93	- 5.7	1.2/18.2	30782
(7850)	97 09 17.3	23 39.97	-03 15.0	17.9	-1.00	- 3.2	0.4/17.0	30444
(7421)	97 09 17.3	23 40.00	+03 49.5	16.8	-0.77	-11.7	2.0/19.7	28831
1981 EB ₅	97 09 17.5	23 40.46	+07 36.1	19.2	-0.85	- 3.6	3.0/20.6	26915
1996 LX ₂	97 09 17.5	23 40.80	-02 02.3	18.9	-0.85	- 8.5	0.0/17.6	27563
1992 TW	97 09 17.5	23 40.84	+02 05.7	17.4	-0.68	- 8.9	1.4/19.2	27446
1996 FJ ₁₈	97 09 17.6	23 40.80	-06 48.7	16.3	-0.85	- 3.5	1.6/16.1	29114
2218 T-3	97 09 17.6	23 41.05	-03 35.5	16.9	-1.08	- 2.7	0.7/17.2	23867
1994 TM ₂	97 09 17.7	23 41.51	-07 27.0	16.2	-0.96	- 7.4	2.3/16.0	29921
(7928)	97 09 17.8	23 41.56	+16 41.8	15.6	-0.84	- 3.0	6.1/24.2	30743
1983 RW ₃	97 09 17.8	23 41.82	-00 30.3	16.5	-1.25	+ 4.0	0.7/18.2	27119
1994 YQ ₁	97 09 17.8	23 41.89	-16 18.4	15.8	-0.89	- 4.9	6.3/13.1	27917
(7916)	97 09 18.0	23 42.32	-04 53.9	17.9	-0.86	- 8.9	1.0/17.0	30740

1997 OCT. 16

M.P.C. 30809

1989 SJ₁ 97 09 18.1 23 42.81 -09 55.8 17.3 -0.81 - 4.1 3.8/15.5 30289
 1990 VK₅ 97 09 18.1 23 42.95 -11 03.1 16.7 -0.84 - 8.1 3.7/14.9 30687
 1995 GO₇ 97 09 18.2 23 42.99 -04 04.0 16.9 -0.72 - 4.4 0.6/17.5 30665
 1981 EK₂₉ 97 09 18.3 23 43.35 +04 32.1 19.3 -0.77 - 6.5 2.1/20.5 26920
 1978 TR₂ 97 09 18.3 23 43.55 -00 07.6 16.2 -0.79 - 5.0 0.6/18.9 30648
 1994 AJ₁ 97 09 18.4 23 43.78 +13 15.7 17.0 -0.81 - 3.5 4.9/23.4 23791
 1981 EL₂₉ 97 09 18.4 23 44.06 +01 33.0 19.8 -0.86 - 8.3 1.2/19.6 26920
 (7576) 97 09 18.6 23 44.50 -07 37.6 16.7 -0.75 - 7.6 1.8/16.5 29595
 (7930) 97 09 18.6 23 44.62 +11 47.2 14.6 -0.76 - 3.6 7.3/23.3 30743
 1992 GB₁ 97 09 18.7 23 44.90 -33 23.9 18.5 -1.19 + 0.1 9.9/09.5 29135
 6519 P-L 97 09 18.8 23 45.13 -04 37.6 17.6 -0.77 - 4.3 0.8/17.8 22274
 (7585) 97 09 18.8 23 45.45 -16 22.4 16.1 -0.69 - 7.1 4.6/13.4 29597
 1981 ET₁₉ 97 09 18.9 23 45.62 -03 48.9 19.4 -0.91 - 6.5 0.8/18.2 21967
 1983 WN 97 09 19.0 23 45.87 +20 38.9 15.9 -0.67 - 5.9 11.2/28.0 30780
 1989 SV₅ 97 09 19.1 23 46.41 -11 56.6 18.8 -0.90 - 5.1 3.5/15.7 30289
 1997 RR₁ 97 09 19.2 23 46.52 -06 10.2 16.9 -0.97 - 5.5 2.1/17.7 30770
 1991 PO₄ 97 09 19.2 23 46.52 -02 45.8 15.7 -0.71 - 5.5 0.5/18.7 30655
 1995 AV₂ 97 09 19.4 23 47.35 -07 36.8 17.6 -0.92 - 5.1 2.1/17.4 24915
 1994 WH₂ 97 09 19.4 23 47.53 -04 38.2 16.5 -0.89 - 8.6 1.3/18.3 30689
 1990 ON₂ 97 09 19.5 23 47.74 -01 59.2 15.7 -1.00 - 4.4 0.3/19.3 26925
 1989 UJ₃ 97 09 19.7 23 48.35 -02 41.5 16.0 -1.11 + 0.6 0.6/19.4 30781
 1988 FB 97 09 19.7 23 48.43 -04 42.5 16.4 -0.94 - 5.4 1.2/18.6 29941
 (7911) 97 09 19.7 23 48.45 +06 41.0 16.4 -0.95 - 1.3 2.6/22.0 30739
 (7546) 97 09 19.7 23 48.68 -03 43.1 18.4 -0.89 - 8.3 1.0/18.9 29588
 1996 GZ₂ 97 09 19.8 23 48.75 -02 39.4 18.5 -0.95 - 5.2 0.5/19.4 28595
 1402 T-2 97 09 19.8 23 48.89 +00 24.4 18.2 -0.89 - 4.1 0.7/20.4 28892
 1991 BV₁ 97 09 20.0 23 49.61 -05 57.0 17.3 -0.79 - 7.0 1.4/18.4 30687
 1981 EG₂₉ 97 09 20.0 23 49.65 +01 06.1 18.7 -0.77 - 8.1 0.7/20.9 26920
 1993 TY₃₈ 97 09 20.0 23 49.70 -04 40.7 17.5 -0.78 - 8.8 1.3/18.8 23784
 (7948) 97 09 20.1 23 50.19 -00 48.7 17.2 -0.89 - 6.0 0.1/20.3 30747
 1994 VO₁ 97 09 20.2 23 50.34 +01 35.9 16.1 -0.93 - 6.5 1.2/21.0 27313
 5192 T-2 97 09 20.2 23 50.45 +06 01.6 18.2 -1.62 + 5.3 3.5/21.5 30776
 (7360) 97 09 20.2 23 50.55 +06 13.2 15.8 -1.01 - 4.8 2.7/22.5 28578
 1986 PN₄ 97 09 20.3 23 50.54 +20 44.9 15.2 -0.93 - 0.7 7.8/27.3 30780
 1990 DZ 97 09 20.4 23 50.86 +04 21.5 17.8 -0.81 - 3.2 1.5/22.1 25440
 1993 XM 97 09 20.5 23 51.56 -23 49.1 16.7 -0.75 - 5.2 5.9/12.1 25442
 1981 EN₉ 97 09 20.6 23 51.64 +03 18.1 20.0 -0.99 - 4.0 1.4/21.9 26916
 1991 DE 97 09 20.6 23 51.69 -21 35.5 17.9 -0.88 - 4.5 5.9/13.6 24913
 1990 QM₄ 97 09 20.7 23 52.00 -07 11.7 16.4 -0.91 - 7.9 2.5/18.6 22600
 1993 KO 97 09 20.7 23 52.01 +02 50.9 16.8 -0.92 - 8.8 1.4/22.0 30758
 1978 VL₁₀ 97 09 20.8 23 52.36 -01 47.4 16.8 -0.77 - 5.8 0.3/20.5 30778
 (7962) 97 09 21.0 23 53.30 -11 00.8 15.7 -0.74 - 5.7 5.5/17.4 30750
 1988 CF₆ 97 09 21.0 23 53.40 +05 40.1 16.9 -0.92 - 6.1 2.3/23.2 21568
 1993 PY₅ 97 09 21.1 23 53.35 +09 37.1 17.6 -0.97 - 4.7 3.6/24.4 23981
 (7915) 97 09 21.1 23 53.41 -07 47.5 17.4 -0.89 - 8.0 2.7/18.7 30740
 1993 SY₃ 97 09 21.1 23 53.42 +04 55.8 15.9 -0.77 - 8.3 2.3/23.2 30782
 1991 RJ₁₁ 97 09 21.1 23 53.45 -04 31.6 17.4 -0.74 - 5.0 1.2/19.8 30290
 1996 GV₁₈ 97 09 21.1 23 53.66 -12 29.9 16.2 -1.01 - 2.1 5.3/17.7 29140
 1981 EZ₃₀ 97 09 21.2 23 53.70 +01 21.4 19.5 -0.83 - 4.4 0.7/21.9 26920
 1989 SU 97 09 21.2 23 53.88 +07 36.9 14.9 -0.85 - 4.4 3.8/24.0 30781
 1994 CF₂ 97 09 21.2 23 54.00 -03 30.6 17.7 -0.72 - 5.0 0.8/20.3 30453

1989 GB₁ 97 09 21.2 23 54.08 +05 14.0 16.6 -0.70 - 5.6 1.6/23.3 30780
 1993 FB₂₄ 97 09 21.2 23 54.08 +00 17.0 15.0 -1.02 - 1.4 0.5/21.5 27105
 (7204) 97 09 21.3 23 54.07 -01 32.5 16.8 -0.78 - 7.6 0.3/21.0 28818
 1990 TQ₁₂ 97 09 21.3 23 54.16 +08 44.8 16.2 -0.91 - 6.0 4.1/24.4 17965
 1990 SY₈ 97 09 21.5 23 55.08 -08 16.0 17.6 -0.97 - 4.0 3.5/19.2 24582
 (7292) 97 09 21.6 23 55.48 -09 00.6 16.1 -1.02 - 1.8 3.7/19.3 28287
 1996 KB 97 09 21.6 23 55.56 +03 16.3 17.5 -0.86 - 6.3 1.3/23.0 28303
 1979 MR₅ 97 09 21.7 23 55.87 +03 46.9 17.3 -0.88 - 5.8 1.9/23.2 30778
 1353 T-2 97 09 21.8 23 56.21 -00 38.8 17.8 -0.89 - 5.4 0.1/21.8 28892
 1991 FQ₂ 97 09 21.9 23 56.22 -00 41.8 18.1 -0.86 - 4.1 0.1/21.8 29098
 2110 T-3 97 09 21.9 23 56.49 +00 50.7 17.7 -1.00 - 2.6 0.4/22.3 24115
 1997 TS₁₆ 97 09 22.1 23 57.28 +04 00.6 16.9 -0.77 - 8.7 1.9/23.7 30774
 1996 CR₁ 97 09 22.2 23 57.33 +02 58.4 16.7 -0.87 - 9.5 1.4/23.4 30784
 (7072) 97 09 22.3 23 57.79 -00 20.2 17.2 -0.92 - 6.0 0.0/22.3 27441
 1981 SC₇ 97 09 22.3 23 57.83 -13 31.5 15.4 -0.97 - 0.2 6.4/18.5 30468
 6581 P-L 97 09 22.3 23 57.98 +00 47.7 17.2 -0.50 - 2.6 0.2/22.7 30696
 1988 FN 97 09 22.3 23 58.02 +20 28.8 18.4 -1.15 - 0.7 6.5/28.1 27932
 1993 BJ₅ 97 09 22.4 23 58.06 +07 35.3 17.6 -0.62 - 3.1 1.7/25.1 30658
 (7947) 97 09 22.4 23 58.42 +02 14.6 17.8 -0.90 - 8.9 1.0/23.3 30747
 1978 SE₃ 97 09 22.5 23 58.36 +02 48.5 16.4 -0.85 - 7.3 1.2/23.5 30778
 1991 AU₁ 97 09 22.6 23 58.78 +26 11.8 15.5 -1.83 + 8.2 13.4/26.8 30756
 (6975) 97 09 22.7 23 59.43 +05 38.4 15.2 -0.88 - 3.8 2.3/24.6 27096
 1981 ED₄₅ 97 09 22.8 23 59.78 +07 09.9 20.1 -0.98 - 4.2 2.7/25.1 26923
 1982 YR₁ 97 09 22.9 23 59.95 -01 38.2 15.4 -1.00 - 2.0 0.7/22.5 24894
 1989 WU₁ 97 09 23.0 00 00.31 +15 52.5 15.3 -0.61 -10.8 7.2/29.8 30781
 1996 OO 97 09 23.0 00 00.42 +11 13.9 18.3 -0.58 - 4.8 2.5/27.2 30473
 1993 OB 97 09 23.0 00 00.45 +50 47.2 15.1 -0.91 + 4.6 24.7/16.0 22816
 1981 EA₂₁ 97 09 23.1 00 00.68 +01 02.0 18.3 -0.80 - 5.0 0.3/23.5 26919
 6274 P-L 97 09 23.2 00 01.15 +03 03.7 18.1 -0.85 - 7.0 1.0/24.3 30775
 1993 NU₁ 97 09 23.3 00 01.57 -02 54.2 16.4 -0.76 - 7.4 1.5/22.3 27556
 1987 SM₁₂ 97 09 23.4 00 01.92 +00 56.0 16.9 -0.80 - 4.7 0.2/23.7 22078
 1995 HE 97 09 23.5 00 02.12 -03 23.8 17.5 -0.87 - 4.1 1.3/22.4 30783
 1995 EQ₁ 97 09 23.5 00 02.30 -02 37.8 17.8 -0.73 - 4.6 0.8/22.6 29664
 1993 NJ₁ 97 09 23.6 00 02.36 -04 41.2 17.8 -0.86 - 6.9 2.1/22.0 30758
 1997 QK₃ 97 09 23.6 00 02.37 -04 41.3 16.7 -0.86 - 6.9 2.1/22.0 30679
 1996 EL 97 09 23.6 00 02.39 +08 07.2 17.0 -1.02 - 4.1 2.8/26.0 27114
 2647 P-L 97 09 23.6 00 02.39 -00 39.1 16.4 -0.91 - 4.8 0.4/23.3 16438
 1981 EV₃₇ 97 09 23.6 00 02.40 +06 18.0 20.2 -0.86 - 8.7 2.3/25.8 26922
 1993 UT₆ 97 09 23.6 00 02.46 -00 15.8 17.2 -0.78 - 8.8 0.2/23.4 30782
 1997 TR₉ 97 09 23.6 00 02.46 +00 06.7 16.0 -0.77 - 8.0 0.1/23.6 30771
 1994 VR₁ 97 09 23.8 00 03.18 +03 38.5 16.2 -0.95 - 5.4 1.5/24.9 30783
 1981 EU₇ 97 09 23.8 00 03.30 +12 23.3 17.7 -0.93 - 4.1 5.3/27.7 24758
 1992 BG 97 09 23.8 00 03.32 -08 46.6 17.0 -0.88 - 8.6 3.1/20.7 30782
 1993 XF 97 09 23.9 00 03.73 -04 57.2 16.7 -0.80 - 5.8 1.9/22.2 30783
 1995 AZ₃ 97 09 24.1 00 04.48 +06 32.1 16.9 -0.95 - 4.2 2.3/26.1 30783
 1996 EK₁₅ 97 09 24.2 00 04.77 -03 06.6 16.6 -0.93 - 6.8 1.7/23.1 27115
 1993 RH₂ 97 09 24.2 00 04.77 -00 47.2 15.7 -1.17 + 4.2 0.6/24.0 30471
 1993 PV₆ 97 09 24.3 00 04.97 +06 24.4 16.3 -0.88 - 3.3 2.7/26.2 30782
 3175 T-3 97 09 24.3 00 05.06 -00 58.3 18.5 -0.80 - 4.4 0.5/23.9 21127
 1978 WY₈ 97 09 24.4 00 05.45 -04 42.0 17.3 -0.79 - 4.8 1.7/22.7 23336
 1981 ET₉ 97 09 24.5 00 05.84 +07 34.9 19.6 -0.97 - 5.2 2.6/26.7 22270

(7966) 97 09 24.6 00 05.91 -05 26.3 17.7 -0.95 - 5.9 2.4/22.7 30751
 2330 T-2 97 09 24.6 00 06.07 +00 14.2 18.1 -0.93 - 4.1 0.2/24.5 27939
 1994 AP₁ 97 09 24.6 00 06.15 +24 28.1 17.6 -0.91 - 1.6 6.4/02.2 27716
 1991 AC₃ 97 09 24.7 00 06.38 -04 48.1 17.5 -0.83 - 6.4 1.9/22.9 30781
 1981 EN₁₄ 97 09 24.7 00 06.55 +04 18.0 18.6 -0.92 - 6.0 1.3/25.9 30754
 1994 VC 97 09 24.7 00 06.66 +01 38.9 16.7 -0.96 - 4.9 0.5/25.1 30760
 1991 GQ₃ 97 09 25.0 00 07.53 +07 16.3 16.5 -0.76 -10.5 2.3/27.5 28614
 1996 JF₉ 97 09 25.0 00 07.63 -04 08.9 20.0 -0.74 - 6.7 1.5/23.3 27562
 2182 T-3 97 09 25.1 00 07.98 +04 55.2 17.2 -0.96 - 7.1 1.6/26.5 30683
 1981 EH₃₅ 97 09 25.1 00 08.13 +04 58.7 18.0 -1.00 - 4.4 1.8/26.0 30780
 2073 P-L 97 09 25.2 00 08.21 +03 29.2 18.7 -0.86 - 6.6 0.9/26.0 30797
 1995 AW 97 09 25.4 00 08.92 +19 40.5 16.3 -0.92 - 3.9 5.8/01.6 30783
 (7944) 97 09 25.4 00 09.16 +01 34.0 16.9 -0.74 - 4.9 0.2/25.7 30746
 1992 EB₁₃ 97 09 25.5 00 09.41 +07 59.4 16.4 -0.95 - 4.7 3.0/27.8 29660
 1990 SX₅ 97 09 25.5 00 09.55 -02 57.4 17.1 -0.92 - 4.6 1.9/24.3 24564
 (7938) 97 09 25.6 00 09.52 -12 53.6 15.8 -0.91 - 2.5 6.8/21.4 30745
 4195 T-1 97 09 25.6 00 09.57 -04 15.5 17.9 -0.79 - 5.1 1.7/23.9 30293
 (7868) 97 09 25.6 00 09.87 -05 03.2 15.1 -1.05 + 1.7 2.7/24.2 30636
 1981 EN₁₁ 97 09 25.7 00 10.04 +06 24.1 20.6 -1.16 - 4.0 2.2/27.2 26917
 1991 AQ₂ 97 09 25.7 00 10.09 +01 12.8 17.4 -0.92 - 5.9 9.3/06.0 29134
 1992 DC₁₀ 97 09 25.7 00 10.14 +08 24.0 15.8 -0.91 - 6.3 3.1/28.2 30782
 2778 P-L 97 09 25.8 00 10.46 +00 21.2 17.2 -0.89 - 6.6 0.3/25.6 28088
 1990 WZ₁ 97 09 26.1 00 11.64 -02 57.2 17.0 -0.82 - 8.8 1.8/24.7 30781
 1993 FD₂₇ 97 09 26.3 00 12.10 -00 12.2 17.8 -1.02 - 6.0 0.6/25.8 27455
 1991 AL 97 09 26.3 00 12.27 -08 55.0 15.8 -0.91 - 6.6 4.0/22.9 24896
 3063 P-L 97 09 26.3 00 12.30 +11 38.5 17.4 -0.72 - 4.0 2.8/29.9 27724
 1990 QW₁₀ 97 09 26.3 00 12.37 +01 15.7 16.5 -1.05 - 3.6 0.0/26.4 30781
 1993 TH₁₄ 97 09 26.6 00 13.18 -01 10.2 17.4 -0.84 - 6.4 0.8/25.7 27936
 1992 FY₁ 97 09 26.6 00 13.28 -10 48.0 16.7 -1.02 - 3.4 4.6/23.0 30687
 4124 T-3 97 09 26.6 00 13.34 -03 17.1 19.0 -0.76 - 5.6 1.6/25.1 25540
 1994 AL₁₆ 97 09 26.6 00 13.45 +00 35.2 17.1 -0.69 - 7.5 0.3/26.4 23676
 1996 PS₁ 97 09 26.7 00 13.74 +09 36.3 17.0 -0.47 - 5.8 1.5/29.9 30764
 2343 T-3 97 09 26.7 00 13.74 +02 16.9 18.7 -0.79 - 4.6 0.3/27.0 30776
 1981 EM₃₈ 97 09 26.8 00 14.24 +07 45.8 19.8 -0.84 - 4.6 2.0/28.9 22430
 (7926) 97 09 26.9 00 14.34 +03 13.7 16.0 -0.80 - 3.7 0.6/27.5 30742
 1996 HC₁₉ 97 09 27.1 00 14.92 +02 53.0 16.1 -0.85 - 7.1 0.5/27.5 30763
 (7914) 97 09 27.1 00 15.16 +14 11.3 15.9 -0.82 -11.8 4.9/02.1 30740
 1989 UN₁ 97 09 27.1 00 15.20 +06 59.4 15.9 -0.68 - 8.3 2.5/29.2 30781
 1997 SN₁₀ 97 09 27.2 00 15.40 +02 56.2 16.9 -0.72 - 6.3 0.4/27.7 30773
 (7922) 97 09 27.2 00 15.42 +23 18.8 18.0 -0.79 - 3.7 5.7/04.7 30742
 1990 VD₃ 97 09 27.2 00 15.66 +07 36.0 17.1 -0.93 - 5.9 2.2/29.2 21575
 1980 FX₃ 97 09 27.4 00 16.02 +03 16.5 16.9 -0.98 - 3.6 0.6/27.9 30753
 (7949) 97 09 27.4 00 16.09 -02 05.2 15.7 -0.69 -12.3 1.3/25.9 30747
 1993 FN₅₀ 97 09 27.4 00 16.11 +03 23.5 17.0 -0.85 -11.2 0.7/28.0 30758
 1997 TZ₇ 97 09 27.4 00 16.16 -23 15.8 16.8 -0.97 + 2.5 9.9/20.7 30773
 1989 UK₁ 97 09 27.4 00 16.29 +13 37.0 16.6 -0.80 -10.2 4.7/01.9 30781
 (7069) 97 09 27.4 00 16.35 -07 02.9 16.7 -0.92 - 4.6 3.3/24.7 29587
 1993 TY₃₄ 97 09 27.5 00 16.47 -02 19.7 18.0 -0.92 - 3.7 1.7/26.3 27557
 1314 T-2 97 09 27.5 00 16.48 +01 39.5 17.2 -0.92 - 4.8 0.0/27.5 30776
 1996 LG₄ 97 09 27.5 00 16.62 -03 41.6 15.8 -0.80 - 4.7 2.2/25.8 28863
 1994 XE₁ 97 09 27.6 00 16.89 -14 15.6 16.2 -0.98 - 4.0 6.7/22.5 30783

1992 RA₂ 97 09 27.7 00 17.12 +15 51.1 17.2 -1.02 + 0.7 5.5/01.5 30757
 1997 LD 97 09 27.7 00 17.21 +00 40.8 14.9 -0.70 -10.1 0.6/27.3 30788
 1994 YB 97 09 27.7 00 17.37 +17 44.0 17.4 -0.99 - 5.0 5.3/03.0 30783
 1994 YV₃ 97 09 27.7 00 17.50 +08 43.1 16.9 -0.94 - 4.9 3.2/29.9 30761
 1997 SZ₉ 97 09 27.8 00 17.53 +15 24.2 16.4 -0.93 - 4.5 6.3/02.2 30773
 (7955) 97 09 27.8 00 17.55 +04 22.9 17.4 -0.82 - 5.2 0.8/28.6 30748
 1989 UB₃ 97 09 27.8 00 17.80 -07 03.8 16.7 -0.95 - 4.6 3.6/25.0 30781
 1979 MW₃ 97 09 27.9 00 17.90 +05 49.2 18.0 -0.96 - 7.4 1.6/29.2 26913
 1996 HU₂₄ 97 09 28.0 00 18.31 -09 57.0 17.5 -1.03 - 3.4 5.0/24.5 27721
 (7940) 97 09 28.0 00 18.53 -04 16.8 17.0 -0.83 - 6.0 2.4/26.0 30745
 2698 P-L 97 09 28.0 00 18.55 +01 42.5 17.7 -1.10 - 2.3 0.1/28.0 30774
 1996 FL₅ 97 09 28.0 00 18.56 -03 29.4 17.3 -1.03 - 3.7 2.0/26.5 30784
 1981 YG 97 09 28.2 00 19.31 +27 11.5 17.0 -0.94 - 4.2 8.3/06.9 30685
 1979 MC₅ 97 09 28.3 00 19.27 +00 31.5 16.8 -0.64 - 9.7 0.8/27.7 30778
 2042 P-L 97 09 28.3 00 19.41 +08 16.6 17.7 -0.89 - 7.3 2.3/30.4 30774
 1990 UQ₃ 97 09 28.4 00 19.70 +00 25.7 16.9 -0.74 -10.1 0.8/27.8 23860
 1988 QU 97 09 28.4 00 19.75 -12 28.3 16.6 -0.75 - 9.4 4.9/22.9 30780
 1997 RJ₁₀ 97 09 28.4 00 19.79 +01 11.5 16.2 -0.76 - 5.6 0.3/28.1 30771
 (6867) 97 09 28.4 00 19.93 +00 00.6 16.0 -0.82 -10.1 0.7/27.7 29586
 1979 MV₄ 97 09 28.7 00 20.71 +08 02.9 18.8 -0.96 - 6.6 2.1/30.6 30778
 3553 P-L 97 09 28.7 00 20.74 +12 15.6 17.7 -0.85 - 4.4 3.1/01.9 27732
 1981 EQ₂ 97 09 28.7 00 20.97 +12 58.1 18.8 -0.94 - 5.8 3.9/02.3 26915
 (7921) 97 09 28.7 00 21.07 +01 14.7 14.9 -0.73 - 7.1 0.5/28.4 30741
 1981 EV₂₂ 97 09 28.8 00 21.18 +00 25.7 16.4 -0.74 - 6.9 0.8/28.2 30685
 1282 T-2 97 09 28.8 00 21.35 +04 09.2 17.3 -0.80 - 5.3 0.6/29.5 22087
 1986 RL₅ 97 09 28.9 00 21.60 +00 55.2 15.8 -0.86 - 2.0 0.5/28.5 30685
 (7034) 97 09 28.9 00 21.73 +06 12.5 16.4 -0.88 - 9.2 1.5/30.3 27299
 4342 T-1 97 09 29.0 00 22.09 -04 08.4 19.0 -0.91 - 4.3 2.3/27.0 25224
 (7931) 97 09 29.0 00 22.11 -01 39.5 17.9 -0.92 - 5.2 1.4/27.8 30743
 1996 HQ₂₂ 97 09 29.1 00 22.42 +06 58.3 16.6 -0.73 - 7.8 1.9/30.8 30763
 1989 TL₁₅ 97 09 29.2 00 22.82 +04 25.6 16.3 -0.88 - 5.0 0.8/29.9 30781
 1977 DQ₃ 97 09 29.2 00 22.88 -00 31.3 17.4 -0.76 - 4.5 1.0/28.3 23347
 1995 FU₂ 97 09 29.3 00 23.03 -02 44.3 19.5 -0.79 - 5.3 1.8/27.6 25442
 1967 HA 97 09 29.4 00 23.23 +17 51.2 16.7 -1.04 - 1.7 5.3/03.9 27929
 1994 VO₇ 97 09 29.4 00 23.55 +05 15.6 16.6 -0.96 - 7.3 1.2/30.4 28617
 1977 QT₂ 97 09 29.6 00 23.95 +06 41.3 15.9 -0.97 - 5.3 1.9/30.9 30778
 1996 DR 97 09 29.7 00 24.64 -05 28.6 16.6 -0.92 - 9.0 3.0/27.0 27457
 1981 EM₂₄ 97 09 29.8 00 24.92 +05 32.5 16.9 -0.84 - 4.2 1.0/30.8 22697
 1979 MF₃ 97 09 29.9 00 25.04 +03 24.3 18.3 -0.82 - 6.6 0.3/30.1 30778
 1991 PG₃ 97 09 30.0 00 25.72 -01 30.5 18.2 -0.75 - 4.7 1.2/28.7 29942
 1992 KF 97 09 30.1 00 25.96 -20 50.9 17.5 -0.98 - 1.7 8.0/23.1 25441
 1991 SK 97 09 30.1 00 25.98 +01 51.8 15.9 -0.80 - 2.7 0.3/29.9 30687
 1996 HL₁₂ 97 09 30.1 00 26.14 +03 20.4 18.8 -0.93 - 5.8 0.2/30.4 27561
 1981 EV₁₇ 97 09 30.2 00 26.44 +05 13.7 19.5 -0.92 - 6.6 0.9/01.1 22697
 1989 WG₇ 97 09 30.3 00 26.65 +05 06.4 16.7 -0.86 - 6.0 0.8/31.0 30470
 (7943) 97 09 30.3 00 26.76 +02 29.1 16.9 -0.73 - 5.0 0.1/30.2 30746
 1992 ER₁₂ 97 09 30.9 00 28.86 +03 51.5 17.7 -0.91 - 6.8 0.3/01.2 27729
 1995 EP₁ 97 09 30.9 00 28.96 +09 32.1 17.4 -0.89 - 2.5 1.9/02.9 25442
 (6914) 97 10 01.0 00 29.09 +03 58.7 16.4 -0.91 - 5.1 0.3/01.3 26893
 1993 TE 97 10 01.0 00 29.35 +04 41.3 15.7 -0.55 -12.9 0.7/01.7 30782
 1992 DA 97 10 01.1 00 29.37 +00 57.5 17.0 -0.97 - 4.9 0.7/30.4 28886

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(6940) 97 10 01.3 00 30.13 +02 41.0 17.3 -1.01 - 5.0 0.2/01.1 27088
 (7451) 97 10 01.3 00 30.47 -08 49.0 15.7 -0.70 - 8.4 4.6/26.9 29077
 4165 T-3 97 10 01.4 00 30.55 -10 32.6 17.2 -1.08 - 1.5 6.4/27.7 30777
 1990 WX₁ 97 10 01.4 00 30.61 -04 58.5 17.8 -0.86 - 7.9 3.2/28.6 30781
 1996 JF 97 10 01.5 00 30.79 -05 18.5 18.5 -0.98 - 5.1 3.0/28.8 29140
 1989 WB₂ 97 10 01.7 00 31.57 +12 20.6 16.8 -0.93 - 4.9 3.3/04.5 30781
 2748 P-L 97 10 01.9 00 32.54 -00 57.1 17.6 -0.74 - 9.7 1.9/30.3 23985
 5004 P-L 97 10 02.1 00 33.13 +10 07.1 16.0 -0.67 - 9.9 2.4/04.7 30797
 1991 PB₁₂ 97 10 02.1 00 33.20 +14 43.3 16.4 -0.74 - 5.6 3.3/06.1 30781
 1981 EM₂₅ 97 10 02.2 00 33.42 +02 03.2 19.7 -0.90 - 7.1 0.5/01.7 26919
 (7894) 97 10 02.3 00 33.87 -19 45.5 17.9 -0.90 - 3.8 7.5/24.7 30643
 1975 XD 97 10 02.3 00 34.00 -10 06.5 17.4 -0.85 - 6.7 5.9/27.6 27323
 1990 QN₉ 97 10 02.4 00 34.19 -03 37.4 17.0 -0.94 - 7.3 3.0/30.0 23859
 2818 P-L 97 10 02.4 00 34.22 -01 03.7 19.0 -0.96 - 4.6 1.6/01.0 27320
 1989 GE₃ 97 10 02.7 00 35.40 +06 29.0 17.6 -0.81 - 4.0 0.8/03.6 23670
 1992 EL₁₇ 97 10 02.7 00 35.49 -05 26.0 18.2 -0.92 - 6.1 4.0/29.8 24106
 (7007) 97 10 02.8 00 35.73 +04 18.3 17.9 -0.95 - 5.8 0.2/03.0 27292
 1993 YR 97 10 02.8 00 35.83 +14 57.0 16.6 -0.59 -13.0 5.0/07.5 30760
 6313 P-L 97 10 02.8 00 35.84 +07 24.5 18.7 -0.84 - 4.7 1.2/04.0 16036
 1980 FY 97 10 03.0 00 36.24 +06 45.8 16.8 -1.03 - 5.8 1.2/03.9 30779
 1990 TG₁₁ 97 10 03.2 00 37.24 +08 44.4 17.7 -0.96 - 6.2 1.9/04.8 22953
 1988 TQ₄ 97 10 03.3 00 37.42 +01 55.5 15.7 -0.81 - 5.4 0.8/02.6 30780
 1997 RO₃ 97 10 03.4 00 37.91 -00 01.2 16.7 -0.81 - 8.5 1.7/02.0 30680
 1995 CB₁ 97 10 03.5 00 38.07 -10 56.1 16.2 -0.85 - 5.2 6.7/28.5 26928
 1993 OQ₈ 97 10 03.5 00 38.38 -00 52.0 17.0 -0.82 - 5.4 2.4/02.0 30758
 1986 QK₂ 97 10 03.5 00 38.41 -15 26.8 16.4 -0.83 - 9.3 7.6/26.3 27324
 6381 P-L 97 10 03.8 00 39.14 +01 39.1 17.5 -0.78 - 9.8 0.9/02.9 28892
 1996 EP₇ 97 10 03.8 00 39.29 +05 08.1 20.0 -1.02 - 5.0 0.4/04.1 30762
 1991 RR₃₀ 97 10 03.8 00 39.35 +01 19.1 15.6 -0.82 - 2.7 1.0/03.0 29659
 4805 P-L 97 10 04.0 00 40.04 +03 35.1 18.4 -0.95 - 5.2 0.2/03.8 30797
 1995 EE₈ 97 10 04.2 00 41.04 +14 43.6 16.8 -1.05 - 1.1 3.5/07.1 28889
 (7969) 97 10 04.3 00 41.18 +00 57.2 16.2 -0.73 - 5.2 1.2/03.2 30751
 1997 RQ₃ 97 10 04.4 00 41.34 +00 56.4 16.5 -0.74 - 5.2 1.2/03.2 30791
 1996 HQ₂₃ 97 10 04.4 00 41.74 +02 33.3 16.5 -0.91 - 6.4 0.9/03.9 30785
 1990 SA₁₅ 97 10 04.5 00 41.82 +12 47.1 16.0 -0.90 - 7.1 3.7/07.3 30654
 (7033) 97 10 04.5 00 41.86 -05 57.0 16.1 -0.92 - 7.9 4.1/01.0 27299
 1993 BE₅ 97 10 04.5 00 41.89 +07 29.2 16.4 -0.67 - 4.0 0.8/05.5 28887
 1997 SQ 97 10 04.6 00 42.40 +03 36.3 17.5 -0.78 - 4.7 0.4/04.4 30772
 1997 RR₃ 97 10 04.7 00 42.42 -00 56.2 16.2 -0.77 -10.9 1.9/02.7 30770
 1991 DK₁ 97 10 04.7 00 42.42 +01 43.0 19.5 -0.50 - 2.5 0.5/03.7 30781
 1986 QZ₁ 97 10 04.7 00 42.61 -06 49.3 16.6 -0.71 - 7.0 3.6/30.7 30651
 1996 ER 97 10 04.7 00 42.66 +01 51.4 16.8 -0.91 - 9.2 1.2/03.8 30668
 1992 OB₉ 97 10 04.8 00 43.13 -15 16.3 16.7 -0.82 - 5.0 7.0/28.3 29660
 5030 T-2 97 10 04.9 00 43.34 +19 33.7 18.7 -0.53 - 2.9 2.8/10.2 15258
 1992 RZ 97 10 04.9 00 43.36 +06 15.0 16.7 -0.80 - 5.1 0.5/05.5 23869
 1996 OH 97 10 05.0 00 43.61 -04 05.1 18.6 -0.66 - 4.7 2.3/02.0 30785
 1981 EC₆ 97 10 05.0 00 43.65 +22 40.3 17.2 -1.02 - 3.9 8.1/11.0 30779
 1993 HG₁ 97 10 05.1 00 44.12 +01 58.8 17.0 -0.98 - 7.8 1.1/04.3 29944
 (7641) 97 10 05.1 00 44.23 +36 23.2 16.5 -0.55 - 4.7 5.2/18.3 29897
 1994 YZ₁ 97 10 05.3 00 44.74 -00 34.0 17.2 -0.96 - 4.4 2.1/03.7 27568
 4370 T-1 97 10 05.3 00 44.80 -01 13.2 17.6 -0.98 - 6.1 2.8/03.5 30775

1988 AA₂ 97 10 05.5 00 45.37 -05 42.1 16.5 -0.97 - 5.6 4.5/02.1 30755
 1991 QE 97 10 05.6 00 45.96 -04 09.0 15.8 -1.16 + 4.3 3.5/03.8 30782
 1985 CN₁ 97 10 05.7 00 46.40 +04 55.8 16.8 -1.00 - 4.9 9.5/16.0 30780
 1973 SP₁ 97 10 05.8 00 46.66 +01 45.9 17.8 -0.48 - 3.4 0.6/04.7 30777
 1979 MO₇ 97 10 05.8 00 46.76 +11 07.9 18.3 -0.71 - 6.2 2.0/08.0 21561
 1994 BJ₄ 97 10 05.8 00 46.81 +18 07.2 18.1 -0.77 - 4.8 3.7/10.3 28888
 1990 TH₁₂ 97 10 05.9 00 47.03 +11 04.6 16.9 -0.93 - 6.9 2.3/07.9 30781
 1991 PR₁ 97 10 05.9 00 47.10 +22 03.2 17.6 -0.85 - 3.4 5.1/11.4 23339
 1981 EQ₂₈ 97 10 06.0 00 47.42 +01 25.3 16.1 -0.78 - 6.7 1.4/04.8 30779
 1994 YJ₂ 97 10 06.1 00 47.73 -18 03.4 16.7 -0.89 - 3.8 7.3/28.6 24754
 1996 HT₂ 97 10 06.1 00 47.89 +07 33.0 17.3 -0.81 -11.8 0.9/07.1 30763
 2122 T-3 97 10 06.5 00 49.06 +08 59.5 18.9 -0.97 - 7.1 1.4/07.7 30797
 1986 TR₃ 97 10 06.6 00 49.66 +05 25.2 17.2 -0.77 - 4.6 0.0/06.7 30780
 2234 T-1 97 10 06.7 00 50.02 +05 03.7 17.5 -1.08 - 0.9 0.1/06.7 25336
 1992 UZ₃ 97 10 06.9 00 50.65 +05 37.1 15.6 -0.79 - 3.6 0.1/07.0 29661
 1996 GB₁₈ 97 10 06.9 00 50.74 +00 39.7 16.5 -1.07 - 3.1 2.1/05.6 30762
 1982 RK₁ 97 10 07.0 00 50.80 +12 51.7 17.3 -0.96 - 5.8 3.2/09.4 22271
 1994 FQ 97 10 07.0 00 50.92 -08 35.8 18.8 -0.69 - 7.4 3.8/01.9 27730
 1993 TB₃₉ 97 10 07.0 00 51.09 -02 18.7 17.8 -0.83 - 6.6 2.5/04.5 25642
 1996 RJ 97 10 07.0 00 51.21 +39 53.0 16.5 -0.59 - 3.8 6.0/21.3 30785
 1997 TM₁₈ 97 10 07.0 00 51.22 +00 42.9 16.8 -1.02 - 1.7 1.7/05.8 30774
 1996 GA₁₉ 97 10 07.1 00 51.55 +00 43.0 17.8 -1.02 - 4.4 1.9/05.8 30784
 1973 SA₂ 97 10 07.2 00 51.61 -01 43.8 17.8 -0.50 - 2.8 1.3/04.7 27725
 1995 GE 97 10 07.2 00 51.77 -02 44.2 16.5 -0.67 -12.8 3.3/04.0 30783
 4034 T-1 97 10 07.3 00 52.01 +01 28.8 16.4 -0.77 - 6.0 1.3/06.0 30797
 1987 YU₁ 97 10 07.4 00 52.51 +20 13.1 16.9 -0.50 - 5.5 2.9/13.0 16428
 1992 KQ 97 10 07.4 00 52.67 -21 24.8 15.4 -0.87 - 2.9 10.3/28.8 30688
 1981 EN₁₉ 97 10 07.4 00 52.68 +07 02.7 18.1 -0.82 - 6.6 0.5/08.0 26918
 1990 SU₉ 97 10 07.5 00 52.82 +00 07.1 17.2 -1.02 - 4.5 2.2/05.9 30756
 1993 XK₁ 97 10 07.5 00 52.90 +00 31.0 17.1 -0.81 - 4.4 1.7/05.9 25539
 (7152) 97 10 07.5 00 52.90 +00 42.0 16.5 -0.50 - 3.2 0.9/05.8 27893
 1993 UM₈ 97 10 07.6 00 53.19 +01 52.6 16.8 -0.76 -11.8 1.4/06.2 24112
 4381 T-1 97 10 07.6 00 53.28 +03 12.6 18.5 -1.00 - 3.2 1.1/07.0 27927
 1987 SG₁₃ 97 10 07.8 00 53.80 +04 18.9 16.2 -1.05 - 2.8 0.7/07.4 30780
 (6991) 97 10 07.8 00 53.83 -05 32.0 14.8 -0.77 - 6.6 5.3/03.9 30684
 1993 QA₉ 97 10 08.0 00 54.58 +01 14.9 18.0 -0.91 - 6.4 1.7/06.6 30758
 1993 HS 97 10 08.0 00 54.59 +05 16.3 16.3 -1.06 - 5.0 0.2/07.9 29944
 (7098) 97 10 08.0 00 54.64 -02 57.3 17.8 -0.83 - 5.3 2.5/05.2 27551
 1981 FL 97 10 08.1 00 55.03 +03 30.5 18.1 -0.88 - 8.1 0.8/07.3 28882
 4722 P-L 97 10 08.2 00 55.21 +06 36.2 17.5 -0.92 - 6.3 0.2/08.4 22086
 1993 OH₄ 97 10 08.2 00 55.38 +04 04.6 17.7 -0.97 - 5.7 0.7/07.7 30660
 1985 HH 97 10 08.2 00 55.44 +03 20.8 17.3 -0.93 - 6.5 0.9/07.4 30780
 (6942) 97 10 08.2 00 55.62 +00 43.9 15.6 -0.96 - 3.8 2.3/06.8 27088
 1996 HQ 97 10 08.3 00 55.65 -03 42.1 19.3 -1.02 - 3.9 3.6/05.5 30762
 1995 BU₂ 97 10 08.5 00 56.53 +29 39.0 16.3 -1.00 - 3.9 7.8/16.5 30761
 1989 EG₁ 97 10 08.6 00 57.03 +00 18.0 17.5 -0.94 - 8.0 2.2/06.8 27566
 1992 JP₃ 97 10 08.6 00 57.10 -00 21.7 19.2 -0.96 - 3.3 2.2/06.9 27309
 1992 WP₃ 97 10 08.7 00 57.10 +22 14.6 16.3 -0.80 - 4.8 5.5/14.2 28887
 1991 DK 97 10 08.8 00 57.40 +17 18.6 14.1 -1.19 + 2.6 4.8/11.3 30781
 1992 EF₂ 97 10 08.9 00 57.82 -06 18.5 17.7 -0.86 - 8.4 4.2/04.7 30290
 1981 ES₃₈ 97 10 08.9 00 58.12 +06 44.7 16.4 -0.81 - 9.9 0.2/09.2 28882

1996 KG	97 10 09.0	00 58.13	+05 54.3	17.4	-0.94	- 7.5	0.1/08.9	27453
(7065)	97 10 09.0	00 58.13	+07 00.8	15.7	-0.77	- 7.9	0.3/09.3	29076
1989 CD ₈	97 10 09.1	00 58.74	+20 36.1	15.8	-0.78	- 5.9	4.8/14.1	27566
(7068)	97 10 09.1	00 58.76	-06 33.1	15.5	-0.97	- 5.7	5.6/05.1	27440
1990 WJ ₄	97 10 09.4	00 59.67	-04 29.3	18.1	-0.90	- 6.2	3.9/05.9	25957
1993 OJ ₇	97 10 09.4	00 59.88	+18 09.8	16.7	-0.99	- 4.8	5.1/13.1	24763
1996 JF ₃	97 10 09.4	01 00.01	-06 44.0	16.4	-0.98	- 1.8	6.2/05.8	27562
1984 CP	97 10 09.5	01 00.05	-05 28.1	17.7	-0.89	- 6.1	4.0/05.7	30780
6038 P-L	97 10 09.5	01 00.09	+11 05.9	16.1	-1.00	- 1.1	2.1/10.8	30797
1991 PL ₈	97 10 09.5	01 00.17	+05 49.8	17.9	-0.79	- 4.4	0.2/09.4	25065
(7956)	97 10 09.7	01 00.92	+02 41.9	18.3	-0.75	- 4.5	1.1/08.5	30748
4196 T-2	97 10 09.7	01 01.13	+01 45.0	16.6	-0.83	- 4.4	1.6/08.3	30797
1981 EH ₉	97 10 09.9	01 01.61	+12 08.8	18.8	-0.97	- 6.3	2.0/11.7	22696
1982 BS	97 10 09.9	01 01.85	+31 15.3	15.9	-0.98	- 2.6	10.1/18.0	30780
1992 EQ ₉	97 10 10.0	01 02.11	+06 22.1	16.0	-0.93	- 7.7	0.1/10.0	30274
1991 FB ₄	97 10 10.0	01 02.18	+09 44.2	16.8	-0.88	- 4.1	1.0/11.0	30781
1992 CA ₂	97 10 10.1	01 02.43	-00 10.1	16.6	-0.94	- 7.1	2.7/08.0	27935
1992 NS	97 10 10.2	01 02.88	+13 12.8	16.9	-0.81	- 9.3	2.2/12.6	30782
(6944)	97 10 10.3	01 02.94	-07 33.8	16.8	-0.92	- 5.9	5.9/05.8	27089
4655 P-L	97 10 10.3	01 03.04	+11 37.7	17.4	-0.55	- 1.5	0.9/11.9	29649
1993 VR ₂	97 10 10.5	01 03.77	+23 35.4	15.1	-0.78	- 9.4	6.8/17.0	30688
1981 EX ₃₀	97 10 10.6	01 04.02	+01 50.8	16.3	-0.76	- 6.7	2.5/08.9	30779
1981 EG ₂₆	97 10 10.6	01 04.39	+13 14.3	18.5	-0.93	- 2.7	2.1/12.5	30755
(7964)	97 10 10.7	01 04.71	-02 01.9	16.2	-0.77	- 7.3	2.8/07.7	30750
1973 SO ₁	97 10 10.7	01 04.72	+03 00.1	17.6	-0.48	- 4.0	0.7/09.4	30777
4197 T-2	97 10 10.7	01 04.79	+02 23.6	16.7	-0.97	- 4.0	2.1/09.5	30776
1993 TL ₂₅	97 10 10.8	01 04.86	+01 20.4	17.9	-0.89	- 5.4	2.0/09.1	30759
1990 SK	97 10 10.8	01 05.11	-33 18.7	15.7	-1.81	+20.4	22.6/09.7	22699
(7886)	97 10 10.8	01 05.15	+14 11.1	17.1	-0.92	- 6.5	3.0/13.2	30640
1993 OW ₃	97 10 10.8	01 05.18	+00 25.9	15.8	-0.87	- 5.7	3.0/08.9	30660
1994 AH	97 10 10.9	01 05.28	+02 57.1	16.3	-0.78	- 5.2	1.3/09.7	30783
1988 FE	97 10 11.0	01 05.48	-02 14.1	17.4	-0.99	- 3.1	3.0/08.4	21569
1997 RA ₁₀	97 10 11.1	01 05.88	+00 55.4	16.9	-0.89	- 6.4	2.5/09.2	30771
9519 P-L	97 10 11.1	01 06.05	+05 14.3	18.3	-0.88	- 3.5	0.6/10.6	14631
4409 T-1	97 10 11.4	01 07.22	-00 16.7	17.9	-0.92	- 7.0	2.9/09.1	29668
1997 SD ₁₀	97 10 11.4	01 07.30	+01 31.7	16.6	-0.85	- 4.6	2.7/09.7	30773
1992 EE ₁	97 10 11.5	01 07.54	-03 33.3	17.4	-1.24	+ 1.1	3.7/09.2	21977
1997 RD ₁₀	97 10 11.5	01 07.62	+00 31.6	15.8	-0.63	- 7.8	3.3/09.2	30771
1992 WS ₂	97 10 11.5	01 07.73	+07 02.0	15.9	-0.78	- 4.4	0.1/11.5	25641
(7062)	97 10 11.8	01 08.49	-14 00.3	18.0	-0.72	- 5.7	5.9/04.6	27439
1981 EQ ₁₇	97 10 11.8	01 08.64	+08 33.9	18.6	-0.94	- 6.4	0.5/12.2	26918
1045 T-2	97 10 11.8	01 08.67	+07 37.8	15.4	-0.78	-11.7	0.2/12.0	28892
1980 UF ₁	97 10 11.8	01 08.73	+11 23.1	17.4	-1.13	+ 0.8	2.1/12.8	30754
1996 RD ₁₂	97 10 11.9	01 08.84	+10 54.1	19.1	-0.54	- 2.1	0.7/13.1	30764
1995 FP ₁₄	97 10 11.9	01 08.99	+01 26.1	18.5	-0.81	- 4.2	2.0/10.1	30761
1978 UK ₇	97 10 12.0	01 09.57	+07 34.1	16.7	-0.84	- 6.5	0.1/12.2	28610
6591 P-L	97 10 12.1	01 09.65	+07 23.6	17.8	-0.51	- 2.3	0.0/12.1	28620
1981 ED ₃₁	97 10 12.1	01 09.73	+03 14.2	18.2	-0.89	- 7.1	1.8/10.8	26920
1996 CW ₇	97 10 12.2	01 10.20	-03 13.7	17.5	-1.00	- 6.2	4.5/09.1	30784
1986 XF ₅	97 10 12.3	01 10.43	+06 25.3	16.5	-0.82	- 6.6	0.5/12.0	30780
(6963)	97 10 12.3	01 10.62	+16 43.4	15.6	-1.02	- 6.3	4.1/15.3	27093

1995 FG ₁	97 10 12.3	01 10.69	+08 59.8	16.4	-0.81	- 4.8	0.5/12.9	25963
1990 TK ₄	97 10 12.5	01 11.08	+10 17.5	18.0	-0.94	- 7.1	1.1/13.4	30756
1211 T-2	97 10 12.5	01 11.21	+14 10.1	18.5	-1.09	- 3.6	2.6/14.4	30797
1991 EL	97 10 12.5	01 11.38	+35 39.7	19.1	-0.55	- 2.8	4.4/23.1	18437
1992 UM ₃	97 10 12.5	01 11.43	+16 37.9	16.2	-0.76	- 6.6	2.7/15.7	29661
1995 DP ₂	97 10 12.5	01 11.44	+07 22.9	19.3	-0.91	- 4.1	0.1/12.5	30292
1993 RZ ₁	97 10 12.7	01 12.00	+09 06.5	16.5	-0.92	- 6.0	0.6/13.2	28616
1988 CD ₂	97 10 12.7	01 12.12	+04 14.9	17.0	-0.93	- 6.5	1.5/11.7	25339
(6873)	97 10 12.8	01 12.14	+07 41.2	16.6	-0.98	- 8.5	0.0/12.8	26734
1981 ES ₂₅	97 10 12.8	01 12.25	+07 25.9	17.9	-0.98	- 5.0	0.1/12.8	26919
1988 CZ ₂	97 10 12.8	01 12.50	+01 08.6	19.5	-0.94	- 6.2	2.3/10.9	30755
1973 SJ ₁	97 10 12.9	01 12.73	+06 36.2	18.0	-0.59	- 3.9	0.2/12.6	30647
(7082)	97 10 13.1	01 13.48	-12 59.9	16.4	-0.71	- 6.1	6.4/06.0	27547
1981 EE ₁₅	97 10 13.2	01 13.63	+15 53.4	19.1	-0.84	- 5.1	2.5/15.8	26917
1987 SE ₇	97 10 13.2	01 13.70	+19 06.2	16.4	-0.95	- 5.3	5.6/16.8	28315
1995 CJ	97 10 13.2	01 13.89	-12 34.9	17.6	-0.74	- 4.6	5.4/06.6	24906
2093 P-L	97 10 13.3	01 14.06	+11 09.2	17.1	-0.73	- 7.1	1.0/14.5	30797
1989 UL ₁	97 10 13.4	01 14.61	-00 45.3	15.3	-1.02	- 0.6	3.5/11.3	27325
1995 DF ₈	97 10 13.6	01 15.13	+03 29.3	18.4	-0.85	- 6.6	1.8/12.2	25229
1986 RA ₃	97 10 13.6	01 15.50	+26 31.6	16.3	-0.83	- 4.7	5.8/19.9	30685
1981 EK ₁₀	97 10 13.7	01 15.68	+13 33.8	17.6	-1.00	- 5.2	2.3/15.4	30779
1993 FX ₇₇	97 10 13.8	01 15.86	+11 43.5	16.7	-1.05	- 7.4	1.5/15.0	24109
1981 EN ₂₆	97 10 13.8	01 16.03	+05 04.1	17.9	-0.77	- 6.7	0.8/12.9	21967
1989 SR ₄	97 10 13.8	01 16.20	+03 59.1	17.5	-0.94	- 2.4	1.8/12.8	24582
1996 KW	97 10 13.9	01 16.37	-08 30.2	15.5	-1.06	+ 3.3	7.5/10.5	30785
1981 EX ₂₆	97 10 13.9	01 16.55	+07 57.4	17.7	-0.95	- 7.2	0.1/13.9	30779
1994 AX ₂	97 10 14.0	01 16.96	+25 46.5	17.4	-0.83	- 4.1	4.8/19.8	30783
1991 GJ ₁	97 10 14.0	01 17.01	+01 29.5	16.5	-1.04	- 1.1	2.3/12.4	28614
4634 P-L	97 10 14.1	01 17.03	+09 03.6	16.5	-1.08	- 2.4	0.4/14.4	30775
1981 EL ₉	97 10 14.2	01 17.46	+26 54.8	18.4	-0.91	- 0.8	5.8/19.6	26916
1979 MG ₇	97 10 14.3	01 17.71	+06 34.7	18.8	-0.84	- 6.1	0.6/13.8	30779
(6961)	97 10 14.3	01 17.72	+11 23.8	16.9	-0.95	- 7.2	1.1/15.3	27093
1981 EL ₂₂	97 10 14.4	01 18.12	+12 46.8	21.4	-1.02	- 4.3	1.6/15.7	26919
1980 FF ₁₂	97 10 14.4	01 18.42	+11 06.4	16.6	-1.07	- 5.1	1.1/15.3	28610
1991 GH ₃	97 10 14.5	01 18.52	+09 42.6	16.2	-0.89	- 5.6	0.6/15.0	29658
1981 EW ₃₆	97 10 14.5	01 18.63	+17 31.9	19.6	-0.85	- 5.2	3.2/17.5	22271
1987 RJ	97 10 14.5	01 18.83	+03 18.4	15.7	-0.98	- 4.2	2.4/13.2	30780
1997 RX ₆	97 10 14.5	01 18.86	+08 37.1	16.3	-0.82	- 4.3	0.1/14.7	30770
1989 BA ₁	97 10 14.6	01 18.83	+49 34.6	16.7	-0.95	-13.1	13.9/03.3	30469
(7571)	97 10 14.6	01 18.86	+04 54.5	17.3	-0.76	- 4.6	1.0/13.6	30777
6113 P-L	97 10 14.6	01 18.90	+09 57.3	17.5	-0.92	- 5.2	0.6/15.1	30775
1996 KL ₁	97 10 14.7	01 19.29	-18 01.5	18.7	-0.78	- 4.1	7.7/06.4	30764
1981 ED ₁₃	97 10 14.7	01 19.34	+18 58.2	19.2	-0.92	- 3.6	4.0/17.9	26917
1992 ER	97 10 14.8	01 19.79	+12 24.6	16.6	-1.10	- 2.4	1.6/15.9	30471
6224 P-L	97 10 14.8	01 19.81	+09 41.9	18.4	-0.81	- 6.5	0.4/15.3	30775
1979 MD ₂	97 10 14.8	01 19.89	+06 32.8	15.7	-0.89	- 8.1	0.9/14.3	30778
1992 UG ₄	97 10 14.9	01 20.02	+00 30.0	16.0	-0.84	- 2.5	2.8/12.7	30782
1979 MP ₄	97 10 14.9	01 20.23	+09 53.9	19.3	-0.84	- 6.6	0.5/15.4	30753
2326 T-3	97 10 14.9	01 20.24	+12 34.6	17.9	-0.91	- 5.6	1.6/16.2	30798
(7967)	97 10 15.0	01 20.59	+02 54.7	16.7	-0.98	- 7.0	2.5/13.4	30751
3005 P-L	97 10 15.2	01 21.28	+22 50.2	18.5	-0.81	- 5.0	4.2/20.0	22700

1994 XJ	97 10 15.3	01 21.58	-00 22.4	17.1	-1.01	- 3.5	3.4/12.9	29106
4070 P-L	97 10 15.3	01 21.64	+13 50.1	17.9	-0.92	- 5.1	1.9/16.9	30774
1993 UC ₈	97 10 15.3	01 21.68	+00 29.7	17.9	-0.77	- 6.2	3.7/12.7	30759
1988 GL	97 10 15.3	01 21.74	-10 56.1	17.7	-1.00	- 1.9	6.3/10.1	30469
1993 RK ₄	97 10 15.4	01 21.93	+11 36.6	18.0	-0.94	- 5.4	1.0/16.3	24914
4408 T-1	97 10 15.4	01 22.09	+01 58.7	14.9	-0.94	- 1.6	3.4/13.7	28892
3232 T-2	97 10 15.5	01 22.16	+00 31.9	18.1	-0.98	- 6.0	3.2/13.1	23988
1990 SL ₂₇	97 10 15.5	01 22.19	+04 30.2	15.6	-0.84	- 7.6	2.0/14.2	30654
1993 TD ₂₆	97 10 15.5	01 22.33	+04 47.0	18.4	-0.76	-12.6	1.5/14.1	27557
1993 VE	97 10 15.5	01 22.41	+00 23.9	15.4	-1.08	+ 0.9	3.3/13.7	28888
1993 VT	97 10 15.6	01 22.78	-08 16.5	15.7	-1.01	+ 1.3	7.4/11.7	27558
1973 SS	97 10 15.7	01 22.92	+04 33.0	18.8	-0.50	- 2.9	0.7/14.3	29606
1995 CT ₁	97 10 15.7	01 23.20	+49 26.1	17.5	-1.07	- 5.2	9.8/31.9	27731
1994 AB ₂	97 10 15.7	01 23.21	+09 22.7	16.3	-0.80	- 5.0	7.9/26.0	25228
1981 EQ ₃₃	97 10 15.8	01 23.39	+18 29.9	19.4	-1.00	- 5.8	3.8/18.8	23990
1996 JW ₂	97 10 15.9	01 23.88	+00 31.6	18.5	-0.86	- 7.5	2.9/13.3	30293
1989 GZ ₁	97 10 15.9	01 24.00	+11 52.9	18.0	-0.97	- 6.5	1.2/16.9	22969
1986 WC ₁	97 10 16.0	01 24.27	+06 15.3	17.4	-0.78	- 3.7	0.9/15.3	20500
1988 RU ₆	97 10 16.2	01 25.19	+08 43.7	17.4	-0.85	- 5.6	0.1/16.2	30780
1995 BM ₂	97 10 16.3	01 25.33	+32 15.2	19.3	-1.07	- 9.2	7.9/24.2	25431
1988 NR	97 10 16.4	01 25.66	+29 25.6	16.0	-0.87	- 8.7	7.8/24.1	29133
6540 P-L	97 10 16.6	01 26.38	+08 48.4	18.3	-0.52	- 2.0	0.0/16.6	29649
1992 EE	97 10 16.6	01 26.45	+14 56.8	17.6	-1.03	- 4.0	2.0/18.3	29660
1996 EK	97 10 16.9	01 27.53	-01 17.2	17.5	-0.98	- 7.1	3.7/13.8	28318
1995 CL ₁	97 10 17.0	01 28.11	-10 23.1	17.7	-0.82	- 5.5	5.9/10.7	24907
1993 OO ₃	97 10 17.1	01 28.09	+12 23.9	16.8	-0.87	- 5.0	1.6/18.1	25441
4082 P-L	97 10 17.1	01 28.27	+11 34.8	17.5	-0.97	- 5.4	0.8/17.8	30797
1995 CD	97 10 17.1	01 28.37	+08 04.7	16.4	-0.91	- 3.8	0.4/16.8	27937
1989 OC	97 10 17.2	01 28.53	+23 23.6	17.8	-1.10	- 5.8	5.2/21.6	30781
1996 HC ₂₄	97 10 17.2	01 28.56	-00 27.3	17.0	-1.00	- 2.1	4.3/14.7	30763
1991 SG	97 10 17.2	01 28.62	-01 49.6	17.1	-0.70	- 6.2	3.5/13.5	29615
1981 EC ₂₈	97 10 17.2	01 28.84	+10 46.2	20.0	-1.00	- 4.3	0.5/17.7	26920
1995 CE ₂	97 10 17.3	01 28.92	+54 40.9	16.9	-1.30	- 3.2	14.1/05.1	29138
1993 UW ₈	97 10 17.3	01 29.09	+00 50.8	17.9	-0.93	- 4.0	3.1/15.0	27558
1993 JG	97 10 17.3	01 29.15	-02 02.3	15.7	-1.13	- 0.3	5.2/14.7	29137
1993 OV ₅	97 10 17.5	01 30.01	+02 46.0	18.4	-0.98	- 5.9	2.5/15.6	27557
1993 QS	97 10 17.6	01 30.22	-08 20.5	15.9	-0.68	-11.0	8.1/11.0	30688
1992 TX	97 10 17.6	01 30.39	+09 52.1	15.7	-0.84	- 4.1	0.1/17.8	27455
1994 CF ₁₆	97 10 17.7	01 30.75	-03 08.1	18.1	-0.74	- 4.4	3.6/13.8	24112
1996 LJ ₁	97 10 18.2	01 32.25	+15 05.3	18.4	-0.79	- 9.2	1.7/20.1	30785
1992 DG ₁	97 10 18.2	01 32.41	+15 29.3	17.1	-1.02	- 4.2	2.0/19.9	24119
1993 OH ₆	97 10 18.2	01 32.64	-00 41.0	17.1	-0.92	- 5.7	4.6/15.2	24110
1981 EO ₁₁	97 10 18.2	01 32.65	+12 37.3	19.0	-0.98	- 5.7	1.0/19.2	22270
1981 ED ₅	97 10 18.3	01 32.63	+20 18.7	19.5	-0.97	- 7.0	3.7/21.7	26915
1995 AL	97 10 18.3	01 33.00	-02 48.0	17.2	-0.93	- 4.1	4.8/14.8	30783
1981 EP ₄	97 10 18.4	01 33.08	+11 18.7	18.8	-0.78	- 8.4	0.5/19.0	26915
1981 EV ₂₇	97 10 18.4	01 33.08	+06 03.2	17.9	-0.79	- 6.5	1.3/17.3	21101
1984 QB	97 10 18.4	01 33.14	+27 44.0	16.3	-1.03	- 4.5	6.7/24.1	28315
1981 EH ₁₃	97 10 18.4	01 33.25	+14 28.6	17.6	-0.94	- 7.0	2.1/19.9	24580
1988 NU	97 10 18.5	01 33.51	+13 20.3	17.1	-0.85	- 7.6	1.4/19.7	30780
(7137)	97 10 18.5	01 33.64	+14 13.2	16.4	-0.85	- 4.9	1.5/19.9	27705

1989 UA	97 10 18.5	01 33.76	+02 08.8	15.3	-1.04	- 0.3	3.1/16.7	25226
1992 EU ₁₁	97 10 18.6	01 34.14	+18 24.8	18.0	-1.05	- 4.2	3.1/21.1	28886
1991 RA ₁₅	97 10 18.7	01 34.53	+09 44.8	17.8	-0.77	- 4.4	0.0/18.8	30782
2096 P-L	97 10 19.0	01 35.55	+09 28.4	16.9	-0.88	- 7.2	0.2/18.9	24120
(7000)	97 10 19.1	01 36.05	-03 57.8	14.3	-1.00	+ 3.9	7.3/16.4	27291
1991 EN	97 10 19.2	01 36.12	+35 18.0	17.6	-0.59	- 2.8	4.4/28.1	26420
1990 SM ₆	97 10 19.4	01 36.73	+09 18.0	16.3	-1.06	- 3.5	0.3/19.2	24912
1981 JM ₂	97 10 19.5	01 37.10	+10 34.1	17.3	-0.95	- 6.3	0.2/19.6	28611
1994 WL ₁	97 10 19.5	01 37.16	+15 27.6	17.5	-1.02	- 6.4	2.0/21.1	30760
1980 RP	97 10 19.5	01 37.34	+33 36.4	16.7	-1.04	- 1.2	7.7/26.6	27118
(7070)	97 10 19.9	01 38.61	-04 24.7	15.1	-0.90	- 6.1	6.8/15.3	27440
1981 EA ₃₉	97 10 19.9	01 38.76	+12 48.5	19.9	-0.98	- 5.4	0.9/20.7	23778
1994 BW ₄	97 10 20.0	01 39.43	+25 24.0	16.8	-0.86	- 4.1	4.5/24.8	23243
2316 T-3	97 10 20.1	01 39.74	+13 58.1	18.0	-1.12	+ 2.4	2.0/21.0	30776
1994 BM ₄	97 10 20.2	01 39.82	+19 11.9	17.0	-0.86	- 6.3	3.1/23.0	23243
1981 WC	97 10 20.3	01 40.10	-02 23.1	15.2	-0.85	+ 1.9	5.9/17.3	30650
1996 HK ₁	97 10 20.4	01 40.80	+06 58.9	16.9	-1.11	- 1.0	1.6/19.6	30763
1102 T-1	97 10 20.7	01 41.63	+11 52.1	17.8	-0.94	- 8.3	0.5/21.1	30797
(6952)	97 10 20.7	01 42.01	+10 50.1	17.0	-0.81	- 6.9	7.7/10.0	27091
1993 VE ₂	97 10 20.7	01 42.03	+18 22.3	15.9	-0.78	-12.8	3.1/23.7	28087
1208 T-1	97 10 20.8	01 42.23	+12 17.5	17.2	-0.92	- 8.0	0.7/21.4	30797
1992 WB ₉	97 10 20.9	01 42.58	+12 38.5	17.4	-0.81	- 4.1	0.7/21.5	22407
1973 SN ₁	97 10 21.0	01 42.80	+05 14.2	19.3	-0.50	- 2.7	1.0/19.3	29607
1990 QW ₁₇	97 10 21.0	01 43.04	+21 24.1	14.9	-0.92	- 6.1	5.4/24.5	24563
1991 RO ₂₃	97 10 21.1	01 43.56	+20 53.2	15.3	-1.00	+ 0.4	3.5/23.7	30782
4094 T-3	97 10 21.1	01 43.57	+05 37.6	17.7	-0.96	- 3.1	2.0/19.8	24585
1997 RA ₉	97 10 21.3	01 43.89	+05 16.5	16.5	-0.88	- 8.7	2.4/19.6	30771
1993 OM ₃	97 10 21.3	01 43.97	-00 37.8	17.7	-0.99	- 5.5	4.3/18.1	28888
3152 T-3	97 10 21.3	01 44.14	+08 55.8	17.0	-0.84	- 3.8	0.6/20.8	30777
(7144)	97 10 21.3	01 44.30	+01 23.4	16.5	-0.88	- 6.8	3.9/18.5	27706
(7215)	97 10 21.6	01 45.12	+41 57.1	16.7	-1.01	- 1.8	8.7/31.6	28058
1996 HU	97 10 21.6	01 45.35	+05 07.8	16.7	-0.79	- 7.9	2.7/19.8	30762
4848 P-L	97 10 21.7	01 45.64	+08 15.8	18.2	-0.95	- 6.2	1.0/21.0	27457
(7112)	97 10 21.8	01 46.05	-14 44.3	17.9	-0.84	- 3.1	7.6/14.3	27699
1996 PM ₄	97 10 22.0	01 46.59	+10 46.9	17.4	-0.75	- 3.9	0.1/21.9	29666
(7963)	97 10 22.0	01 46.75	+26 08.3	17.0	-0.90	- 9.6	5.6/27.4	30750
4835 T-1	97 10 22.0	01 46.98	+12 58.2	14.1	-1.86	+12.4	1.1/22.2	27938
1995 BT ₃	97 10 22.1	01 47.27	+05 08.0	15.3	-0.86	- 6.7	2.7/20.4	30689
1972 TC	97 10 22.2	01 47.46	+25 46.6	15.5	-0.81	-10.5	6.1/27.5	22967
(7416)	97 10 22.3	01 47.93	+08 47.0	16.4	-0.94	- 7.6	0.9/21.6	28830
1981 EM ₂₂	97 10 22.5	01 48.43	+14 15.8	19.5	-1.03	- 4.9	1.3/23.3	26919
1993 RB ₁₆	97 10 22.5	01 48.65	+13 00.3	18.1	-1.01	- 4.1	0.7/23.0	30759
1989 CW ₂	97 10 22.6	01 48.93	+21 34.2	16.2	-0.80	- 6.2	3.2/26.0	27911
1981 EX ₃	97 10 22.6	01 48.93	+16 37.2	18.0	-0.83	- 7.3	1.8/24.3	22696
1994 YO	97 10 22.8	01 49.79	+02 39.4	17.0	-0.92	- 4.0	4.3/20.5	30292
1991 RE ₇	97 10 22.9	01 50.22	+22 50.9	16.2	-0.96	- 0.8	3.4/26.0	25214
1978 TD ₂	97 10 23.0	01 50.47	+12 39.1	16.7	-0.87	- 4.2	0.5/23.4	30778
2573 P-L	97 10 23.1	01 50.94	+12 04.6	17.2	-1.00	- 2.7	0.3/23.3	28312
1997 SJ ₂₃	97 10 23.1	01 50.96	+13 04.1	18.6	-0.99	- 4.4	0.6/23.6	30773
(7106)	97 10 23.2	01 51.42	-04 07.1	15.7	-0.77	- 6.1	6.0/18.4	27697
1996 FB ₅	97 10 23.2	01 51.49	-05 21.5	19.5	-0.91	-10.4	5.4/17.8	27560

1980 EB	97 10 23.3	01 51.58	+13 04.3	17.4	-0.97	- 4.6	0.6/23.8	30779
(7145)	97 10 23.5	01 52.54	+03 00.0	14.7	-0.78	- 9.5	3.5/20.7	27706
5159 T-2	97 10 23.5	01 52.56	+24 43.7	18.4	-0.56	- 2.3	2.4/27.7	29669
1990 WB ₂	97 10 23.5	01 52.60	-00 49.6	17.6	-0.97	- 4.8	4.4/20.1	29658
7581 P-L	97 10 23.6	01 52.83	+10 31.9	16.8	-1.10	- 2.0	0.5/23.4	28620
1995 FE	97 10 23.7	01 53.39	+33 37.0	16.8	-1.57	+ 4.5	8.8/27.4	25539
1981 EO ₃₃	97 10 23.9	01 54.14	+03 50.3	19.9	-0.77	- 8.1	2.3/21.4	26921
(7486)	97 10 24.0	01 54.20	+07 20.2	15.4	-0.99	- 2.2	2.2/22.9	29087
1995 OK ₈	97 10 24.0	01 54.33	+14 23.8	17.6	-0.51	- 3.5	0.5/24.9	30783
1992 UP ₆	97 10 24.1	01 54.80	+14 40.1	15.1	-0.73	-10.2	1.0/25.2	29661
1988 FS ₂	97 10 24.1	01 54.90	+13 26.2	17.5	-0.99	- 4.5	0.6/24.6	24912
1990 UN ₂	97 10 24.2	01 55.09	+06 56.5	16.9	-1.06	- 2.1	2.1/23.1	27307
1992 EA ₇	97 10 24.2	01 55.20	+11 41.2	16.8	-1.08	- 2.7	0.0/24.2	30782
1996 NX	97 10 24.2	01 55.24	+31 21.8	16.4	-0.97	- 6.9	6.5/30.6	27731
1986 TQ	97 10 24.3	01 55.72	+31 04.8	16.8	-1.02	- 0.7	6.1/29.5	21970
(7084)	97 10 24.4	01 55.98	+05 27.4	17.8	-0.85	- 6.3	1.9/22.6	27547
4613 T-2	97 10 24.4	01 56.07	-08 00.6	18.6	-0.47	- 4.9	3.5/17.7	29651
(7094)	97 10 24.5	01 56.38	+00 12.1	15.6	-0.75	- 7.8	4.6/20.8	27550
(7061)	97 10 24.6	01 56.57	-17 04.4	16.7	-0.76	- 4.0	9.7/15.8	27438
(7012)	97 10 24.9	01 57.63	-02 31.0	15.6	-0.90	- 5.3	6.7/20.7	27294
1993 QN ₇	97 10 24.9	01 57.73	+11 15.1	17.2	-0.98	- 4.2	0.3/24.7	29618
1989 WH ₃	97 10 25.0	01 58.04	+11 49.2	15.2	-0.88	- 3.8	0.1/25.0	25080
1994 XS ₄	97 10 25.0	01 58.24	-00 29.3	17.4	-0.97	- 3.9	4.6/21.7	28889
1981 EX ₂₀	97 10 25.0	01 58.31	+03 25.5	18.6	-0.80	- 5.9	2.7/22.5	26918
2020 P-L	97 10 25.0	01 58.33	+20 36.2	15.3	-0.94	- 1.7	4.1/27.3	22821
1981 EX ₁₄	97 10 25.1	01 58.42	+10 56.4	19.4	-0.80	- 7.0	0.4/24.8	30779
1993 OP ₁₂	97 10 25.1	01 58.44	+07 49.4	16.8	-0.93	- 5.8	2.0/23.9	28888
(7190)	97 10 25.1	01 58.49	+09 49.8	17.1	-1.06	- 6.5	0.9/24.5	27902
6541 P-L	97 10 25.1	01 58.60	+03 09.2	18.2	-0.49	- 3.2	1.7/22.4	29668
1988 MJ	97 10 25.1	01 58.67	+00 45.5	16.2	-0.89	- 5.4	4.3/22.0	30780
1992 LJ	97 10 25.2	01 58.80	+05 53.2	17.7	-0.92	- 5.4	2.1/23.5	28886
1991 JA ₁	97 10 25.3	01 59.42	+16 37.8	15.6	-0.89	-25.3	2.0/27.2	30781
6128 P-L	97 10 25.4	01 59.51	+12 32.0	18.4	-0.92	- 5.4	0.1/25.5	30775
1994 BE	97 10 25.4	01 59.86	+07 35.4	17.7	-0.77	- 5.9	1.4/24.1	27730
1996 HX ₁₂	97 10 25.5	01 59.95	+10 27.6	17.1	-0.89	- 7.6	0.6/25.0	27561
1981 EY ₇	97 10 25.5	02 00.17	+14 08.3	20.3	-0.96	- 7.2	0.7/26.0	26916
1993 SO ₁₄	97 10 25.6	02 00.24	+09 37.0	19.4	-0.96	- 6.0	0.9/24.9	30452
9530 P-L	97 10 25.6	02 00.56	+01 58.4	16.6	-0.88	- 9.7	4.2/22.3	28892
1985 QL ₄	97 10 25.7	02 00.74	+02 01.3	16.8	-0.75	- 3.7	2.9/22.8	29655
1981 EA ₅	97 10 25.7	02 00.80	+23 07.4	17.8	-0.85	- 7.5	4.2/29.2	20497
1994 PP ₁	97 10 25.7	02 01.05	-14 38.0	17.4	-1.58	+ 7.7	12.8/22.4	28888
2314 T-2	97 10 25.8	02 01.27	+07 22.9	17.8	-0.99	- 6.3	2.0/24.5	27322
1978 UG	97 10 25.9	02 01.62	+10 41.5	15.6	-0.96	- 2.4	0.8/25.5	29652
(7959)	97 10 26.0	02 01.79	+28 28.1	16.1	-1.00	-21.4	7.3/01.4	30749
1983 RG ₂	97 10 26.0	02 02.09	+03 17.8	16.0	-1.01	+ 0.2	4.7/24.1	30287
1992 WL	97 10 26.0	02 02.14	+07 57.9	16.1	-0.88	- 1.5	1.4/25.0	29943
4311 T-2	97 10 26.1	02 02.27	+06 24.0	18.6	-1.00	- 5.7	2.3/24.5	21126
1995 BU	97 10 26.3	02 03.19	-24 44.9	17.2	-0.91	- 3.9	13.4/13.7	29945
1981 EA ₁₃	97 10 26.3	02 03.37	+19 16.1	18.0	-0.96	- 8.0	2.8/28.5	26917
1974 FD	97 10 26.4	02 03.42	+22 41.7	16.9	-0.91	- 2.3	3.1/29.1	30777
1990 WV ₁	97 10 26.4	02 03.56	+03 03.6	17.9	-0.96	- 5.5	3.7/23.8	24739

1981 SN ₁	97 10 26.4	02 03.73	+08 15.9	15.6	-0.73	- 4.4	1.9/25.2	30468
1988 GD	97 10 26.7	02 04.69	+04 25.7	17.1	-0.96	- 4.2	2.9/24.6	30686
1990 VB ₆	97 10 26.7	02 04.75	-01 35.7	16.7	-0.93	- 5.5	6.0/22.7	24739
1990 SG ₃	97 10 26.8	02 05.07	+04 23.1	16.0	-0.97	- 5.0	3.8/24.6	30781
1997 SC ₂	97 10 26.8	02 05.32	+11 50.0	17.1	-0.90	- 6.8	0.4/26.6	30772
1993 VM ₂	97 10 26.9	02 05.35	+13 37.7	17.9	-0.97	- 4.5	0.3/27.2	30760
(7952)	97 10 26.9	02 05.40	+25 38.6	15.3	-0.76	- 8.0	5.1/31.3	30748
(7974)	97 10 27.0	02 05.62	+12 28.4	16.3	-1.00	- 5.3	0.1/26.9	30753
1981 ER ₂₆	97 10 27.1	02 06.06	+19 15.4	18.6	-1.10	- 2.7	2.5/28.7	26920
9602 P-L	97 10 27.1	02 06.25	+04 20.2	18.7	-0.50	- 3.0	1.6/24.6	22274
1996 PF ₁	97 10 27.1	02 06.26	+17 00.6	18.7	-0.82	- 3.3	1.2/28.3	30764
(7021)	97 10 27.2	02 06.62	-08 19.3	16.0	-0.98	- 0.3	8.1/22.4	29893
1993 TD	97 10 27.2	02 06.83	+24 50.0	16.6	-1.17	+ 2.0	5.7/29.8	30688
1990 UR ₄	97 10 27.3	02 06.82	+04 15.9	18.5	-1.03	- 3.4	3.3/25.2	22273
1981 EX ₂₇	97 10 27.3	02 06.92	+12 25.3	19.5	-0.98	- 5.2	0.1/27.2	30755
1978 SR ₄	97 10 27.3	02 06.94	+12 51.0	16.1	-0.98	- 6.2	0.0/27.3	30778
1993 OL ₅	97 10 27.3	02 07.19	+12 08.1	18.9	-1.05	- 5.4	0.3/27.2	27556
1996 LV ₃	97 10 27.4	02 07.19	+08 44.9	17.2	-0.99	- 3.6	1.7/26.4	28863
1986 QG ₁	97 10 27.4	02 07.23	+04 37.2	17.9	-0.99	- 4.6	3.3/25.2	22077
6615 P-L	97 10 27.4	02 07.27	+15 07.3	17.4	-1.11	- 3.6	0.9/28.0	29141
1994 WK ₁	97 10 27.4	02 07.37	+15 43.3	16.5	-1.05	- 5.8	1.3/28.2	27327
(7139)	97 10 27.4	02 07.38	+03 50.7	16.7	-0.75	- 6.2	2.7/24.7	27705
1997 SZ ₁	97 10 27.4	02 07.45	+11 41.5	16.7	-0.91	- 6.5	0.5/27.1	30772
(7897)	97 10 27.5	02 07.76	+08 42.1	18.2	-0.79	- 4.9	1.3/26.3	30644
1981 EZ ₁₀	97 10 27.5	02 07.91	+17 02.1	17.7	-0.87	- 5.2	1.4/28.7	27930
1990 VX ₃	97 10 27.5	02 07.96	+12 28.6	16.3	-1.06	- 4.1	0.2/27.5	29658
1989 UA ₆	97 10 27.5	02 07.99	+10 49.6	17.3	-0.65	- 2.9	0.5/27.0	29657
1985 HS ₁	97 10 27.6	02 08.18	-06 05.1	17.5	-0.89	-10.3	6.1/21.4	27726
1981 ED ₄₇	97 10 27.6	02 08.32	+16 21.3	19.2	-1.05	- 4.6	1.5/28.6	26923
1988 RV ₁₂	97 10 27.7	02 08.59	+02 55.3	17.7	-0.60	- 5.7	2.3/24.6	29656
1176 T-2	97 10 27.7	02 08.66	+17 02.4	18.4	-1.07	- 5.6	1.6/28.9	23987
1981 EH ₄₀	97 10 27.8	02 08.79	+15 57.0	20.8	-0.88	- 3.7	0.9/28.6	26922
1990 VF ₆	97 10 27.8	02 08.82	-04 06.0	17.9	-0.97	- 2.2	7.7/23.6	27308
(7958)	97 10 27.8	02 09.06	-02 29.0	15.1	-0.88	-24.9	7.2/21.6	30749
1995 DU ₃	97 10 27.9	02 09.15	+13 04.4	18.7	-0.99	- 5.0	0.0/27.9	30783
1981 EF ₃₀	97 10 27.9	02 09.37	+04 29.0	17.4	-0.94	- 6.8	3.4/25.5	29132
1986 CP ₁	97 10 28.0	02 09.67	+12 57.2	17.1	-0.93	- 3.5	0.0/28.0	25225
3078 T-1	97 10 28.0	02 09.78	+11 23.4	16.0	-0.83	- 8.7	0.9/27.5	30775
1988 BX ₃	97 10 28.3	02 10.91	+16 11.7	17.1	-0.97	- 7.4	1.1/29.2	28883
(6974)	97 10 28.4	02 11.15	-07 49.4	14.8	-0.77	- 8.9	8.3/21.4	27096
1985 CM ₁	97 10 28.4	02 11.20	+04 47.9	16.7	-0.99	- 5.4	3.1/26.2	27726
1991 GX ₁	97 10 28.5	02 11.42	+25 36.4	17.4	-0.56	- 2.8	2.3/01.2	29658
1981 EF ₁₃	97 10 28.7	02 12.19	+31 52.1	17.9	-1.07	- 1.4	7.1/02.4	21100
1995 FD	97 10 28.7	02 12.28	+15 57.3	18.8	-0.95	- 3.8	0.9/29.4	25433
1996 HD ₂₁	97 10 28.7	02 12.31	+10 02.0	17.6	-0.97	- 3.5	1.1/27.9	28088
1993 OX ₉	97 10 28.7	02 12.65	+19 12.7	16.4	-1.02	- 5.1	2.7/30.4	25082
1990 QC ₅	97 10 28.8	02 12.66	+15 49.2	16.8	-1.12	- 4.2	1.0/29.4	28614
1975 ST	97 10 28.8	02 12.79	+04 59.2	17.9	-0.85	- 7.7	2.8/26.4	27301
1975 VV ₂	97 10 28.8	02 12.90	+10 17.8	16.6	-1.01	+ 1.3	1.1/28.2	21963
1995 GV ₂	97 10 29.1	02 13.84	+05 32.8	17.5	-0.85	- 4.8	2.8/26.9	25341
(7057)	97 10 29.2	02 14.20	+04 37.0	15.0	-0.90	- 6.8	4.2/26.7	27437

1993 OY ₆	97 10 29.2	02 14.27	+02 39.6	18.3	-1.02	- 4.6	4.1/26.5	28888	(7171)	97 11 01.6	02 27.58	+19 14.6	17.4	-1.05	- 5.0	1.7/02.8	27898
(7181)	97 10 29.2	02 14.41	+31 39.8	16.0	-0.88	- 4.7	6.0/03.6	27900	(7543)	97 11 01.6	02 27.80	+07 29.2	17.1	-0.51	- 4.2	1.4/30.6	29587
1991 SR ₃	97 10 29.2	02 14.47	+25 16.3	16.5	-1.11	+ 2.2	3.9/31.6	25639	(7598)	97 11 01.7	02 27.95	+03 13.2	18.2	-0.77	- 4.2	3.1/29.6	29600
4313 T-3	97 10 29.4	02 15.02	+07 18.1	16.2	-0.99	- 4.7	3.0/27.8	27458	(7115)	97 11 01.8	02 28.55	+21 30.4	17.2	-0.85	- 3.6	2.2/03.7	27699
6020 P-L	97 10 29.4	02 15.16	+12 45.8	18.4	-0.50	- 2.7	0.1/29.2	26415	1996 NC	97 11 01.8	02 28.62	+09 56.7	18.1	-0.86	- 3.6	1.6/31.7	27721
1994 YV ₁	97 10 29.5	02 15.47	+04 39.7	16.7	-1.06	- 2.3	3.7/27.5	30689	1986 QS ₃	97 11 01.9	02 28.69	-02 12.5	17.5	-0.78	- 4.1	5.1/28.4	29655
1986 TZ ₁₁	97 10 29.5	02 15.49	+21 25.4	16.6	-0.83	- 4.8	2.7/31.8	27566	(7135)	97 11 02.0	02 29.20	+11 53.9	15.2	-0.78	- 9.5	1.3/01.2	27704
1992 HM	97 10 29.5	02 15.60	-00 03.3	17.3	-1.23	+ 2.4	4.8/27.2	25650	1992 YH ₂	97 11 02.1	02 29.43	+02 03.7	17.3	-0.82	- 1.6	4.0/30.1	30782
1996 KX ₂	97 10 29.5	02 15.67	-00 54.8	16.6	-0.80	- 8.0	5.6/25.1	27563	4216 T-2	97 11 02.1	02 29.62	+04 51.3	17.4	-0.63	- 4.1	2.4/30.4	29142
1992 CN ₃	97 10 29.6	02 15.72	+13 22.3	16.6	-1.03	- 6.9	0.1/29.5	30782	(7203)	97 11 02.2	02 30.07	+18 58.2	16.7	-1.02	- 4.5	1.5/03.3	27905
1995 JD	97 10 29.6	02 15.91	+13 20.9	19.5	-0.84	- 5.3	0.1/29.6	27718	(7091)	97 11 02.3	02 30.43	+24 10.2	16.7	-1.01	-11.9	3.0/05.3	27549
1996 GJ ₂	97 10 29.8	02 16.62	+09 55.8	18.3	-0.97	- 6.3	1.4/28.8	30784	1995 DZ ₈	97 11 02.4	02 30.63	+17 38.8	17.9	-1.04	- 3.6	1.2/03.1	30783
1981 EP ₇	97 10 29.8	02 16.66	+20 05.8	18.1	-0.98	- 8.0	2.6/31.7	26916	1997 QV ₃	97 11 02.5	02 31.13	+10 19.2	18.2	-0.92	- 6.5	1.6/01.3	30769
1978 RV ₇	97 10 29.8	02 16.88	+11 01.1	19.6	-0.84	- 5.1	0.8/29.2	21251	5187 T-2	97 11 02.5	02 31.17	+18 34.4	18.2	-0.53	- 3.4	0.7/03.6	30797
1981 UC ₂₆	97 10 29.9	02 16.88	+08 24.7	17.0	-0.78	- 4.8	1.8/28.4	29132	1981 EJ ₃₃	97 11 02.5	02 31.26	+23 45.5	20.2	-1.07	- 4.7	3.3/05.0	26921
1995 DA ₁	97 10 29.9	02 16.99	+00 08.0	18.7	-0.89	- 3.4	4.3/26.4	30783	1990 TB ₁	97 11 02.6	02 31.34	+24 33.7	16.8	-1.20	- 2.5	4.0/05.0	27325
1979 MX ₅	97 10 29.9	02 17.15	+10 22.7	17.6	-1.01	- 5.8	1.2/29.1	30778	1993 ST ₄	97 11 02.6	02 31.55	+14 22.2	17.2	-1.02	- 4.4	0.2/02.5	29662
2572 P-L	97 10 30.1	02 17.66	+16 10.0	17.8	-1.10	- 4.0	1.0/30.7	29668	(7039)	97 11 02.7	02 32.04	+08 04.2	16.6	-0.91	- 7.5	2.9/31.9	28818
1996 HB ₂	97 10 30.1	02 17.81	+16 09.4	16.8	-1.12	- 3.6	0.9/31.0	27318	1979 FD ₃	97 11 03.0	02 33.26	+09 55.5	17.2	-1.04	- 4.9	1.9/01.8	29653
1981 EB ₃₉	97 10 30.2	02 18.04	+05 48.9	20.1	-0.94	- 7.1	2.7/28.0	27118	1995 DC	97 11 03.0	02 33.34	+19 05.8	19.4	-0.96	- 3.3	1.2/04.1	27937
1981 ET ₇	97 10 30.5	02 19.38	+21 48.0	17.4	-1.03	- 5.4	3.4/01.6	23990	1981 DO ₁	97 11 03.1	02 33.57	+23 32.3	19.2	-1.05	- 5.7	2.9/05.3	26914
1997 SG ₁	97 10 30.6	02 19.73	-03 54.1	17.4	-0.82	- 6.7	6.0/25.2	30772	1995 DX	97 11 03.2	02 34.12	-03 04.5	19.5	-0.85	- 4.3	5.5/29.5	27717
1989 FH	97 10 30.6	02 19.74	+10 28.8	17.5	-1.05	- 4.5	1.3/29.8	27454	(6949)	97 11 03.3	02 34.12	-05 52.7	16.9	-0.94	- 4.8	7.4/28.9	27090
1994 YT	97 10 30.7	02 19.95	+17 43.5	17.0	-1.00	- 5.4	1.3/31.7	30783	1973 SD ₁	97 11 03.3	02 34.25	+20 43.4	16.8	-0.59	- 1.9	1.1/04.8	29652
1973 SE ₁	97 10 30.7	02 20.08	+15 27.5	17.8	-0.54	- 2.2	0.3/31.1	29607	1988 RN ₄	97 11 03.4	02 34.58	+31 08.3	17.5	-1.07	- 3.3	4.8/07.5	22079
6188 P-L	97 10 30.8	02 20.48	+14 38.0	17.5	-1.04	- 6.4	10.4/11.0	25652	1987 SF ₅	97 11 03.4	02 34.72	+22 07.4	16.2	-1.04	- 4.0	3.5/05.2	24560
1996 EK ₂	97 10 30.8	02 20.73	+11 36.7	16.9	-1.05	- 7.0	1.1/30.2	30668	1990 VD ₇	97 11 03.4	02 34.93	+20 22.8	16.1	-1.09	- 3.9	2.1/04.7	30781
1990 SZ ₇	97 10 30.8	02 20.77	+13 19.6	16.2	-1.14	- 2.1	0.3/30.7	19866	1992 EP	97 11 03.5	02 35.11	+10 18.6	17.1	-1.03	- 3.1	1.7/02.4	20034
4716 P-L	97 10 30.9	02 20.85	+17 34.2	18.3	-0.95	- 2.5	1.2/31.8	25076	1993 ON ₉	97 11 03.6	02 35.55	+20 48.4	15.9	-1.06	- 5.7	2.6/05.0	25651
1991 PT ₈	97 10 30.9	02 21.18	-02 49.1	17.3	-0.76	- 5.8	5.7/25.9	30781	1978 UV ₇	97 11 03.7	02 35.86	+12 25.7	16.7	-0.85	- 5.7	1.0/03.0	22947
1997 QP ₃	97 10 31.0	02 21.29	+10 54.6	18.0	-0.95	- 6.3	1.3/30.2	30679	1991 RQ ₁₄	97 11 03.8	02 36.17	+14 19.1	17.1	-0.84	- 3.2	0.3/03.6	27935
1992 DE ₁₁	97 10 31.2	02 22.26	+09 16.2	19.2	-0.99	- 5.2	1.8/30.0	27445	4171 T-3	97 11 03.8	02 36.34	+11 42.8	16.3	-1.13	- 1.8	1.6/03.1	28620
1995 CP ₃	97 10 31.2	02 22.30	+10 53.2	19.2	-0.92	- 5.4	1.2/30.4	30783	1993 RE	97 11 03.9	02 36.61	+17 19.9	15.8	-0.92	- 5.4	0.9/04.5	30471
(7174)	97 10 31.5	02 23.18	+27 04.8	17.5	-0.74	- 2.0	2.9/04.0	27898	1996 HA ₁₅	97 11 03.9	02 36.92	+13 44.6	15.4	-1.10	- 0.4	0.8/03.7	30459
(7939)	97 10 31.6	02 23.57	+17 20.9	15.7	-0.93	- 3.9	1.6/01.4	30745	1996 GD ₂₁	97 11 04.0	02 36.93	+11 13.8	18.7	-1.04	- 6.0	1.6/03.0	27561
1992 ES ₁	97 10 31.6	02 23.61	+14 53.6	17.4	-1.09	- 2.1	0.2/31.8	30687	1981 EX ₃₄	97 11 04.0	02 37.29	+04 50.6	18.9	-0.83	- 5.1	3.5/01.3	26921
1981 EP ₁₅	97 10 31.6	02 23.77	+23 39.2	17.3	-0.97	- 5.8	4.4/03.3	22270	1982 UD ₂	97 11 04.1	02 37.34	+15 16.7	15.6	-0.89	- 3.0	0.0/04.1	30780
1988 RV ₄	97 10 31.8	02 24.71	+17 15.2	16.4	-0.95	- 4.8	1.1/01.7	30780	1991 CW ₂	97 11 04.3	02 38.08	+22 51.3	15.6	-1.12	- 0.7	3.1/05.8	30448
1994 CV	97 10 31.9	02 24.91	+10 10.7	16.6	-0.83	- 6.4	1.9/30.8	30783	1990 HO ₃	97 11 04.4	02 38.70	+13 22.0	17.3	-0.84	- 2.9	0.8/04.0	30686
1979 ME ₈	97 11 01.0	02 25.31	+11 12.7	17.2	-0.99	- 7.2	1.4/31.2	20808	(7127)	97 11 04.5	02 38.99	+12 54.5	18.8	-0.75	- 5.0	0.7/03.8	27702
1981 EN ₃₉	97 11 01.1	02 25.54	+12 00.1	19.8	-0.85	- 5.1	0.8/31.5	26922	1988 RZ ₂	97 11 04.5	02 39.28	+19 30.6	18.0	-0.99	- 3.3	1.3/05.5	29941
1992 PX ₂	97 11 01.3	02 26.47	+30 30.3	17.3	-0.99	- 5.5	5.0/05.9	27729	1975 UA	97 11 04.6	02 39.55	+17 04.8	15.5	-0.96	-24.7	0.7/05.2	24099
1978 SQ ₇	97 11 01.3	02 26.47	+11 47.5	16.3	-0.88	- 7.4	1.2/31.6	27725	1991 RF ₂	97 11 04.8	02 40.27	+31 01.1	16.2	-0.93	- 2.7	4.9/08.7	30655
1991 EL ₄	97 11 01.3	02 26.54	+02 38.6	17.6	-0.83	- 7.0	3.8/29.0	27325	1996 TN ₄₉	97 11 04.8	02 40.34	+11 56.1	18.9	-0.52	- 3.8	0.7/03.8	30764
1978 RR	97 11 01.4	02 26.76	+21 52.9	17.4	-0.99	- 2.8	2.4/03.3	24758	1986 WO ₁	97 11 04.8	02 40.47	+18 08.2	16.3	-0.95	- 2.4	1.3/05.5	27454
1992 SA ₂₂	97 11 01.5	02 27.27	+15 47.4	17.1	-0.93	- 3.0	0.4/01.9	22816	1993 SH ₂	97 11 04.9	02 40.65	+20 44.9	15.7	-0.98	- 2.4	2.5/06.1	29137
1979 MM ₆	97 11 01.5	02 27.43	+16 06.0	19.2	-0.77	- 4.7	0.4/02.0	30778	1990 QE ₂	97 11 04.9	02 40.78	+24 06.4	17.4	-1.17	- 4.4	3.4/07.0	29298
(7132)	97 11 01.5	02 27.48	+23 27.1	17.6	-1.08	- 4.5	3.0/03.8	27703	1992 UG ₃	97 11 05.0	02 41.07	+11 39.7	16.5	-0.85	- 4.2	1.4/04.1	29661
(7131)	97 11 01.6	02 27.51	-04 16.5	15.2	-0.90	+ 1.4	6.8/28.8	27703	1975 SK ₁	97 11 05.0	02 41.24	+18 34.1	16.9	-1.06	- 3.9	1.1/05.8	28610
1987 SU ₁	97 11 01.6	02 27.51	+21 56.9	16.1	-0.97	- 9.0	3.5/03.8	28296	1992 PG ₂	97 11 05.1	02 41.25	+09 11.3	17.4	-0.89	- 6.7	2.3/03.4	29943
1995 HA	97 11 01.6	02 27.52	+13 08.1	19.2	-0.77	- 6.2	0.4/01.2	30783	(7587)	97 11 05.4	02 42.70	+09 35.3	17.9	-1.01	- 6.2	2.3/03.9	29598

1989 WA ₂	97 11 05.5	02 42.98	-00 42.4	15.2	-1.11	+	4.3	7.2/03.1	27325
1981 EA ₃₁	97 11 05.5	02 43.00	+19 20.3	20.2	-1.05	-	4.8	1.3/06.4	26920
1995 EB ₁	97 11 05.5	02 43.04	+09 16.9	15.6	-0.92	-	3.5	3.2/04.0	25341
(7089)	97 11 05.7	02 43.76	+07 11.7	17.3	-0.97	-	6.3	3.1/03.5	27549
(7040)	97 11 05.9	02 44.47	+08 19.7	17.6	-1.01	-	6.6	2.8/04.0	27301
1996 JV	97 11 05.9	02 44.83	-23 20.0	17.0	-1.03	+	0.6	13.8/28.8	28890
(7256)	97 11 06.0	02 44.86	+09 17.6	17.1	-0.97	-	3.3	2.8/04.5	28067
1983 RV ₃	97 11 06.0	02 44.98	+09 16.7	16.9	-0.88	-	5.3	2.4/04.4	29132
1983 WM	97 11 06.1	02 45.22	+21 17.4	16.0	-1.00	-	7.5	2.3/07.5	22968
1981 EX ₂₅	97 11 06.1	02 45.48	+10 57.3	18.3	-0.98	-	5.8	2.0/04.9	27454
4595 P-L	97 11 06.2	02 46.04	+12 03.8	17.3	-0.93	-	5.5	1.9/05.3	25076
1981 DM	97 11 06.3	02 46.01	+22 57.3	18.3	-1.03	-	6.6	2.5/08.1	22429
1991 FK ₁	97 11 06.3	02 46.13	+12 01.6	15.7	-0.95	-	18.0	1.7/05.0	27934
1990 TR ₁	97 11 06.3	02 46.35	+08 40.7	16.6	-0.99	-	6.9	3.1/04.5	29942
1996 GO ₁₈	97 11 06.3	02 46.41	+12 40.4	16.6	-0.99	-	7.2	1.5/05.5	29114
1991 DD	97 11 06.4	02 46.52	+16 44.5	16.6	-1.04	-	3.4	0.3/06.6	30781
1994 WY ₂	97 11 06.5	02 46.90	+23 23.0	16.1	-1.06	-	7.1	3.5/08.4	24575
1990 SK ₁₁	97 11 06.5	02 46.99	+19 41.2	15.4	-1.03	-	5.8	1.7/07.4	27454
1988 BT ₃	97 11 06.6	02 47.23	+05 38.8	16.7	-0.95	-	5.6	4.8/04.0	22079
1988 UO	97 11 06.7	02 47.56	+20 14.4	14.9	-1.07	-	0.1	1.6/07.5	30288
1981 EW ₄₀	97 11 06.7	02 47.62	+31 45.6	18.6	-1.25	-	1.4	6.8/10.1	26922
1994 AQ ₂	97 11 06.8	02 48.11	+11 20.7	16.7	-0.88	-	3.4	1.7/05.7	28888
1986 AW ₂	97 11 06.9	02 48.78	-10 31.1	17.4	-0.89	-	3.8	8.4/30.8	28084
1990 FM ₁	97 11 07.0	02 48.94	+03 36.6	16.8	-0.87	-	3.4	4.0/04.0	27728
1996 NS	97 11 07.1	02 49.17	+01 15.1	18.5	-0.79	-	3.3	4.5/03.5	30785
1989 WC ₂	97 11 07.1	02 49.62	+09 50.5	15.7	-1.06	+	0.8	2.8/06.0	25339
5493 T-2	97 11 07.2	02 49.57	+33 27.1	17.3	-0.63	-	2.1	3.3/11.8	30797
1979 ML ₇	97 11 07.2	02 49.63	+10 38.8	19.5	-1.05	-	4.3	2.2/05.9	30779
1988 BM ₃	97 11 07.3	02 50.20	+18 59.8	17.0	-1.07	-	4.8	1.0/08.0	24736
4637 P-L	97 11 07.4	02 50.46	+06 14.7	17.7	-0.93	-	5.9	5.0/04.9	23866
1981 EB ₁₀	97 11 07.5	02 50.75	+13 38.6	18.1	-1.00	-	6.3	1.0/06.8	30754
1984 SN ₄	97 11 07.5	02 50.84	+18 57.7	17.3	-0.98	-	4.0	1.1/08.1	18109
1992 LS	97 11 07.5	02 51.23	+13 54.4	17.1	-0.95	-	5.7	0.9/07.0	27455
1990 WQ ₆	97 11 07.6	02 51.15	+10 08.5	17.2	-0.97	-	5.9	2.8/06.1	27912
1993 XO	97 11 07.7	02 51.85	+26 26.5	15.0	-0.87	-	11.6	4.2/10.9	27558
1992 GA ₁	97 11 07.7	02 51.93	-00 11.6	18.6	-0.92	-	10.1	5.3/02.9	28317
(7030)	97 11 07.9	02 52.60	+22 36.0	17.2	-1.03	-	8.1	2.2/10.0	27298
1981 ED ₄	97 11 07.9	02 52.83	+23 41.8	21.8	-0.92	-	4.4	2.0/09.7	26915
1990 OW ₁	97 11 08.0	02 53.25	+17 14.8	17.0	-1.17	-	3.0	0.3/08.2	28614
1990 BE ₁	97 11 08.1	02 53.41	-10 11.4	14.5	-0.77	+	0.1	13.4/01.6	23237
1991 AV ₂	97 11 08.1	02 53.49	+19 20.1	16.9	-1.05	-	4.4	1.1/08.8	29135
1981 DJ ₂	97 11 08.2	02 53.99	+11 31.1	17.0	-0.81	-	10.5	1.9/06.8	30754
2407 T-3	97 11 08.6	02 55.25	+18 24.0	18.1	-0.89	-	3.5	0.6/09.0	25540
4581 P-L	97 11 08.6	02 55.49	+15 50.5	15.5	-1.07	-	2.3	0.4/08.5	30797
4139 P-L	97 11 08.6	02 55.56	+33 15.5	18.0	-0.64	-	1.0	3.0/12.7	24409
1993 TG ₃₁	97 11 08.7	02 55.67	+14 15.9	17.6	-1.02	-	3.2	0.9/08.2	30759
3006 T-3	97 11 08.7	02 55.73	+20 10.0	15.2	-1.19	+	0.2	1.7/09.3	30798
1991 SL ₂	97 11 08.7	02 55.95	+10 07.4	15.7	-0.89		0.0	2.3/07.5	28086
(7103)	97 11 09.0	02 57.01	+06 40.0	17.6	-0.78	-	5.2	3.0/06.5	27697
(7180)	97 11 09.0	02 57.03	+31 03.2	16.7	-0.94	-	4.1	4.7/12.6	27900
1990 EN ₁	97 11 09.1	02 57.31	+17 40.5	17.8	-0.85	-	5.5	0.2/09.3	25213

7636 P-L	97 11 09.1	02 57.44	+15 34.8	18.6	-1.13	-	2.8	0.5/08.9	27321
1981 DD ₃	97 11 09.1	02 57.65	+27 34.5	18.3	-0.96	-	4.8	4.0/11.8	27565
1992 DN ₆	97 11 09.2	02 57.59	+10 53.5	15.8	-1.05	-	4.1	2.6/07.9	27455
1969 TQ ₁	97 11 09.2	02 57.61	+14 59.9	16.3	-0.85	-	2.4	0.7/08.8	29652
1992 OE	97 11 09.3	02 58.15	+61 05.3	17.6	-1.75	-	1.0	15.0/24.1	22432
1992 YE ₃	97 11 09.3	02 58.33	+01 08.5	16.4	-0.80	-	1.9	4.5/05.8	23520
1996 HZ ₁	97 11 09.5	02 59.16	+06 28.0	17.9	-1.04	-	2.0	4.3/07.5	29114
1996 OJ	97 11 09.6	02 59.33	+13 50.5	19.1	-0.82	-	3.3	0.9/08.9	30785
1981 EW ₄₁	97 11 09.6	02 59.36	+14 19.2	18.3	-1.04	-	4.5	1.1/09.0	30685
1995 GJ ₇	97 11 09.6	02 59.51	+24 46.5	17.3	-1.02	-	1.9	2.4/11.3	27937
(7085)	97 11 09.7	03 00.05	+12 48.6	16.3	-0.87	-	3.3	1.4/08.8	27893
1993 SJ ₅	97 11 09.8	03 00.17	+27 51.5	15.9	-1.15	-	2.3	4.7/12.1	25068
1995 YU ₃	97 11 09.9	03 00.70	-08 01.7	20.3	-1.35	-	1.8	13.9/04.6	26907
1981 EA ₃₄	97 11 09.9	03 00.71	+12 41.1	17.9	-0.84	-	7.8	1.7/08.8	26921
(7214)	97 11 10.0	03 00.97	+08 10.4	19.0	-0.52	-	3.6	1.7/07.7	28058
1982 VY ₂	97 11 10.0	03 01.21	+12 28.2	16.9	-0.86	-	3.4	1.5/09.0	29654
1988 TR	97 11 10.1	03 01.55	+11 14.7	15.6	-0.91	-	3.5	2.3/08.9	30447
1995 DM ₂	97 11 10.3	03 02.11	+10 10.3	17.0	-0.98	-	1.3	2.3/09.0	27568
1995 JJ	97 11 10.3	03 02.35	+08 54.9	18.1	-0.84	-	3.1	2.7/08.5	27937
1996 JT ₃	97 11 10.3	03 02.50	+09 56.2	16.6	-0.94	-	5.7	3.3/08.7	27721
(6859)	97 11 10.4	03 02.46	-27 26.7	15.7	-1.08	-	5.0	21.0/26.7	26731
1979 MN ₃	97 11 10.4	03 02.60	+17 41.6	16.9	-1.06	-	5.5	0.2/10.5	23990
1992 DQ ₁₀	97 11 10.5	03 02.90	+21 53.9	16.6	-1.09	-	6.0	1.9/11.6	29660
1981 EB ₃₈	97 11 10.6	03 03.26	+23 24.4	19.5	-0.95	-	3.5	2.0/12.0	30780
1981 EE ₃₀	97 11 10.7	03 03.63	+20 01.2	18.8	-1.03	-	7.8	1.1/11.4	26920
4038 P-L	97 11 10.7	03 03.73	+20 04.8	16.8	-1.06	-	4.5	1.2/11.3	28620
(7927)	97 11 10.9	03 04.91	+14 48.3	16.3	-0.83	-	3.7	0.9/10.4	30743
1978 US ₅	97 11 11.2	03 05.95	+32 28.8	18.0	-1.22	-	0.1	5.1/14.2	27725
1996 FF	97 11 11.3	03 06.38	-00 41.3	16.3	-1.00	-	20.0	8.5/05.1	27316
(6954)	97 11 11.4	03 06.83	+16 21.1	16.5	-1.15	-	3.2	0.5/11.2	27092
4232 T-1	97 11 11.5	03 06.96	+25 01.1	17.5	-1.03	-	1.3	2.7/13.0	25085
1996 QL	97 11 11.5	03 07.08	+25 05.9	18.0	-1.00	-	3.9	2.5/13.2	28304
1976 DJ ₁	97 11 11.6	03 07.28	+10 15.1	18.2	-0.63	-	2.3	1.5/09.9	29131
1988 DD	97 11 11.6	03 07.28	-03 40.8	17.4	-1.02	-	3.6	8.1/06.7	28883
(7460)	97 11 11.6	03 07.58	+12 54.0	17.9	-1.02	-	3.5	1.8/10.7	29079
1993 BC ₅	97 11 11.6	03 07.62	+16 47.7	16.5	-0.82	-	3.4	0.3/11.5	28317
1990 RR ₅	97 11 11.7	03 08.16	+16 26.8	15.5	-1.00	-	5.3	0.6/11.5	30756
1992 BO	97 11 11.8	03 08.35	+21 48.5	16.6	-1.16	-	2.8	1.6/12.7	28316
1139 T-2	97 11 11.9	03 08.88	+10 23.5	18.8	-0.86	-	4.7	2.3/10.3	27939
1980 RU	97 11 12.0	03 08.98	+43 28.2	16.1	-1.31	-	0.4	10.6/17.7	27930
1993 TL ₁₃	97 11 12.0	03 09.16	+18 04.6	17.5	-1.14	-	0.8	0.2/12.1	27557
1978 SA ₈	97 11 12.1	03 09.59	+16 05.3	15.7	-0.94	-	5.7	0.8/11.8	30778
(6977)	97 11 12.1	03 09.64	+11 42.5	17.3	-1.08	-	3.9	2.4/10.9	27097
1981 GO	97 11 12.3	03 10.28	+12 13.5	16.9	-1.02	-	4.7	2.2/11.1	29653
1981 EG ₂₁	97 11 12.3	03 10.49	+09 17.9	17.3	-0.75	-	3.6	2.6/10.4	28084
1981 DT ₁	97 11 12.4	03 10.77	+20 29.0	19.5	-0.88	-	5.2	0.8/13.1	26914
1983 GU	97 11 12.4	03 10.83	-04 11.8	16.4	-0.96	-	0.8	7.7/08.4	27553
1995 EF ₁	97 11 12.4	03 10.85	+17 43.8	16.5	-1.09	-	2.8	0.0/12.5	29138
1994 RD ₁₁	97 11 12.4	03 10.98	-29 01.8	18.7	-1.05	-	3.7	21.0/28.9	24584
1988 XG ₂	97 11 12.5	03 11.26	+24 55.5	16.3	-0.90	-	6.5	2.9/14.3	27728
1981 EX ₁₇	97 11 12.5	03 11.38	+21 31.7	19.4	-1.09	-	3.7	1.3/13.4	26918

1988 SZ ₂	97 11 12.6	03 11.35	+13 51.8	18.7	-0.66	- 2.5	0.9/11.7	29656
1991 RX ₂₃	97 11 12.8	03 12.63	+30 27.7	17.2	-0.98	- 1.7	4.1/15.5	23790
1981 EX ₂₃	97 11 12.9	03 12.76	+19 22.3	18.8	-0.91	- 4.3	0.5/13.3	21967
1996 KQ ₁	97 11 12.9	03 12.90	+05 51.0	19.8	-0.98	- 5.6	4.2/10.3	27569
(7110)	97 11 13.1	03 13.68	+06 28.2	15.3	-0.82	- 5.8	4.7/10.3	27698
1987 WU ₂	97 11 13.2	03 14.23	+34 55.3	15.7	-1.00	- 5.4	7.1/17.7	29655
1993 UB ₃	97 11 13.4	03 14.84	+19 42.5	15.6	-0.99	- 7.4	0.7/13.9	27936
(7136)	97 11 13.6	03 15.57	+03 15.9	15.8	-1.08	+ 2.7	5.9/11.6	27704
1985 JK	97 11 13.6	03 15.62	+10 09.8	17.5	-1.04	- 2.8	2.9/12.1	30780
4592 P-L	97 11 13.6	03 15.83	+09 53.0	17.6	-0.90	- 3.9	2.9/11.9	25229
1981 ED ₁₄	97 11 13.7	03 15.89	+23 58.5	19.1	-1.09	- 3.9	2.1/14.9	27565
1981 DF ₃	97 11 13.8	03 16.62	+32 22.5	20.1	-0.97	- 3.7	3.9/17.1	26914
1992 UZ ₂	97 11 13.9	03 17.04	+16 32.1	16.4	-0.91	- 2.3	0.6/13.7	29661
1993 QZ	97 11 14.0	03 17.26	-17 44.1	16.0	-0.89	- 5.1	15.1/04.7	27446
1979 MK ₃	97 11 14.0	03 17.38	+08 33.1	17.0	-0.82	- 2.9	3.2/12.0	28083
1985 CS ₂	97 11 14.2	03 17.87	+24 17.9	16.9	-1.11	- 4.8	2.3/15.5	24759
1981 EO ₄₁	97 11 14.4	03 18.71	+30 39.2	17.8	-1.09	- 0.8	4.7/16.7	26922
1983 CQ ₂	97 11 14.4	03 18.86	+18 18.6	16.6	-0.85	- 3.2	0.0/14.4	29940
1981 EU ₁₃	97 11 14.5	03 19.14	+09 20.1	17.1	-0.95	- 9.1	4.1/12.2	30685
1983 WG	97 11 14.6	03 19.53	+09 28.1	15.5	-1.01	+ 1.2	3.6/13.2	29654
2120 T-2	97 11 14.6	03 19.87	+24 57.8	18.5	-1.21	- 2.0	3.0/15.9	27927
(7217)	97 11 14.6	03 19.92	+33 40.9	16.1	-0.95	- 3.1	4.6/18.1	28058
1982 SM ₆	97 11 14.9	03 21.09	+28 21.6	15.8	-1.16	- 1.0	4.5/16.7	29654
1992 LN	97 11 14.9	03 21.12	+10 47.0	16.8	-1.06	- 1.5	2.9/13.6	25227
(6932)	97 11 15.0	03 21.25	+12 46.3	16.8	-1.10	- 3.1	2.2/14.0	26897
1993 QU ₉	97 11 15.1	03 21.77	+05 55.8	19.2	-1.01	- 3.6	4.9/12.7	27447
1981 DY	97 11 15.1	03 21.83	+25 50.9	18.4	-0.94	- 4.3	2.2/16.8	26914
4040 P-L	97 11 15.1	03 21.89	+15 15.2	18.0	-0.92	- 5.8	1.1/14.4	27938
1993 KC	97 11 15.1	03 21.90	+15 35.1	19.6	-1.12	-11.6	1.0/14.4	22700
1981 EF ₂₀	97 11 15.1	03 22.00	+07 26.6	19.1	-0.87	- 4.4	3.6/12.8	26918
(7968)	97 11 15.2	03 22.23	+16 34.3	18.6	-0.82	- 3.2	0.6/14.8	30751
3138 T-1	97 11 15.3	03 22.81	+12 30.8	17.1	-1.01	- 5.4	2.8/14.1	24915
1976 UY	97 11 15.4	03 22.87	+20 23.5	14.4	-0.85	-11.0	0.8/15.9	23968
(7041)	97 11 15.4	03 23.07	+10 49.8	16.2	-0.98	- 7.8	3.6/13.6	27301
1992 YC ₁	97 11 15.4	03 23.09	+16 41.4	17.6	-0.83	- 2.6	0.5/15.1	27915
1989 GE	97 11 15.6	03 23.88	+18 41.7	16.7	-1.16	- 1.4	0.0/15.7	29657
1986 QN ₁	97 11 15.8	03 24.82	+39 12.1	16.9	-1.10	- 1.3	7.2/20.1	25079
1984 SU ₃	97 11 16.1	03 25.92	+20 54.0	15.8	-1.07	+ 0.4	1.0/16.5	30287
1995 CY ₁	97 11 16.1	03 26.03	+45 57.8	19.1	-1.38	- 8.2	10.1/23.0	25432
1981 EK ₁₆	97 11 16.2	03 26.10	+29 37.3	19.8	-1.17	- 3.1	4.2/18.3	26918
1979 MK ₇	97 11 16.2	03 26.17	+18 12.7	18.1	-0.84	- 3.9	0.2/16.1	27930
1995 DU ₁	97 11 16.4	03 27.17	-21 21.3	17.3	-1.14	+ 2.3	16.2/08.1	27568
1993 WQ	97 11 16.5	03 27.54	+20 04.0	15.1	-1.01	+ 0.6	0.6/16.7	30783
1992 UE ₃	97 11 16.5	03 27.73	+15 59.8	16.4	-0.92	- 2.3	1.0/16.0	29661
1993 TT ₂₆	97 11 16.6	03 27.87	+15 11.8	18.0	-1.05	- 4.1	1.4/15.9	27567
2503 P-L	97 11 16.6	03 27.96	+39 33.2	16.5	-1.33	+ 2.1	8.7/19.7	27724
1988 DD ₅	97 11 16.6	03 27.97	+29 50.1	18.1	-1.10	- 5.5	3.6/19.0	27566
1979 SJ	97 11 16.6	03 28.23	+27 36.0	17.3	-1.21	- 2.4	4.0/18.3	28314
1990 YM	97 11 16.7	03 28.28	-16 32.6	15.9	-1.19	+ 2.9	14.2/10.0	27567
4133 P-L	97 11 16.7	03 28.33	+29 14.2	19.0	-1.18	- 2.6	4.2/18.7	25435
1979 HW ₆	97 11 16.7	03 28.36	+19 13.3	17.5	-1.11	- 4.1	0.1/16.8	24758

1974 ST ₁	97 11 16.8	03 28.59	+23 07.2	17.7	-1.12	- 3.3	1.7/17.6	27323
1996 NU ₁	97 11 16.8	03 28.61	+34 49.3	15.7	-1.07	- 4.3	5.6/20.3	28890
1980 UM ₁	97 11 16.8	03 28.70	+24 20.3	16.5	-1.07	- 6.5	2.5/18.0	29132
1981 EL ₁₅	97 11 16.8	03 28.85	+21 19.0	19.8	-0.91	- 4.2	0.7/17.4	26918
2827 P-L	97 11 16.8	03 28.89	+22 41.3	18.3	-1.12	- 2.2	1.4/17.5	25442
4721 P-L	97 11 16.8	03 29.01	+21 36.7	18.1	-0.96	- 2.8	0.9/17.4	27732
1996 JD ₁	97 11 16.8	03 29.03	+12 53.0	18.0	-1.07	- 4.3	2.4/15.7	28088
1985 CR ₂	97 11 16.9	03 29.18	+19 42.3	16.2	-1.09	- 4.1	0.3/17.1	22599
1981 EW ₁₆	97 11 16.9	03 29.30	+18 37.4	20.5	-0.89	- 3.8	0.1/16.9	26918
1996 HR ₁₈	97 11 17.0	03 29.68	+18 09.0	17.5	-1.06	- 4.8	0.3/16.9	27938
1977 XP ₂	97 11 17.0	03 29.78	+14 57.8	17.7	-0.86	- 3.1	1.3/16.3	28313
1996 HD ₂₄	97 11 17.0	03 29.81	+14 07.0	17.3	-1.01	- 5.6	1.8/16.1	30763
1983 RP ₂	97 11 17.1	03 29.93	+10 21.9	15.8	-1.00	- 3.5	4.2/15.5	29654
1983 RY ₄	97 11 17.2	03 30.22	+26 04.4	14.6	-0.93	- 8.0	2.9/19.0	27726
1989 GC ₈	97 11 17.2	03 30.52	+13 50.1	19.4	-1.11	- 2.5	2.1/16.4	27555
(7120)	97 11 17.3	03 30.66	+20 52.7	16.9	-0.92	- 3.3	0.7/17.7	27700
(7150)	97 11 17.3	03 30.67	+19 52.9	17.4	-1.10	- 2.0	0.4/17.5	27893
1994 AY ₂	97 11 17.3	03 30.88	+27 46.0	16.3	-1.00	- 4.5	3.3/19.2	29618
1981 EG ₁₀	97 11 17.5	03 31.64	+23 48.0	18.3	-0.95	- 4.4	1.7/18.5	26916
1996 NG	97 11 17.5	03 31.72	+11 00.8	15.9	-0.85	- 1.6	2.7/16.1	29140
1995 BG ₂	97 11 17.5	03 31.78	+12 36.2	16.6	-1.06	- 3.2	2.7/16.4	29664
1990 SA ₂	97 11 17.5	03 31.84	+21 27.0	15.9	-1.10	- 3.3	1.1/18.0	29658
1981 EM ₃₀	97 11 17.7	03 32.37	+14 12.1	16.3	-0.91	- 2.7	2.2/16.8	23132
1993 UC ₁	97 11 17.8	03 32.89	+28 39.7	14.7	-1.06	- 9.9	3.9/20.3	29944
1995 KN	97 11 17.8	03 33.00	+15 54.4	17.0	-1.13	- 1.6	1.4/17.3	26175
1990 BH ₁	97 11 18.0	03 33.87	+16 42.0	16.5	-1.01	- 1.5	0.9/17.6	23349
1995 AA ₁	97 11 18.2	03 34.44	+08 57.6	16.7	-1.05	- 1.5	4.8/16.5	29622
1990 TO	97 11 18.3	03 34.79	+16 25.2	15.7	-1.15	+ 0.5	1.4/17.9	27567
1979 OQ ₅	97 11 18.3	03 34.92	+25 42.3	17.2	-0.87	- 3.3	1.9/19.6	21965
1977 XZ ₂	97 11 18.6	03 36.22	+21 10.0	17.1	-0.90	- 2.9	0.6/19.0	28314
1986 PM	97 11 18.6	03 36.22	+26 57.8	16.9	-1.16	- 4.8	2.8/20.1	25079
1981 ET ₁₅	97 11 18.6	03 36.42	+43 46.6	17.2	-1.26	- 0.4	9.0/23.1	22948
(7114)	97 11 18.7	03 36.56	+27 23.8	16.9	-0.90	- 3.4	2.8/20.3	27699
(7367)	97 11 18.9	03 37.66	+20 02.4	18.4	-0.83	- 2.6	0.2/19.1	28579
1995 EH	97 11 19.3	03 39.19	+27 36.1	16.6	-1.13	- 1.6	2.9/20.7	28318
1992 ST ₁	97 11 19.4	03 39.42	+30 36.7	16.9	-1.01	- 3.6	3.4/21.6	28086
1976 UP ₁₈	97 11 19.4	03 39.43	+08 39.3	17.6	-0.91	- 6.1	5.5/17.1	22598
1994 CM	97 11 19.5	03 39.90	+25 33.6	16.4	-1.03	0.0	2.2/20.4	28590
1981 EK ₂₁	97 11 19.5	03 39.93	+30 29.4	18.7	-1.03	- 2.4	3.5/21.5	26919
1994 CP ₁₀	97 11 19.5	03 39.98	+26 22.3	17.4	-0.91	- 2.3	2.1/20.8	29137
1990 RO ₂	97 11 19.6	03 40.53	+25 47.5	17.9	-1.19	- 4.4	2.5/20.8	28885
1984 SH	97 11 19.7	03 40.76	+15 19.7	16.7	-1.17	- 3.0	1.8/19.0	27119
1991 VA ₁	97 11 19.7	03 41.02	+21 30.8	17.0	-0.82	- 5.2	0.6/20.2	27935
1991 SC ₁	97 11 19.8	03 41.25	+23 57.2	17.1	-0.98	- 0.1	1.4/20.5	29615
1992 OG ₂	97 11 19.9	03 41.87	+10 33.8	16.2	-0.93	- 2.1	3.8/18.4	29660
1995 OX	97 11 20.0	03 42.11	+38 58.4	20.3	-0.93	- 4.2	4.4/24.2	28076
1991 PT ₁₁	97 11 20.0	03 42.14	+14 27.9	16.1	-0.83	- 3.6	2.0/19.1	20024
1996 FE	97 11 20.1	03 42.37	-05 56.8	17.1	-1.01	-21.0	12.5/11.2	30784
1990 QT ₉	97 11 20.3	03 43.19	+17 22.4	17.7	-1.15	- 3.3	1.0/19.9	28885
1994 BL ₄	97 11 20.3	03 43.62	+41 57.8	17.2	-1.18	- 1.9	9.8/24.4	23686
(7182)	97 11 20.4	03 43.66	+14 10.9	15.6	-0.80	- 8.1	2.0/19.1	27900

1957 JP	97 11 20.5	03 43.98	+21 16.1	15.9	-1.08	+ 0.6	0.5/20.7	29652
1966 BL	97 11 20.5	03 44.01	+29 53.1	16.0	-1.02	- 4.1	3.7/22.4	23682
1978 VD ₇	97 11 20.5	03 44.14	+18 19.1	17.8	-0.94	- 1.8	0.5/20.3	29652
(7111)	97 11 20.7	03 45.01	+13 26.1	16.1	-0.99	- 6.2	2.5/19.4	27698
1993 TH ₃₂	97 11 20.7	03 45.12	+15 32.8	17.7	-1.04	- 3.2	1.5/20.0	28616
1991 EA	97 11 20.9	03 45.76	+30 01.6	16.6	-1.15	- 2.1	4.0/22.6	25226
1980 RE ₁	97 11 20.9	03 46.10	+08 10.4	18.0	-0.95	- 4.6	4.3/18.8	27565
1996 HD ₁₃	97 11 21.1	03 46.47	+16 05.4	17.2	-1.09	- 4.1	1.6/20.4	29630
3175 T-2	97 11 21.1	03 46.63	+24 36.9	18.4	-1.22	- 1.6	1.9/21.8	27322
(7102)	97 11 21.1	03 46.91	+41 57.5	17.6	-1.04	- 4.5	5.8/26.1	27696
6580 P-L	97 11 21.2	03 46.88	+18 41.6	16.3	-1.16	- 2.0	0.5/21.0	24120
1995 AW ₂	97 11 21.2	03 47.17	+21 23.6	16.2	-1.11	- 5.8	0.6/21.5	24756
1991 PE ₅	97 11 21.3	03 47.43	+20 09.6	16.2	-0.91	- 3.3	0.1/21.4	30470
1981 EH ₁₂	97 11 21.3	03 47.77	+22 29.2	19.6	-1.07	- 4.6	0.9/21.9	26917
1993 TN ₂₉	97 11 21.5	03 48.16	+14 46.3	18.9	-1.07	- 2.5	2.1/20.7	27730
1990 VW ₆	97 11 21.5	03 48.27	+16 18.7	16.4	-1.15	- 1.5	1.6/21.0	24761
1990 QT ₂	97 11 21.5	03 48.31	+20 55.3	15.8	-1.07	- 2.7	0.5/21.7	30781
(7042)	97 11 21.5	03 48.39	+21 22.6	17.5	-1.11	- 4.1	0.5/21.8	27434
1995 BC ₁₆	97 11 21.5	03 48.50	+31 18.1	17.0	-1.18	- 4.4	4.5/23.7	27937
1991 RV ₃	97 11 21.6	03 48.69	+33 08.0	17.7	-0.97	- 2.2	3.9/24.0	28086
(7146)	97 11 21.7	03 49.01	+19 27.9	16.6	-0.87	- 5.9	0.2/21.6	27707
1996 HC ₂₆	97 11 21.7	03 49.14	+18 02.3	18.9	-1.10	- 2.3	0.7/21.4	30785
1996 NB ₄	97 11 21.7	03 49.16	+23 57.5	17.2	-1.09	- 3.5	1.5/22.4	28618
(7020)	97 11 21.7	03 49.32	+16 31.2	16.8	-1.05	- 3.7	1.4/21.2	27296
1992 UK ₁	97 11 21.7	03 49.41	+25 33.7	16.8	-0.96	- 5.4	1.9/22.9	27729
1995 HR	97 11 21.8	03 49.43	+10 05.0	17.6	-0.78	- 4.1	2.7/19.9	28889
(7957)	97 11 21.9	03 49.95	+32 20.0	17.0	-1.10	- 0.5	4.6/23.7	30749
1981 EO ₃₂	97 11 21.9	03 50.15	+23 36.2	19.7	-0.96	- 4.0	1.2/22.6	22271
1990 OH ₁	97 11 22.1	03 50.90	+19 47.8	17.5	-0.85	- 7.3	0.1/22.1	30781
1988 CQ ₇	97 11 22.1	03 50.97	+20 40.6	18.1	-1.12	- 2.8	0.2/22.2	23972
4194 T-2	97 11 22.1	03 51.02	+14 26.5	18.8	-0.90	- 2.7	1.8/21.2	30467
3509 P-L	97 11 22.1	03 51.12	+61 19.6	17.6	-2.59	+ 6.5	19.7/25.8	29668
1979 KD	97 11 22.5	03 52.45	+08 14.7	17.2	-0.93	- 2.8	3.9/20.5	29653
1990 OH ₂	97 11 22.5	03 52.80	+26 35.5	17.7	-0.87	- 2.2	1.7/23.7	29657
(7284)	97 11 22.6	03 53.26	+22 18.2	16.1	-0.77	- 0.8	0.6/23.0	28285
1993 QN ₄	97 11 22.7	03 53.63	+07 05.4	15.8	-0.93	- 2.0	6.6/20.6	29618
1994 AZ ₂	97 11 22.7	03 53.67	+34 12.0	16.3	-1.09	- 5.5	5.3/25.0	23686
1992 YG ₃	97 11 22.8	03 53.87	+17 50.5	16.0	-0.87	- 2.4	0.8/22.4	29943
6783 P-L	97 11 22.9	03 54.07	+26 01.2	18.4	-1.04	- 0.8	2.3/23.8	21600
1989 TC	97 11 23.2	03 55.32	+64 29.5	15.9	-2.81	+ 6.4	21.9/28.4	27103
1993 AN	97 11 23.2	03 55.40	+17 28.9	16.6	-0.88	- 2.0	1.0/22.8	22086
1985 PE	97 11 23.2	03 55.73	+01 40.5	16.3	-0.80	- 2.1	6.7/20.2	27932
1979 MH ₂	97 11 23.3	03 55.95	+16 47.0	18.3	-0.84	- 3.2	1.1/22.7	30753
1994 QL	97 11 23.3	03 56.16	+37 51.5	17.3	-2.22	+13.8	9.0/23.4	25084
1989 GQ ₄	97 11 23.4	03 56.32	+13 41.7	17.9	-1.09	- 4.5	2.7/22.3	23972
1979 MG ₄	97 11 23.4	03 56.42	+18 05.7	18.4	-0.83	- 2.5	0.6/23.1	28610
1986 QS ₁	97 11 23.5	03 57.06	+10 06.8	16.2	-1.05	- 1.5	4.8/22.1	27932
1981 EL ₃	97 11 23.6	03 57.04	+28 52.0	19.6	-0.99	- 4.4	2.7/25.2	26915
1991 PG ₁₆	97 11 23.6	03 57.05	+17 03.7	16.6	-0.90	- 1.7	1.3/23.1	20025
1982 QX ₁	97 11 23.6	03 57.08	+08 16.9	17.8	-1.05	- 1.8	4.7/21.9	30685
1993 OD ₅	97 11 23.6	03 57.46	+22 12.9	18.1	-1.17	- 3.2	0.7/24.0	27311

1981 EM ₂	97 11 23.9	03 58.34	+19 00.4	19.2	-1.08	- 6.8	0.6/23.6	26914
1996 PY ₄	97 11 23.9	03 58.41	-15 07.0	19.6	-0.98	- 2.2	11.0/17.3	28863
1994 YS ₁	97 11 24.0	03 58.82	+17 23.5	16.5	-1.20	+ 2.3	1.6/23.7	27568
6676 P-L	97 11 24.0	03 58.97	+22 16.5	18.1	-0.92	- 2.5	0.6/24.3	14962
1981 EG ₇	97 11 24.1	03 59.45	+29 19.5	19.1	-1.16	- 4.4	3.4/25.7	26916
1979 ME ₄	97 11 24.3	04 00.21	-04 11.1	16.8	-0.95	+ 3.5	11.1/22.1	30778
1981 EU ₃₃	97 11 24.3	04 00.34	+19 12.2	17.9	-1.06	- 6.1	0.6/24.1	22697
5058 T-2	97 11 24.4	04 00.63	+25 40.6	17.7	-0.96	- 4.3	1.6/25.4	23131
1992 FM ₁	97 11 24.4	04 00.92	+61 33.8	17.6	-2.08	+ 1.0	15.7/30.4	22700
1981 EK ₄₅	97 11 24.5	04 00.92	+32 08.7	18.3	-1.21	- 3.3	4.8/26.4	25527
(7076)	97 11 24.6	04 01.36	+17 34.2	16.8	-0.89	- 1.9	1.0/24.2	27545
1991 PA	97 11 24.7	04 01.76	+27 05.9	17.3	-1.00	- 3.4	2.2/25.8	30781
1981 EW ₃₈	97 11 24.7	04 01.80	+24 38.9	19.2	-0.97	- 3.6	1.3/25.4	22697
1995 BR ₄	97 11 24.7	04 01.82	+07 16.0	16.0	-1.06	- 2.8	6.0/22.6	28617
1981 EF ₄	97 11 24.8	04 02.09	+21 18.7	18.5	-1.07	- 5.2	8.7/05.0	26915
1989 CH	97 11 24.9	04 02.71	-03 47.4	16.7	-0.90	- 1.3	8.3/20.8	28613
1991 RP ₁₅	97 11 24.9	04 02.77	+21 19.7	15.8	-0.90	- 1.9	8.8/15.0	29659
1992 RO ₂	97 11 24.9	04 02.94	+00 35.7	19.0	-0.89	- 3.7	7.0/21.5	25331
6570 P-L	97 11 24.9	04 02.98	+16 10.9	16.4	-0.94	- 3.7	2.3/24.2	30682
1996 HD ₁	97 11 25.0	04 03.11	+17 06.1	17.6	-1.17	- 0.6	1.4/24.6	29666
1981 ET ₄₂	97 11 25.1	04 03.37	+23 44.2	18.2	-1.14	- 3.2	1.1/25.6	24911
(7023)	97 11 25.1	04 03.47	+12 04.4	16.5	-1.05	- 0.8	3.2/24.0	27296
3057 T-1	97 11 25.1	04 03.53	+19 55.2	17.7	-1.01	- 3.7	0.3/25.0	29142
1996 FK ₁₂	97 11 25.3	04 04.63	+48 15.7	17.8	-2.07	+ 6.0	12.3/27.2	27328
1993 HQ ₁	97 11 25.4	04 04.65	+52 12.8	18.2	-2.00	+ 3.6	14.3/28.3	23539
1989 NY	97 11 25.4	04 04.87	+02 11.3	16.3	-1.03	- 0.4	8.1/23.3	30469
1988 RJ ₁₃	97 11 25.4	04 04.88	+31 23.5	18.3	-1.21	+ 1.5	3.8/26.6	29134
1979 SP ₁₄	97 11 25.6	04 05.47	+17 49.0	16.5	-0.85	- 1.7	1.0/25.2	30287
1981 ET ₁₂	97 11 25.6	04 05.48	+16 00.8	20.6	-1.07	- 5.5	1.9/24.8	26917
4110 P-L	97 11 25.6	04 05.95	+16 55.8	18.1	-1.12	- 4.1	1.7/25.1	27457
(7052)	97 11 25.7	04 06.20	+24 23.2	15.2	-1.28	+ 5.1	1.5/26.0	27436
1996 RU ₂₅	97 11 25.9	04 07.12	+20 10.8	19.0	-0.83	- 2.3	0.2/25.9	29319
1993 VT ₂	97 11 25.9	04 07.26	-05 18.9	15.7	-1.30	+19.4	14.1/28.9	23342
1995 BQ ₁₅	97 11 26.0	04 07.27	+24 06.6	17.2	-1.09	- 2.1	1.1/26.5	28617
1991 AH ₁	97 11 26.1	04 07.71	+21 43.9	17.2	-1.10	- 3.4	0.3/26.2	29134
(7113)	97 11 26.1	04 07.83	+37 38.6	15.7	-1.04	- 4.4	5.6/29.2	27699
1995 AT ₂	97 11 26.2	04 08.01	+23 32.8	17.2	-1.20	- 1.6	1.2/26.5	24756
1995 BH ₂	97 11 26.2	04 08.25	+18 25.7	17.4	-1.13	- 2.5	1.0/25.9	25084
1981 ES ₁₈	97 11 26.3	04 08.86	+19 07.2	20.5	-1.09	- 3.4	0.7/26.1	26918
1982 UR ₆	97 11 26.4	04 09.04	+22 46.6	15.9	-1.13	- 1.0	0.8/26.7	30685
1995 GF	97 11 26.5	04 09.69	+20 26.7	15.7	-1.08	+ 0.4	0.2/26.5	25442
1981 EL ₃₈	97 11 26.5	04 09.76	+04 43.5	18.7	-0.88	- 6.0	6.4/23.4	26922
1992 OO ₁	97 11 26.7	04 10.38	-02 22.4	16.7	-0.95	- 0.6	8.6/23.6	29660
4294 T-2	97 11 26.8	04 10.70	+17 12.0	15.7	-1.09	- 1.2	1.9/26.3	25229
1981 EJ ₄₃	97 11 26.9	04 11.51	+24 55.5	18.2	-1.15	- 3.3	1.6/27.6	27909
1991 GH ₈	97 11 26.9	04 11.53	+34 07.6	18.7	-1.14	- 0.6	4.2/28.7	25081
1210 T-2	97 11 27.0	04 11.44	+27 04.3	16.9	-1.21	- 2.6	2.4/27.8	28620
1995 DO ₁	97 11 27.0	04 11.72	+25 12.0	18.1	-1.13	- 1.4	1.4/27.6	30292
1996 OS ₂	97 11 27.1	04 11.98	+23 11.3	18.4	-1.01	- 1.8	0.8/27.4	28303
1967 JP	97 11 27.1	04 12.20	+26 56.7	17.9	-0.89	- 2.3	1.6/28.0	30286
1995 DE	97 11 27.1	04 12.28	-04 16.0	16.3	-0.93	- 1.1	9.3/23.9	29138