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

on the date of each full moon, by:

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

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

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

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

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

Brian G. Marsden, Director

Gareth V. Williams, Associate Director

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Syuichi Nakano, Liaison in Japan

EDITORIAL NOTICE

Subscribers who have commented on the introduction of the *Minor Planet Circulars Supplement* have almost all been favorably disposed toward them, although a few made additional suggestions, mainly concerning what should remain in the *Minor Planet Circulars* themselves. Of these suggestions, the most easily and usefully implementable is that the information in square brackets at the end of each observatory summary in the *MPCs* should also include a count of the number of discoveries (i.e., the number of asterisked designations). Accordingly, this count of discoveries has been added in the present batch of *MPCs* as the third number in the square brackets (and it is followed by an asterisk for good measure).

Readers will also have noticed that the smaller type used in the blocks of residuals accompanying the orbital elements now allows us to give full four-digit years, and this Y2K compliance ("preparation for the millennium") has also been extended to the opposition dates given in the section on Opposition Data.

Use is being made of blank space at the end of the *MPS* batches for miscellaneous information, such as diagrams, tables and occasional explanations of the alphabetic note codes used with the observations.

CORRECTED OBSERVATIONS

The following observations correct those previously published.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Mag.	N Obs.
1985 RQ	1997 09 30.48076	23 20 52.88	-09 28 18.4	<i>MPS</i>	3 16.9 V	566	
1985 RQ	1997 09 30.49037	23 20 52.48	-09 28 15.4	<i>MPS</i>	3 17.0 V	566	
1985 RQ	1997 09 30.50028	23 20 52.07	-09 28 12.8	<i>MPS</i>	3 16.9 V	566	
1989 PU	1989 08 29.35990	22 06 18.39	-26 57 27.4	<i>MPC</i> 15176		1 675	
1997 TZ ₁₆	1997 10 12.14729	22 22 39.43	-03 13 23.3	<i>MPS</i>	67	658	
1997 TZ ₁₆	1997 10 12.14843	22 22 37.61	-03 13 20.9	<i>MPS</i>	67	658	
(587)	1957 08 25.03460	20 21 55.72	-28 37 15.4	<i>MPC</i>	1728 15.0	2 839	
(1383)	1991 03 18.22986	10 25 34.57	+09 48 50.2	<i>MPS</i>	77 16.5	675	
(1383)	1991 03 18.26285	10 25 33.26	+09 48 56.2	<i>MPS</i>	77	675	
(3792)	1995 04 23.24722	08 01 32.31	+46 37 55.6	<i>MPC</i> 25289	16.3 R	3 750	
(7194)	1997 09 30.49629	23 04 33.61	+00 56 34.6	<i>MPS</i>	82 15.7 V	566	
(7194)	1997 09 30.50633	23 04 33.38	+00 56 25.3	<i>MPS</i>	82 15.5 V	566	
(7194)	1997 09 30.51678	23 04 33.14	+00 56 15.5	<i>MPS</i>	82 15.6 V	566	

Note 1: time changed. 2: time corrected by -1 hour. 3: date changed by +1 day.

ERRATA

<i>MPC</i>	Line	
30798	-16	<i>For</i> carbon-phosphorus stars <i>read</i> chemically-peculiar stars
30798	- 5	<i>For</i> HALKA <i>read</i> HALCA
30798	- 4	<i>For</i> Kogoshima <i>read</i> Kagoshima

NEW OBSERVATORY CODES

The following listing is a continuation to that on *MPC* 30713. 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	$\rho \cos \phi'$	$\rho \sin \phi'$	
427	138.7283	0.82667	-0.56084	Stockport
676	242.4661	0.83552	+0.54762	San Clemente

DELETED OBSERVATIONS

The following observations are to be deleted.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	N Obs.
1932 WK	1932 11 24.14396	02 48 24.31	+24 41 34.8	<i>RI</i>	730	1 754
1935 DM	1935 03 07.00286	09 12 22.07	+12 52 50.5	<i>MPC</i> 15439		2 012
1940 QE	1940 09 02.92719	22 57 40.05	-01 02 26.5	<i>MPC</i>	3234	3 020
1940 QE	1940 09 02.95766	22 57 32.19	-01 00 20.2	<i>MPC</i>	45	3 020
1954 MN	1954 06 29.96931	17 47 19.02	-15 04 40.3	<i>MPC</i>	1323	4 020
1954 MN	1954 07 07.96130	17 41 01.47	-15 51 34.0	<i>MPC</i>	1323	4 020
1964 CF	1964 03 14.10763	10 06 31.84	+13 09 43.6	<i>MPC</i>	3167	5 760
1997 ST ₄	1997 10 04.84735	23 49 27.41	+01 21 14.2	<i>MPS</i>	28	589
1997 SE ₅	1997 10 04.80555	20 35 43.12	-11 17 13.2	<i>MPS</i>	29	091
1997 SE ₅	1997 10 04.82639	20 35 39.18	-11 17 27.5	<i>MPS</i>	29	091
(2002)	1979 02 23.55903	08 06 35.83	+10 32 15.1	<i>MPC</i>	9934	323
(2002)	1979 02 23.58333	08 06 35.55	+10 32 20.4	<i>MPC</i>	9934	323
(3970)	1994 03 12.86181	11 14 53.99	+13 23 03.6	<i>MPC</i> 26222		071
(4014)	1990 06 04.68514	18 01 25.83	-23 42 12.3	<i>MPC</i> 16516		413

Note 1: 1932 WK = (4682). 2: 1935 DM = (3453). 3: 1940 QE = (3453).
4: 1954 MN = (2375). 5: 1964 CF = (2411).

IDENTIFICATION CHANGES

Continuation to MPC 30714.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	Obs.
1949 QR ₂	* 1949 08 22.93246		22 09 49.95	-11 30 52.6	1949 QH		024
1980 RP ₈	* 1980 09 06.90587		00 15 36.11	+01 14 12.5	(2700)		095
1982 SJ ₁₃	* 1982 09 16.78126		21 40 10.22	-05 59 35.6	1982 RG ₂	16.5	095
1984 SQ ₈	* 1984 09 23.97576		23 51 55.23	-02 42 05.4	(2361)		071
1984 SQ ₈	1984 09 23.97965		23 51 55.00	-02 42 12.1	(2361)		071
1984 SQ ₈	1984 09 24.01716		23 51 53.11	-02 42 45.3	(2361)		071
1991 OD ₂	* 1991 07 18.11458		19 40 52.39	-18 54 30.5	1991 NN ₄		809
1991 OD ₂	1991 07 18.12292		19 40 51.95	-18 54 31.7	1991 NN ₄		809
1991 OD ₂	1991 07 18.13126		19 40 51.51	-18 54 32.8	1991 NN ₄		809
1994 EF ₉	* 1994 03 13.84722		11 23 58.54	+13 29 17.8	(3970)		071
1996 FS ₂₃	* 1996 03 27.29097		14 40 49.65	-15 20 00.3	1996 FZ ₂₂	18.5	809
1996 FS ₂₃	1996 03 27.30278		14 40 49.45	-15 19 57.9	1996 FZ ₂₂		809
1996 FS ₂₃	1996 03 27.31458		14 40 49.16	-15 19 55.0	1996 FZ ₂₂		809
1996 KP ₉	* 1996 05 22.97108		15 53 27.08	-23 01 55.2	1986 WO ₁	19.0 R	046
1996 KP ₉	1996 05 22.97289		15 53 26.96	-23 01 54.7	1986 WO ₁		046
1996 KP ₉	1996 05 22.97471		15 53 26.80	-23 01 56.1	1986 WO ₁		046
1997 TZ ₂₅	* 1997 10 09.59409		00 03 22.66	+01 24 58.6	1997 SQ ₃₂	19.6	327
1997 TZ ₂₅	1997 10 09.61912		00 03 21.48	+01 24 53.8	1997 SQ ₃₂		327
1997 TZ ₂₅	1997 10 09.64391		00 03 20.35	+01 24 47.8	1997 SQ ₃₂		327

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

046	Kleť. 0.57-m $f/5.2$ reflector + CCD. Observers J. Tichá, M. Tichý and Z. Moravec.
104	San Marcello Pistoise. 0.40-m $f/5$ reflector. Observers L. Tesi, G. Cattani and A. Boattini. Measurers L. Tesi, G. Forti and A. Boattini.
107	Cavezzo. 0.40-m $f/5.5$ reflector + CCD. Observers M. Nicolini and M. Facchini. Measured by M. Nicolini.
108	Montelupo. 0.30-m $f/5.7$ Schmidt-Cassegrain + CCD. Observers M. Tombelli and G. Forti.
113	Drebach. 0.18-m $f/9$ refractor + CCD. Observer G. Lehmann. Measured by J. Kandler and G. Lehmann.
118	Modra. 0.6-m $f/5.5$ reflector + CCD. Observers A. Galád, P. Kolény, L. Kornoš and A. Pravda.
138	Village-Neuf. 0.20-m $f/10$ reflector + CCD. Observers C. Demeautis and D. Matter.
249	SOHO. SOHO-LASCO coronagraphs C3 and C2. Observers D. A. Biesecker and C. St. Cyr. Reduction by G. V. Williams.
327	Xinglong. 0.60-m Schmidt + CCD. Observers X. Zhou, J. Zhu 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. 0.21-m $f/3.0$ reflector. Observer T. Seki.
381	Kiso. 1.05-m Kiso Schmidt + CCD. Observers S. Isobe, Y. Asakura, M. Saito and K. Sasahara. Measured by D. J. Asher.
385	Nihondaira Observatory Oohira Station. 0.31-m $f/4.7$ reflector + CCD. Observer T. Urata.
388	Mitaka. 0.50-m $f/12$ reflector + CCD. Observer H. Fukushima and I. Sato.
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.
482	St. Andrews. 0.25-m $f/10$ Schmidt-Cassegrain + CCD. Observer F. J. Clarke. Measured by F. Vincent.
504	Le Creusot. 0.40-m $f/5$ reflector + CCD. Observer J. C. Merlin.
557	Ondřejov. 0.65-m $f/3.6$ reflector + CCD. Observers P. Pravec and L. Šarounová.
596	Colleverde di Guidonia. 0.31-m $f/2.8$ Baker-Schmidt + CCD. Observer V. S. Casulli.
605	Marl. 0.2-m reflector + CCD. Observer E. Jung.
613	Heisingen. 0.35-m $f/5.7$ reflector + CCD. Observer H. Denzau.
616	Brno. 0.4-m $f/4.4$ reflector + CCD. Observers D. Hanžl and F. Hroch. Measured by F. Hroch.
627	Blauvac. 0.26-m $f/4.73$ reflector + CCD. Observer R. Roy.
628	Mülheim-Ruhr. 0.2-m Schmidt-Cassegrain + CCD. Observer A. Martin.
691	Kitt Peak. 0.91-m Spacewatch telescope. Observers T. Gehrels, J. Larsen, J. Montani and J. V. Scotti.
696	Mt. Hopkins. 1.2-m reflector + CCD. Observer C. W. Hergenrother.
704	LINEAR. 1.0-m $f/2.15$ reflector + CCD. Observers M. Blythe, F. Shelly and M. Bezpalko. Measured by J. Stuart, H. Viggh and J. Sharma.
709	Cloudcroft. 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.
834	Buenos Aires-AAAA. 0.25-m $f/6.8$ and $f/4$ reflectors. Observers R. Mackintosh and R. Caprio.
844	Los Molinos. 0.35-m reflector + CCD. Observers N. Sosa, O. Mendez and J. Scheck.
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.
871	Akou. 0.33-m $f/3.3$ reflector + CCD. Observer K. Kawanishi.
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.
954	Teide. 0.8-m $f/11.3$ reflector + CCD. Observer M. Kidger. Measured by R. Casas.
963	Werrington. 0.28-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer J. Mackey.
965	Portimão. 0.5-m reflector + CCD. Observers K. Dollery, J. Lang, N. Martin, I. Carberry, G. MacKenzie and J. Wrightson.
966	Church Stretton. 0.25-m Schmidt-Cassegrain + CCD. Observer S. P. Laurie.
967	Greens Norton. 0.22-m $f/4.3$ reflector + CCD. Observer R. J. Neville.

1997 NOV. 14

M.P.C. 30821

Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N Obs.						
C/1995 O1 (Hale-Bopp)							C/1995 O1	1997 10 30.43209	08 06 52.68	-49 43 06.2	10.5 N	758
C/1995 O1	1997 09 14.37195		07 59 46.42	-30 28 26.0		834	C/1995 O1	1997 10 31.80870	08 06 09.36	-50 15 31.7		897
C/1995 O1	1997 09 15.32963		08 00 22.42	-30 52 22.7		834	C/1995 O1	1997 10 31.81007	08 06 09.31	-50 15 35.2		897
C/1995 O1	1997 09 18.33383		08 02 09.87	-32 07 47.4		834	C/1995 O1	1997 11 01.80464	08 05 35.39	-50 38 49.9		897
C/1995 O1	1997 09 18.34965		08 02 10.29	-32 08 13.0		834	C/1995 O1	1997 11 01.80704	08 05 35.31	-50 38 51.9		897
C/1995 O1	1997 09 24.30416		08 05 16.48	-34 38 42.8		844	C/1995 O1	1997 11 03.54765	08 04 30.34	-51 19 07.9	12.5 N	422
C/1995 O1	1997 09 24.30513		08 05 16.51	-34 38 44.3		844	C/1995 O1	1997 11 03.55001	08 04 30.25	-51 19 11.1	12.4 N	422
C/1995 O1	1997 09 26.35446		08 06 11.90	-35 30 47.3		844	C/1995 O1	1997 11 03.55085	08 04 30.24	-51 19 12.2	12.4 N	422
C/1995 O1	1997 09 26.35514		08 06 11.92	-35 30 48.1		844	C/1995 O1	1997 11 04.40458	08 03 55.63	-51 38 49.2	10.0 N	758
C/1995 O1	1997 10 07.33859		08 09 42.52	-40 10 29.9		844	C/1995 O1	1997 11 04.42722	08 03 54.62	-51 39 20.1	10.1 N	758
C/1995 O1	1997 10 07.33916		08 09 42.51	-40 10 30.9		844	C/1995 O1	1997 11 04.45448	08 03 53.45	-51 39 57.5	9.9 N	758
C/1995 O1	1997 10 07.34163		08 09 42.54	-40 10 34.9		844	C/1995 O1	1997 11 05.41765	08 03 12.17	-52 01 51.8	10.6 N	758
C/1995 O1	1997 10 15.40003		08 10 29.72	-43 34 34.8	9.4 N	758	C/1995 O1	1997 11 05.42300	08 03 12.00	-52 02 00.5	10.6 N	758
C/1995 O1	1997 10 15.41635		08 10 29.61	-43 35 01.1	10.0 N	758	C/1995 O1	1997 11 06.39106	08 02 28.31	-52 23 49.1	10.3 N	758
C/1995 O1	1997 10 15.43700		08 10 29.81	-43 35 31.1	9.4 N	758	C/1995 O1	1997 11 06.41921	08 02 26.93	-52 24 26.7	10.5 N	758
C/1995 O1	1997 10 18.32277		08 10 20.80	-44 47 46.8		844	C/1995 O1	1997 11 06.43895	08 02 25.96	-52 24 51.8	10.4 N	758
C/1995 O1	1997 10 18.33115		08 10 20.74	-44 47 59.4		844	C/1995 O1	1997 11 06.73824	08 02 11.87	-52 31 36.5	13.7 N	422
C/1995 O1	1997 10 18.34395		08 10 20.64	-44 48 18.3		844	C/1995 O1	1997 11 06.73887	08 02 11.79	-52 31 37.4	13.5 N	422
C/1995 O1	1997 10 18.80199		08 10 18.08	-44 59 44.6		897	C/1995 O1	1997 11 06.73952	08 02 11.82	-52 31 38.3	13.6 N	422
C/1995 O1	1997 10 18.80523		08 10 17.93	-44 59 49.4		897	C/1995 O1	1997 11 08.41465	08 00 48.97	-53 08 52.0	9.8 N	758
C/1995 O1	1997 10 18.80983		08 10 18.01	-44 59 57.7		897	C/1995 O1	1997 11 08.43073	08 00 48.16	-53 09 13.1	10.2 N	758
C/1995 O1	1997 10 18.81381		08 10 17.92	-45 00 03.2		897	C/1995 O1	1997 11 08.44749	08 00 47.23	-53 09 34.5	10.6 N	758
C/1995 O1	1997 10 19.66019		08 10 11.92	-45 21 04.3	12.6 N	422	C/1995 O1	1997 11 08.68745	08 00 34.66	-53 14 52.0	12.4 N	422
C/1995 O1	1997 10 19.66099		08 10 11.90	-45 21 05.3	12.6 N	422	C/1995 O1	1997 11 08.68854	08 00 34.61	-53 14 53.4	12.5 N	422
C/1995 O1	1997 10 19.66180		08 10 11.89	-45 21 06.4	12.6 N	422	C/1995 O1	1997 11 08.68963	08 00 34.54	-53 14 55.0	12.5 N	422
C/1995 O1	1997 10 20.39258		08 10 05.68	-45 39 17.6	10.0 N	758	C/1995 O1	1997 11 10.39196	07 59 01.78	-53 52 01.2	9.8 N	758
C/1995 O1	1997 10 20.41068		08 10 05.52	-45 39 44.1	10.0 N	758	C/1995 O1	1997 11 10.41553	07 59 00.25	-53 52 31.9	10.3 N	758
C/1995 O1	1997 10 20.42955		08 10 05.35	-45 40 12.1	10.0 N	758	C/1995 O1	1997 11 10.43830	07 58 58.96	-53 53 01.8	10.3 N	758
C/1995 O1	1997 10 21.38411		08 09 55.75	-46 03 48.9	9.7 N	758	C/1996 J1 (Evans-Drinkwater)					
C/1995 O1	1997 10 21.41604		08 09 55.30	-46 04 36.1	10.1 N	758	C/1996 J1-B	1997 09 26.01252	03 05 29.52	+41 27 52.5	15.7 T	613
C/1995 O1	1997 10 21.43601		08 09 55.01	-46 05 05.4	9.7 N	758	C/1996 J1-B	1997 09 26.02670	03 05 28.94	+41 27 52.8	15.7 T	613
C/1995 O1	1997 10 22.40546		08 09 43.27	-46 28 59.9	10.8 N	758	C/1996 J1-B	1997 09 26.04050	03 05 28.38	+41 27 53.3	15.6 T	613
C/1995 O1	1997 10 22.42064		08 09 43.07	-46 29 22.0	10.7 N	758	C/1996 J1-A	1997 10 13.95784	02 51 15.57	+41 10 41.6		118
C/1995 O1	1997 10 22.43293		08 09 42.87	-46 29 41.1	10.6 N	758	C/1996 J1-B	1997 10 13.95784	02 51 31.70	+41 10 56.7		118
C/1995 O1	1997 10 23.39093		08 09 29.34	-46 53 14.9	11.5 N	758	C/1996 J1-A	1997 10 13.96109	02 51 15.40	+41 10 41.1		118
C/1995 O1	1997 10 23.41152		08 09 29.14	-46 53 43.8	11.2 N	758	C/1996 J1-A	1997 10 13.96400	02 51 15.21	+41 10 40.4	17.8 T	118
C/1995 O1	1997 10 23.43807		08 09 28.62	-46 54 24.0	9.6 N	758	C/1996 J1-B	1997 10 13.96400	02 51 31.35	+41 10 55.8		118
C/1995 O1	1997 10 23.58646		08 09 26.37	-46 57 59.8	11.8 N	422	C/1996 J1-B	1997 10 13.97023	02 51 30.99	+41 10 55.0	15.4 T	118
C/1995 O1	1997 10 23.58726		08 09 26.30	-46 58 01.3	11.8 N	422	C/1996 J1-B	1997 10 16.96987	02 48 47.41	+41 02 25.4		118
C/1995 O1	1997 10 23.58805		08 09 26.37	-46 58 02.2	11.8 N	422	C/1996 J1-B	1997 10 16.98000	02 48 46.83	+41 02 23.7		118
C/1995 O1	1997 10 26.81012		08 08 26.30	-48 16 28.1		897	C/1996 J1-B	1997 10 16.98404	02 48 46.62	+41 02 23.0	15.5 T	118
C/1995 O1	1997 10 26.81273		08 08 26.22	-48 16 33.1		897	C/1996 J1-B	1997 10 17.86752	02 47 57.85	+40 59 34.3		118
C/1995 O1	1997 10 26.81500		08 08 26.13	-48 16 34.8		897	C/1996 J1-B	1997 10 17.87616	02 47 57.36	+40 59 32.5	15.4 T	118
C/1995 O1	1997 10 27.80838		08 08 03.29	-48 40 32.1		897	C/1996 J1-B	1997 10 18.91539	02 46 59.63	+40 56 01.2	15.0 T	108
C/1995 O1	1997 10 27.81179		08 08 03.18	-48 40 36.0		897	C/1996 J1-B	1997 10 18.92457	02 46 58.77	+40 55 59.7		108
C/1995 O1	1997 10 27.81525		08 08 03.11	-48 40 40.7		897	C/1996 J1-B	1997 10 18.93056	02 46 58.70	+40 55 58.9		108
C/1995 O1	1997 10 28.42028		08 07 48.15	-48 55 11.1	9.8 N	758	C/1996 J1-B	1997 10 18.98302	02 46 55.63	+40 55 49.8		118
C/1995 O1	1997 10 28.43508		08 07 47.74	-48 55 32.2	9.8 N	758	C/1996 J1-B	1997 10 18.99710	02 46 54.84	+40 55 46.7	15.5 T	118
C/1995 O1	1997 10 28.45101		08 07 47.34	-48 55 56.0	9.7 N	758	C/1996 J1-B	1997 10 19.86480	02 46 06.41	+40 52 42.3	15.9 T	596
C/1995 O1	1997 10 30.41876		08 06 53.05	-49 42 46.0	10.3 N	758	C/1996 J1-B	1997 10 19.87215	02 46 05.96	+40 52 40.6		596
C/1995 O1	1997 10 30.42847		08 06 52.81	-49 42 58.9	10.3 N	758	C/1996 J1-B	1997 10 19.88204	02 46 05.34	+40 52 39.1		596
							C/1996 J1-B	1997 10 19.88890	02 46 05.02	+40 52 37.6		596

C/1996 J1-B	1997 10 20.02550	02 45 57.21	+40 52 07.5		118
C/1996 J1-B	1997 10 20.03211	02 45 56.82	+40 52 06.1		118
C/1996 J1-B	1997 10 20.04409	02 45 56.15	+40 52 03.3	15.5 T	118
C/1996 J1-B	1997 10 23.05377	02 43 06.22	+40 40 19.1	15.5 T	613
C/1996 J1-B	1997 10 25.58467	02 40 42.79	+40 29 14.7	15.4 T	355
C/1996 J1-B	1997 10 25.58811	02 40 42.56	+40 29 13.4		355
C/1996 J1-B	1997 10 25.59336	02 40 42.24	+40 29 11.9		355
C/1996 J1-B	1997 10 31.03862	02 35 34.70	+40 01 53.6	15.8 T	613
C/1996 J1-B	1997 10 31.08722	02 35 32.03	+40 01 34.7	15.7 T	613
C/1996 J1-B	1997 11 01.83547	02 33 55.19	+39 51 53.4	15.6 T	504
C/1996 J1-B	1997 11 01.83824	02 33 55.04	+39 51 52.5		504
C/1996 J1-B	1997 11 01.84338	02 33 54.75	+39 51 50.6		504
C/1996 J1-B	1997 11 01.84405	02 33 54.73	+39 51 50.4		504
C/1996 J1-B	1997 11 08.11358	02 28 17.40	+39 13 42.8	15.4 T	758
C/1996 J1-B	1997 11 08.13437	02 28 16.41	+39 13 34.6	15.3 T	758
C/1996 J1-B	1997 11 09.03101	02 27 30.07	+39 07 44.3	16.6 T	758
C/1996 J1-B	1997 11 09.04565	02 27 29.37	+39 07 38.6	15.2 T	758
C/1996 J1-B	1997 11 10.01476	02 26 39.85	+39 01 15.1	15.0 T	758
C/1996 J1-B	1997 11 10.05946	02 26 37.57	+39 00 57.9	15.3 T	758
C/1996 P2 (Russell-Watson)					
C/1996 P2	1997 11 02.65747	03 31 36.82	-10 34 31.0	18.0 T	360
C/1996 P2	1997 11 02.66198	03 31 36.74	-10 34 31.5		360
C/1996 P2	1997 11 03.69065	03 31 05.57	-10 35 53.6	17.4 T	867
C/1996 P2	1997 11 03.69794	03 31 05.38	-10 35 54.5		867
C/1996 P2	1997 11 03.70454	03 31 05.14	-10 35 55.2		867
C/1997 A1 (NEAT)					
C/1997 A1	1997 11 09.72465	04 08 33.30	+65 54 24.9	18.0 T	360
C/1997 A1	1997 11 09.72917	04 08 31.69	+65 54 25.6		360
C/1997 BA₆ (Spacewatch)					
C/1997 BA ₆	1997 11 03.81753	09 48 56.52	+00 24 49.4	18.4 T	360
C/1997 BA ₆	1997 11 03.82292	09 48 56.54	+00 24 47.7		360
C/1997 BA ₆	1997 11 03.82778	09 48 56.62	+00 24 46.2		360
C/1997 BA ₆	1997 11 06.75214	09 49 17.77	+00 09 22.7	18.2 T	402
C/1997 BA ₆	1997 11 06.75631	09 49 17.86	+00 09 20.8		402
C/1997 BA ₆	1997 11 06.76047	09 49 17.87	+00 09 20.6		402
C/1997 BA ₆	1997 11 08.80454	09 49 30.27	-00 01 23.0	18.3 T	867
C/1997 BA ₆	1997 11 08.81287	09 49 30.31	-00 01 25.5		867
C/1997 BA ₆	1997 11 08.81947	09 49 30.36	-00 01 27.7		867
C/1997 D1 (Mueller)					
C/1997 D1	1997 10 17.70994	08 02 36.17	+15 25 54.9		355
C/1997 D1	1997 10 17.71110	08 02 36.03	+15 25 53.5		355
C/1997 D1	1997 10 17.71558	08 02 35.71	+15 25 50.7	13.2 T	355
C/1997 D1	1997 10 18.82352	08 01 01.70	+15 08 15.4		897
C/1997 D1	1997 10 18.82517	08 01 01.60	+15 08 13.6		897
C/1997 D1	1997 10 18.82919	08 01 01.20	+15 08 10.0		897
C/1997 D1	1997 10 25.77446	07 49 30.63	+13 09 13.0		900
C/1997 D1	1997 10 25.78359	07 49 29.56	+13 09 03.0	13.2 T	900
C/1997 D1	1997 10 26.76153	07 47 36.90	+12 50 59.1		897
C/1997 D1	1997 10 26.77178	07 47 35.64	+12 50 47.2		897
C/1997 D1	1997 11 02.71979	07 32 09.21	+10 31 21.3	13.1 T	360
C/1997 D1	1997 11 02.72257	07 32 08.80	+10 31 17.7		360

C/1997 D1	1997 11 05.07660	07 26 01.01	+09 39 20.3		046
C/1997 D1	1997 11 05.07861	07 26 00.68	+09 39 17.6		046
C/1997 D1	1997 11 05.08066	07 26 00.34	+09 39 14.8		046
C/1997 D1	1997 11 05.73463	07 24 13.11	+09 24 22.9	13.2 T	402
C/1997 D1	1997 11 05.73671	07 24 12.70	+09 24 19.7		402
C/1997 D1	1997 11 05.74110	07 24 12.00	+09 24 13.8		402
C/1997 D1	1997 11 07.84514	07 18 10.99	+08 34 59.1		867
C/1997 D1	1997 11 07.84653	07 18 10.73	+08 34 57.0		867
C/1997 D1	1997 11 09.76493	07 12 20.90	+07 48 13.5	12.9 T	360
C/1997 D1	1997 11 09.76771	07 12 20.37	+07 48 09.4		360
C/1997 D1	1997 11 11.16642	07 07 52.19	+07 12 59.8	14.5 T	046
C/1997 D1	1997 11 11.16795	07 07 51.88	+07 12 57.6		046
C/1997 J1 (Mueller)					
C/1997 J1	1997 10 25.80386	09 17 52.34	+36 16 45.4		900
C/1997 J1	1997 10 25.81647	09 17 51.70	+36 16 45.2		900
C/1997 J1	1997 10 26.79218	09 17 03.24	+36 16 07.4	14.4 T	897
C/1997 J1	1997 10 26.80101	09 17 02.88	+36 16 06.7		897
C/1997 J1	1997 11 02.73403	09 10 22.71	+36 13 58.1	14.5 T	360
C/1997 J1	1997 11 02.73733	09 10 22.48	+36 13 58.0		360
C/1997 J1	1997 11 05.11443	09 07 41.22	+36 14 03.0	15.0 T	046
C/1997 J1	1997 11 05.11589	09 07 41.13	+36 14 03.0		046
C/1997 J1	1997 11 05.11736	09 07 41.01	+36 14 03.4		046
C/1997 J1	1997 11 08.74329	09 03 09.99	+36 14 48.1	14.8 T	871
C/1997 J1	1997 11 08.74731	09 03 09.77	+36 14 48.3		871
C/1997 J1	1997 11 09.81128	09 01 44.20	+36 15 07.9	14.3 T	360
C/1997 J1	1997 11 09.81389	09 01 43.98	+36 15 08.1		360
C/1997 J2 (Meunier-Dupouy)					
C/1997 J2	1997 09 10.82080	13 57 44.57	+63 35 20.9	13.0 T	605
C/1997 J2	1997 09 10.83251	13 57 46.73	+63 35 17.1	13.1 T	605
C/1997 J2	1997 09 25.78062	14 42 36.49	+61 33 06.7	13.0 T	605
C/1997 J2	1997 09 25.78841	14 42 37.84	+61 33 03.3	13.0 T	605
C/1997 J2	1997 09 25.79881	14 42 39.84	+61 32 57.3	13.0 T	605
C/1997 J2	1997 10 13.91296	15 39 13.00	+58 31 12.0		118
C/1997 J2	1997 10 13.92226	15 39 14.73	+58 31 05.6	12.2 T	118
C/1997 J2	1997 10 15.00219	15 42 38.48	+58 19 02.5	13.4 N	758
C/1997 J2	1997 10 15.01209	15 42 40.54	+58 18 55.7	13.2 N	758
C/1997 J2	1997 10 17.47679	15 50 25.69	+57 50 48.7	12.4 T	367
C/1997 J2	1997 10 17.47853	15 50 26.02	+57 50 47.6		367
C/1997 J2	1997 10 17.48027	15 50 26.36	+57 50 46.7		367
C/1997 J2	1997 10 17.48200	15 50 26.66	+57 50 45.2		367
C/1997 J2	1997 10 17.75720	15 51 18.74	+57 47 34.8	12.7 T	628
C/1997 J2	1997 10 17.78428	15 51 23.93	+57 47 15.9	12.5 T	628
C/1997 J2	1997 10 18.50515	15 53 39.90	+57 38 53.0	12.4 T	367
C/1997 J2	1997 10 18.50689	15 53 40.28	+57 38 52.2		367
C/1997 J2	1997 10 18.50862	15 53 40.61	+57 38 51.0		367
C/1997 J2	1997 10 18.71384	15 54 19.40	+57 36 28.0		1 118
C/1997 J2	1997 10 18.72144	15 54 20.80	+57 36 22.6	12.3 T	1 118
C/1997 J2	1997 10 18.81067	15 54 37.45	+57 35 18.9	12.2 T	628
C/1997 J2	1997 10 18.84123	15 54 43.25	+57 34 57.3	12.4 T	628
C/1997 J2	1997 10 18.86553	15 54 47.89	+57 34 40.0	12.6 T	628
C/1997 J2	1997 10 19.41444	15 56 31.32	+57 28 15.2	12.4 T	900
C/1997 J2	1997 10 19.42376	15 56 33.11	+57 28 08.5		900

C/1997 J2	1997 10 19.77039	15 57 38.54	+57 24 02.0	12.3 T	628
C/1997 J2	1997 10 19.79400	15 57 42.97	+57 23 44.8	12.4 T	628
C/1997 J2	1997 10 19.81067	15 57 46.12	+57 23 33.3	12.8 T	628
C/1997 J2	1997 10 19.81528	15 57 46.95	+57 23 30.5		118
C/1997 J2	1997 10 19.82273	15 57 48.34	+57 23 25.2	12.5 T	118
C/1997 J2	1997 10 20.00871	15 58 23.43	+57 21 13.6	14.1 T	758
C/1997 J2	1997 10 20.00983	15 58 23.59	+57 21 12.9	14.0 T	758
C/1997 J2	1997 10 20.98071	16 01 26.48	+57 09 40.4	13.5 T	758
C/1997 J2	1997 10 20.98557	16 01 27.42	+57 09 36.4	13.3 T	758
C/1997 J2	1997 10 21.75095	16 03 51.67	+57 00 23.7	12.2 T	628
C/1997 J2	1997 10 21.77664	16 03 56.42	+57 00 05.6	12.2 T	628
C/1997 J2	1997 10 21.79817	16 04 00.42	+56 59 48.8	12.2 T	628
C/1997 J2	1997 10 21.98087	16 04 34.81	+56 57 38.5	12.8 T	758
C/1997 J2	1997 10 21.98491	16 04 35.56	+56 57 35.1	12.9 T	758
C/1997 J2	1997 10 22.76692	16 07 02.71	+56 48 05.0	12.6 T	628
C/1997 J2	1997 10 22.78498	16 07 06.08	+56 47 51.7	12.6 T	628
C/1997 J2	1997 10 22.80998	16 07 10.83	+56 47 33.6	12.6 T	628
C/1997 J2	1997 10 22.98997	16 07 44.67	+56 45 22.6	12.9 T	758
C/1997 J2	1997 10 22.99103	16 07 44.79	+56 45 22.9	12.7 T	758
C/1997 J2	1997 10 23.47642	16 09 16.16	+56 39 26.1	11.3 T	402
C/1997 J2	1997 10 23.47852	16 09 16.57	+56 39 24.2		402
C/1997 J2	1997 10 23.48060	16 09 16.86	+56 39 22.3		402
C/1997 J2	1997 10 26.39722	16 18 23.86	+56 03 13.7	12.3 T	360
C/1997 J2	1997 10 26.40035	16 18 24.44	+56 03 11.4		360
C/1997 J2	1997 10 27.73221	16 22 33.59	+55 46 20.2	12.7 T	605
C/1997 J2	1997 10 27.74185	16 22 35.38	+55 46 13.1	12.9 T	605
C/1997 J2	1997 10 27.76549	16 22 39.83	+55 45 54.4	12.7 T	605
C/1997 J2	1997 10 28.76345	16 25 46.02	+55 33 11.0	12.8 T	628
C/1997 J2	1997 10 28.78150	16 25 49.41	+55 32 57.3	12.6 T	628
C/1997 J2	1997 10 28.79678	16 25 52.27	+55 32 45.9	12.6 T	628
C/1997 J2	1997 10 28.80512	16 25 53.78	+55 32 38.6	12.7 T	628
C/1997 J2	1997 10 29.40565	16 27 45.64	+55 24 57.3	12.4 T	402
C/1997 J2	1997 10 29.40773	16 27 46.04	+55 24 55.7		402
C/1997 J2	1997 10 29.40981	16 27 46.41	+55 24 54.0		402
C/1997 J2	1997 10 30.75789	16 31 57.11	+55 07 26.4	13.0 T	628
C/1997 J2	1997 10 30.76337	16 31 58.16	+55 07 22.6	13.6 T	613
C/1997 J2	1997 10 30.77734	16 32 00.80	+55 07 11.3	12.6 T	628
C/1997 J2	1997 10 30.80441	16 32 05.72	+55 06 50.4	13.5 T	613
C/1997 J2	1997 10 30.80720	16 32 06.33	+55 06 47.5	12.7 T	628
C/1997 J2	1997 10 30.81399	16 32 07.60	+55 06 42.1	13.6 T	613
C/1997 J2	1997 10 30.82525	16 32 09.68	+55 06 33.9	12.5 T	628
C/1997 J2	1997 10 31.78220	16 35 07.21	+54 54 04.6	12.7 T	628
C/1997 J2	1997 10 31.80442	16 35 11.31	+54 53 46.8	12.2 T	628
C/1997 J2	1997 10 31.82387	16 35 14.89	+54 53 31.8	12.3 T	628
C/1997 J2	1997 11 01.77734	16 38 11.37	+54 41 00.3	12.5 T	628
C/1997 J2	1997 11 01.79609	16 38 14.81	+54 40 44.8	12.4 T	628
C/1997 J2	1997 11 01.79920	16 38 15.43	+54 40 42.2		504
C/1997 J2	1997 11 01.79985	16 38 15.54	+54 40 41.6		504
C/1997 J2	1997 11 01.80025	16 38 15.60	+54 40 41.4		504
C/1997 J2	1997 11 01.80066	16 38 15.67	+54 40 41.2	12.6 T	504
C/1997 J2	1997 11 01.80170	16 38 15.89	+54 40 40.3		504
C/1997 J2	1997 11 01.80212	16 38 15.95	+54 40 39.8		504
C/1997 J2	1997 11 01.80418	16 38 16.35	+54 40 37.9		504

C/1997 J2	1997 11 01.80472	16 38 16.45	+54 40 37.7		504
C/1997 J2	1997 11 01.80559	16 38 16.62	+54 40 37.1		504
C/1997 J2	1997 11 01.80598	16 38 16.67	+54 40 36.8		504
C/1997 J2	1997 11 01.83359	16 38 21.85	+54 40 14.6	12.2 T	628
C/1997 J2	1997 11 01.83575	16 38 22.21	+54 40 12.1	13.4 T	613
C/1997 J2	1997 11 03.77718	16 44 20.31	+54 14 27.0		504
C/1997 J2	1997 11 03.77759	16 44 20.38	+54 14 26.5		504
C/1997 J2	1997 11 03.77944	16 44 20.72	+54 14 25.2		504
C/1997 J2	1997 11 03.78207	16 44 21.21	+54 14 23.1		504
C/1997 J2	1997 11 03.78260	16 44 21.32	+54 14 22.4	12.5 T	504
C/1997 J2	1997 11 03.78337	16 44 21.46	+54 14 21.8		504
C/1997 J2	1997 11 03.80442	16 44 25.32	+54 14 03.8	12.1 T	628
C/1997 J2	1997 11 03.82595	16 44 29.32	+54 13 46.6	12.0 T	628
C/1997 J2	1997 11 03.84887	16 44 33.58	+54 13 27.7	12.0 T	628
C/1997 J2	1997 11 04.72558	16 47 14.60	+54 01 44.5	12.0 T	046
C/1997 J2	1997 11 04.72656	16 47 14.79	+54 01 43.8		046
C/1997 J2	1997 11 04.72765	16 47 14.96	+54 01 42.8		046
C/1997 J2	1997 11 06.38523	16 52 18.43	+53 39 19.6	12.2 T	402
C/1997 J2	1997 11 06.38731	16 52 18.81	+53 39 17.9		402
C/1997 J2	1997 11 06.38940	16 52 19.19	+53 39 16.2		402
C/1997 J2	1997 11 06.98750	16 54 08.25	+53 31 07.6	13.4 T	758
C/1997 J2	1997 11 06.99111	16 54 08.93	+53 31 05.3	13.4 T	758
C/1997 J2	1997 11 07.96630	16 57 06.57	+53 17 46.5	13.3 T	758
C/1997 J2	1997 11 08.00365	16 57 13.33	+53 17 15.2	13.2 T	758
C/1997 J2	1997 11 08.97297	17 00 09.41	+53 03 56.2	13.1 T	758
C/1997 J2	1997 11 08.99050	17 00 12.54	+53 03 42.0	13.1 T	758
C/1997 J2	1997 11 09.81970	17 02 42.71	+52 52 15.1	12.6 T	628
C/1997 J2	1997 11 09.83984	17 02 46.33	+52 51 57.8	12.6 T	628
C/1997 J2	1997 11 09.86137	17 02 50.28	+52 51 39.8	12.5 T	628
C/1997 J2	1997 11 09.97758	17 03 11.23	+52 50 04.3	13.2 T	758
C/1997 J2	1997 11 09.97841	17 03 11.35	+52 50 04.3	13.2 T	758
C/1997 J2	1997 11 10.73367	17 05 27.70	+52 39 36.3		046
C/1997 J2	1997 11 10.73444	17 05 27.84	+52 39 35.6		046
C/1997 J2	1997 11 10.73595	17 05 28.11	+52 39 34.3		046

C/1997 T1 (Utsunomiya)

C/1997 T1	1997 10 07.72450	21 52 53.29	+70 17 03.4		616
C/1997 T1	1997 10 07.72670	21 52 50.69	+70 16 56.1		616
C/1997 T1	1997 10 07.72833	21 52 48.81	+70 16 50.6		616
C/1997 T1	1997 10 08.90493	21 30 59.27	+69 04 34.7		965
C/1997 T1	1997 10 08.90611	21 30 58.10	+69 04 30.4		965
C/1997 T1	1997 10 08.92841	21 30 34.60	+69 03 01.2		965
C/1997 T1	1997 10 08.93359	21 30 29.05	+69 02 40.6		965
C/1997 T1	1997 10 10.55497	21 04 32.90	+67 06 27.4		352
C/1997 T1	1997 10 10.55705	21 04 31.06	+67 06 17.6		352
C/1997 T1	1997 10 10.55913	21 04 29.11	+67 06 08.0		352
C/1997 T1	1997 10 10.63819	21 03 19.79	+67 00 01.3	11 T	372
C/1997 T1	1997 10 10.67674	21 02 46.34	+66 57 01.9		372
C/1997 T1	1997 10 11.61748	20 49 54.99	+65 42 17.3		372
C/1997 T1	1997 10 11.65456	20 49 26.46	+65 39 14.5	12.1 T	871
C/1997 T1	1997 10 11.65872	20 49 23.25	+65 38 53.5		352
C/1997 T1	1997 10 11.65873	20 49 23.30	+65 38 54.0		871
C/1997 T1	1997 10 11.66080	20 49 21.48	+65 38 43.3		352

C/1997 T1	1997 10 11.66288	20 49 19.98	+65 38 33.1		352	C/1997 T1	1997 10 17.70334	19 53 23.47	+56 39 21.3		118
C/1997 T1	1997 10 12.69549	20 36 48.37	+64 12 01.2		372	C/1997 T1	1997 10 17.70872	19 53 21.36	+56 38 51.6		118
C/1997 T1	1997 10 12.70938	20 36 38.67	+64 10 49.1		372	C/1997 T1	1997 10 17.71070	19 53 20.59	+56 38 40.6		118
C/1997 T1	1997 10 12.81125	20 35 30.27	+64 02 10.0	11.5 T	104	C/1997 T1	1997 10 17.71348	19 53 19.52	+56 38 25.1	11.6 T	118
C/1997 T1	1997 10 12.81368	20 35 28.70	+64 01 58.0		104	C/1997 T1	1997 10 17.78165	19 52 53.33	+56 32 06.7		963
C/1997 T1	1997 10 12.81600	20 35 27.12	+64 01 45.7		104	C/1997 T1	1997 10 17.84994	19 52 26.54	+56 25 46.2		046
C/1997 T1	1997 10 12.81808	20 35 25.71	+64 01 34.6		104	C/1997 T1	1997 10 17.85088	19 52 26.19	+56 25 41.1		046
C/1997 T1	1997 10 13.70098	20 25 58.47	+62 44 27.3	12.1 T	871	C/1997 T1	1997 10 17.85174	19 52 25.86	+56 25 36.3		046
C/1997 T1	1997 10 13.70341	20 25 56.94	+62 44 13.9		871	C/1997 T1	1997 10 18.50831	19 48 24.31	+55 24 56.2	11.8 T	355
C/1997 T1	1997 10 13.70515	20 25 55.98	+62 44 04.8		871	C/1997 T1	1997 10 18.50883	19 48 24.14	+55 24 53.2		355
C/1997 T1	1997 10 13.82199	20 24 45.83	+62 33 51.0		104	C/1997 T1	1997 10 18.50986	19 48 23.76	+55 24 47.6		355
C/1997 T1	1997 10 13.82361	20 24 44.83	+62 33 42.1		104	C/1997 T1	1997 10 18.51744	19 48 21.11	+55 24 05.3		367
C/1997 T1	1997 10 13.82569	20 24 43.55	+62 33 30.8		104	C/1997 T1	1997 10 18.51883	19 48 20.64	+55 23 57.7		367
C/1997 T1	1997 10 13.82778	20 24 42.28	+62 33 20.0		104	C/1997 T1	1997 10 18.52022	19 48 20.10	+55 23 50.1		367
C/1997 T1	1997 10 13.85799	20 24 24.33	+62 30 38.8	12.6 T	967	C/1997 T1	1997 10 18.75648	19 46 58.05	+55 02 02.4		108
C/1997 T1	1997 10 13.87234	20 24 15.74	+62 29 20.7	11.7 T	967	C/1997 T1	1997 10 18.75909	19 46 56.88	+55 01 47.5		108
C/1997 T1	1997 10 13.88472	20 24 08.42	+62 28 15.1	12.7 T	967	C/1997 T1	1997 10 18.76059	19 46 56.58	+55 01 40.7		108
C/1997 T1	1997 10 13.88889	20 24 05.58	+62 27 52.3	12.3 T	967	C/1997 T1	1997 10 18.76277	19 46 56.02	+55 01 27.6		963
C/1997 T1	1997 10 14.00841	20 22 54.78	+62 17 09.8		482	C/1997 T1	1997 10 18.76351	19 46 55.55	+55 01 24.5	10.0 T	108
C/1997 T1	1997 10 14.01002	20 22 53.59	+62 17 02.0		482	C/1997 T1	1997 10 18.79480	19 46 45.05	+54 58 30.0	11.7 T	605
C/1997 T1	1997 10 14.01089	20 22 53.06	+62 16 57.1		482	C/1997 T1	1997 10 18.80280	19 46 42.19	+54 57 45.6	11.6 T	605
C/1997 T1	1997 10 14.01176	20 22 52.57	+62 16 52.8		482	C/1997 T1	1997 10 18.90047	19 46 08.37	+54 48 43.4	11.4 T	628
C/1997 T1	1997 10 14.01245	20 22 52.18	+62 16 49.2		482	C/1997 T1	1997 10 18.92409	19 46 00.40	+54 46 31.7	11.6 T	628
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C/1997 T1	1997 10 14.01419	20 22 51.01	+62 16 40.0		482	C/1997 T1	1997 10 18.94184	19 45 54.06	+54 44 52.6		118
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P/1997 T3	1997 11 06.52175	01 00 07.09	+01 59 00.5	18.8 N	402
P/1997 T3	1997 11 06.52591	01 00 07.08	+01 59 00.7		402
P/1997 T3	1997 11 06.53008	01 00 06.98	+01 59 00.4		402

C/1997 T4 (SOHO)					
C/1997 T4	1997 10 06.21817	12 31 43.8	-06 06 12		249
Geocentric position (AU)	-0.00780634	-0.00568581	-0.00232174		
C/1997 T4	1997 10 06.23738	12 32 17.2	-06 05 02		249
Geocentric position (AU)	-0.00780468	-0.00568897	-0.00232371		
C/1997 T4	1997 10 06.25971	12 32 52.2	-06 03 03		249
Geocentric position (AU)	-0.00780276	-0.00569265	-0.00232599		
C/1997 T4	1997 10 06.28880	12 33 31.6	-06 01 26		249
Geocentric position (AU)	-0.00780025	-0.00569744	-0.00232895		

C/1997 T4	1997 10 06.35051	12 35 04.4	-05 59 08	249
Geocentric position (AU)	-0.00779492	-0.00570758	-0.00233524	
C/1997 T4	1997 10 06.36873	12 35 28.6	-05 57 46	249
Geocentric position (AU)	-0.00779335	-0.00571057	-0.00233710	
C/1997 T4	1997 10 06.40642	12 36 28.6	-05 55 35	249
Geocentric position (AU)	-0.00779009	-0.00571675	-0.00234093	
C/1997 T4	1997 10 06.44427	12 37 25.4	-05 52 58	249
Geocentric position (AU)	-0.00778681	-0.00572294	-0.00234478	
C/1997 T4	1997 10 06.50469	12 38 59.4	-05 49 34	249
Geocentric position (AU)	-0.00778157	-0.00573280	-0.00235091	
C/1997 T4	1997 10 06.53154	12 39 35.7	-05 51 07	249
Geocentric position (AU)	-0.00777924	-0.00573718	-0.00235363	
C/1997 T4	1997 10 06.53703	12 39 49.2	-05 48 07	249
Geocentric position (AU)	-0.00777876	-0.00573807	-0.00235419	
C/1997 T4	1997 10 06.54506	12 39 57.4	-05 50 10	249
Geocentric position (AU)	-0.00777807	-0.00573938	-0.00235500	
C/1997 T4	1997 10 06.58499	12 41 03.5	-05 47 18	249
Geocentric position (AU)	-0.00777460	-0.00574588	-0.00235905	
C/1997 T4	1997 10 06.59314	12 41 34.2	-05 45 19	249
Geocentric position (AU)	-0.00777389	-0.00574720	-0.00235987	
C/1997 T4	1997 10 06.60852	12 41 44.0	-05 45 31	249
Geocentric position (AU)	-0.00777255	-0.00574970	-0.00236143	
C/1997 T4	1997 10 06.61672	12 41 58.5	-05 45 02	249
Geocentric position (AU)	-0.00777183	-0.00575103	-0.00236226	
C/1997 T4	1997 10 06.64481	12 42 47.1	-05 42 45	249
Geocentric position (AU)	-0.00776939	-0.00575559	-0.00236510	

C/1997 T5 (SOHO)

C/1997 T5	1997 10 07.21697	12 32 31.9	-06 47 44	249
Geocentric position (AU)	-0.00771922	-0.00584726	-0.00242250	
C/1997 T5	1997 10 07.25102	12 33 17.1	-06 45 39	249
Geocentric position (AU)	-0.00771622	-0.00585264	-0.00242589	
C/1997 T5	1997 10 07.28698	12 34 08.4	-06 43 41	249
Geocentric position (AU)	-0.00771304	-0.00585832	-0.00242947	
C/1997 T5	1997 10 07.32378	12 34 58.4	-06 42 15	249
Geocentric position (AU)	-0.00770979	-0.00586413	-0.00243312	
C/1997 T5	1997 10 07.40650	12 36 57.5	-06 38 01	249
Geocentric position (AU)	-0.00770246	-0.00587714	-0.00244133	
C/1997 T5	1997 10 07.44113	12 37 48.2	-06 35 48	249
Geocentric position (AU)	-0.00769940	-0.00588257	-0.00244476	
C/1997 T5	1997 10 07.49465	12 39 09.0	-06 31 55	249
Geocentric position (AU)	-0.00769465	-0.00589095	-0.00245005	
C/1997 T5	1997 10 07.52922	12 40 00.2	-06 29 34	249
Geocentric position (AU)	-0.00769158	-0.00589636	-0.00245347	
C/1997 T5	1997 10 07.57377	12 41 10.8	-06 27 34	249
Geocentric position (AU)	-0.00768762	-0.00590331	-0.00245786	
C/1997 T5	1997 10 07.63767	12 42 52.0	-06 23 08	249
Geocentric position (AU)	-0.00768194	-0.00591326	-0.00246416	
C/1997 T5	1997 10 07.66197	12 43 31.4	-06 21 33	249
Geocentric position (AU)	-0.00767978	-0.00591703	-0.00246655	
C/1997 T5	1997 10 07.72817	12 45 21.6	-06 18 32	249
Geocentric position (AU)	-0.00767388	-0.00592730	-0.00247306	

C/1997 T5	1997 10 07.76620	12 46 31.5	-06 14 59	249
Geocentric position (AU)	-0.00767049	-0.00593318	-0.00247679	

P/1997 V1 (Larsen)

P/1997 V1	1997 11 03.22743	00 14 11.99	+12 28 59.4	19.2 N	691
P/1997 V1	1997 11 03.24864	00 14 11.70	+12 28 51.3	16.6 T	691
P/1997 V1	1997 11 03.27007	00 14 11.42	+12 28 43.4	16.6 T	691
P/1997 V1	1997 11 03.29130	00 14 11.11	+12 28 35.2	19.7 N	691
P/1997 V1	1997 11 03.29561	00 14 11.05	+12 28 33.5	16.6 T	691
P/1997 V1	1997 11 03.29981	00 14 10.99	+12 28 32.0	16.6 T	691
P/1997 V1	1997 11 03.36761	00 14 10.09	+12 28 06.0	16.6 T	691
P/1997 V1	1997 11 03.37237	00 14 10.03	+12 28 04.4	16.7 T	691
P/1997 V1	1997 11 03.37636	00 14 09.97	+12 28 02.8	16.7 T	691
P/1997 V1	1997 11 03.96399	00 14 03.10	+12 24 22.5	16.0 T	046
P/1997 V1	1997 11 03.96612	00 14 03.04	+12 24 21.3		046
P/1997 V1	1997 11 03.96756	00 14 03.02	+12 24 20.6		046
P/1997 V1	1997 11 03.97039	00 14 02.98	+12 24 20.2		046
P/1997 V1	1997 11 03.98091	00 14 02.88	+12 24 15.6	16.3 T	557
P/1997 V1	1997 11 03.98365	00 14 02.84	+12 24 14.6	17.1 N	557
P/1997 V1	1997 11 03.99713	00 14 02.69	+12 24 09.5		557
P/1997 V1	1997 11 03.99981	00 14 02.65	+12 24 08.7		557
P/1997 V1	1997 11 04.04208	00 14 02.08	+12 23 54.1		954
P/1997 V1	1997 11 04.04539	00 14 02.09	+12 23 53.0		954
P/1997 V1	1997 11 04.04664	00 14 02.00	+12 23 52.6		954
P/1997 V1	1997 11 04.04789	00 14 02.05	+12 23 52.3		954
P/1997 V1	1997 11 04.04914	00 14 02.01	+12 23 51.6		954
P/1997 V1	1997 11 04.05039	00 14 02.03	+12 23 51.3		954
P/1997 V1	1997 11 04.05166	00 14 02.01	+12 23 51.0		954
P/1997 V1	1997 11 04.05291	00 14 01.97	+12 23 50.6		954
P/1997 V1	1997 11 04.05416	00 14 01.95	+12 23 50.0		954
P/1997 V1	1997 11 04.05541	00 14 01.95	+12 23 49.2		954
P/1997 V1	1997 11 04.05666	00 14 01.92	+12 23 48.7		954
P/1997 V1	1997 11 04.05904	00 14 01.93	+12 23 48.2		954
P/1997 V1	1997 11 04.06030	00 14 01.89	+12 23 47.7		954
P/1997 V1	1997 11 04.06155	00 14 01.88	+12 23 47.0		954
P/1997 V1	1997 11 04.06280	00 14 01.85	+12 23 46.5		954
P/1997 V1	1997 11 04.06405	00 14 01.84	+12 23 46.5		954
P/1997 V1	1997 11 04.06530	00 14 01.82	+12 23 45.9		954
P/1997 V1	1997 11 04.06656	00 14 01.80	+12 23 45.6		954
P/1997 V1	1997 11 04.06781	00 14 01.75	+12 23 44.9		954
P/1997 V1	1997 11 04.06906	00 14 01.73	+12 23 44.1		954
P/1997 V1	1997 11 04.07030	00 14 01.76	+12 23 44.0		954
P/1997 V1	1997 11 04.41503	00 13 58.14	+12 21 35.4	16.3 T	402
P/1997 V1	1997 11 04.41851	00 13 58.11	+12 21 34.1		402
P/1997 V1	1997 11 04.42198	00 13 58.04	+12 21 32.7		402
P/1997 V1	1997 11 04.42545	00 13 58.00	+12 21 31.7		402
P/1997 V1	1997 11 04.50839	00 13 56.95	+12 21 01.0	15.8 T	355
P/1997 V1	1997 11 04.51179	00 13 56.95	+12 20 59.9		355
P/1997 V1	1997 11 04.52171	00 13 56.80	+12 20 55.9		355
P/1997 V1	1997 11 04.57911	00 13 56.18	+12 20 33.8	16.9 T	327
P/1997 V1	1997 11 04.58300	00 13 56.11	+12 20 32.7	16.9 T	327
P/1997 V1	1997 11 04.58692	00 13 56.05	+12 20 31.3	16.9 T	327
P/1997 V1	1997 11 04.69663	00 13 55.04	+12 19 50.6	16.2 T	046

P/1997 V1	1997 11 04.69818	00 13 55.02	+12 19 49.8		046	P/1997 V1	1997 11 08.58553	00 13 20.58	+11 56 34.4		897
P/1997 V1	1997 11 04.69958	00 13 55.00	+12 19 49.3		046	P/1997 V1	1997 11 08.59583	00 13 20.53	+11 56 31.0	16.6 T	367
P/1997 V1	1997 11 04.70196	00 13 54.98	+12 19 48.8		046	P/1997 V1	1997 11 08.60001	00 13 20.50	+11 56 29.7		367
P/1997 V1	1997 11 04.70694	00 13 54.94	+12 19 46.6		046	P/1997 V1	1997 11 08.60417	00 13 20.45	+11 56 27.9		367
P/1997 V1	1997 11 04.91080	00 13 52.55	+12 18 31.9	16.3 T	046	P/1997 V1	1997 11 08.69281	00 13 19.77	+11 55 57.0	15.8 T	864
P/1997 V1	1997 11 04.91646	00 13 52.50	+12 18 29.5		046	P/1997 V1	1997 11 08.70403	00 13 19.68	+11 55 53.5		864
P/1997 V1	1997 11 04.91946	00 13 52.45	+12 18 28.4		046	P/1997 V1	1997 11 09.46911	00 13 15.23	+11 51 29.8	16.7 T	402
P/1997 V1	1997 11 04.95806	00 13 52.03	+12 18 14.0		557	P/1997 V1	1997 11 09.47258	00 13 15.21	+11 51 28.5		402
P/1997 V1	1997 11 04.99853	00 13 51.56	+12 17 58.9		557	P/1997 V1	1997 11 09.47605	00 13 15.18	+11 51 27.1		402
P/1997 V1	1997 11 05.18395	00 13 49.74	+12 16 51.7	16.3 T	709	P/1997 V1	1997 11 09.47748	00 13 15.14	+11 51 26.9		355
P/1997 V1	1997 11 05.18932	00 13 49.67	+12 16 49.7	16.4 T	709	P/1997 V1	1997 11 09.48530	00 13 15.12	+11 51 23.7	16.3 T	355
P/1997 V1	1997 11 05.19736	00 13 49.58	+12 16 46.8	16.4 T	709	P/1997 V1	1997 11 09.49450	00 13 15.06	+11 51 21.1		355
P/1997 V1	1997 11 05.43271	00 13 47.30	+12 15 20.7	16.3 T	402	2P/Encke					
P/1997 V1	1997 11 05.43618	00 13 47.24	+12 15 19.5		402	2P	1997 07 16.95035	15 34 42.91	-60 29 12.8		834
P/1997 V1	1997 11 05.43965	00 13 47.21	+12 15 18.3		402	2P	1997 07 16.96905	15 34 59.94	-60 27 28.5		834
P/1997 V1	1997 11 05.44459	00 13 47.09	+12 15 15.1		897	2P	1997 07 16.98324	15 35 12.71	-60 26 08.2		834
P/1997 V1	1997 11 05.47552	00 13 46.82	+12 15 05.6	16.6 T	360	2P	1997 07 17.02312	15 35 48.61	-60 22 26.2		834
P/1997 V1	1997 11 05.48108	00 13 46.76	+12 15 03.5		360	2P	1997 07 17.05501	15 36 17.36	-60 19 27.2		834
P/1997 V1	1997 11 05.48802	00 13 46.69	+12 15 00.9		360	9P/Tempel 1					
P/1997 V1	1997 11 05.48986	00 13 46.47	+12 14 59.7		897	9P	1997 10 25.34070	06 11 19.89	+26 05 10.0	21.7 T	809
P/1997 V1	1997 11 05.50706	00 13 46.31	+12 14 52.9	16.5 T	897	9P	1997 10 25.35011	06 11 19.78	+26 05 10.7		809
P/1997 V1	1997 11 05.55931	00 13 45.84	+12 14 35.3		864	9P	1997 10 25.35492	06 11 19.73	+26 05 11.2		809
P/1997 V1	1997 11 05.57010	00 13 45.80	+12 14 30.5	16.8 T	864	22P/Kopff					
P/1997 V1	1997 11 05.59125	00 13 45.54	+12 14 23.0		864	22P	1997 11 02.71738	04 13 24.92	+15 36 57.5	16.9 T	867
P/1997 V1	1997 11 05.64608	00 13 44.97	+12 14 02.9	16.4 T	900	22P	1997 11 02.74933	04 13 23.62	+15 36 52.0		867
P/1997 V1	1997 11 05.65811	00 13 44.77	+12 13 58.4		900	22P	1997 11 02.75593	04 13 23.25	+15 36 51.6		867
P/1997 V1	1997 11 05.69870	00 13 44.67	+12 13 43.2		046	22P	1997 11 03.71935	04 12 39.86	+15 34 44.9	17.0 T	402
P/1997 V1	1997 11 05.70013	00 13 44.67	+12 13 42.2		046	22P	1997 11 03.72282	04 12 39.79	+15 34 46.4		402
P/1997 V1	1997 11 05.70145	00 13 44.65	+12 13 41.6		046	22P	1997 11 03.72630	04 12 39.64	+15 34 43.6		402
P/1997 V1	1997 11 06.41117	00 13 37.92	+12 09 25.1	16.5 T	402	22P	1997 11 06.65819	04 10 25.21	+15 28 11.5	17.0 T	402
P/1997 V1	1997 11 06.41464	00 13 37.89	+12 09 23.9		402	22P	1997 11 06.66236	04 10 24.73	+15 28 10.2		402
P/1997 V1	1997 11 06.41811	00 13 37.87	+12 09 22.9		402	22P	1997 11 06.66653	04 10 24.73	+15 28 11.2		402
P/1997 V1	1997 11 06.42159	00 13 37.85	+12 09 21.9		402	22P	1997 11 07.77958	04 09 32.23	+15 25 41.5		381
P/1997 V1	1997 11 06.50634	00 13 36.97	+12 08 51.8		864	22P	1997 11 07.78712	04 09 31.77	+15 25 40.4		381
P/1997 V1	1997 11 06.52416	00 13 36.77	+12 08 44.5	16.5 T	897	22P	1997 11 08.26025	04 09 09.64	+15 24 40.9	20.4 N	696
P/1997 V1	1997 11 06.52741	00 13 36.76	+12 08 44.2		864	22P	1997 11 08.26802	04 09 09.22	+15 24 40.1		696
P/1997 V1	1997 11 06.53457	00 13 36.65	+12 08 41.0		897	22P	1997 11 08.27578	04 09 08.86	+15 24 38.9		696
P/1997 V1	1997 11 06.54499	00 13 36.52	+12 08 37.4	16.5 T	897	43P/Wolf-Harrington					
P/1997 V1	1997 11 06.55696	00 13 36.46	+12 08 32.3	16.1 T	867	43P	1997 10 17.74444	08 41 57.48	+12 01 27.0		355
P/1997 V1	1997 11 06.56216	00 13 36.42	+12 08 30.5		867	43P	1997 10 17.74541	08 41 57.61	+12 01 25.8	13.0 T	355
P/1997 V1	1997 11 06.56980	00 13 36.34	+12 08 27.9		867	43P	1997 10 17.74636	08 41 57.70	+12 01 24.8		355
P/1997 V1	1997 11 06.57072	00 13 36.27	+12 08 28.0		900	43P	1997 10 18.83345	08 44 22.39	+11 36 59.2	12.3 T	897
P/1997 V1	1997 11 06.59044	00 13 36.05	+12 08 20.5		900	43P	1997 10 18.83669	08 44 22.76	+11 36 55.2		897
P/1997 V1	1997 11 06.84612	00 13 33.98	+12 06 48.7		046	43P	1997 10 18.83883	08 44 23.05	+11 36 51.7		897
P/1997 V1	1997 11 06.84763	00 13 33.97	+12 06 48.2		046	43P	1997 10 26.77818	09 01 13.51	+08 34 31.9		897
P/1997 V1	1997 11 06.85027	00 13 33.94	+12 06 47.4		046	43P	1997 10 26.78729	09 01 14.62	+08 34 19.1		897
P/1997 V1	1997 11 07.63229	00 13 27.43	+12 02 09.7	16.6 T	360	43P	1997 11 03.79618	09 16 46.28	+05 25 08.5	12.9 T	360
P/1997 V1	1997 11 07.63681	00 13 27.39	+12 02 08.1		360	43P	1997 11 03.79913	09 16 46.61	+05 25 04.2		360
P/1997 V1	1997 11 08.39030	00 13 22.14	+11 57 42.9	16.6 T	402	43P	1997 11 05.09868	09 19 09.13	+04 54 01.5	13.5 T	046
P/1997 V1	1997 11 08.39377	00 13 22.12	+11 57 41.7		402	43P	1997 11 05.10015	09 19 09.29	+04 53 59.4		046
P/1997 V1	1997 11 08.39725	00 13 22.09	+11 57 40.7		402	43P	1997 11 05.10179	09 19 09.47	+04 53 57.1		046
P/1997 V1	1997 11 08.55054	00 13 20.80	+11 56 46.5	16.4 T	897						
P/1997 V1	1997 11 08.56814	00 13 20.72	+11 56 40.3		897						

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43P	1997 11 07.83819	09 24 01.31	+03 48 27.5		867	74P	1997 11 03.61877	00 54 11.39	-01 53 05.6		867
43P	1997 11 07.83958	09 24 01.48	+03 48 25.5		867	74P	1997 11 03.62572	00 54 11.19	-01 53 06.1		867
48P/Johnson						78P/Gehrels 2					
48P	1997 10 21.45072	19 55 39.19	-27 01 27.4	16.6 T	867	78P	1997 10 11.49901	06 36 07.36	+18 10 20.7	17.8 N	691
48P	1997 10 21.45940	19 55 39.95	-27 01 26.6		867	78P	1997 10 11.50635	06 36 07.87	+18 10 18.1	13.3 T	691
48P	1997 10 21.46600	19 55 40.55	-27 01 25.8		867	78P	1997 10 11.71836	06 36 23.09	+18 09 10.0		352
48P	1997 10 26.42535	20 03 22.55	-26 53 11.6	15.7 T	360	78P	1997 10 11.72044	06 36 23.26	+18 09 09.2		352
48P	1997 10 26.42813	20 03 22.81	-26 53 11.4		360	78P	1997 10 11.72252	06 36 23.44	+18 09 08.4		352
55P/Tempel-Tuttle						78P	1997 10 14.06543	06 39 05.34	+17 56 27.3		118
55P	1997 11 07.81183	12 17 54.82	+12 49 08.8	18.4 T	867	78P	1997 10 14.07322	06 39 05.87	+17 56 24.7	12.5 T	118
55P	1997 11 07.82433	12 17 55.28	+12 49 11.8		867	78P	1997 10 20.07281	06 45 18.02	+17 23 12.7		118
55P	1997 11 07.83162	12 17 55.52	+12 49 13.6		867	78P	1997 10 20.07920	06 45 18.37	+17 23 10.5	12.5 T	118
55P	1997 11 08.84100	12 18 30.57	+12 51 21.2	19.5 T	867	78P	1997 10 22.02476	06 47 05.45	+17 12 18.9	13.1 T	605
55P	1997 11 08.84829	12 18 30.78	+12 51 21.9		867	78P	1997 10 22.02957	06 47 05.50	+17 12 17.0	13.0 T	605
55P	1997 11 09.83993	12 19 05.15	+12 53 42.7	19.5 T	F 360	78P	1997 10 22.04337	06 47 06.30	+17 12 11.1	13.1 T	605
55P	1997 11 09.84375	12 19 05.22	+12 53 44.0		F 360	78P	1997 10 25.74830	06 50 10.62	+16 51 22.9	12.7 T	900
55P	1997 11 09.84896	12 19 05.37	+12 53 43.7		F 360	78P	1997 10 25.75745	06 50 11.05	+16 51 19.6		900
62P/Tsuchinshan 1						78P	1997 10 27.73889	06 51 38.84	+16 40 12.0	12.4 T	360
62P	1997 10 12.39513	02 40 14.96	-01 32 21.5	21.1 T	691	78P	1997 10 27.74271	06 51 38.99	+16 40 10.8		360
62P	1997 10 12.40026	02 40 14.72	-01 32 22.3	20.5 T	691	78P	1997 10 28.03185	06 51 51.06	+16 38 33.1	13.0 T	605
62P	1997 10 12.40646	02 40 14.46	-01 32 25.8	21.6 T	691	78P	1997 10 28.04764	06 51 51.69	+16 38 27.6	12.9 T	605
62P	1997 11 02.64169	02 21 33.16	-03 14 49.8	20.4 N	867	78P	1997 10 28.05550	06 51 52.05	+16 38 25.3	12.9 T	605
62P	1997 11 02.64863	02 21 32.72	-03 14 51.9		867	78P	1997 11 05.06486	06 56 21.92	+15 54 12.6		046
62P	1997 11 02.65558	02 21 32.22	-03 14 52.4		867	78P	1997 11 05.06711	06 56 21.98	+15 54 11.9		046
62P	1997 11 02.66183	02 21 31.88	-03 14 53.7		867	78P	1997 11 05.07005	06 56 22.05	+15 54 11.1		046
62P	1997 11 03.66218	02 20 29.99	-03 18 00.7	20.3 N	867	78P	1997 11 07.79341	06 57 23.69	+15 39 39.3		867
62P	1997 11 03.67572	02 20 29.08	-03 18 05.2		867	78P	1997 11 07.79758	06 57 23.77	+15 39 37.8		867
62P	1997 11 03.68231	02 20 28.71	-03 18 05.2		867	78P	1997 11 09.75816	06 57 58.78	+15 29 21.4	12.3 T	360
65P/Gunn						78P	1997 11 09.76094	06 57 58.82	+15 29 20.5		360
65P	1997 10 22.53194	00 19 03.80	-11 14 08.4	15.1 T	360	78P	1997 11 11.16044	06 58 18.68	+15 22 06.8		046
65P	1997 10 22.53472	00 19 03.71	-11 14 08.5		360	78P	1997 11 11.16178	06 58 18.70	+15 22 06.4		046
65P	1997 10 25.56654	00 17 25.00	-11 13 33.7	16.0 T	900	78P	1997 11 11.16472	06 58 18.73	+15 22 05.5		046
65P	1997 10 25.58229	00 17 24.49	-11 13 33.6		900	103P/Hartley 2					
69P/Taylor						103P	1997 09 10.85450	18 33 32.42	-01 15 37.5	16.9 T	605
69P	1997 11 01.79193	07 50 56.42	+10 53 18.6	17.9 T	402	103P	1997 09 10.88069	18 33 32.29	-01 15 54.3	16.7 T	605
69P	1997 11 01.79541	07 50 56.75	+10 53 18.9		402	103P	1997 10 01.88056	18 45 27.58	-04 15 25.1	15.1 T	967
69P	1997 11 01.79888	07 50 57.01	+10 53 20.7		402	103P	1997 10 05.87604	18 50 02.07	-04 48 33.2	14.4 T	967
69P	1997 11 03.75955	07 53 38.76	+10 59 41.5	18.4 T	360	103P	1997 10 08.47647	18 53 23.96	-05 09 34.0		897
69P	1997 11 03.76458	07 53 39.17	+10 59 42.4		360	103P	1997 10 16.76240	19 06 09.31	-06 13 25.6		1 118
69P	1997 11 07.76461	07 58 55.82	+11 14 39.2	17.6 T	867	103P	1997 10 16.76492	19 06 09.60	-06 13 27.0		1 118
69P	1997 11 07.77086	07 58 56.26	+11 14 40.9		867	103P	1997 10 16.76733	19 06 09.80	-06 13 27.9	14.9 T	1 118
69P	1997 11 09.78281	08 01 28.64	+11 23 20.0	18.3 T	360	103P	1997 10 17.75405	19 07 53.18	-06 20 41.8	14.9 T	118
69P	1997 11 09.78698	08 01 28.92	+11 23 21.3		360	103P	1997 10 18.78017	19 09 43.31	-06 28 06.5	14.8 T	118
74P/Smirnova-Chernykh						103P	1997 10 19.43627	19 10 55.33	-06 32 46.1	14.9 T	900
74P	1997 10 27.58056	00 57 38.90	-01 40 19.1	18.2 T	360	103P	1997 10 19.44378	19 10 56.17	-06 32 48.5		900
74P	1997 10 27.58819	00 57 38.65	-01 40 20.1		360	103P	1997 10 20.80145	19 13 28.54	-06 42 24.1	16.2 T	118
74P	1997 10 29.54854	00 56 38.58	-01 44 17.7	18.0 T	402	103P	1997 10 20.80479	19 13 28.91	-06 42 24.9		118
74P	1997 10 29.55271	00 56 38.44	-01 44 17.7		402	103P	1997 10 21.42986	19 14 40.78	-06 46 44.6	13.3 T	360
74P	1997 10 29.55688	00 56 38.26	-01 44 18.4		402	103P	1997 10 21.43264	19 14 41.14	-06 46 45.8		360
74P	1997 11 03.61218	00 54 11.59	-01 53 05.0	18.3 T	867	103P	1997 10 23.43993	19 18 38.96	-07 00 25.6		867
						103P	1997 10 23.44340	19 18 39.38	-07 00 26.8		867
						103P	1997 10 23.44722	19 18 39.83	-07 00 28.3		867

103P	1997 10 23.44828	19 18 39.82	-07 00 19.6		2	422
103P	1997 10 23.44944	19 18 39.96	-07 00 20.3		2	422
103P	1997 10 23.45535	19 18 40.48	-07 00 22.3			422
103P	1997 10 26.41771	19 24 51.74	-07 19 51.8	12.5 T	2	360
103P	1997 10 26.42049	19 24 52.10	-07 19 53.1			360
103P	1997 10 26.48420	19 25 00.35	-07 20 16.9	13.5 T		897
103P	1997 10 26.49401	19 25 01.52	-07 20 19.9			897
103P	1997 10 26.50440	19 25 02.86	-07 20 24.5			897
103P	1997 11 05.40729	19 48 37.20	-08 16 59.3	12.1 T		360
103P	1997 11 05.41024	19 48 37.70	-08 17 00.2			360
103P	1997 11 06.37181	19 51 09.29	-08 21 45.9	13.5 T		402
103P	1997 11 06.37250	19 51 09.38	-08 21 46.1			402
103P	1997 11 06.37319	19 51 09.50	-08 21 46.1			402
103P	1997 11 10.74100	20 03 09.57	-08 41 40.0	15.0 T		046
103P	1997 11 10.74211	20 03 09.76	-08 41 40.3			046
103P	1997 11 10.74323	20 03 09.95	-08 41 40.6			046

104P/Kowal 2

104P	1997 09 06.97088	22 32 41.51	+19 55 40.4	15.5 T		605
104P	1997 09 06.98211	22 32 40.88	+19 55 39.5	15.3 T		605
104P	1997 09 06.98757	22 32 40.46	+19 55 36.7	15.6 T		605
104P	1997 09 10.96205	22 28 36.60	+19 38 47.6	15.6 T		605
104P	1997 09 10.96571	22 28 36.39	+19 38 46.1	15.6 T		605
104P	1997 09 10.97477	22 28 35.87	+19 38 43.3	15.5 T		605
104P	1997 09 10.98207	22 28 35.36	+19 38 41.8	15.5 T		605
104P	1997 09 20.92407	22 18 44.83	+18 32 50.8	15.2 T		605
104P	1997 09 20.93623	22 18 44.21	+18 32 45.3	15.3 T		605
104P	1997 09 20.94829	22 18 43.49	+18 32 38.5	15.1 T		605
104P	1997 09 25.94510	22 14 16.63	+17 48 06.4	15.0 T		605
104P	1997 09 25.95536	22 14 16.13	+17 48 00.5	15.2 T		605
104P	1997 09 25.97008	22 14 15.30	+17 47 51.8	15.0 T		605
104P	1997 10 13.81109	22 03 58.04	+14 29 48.0			118
104P	1997 10 13.81772	22 03 57.93	+14 29 42.6			118
104P	1997 10 13.82799	22 03 57.72	+14 29 35.7	14.8 T		118
104P	1997 10 16.90610	22 03 19.32	+13 52 50.7		2	118
104P	1997 10 16.93054	22 03 19.10	+13 52 33.1	15.4 T	1	118
104P	1997 10 17.82449	22 03 12.40	+13 41 53.2			118
104P	1997 10 17.82841	22 03 12.34	+13 41 50.2			118
104P	1997 10 17.83001	22 03 12.34	+13 41 49.0	15.3 T		118
104P	1997 10 17.83618	22 03 12.30	+13 41 44.9	14.7 T		046
104P	1997 10 17.83757	22 03 12.31	+13 41 43.7			046
104P	1997 10 17.83894	22 03 12.28	+13 41 43.1			046
104P	1997 10 18.81990	22 03 06.91	+13 30 05.0			108
104P	1997 10 18.82257	22 03 06.90	+13 30 02.2			108
104P	1997 10 18.82500	22 03 06.92	+13 29 57.9			108
104P	1997 10 18.83260	22 03 06.91	+13 29 53.1			118
104P	1997 10 18.83854	22 03 06.88	+13 29 49.0	15.6 T		118
104P	1997 10 18.83882	22 03 06.93	+13 29 50.0	15.0 T		108
104P	1997 10 18.86722	22 03 06.73	+13 29 28.8	15.3 T		605
104P	1997 10 18.88471	22 03 06.67	+13 29 15.9	15.2 T		605
104P	1997 10 19.84478	22 03 03.80	+13 17 52.7			118
104P	1997 10 19.86490	22 03 03.75	+13 17 38.5	15.3 T		118
104P	1997 10 22.52413	22 03 07.65	+12 46 24.3	14.1 T		360

104P	1997 10 22.52726	22 03 07.64	+12 46 22.1			360
104P	1997 10 22.83994	22 03 09.35	+12 42 41.6			118
104P	1997 10 22.84492	22 03 09.33	+12 42 38.7	15.4 T		118
104P	1997 10 23.45139	22 03 13.24	+12 35 37.0	14.1 T		867
104P	1997 10 23.45486	22 03 13.25	+12 35 34.5			867
104P	1997 10 23.45799	22 03 13.28	+12 35 32.3			867
104P	1997 10 26.54760	22 03 46.50	+12 00 09.7			897
104P	1997 10 26.55663	22 03 46.60	+12 00 04.1			897
104P	1997 10 26.56913	22 03 46.74	+11 59 55.5	13.9 T		897
104P	1997 10 27.82954	22 04 07.47	+11 45 46.8	15.0 T		605
104P	1997 10 27.84443	22 04 07.71	+11 45 36.2	14.9 T		605
104P	1997 10 27.85698	22 04 07.87	+11 45 27.7	14.9 T		605
104P	1997 10 28.53587	22 04 20.46	+11 37 58.4	14.2 T		352
104P	1997 10 28.53795	22 04 20.48	+11 37 57.0			352
104P	1997 10 28.54004	22 04 20.58	+11 37 55.6			352
104P	1997 10 29.48169	22 04 40.13	+11 27 35.9	14.7 T		402
104P	1997 10 29.48397	22 04 40.18	+11 27 34.3			402
104P	1997 10 29.48625	22 04 40.22	+11 27 32.9			402
104P	1997 10 30.83654	22 05 12.08	+11 12 55.4	15.3 T		504
104P	1997 10 30.83852	22 05 12.10	+11 12 54.2			504
104P	1997 10 30.85427	22 05 12.46	+11 12 44.2			504
104P	1997 10 30.85606	22 05 12.48	+11 12 42.5			504
104P	1997 10 30.85706	22 05 12.52	+11 12 42.0			504
104P	1997 10 30.86244	22 05 12.64	+11 12 38.9			504
104P	1997 10 30.86355	22 05 12.66	+11 12 38.0			504
104P	1997 10 30.86513	22 05 12.71	+11 12 37.0			504
104P	1997 10 30.86605	22 05 12.72	+11 12 36.6			504
104P	1997 10 31.82157	22 05 38.15	+11 02 25.4	15.2 T		605
104P	1997 10 31.83243	22 05 38.46	+11 02 18.5	14.9 T		605
104P	1997 10 31.84505	22 05 38.70	+11 02 10.9	14.9 T		605
104P	1997 11 03.57731	22 07 03.24	+10 33 56.6	14.1 T		402
104P	1997 11 03.58426	22 07 03.46	+10 33 52.3			402
104P	1997 11 04.41851	22 07 33.30	+10 25 30.7	15.3 T		900
104P	1997 11 04.43837	22 07 34.01	+10 25 19.4			900
104P	1997 11 04.74045	22 07 45.18	+10 22 17.4	14.5 T		046
104P	1997 11 04.74175	22 07 45.22	+10 22 16.4			046
104P	1997 11 04.74325	22 07 45.30	+10 22 15.7			046
104P	1997 11 05.42205	22 08 11.05	+10 15 36.3	14.3 T		360
104P	1997 11 05.42483	22 08 11.16	+10 15 34.8			360
104P	1997 11 05.50505	22 08 14.06	+10 14 47.4	14.0 T		402
104P	1997 11 05.50852	22 08 14.22	+10 14 45.4			402
104P	1997 11 05.51199	22 08 14.31	+10 14 43.3			402
104P	1997 11 06.50363	22 08 54.16	+10 05 08.1	14.0 T		897
104P	1997 11 06.51458	22 08 54.67	+10 05 02.0	13.9 T		897

116P/Wild 4

116P	1997 10 21.43023	19 28 10.96	-25 32 02.4	18.0 T		867
116P	1997 10 21.43683	19 28 11.23	-25 32 01.6			867
116P	1997 10 21.44343	19 28 11.58	-25 31 59.9			867

117P/Helin-Roman-Alu 1

117P	1997 10 29.42656	20 38 22.89	-27 59 53.7	16.8 T		360
117P	1997 10 29.43316	20 38 23.13	-27 59 51.8			360

128P/Shoemaker-Holt 1

128P-B	1997 10 11.48475	04 40 34.88	+20 03 56.0	19.9 N	691
128P-B	1997 10 11.48827	04 40 34.87	+20 03 56.0	16.5 T	691
128P-B	1997 10 14.01882	04 40 39.77	+19 59 36.0	15.4 T	118
128P-B	1997 10 14.02196	04 40 39.77	+19 59 35.7	15.6 T	118
128P-B	1997 10 14.02769	04 40 39.76	+19 59 35.1	15.5 T	118
128P-B	1997 10 27.72708	04 38 33.05	+19 30 50.2	16.1 T	360
128P-B	1997 10 27.73229	04 38 32.97	+19 30 49.4		360
128P-B	1997 11 02.69948	04 36 21.17	+19 15 46.4	16.1 T	360
128P-B	1997 11 02.70469	04 36 21.02	+19 15 45.6		360
128P-B	1997 11 03.73552	04 35 53.91	+19 13 01.8	15.2 T	402
128P-B	1997 11 03.73899	04 35 53.81	+19 13 01.3		402
128P-B	1997 11 03.74247	04 35 53.72	+19 13 00.6		402
128P-B	1997 11 07.67500	04 34 00.24	+19 02 17.4	15.2 T	867
128P-B	1997 11 07.68091	04 34 00.04	+19 02 16.6		867
128P-B	1997 11 09.68681	04 32 56.28	+18 56 38.5	15.7 T	360
128P-B	1997 11 09.69392	04 32 56.06	+18 56 37.4		360

129P/Shoemaker-Levy 3

129P	1997 11 03.77118	07 57 50.95	+23 19 39.2	18.6 T	360
129P	1997 11 03.77604	07 57 51.07	+23 19 38.7		360
129P	1997 11 06.72069	07 59 33.98	+23 13 39.9	18.2 T	402
129P	1997 11 06.72417	07 59 34.06	+23 13 39.9		402
129P	1997 11 06.72764	07 59 34.11	+23 13 39.3		402
129P	1997 11 07.78127	08 00 08.36	+23 11 36.8	18.3 T	867
129P	1997 11 07.78822	08 00 08.58	+23 11 35.8		867
129P	1997 11 09.79635	08 01 09.31	+23 07 48.8	18.4 T	360
129P	1997 11 09.80052	08 01 09.44	+23 07 48.5		360

131P/Mueller 2

131P	1997 10 05.72440	01 26 11.56	+12 25 59.6	16.9 T	897
131P	1997 10 05.73999	01 26 10.92	+12 25 53.1		897
131P	1997 10 05.74744	01 26 10.64	+12 25 51.2	17.0 T	897
131P	1997 10 26.57733	01 14 09.50	+09 48 34.9	16.8 T	897
131P	1997 10 26.58447	01 14 09.34	+09 48 29.4		897
131P	1997 10 26.59739	01 14 08.92	+09 48 24.7		897
131P	1997 10 26.85905	01 14 00.87	+09 46 27.1		627
131P	1997 10 26.87979	01 14 00.14	+09 46 17.9		627
131P	1997 10 26.90491	01 13 59.30	+09 46 05.9		627
131P	1997 10 27.65295	01 13 35.64	+09 40 27.5	17.6 T	360
131P	1997 10 27.65833	01 13 35.48	+09 40 25.1		360
131P	1997 10 30.16906	01 12 20.56	+09 21 42.4		704
131P	1997 10 30.18651	01 12 19.88	+09 21 37.7		704
131P	1997 10 30.20380	01 12 19.48	+09 21 28.7		704
131P	1997 10 30.22116	01 12 18.74	+09 21 20.2		704
131P	1997 10 30.24113	01 12 18.25	+09 21 11.5		704
131P	1997 11 05.50799	01 09 37.07	+08 37 18.5	17.7 T	360
131P	1997 11 05.51337	01 09 36.93	+08 37 15.9		360
131P	1997 11 09.53875	01 08 16.86	+08 11 42.2	17.5 T	402
131P	1997 11 09.54222	01 08 16.88	+08 11 40.9		402
131P	1997 11 09.54569	01 08 16.76	+08 11 39.2		402

132P/Helin-Roman-Alu 2

132P	1997 10 05.75404	02 13 47.14	+08 19 58.8		897
132P	1997 10 05.76435	02 13 47.09	+08 19 54.5		897
132P	1997 10 05.78620	02 13 46.90	+08 19 45.8	15.4 T	897
132P	1997 10 12.38618	02 12 46.45	+07 32 37.1	16.1 T	691
132P	1997 10 12.38956	02 12 46.39	+07 32 36.0	20.0 N	691
132P	1997 10 18.88552	02 11 02.41	+06 44 16.1		118
132P	1997 10 18.89884	02 11 02.13	+06 44 10.3	15.3 T	118
132P	1997 10 19.90628	02 10 42.93	+06 36 41.8		118
132P	1997 10 19.91223	02 10 42.80	+06 36 39.2		118
132P	1997 10 19.91567	02 10 42.71	+06 36 37.7	15.8 T	118
132P	1997 10 26.60509	02 08 23.59	+05 48 27.0	15.4 T	897
132P	1997 10 26.61317	02 08 23.43	+05 48 23.6		897
132P	1997 10 26.62500	02 08 23.11	+05 48 18.8		897
132P	1997 10 27.66458	02 08 00.50	+05 41 11.2	15.8 T	360
132P	1997 10 27.66875	02 08 00.38	+05 41 09.5		360
132P	1997 10 28.60097	02 07 40.37	+05 34 52.6		352
132P	1997 10 28.60306	02 07 40.31	+05 34 51.6		352
132P	1997 10 28.60514	02 07 40.27	+05 34 50.6		352
132P	1997 10 28.64128	02 07 39.30	+05 34 36.3	15.9 T	900
132P	1997 10 28.65109	02 07 39.15	+05 34 32.7		900
132P	1997 11 05.54688	02 04 58.02	+04 46 50.8	15.6 T	360
132P	1997 11 05.55000	02 04 57.97	+04 46 49.9		360
132P	1997 11 07.72154	02 04 19.27	+04 35 48.5	15.5 T	867
132P	1997 11 07.72848	02 04 19.14	+04 35 46.5		867

Note 1: poor distribution of reference stars. 2: involved with star.

OBSERVATIONS OF MINOR PLANETS

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

010 Caussols

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

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

Observers C. Pollas, D. Albanese

Measurer E. W. Elst

0.9-m Schmidt telescope

1966 BL, 3, 1, 0; 1978 RM₇, 6, 2, 2; 1981 EY₁₄, 6, 2, 2; 1987 OT, 6, 2, 2; 1996 PC₃, 6, 2, 2; 1996 PJ₆, 6, 2, 2; 1996 PK₆, 6, 2, 2; 1996 PT₆, 6, 2, 2; 1996 QX₁, 3, 1, 0; 1996 ST, 6, 2, 2; 1996 TK₆, 3, 1, 0; 6180 P-L, 6, 2, 2; (123), 6, 2, 2; (244), 6, 2, 2; (1730), 3, 1, 0; (1932), 3, 1, 0; (2949), 6, 2, 2; (3059), 6, 2, 2; (4314), 6, 2, 2; (4883), 3, 1, 0; (5955), 6, 2, 2; (7156), 6, 2, 2; (7365), 6, 2, 2; [120, 23, 0*, 1996/08/18-1996/08/20]

012 Uccle

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

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

1987 SM₁₂, 3, 1, 0; 1987 YU₁, 6, 2, 27; 1990 SX₅, 3, 1, 0; 1993 UT₆, 7, 2, 2; 1997 PF₂, 3, 1, 0;
 1997 RG₉, 3, 1, 0; 1997 RT₉, 3, 1, 0; 1997 ST₄, 3, 1, 0; (6375), 3, 1, 0; [34, 9, 0*, 1997/09/10–
 1997/10/27]

033 Tautenburg

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

1.3-m Schmidt telescope
 PPM

1992 GJ₈ *, 2, 2, 1; 1992 GK₈ *, 3, 2, 1; 1992 HJ₇ *, 5, 5, 6; 1993 SR₁₅, 2, 1, 0; 1995 BO₁, 2, 1,
 0; 1995 CX₁₀ *, 2, 1, 0; (81), 2, 1, 0; (6234), 5, 5, 6; (6827), 3, 2, 1; (7243), 8, 7, 34; [34, 10, 4*,
 1992/04/01–1995/02/03]

046 Kleť

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

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

0.57-m $f/5.2$ reflector + CCD
 GSC, USNO-SA1.0

1973 SS, 9, 2, 1; 1979 SJ, 6, 2, 7; 1980 RE₁, 6, 2, 9; 1980 SM, 6, 2, 3; 1981 SN, 6, 2, 1; 1982 UD₂,
 6, 2, 7; 1984 QM, 6, 2, 1; 1985 HH, 6, 2, 1; 1985 UY, 5, 2, 1; 1986 TR₃, 12, 4, 4; 1986 XF₅, 6,
 2, 1; 1988 AA₂, 6, 2, 1; 1989 VA, 12, 3, 15; 1990 VD₇, 6, 2, 7; 1991 FK₁, 4, 1, 0; 1991 WA, 7,
 2, 3; 1992 AB, 3, 1, 0; 1995 DA₁, 6, 2, 7; 1995 DB₁, 9, 3, 13; 1995 ES, 6, 2, 1; 1996 FG₃, 5,
 1, 0; 1996 LA, 5, 2, 1; 1996 OX, 6, 2, 1; 1996 TL₆₆, 1, 1, 0; 1997 NV, 7, 2, 2; 1997 PX₁, 6, 2,
 3; 1997 PU₂, 5, 2, 3; 1997 QD, 6, 3, 2; 1997 QK, 9, 3, 2; 1997 RC, 16, 5, 10; 1997 RT, 3, 1, 0;
 1997 RD₁, 9, 3, 10; 1997 RK₇, 29, 10, 54; 1997 RL₇, 6, 2, 1; 1997 SE, 33, 12, 37; 1997 SF, 22,
 7, 27; 1997 SG, 21, 8, 31; 1997 SH₁, 17, 6, 12; 1997 SJ₁, 21, 7, 12; 1997 SK₁, 5, 2, 1; 1997 SU₁,
 21, 7, 28; 1997 SV₁, 24, 8, 38; 1997 SW₁, 21, 7, 28; 1997 SK₂, 24, 8, 27; 1997 SL₂, 21, 7, 27;
 1997 SF₃, 18, 6, 26; 1997 SG₃, 19, 6, 31; 1997 SH₃, 21, 7, 27; 1997 SJ₃, 16, 6, 26; 1997 SX₃, 18,
 6, 26; 1997 SE₅, 17, 5, 15; 1997 SQ₁₇, 3, 1, 0; 1997 TD, 17, 5, 16; 1997 TR, 6, 2, 1; 1997 TS,
 5, 2, 1; 1997 TX₇, 27, 9, 33; 1997 TY₇, 14, 6, 31; 1997 TY₈, 12, 5, 20; 1997 TB₁₂, 20, 7, 27;
 1997 TY₁₆, 9, 3, 18; 1997 TT₂₅, 11, 4, 20; 1997 UA *, 11, 2, 1; 1997 UK *, 7, 2, 3; 1997 UL *, 9,
 2, 3; 1997 UN *, 9, 2, 3; 1997 UO *, 12, 3, 3; 1997 UP *, 10, 2, 3; 1997 UQ *, 10, 2, 1; 1997 UR,
 14, 3, 7; 1997 UY *, 8, 2, 1; 1997 UZ *, 8, 2, 1; 1997 UN₁ *, 6, 2, 1; 1997 US₂, 4, 1, 0; 1997 UD₇ *,
 9, 2, 6; 1997 UZ₇ *, 8, 2, 1; 1997 UA₈ *, 9, 2, 1; 1997 UD₈ *, 7, 2, 1; 1997 UF₉, 19, 5, 12;
 1997 UH₉, 14, 4, 10; 1997 US₉, 15, 4, 4; 1997 UT₉, 10, 3, 2; 1997 UZ₁₀, 5, 1, 0; 1997 UA₁₅, 7, 2,
 4; 1997 UE₁₅ *, 10, 2, 1; 1997 UL₂₀, 3, 1, 0; 1997 VC *, 10, 2, 1; 1997 VD *, 6, 2, 1; 1997 VE *, 11,
 2, 1; 1997 VF *, 10, 2, 1; 1997 VG, 13, 2, 1; 1997 VA₁ *, 9, 2, 1; 1997 VB₁ *, 6, 2, 1; 1997 VD₁ *,
 9, 2, 1; 1997 VT₁ *, 7, 2, 1; 1997 VM₄, 7, 2, 4; 1997 VN₄, 3, 1, 0; 1997 VG₆, 10, 2, 1; 1997 VL₆ *,
 10, 2, 6; 4033 P-L, 15, 3, 2; 2122 T-3, 4, 1, 0; (142), 3, 1, 0; (258), 3, 1, 0; (433), 3, 1, 0; (1620),
 3, 1, 0; (2358), 6, 2, 11; (3102), 3, 1, 0; (3200), 3, 1, 0; (4084), 2, 1, 0; (5630), 3, 1, 0; (5836), 3,
 1, 0; (6442), 3, 1, 0; [1102, 111, 24*, 1997/09/12–1997/11/11]

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

1981 SN₁, 5, 1, 0; [5, 1, 0*, 1988/01/18–1988/01/19]

084 Pulkovo

T. P. Kisseleva, Pulkovo Observatory, Russian Academy of Sciences, Pulkovskoe
 shosse 65, St. Petersburg 196140, Russia [aak@pulvz.spb.su]

Observers T. P. Kisseleva, N. M. Bronnikova, T. A. Vasilieva, O. A. Kalinichenko,
 V. S. Tchubej.

0.34-m $f/10$ normal astrograph
 PPM

(1), 94, 93, 6644; (2), 62, 62, 6994; (3), 49, 49, 7192; (4), 61, 60, 5114; (6), 58, 57, 7009; (7), 22, 21,
 4144; (11), 53, 51, 4606; (18), 61, 59, 6655; (25), 10, 10, 129; (39), 77, 74, 7072; (40), 56, 53, 5251;
 (389), 3, 3, 9; (532), 21, 21, 2003; (704), 54, 54, 5836; [681, 14, 0*, 1974/04/19–1994/05/09]

097 Wise Observatory, Mitzpeh Ramon

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

Observer S. Kaspi
 Measurer E. O. Ofek
 1.0-m $f/7$ reflector + CCD
 GSC

1997 NU, 2, 1, 0; [2, 1, 0*, 1997/08/29]

098 Asiago Observatory, Cima Ekar

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

Observers U. Munari, A. Boattini, M. Tombelli
 Measurers M. Tombelli, G. Forti, A. Boattini

0.67-m $f/3.2$ Schmidt

(78), 2, 1, 0; (389), 4, 2, 8; (1411), 4, 2, 8; (3749), 2, 1, 0; (4183), 4, 1, 0; (5452), 2, 1, 0; (6019),
 2, 1, 0; (7914), 2, 1, 0; (7952), 2, 1, 0; (7959), 4, 1, 0; [28, 10, 0*, 1997/09/24–1997/10/25]

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

0.40-m $f/5$ reflector + CCD

GSC

1992 ER, 3, 1, 0; 1996 GJ₂, 3, 1, 0; 1996 PD₃, 5, 2, 27; 1996 PJ₅, 11, 3, 27; 1997 PP₄, 6, 2, 14;
 1997 PQ₄, 11, 3, 16; 1997 RT, 2, 1, 0; 1997 RB₁, 3, 1, 0; 1997 SE₁, 2, 1, 0; 1997 SY₁, 7, 2, 1;
 1997 SE₅, 4, 1, 0; 1997 SQ₁₄, 9, 3, 4; 1997 SL₁₇, 10, 3, 17; 1997 TT₂₅, 3, 1, 0; 1997 UR, 4, 1, 0;
 1997 UB₁ *, 18, 5, 14; 1997 US₂, 3, 1, 0; 1997 UX₂, 11, 3, 8; 1997 UJ₅ *, 14, 4, 9; 1997 UK₅ *,
 13, 4, 9; 1997 UH₉, 4, 1, 0; 1997 UU₁₄ *, 3, 1, 0; (5848), 3, 1, 0; (7957), 3, 1, 0; (7967), 2, 1, 0;
 [157, 25, 4*, 1997/09/30–1997/11/03]

106 Crni vrh

H. Mikuž, Kersnikova 11, SI-61000 Ljubljana, Slovenia [herman.mikuz@uni-lj.si]
 0.36-m $f/6.7$ Schmidt-Cassegrain + CCD

GSC

1997 OU₂, 2, 1, 0; 1997 PC₄, 2, 1, 0; 1997 SW₃₀, 6, 3, 13; 1997 UF₉, 2, 1, 0; 1997 UH₉, 3, 1, 0;
 [15, 5, 0*, 1997/09/21–1997/11/01]

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

1996 CJ₇, 3, 1, 0; 1997 SE₅, 2, 1, 0; (35), 3, 1, 0; (142), 3, 1, 0; (376), 2, 1, 0; (5819), 3, 1, 0; [16,
 6, 0*, 1997/09/07–1997/10/18]

112 Osservatorio Pleiade

P. Antolini, Via Bertoldi 84, I-37026 Settimo di Pescantina (Verona), Italy
 [castvr@chiostro.univr.it]

Observers P. Antolini, F. Castellani, I. Dal Prete

0.60-m $f/3.0$ reflector + CCD
GSC

1997 SA₂₅, 6, 2, 2; (6334), 6, 2, 2; [12, 2, 0*, 1997/10/26–1997/10/28]

113 Volkssternwarte Drebach, Schönbrunn

G. Lehmann, Volkssternwarte Drebach, D-09430 Drebach, Germany
[lehmann@stw-drebach.zp.sn.schule.de]

Observers J. Kandler, G. Lehmann

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

1989 SX₁₄, 6, 12; 1990 TH₁₂, 9, 4, 30; 1990 TF₁₃, 3, 1, 0; 1990 TV₁₃, 45, 14, 44; 1990 UF₂, 6, 3, 2; 1991 AV₂, 23, 8, 13; 1991 RP₂, 9, 3, 2; 1991 TE₅, 3, 1, 0; 1995 BC₁₆, 5, 2, 2; 1997 SS₄, 7, 2, 1; 1997 SX₉, 6, 2, 1; 1997 US₄, 1, 0; 1997 UA₄ *, 30, 8, 17; (37), 4, 1, 0; (906), 3, 1, 0; (4019), 6, 2, 5; (4666), 3, 1, 0; (5642), 3, 1, 0; [183, 18, 1*, 1997/02/01–1997/11/08]

117 Sendling

H. Beuchat, European Patent Office, Erhardstrasse 27, D-80331 Munich, Germany
[100341.75@compuserve.com]

0.20-m $f/10$ reflector + CCD
GSC

1997 SG₁, 16, 5, 7; (89), 8, 3, 4; (258), 3, 1, 0; (2235), 10, 4, 6; [37, 4, 0*, 1997/10/28–1997/11/04]

118 Modra

A. Galád, AGO MFF UK, P.O. Box 4, SK-90001 Modra, Slovakia
[ago.modra@center.fmph.uniba.sk]

Observers P. Kolény, L. Kornoš, A. Galád, A. Pravda
0.6-m $f/5.5$ reflector + CCD
GSC

1981 UT₇, 2, 1, 0; 1989 VA₆, 6, 2, 1; 1992 YH₂, 2, 1, 0; 1997 QA₂, 2, 1, 0; 1997 QK₁, 5, 2, 1; 1997 RT₆, 6, 3, 5; 1997 RH₉, 2, 1, 0; 1997 RN₉, 4, 2, 1; 1997 SB₄, 4, 2, 2; 1997 SC₃₈, 14, 31; 1997 SW₄, 9, 5, 22; 1997 SE₅, 6, 2, 2; 1997 TR₁₃, 5, 12; 1997 TS₅, 5, 2, 8; 1997 TW₂₄ *, 6, 2, 3; 4165 T-3, 7, 3, 18; (142), 2, 1, 0; (1922), 2, 1, 0; (3200), 4, 2, 6; [125, 19, 1*, 1997/09/21–1997/10/23]

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

(419), 2, 1, 0; (1980), 3, 1, 0; [5, 2, 0*, 1997/10/22–1997/10/25]

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

1957 JP₂, 2, 1, 0; 1990 TX₅, 5, 2, 1; 1991 RR₃₀, 6, 2, 1; 1997 SE₅, 9, 2, 1; 1997 TB₁₈, 2, 1, 0; 1997 TG₂₄, 6, 2, 1; 1997 TJ₂₄, 3, 1, 0; 1997 UG₃ *, 6, 2, 1; 4034 T-1, 4, 1, 0; 1045 T-2, 4, 1, 0; (4734), 4, 1, 0; (6160), 3, 1, 0; [54, 12, 1*, 1997/10/02–1997/10/26]

126 Monte Viseggi

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

Observers P. Pietrapiana, L. Zannoni, G. Scarfi
Measurer P. Pietrapiana

0.40-m $f/6$ reflector + CCD
USNO-SA1.0, GSC

1997 UG₂, 10, 2, 4; 1997 UW₂ *, 5, 2, 1; 1997 UG₉, 2, 1, 0; 1997 UH₉, 3, 1, 0; [20, 4, 1*, 1997/10/24–1997/11/01]

127 Bornheim

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

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

1980 FF₁₂, 4, 2, 1; 1988 NR₉, 9, 3, 3; 1990 QW₁₇, 7, 3, 23; 1990 UO₂, 8, 4, 25; 1991 DK₁₂, 4, 25; 1993 ON₉, 9, 3, 3; 1993 VR₂, 21, 5, 26; 1997 UE₉ *, 26, 5, 7; 4835 T-1, 9, 3, 23; (7952), 8, 3, 23; [113, 10, 1*, 1997/10/05–1997/11/03]

132 Bedoin

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

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

1991 AV₂, 3, 1, 0; 1997 TG₂₄, 9, 3, 24; 1997 TJ₂₄, 9, 3, 16; 1997 UR₉ *, 9, 3, 3; [30, 4, 1*, 1997/10/08–1997/11/01]

134 Groszschwabhausen

H.-G. Reimann, Astrophysikalisches Institut und Universitätssternwarte Jena,
Schillergäßchen 2, D-07745 Jena, Germany [rei@astro.uni-jena.de]

Observers H.-G. Reimann, W. Pfau

Measurer H.-G. Reimann

0.90-m $f/2$ Schmidt + CCD
GSC

1990 TH₁₂, 3, 1, 0; [3, 1, 0*, 1997/10/28]

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 $f/3.3$ Schmidt-Cassegrain + CCD
GSC

1991 DK₆, 6, 2, 14; 1992 DN₆, 8, 2, 2; 1992 UP₆, 3, 1, 0; 1993 VR₂, 6, 2, 14; 1995 BT₃, 3, 1, 0; 1995 EB₁, 3, 1, 0; 1997 RV₈, 3, 1, 0; 1997 SE₅, 7, 2, 1; 1997 UU₉ *, 13, 3, 15; 1997 VV *, 6, 2, 1; 2020 P-L, 8, 2, 1; 4835 T-1, 3, 1, 0; (795), 2, 1, 0; [71, 13, 2*, 1997/10/18–1997/11/02]

141 Hottviller

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

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

Measurer P. Buttani

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

1997 TB₁₈, 7, 2, 2; 1997 UP₉, 3, 1, 0; [10, 2, 0*, 1997/10/30–1997/11/02]

292 Burlington

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

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

1997 OM₃, 3, 1, 0; 1997 PA₄, 5, 2, 2; 1997 QB₅ *, 27, 9, 35; 1997 RP₁₀ *, 20, 7, 25; (7902), 9, 4, 24; [64, 5, 2*, 1997/08/07–1997/09/30]

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 X. Zhou, J. Zhu, L. C. Deng, R. Chen, Y. J. Chen, X. Y. Li,
H. T. Zhang, Z. Y. Zheng, X. M. Teng, Z. Zheng

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

0.60-m Schmidt + CCD

1978 SA₈, 6, 2, 6; 1981 EQ₂₈, 3, 1, 0; 1981 EX₃₀, 6, 2, 5; 1981 EU₃₃, 3, 1, 0; 1981 EW₃₈, 3, 1, 0; 1983 CQ₂, 4, 1, 0; 1985 PN, 7, 2, 1; 1989 LT, 3, 1, 0; 1990 RR₅, 6, 2, 3; 1990 TK₁₅, 3, 1, 0; 1991 GH₁, 8, 2, 2; 1991 RA₁₅, 3, 1, 0; 1992 CD₁, 6, 2, 8; 1992 EE, 6, 2, 1; 1992 UG₃, 10, 2, 1; 1992 UG₄, 8, 2, 2; 1992 YS₂, 4, 1, 0; 1993 BC₅, 10, 3, 10; 1993 OW₃, 3, 1, 0; 1993 QA₉, 3, 1, 0; 1993 RH₂, 6, 2, 1; 1993 TL₁₃, 6, 2, 9; 1993 TL₂₅, 3, 1, 0; 1993 UM₈, 3, 1, 0; 1993 XK₁, 12, 4, 16; 1994 WU₁, 3, 1, 0; 1995 EF₁, 3, 1, 0; 1995 FP₁₄, 8, 2, 15; 1996 GB₁₈, 7, 2, 2; 1996 GA₁₉, 10, 3, 8; 1996 GD₂₁, 3, 1, 0; 1996 HA₁₅, 10, 2, 1; 1996 LV₃, 3, 1, 0; 1996 TU₁₃, 3, 1, 0; 1996 WG₃, 3, 1, 0; 1996 YH₃, 10, 3, 5; 1997 NZ, 3, 1, 0; 1997 OT, 3, 1, 0; 1997 PC₂, 3, 1, 0; 1997 PL₅, 6, 2, 2; 1997 QF₂, 3, 1, 0; 1997 QU₄, 3, 1, 0; 1997 QA₅, 3, 1, 0; 1997 RY₂, 3, 1, 0; 1997 RT₈, 15, 4, 22; 1997 RY₈, 6, 2, 2; 1997 RK₉, 6, 2, 1; 1997 RD₁₀, 6, 2, 5; 1997 ST, 9, 3, 11; 1997 SU, 12, 4, 12; 1997 SV, 3, 1, 0; 1997 SX, 3, 1, 0; 1997 SO₁, 3, 1, 0; 1997 SQ₃, 3, 1, 0; 1997 SR₃, 3, 1, 0; 1997 SZ₃, 6, 2, 1; 1997 SN₄, 6, 2, 7; 1997 SR₈, 6, 2, 25; 1997 SD₁₀, 10, 3, 12; 1997 SF₁₀, 8, 2, 13; 1997 SH₁₀, 10, 3, 23; 1997 SK₁₀, 9, 3, 37; 1997 SR₁₀, 3, 1, 0; 1997 SU₁₀, 3, 1, 0; 1997 SV₁₀, 3, 1, 0; 1997 SK₁₅, 3, 1, 0; 1997 SO₁₆, 3, 1, 0; 1997 SX₁₇, 3, 1, 0; 1997 SX₂₄, 3, 1, 0; 1997 SQ₃₂, 12, 4, 9; 1997 SR₃₂, 6, 2, 1; 1997 SM₃₃ *, 10, 3, 28; 1997 SN₃₃ *, 9, 3, 2; 1997 SO₃₃ *, 6, 2, 4; 1997 SP₃₃ *, 6, 2, 1; 1997 SQ₃₃ *, 6, 2, 1; 1997 SR₃₃ *, 6, 2, 1; 1997 SS₃₃ *, 6, 2, 1; 1997 ST₃₃ *, 6, 2, 1; 1997 SU₃₃ *, 6, 2, 1; 1997 SV₃₃ *, 6, 2, 1; 1997 SW₃₃ *, 6, 2, 2; 1997 SX₃₃ *, 6, 2, 9; 1997 SY₃₃ *, 6, 2, 5; 1997 SA₃₄ *, 6, 2, 14; 1997 SB₃₄ *, 6, 2, 12; 1997 SC₃₄ *, 10, 3, 21; 1997 TT₅, 6, 2, 2; 1997 TL₆, 13, 4, 14; 1997 TW₁₁, 3, 1, 0; 1997 TK₁₄, 3, 1, 0; 1997 TG₁₅, 3, 1, 0; 1997 TW₁₅, 9, 3, 9; 1997 TZ₁₅, 3, 1, 0; 1997 TB₁₈, 7, 2, 7; 1997 TM₁₈, 10, 3, 2; 1997 TR₁₈, 7, 2, 2; 1997 TS₁₈, 7, 2, 2; 1997 TT₁₈, 4, 1, 0; 1997 TU₁₈, 7, 2, 2; 1997 TX₁₈, 3, 1, 0; 1997 TY₁₉, 3, 1, 0; 1997 TU₂₀, 3, 1, 0; 1997 TV₂₀, 3, 1, 0; 1997 TS₂₂, 6, 2, 6; 1997 TT₂₂, 6, 2, 8; 1997 TG₂₄, 7, 2, 7; 1997 TJ₂₄, 6, 2, 1; 1997 TK₂₄, 9, 3, 13; 1997 TL₂₄, 3, 1, 0; 1997 TM₂₄, 3, 1, 0; 1997 TN₂₄, 3, 1, 0; 1997 TO₂₄, 13, 4, 31; 1997 TR₂₄, 6, 2, 1; 1997 TS₂₄, 6, 2, 2; 1997 TH₂₅ *, 7, 2, 2; 1997 TJ₂₅ *, 7, 2, 2; 1997 TK₂₅ *, 9, 2, 7; 1997 TL₂₅ *, 6, 2, 8; 1997 TM₂₅ *, 9, 3, 7; 1997 TN₂₅ *, 10, 3, 7; 1997 TO₂₅ *, 8, 2, 2; 1997 TP₂₅ *, 19, 5, 13; 1997 TQ₂₅ *, 6, 2, 3; 1997 TR₂₅ *, 9, 3, 10; 1997 TS₂₅ *, 9, 3, 10; 1997 TT₂₅ *, 23, 7, 22; 1997 TA₂₆ *, 12, 3, 11; 1997 TB₂₆ *, 9, 3, 12; 1997 TC₂₆ *, 9, 3, 10; 1997 TD₂₆ *, 6, 2, 8; 1997 TE₂₆ *, 10, 3, 22; 1997 TF₂₆ *, 10, 3, 22; 1997 TG₂₆ *, 7, 2, 10; 1997 TH₂₆ *, 13, 4, 22; 1997 TK₂₆ *, 10, 3, 8; 1997 TO₂₆ *, 9, 2, 10; 1997 TP₂₆ *, 7, 2, 3; 1997 TQ₂₆ *, 10, 2, 1; 1997 TR₂₆ *, 6, 2, 6; 1997 TS₂₆ *, 6, 2, 8; 1997 TT₂₆ *, 6, 2, 7; 1997 UH₃ *, 12, 4, 10; 1997 UQ₃, 3, 1, 0; 1997 UB₄ *, 7, 2, 2; 1997 UC₄ *, 7, 2, 2; 1997 UD₄ *, 7, 2, 2; 1997 UE₄ *, 7, 2, 2; 1997 UF₄ *, 7, 2, 1; 1997 UG₄ *, 7, 2, 2; 1997 UH₄ *, 7, 2, 2; 1997 UJ₄ *, 7, 2, 2; 1997 UK₄ *, 7, 2, 2; 1997 UL₄ *, 7, 2, 2; 1997 UM₄ *, 7, 2, 2; 1997 UN₄ *, 7, 2, 2; 1997 UO₄ *, 11, 3, 2; 1997 UP₄ *, 6, 2, 1; 1997 UQ₄ *, 6, 2, 1; 1997 UR₄ *, 6, 2, 2; 1997 US₄ *, 6, 2, 2; 1997 UT₄ *, 6, 2, 4; 1997 UU₄ *, 9, 3, 14; 1997 UV₄ *, 7, 2, 1; 1997 UW₄ *, 7, 2, 1; 1997 UX₄ *, 9, 3, 13; 1997 UY₄ *, 6, 2, 1; 1997 UZ₄ *, 9, 3, 13; 1997 UA₅ *, 9, 3, 5; 1997 UB₅ *, 6, 2, 2; 1997 UC₅ *, 6, 2, 2; 1997 UD₅ *, 6, 2, 2; 1997 UE₅ *, 6, 2, 2; 1997 UF₅ *, 3, 1, 0; 1997 UG₅ *, 6, 2, 13; 1997 US₂₀ *, 9, 3, 13; 1997 UT₂₀ *, 7, 2, 4; 1997 UU₂₀ *, 9, 2, 4; 1997 UV₂₀ *, 6, 2, 3; 1997 UW₂₀ *, 6, 2, 9; 1997 UX₂₀ *, 10, 3, 21; 1997 UY₂₀ *, 12, 4, 5; 1997 UZ₂₀ *, 12, 4, 5; 1997 UA₂₁ *, 12, 4, 5; 1997 UB₂₁ *, 6, 2, 2; 1997 UC₂₁ *, 7, 2, 3; 1997 UD₂₁ *, 10, 3, 3; 1997 UG₂₁ *, 7, 2, 2; 1997 UH₂₁ *, 6, 2, 5; 1997 UJ₂₁ *, 6, 2, 1; 1997 UK₂₁ *, 6, 2, 1; 1997 UL₂₁ *, 7, 2, 1; 1997 VQ₂ *, 6, 2, 1; 1997 VR₂ *, 6, 2, 1; 1997 VS₂ *, 6, 2, 2; 1997 VT₂ *, 6, 2, 1; 9076 P-L, 4, 1, 0; 3078 T-1, 3, 1, 0; 4034 T-1, 13, 4, 4; (86), 3, 1, 0; (250), 7, 2, 1; (589), 3, 1, 0; (649), 3, 1, 0; (848), 6, 2, 20; (937), 3, 1, 0; (1359), 4, 1, 0; (1741), 3, 1, 0; (1812), 3, 1, 0; (2268), 10, 2, 8; (2388), 3, 1, 0; (2473), 3, 1, 0; (2708), 4, 1, 0; (2900), 6, 2, 4; (3221), 6, 2, 2; (3472), 7, 2, 6; (3481), 3, 1, 0; (3530), 3, 1, 0; (3709), 4, 1, 0; (4146), 3, 1, 0; (4251), 3, 1, 0; (4256), 3, 1, 0; (4810), 3, 1, 0; (4844), 3, 1, 0; (5248), 3, 1, 0; (5270), 3, 1, 0; (5664), 3, 1, 0; (5702), 7, 2, 3; (6305), 3, 1, 0; (6364), 6, 2, 4; (6457), 6, 2, 2; (6942), 9, 3, 3; (6954), 13, 4, 13; (7005), 6, 2, 1; (7029), 3, 1, 0; (7152), 13, 4, 20; (7211), 7, 2, 3; (7867), 3, 1, 0; (7876), 3, 1, 0; (7891), 8, 2, 1; (7921), 6, 2, 13; (7926), 4, 1, 0; [1525, 241, 95*, 1997/08/10–1997/11/03]

352 Konan

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

0.28-m $f/5.0$ reflector + CCD

GSC

1997 SE₅, 3, 1, 0; [3, 1, 0*, 1997/10/28]

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

1997 SE₅, 3, 1, 0; 1997 SL₁₆, 3, 1, 0; 1997 UR, 4, 1, 0; 1997 UO₁ *, 25, 8, 15; 1997 UF₁₅ *, 16, 5, 9; 1997 VH *, 12, 4, 6; [63, 6, 3*, 1997/10/20–1997/11/07]

358 Nanyou

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

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

GSC

1997 RX₆, 4, 2, 1; 1997 SN₂₅, 4, 2, 1; 1997 TT₃, 4, 2, 1; 1997 TX₂₄ *, 4, 2, 1; 1997 UL₈ *, 4, 2, 1; 1997 UM₈ *, 4, 2, 1; 1997 UN₈ *, 4, 2, 1; 1997 UG₁₅ *, 4, 2, 3; 1997 UH₁₅ *, 4, 2, 3; 1997 VM₁ *, 4, 2, 2; 1997 VR₁ *, 4, 2, 1; [44, 11, 8*, 1997/10/04–1997/11/03]

360 Kuma Kogen Astronomical Observatory

A. Nakamura, Shimo-Hatanokawa, Kuma, Kamiukena-Gun, Ehime-Ken, 791-12 Japan
[a-nakamu@mx2.nisiq.net]

0.60-m $f/6.0$ Ritchey-Chrétien + CCD

GSC, USNO-SA1.0

1977 QQ₅, 3, 1, 0; 1989 VA, 6, 2, 15; 1991 WA, 3, 1, 0; 1992 AB, 3, 1, 0; 1992 LR, 3, 1, 0; 1995 BH₁, 2, 1, 0; 1995 HE, 4, 2, 3; 1995 UO₅, 3, 1, 0; 1996 AH₆, 2, 1, 0; 1996 FG₃, 3, 1, 0; 1996 NW, 5, 2, 2; 1997 CU₂₆, 2, 1, 0; 1997 OY, 2, 1, 0; 1997 RT, 3, 1, 0; 1997 RD₁, 3, 1, 0; 1997 SE₅, 6, 2, 15; 1997 SJ₁₆, 9, 3, 14; 1997 TD, 6, 2, 8; 1997 TA₁₀, 3, 1, 0; 1997 TT₂₅, 6, 2, 10; 1997 TW₂₅ *, 11, 4, 20; 1997 UR, 7, 2, 3; 1997 US₂, 6, 2, 5; 1997 US₄, 6, 2, 125; 1997 UX₈ *, 11, 4, 9; 1997 UF₉, 3, 1, 0; 1997 UH₉, 6, 2, 2; 1997 US₉, 3, 1, 0; 1997 UU₁₄, 9, 3, 8; 1997 VG, 6, 2, 2; 1997 VO *, 9, 3, 2; 1997 VP *, 10, 4, 6; 1997 VK₂ *, 6, 2, 1; 1997 VM₄, 3, 1, 0; (1328), 2, 1, 0; (1620), 2, 1, 0; (2340), 2, 1, 0; (3268), 2, 1, 0; (4183), 2, 1, 0; (4486), 2, 1, 0; (5718), 2, 1, 0; (5751), 2, 1, 0; [189, 42, 5*, 1996/01/24–1997/11/09]

367 Yatsuka

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

0.26-m $f/6.0$ reflector + CCD

GSC

1972 TC, 2, 1, 0; 1975 UA, 2, 1, 0; 1982 SM₆, 2, 1, 0; 1983 WM, 4, 2, 2; 1986 WO₁, 4, 2, 1; 1987 SU₁, 2, 1, 0; 1988 TR, 2, 1, 0; 1990 SZ₇, 2, 1, 0; 1990 SL₂₇, 2, 1, 0; 1991 RO₂₃, 2, 1, 0; 1992 UP₆, 2, 1, 0; 1993 ON₉, 2, 1, 0; 1993 QN₄, 2, 1, 0; 1993 TE, 4, 2, 2; 1993 UC₁, 2, 1, 0; 1994 AQ₂, 4, 2, 1; 1994 CM, 2, 1, 0; 1994 YS₁, 2, 1, 0; 1995 BG₂, 2, 1, 0; 1995 EH, 2, 1, 0; 1995 GF, 2, 1, 0; 1996 HD₁, 4, 2, 2; 1996 HZ₁, 4, 2, 2; 1996 HB₂, 2, 1, 0; 1997 TD₁₁, 4, 2, 1; 1997 TG₁₉, 2, 1, 0; 1997 VB *, 8, 4, 7; 1997 VT *, 4, 2, 1; 1997 VU *, 6, 3, 6; 2020 P-L, 2, 1, 0; 6038 P-L, 2, 1, 0; 3006 T-3, 2, 1, 0; 4171 T-3, 2, 1, 0; (142), 3, 1, 0; (258), 3, 1, 0; (376), 3, 1, 0; (5318), 2, 1, 0; [103, 37, 3*, 1997/10/18–1997/11/08]

369 Chichibu

N. Sato, 743-27, Kitairiso Sayama, Saitama-Ken 350-13, Japan
[mx05524@niftyserve.or.jp]

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

GSC

1983 CQ₂, 6, 2, 1; 1997 UL₇ *, 10, 4, 13; 1997 UM₇ *, 12, 4, 13; 1997 UN₇ *, 7, 3, 7; 1997 UO₇ *, 10, 3, 7; 1997 UT₁₉ *, 10, 4, 12; (340), 2, 1, 0; [57, 7, 5*, 1997/10/20–1997/11/07]

372 Geisei

T. Seki, Kamimachi 2-9-35, Kochi 780, Japan

0.60-m $f/3.5$ reflector

1996 FE, 5, 2, 2; 1997 VK₁ *, 3, 2, 2; [8, 2, 1*, 1997/11/01–1997/11/03]

376 Uenohara

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

0.30-m reflector + CCD

GSC

1997 RS₅, 2, 1, 0; 1997 SE₁₆, 2, 1, 0; 1997 SF₁₆, 4, 2, 17; 1997 SG₁₆, 2, 1, 0; 1997 SD₂₅, 3, 2, 17; 1997 SL₃₃ *, 4, 2, 8; 1997 TW₁₇, 2, 1, 0; 1997 TD₁₉, 2, 1, 0; 1997 TX₂₄, 4, 2, 2; 1997 TY₂₄ *, 4, 2, 2; 1997 TL₂₆ *, 6, 3, 19; 1997 UK₁₅, 2, 1, 0; [37, 12, 3*, 1997/09/30–1997/10/27]

381 Kiso

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

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

Measurer D. J. Asher

1.05-m Kiso Schmidt + CCD

GSC

1979 TY₁, 4, 1, 0; 1986 UH₃, 6, 2, 2; 1986 US₄ *, 6, 2, 2; 1986 UT₄ *, 6, 2, 2; 1989 VA, 3, 1, 0; 1990 KA, 3, 1, 0; 1990 MF, 2, 1, 0; 1991 RP₁₅, 6, 2, 2; 1991 WA, 3, 1, 0; 1992 LR, 3, 1, 0; 1992 TB, 3, 1, 0; 1993 HQ₁, 2, 1, 0; 1993 PZ₂, 6, 2, 2; 1994 AH₂, 3, 1, 0; 1995 UO₅, 3, 1, 0; 1996 FG₃, 3, 1, 0; 1997 BR, 7, 3, 2; 1997 QK₁, 5, 2, 2; 1997 RT, 3, 1, 0; 1997 RD₁, 3, 1, 0; 1997 SE₅, 2, 1, 0; 1997 TD, 3, 1, 0; 1997 TT₂₅, 3, 1, 0; 1997 UR, 3, 1, 0; 1997 US₂, 3, 1, 0; 1997 UF₉, 3, 1, 0; 1997 UH₉, 3, 1, 0; 1997 US₉, 3, 1, 0; 1997 UT₉, 3, 1, 0; 1997 UZ₁₀, 3, 1, 0; 1997 UA₁₁, 1, 1, 0; 1997 VG, 3, 1, 0; 1997 VM₄, 3, 1, 0; 1997 VN₄, 2, 1, 0; 1997 VV₅ *, 5, 2, 2; 1997 VW₅ *, 6, 2, 2; 2096 P-L, 6, 2, 2; (1202), 6, 2, 2; (1343), 6, 2, 2; (1686), 6, 2, 2; (1793), 6, 2, 2; (1797), 6, 2, 2; (1981), 3, 1, 0; (2102), 3, 1, 0; (2212), 4, 2, 2; (3200), 3, 1, 0; (3288), 3, 1, 0; (3545), 3, 1, 0; (3671), 3, 1, 0; (4183), 3, 1, 0; (4486), 3, 1, 0; (4941), 6, 2, 2; (5844), 8, 2, 2; (5879), 6, 2, 1; [213, 54, 4*, 1986/10/23–1997/11/09]

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, 4, 2, 5; 1992 BG, 3, 2, 5; 1993 VM₂, 4, 2, 5; 1995 BR₄, 3, 1, 0; 1995 FE, 4, 2, 5; 1996 ER, 4, 2, 3; 1997 QB₂, 2, 1, 0; 1997 QC₂, 2, 1, 0; 1997 QD₂, 2, 1, 0; 1997 QE₂, 2, 1, 0; 1997 QF₂, 2, 1, 0; 1997 QB₄, 2, 1, 0; 1997 RJ₁, 2, 1, 0; 1997 RP₁, 2, 1, 0; 1997 SF₂₅, 2, 1, 0; 1997 SG₂₅, 2, 1, 0; 1997 SH₂₅, 5, 2, 1; 1997 SK₂₅, 2, 1, 0; 1997 UC *, 6, 3, 9; 1997 UR, 5, 1, 0; 1997 UF₁, 2, 1, 0; 1997 UG₁, 2, 1, 0; 1997 UH₁, 2, 1, 0; 1997 UE₂, 4, 2, 6; 1997 UF₂, 4, 2, 6; 1997 UT₂ *, 7, 4, 10; 1997 UU₂ *, 8, 4, 12; 1997 UV₂ *, 10, 5, 12; 1997 UX₇, 4, 2, 4; 1997 UF₉, 4, 1, 0; 1997 UB₁₁ *, 4, 2, 6; 1997 UC₁₁ *, 4, 2, 6; 1997 UD₁₁ *, 8, 4, 8; 1997 UE₁₁ *, 6, 3, 6; 1997 UZ₁₄, 2, 1, 0; 1997 UA₁₅, 2, 1, 0; 1997 UB₁₅, 1, 1, 0; 1997 UD₁₅, 3, 1, 0; 1997 VF₁ *, 4, 2, 3; 1997 VG₁ *, 4, 2, 3; 1997 VH₁ *, 6, 3, 5; 1997 VJ₁ *, 6, 3, 5; 1997 VL₁ *, 6, 3, 5; 1997 VY₄, 6, 2, 2; (5674), 3, 1, 0; [172, 45, 13*, 1997/10/20–1997/11/10]

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

(593), 5, 1, 0; (953), 5, 1, 0; (1437), 10, 1, 0; (2378), 5, 1, 0; (2456), 20, 1, 0; [45, 5, 0*, 1997/11/01]

399 Kushiro

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

Observer S. Ueda

Measurer H. Kaneda

0.25-m $f/3.4$ hyperboloid astrocamera

GSC

1993 SH₂, 4, 2, 1; 1995 EB₁, 6, 3, 8; 1997 TH₁₉, 4, 2, 2; 1997 TN₂₆ *, 6, 3, 14; 1997 UO₈ *, 4, 2, 2; 1997 UP₈ *, 4, 2, 2; 1997 UJ₁₀, 4, 2, 1; 1997 UY₁₄, 4, 2, 1; 1997 VN₁ *, 4, 2, 1; 1997 VO₁ *, 4,

2, 1; 1997 VP₁ *, 4, 2, 1; 1997 VQ₁ *, 4, 2, 1; 1997 VB₂ *, 4, 2, 1; 1997 VJ₂ *, 4, 2, 1; 1997 VC₄ *, 4, 2, 1; 1997 VD₄ *, 4, 2, 1; 1997 VF₅ *, 4, 2, 1; [72, 17, 12*, 1997/10/11–1997/11/02]

400 Kitami

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

Observer K. Endate

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

GSC

1997 SA₃₁, 4, 2, 2; 1997 TE₂₅, 5, 2, 2; 1997 UY₂, 4, 2, 1; 1997 UQ₈ *, 4, 2, 3; 1997 UR₈ *, 4, 2, 1; 1997 US₈ *, 6, 3, 3; 1997 UT₈ *, 4, 2, 3; 1997 UU₈ *, 4, 2, 3; 1997 UV₈ *, 5, 2, 3; 1997 UW₈ *, 4, 2, 3; 1997 UY₁₀, 4, 2, 1; 1997 UJ₁₁, 3, 2, 1; 1997 VQ *, 4, 2, 1; 1997 VR *, 4, 2, 1; 1997 VS *, 4, 2, 1; 1997 VE₂ *, 4, 2, 1; 1997 VF₂ *, 4, 2, 1; (4344), 4, 2, 1; [75, 18, 12*, 1997/10/25–1997/11/02]

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

1992 LR, 3, 1, 0; 1993 TE, 3, 1, 0; 1997 QN, 6, 2, 6; 1997 QA₂, 6, 2, 6; 1997 RT, 12, 4, 12; 1997 RD₁, 3, 1, 0; 1997 SG₂, 6, 2, 6; 1997 SF₄, 3, 1, 0; 1997 SE₅, 8, 3, 12; 1997 SL₁₆, 3, 1, 0; 1997 SS₁₇, 3, 1, 0; 1997 TD, 8, 3, 7; 1997 TA₁₈, 6, 2, 5; 1997 TT₂₅, 12, 4, 13; 1997 UR, 15, 4, 6; 1997 UO₁, 3, 1, 0; 1997 UF₉, 6, 2, 1; 1997 US₉, 3, 1, 0; 1997 UT₉, 3, 1, 0; 1997 UH₁₁, 6, 2, 1; 1997 VB, 3, 1, 0; 1997 VG, 6, 2, 2; 1997 VH, 3, 1, 0; 1997 VL₂, 9, 3, 4; 1997 VM₂ *, 13, 4, 5; 1997 VY₂ *, 7, 2, 1; 1997 VM₄, 3, 1, 0; 1997 VN₄, 3, 1, 0; [165, 28, 2*, 1997/10/23–1997/11/09]

408 Nyukasa

M. Hirasawa, 6-62, Minami Koshigaya 1 Chome, Koshigaya, Saitama-Kem, 343 Japan

Observers M. Hirasawa, S. Suzuki

Measurer K. Watanabe

0.30-m $f/2.7$ Schmidt camera

GSC

1997 UN₂₁ *, 6, 2, 2; [6, 1, 1*, 1997/10/25–1997/10/27]**411 Oizumi**

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

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

GSC

1979 MN₃, 2, 1, 0; 1985 CR₂, 2, 1, 0; 1986 XF₁, 2, 1, 0; 1988 RX₂, 4, 2, 1; 1991 RR₁, 4, 2, 1; 1992 BO, 2, 1, 0; 1993 UV, 2, 1, 0; 1994 BW₄, 7, 4, 17; 1994 CM, 6, 3, 20; 1994 GT, 2, 1, 0; 1995 AG, 2, 1, 0; 1995 GF, 2, 1, 0; 1997 RP₇, 4, 2, 2; 1997 SX, 2, 1, 0; 1997 SG₄, 4, 2, 14; 1997 SH₄, 4, 2, 13; 1997 SJ₄, 7, 3, 25; 1997 SK₄, 4, 2, 14; 1997 SL₄, 4, 2, 13; 1997 SM₄, 4, 2, 14; 1997 SB₁₀, 2, 1, 0; 1997 ST₁₀, 2, 1, 0; 1997 SX₁₀, 2, 1, 0; 1997 SW₃₃, 4, 2, 4; 1997 SA₃₄, 4, 2, 2; 1997 TJ₁₇, 5, 2, 13; 1997 TL₁₇, 4, 2, 13; 1997 TM₁₇, 4, 2, 13; 1997 TN₁₇, 4, 2, 13; 1997 UY₂, 4, 2, 1; 1997 UJ₃ *, 8, 4, 11; 1997 UK₃ *, 6, 3, 11; 1997 UL₃ *, 8, 4, 11; 1997 UM₃ *, 8, 4, 11; 1997 UN₃ *, 8, 4, 11; 1997 UO₃ *, 9, 4, 11; 1997 UP₃ *, 9, 4, 11; 1997 UQ₃ *, 8, 4, 11; 1997 UR₃ *, 8, 4, 11; 1997 US₃ *, 8, 4, 11; 1997 UT₃ *, 8, 4, 11; 1997 UU₃ *, 9, 4, 11; 1997 UV₃ *, 8, 4, 11; 1997 UW₃ *, 8, 4, 11; 1997 UX₃ *, 8, 4, 11; 1997 UY₃ *, 8, 4, 11; 1997 UY₈ *, 6, 3, 8; 1997 UZ₈ *, 6, 3, 9; 1997 UA₉ *, 6, 3, 9; 1997 VJ *, 6, 3, 7; 1997 VW *, 6, 3, 7; 1997 VV *, 9, 4, 8; 1997 VZ *, 6, 3, 7; 1997 VZ₁ *, 6, 3, 7; 1997 VA₂ *, 4, 2, 4; 1997 VC₂ *, 6, 3, 7; 1997 VD₂ *, 6, 3, 7; 1997 VG₂ *, 6, 3, 7; 1997 VH₂ *, 6, 3, 7; 1997 VZ₂ *, 5, 2, 1; 1997 VB₃ *, 6, 3, 3; 1997 VC₃ *, 6, 3, 3; 1997 VD₃ *, 6, 3, 3; 1997 VE₃ *, 6, 3, 3; 1997 VF₃ *, 7, 3, 3; 1997 VG₃ *, 4, 2, 1; 1997 VH₃ *, 6, 3, 3; 1997 VJ₃ *, 6, 3, 3; 1997 VK₃ *, 6, 3, 3; 1997 VL₃ *, 6, 3, 3; 1997 VM₃ *, 6, 3, 3; 1997 VN₃ *, 6, 3, 3; 1997 VO₃ *, 6, 3, 3; 1997 VP₃ *, 7, 3, 3; 1997 VQ₃ *, 6, 3, 3; 1997 VR₃ *, 6, 3, 3; 1997 VS₃ *, 6, 3, 3; 1997 VT₃ *, 4, 2, 1; 1997 VU₃ *, 6, 3, 3; 1997 VV₃ *, 6, 3, 3; 1997 VW₃ *, 6, 3, 3; 1997 VF₄ *, 6, 3, 2; 1997 VG₄ *, 4, 2, 1; 1997 VH₅ *, 4, 2, 1; 1997 VJ₅ *, 4, 2, 1; 1997 VK₅ *, 4, 2, 1; 1997 VL₅ *, 4, 2, 1; 1997 VM₅ *, 4, 2, 1; 1997 VN₅ *, 4, 2, 1; 1997 VO₅ *, 4, 2, 1; 1997 VP₅ *, 4, 2, 1; 1997 VQ₅ *, 4, 2, 1; 1997 VR₅ *, 4, 2, 1; 1997 VS₅ *, 4, 2, 1; 1997 VT₅ *, 4, 2, 1; 1997 VZ₅ *, 4, 2, 1; 1997 VA₆ *, 4,

2, 1; 1997 VB₆ *, 4, 2, 1; 1997 VC₆ *, 4, 2, 1; 1997 VD₆ *, 4, 2, 1; 1997 VE₆ *, 4, 2, 1; 1997 VF₆ *, 4, 2, 1; 4038 P-L, 2, 1, 0; 2185 T-2, 4, 2, 1; *[540, 105, 73*, 1997/10/10–1997/11/10]*

422 Loomberah

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

0.25-m *f*/4.1 reflector + CCD

GSC

1977 QQ₅, 2, 1, 0; 1993 WD, 3, 1, 0; 1997 RD₁, 3, 1, 0; 1997 SE₅, 9, 3, 15; 1997 TD, 9, 3, 14; 1997 TT₂₅, 6, 3, 15; 1997 UR, 12, 2, 2; 1997 UF₉, 10, 4, 7; 1997 UH₉, 10, 4, 7; 1997 US₉, 6, 2, 2; 1997 VG, 3, 1, 0; (15), 3, 1, 0; (20), 3, 1, 0; (52), 3, 1, 0; (126), 3, 1, 0; (132), 3, 1, 0; (140), 3, 1, 0; (163), 3, 1, 0; (287), 3, 1, 0; (313), 3, 1, 0; (347), 3, 1, 0; (389), 5, 2, 14; (433), 3, 1, 0; (1681), 2, 1, 0; (1951), 2, 1, 0; (2212), 4, 1, 0; (2358), 3, 1, 0; (2703), 1, 1, 0; (2938), 6, 2, 19; (3568), 2, 1, 0; (3671), 5, 2, 15; (3752), 3, 1, 0; (3753), 7, 2, 15; (3840), 12, 4, 18; (5131), 2, 1, 0; (5870), 3, 1, 0; (7889), 1, 1, 0; *[164, 37, 0*, 1997/10/19–1997/11/08]*

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

1981 WC, 8, 2, 1; 1989 WA₂, 13, 3, 7; 1990 BE₁, 7, 2, 1; 1990 SK, 8, 2, 1; 1992 KQ, 7, 2, 1; *[43, 5, 0*, 1997/10/13–1997/11/08]*

424 Macquarie, near Canberra

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

[jbchild@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, 2, 32; 1991 GB₁, 2, 1, 0; 1991 RJ₂₂, 4, 1, 0; 1996 FE, 2, 1, 0; 1996 FF, 3, 1, 0; 1996 HT, 2, 1, 0; 1997 UR, 9, 1, 0; 1997 UB₈, 3, 1, 0; 1997 UH₉, 5, 1, 0; 1997 UK₉, 3, 1, 0; *[37, 10, 0*, 1997/09/30–1997/11/06]*

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

1981 SN₁, 6, 2, 1; 1991 FB₄, 6, 2, 1; 1992 UZ₂, 6, 2, 1; 1992 WL, 6, 2, 1; 1993 VE, 6, 2, 1; 1996 LL, 6, 2, 2; 1997 PR, 6, 2, 3; 1997 SR, 6, 2, 3; 1997 SE₅, 4, 1, 0; 1997 SD₂₅, 5, 2, 1; 1997 SS₃₁, 5, 2, 3; 1997 TD, 13, 4, 7; 1997 UR, 5, 2, 2; 1997 UF₉, 3, 1, 0; 1997 UH₉, 6, 2, 4; 1997 US₉, 9, 3, 4; 1997 UP₁₀ *, 6, 2, 2; 1997 UQ₁₀ *, 6, 2, 2; 1997 UH₁₁, 5, 2, 5; 1997 UV₁₄ *, 11, 4, 11; 1997 VA *, 6, 2, 1; 1997 VP₂ *, 6, 2, 1; 3138 T-1, 6, 2, 1; (65), 6, 2, 1; (258), 7, 2, 6; (2100), 9, 3, 13; (2938), 3, 1, 0; (3709), 6, 2, 1; (3747), 6, 2, 2; (3753), 6, 2, 3; (5131), 4, 2, 1; (5669), 5, 2, 7; (5819), 6, 2, 2; (6932), 6, 2, 1; *[208, 34, 5*, 1997/10/29–1997/11/11]*

427 Stockport

R. Purvinskis, Astronomical Society of S.A., GPO Box 199, Adelaide,

S.A. 5001, Australia [robcol@senet.com.au]

Observers R. Purvinskis, F. Farrell

Measurer R. Purvinskis

0.50-m *f*/5 Newtonian + CCD

GSC

(42), 7, 1, 0; (2100), 15, 2, 1; *[22, 2, 0*, 1997/09/11–1997/10/24]*

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

1997 UH₉, 5, 1, 0; 1997 VC₁ *, 11, 2, 1; *[16, 2, 1*, 1997/11/02–1997/11/03]*

476 Grange Observatory

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

[mc2213@mcclink.it]

0.30-m *f*/4.0 reflector + CCD

GSC

(258), 4, 2, 4; *[4, 1, 0*, 1997/10/29–1997/11/02]*

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

(1), 2, 1, 0; (40), 3, 1, 0; (103), 1, 1, 0; (389), 2, 1, 0; (407), 2, 1, 0; (1011), 2, 1, 0; (1139), 2, 1, 0; (1980), 4, 2, 22; (6991), 2, 1, 0; (7057), 3, 1, 0; (7131), 2, 1, 0; (7135), 1, 1, 0; *[26, 12, 0*, 1997/10/03–1997/10/30]*

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, 6, 3, 19; (7069), 2, 1, 0; *[8, 2, 0*, 1997/10/21–1997/11/09]*

504 Le Creusot

J.-C. Merlin, 17 rue P. Mendes-France, F-71200 Le Creusot, France

Observer J.-C. Merlin

Measurer J.-M. Azema

0.40-m *f*/5.1 reflector + RTC XX 1390 image intensifier

GSC

(258), 7, 1, 0; (376), 7, 1, 0; (1100), 4, 1, 0; (2809), 14, 3, 5; (3568), 3, 1, 0; *[35, 5, 0*, 1997/10/19–1997/10/29]*

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

1991 GJ₁, 6, 2, 1; 1997 SP₃, 8, 2, 11; 1997 SE₄, 3, 1, 0; 1997 UC₁ *, 12, 4, 10; 1997 US₉, 3, 1, 0; 1997 VG, 4, 1, 0; (874), 4, 1, 0; *[40, 7, 1*, 1997/10/22–1997/11/02]*

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

1973 SJ₁, 4, 2, 8; 1988 QU, 2, 1, 0; 1996 KW, 6, 3, 28; 1997 SW₂, 4, 2, 8; 1997 ST₁₇, 6, 3, 28; 1997 SF₁₈, 6, 3, 9; 1997 TE, 6, 3, 28; 1997 UL₁₅ *, 4, 2, 8; 1997 UO₂₁ *, 4, 2, 9; 1997 VP₄ *, 4, 2, 1; 1997 VQ₄ *, 4, 2, 1; 1997 VR₄ *, 4, 2, 1; 1997 VS₄ *, 4, 2, 1; 1997 VT₄ *, 6, 3, 9; *[64, 14, 7*, 1997/10/05–1997/11/03]*

1997 NOV. 14

M.P.C. 30837

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

1981 EG₁₅, 4, 2, 8; 1981 EM₂₄, 5, 2, 1; 1981 EF₃₀, 4, 2, 2; 1985 HS₁, 5, 3, 11; 1985 JK, 3, 1, 0; 1991 DD, 3, 1, 0; 1991 WA, 3, 1, 0; 1995 HA, 2, 1, 0; 1995 HC, 5, 2, 8; 1995 OD₁, 4, 2, 3; 1996 EH, 2, 1, 0; 1996 HQ, 2, 1, 0; 1996 HB₂, 7, 3, 3; 1996 QD, 7, 3, 9; 1996 YU₂, 4, 2, 3; 1997 PF₂, 4, 2, 8; 1997 PD₃, 4, 2, 1; 1997 PM₄, 4, 2, 11; 1997 QP, 4, 2, 11; 1997 QR, 2, 1, 0; 1997 QD₁, 5, 2, 2; 1997 QV₂, 4, 2, 11; 1997 RT, 2, 1, 0; 1997 RA₁, 4, 2, 15; 1997 RJ₇, 2, 1, 0; 1997 RA₉, 2, 1, 0; 1997 RM₉, 4, 2, 4; 1997 RT₉, 2, 1, 0; 1997 SH, 9, 4, 17; 1997 SL, 8, 4, 11; 1997 SN, 4, 2, 8; 1997 SO, 4, 2, 8; 1997 SQ, 6, 3, 18; 1997 SM₁, 4, 2, 8; 1997 SN₁, 7, 3, 15; 1997 SP₁, 11, 4, 19; 1997 SX₁, 6, 3, 16; 1997 SY₁, 6, 2, 9; 1997 SZ₁, 2, 1, 0; 1997 SA₂, 4, 2, 7; 1997 SB₂, 4, 2, 13; 1997 SC₂, 2, 1, 0; 1997 SE₂, 5, 2, 10; 1997 SN₂, 2, 1, 0; 1997 SP₂, 4, 2, 8; 1997 SQ₂, 5, 3, 3; 1997 ST₂, 3, 1, 0; 1997 SU₂, 4, 2, 11; 1997 SQ₃, 2, 1, 0; 1997 SA₄, 2, 1, 0; 1997 SB₄, 2, 1, 0; 1997 SC₄, 6, 3, 12; 1997 SD₄, 6, 3, 16; 1997 SF₄, 2, 1, 0; 1997 SE₅, 31, 7, 13; 1997 SO₂₅, 4, 2, 12; 1997 SP₂₅, 9, 4, 13; 1997 TR₉, 3, 2, 6; 1997 TT₉, 4, 2, 1; 1997 TU₉, 6, 3, 11; 1997 TV₉, 2, 1, 0; 1997 TW₉, 8, 3, 11; 1997 TX₉, 4, 2, 7; 1997 TY₉, 2, 1, 0; 1997 TZ₉, 6, 3, 13; 1997 TA₁₀, 7, 3, 13; 1997 TB₁₀, 4, 2, 11; 1997 TC₁₀, 10, 4, 14; 1997 TG₁₀, 9, 4, 13; 1997 TH₁₀, 9, 4, 13; 1997 TJ₁₀, 13, 6, 16; 1997 TA₁₇, 7, 3, 16; 1997 TM₁₉, 6, 3, 17; 1997 TN₁₉, 6, 3, 16; 1997 TO₁₉, 8, 4, 18; 1997 TP₁₉, 6, 3, 16; 1997 TN₂₁, 2, 1, 0; 1997 TB₂₅, *, 10, 4, 15; 1997 TF₂₅, *, 10, 4, 17; 1997 TG₂₅, *, 11, 5, 25; 1997 TT₂₅, 11, 4, 14; 1997 UF *, 10, 5, 21; 1997 UG *, 7, 3, 3; 1997 UH *, 10, 5, 20; 1997 UJ *, 13, 5, 13; 1997 UR, 9, 1, 0; 1997 UT *, 11, 5, 14; 1997 UU *, 8, 4, 11; 1997 UV *, 8, 4, 11; 1997 UW *, 10, 5, 13; 1997 UX *, 8, 4, 10; 1997 UD₁ *, 12, 4, 11; 1997 UX₂, 4, 2, 1; 1997 UQ₇ *, 9, 4, 12; 1997 UR₇ *, 7, 4, 12; 1997 US₇ *, 8, 4, 10; 1997 UT₇ *, 11, 4, 4; 1997 UU₇ *, 8, 4, 7; 1997 UV₇ *, 9, 4, 8; 1997 UW₇ *, 8, 4, 7; 1997 UX₇ *, 9, 5, 7; 1997 UY₇ *, 11, 5, 7; 1997 UE₈ *, 4, 2, 1; 1997 UF₉, 5, 2, 5; 1997 UG₉, 2, 1, 0; 1997 UH₉, 10, 3, 5; 1997 UL₉ *, 9, 4, 6; 1997 UM₉ *, 8, 4, 6; 1997 UN₉ *, 12, 4, 6; 1997 UO₉ *, 8, 4, 6; 1997 US₉, 7, 2, 4; 1997 UT₉, 2, 1, 0; 1997 US₁₀ *, 6, 3, 4; 1997 UT₁₀ *, 9, 4, 6; 1997 UU₁₀ *, 6, 3, 4; 1997 UZ₁₀, 4, 1, 0; 1997 UE₁₃, 2, 1, 0; 1997 UW₁₄ *, 6, 3, 3; 1997 UX₁₄ *, 8, 3, 3; 1997 UZ₁₄, 7, 2, 2; 1997 UA₁₅, 7, 3, 3; 1997 UP₂₀ *, 5, 2, 9; 1997 UQ₂₀ *, 6, 2, 4; 1997 VG, 6, 1, 0; 1997 VE₁ *, 5, 2, 2; 1997 VU₁ *, 4, 2, 3; 1997 VV₁ *, 5, 2, 1; 1997 VW₁ *, 4, 2, 1; 1997 VU₂ *, 5, 2, 1; 1997 VV₂ *, 6, 2, 1; 1997 VW₂ *, 4, 2, 1; 1997 VX₂ *, 11, 3, 4; 1997 VM₄, 6, 2, 2; 1997 VN₄, 10, 3, 3; 1997 VC₅ *, 10, 3, 6; 1997 VG₆, 8, 2, 1; 1997 VH₆ *, 7, 3, 2; 1997 VJ₆ *, 8, 3, 2; 1997 VK₆ *, 7, 3, 2; 1997 VM₆ *, 4, 2, 1; 2572 P-L, 3, 2, 1; 5493 T-2, 2, 1, 0; (1980), 16, 3, 14; (3200), 5, 1, 0; (3793), 3, 1, 0; (4183), 8, 2, 1; (5478), 4, 1, 0; (5836), 4, 1, 0; (6293), 3, 1, 0; (7920), 2, 1, 0; (7939), 4, 1, 0; (7966), 2, 1, 0; (7974), 4, 2, 8; [924, 153, 47*, 1997/09/28–1997/11/11]

560 Madonna di Dossobuono

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

[astrofil@astboi.bo.cnr.it]

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

0.40-m $f/3.5$ reflector + CCD

GSC

1997 ST₄, 12, 4, 25; [12, 1, 0*, 1997/10/03–1997/10/28]

566 Haleakala-NEAT/GEODSS

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

[efh@ipl.jpl.nasa.gov]

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

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

C. Cotton, D. Bascon

1-m $f/2.2$ Ritchey-Chrétien + CCD

1972 TC, 3, 1, 0; 1974 FD, 3, 1, 0; 1975 SK₁, 3, 1, 0; 1975 UA, 3, 1, 0; 1976 UY, 3, 1, 0; 1977 QT₂, 3, 1, 0; 1977 XP₂, 3, 1, 0; 1979 MX₅, 3, 1, 0; 1979 QC₁, 3, 1, 0; 1980 RP, 3, 1, 0; 1981 EA₅, 3, 1, 0; 1981 EZ₁₀, 3, 1, 0; 1981 EH₁₃, 3, 1, 0; 1981 EG₂₅, 3, 1, 0; 1981 EV₂₇, 3, 1, 0; 1981 EM₃₀, 3, 1, 0; 1981 JM₂, 3, 1, 0; 1983 CQ₂, 3, 1, 0; 1983 PX, 3, 1, 0; 1983 RF₂, 3, 1, 0; 1983 WM, 3, 1, 0; 1983 WN, 3, 1, 0; 1984 SU₃, 3, 1, 0; 1986 PM, 3, 1, 0; 1986 QZ₁, 3, 1, 0; 1986 QS₃, 3, 1, 0; 1986 RA₃, 6, 1, 0; 1987 SF₅, 3, 1, 0; 1987 WU₂, 3, 1, 0; 1988 BX₃, 3, 1, 0; 1988 CT₂, 3, 1, 0; 1988 MJ, 3, 1, 0; 1988 NU, 3, 1, 0; 1988 UO, 3, 1, 0; 1988 XG₂, 3, 1, 0; 1989 EG₁, 3, 1, 0; 1989 GE, 3, 1, 0; 1989 GB₁, 3, 1, 0; 1989 SE, 3, 1, 0; 1989 SX, 3, 1, 0; 1989 SS₁,

3, 1, 0; 1989 TM₁, 3, 1, 0; 1989 UA, 3, 1, 0; 1989 UK₁, 3, 1, 0; 1989 UL₁, 3, 1, 0; 1989 UA₆, 3, 1, 0; 1989 WG₇, 3, 1, 0; 1990 QE₂, 3, 1, 0; 1990 SK₁₁, 3, 1, 0; 1990 TB₁, 3, 1, 0; 1990 VD₇, 3, 1, 0; 1990 WB₂, 3, 1, 0; 1991 CU, 3, 1, 0; 1991 DK, 3, 1, 0; 1991 EL₄, 3, 1, 0; 1991 FK₁, 3, 1, 0; 1991 JA₁, 3, 1, 0; 1991 PT₈, 3, 1, 0; 1991 QE, 6, 2, 31; 1991 RE₇, 3, 1, 0; 1991 RR₃₀, 3, 1, 0; 1991 SK, 3, 1, 0; 1992 CA₂, 3, 1, 0; 1992 DA, 3, 1, 0; 1992 DB₉, 3, 1, 0; 1992 EE, 3, 1, 0; 1992 ER, 3, 1, 0; 1992 FY₁, 3, 1, 0; 1992 OY₇, 3, 1, 0; 1992 TW, 3, 1, 0; 1992 TX, 3, 1, 0; 1992 UE₃, 3, 1, 0; 1992 YC₁, 3, 1, 0; 1992 YE₃, 6, 1, 0; 1993 FB₂₄, 3, 1, 0; 1993 OM₃, 3, 1, 0; 1993 OO₃, 3, 1, 0; 1993 ON₉, 3, 1, 0; 1993 QX₄, 3, 1, 0; 1993 SL₃, 3, 1, 0; 1993 SY₃, 3, 1, 0; 1993 UB₃, 3, 1, 0; 1993 UM₈, 6, 2, 1; 1993 VT, 3, 1, 0; 1993 WQ, 3, 1, 0; 1994 AH, 3, 1, 0; 1994 AQ₂, 3, 1, 0; 1994 AX₂, 3, 1, 0; 1994 CP₁₀, 3, 1, 0; 1994 VO₇, 3, 1, 0; 1994 YO, 3, 1, 0; 1994 YQ₁, 3, 1, 0; 1995 AA₁, 3, 1, 0; 1995 BG₂, 3, 1, 0; 1995 ED₈, 3, 1, 0; 1996 CJ₇, 3, 1, 0; 1996 FE, 3, 1, 0; 1996 FF, 6, 2, 1; 1996 GO₁₈, 3, 1, 0; 1996 HU, 3, 1, 0; 1996 HZ₁, 3, 1, 0; 1996 HD₂₄, 3, 1, 0; 1996 JF, 3, 1, 0; 1996 JD₁, 6, 1, 0; 1996 KW, 3, 1, 0; 1996 LV₃, 3, 1, 0; 1996 NG, 3, 1, 0; 1996 TN₄₉, 3, 1, 0; 1997 QY₁, 3, 1, 0; 1997 QY₂, 3, 1, 0; 1997 QW₃, 6, 2, 1; 1997 QA₅ *, 3, 1, 0; 1997 QB₅, 3, 1, 0; 1997 RC, 3, 1, 0; 1997 RA₁, 3, 1, 0; 1997 RD₁, 3, 1, 0; 1997 RR₃, 6, 2, 31; 1997 RH₄, 3, 1, 0; 1997 RY₈, 3, 1, 0; 1997 RA₉, 3, 1, 0; 1997 RM₉, 3, 1, 0; 1997 RR₉, 3, 1, 0; 1997 RT₉, 3, 1, 0; 1997 RP₁₀, 3, 1, 0; 1997 SZ₁, 3, 1, 0; 1997 SC₂, 3, 1, 0; 1997 SU₂, 3, 1, 0; 1997 SF₄, 3, 1, 0; 1997 SH₄, 3, 1, 0; 1997 SE₅, 3, 1, 0; 1997 SD₁₀, 3, 1, 0; 1997 SF₁₀, 3, 1, 0; 1997 SP₁₇, 3, 1, 0; 1997 SS₁₇, 3, 1, 0; 1997 SA₂₅, 3, 1, 0; 1997 SB₂₅, 3, 1, 0; 1997 SR₃₀, 3, 1, 0; 1997 SM₃₃, 3, 1, 0; 1997 SD₃₄ *, 6, 2, 2; 1997 SE₃₄ *, 6, 2, 1; 1997 SF₃₄ *, 6, 2, 1; 1997 TD, 3, 1, 0; 1997 TT₅, 3, 1, 0; 1997 TY₉, 3, 1, 0; 1997 TA₁₇, 3, 1, 0; 1997 TH₁₇, 3, 1, 0; 1997 TH₁₉, 6, 1, 0; 1997 TJ₁₉, 3, 1, 0; 1997 TB₂₅, 3, 1, 0; 1997 TN₂₅, 3, 1, 0; 1997 TT₂₅, 3, 1, 0; 1997 TN₂₆, 3, 1, 0; 1997 UC, 3, 1, 0; 1997 UE₂, 3, 1, 0; 1997 UY₂, 3, 1, 0; 1997 UT₃, 3, 1, 0; 1997 UX₃, 3, 1, 0; 1997 UV₃, 3, 1, 0; 1997 UW₃, 3, 1, 0; 1997 UY₃, 3, 1, 0; 1997 UA₄, 3, 1, 0; 1997 UX₄, 3, 1, 0; 1997 UY₄, 3, 1, 0; 1997 UA₅, 3, 1, 0; 1997 UN₇, 3, 1, 0; 1997 UO₇, 6, 1, 0; 1997 UP₇, 3, 1, 0; 1997 UQ₇, 3, 1, 0; 1997 UB₈ *, 9, 3, 2; 1997 UX₈, 3, 1, 0; 1997 UB₉ *, 6, 2, 1; 1997 UC₉ *, 6, 2, 1; 1997 UD₉ *, 6, 2, 1; 1997 UC₉ *, 6, 2, 1; 1997 UH₉ *, 9, 3, 2; 1997 UJ₉ *, 3, 1, 0; 1997 UK₉ *, 3, 1, 0; 1997 UL₉, 3, 1, 0; 1997 UM₉, 3, 1, 0; 1997 UT₉ *, 3, 1, 0; 1997 UV₉ *, 6, 2, 1; 1997 UW₉ *, 6, 2, 1; 1997 UX₉ *, 6, 2, 1; 1997 UY₉ *, 6, 2, 1; 1997 UZ₉ *, 9, 2, 1; 1997 UA₁₀ *, 6, 2, 1; 1997 UB₁₀ *, 6, 2, 1; 1997 UC₁₀ *, 6, 2, 1; 1997 UD₁₀ *, 6, 2, 1; 1997 UE₁₀ *, 6, 2, 1; 1997 UF₁₀ *, 6, 2, 1; 1997 UG₁₀ *, 6, 2, 1; 1997 UH₁₀ *, 6, 2, 1; 1997 UJ₁₀ *, 6, 2, 1; 1997 UK₁₀ *, 6, 2, 1; 1997 UL₁₀ *, 6, 2, 1; 1997 UM₁₀ *, 6, 2, 1; 1997 UN₁₀ *, 6, 2, 1; 1997 UO₁₀ *, 6, 2, 1; 1997 UV₁₀, 3, 1, 0; 1997 UW₁₀, 3, 1, 0; 1997 UY₁₀, 3, 1, 0; 1997 UF₁₁ *, 3, 1, 0; 1997 UG₁₁ *, 3, 1, 0; 1997 UH₁₁ *, 3, 1, 0; 1997 UJ₁₁ *, 3, 1, 0; 1997 UK₁₁ *, 3, 1, 0; 1997 UA₁₂, 3, 1, 0; 1997 UY₁₄, 3, 1, 0; 1997 UP₂₁ *, 6, 2, 1; 1997 UQ₂₁ *, 6, 2, 1; 1997 VB, 3, 1, 0; 1997 VW, 3, 1, 0; 1997 VR₁, 3, 1, 0; 1997 VA₃, 3, 1, 0; 2020 P-L, 3, 1, 0; 4040 P-L, 3, 1, 0; 4082 P-L, 3, 1, 0; 4595 P-L, 3, 1, 0; 4637 P-L, 3, 1, 0; 3078 T-1, 3, 1, 0; 3300 T-1, 3, 1, 0; 4034 T-1, 3, 1, 0; 1176 T-2, 3, 1, 0; 2120 T-2, 3, 1, 0; 4196 T-2, 3, 1, 0; 3241 T-3, 3, 1, 0; 4094 T-3, 3, 1, 0; 4313 T-3, 3, 1, 0; (9), 3, 1, 0; (26), 3, 1, 0; (37), 3, 1, 0; (40), 3, 1, 0; (45), 3, 1, 0; (82), 3, 1, 0; (101), 6, 1, 0; (103), 3, 1, 0; (133), 3, 1, 0; (149), 3, 1, 0; (152), 3, 1, 0; (171), 3, 1, 0; (203), 3, 1, 0; (206), 3, 1, 0; (215), 3, 1, 0; (239), 3, 1, 0; (240), 3, 1, 0; (255), 3, 1, 0; (258), 3, 1, 0; (272), 3, 1, 0; (297), 3, 1, 0; (335), 3, 1, 0; (336), 9, 2, 1; (347), 3, 1, 0; (351), 3, 1, 0; (376), 3, 1, 0; (385), 3, 1, 0; (389), 3, 1, 0; (415), 3, 1, 0; (421), 3, 1, 0; (447), 3, 1, 0; (449), 3, 1, 0; (540), 3, 1, 0; (558), 3, 1, 0; (603), 3, 1, 0; (716), 3, 1, 0; (718), 3, 1, 0; (722), 3, 1, 0; (732), 3, 1, 0; (763), 3, 1, 0; (766), 3, 1, 0; (800), 3, 1, 0; (801), 3, 1, 0; (823), 3, 1, 0; (825), 3, 1, 0; (836), 3, 1, 0; (855), 3, 1, 0; (858), 3, 1, 0; (931), 3, 1, 0; (984), 3, 1, 0; (1013), 3, 1, 0; (1030), 3, 1, 0; (1033), 3, 1, 0; (1034), 3, 1, 0; (1058), 3, 1, 0; (1061), 3, 1, 0; (1071), 3, 1, 0; (1081), 3, 1, 0; (1112), 3, 1, 0; (1163), 3, 1, 0; (1169), 3, 1, 0; (1180), 3, 1, 0; (1197), 3, 1, 0; (1209), 3, 1, 0; (1245), 3, 1, 0; (1288), 3, 1, 0; (1300), 3, 1, 0; (1315), 3, 1, 0; (1328), 3, 1, 0; (1392), 6, 2, 4; (1411), 3, 1, 0; (1461), 3, 1, 0; (1466), 3, 1, 0; (1486), 6, 2, 3; (1492), 3, 1, 0; (1496), 3, 1, 0; (1505), 3, 1, 0; (1546), 3, 1, 0; (1585), 3, 1, 0; (1656), 6, 2, 5; (1673), 3, 1, 0; (1686), 3, 1, 0; (1694), 3, 1, 0; (1699), 3, 1, 0; (1741), 3, 1, 0; (1752), 3, 1, 0; (1758), 3, 1, 0; (1782), 3, 1, 0; (1850), 3, 1, 0; (1868), 3, 1, 0; (1881), 3, 1, 0; (1911), 3, 1, 0; (1918), 3, 1, 0; (1939), 3, 1, 0; (1960), 3, 1, 0; (1976), 3, 1, 0; (2045), 3, 1, 0; (2123), 3, 1, 0; (2143), 3, 1, 0; (2171), 3, 1, 0; (2190), 3, 1, 0; (2208), 3, 1, 0; (2213), 3, 1, 0; (2221), 3, 1, 0; (2230), 3, 1, 0; (2235), 3, 1, 0; (2268), 6, 2, 1; (2287), 3, 1, 0; (2301), 3, 1, 0; (2358), 3, 1, 0; (2364), 3, 1, 0; (2413), 6, 2, 1; (2432), 3, 1, 0; (2437), 3, 1, 0; (2460), 3, 1, 0; (2471), 3, 1, 0; (2502), 3, 1, 0; (2519), 3, 1, 0; (2531), 6, 2, 1; (2540), 3, 1, 0; (2554), 3, 1, 0; (2577), 3, 1, 0; (2633), 3, 1, 0; (2650), 3, 1, 0; (2694), 3, 1, 0; (2702), 3, 1, 0; (2708), 3, 1, 0; (2732), 6, 1, 0; (2762), 3, 1, 0; (2794), 3, 1, 0; (2821), 3, 1, 0; (2828), 6, 1, 0; (2842), 3, 1, 0; (2846), 3, 1, 0; (2869), 3, 1, 0; (2933), 3, 1, 0; (3007), 3, 1, 0; (3018), 3, 1, 0; (3062), 6, 1, 0; (3063), 3, 1, 0; (3081), 3, 1, 0; (3161), 3, 1, 0; (3184), 3, 1, 0; (3238), 3, 1, 0; (3244), 3, 1, 0; (3268), 6, 2, 3; (3326), 3, 1, 0; (3327), 3, 1, 0; (3343), 3, 1, 0; (3347), 3, 1, 0; (3391), 3, 1, 0; (3428), 3, 1, 0; (3536), 3, 1, 0; (3540), 3, 1, 0; (3564), 3, 1, 0; (3583), 3, 1, 0; (3608), 3, 1, 0; (3619), 3, 1, 0; (3678), 3, 1, 0; (3706), 3, 1, 0; (3713), 6, 2, 3; (3721), 3, 1, 0; (3743), 3, 1, 0; (3755), 3, 1, 0; (3784), 3, 1, 0; (3801), 6, 1, 0; (3815), 3, 1, 0; (3840), 3, 1, 0; (3883), 3, 1, 0; (3903), 3, 1, 0; (3921), 3, 1, 0; (3987), 3, 1, 0; (3992), 3, 1, 0; (4019), 3, 1, 0; (4078), 3, 1, 0; (4084), 3, 1, 0; (4183), 3, 1, 0; (4216), 3, 1, 0; (4225), 3, 1, 0; (4311), 3, 1, 0; (4460), 3, 1, 0; (4471), 3, 1, 0; (4504), 3, 1, 0; (4507), 3, 1, 0; (4529), 3, 1, 0; (4554), 3, 1, 0; (4563), 3, 1, 0; (4617), 3, 1, 0; (4656), 3, 1, 0; (4682), 3, 1, 0; (4705),

3, 1, 0; (4838), 3, 1, 0; (4909), 3, 1, 0; (5006), 3, 1, 0; (5166), 3, 1, 0; (5226), 6, 1, 0; (5228), 3, 1, 0; (5267), 3, 1, 0; (5270), 3, 1, 0; (5297), 3, 1, 0; (5306), 3, 1, 0; (5372), 3, 1, 0; (5385), 3, 1, 0; (5413), 3, 1, 0; (5447), 3, 1, 0; (5458), 3, 1, 0; (5479), 3, 1, 0; (5633), 3, 1, 0; (5659), 3, 1, 0; (5663), 3, 1, 0; (5664), 3, 1, 0; (5669), 3, 1, 0; (5673), 3, 1, 0; (5677), 3, 1, 0; (5682), 3, 1, 0; (5691), 3, 1, 0; (5747), 3, 1, 0; (5796), 3, 1, 0; (5799), 3, 1, 0; (5805), 3, 1, 0; (5819), 3, 1, 0; (5870), 3, 1, 0; (5900), 3, 1, 0; (5914), 3, 1, 0; (5920), 3, 1, 0; (5979), 3, 1, 0; (6109), 3, 1, 0; (6176), 3, 1, 0; (6198), 3, 1, 0; (6245), 3, 1, 0; (6276), 3, 1, 0; (6293), 3, 1, 0; (6299), 3, 1, 0; (6332), 3, 1, 0; (6369), 3, 1, 0; (6373), 3, 1, 0; (6375), 3, 1, 0; (6451), 3, 1, 0; (6457), 3, 1, 0; (6465), 3, 1, 0; (6473), 3, 1, 0; (6932), 3, 1, 0; (6942), 3, 1, 0; (6953), 3, 1, 0; (6981), 3, 1, 0; (7033), 3, 1, 0; (7041), 3, 1, 0; (7070), 3, 1, 0; (7091), 3, 1, 0; (7094), 3, 1, 0; (7103), 3, 1, 0; (7204), 3, 1, 0; (7214), 3, 1, 0; (7421), 3, 1, 0; (7585), 3, 1, 0; (7854), 3, 1, 0; (7868), 3, 1, 0; (7899), 3, 1, 0; (7906), 3, 1, 0; (7930), 3, 1, 0; (7938), 3, 1, 0; (7943), 3, 1, 0; [1653, 492, 39*, 1997/07/05–1997/10/31]

568 Mauna Kea

D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A. [tholen@hale.ifa.hawaii.edu] (2)

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

Observers D. J. Tholen (2), C. Veillet (3), C. Herrick (2), R. Shanks (3)

Measurers D. J. Tholen (2), C. Veillet (3), R. J. Whiteley (2)

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

USNO-A1.0

(2) (6228), 1, 1, 0; [1, 1, 0*, 1997/10/29]

(3) 1993 FB₂₄, 2, 1, 0; 1994 PP₁, 4, 1, 0; 1997 UE₇ *, 11, 2, 1; 1997 UC₈ *, 9, 2, 1; 1997 UU₁₉ *, 6, 2, 2; 1997 UV₁₉ *, 6, 2, 2; 1997 VX₃ *, 4, 2, 1; (7133), 5, 1, 0; [47, 8, 5*, 1997/10/24–1997/11/07]

587 Sormano

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

[sormano@tin.it]

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

0.5-m reflector + CCD

GSC

1969 TQ₁, 4, 2, 8; 1983 WG, 4, 2, 8; 1986 QH₂, 3, 1, 0; 1994 WK₁, 5, 2, 8; 1997 QG₁, 2, 1, 0; 1997 QH₁, 3, 2, 1; 1997 RT, 2, 1, 0; 1997 RD₁, 3, 1, 0; 1997 RO₇, 2, 1, 0; 1997 RP₉, 2, 1, 0; 1997 SE₅, 2, 1, 0; 1997 SZ₉, 4, 2, 16; 1997 TC, 6, 3, 15; 1997 TD, 2, 1, 0; 1997 TV, 8, 3, 16; 1997 TW, 6, 3, 16; 1997 TV₁₂, 5, 2, 1; 1997 TT₂₅, 2, 1, 0; 1997 UR, 7, 3, 14; 1997 UL₁, 4, 2, 1; 1997 UF₅ *, 11, 5, 15; 1997 UF₉, 4, 2, 1; 1997 UZ₁₀, 2, 1, 0; 1997 UA₁₁, 2, 1, 0; 1997 UJ₁₅, 8, 3, 8; 1997 UD₁₆, 5, 2, 1; 1997 VG, 4, 1, 0; 1997 VS₁ *, 5, 2, 1; 1997 VM₄, 2, 1, 0; 1997 VN₄, 3, 1, 0; 1997 VO₄ *, 5, 2, 5; 1997 VG₆, 2, 1, 0; [129, 32, 3*, 1997/10/10–1997/11/09]

589 Santa Lucia Stroncone

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

[vagnozzi@free.net.hut.fi]

Observers A. Vagnozzi, G. Bernabei, V. Risoldi, E. Gregori, F. Lombardi

0.50-m $f/2.8$ Ritchey-Chrétien + CCD

GSC

1995 JJ, 6, 2, 8; 1996 PF₁, 10, 3, 30; 1997 QN₁, 7, 2, 1; 1997 TS₁₆, 17, 5, 15; 1997 TW₁₆, 16, 5, 14; 1997 UZ₂ *, 9, 3, 2; 1997 UA₃ *, 7, 2, 1; 1997 UB₃ *, 6, 2, 1; 1997 VO₂ *, 7, 2, 1; (7963), 5, 2, 1; [90, 10, 4*, 1997/10/04–1997/11/04]

592 Solingen

B. Koch, Fliederweg 10, D-42699 Solingen, Germany [BerndKoch@aol.com]

z0.36-m $f/5$ Schmidt-Cassegrain + CCD

GSC

1987 RJ, 5, 1, 0; 1997 UR₁₀ *, 13, 3, 4; 1997 UU₁₄, 3, 1, 0; 1997 VD₅ *, 12, 2, 5; 1997 VE₅ *, 11, 2, 1; [44, 5, 3*, 1997/10/27–1997/11/08]

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

1992 RZ, 2, 1, 0; 1994 BE, 2, 2, 1; 1994 CV, 2, 2, 1; 1994 FQ, 3, 1, 0; 1996 PS₁, 4, 2, 23; 1997 SQ, 5, 3, 7; 1997 SP₁, 2, 1, 0; 1997 SQ₁, 5, 2, 1; 1997 SX₂, 5, 2, 1; 1997 SY₂, 6, 3, 7; 1997 SZ₂, 2, 1, 0; 1997 SA₃, 2, 1, 0; 1997 SB₃, 5, 3, 23; 1997 SC₃, 4, 2, 23; 1997 SD₃, 7, 3, 6; 1997 SZ₄, 4, 2, 24; 1997 UB *, 7, 3, 11; 1997 UC₃ *, 6, 3, 15; 1997 UD₃ *, 7, 3, 15; 1997 UE₃ *, 4, 2, 3; 1997 UF₃ *, 6, 3, 12; 1997 VC₁, 2, 1, 0; 1997 VV₁, 4, 2, 3; 1997 VH₄ *, 5, 2, 1; 1997 VJ₄ *, 5, 2, 1; 1997 VK₄ *, 4, 2, 1; 1997 VL₄ *, 4, 2, 1; [114, 27, 9*, 1997/10/11–1997/11/05]

596 Colleverde di Guidonia

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

[v.casulli@priminet.it]

0.40-m $f/3.2$ reflector + CCD

GSC

1984 QB, 2, 1, 0; 1985 PG₂, 3, 1, 0; 1989 SU, 2, 1, 0; 1993 TD, 6, 2, 25; 1997 QR₂, 6, 2, 7; 1997 TT₂₅, 3, 1, 0; 1997 UC₇ *, 7, 2, 1; (3469), 2, 1, 0; (7132), 3, 1, 0; [34, 9, 1*, 1997/09/04–1997/10/27]

605 Marl

J. Jahn, Neustaedter Strasse 11, D-29389 Bodenteich, Germany

[j.jahn@abbs.heide.de]

Observer E. Jung

0.20-m $f/10$ reflector + CCD

GSC

(1983), 3, 1, 0; (5819), 3, 1, 0; [6, 2, 0*, 1997/10/19–1997/10/21]

608 Haleakala-AMOS

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

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

[efh@temblor.jpl.nasa.gov]

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

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

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

1.2-m reflector + CCD

1974 FD, 8, 4, 16; 1990 KA, 4, 2, 1; 1991 DK₁, 6, 3, 4; 1992 CN₃, 2, 1, 0; 1992 LR, 4, 2, 3; 1992 TB, 4, 2, 14; 1993 DJ, 6, 3, 14; 1993 UH₁, 4, 2, 2; 1994 TF₂, 2, 1, 0; 1995 AM, 7, 4, 15; 1995 DU₁, 9, 5, 15; 1995 UO₅, 6, 3, 7; 1996 JV, 7, 4, 3; 1996 KL₁, 1, 1, 0; 1996 LV₃, 2, 1, 0; 1996 PR₁, 4, 2, 7; 1997 RT, 4, 2, 4; 1997 RO₁₀ *, 6, 2, 1; 1997 SZ₃₃ *, 4, 2, 2; 1997 TR₁₂, 2, 1, 0; 1997 TE₂₅, 2, 1, 0; 1997 TX₂₅ *, 4, 2, 1; 1997 UM₁, 2, 1, 0; 1997 US₁, 2, 1, 0; 1997 UB₂, 2, 1, 0; 1997 US₂, 2, 1, 0; 1997 UM₂₀ *, 4, 2, 4; 1997 UN₂₀ *, 6, 3, 3; 1997 UO₂₀ *, 4, 2, 2; 1997 VM₄, 2, 1, 0; 1997 VN₄, 2, 1, 0; (35), 2, 1, 0; (142), 4, 2, 3; (376), 2, 1, 0; (419), 3, 2, 4; (3362), 4, 2, 7; (3568), 5, 3, 4; (4183), 4, 2, 1; (4270), 1, 1, 0; (4333), 4, 2, 7; (4486), 2, 1, 0; (5634), 4, 2, 6; (5751), 2, 1, 0; (5819), 10, 5, 15; (5836), 2, 1, 0; (7958), 7, 4, 7; (7959), 4, 2, 1; [184, 47, 6*, 1997/09/11–1997/11/07]

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, 3, 1, 0; 1967 HA, 6, 2, 20; 1972 TC, 3, 1, 0; 1977 EZ, 6, 2, 10; 1977 QT₂, 6, 2, 5; 1978 SE₃, 6, 2, 10; 1978 SV₇, 6, 2, 30; 1978 UK₇, 6, 2, 9; 1978 VL₁₀, 6, 2, 10; 1979 MD₂, 3, 1, 0; 1989 SN₄, 3, 1, 0; 1997 QM, 3, 1, 0; 1997 RB₁, 3, 1, 0; 1997 SY₃, 3, 1, 0; 1997 SZ₃, 6, 2, 8;

1997 SO₄, 3, 1, 0; (1100), 3, 1, 0; (2649), 3, 1, 0; (2809), 3, 1, 0; (7152), 6, 2, 20; (7859), 3, 1, 0; (7870), 9, 3, 39; (7910), 6, 2, 10; (7911), 3, 1, 0; [108, 24, 0*, 1997/09/25–1997/11/03]

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, A. Seib, K. Sonneberg,

J. Rothermel

Measurers M. Busch, R. Stoss

0.2-m $f/6$ reflector + CCD

USNO-SA1.0, GSC

1976 DJ₁, 2, 1, 0; 1991 RP₂, 9, 3, 3; 1991 RV₃, 2, 1, 0; 1997 SS₄, 6, 2, 1; 1997 SX₉, 6, 3, 21; 1997 US*, 18, 6, 13; 1997 UK₇*, 10, 4, 4; 1997 VN*, 11, 4, 8; 1997 VU₅*, 4, 2, 1; (35), 2, 1, 0; [70, 10, 4*, 1997/10/18–1997/11/10]

618 Martigues

D. Morata, 15 lot Floria, Qu St.-Jean, F-13500 Martigues, France

[sdmorata@aix.pacwan.net]

Observers D. Morata, S. Morata

0.30-m $f/5.77$ reflector + CCD

GSC

1997 SE₅, 14, 3, 6; [14, 1, 0*, 1997/10/25–1997/10/31]

620 Observatorio Astronómico de Mallorca

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

[astroam@dinky.bitel.es]

Observers R. Pacheco, A. Lopez

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

PPM, GSC 1.2

1997 TH₁₈, 6, 2, 13; 1997 TE₂₄, 6, 2, 6; 1997 TF₂₄, 6, 2, 6; 1997 TT₂₅, 4, 1, 0; 1997 TY₂₅*, 8, 3, 14; 1997 UR, 5, 1, 0; 1997 UH₉, 3, 1, 0; 1997 US₉, 4, 1, 0; (10), 7, 1, 0; (1116), 14, 2, 16; [63, 10, 1*, 1997/10/11–1997/11/08]

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

(35), 6, 2, 2; (142), 13, 4, 4; (258), 13, 4, 4; (268), 3, 1, 0; (288), 7, 2, 2; (291), 10, 3, 2; (376), 12, 3, 2; (383), 3, 1, 0; (633), 10, 3, 2; (714), 13, 3, 2; (848), 10, 3, 2; (866), 8, 2, 1; (1121), 6, 2, 2; (1557), 6, 2, 2; (1583), 14, 4, 11; (1656), 9, 3, 2; (1959), 11, 4, 11; (1983), 3, 1, 0; (2358), 10, 3, 2; (2693), 15, 5, 11; (3540), 9, 3, 11; (3568), 13, 4, 11; (3619), 23, 6, 13; [227, 23, 0*, 1997/10/08–1997/10/21]

626 Geel

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

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

GSC

(3541), 2, 1, 0; (4614), 2, 1, 0; [4, 2, 0*, 1997/10/28–1997/10/29]

627 Blauvac

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

[Pierre.Antonini@wanadoo.fr]

Observer R. Roy

0.26-m $f/4.7$ reflector + CCD

GSC

1997 TV₃, 6, 2, 1; 1997 TG₂₄, 5, 2, 24; 1997 UG₃, 3, 1, 0; (4734), 6, 2, 1; [20, 4, 0*, 1997/10/03–1997/11/02]

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

1991 SK, 4, 1, 0; 1997 PK₂, 4, 1, 0; (258), 3, 1, 0; [11, 3, 0*, 1997/10/28–1997/11/03]

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

(1922), 2, 1, 0; (1959), 10, 5, 46; (1983), 4, 2, 1; (2693), 4, 2, 1; [20, 4, 0*, 1997/09/19–1997/11/04]

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

1.82-m Plaskett telescope + CCD

GSC, USNO-A1.0

1957 JP, 3, 1, 0; 1967 JP, 3, 1, 0; 1969 TQ₁, 2, 1, 0; 1974 FD, 6, 2, 21; 1977 TD, 3, 1, 0; 1989 VA, 12, 3, 21; 1991 WA, 3, 1, 0; 1992 AB, 6, 2, 1; 1992 LR, 3, 1, 0; 1992 TA, 6, 2, 2; 1993 PB, 9, 4, 30; 1993 TG₃₁, 3, 1, 0; 1995 FD, 6, 2, 1; 1996 RJ, 5, 2, 21; 1996 TY₉, 6, 2, 1; 1997 LY₄, 4, 2, 21; 1997 MW₁, 2, 1, 0; 1997 MD₁₀, 10, 4, 30; 1997 QK₁, 8, 3, 4; 1997 RT, 15, 5, 22; 1997 RD₁, 6, 2, 4; 1997 RH₄, 3, 1, 0; 1997 SE₅, 15, 5, 24; 1997 TT₉, 3, 1, 0; 1997 TV₉, 6, 2, 1; 1997 TW₉, 6, 2, 1; 1997 TY₉, 6, 2, 1; 1997 TZ₉, 3, 1, 0; 1997 TX₁₆, 3, 1, 0; 1997 TZ₁₆, 1, 1, 0; 1997 TC₁₈, 3, 1, 0; 1997 TE₂₅, 6, 2, 1; 1997 TT₂₅, 6, 2, 1; 1997 UR, 6, 2, 1; 1997 UA₁, 3, 1, 0; 1997 US₂, 6, 2, 16; 1997 UF₉, 6, 2, 2; 1997 UH₉, 6, 2, 2; 1997 US₉, 6, 2, 2; 1997 UT₉, 4, 1, 0; 1997 VM₄, 5, 2, 2; 1997 VG₆, 3, 1, 0; (3200), 3, 1, 0; (3362), 3, 1, 0; [233, 44, 0*, 1997/10/12–1997/11/11]

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

1991 FK₁, 3, 1, 0; 1997 SE₅, 12, 4, 17; 1997 UR, 18, 5, 6; 1997 UB₈, 3, 1, 0; 1997 UG₉, 3, 1, 0; 1997 UH₉, 11, 3, 2; 1997 US₉, 3, 1, 0; 1997 UL₁₀, 3, 1, 0; 1997 UF₁₁, 3, 1, 0; 1997 UG₁₁, 3, 1, 0; 1997 UH₁₁, 3, 1, 0; 1997 UJ₁₁, 3, 1, 0; 1997 UK₁₁, 3, 1, 0; [71, 13, 0*, 1997/10/16–1997/11/02]

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 UH₉, 6, 2, 1; 1997 UJ₉, 3, 2, 2; 1997 UK₉, 4, 2, 2; 1997 US₉, 6, 2, 1; 1997 UT₉, 5, 2, 1; 1997 UZ₁₀, 5, 2, 1; 1997 UA₁₁, 2, 1, 0; 1997 VG, 1, 1, 0; [32, 8, 0*, 1997/10/30–1997/11/03]

675 Palomar

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

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

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

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

C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands [vanhouten@rnlh11.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), H. R. Holt (3, S),
J. J. Kavelaars (8, H), K. Lawrence (2, S), D. H. Levy (3, S), F. J. Méndez
(3, S), P. D. Nicholson (8, H), C. M. Olmstead (3, S), T. Rodriguez (3, S),
C. S. Shoemaker (3, S), E. M. Shoemaker (3, S), D. K. Williams (3, S),
L. A. Zimmerman (3, S)

Measurers B. Gladman (8), J. J. Kavelaars (8), K. J. Lawrence (2), B. A. Skiff (6),
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) 1996 FL2, 2, 1, 0; (3118), 3, 2, 3; (4149), 2, 1, 0; (5406), 2, 1, 0; (7808), 2, 1, 0; [11, 5, 0*,
1978/09/09–1991/03/18]

(4) 3520 P-L *, 11, 5, 9; 4033 P-L *, 8, 8, 32; 6199 P-L *, 6, 6, 32; 6579 P-L *, 8, 8, 32; 2185 T-2 *,
15, 8, 16; 3281 T-2 *, 23, 8, 16; [71, 6, 6*, 1960/09/24–1973/10/05]

(6) 1989 RB6, 1, 1, 0; 1992 WH8, 2, 1, 0; 1993 CK1, 2, 1, 0; 1993 PU7, 2, 1, 0; 4634 P-L, 2, 1, 0;
[9, 5, 0*, 1956/05/08]

(8) (142), 2, 1, 0; (376), 2, 1, 0; (419), 2, 1, 0; (441), 2, 1, 0; (1921), 2, 1, 0; (2952), 2, 1, 0; (3362),
2, 1, 0; (3568), 2, 1, 0; (4680), 2, 1, 0; [18, 9, 0*, 1997/10/26]

(9) 1973 AW3, 4, 3, 6; 1975 SX, 1, 1, 0; 1976 UR15, 5, 3, 24; 1977 DF2, 1, 1, 0; 1977 EA6, 2, 1,
0; 1978 RK, 7, 4, 34; 1979 MM3, 5, 3, 6; 1979 QV1, 2, 1, 0; 1979 SC, 3, 2, 2; 1980 PV1, 2, 1,
0; 1980 RV2, 2, 1, 0; 1981 DM, 2, 1, 0; 1981 EK10, 2, 1, 0; 1981 EB25, 2, 1, 0; 1981 EP25, 1, 1,
0; 1981 EB39, 1, 1, 0; 1981 ET41, 4, 2, 4; 1981 KJ, 8, 4, 21; 1981 SC7, 6, 3, 21; 1981 UR27, 4,
2, 6; 1982 HO1, 6, 3, 6; 1982 KK1, 4, 2, 5; 1982 SO4, 4, 2, 4; 1982 UZ2, 2, 1, 0; 1982 UA7, 2,
1, 0; 1983 RX3, 4, 2, 21; 1984 BQ, 8, 4, 1503; 1984 UD, 5, 3, 21; 1984 WC2, 3, 2, 4; 1985 JN1,
2, 1, 0; 1985 RG3, 6, 3, 24; 1986 PM, 2, 1, 0; 1986 RG3, 4, 2, 21; 1986 WB, 6, 3, 6; 1986 XT,
2, 1, 0; 1987 RX, 4, 2, 21; 1987 RZ, 2, 1, 0; 1988 BM3, 2, 1, 0; 1988 CY2, 1, 1, 0; 1988 DD, 2,
1, 0; 1988 FM, 2, 1, 0; 1988 FS2, 4, 2, 4; 1988 FW2, 4, 2, 4; 1988 GD, 1, 1, 0; 1988 GL, 3, 2,
21; 1988 MJ, 2, 1, 0; 1988 RY5, 4, 2, 4; 1988 VF2, 2, 1, 0; 1989 PU, 1, 1, 0; 1989 QV, 2, 1, 0;
1989 RD1, 2, 1, 0; 1989 RB6 *, 12, 6, 469; 1989 SY, 7, 4, 24; 1989 SN4, 3, 2, 4; 1989 TL15, 1,
1, 0; 1989 UG3, 2, 1, 0; 1989 UW5, 2, 1, 0; 1989 VS2, 6, 3, 21; 1990 DW2, 4, 2, 4; 1990 TK3,
2, 1, 0; 1990 TK8, 8, 4, 34; 1990 UA1, 2, 1, 0; 1990 UD1, 2, 1, 0; 1990 UB3, 2, 1, 0; 1990 UC3,
2, 1, 0; 1990 UU3, 1, 1, 0; 1990 VD3, 2, 1, 0; 1990 VE3, 1, 1, 0; 1990 VZ4, 2, 1, 0; 1990 VQ6,
2, 1, 0; 1990 VF8, 2, 1, 0; 1990 VR8, 3, 2, 2; 1990 WX3, 4, 2, 21; 1990 CL, 2, 1, 0; 1991 CP1,
3, 2, 2; 1991 DY, 4, 2, 4; 1992 DA9, 2, 1, 0; 1992 EK1, 2, 1, 0; 1992 ES1, 2, 1, 0; 1992 HL4, 2,
2, 2; 1992 JQ, 1, 1, 0; 1992 JD3, 5, 3, 21; 1992 LN, 6, 3, 21; 1993 FW31, 2, 1, 0; 1993 OD8, 2,
1, 0; 1993 RS, 3, 2, 4; 1993 RC2, 1, 1, 0; 1993 RD2, 2, 1, 0; 1993 RF2, 4, 2, 4; 1993 RH2, 4, 2,
4; 1993 RM2, 3, 2, 4; 1993 RJ3, 3, 2, 4; 1993 RZ3, 3, 2, 4; 1993 RD4, 3, 2, 4; 1993 RE4, 2, 1,
0; 1993 RF4, 3, 2, 4; 1993 RH4, 2, 2, 4; 1993 RJ4, 2, 2, 4; 1993 RL4, 3, 2, 4; 1993 RM4, 3, 2,
4; 1993 RN4, 2, 1, 0; 1993 RO4, 4, 2, 4; 1993 RP4, 2, 2, 4; 1993 RQ4, 3, 2, 4; 1993 RR4, 2, 2,
4; 1993 RT4, 2, 1, 0; 1993 RV4, 3, 2, 4; 1993 RW4, 4, 2, 4; 1993 RX4, 1, 1, 0; 1993 RY4, 3, 2,
4; 1993 RZ4, 1, 1, 0; 1993 RB5, 4, 2, 4; 1993 RC5, 2, 2, 4; 1993 RD5, 3, 2, 4; 1993 RE5, 4, 2,
4; 1993 RF5, 2, 1, 0; 1993 RG5, 4, 2, 4; 1993 RH5, 2, 1, 0; 1993 RK5, 2, 1, 0; 1993 RL5, 2, 1,
0; 1993 RN5, 4, 2, 4; 1993 RO5, 2, 1, 0; 1993 RQ5, 4, 2, 4; 1993 RR5, 2, 1, 0; 1993 RS5, 2, 1,
0; 1993 RT5, 4, 2, 4; 1993 RU5, 2, 2, 4; 1993 RV5, 1, 1, 0; 1993 RW5, 2, 1, 0; 1993 RX5, 4, 2,
4; 1993 RY5, 4, 2, 4; 1993 RE6, 2, 1, 0; 1993 RF6, 2, 1, 0; 1993 RG6, 2, 1, 0; 1993 RH6, 2, 1,
0; 1993 RJ6, 4, 2, 4; 1993 RL6, 4, 2, 4; 1993 RN6, 2, 1, 0; 1993 RP6, 2, 1, 0; 1993 RR6, 2, 1,
0; 1993 RT6, 3, 2, 4; 1993 RU6, 3, 2, 4; 1993 RV6, 2, 1, 0; 1993 RW6, 2, 1, 0; 1993 RY6, 4, 2,
4; 1993 RZ6, 4, 2, 4; 1993 RC7, 4, 2, 4; 1993 RE7, 4, 2, 4; 1993 RF7, 2, 1, 0; 1993 RJ7, 4, 2, 4;
1993 RL7, 1, 1, 0; 1993 RM7, 4, 2, 4; 1993 RO7, 4, 2, 4; 1993 RP7, 3, 2, 4; 1993 RQ7, 2, 1, 0;
1993 RS7, 3, 2, 4; 1993 RU7, 3, 2, 4; 1993 RY7, 4, 2, 4; 1993 RA8, 1, 1, 0; 1993 RB8, 1, 1, 0;
1993 RC8, 2, 1, 0; 1993 RA14, 3, 2, 4; 1993 RC14, 2, 1, 0; 1993 RD14, 4, 2, 4; 1993 RG14, 3, 2,
4; 1993 RM14, 4, 2, 4; 1993 RN14, 3, 2, 4; 1993 RO14, 4, 2, 4; 1993 RP14, 3, 2, 4; 1993 RQ14, 3,
2, 4; 1993 RR14, 2, 1, 0; 1993 RS14, 4, 2, 4; 1993 RT14, 2, 1, 0; 1993 RU14, 2, 1, 0; 1993 RV14,
2, 2, 4; 1993 SG1, 2, 1, 0; 1993 SK1, 2, 1, 0; 1993 SR1, 2, 1, 0; 1993 SS1, 1, 1, 0; 1993 ST1, 2,
1, 0; 1993 SK2, 4, 2, 4; 1993 SK3, 4, 2, 4; 1993 SV3, 2, 1, 0; 1993 SW3, 5, 3, 24; 1993 SA4, 1,
1, 0; 1993 SF4, 6, 3, 21; 1993 SQ5, 3, 2, 4; 1993 ST5, 4, 2, 4; 1993 SV5, 4, 2, 4; 1993 SW5, 4,
2, 4; 1993 SX5, 4, 2, 4; 1993 SY5, 2, 1, 0; 1993 SZ5, 2, 1, 0; 1993 SK6, 1, 1, 0; 1993 SL6, 4, 2,
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[1544, 504, 31*, 1988/06/13–1993/10/12]

676 San Clemente

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

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

GSC

(142), 2, 2, 1; (376), 2, 2, 1; (3568), 2, 2, 1; [6, 3, 0*, 1997/10/30–1997/10/31]

683 Goodricke-Pigott Observatory, Tucson

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

[tucker@mail.hvs.com]

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

GSC

1990 VN₄, 12, 5, 83; 1992 TA, 5, 2, 1; 1997 LQ₂, 18, 7, 100; 1997 SW₉, 16, 5, 16; 1997 UG₇ *, 16, 4, 7; 1997 UH₇ *, 9, 3, 3; 1997 UJ₇ *, 5, 2, 3; 1997 UF₈ *, 6, 2, 4; 1997 UG₈ *, 6, 2, 1; [93, 9, 5*, 1997/07/13–1997/10/30]

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

1977 TD, 2, 1, 0; 1979 MK₅, 5, 2, 2; 1983 CQ₂, 5, 2, 1; 1988 QU, 6, 2, 1; 1989 GB₁, 6, 2, 1; 1991 PB₁₂, 5, 2, 1; 1994 XE₁, 6, 2, 1; 1995 AW, 6, 2, 2; 1996 NA, 5, 2, 1; 1996 PE, 4, 2, 1; 1997 QJ, 5, 2, 1; 1997 RQ₅, 11, 4, 9; 1997 RX₆, 6, 2, 1; 1997 SH₁₁, 8, 3, 3; 1997 SJ₁₁, 7, 3, 4; 1997 SG₂₁, 4, 2, 1; 1997 TB, 6, 2, 4; 1997 TC₉, 19, 6, 5; 1997 UD *, 6, 2, 1; 1997 UE *, 9, 3, 9; 1997 UJ₁ *, 17, 6, 9; 1997 UK₁ *, 12, 4, 7; 1997 UL₁ *, 12, 4, 7; 1997 UG₂ *, 12, 5, 5; 1997 UX₂ *, 11, 4, 7; 1997 UY₂ *, 10, 4, 6; 1997 UZ₃ *, 8, 3, 5; 1997 UG₅ *, 11, 4, 4; 1997 UH₅ *, 8, 3, 3; 1997 UB₆, 6, 2, 1; 1997 UH₈ *, 7, 2, 1; 1997 UJ₈ *, 7, 2, 1; 1997 UH₉, 6, 1, 0; 1997 UQ₉ *, 9, 3, 2; 1997 UX₁₀ *, 6, 2, 1; 1997 UY₁₀ *, 10, 4, 5; 1997 UJ₁₁, 9, 3, 2; 1997 VK *, 10, 4, 4; 1997 VL *, 5, 2, 1; 1997 VM *, 5, 2, 1; 1997 VX₁ *, 8, 3, 2; 1997 VY₁ *, 8, 3, 2; 1997 VZ₃ *, 4, 2, 1; 1997 VA₄ *, 5, 2, 1; 1997 VB₄ *, 6, 2, 1; 2573 P-L, 6, 2, 1; 6199 P-L, 3, 1, 0; (1100), 6, 2, 1; (2809), 6, 2, 1; (4985), 3, 1, 0; (5848), 5, 2, 1; [372, 51, 24*, 1997/10/20–1997/11/08]

689 U.S. Naval Observatory, Flagstaff Station

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

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

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

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

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

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

GSC, USNO-A1.0

1958 TL₁, 1, 1, 0; 1980 RU, 2, 2, 1; 1982 BS, 1, 1, 0; 1983 RG₂, 1, 1, 0; 1985 RQ, 1, 1, 0; 1986 JC, 1, 1, 0; 1986 PN₄, 1, 1, 0; 1986 RA₃, 2, 2, 1; 1986 VY, 1, 1, 0; 1989 SX, 2, 2, 1; 1989 UA, 1, 1, 0; 1990 BE₁, 1, 1, 0; 1990 SW, 1, 1, 0; 1991 DK, 2, 2, 14; 1991 SL₂, 1, 1, 0; 1992 WP₃, 2, 2, 1; 1993 HS, 1, 1, 0; 6038 P-L, 1, 1, 0; (2), 1, 1, 0; (5), 2, 2, 1; (17), 2, 2, 1; (26), 2, 2, 1; (27), 1, 1, 0; (40), 4, 4, 28; (67), 5, 5, 28; (77), 3, 3, 14; (98), 3, 3, 42; (101), 1, 1, 0; (113), 7, 7, 43; (138), 1, 1, 0; (146), 2, 2, 1; (253), 2, 2, 1; (255), 4, 4, 28; (313), 2, 2, 1; (335), 1, 1, 0; (347), 7, 7, 43; (351), 5, 5, 43; (389), 2, 2, 1; (421), 3, 3, 14; (486), 4, 4, 43; (631), 1, 1, 0; (654), 4, 4, 28; (669), 5, 5, 28; (676), 3, 3, 15; (739), 2, 2, 1; (784), 3, 3, 28; (848), 2, 2, 1; (858), 4, 4, 28; (905), 4, 4, 14; (1157), 1, 1, 0; (1185), 2, 2, 1; (1557), 2, 2, 41; (1583), 4, 4, 16; (1642), 5, 5, 28; (1728), 3, 3, 13; (1762), 3, 3, 27; (1800), 3, 3, 14; (1842), 5, 5, 28; (2195), 3, 3, 27; (2260), 2, 2, 28; (2267), 3, 3, 16; (2287), 4, 4, 15; (2443), 1, 1, 0; (2678), 2, 2, 41; (2962), 3, 3, 28; (3002), 1, 1, 0; (3133), 2, 2, 1; (3250), 2, 2, 1; (3499), 1, 1, 0; (3504), 2, 2, 1; (3612), 2, 2, 16; (3619), 2, 2, 1; (3723), 1, 1, 0; (3750), 1, 1, 0; (3755), 1, 1, 0; (3840), 2, 2, 27; (3901), 2, 2, 1; (3921), 4, 4, 28; (3971), 3, 3, 14; (3987), 1, 1, 0; (4091), 2, 2, 15; (4557), 1, 1, 0; (4833), 1, 1, 0; (4836), 1, 1, 0; (4851), 1, 1, 0; (5215), 2, 2, 1; (5314), 1, 1, 0; (5568), 1, 1, 0; (5809), 1, 1, 0; (5922), 5, 5, 43; (6125), 2, 2, 16; (6301), 1, 1, 0; (6334), 1, 1, 0; (7021), 3, 3, 27; (7119), 1, 1, 0; (7778), 1, 1, 0; (7857), 1, 1, 0; (7921), 2, 2, 1; (7939), 1, 1, 0; (7963), 1, 1, 0; (7967), 1, 1, 0; [219, 101, 0*, 1997/09/07–1997/10/20]

691 Kitt Peak, Steward Observatory

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

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

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

0.91-m Spacewatch telescope + CCD

GSC

1978 SR₄, 3, 1, 0; 1978 UK₇, 3, 1, 0; 1981 EW₄₁, 3, 1, 0; 1985 RQ, 3, 1, 0; 1986 CP₁, 3, 1, 0; 1988 SZ₂, 6, 2, 7; 1990 SZ₇, 3, 1, 0; 1991 PZ₁₁, 3, 1, 0; 1992 CN₃, 3, 1, 0; 1992 DB₉, 3, 1, 0; 1992 EE, 3, 1, 0; 1992 ES₁, 3, 1, 0; 1992 LK, 3, 1, 0; 1993 VM₂, 6, 2, 9; 1994 GR₁₁ *, 4, 2, 3; 1995 DU₃, 3, 1, 0; 1995 JD, 9, 3, 9; 1996 DW, 3, 1, 0; 1996 FT₂₃ *, 6, 2, 30; 1996 LV₃, 2, 1, 0; 1996 OJ, 2, 1, 0; 1997 QQ₄, 6, 2, 10; 1997 RC₃, 3, 1, 0; 1997 RS₃, 3, 1, 0; 1997 RT₃, 3, 1, 0; 1997 SY₁, 9, 3, 9; 1997 SA₂, 9, 3, 9; 1997 SB₂, 2, 1, 0; 1997 SE₂, 6, 2, 9; 1997 SS₂, 6, 2, 8; 1997 ST₂, 9, 3, 9; 1997 SA₆, 3, 1, 0; 1997 SB₆, 6, 2, 11; 1997 SC₆, 3, 1, 0; 1997 SG₆, 6, 2, 1;

1997 SL₇, 3, 1, 0; 1997 SR₈, 3, 1, 0; 1997 SF₁₁, 3, 1, 0; 1997 SL₁₁, 3, 1, 0; 1997 SN₁₁, 6, 2, 70; 1997 SO₁₁, 3, 1, 0; 1997 SQ₁₈, 3, 1, 0; 1997 SW₂₃, 3, 1, 0; 1997 SU₂₄, 8, 3, 22; 1997 ST₂₆, 3, 1, 0; 1997 SM₃₀, 6, 2, 10; 1997 SO₃₀, 6, 2, 1; 1997 SJ₃₁, 3, 1, 0; 1997 SM₃₁, 3, 1, 0; 1997 SN₃₁, 3, 1, 0; 1997 SR₃₁, 3, 1, 0; 1997 SR₃₂, 3, 1, 0; 1997 SU₃₂, 3, 1, 0; 1997 SX₃₂, 3, 1, 0; 1997 SY₃₂, 3, 1, 0; 1997 SA₃₃, 3, 1, 0; 1997 SB₃₃, 3, 1, 0; 1997 SC₃₃, 3, 1, 0; 1997 TC, 3, 1, 0; 1997 TR, 6, 2, 11; 1997 TM₉, 3, 1, 0; 1997 TO₉, 3, 1, 0; 1997 TP₉, 3, 1, 0; 1997 TR₉, 6, 2, 9; 1997 TU₉, 3, 1, 0; 1997 TZ₉, 6, 2, 10; 1997 TA₁₀, 3, 1, 0; 1997 TE₁₁, 3, 1, 0; 1997 TT₁₁, 3, 1, 0; 1997 TQ₁₂, 3, 1, 0; 1997 TR₁₂, 9, 2, 1; 1997 TS₁₂, 3, 1, 0; 1997 TT₁₂, 6, 2, 8; 1997 TU₁₂, 6, 2, 10; 1997 TV₁₂, 6, 2, 10; 1997 TW₁₂, 3, 1, 0; 1997 TM₁₃, 3, 1, 0; 1997 TF₁₆, 3, 1, 0; 1997 TR₁₆, 3, 1, 0; 1997 TO₁₉, 3, 1, 0; 1997 TP₁₉, 3, 1, 0; 1997 TV₁₉, 3, 1, 0; 1997 TY₁₉, 3, 1, 0; 1997 TA₂₀, 6, 2, 4; 1997 TL₂₀, 3, 1, 0; 1997 TM₂₀, 6, 2, 1; 1997 TK₂₁, 3, 1, 0; 1997 TM₂₁, 3, 1, 0; 1997 TN₂₁, 3, 1, 0; 1997 TT₂₁, 3, 1, 0; 1997 TV₂₁, 6, 2, 10; 1997 TC₂₃, 3, 1, 0; 1997 TR₂₃, 6, 2, 5; 1997 TW₂₃, 3, 1, 0; 1997 TX₂₃, 6, 2, 9; 1997 TY₂₃, 3, 1, 0; 1997 TZ₂₃, 3, 1, 0; 1997 TA₂₄, 6, 2, 9; 1997 TF₂₄, 3, 1, 0; 1997 TK₂₄, 3, 1, 0; 1997 TC₂₅ *, 13, 4, 13; 1997 TD₂₅ *, 6, 2, 1; 1997 TG₂₅, 9, 3, 13; 1997 TE₂₆, 3, 1, 0; 1997 TF₂₆, 3, 1, 0; 1997 TL₂₆, 6, 2, 21; 1997 TN₂₆, 3, 1, 0; 1997 UT, 6, 2, 5; 1997 UA₁ *, 5, 2, 1; 1997 UB₁, 6, 2, 4; 1997 UE₁, 3, 1, 0; 1997 UL₁, 6, 2, 22; 1997 UM₁ *, 5, 2, 1; 1997 UP₁ *, 6, 2, 1; 1997 UQ₁ *, 6, 2, 1; 1997 UR₁ *, 6, 2, 1; 1997 US₁ *, 9, 3, 15; 1997 UV₁ *, 6, 2, 1; 1997 UY₁ *, 6, 2, 1; 1997 UV₁ *, 6, 2, 1; 1997 UW₁ *, 6, 2, 1; 1997 UX₁ *, 6, 2, 1; 1997 UY₁ *, 6, 2, 1; 1997 UZ₁ *, 6, 2, 1; 1997 UA₂ *, 6, 2, 1; 1997 UB₂ *, 6, 2, 1; 1997 UC₂ *, 12, 3, 2; 1997 UD₂ *, 6, 2, 1; 1997 UH₂ *, 6, 2, 1; 1997 UJ₂ *, 6, 2, 1; 1997 UK₂ *, 6, 2, 1; 1997 UL₂ *, 6, 2, 1; 1997 UM₂ *, 6, 2, 1; 1997 UN₂ *, 6, 2, 1; 1997 UO₂ *, 6, 2, 1; 1997 UP₂ *, 6, 2, 1; 1997 UQ₂ *, 6, 2, 1; 1997 UR₂ *, 6, 2, 1; 1997 US₂ *, 18, 5, 11; 1997 UV₂, 3, 1, 0; 1997 UX₂, 3, 1, 0; 1997 UY₂, 3, 1, 0; 1997 UL₅ *, 6, 2, 7; 1997 UM₅ *, 9, 3, 18; 1997 UN₅ *, 12, 4, 29; 1997 UO₅ *, 6, 2, 7; 1997 UP₅ *, 6, 2, 7; 1997 UQ₅ *, 6, 2, 7; 1997 UR₅ *, 9, 3, 11; 1997 US₅ *, 9, 3, 11; 1997 UT₅ *, 6, 2, 7; 1997 UU₅ *, 6, 2, 7; 1997 UV₅ *, 6, 2, 7; 1997 UW₅ *, 9, 3, 11; 1997 UX₅ *, 6, 2, 7; 1997 UY₅ *, 6, 2, 7; 1997 UZ₅ *, 6, 2, 5; 1997 UA₆ *, 6, 2, 5; 1997 UB₆ *, 6, 2, 5; 1997 UC₆ *, 10, 4, 21; 1997 UD₆ *, 6, 2, 5; 1997 UE₆ *, 6, 2, 5; 1997 UF₆ *, 6, 2, 5; 1997 UG₆ *, 6, 2, 5; 1997 UH₆ *, 11, 4, 21; 1997 UJ₆ *, 6, 2, 5; 1997 UK₆ *, 5, 2, 5; 1997 UL₆ *, 6, 2, 5; 1997 UM₆ *, 6, 2, 5; 1997 UN₆ *, 9, 3, 9; 1997 UO₆ *, 6, 2, 5; 1997 UP₆ *, 6, 2, 5; 1997 UQ₆ *, 9, 3, 9; 1997 UR₆ *, 9, 3, 9; 1997 US₆ *, 6, 2, 5; 1997 UT₆ *, 6, 2, 5; 1997 UV₆ *, 9, 3, 9; 1997 UW₆ *, 6, 2, 5; 1997 UX₆ *, 6, 2, 5; 1997 UY₆ *, 6, 2, 5; 1997 UZ₆ *, 6, 2, 5; 1997 UA₇ *, 6, 2, 3; 1997 UB₇ *, 6, 2, 3; 1997 UW₇, 3, 1, 0; 1997 UB₈, 3, 1, 0; 1997 UH₈, 5, 2, 24; 1997 UL₁₁ *, 6, 2, 11; 1997 UM₁₁ *, 6, 2, 11; 1997 UN₁₁ *, 6, 2, 11; 1997 UO₁₁ *, 6, 2, 11; 1997 UF₁₁ *, 6, 2, 11; 1997 UQ₁₁ *, 6, 2, 11; 1997 UR₁₁ *, 5, 2, 11; 1997 US₁₁ *, 6, 2, 11; 1997 UT₁₁ *, 6, 2, 9; 1997 UU₁₁ *, 6, 2, 9; 1997 UV₁₁ *, 6, 2, 9; 1997 UW₁₁ *, 6, 2, 9; 1997 UX₁₁ *, 6, 2, 9; 1997 UY₁₁ *, 6, 2, 9; 1997 UZ₁₁ *, 6, 2, 9; 1997 UA₁₂ *, 6, 2, 9; 1997 UB₁₂ *, 6, 2, 9; 1997 UC₁₂ *, 6, 2, 9; 1997 UD₁₂ *, 6, 2, 9; 1997 UE₁₂ *, 6, 2, 9; 1997 UF₁₂ *, 6, 2, 9; 1997 UG₁₂ *, 6, 2, 9; 1997 UH₁₂ *, 6, 2, 9; 1997 UJ₁₂ *, 6, 2, 9; 1997 UK₁₂ *, 6, 2, 9; 1997 UL₁₂ *, 6, 2, 9; 1997 UM₁₂ *, 6, 2, 9; 1997 UN₁₂ *, 5, 2, 9; 1997 UO₁₂ *, 6, 2, 9; 1997 UP₁₂ *, 6, 2, 9; 1997 UQ₁₂ *, 6, 2, 9; 1997 UR₁₂ *, 6, 2, 9; 1997 US₁₂ *, 6, 2, 9; 1997 UT₁₂ *, 6, 2, 9; 1997 UV₁₂ *, 6, 2, 9; 1997 UW₁₂ *, 6, 2, 9; 1997 UX₁₂ *, 6, 2, 9; 1997 UY₁₂ *, 6, 2, 9; 1997 UZ₁₂ *, 6, 2, 9; 1997 UA₁₃ *, 6, 2, 9; 1997 UB₁₃ *, 6, 2, 9; 1997 UC₁₃ *, 6, 2, 9; 1997 UD₁₃ *, 6, 2, 9; 1997 UE₁₃ *, 9, 3, 30; 1997 UF₁₃ *, 6, 2, 9; 1997 UG₁₃ *, 6, 2, 9; 1997 UH₁₃ *, 6, 2, 9; 1997 UJ₁₃ *, 6, 2, 9; 1997 UK₁₃ *, 6, 2, 9; 1997 UL₁₃ *, 6, 2, 9; 1997 UM₁₃ *, 6, 2, 9; 1997 UN₁₃ *, 6, 2, 9; 1997 UO₁₃ *, 6, 2, 9; 1997 UP₁₃ *, 6, 2, 9; 1997 UQ₁₃ *, 6, 2, 9; 1997 UR₁₃ *, 6, 2, 9; 1997 US₁₃ *, 6, 2, 9; 1997 UT₁₃ *, 6, 2, 9; 1997 UU₁₃ *, 5, 2, 9; 1997 UV₁₃ *, 6, 2, 9; 1997 UW₁₃ *, 6, 2, 9; 1997 UX₁₃ *, 6, 2, 9; 1997 UY₁₃ *, 6, 2, 9; 1997 UZ₁₃ *, 6, 2, 7; 1997 UA₁₄ *, 6, 2, 7; 1997 UB₁₄ *, 6, 2, 7; 1997 UC₁₄ *, 6, 2, 7; 1997 UD₁₄ *, 6, 2, 7; 1997 UE₁₄ *, 6, 2, 7; 1997 UF₁₄ *, 6, 2, 7; 1997 UG₁₄ *, 6, 2, 7; 1997 UH₁₄ *, 6, 2, 7; 1997 UJ₁₄ *, 6, 2, 7; 1997 UK₁₄ *, 5, 2, 7; 1997 UL₁₄ *, 6, 2, 7; 1997 UM₁₄ *, 6, 2, 4; 1997 UN₁₄ *, 6, 2, 4; 1997 UO₁₄ *, 6, 2, 4; 1997 UP₁₄ *, 6, 2, 4; 1997 UQ₁₄ *, 6, 2, 4; 1997 UR₁₄ *, 9, 3, 5; 1997 US₁₄ *, 6, 2, 4; 1997 UT₁₄ *, 6, 2, 4; 1997 UV₁₄ *, 6, 2, 11; 1997 UJ₁₅, 6, 2, 24; 1997 UK₁₅, 3, 1, 0; 1997 UM₁₅ *, 6, 2, 12; 1997 UN₁₅ *, 6, 2, 12; 1997 UO₁₅ *, 6, 2, 12; 1997 UP₁₅ *, 6, 2, 12; 1997 UQ₁₅ *, 6, 2, 12; 1997 UR₁₅ *, 6, 2, 10; 1997 US₁₅ *, 6, 2, 10; 1997 UT₁₅ *, 6, 2, 10; 1997 UU₁₅ *, 5, 2, 10; 1997 UV₁₅ *, 6, 2, 10; 1997 UW₁₅ *, 6, 2, 10; 1997 UX₁₅ *, 6, 2, 10; 1997 UY₁₅ *, 6, 2, 10; 1997 UZ₁₅ *, 6, 2, 10; 1997 UA₁₆ *, 6, 2, 10; 1997 UB₁₆ *, 6, 2, 10; 1997 UC₁₆ *, 6, 2, 10; 1997 UD₁₆ *, 6, 2, 10; 1997 UE₁₆ *, 6, 2, 10; 1997 UF₁₆ *, 6, 2, 10; 1997 UG₁₆ *, 6, 2, 10; 1997 UH₁₆ *, 6, 2, 10; 1997 UJ₁₆ *, 6, 2, 10; 1997 UK₁₆ *, 6, 2, 10; 1997 UL₁₆ *, 6, 2, 10; 1997 UM₁₆ *, 6, 2, 10; 1997 UN₁₆ *, 6, 2, 10; 1997 UO₁₆ *, 6, 2, 10; 1997 UP₁₆ *, 6, 2, 10; 1997 UQ₁₆ *, 6, 2, 8; 1997 UR₁₆ *, 6, 2, 8; 1997 US₁₆ *, 6, 2, 8; 1997 UT₁₆ *, 6, 2, 8; 1997 UU₁₆ *, 6, 2, 8; 1997 UV₁₆ *, 6, 2, 8; 1997 UW₁₆ *, 6, 2, 8; 1997 UX₁₆ *, 6, 2, 8; 1997 UY₁₆ *, 6, 2, 8; 1997 UZ₁₆ *, 6, 2, 8; 1997 UA₁₇ *, 6, 2, 8; 1997 UB₁₇ *, 6, 2, 8; 1997 UC₁₇ *, 6, 2, 8; 1997 UD₁₇ *, 6, 2, 8; 1997 UE₁₇ *, 6, 2, 8; 1997 UF₁₇ *, 6, 2, 8; 1997 UG₁₇ *, 6, 2, 8; 1997 UH₁₇ *, 6, 2, 8; 1997 UJ₁₇ *, 6, 2, 8; 1997 UK₁₇ *, 6, 2, 8; 1997 UL₁₇ *, 6, 2, 8; 1997 UM₁₇ *, 6, 2, 8; 1997 UN₁₇ *, 6, 2, 8; 1997 UO₁₇ *, 6, 2, 8; 1997 UP₁₇ *, 6, 2, 8; 1997 UQ₁₇ *, 6, 2, 8; 1997 UR₁₇ *, 6, 2, 8; 1997 US₁₇ *, 6, 2, 8; 1997 UT₁₇ *, 5, 2, 8; 1997 UV₁₇ *, 6, 2, 5; 1997 UW₁₇ *, 6, 2, 5; 1997 UX₁₇ *, 6, 2, 5; 1997 UY₁₇ *, 6, 2, 5; 1997 UZ₁₇ *, 6, 2, 5; 1997 UA₁₈ *, 6, 2, 5; 1997 UB₁₈ *, 6, 2, 5; 1997 UC₁₈ *, 6, 2, 5; 1997 UD₁₈ *, 6, 2, 5; 1997 UE₁₈ *, 6, 2, 5; 1997 UF₁₈ *, 6, 2, 5;

1997 UG₁₈ *, 6, 2, 5; 1997 UH₁₈ *, 6, 2, 5; 1997 UJ₁₈ *, 6, 2, 5; 1997 UK₁₈ *, 6, 2, 5; 1997 UL₁₈ *, 6, 2, 5; 1997 UM₁₈ *, 6, 2, 5; 1997 UN₁₈ *, 6, 2, 5; 1997 UO₁₈ *, 6, 2, 5; 1997 UP₁₈ *, 6, 2, 5; 1997 UQ₁₈ *, 6, 2, 5; 1997 UR₁₈ *, 6, 2, 5; 1997 US₁₈ *, 6, 2, 5; 1997 UT₁₈ *, 6, 2, 5; 1997 UU₁₈ *, 6, 2, 5; 1997 UV₁₈ *, 6, 2, 5; 1997 UW₁₈ *, 6, 2, 5; 1997 UX₁₈ *, 6, 2, 5; 1997 UY₁₈ *, 6, 2, 5; 1997 UZ₁₈ *, 6, 2, 5; 1997 UA₁₉ *, 6, 2, 5; 1997 UB₁₉ *, 6, 2, 5; 1997 UC₁₉ *, 6, 2, 5; 1997 UD₁₉ *, 6, 2, 5; 1997 UE₁₉ *, 6, 2, 5; 1997 UF₁₉ *, 6, 2, 5; 1997 UG₁₉ *, 6, 2, 5; 1997 UH₁₉ *, 6, 2, 5; 1997 UJ₁₉ *, 6, 2, 5; 1997 UK₁₉ *, 6, 2, 5; 1997 UL₁₉ *, 6, 2, 5; 1997 UM₁₉ *, 6, 2, 5; 1997 UN₁₉ *, 5, 2, 5; 1997 UO₁₉ *, 6, 2, 5; 1997 UP₁₉ *, 6, 2, 5; 1997 UQ₁₉ *, 6, 2, 5; 1997 UR₁₉ *, 5, 2, 5; 1997 US₁₉ *, 5, 2, 5; 1997 UW₁₉ *, 6, 2, 13; 1997 UX₁₉ *, 6, 2, 13; 1997 UY₁₉ *, 6, 2, 13; 1997 UZ₁₉ *, 6, 2, 11; 1997 UA₂₀ *, 6, 2, 11; 1997 UB₂₀ *, 6, 2, 9; 1997 UC₂₀ *, 6, 2, 9; 1997 UD₂₀ *, 6, 2, 9; 1997 UE₂₀ *, 6, 2, 9; 1997 UF₂₀ *, 6, 2, 9; 1997 UG₂₀ *, 5, 2, 9; 1997 UH₂₀ *, 6, 2, 9; 1997 UJ₂₀ *, 6, 2, 6; 1997 UK₂₀ *, 6, 2, 6; 1997 VL₁, 3, 1, 0; 1997 VY₄, 3, 1, 0; 4595 P-L, 2, 1, 0; 6188 P-L, 3, 1, 0; 2034 T-2, 6, 2, 8; (1737), 3, 1, 0; (1939), 3, 1, 0; (2045), 3, 1, 0; (2807), 3, 1, 0; (2930), 2, 1, 0; (3821), 3, 1, 0; (4656), 3, 1, 0; (5422), 6, 2, 7; (5458), 3, 1, 0; (5466), 3, 1, 0; (5834), 3, 1, 0; (5848), 3, 1, 0; (5884), 2, 1, 0; (5919), 2, 1, 0; (6363), 6, 2, 11; (6437), 3, 1, 0; (6503), 3, 1, 0; (6873), 3, 1, 0; (7065), 3, 1, 0; (7194), 3, 1, 0; (7460), 3, 1, 0; (7927), 3, 1, 0; (7972), 3, 1, 0; [2301, 423, 279*, 1992/04/26-1997/11/03]

696 F. L. Whipple Observatory, Mount Hopkins

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

Observer C. W. Hergenrother

1.2-m $f/8$ reflector + CCD

USNO-A1.0

1997 VM₄, 6, 2, 1; 1997 VN₄, 6, 2, 1; 1997 VG₆, 6, 2, 1; [18, 3, 0*, 1997/11/08-1997/11/09]

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

1992 LR, 6, 2, 2; 1996 LL, 13, 4, 3; 1997 SE₅, 6, 2, 1; 1997 TD, 3, 1, 0; 1997 TZ₇, 39, 13, 19; 1997 TT₂₅, 2, 1, 0; 1997 UR, 5, 2, 1; 1997 UF₉, 2, 1, 0; 1997 US₉, 6, 2, 7; (35), 3, 1, 0; (142), 5, 2, 5; (258), 6, 2, 2; (376), 3, 1, 0; (2358), 6, 2, 5; (3568), 2, 1, 0; (3750), 2, 1, 0; (4680), 2, 1, 0; (5819), 7, 2, 3; [118, 18, 0*, 1997/10/15-1997/11/10]

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

1973 SD₁, 19, 4, 15; 1973 SJ₁, 5, 1, 0; 1973 SO₁, 5, 1, 0; 1973 SP₁, 4, 1, 0; 1975 SK₁, 10, 1, 0; 1975 UA, 15, 3, 15; 1977 QT₂, 10, 1, 0; 1978 RR, 14, 3, 8; 1978 SR₄, 5, 1, 0; 1978 SA₈, 5, 1, 0; 1978 TD₂, 5, 1, 0; 1978 UK₇, 5, 1, 0; 1979 FD₃, 14, 3, 6; 1979 MD₂, 5, 1, 0; 1979 MX₅, 4, 1, 0; 1979 MM₆, 4, 1, 0; 1979 ME₈, 10, 2, 1; 1980 EB, 4, 1, 0; 1980 FY, 5, 1, 0; 1980 FF₁₂, 5, 1, 0; 1981 EB₁₀, 8, 2, 6; 1981 EK₁₀, 5, 1, 0; 1981 EH₁₃, 9, 2, 4; 1981 EV₂₂, 5, 1, 0; 1981 EX₂₅, 14, 3, 6; 1981 EX₂₆, 5, 1, 0; 1981 EX₃₀, 5, 1, 0; 1981 JM₂, 5, 1, 0; 1981 SN₁, 5, 1, 0; 1981 SC₇, 4, 1, 0; 1982 UD₂, 20, 4, 8; 1982 VY₂, 10, 2, 6; 1985 CN₁, 5, 1, 0; 1985 HH, 5, 1, 0; 1986 CP₁, 4, 1, 0; 1986 RL₅, 5, 1, 0; 1986 TR₃, 5, 1, 0; 1986 WO₁, 10, 2, 1; 1986 XF₅, 5, 1, 0; 1987 RJ, 5, 1, 0; 1987 SU₁, 5, 1, 0; 1987 SF₅, 11, 3, 8; 1987 SG₁₃, 5, 1, 0; 1988 BX₃, 4, 1, 0; 1988 NU, 10, 2, 4; 1988 RU₆, 4, 1, 0; 1988 SZ₂, 5, 1, 0; 1988 TQ₄, 5, 1, 0; 1989 EG₁, 5, 1, 0; 1989 GB₁, 5, 1, 0; 1989 TL₁₅, 5, 1, 0; 1989 UA, 8, 2, 4; 1989 UB₃, 4, 1, 0; 1989 UA₆, 5, 1, 0; 1989 WG₇, 5, 1, 0; 1990 HO₃, 18, 4, 8; 1990 QT₂, 5, 1, 0; 1990 QW₁₀, 5, 1, 0; 1990 RR₅, 5, 1, 0; 1990 SM₆, 10, 2, 4; 1990 SZ₇, 4, 1, 0; 1990 SK₁₁, 10, 2, 6; 1990 SL₂₇, 5, 1, 0; 1990 TK₄, 5, 1, 0; 1990 TH₁₂, 5, 1, 0; 1990 VD₇, 15, 3, 8; 1991 DD, 10, 2, 6; 1991 EL₄, 4, 1, 0; 1991 FB₄, 5, 1, 0; 1991 GJ₁, 5, 1, 0; 1991 GH₃, 5, 1, 0; 1991 JA₁, 5, 1, 0; 1991 QE, 10, 1, 0; 1991 RR₃₀, 5, 1, 0; 1991 SK, 5, 1, 0; 1992 BO, 10, 1, 0; 1992 CN₃, 5, 1, 0; 1992 DC₁₀, 5, 1, 0; 1992 ER, 5, 1, 0; 1992 ES₁, 20, 4, 12; 1992 EA₇, 4, 1, 0; 1992 EQ₉, 5, 1, 0; 1992 LR, 4, 1, 0; 1992 NS, 5, 1, 0; 1992 RZ, 3, 1, 0; 1992 TX, 5, 1, 0; 1992 UG₃, 10, 2, 1; 1992 WL, 5, 1, 0; 1992 WS₂, 5, 1, 0; 1993 KO, 4, 1, 0; 1993 OO₃, 5, 1, 0; 1993 OQ₈, 4, 1, 0; 1993 ON₉, 20, 4, 15; 1993 RE, 26, 5, 15; 1993 RR, 4, 1, 0; 1993 RH₂, 5, 1, 0; 1993 RB₁₆, 4, 1, 0; 1993 SH₂, 20, 3, 15; 1993 SY₃, 10, 1, 0; 1993 ST₄, 10, 2,

1; 1993 TL₁₃, 5, 1, 0; 1993 VE, 5, 1, 0; 1993 VM₂, 4, 1, 0; 1994 AH, 5, 1, 0; 1994 CV, 5, 1, 0; 1994 VO₇, 10, 1, 0; 1994 WL₁, 5, 1, 0; 1994 YT, 10, 2, 12; 1995 BT₃, 9, 2, 4; 1995 CP₃, 4, 1, 0; 1995 DZ₈, 5, 1, 0; 1995 EF₁, 5, 1, 0; 1995 FP₁₄, 4, 1, 0; 1995 HA, 9, 2, 8; 1995 HE, 4, 1, 0; 1996 FL₅, 4, 1, 0; 1996 GD₂₁, 8, 2, 1; 1996 HU, 5, 1, 0; 1996 HK₁, 9, 2, 4; 1996 HB₂, 9, 2, 12; 1996 HT₂, 4, 1, 0; 1996 HA₁₅, 10, 2, 1; 1996 HQ₂₂, 5, 1, 0; 1996 HQ₂₃, 4, 1, 0; 1996 LJ₁, 5, 1, 0; 1996 NC, 5, 1, 0; 1996 OJ, 4, 1, 0; 1996 TN₄₉, 15, 3, 8; 1997 QP₃, 5, 1, 0; 1997 QR₃, 14, 3, 8; 1997 QV₃, 10, 2, 1; 1997 RO₃, 5, 1, 0; 1997 RH₄, 20, 3, 8; 1997 RA₉, 8, 2, 4; 1997 SY₂, 4, 1, 0; 1997 SB₃, 4, 1, 0; 1997 SC₃, 4, 1, 0; 1997 SS₃, 5, 1, 0; 1997 SC₄, 10, 2, 1; 1997 SL₄, 5, 1, 0; 1997 SD₁₀, 5, 1, 0; 1997 SS₁₀, 5, 1, 0; 1997 SJ₂₃, 4, 1, 0; 1997 SF₂₅, 4, 1, 0; 1997 TA₁₀, 14, 2, 1; 1997 TD₁₁, 4, 1, 0; 1997 TM₁₈, 5, 1, 0; 1997 TM₂₆, 5, 1, 0; 1997 UC, 4, 1, 0; 1997 UR, 5, 1, 0; 1997 UF₁, 9, 2, 2; 1997 UG₁, 5, 1, 0; 1997 UH₁, 15, 3, 8; 1997 UE₂, 15, 3, 8; 1997 UF₂, 5, 1, 0; 1997 US₂, 10, 1, 0; 1997 UC₃, 4, 1, 0; 1997 UH₃, 5, 1, 0; 1997 UR₃, 5, 1, 0; 1997 UT₆, 4, 1, 0; 1997 UQ₇, 10, 2, 1; 1997 UW₇, 9, 2, 1; 1997 UX₇, 9, 2, 2; 1997 UY₇, 4, 1, 0; 1997 UB₉, 5, 1, 0; 1997 UF₉ *, 14, 2, 1; 1997 UG₉, 9, 2, 1; 1997 UH₉, 15, 1, 0; 1997 UL₉, 10, 2, 1; 1997 UN₉, 4, 1, 0; 1997 US₉ *, 29, 3, 4; 1997 UZ₁₀ *, 14, 2, 3; 1997 UA₁₁ *, 12, 3, 3; 1997 UD₁₁, 10, 2, 1; 1997 UE₁₁, 10, 2, 1; 1997 UU₁₄, 5, 1, 0; 1997 UY₁₄, 10, 2, 1; 1997 UA₁₅, 10, 2, 6; 1997 UL₂₀ *, 14, 2, 1; 1997 VG *, 29, 2, 2; 1997 VB₁, 4, 1, 0; 1997 VL₁, 13, 3, 8; 1997 VR₁, 5, 1, 0; 1997 VN₂ *, 20, 2, 3; 1997 VM₄ *, 53, 2, 1; 1997 VN₄ *, 74, 2, 1; 1997 VY₄, 5, 1, 0; 1997 VG₆ *, 2, 1, 0; 2042 P-L, 4, 1, 0; 2093 P-L, 5, 1, 0; 2096 P-L, 9, 2, 4; 2572 P-L, 4, 1, 0; 4634 P-L, 5, 1, 0; 5004 P-L, 5, 1, 0; 6113 P-L, 4, 1, 0; 6188 P-L, 3, 1, 0; 7581 P-L, 5, 1, 0; 1102 T-1, 5, 1, 0; 1208 T-1, 9, 2, 4; 3078 T-1, 5, 1, 0; 4370 T-1, 4, 1, 0; 1045 T-2, 5, 1, 0; 4196 T-2, 5, 1, 0; 4197 T-2, 5, 1, 0; 5187 T-2, 4, 1, 0; 2316 T-3, 5, 1, 0; 2326 T-3, 4, 1, 0; 3152 T-3, 10, 2, 4; 4094 T-3, 5, 1, 0; 4171 T-3, 22, 4, 5; 4313 T-3, 5, 1, 0; (1462), 5, 1, 0; (1496), 5, 1, 0; (1581), 5, 1, 0; (1616), 10, 2, 6; (1630), 5, 1, 0; (1647), 5, 1, 0; (1673), 10, 2, 4; (1686), 5, 1, 0; (1692), 5, 1, 0; (1699), 5, 1, 0; (2275), 10, 2, 6; (2295), 5, 1, 0; (2303), 5, 1, 0; (2333), 10, 2, 3; (2337), 15, 3, 6; (2656), 5, 1, 0; (2663), 10, 2, 6; (2694), 10, 2, 4; (2698), 5, 1, 0; (3268), 10, 2, 3; (3281), 5, 1, 0; (3290), 5, 1, 0; (3626), 9, 2, 7; (4606), 5, 1, 0; (4607), 5, 1, 0; (4614), 5, 1, 0; (4631), 5, 1, 0; (4640), 5, 1, 0; (4851), 5, 1, 0; (4861), 5, 1, 0; (4862), 5, 1, 0; (5477), 10, 2, 8; (5807), 9, 2, 4; (5809), 10, 2, 4; (5839), 5, 1, 0; (5840), 5, 1, 0; (5848), 5, 1, 0; (5876), 4, 1, 0; (6594), 5, 1, 0; (6867), 10, 1, 0; (6873), 5, 1, 0; (6914), 5, 1, 0; (6940), 5, 1, 0; (6952), 10, 2, 4; (7034), 9, 1, 0; (7039), 4, 1, 0; (7040), 10, 2, 3; (7065), 5, 1, 0; (7069), 5, 1, 0; (7085), 9, 2, 6; (7089), 5, 1, 0; (7132), 5, 1, 0; (7135), 15, 3, 6; (7137), 10, 2, 4; (7190), 4, 1, 0; (7194), 5, 1, 0; (7203), 9, 2, 6; (7214), 4, 1, 0; (7256), 15, 2, 3; (7416), 5, 1, 0; (7460), 5, 1, 0; (7486), 5, 1, 0; (7571), 5, 1, 0; (7587), 15, 3, 6; (7939), 5, 1, 0; (7940), 5, 1, 0; (7955), 4, 1, 0; (7956), 5, 1, 0; (7967), 5, 1, 0; (7974), 5, 1, 0; [2149, 283, 11*, 1997/10/22-1997/11/07]

706 Salinas

J. Hall, 10180 County Rd. 190, Salida, CO 81201, U.S.A. [teila@rmi.net]

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

GSC

(419), 2, 1, 0; [2, 1, 0*, 1997/11/02]

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

1990 SX₅, 5, 1, 0; 1993 OV₁, 5, 1, 0; 1997 RT, 4, 1, 0; (10), 18, 1, 0; (3392), 10, 2, 2; (7968), 5, 1, 0; [47, 6, 0*, 1997/10/22-1997/11/08]

711 McDonald Observatory

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

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

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

0.76-m $f/3.0$ reflector + CCD

GSC

1988 GB, 4, 2, 1; 1990 MF, 1, 1, 0; 1991 QG, 2, 1, 0; 1991 WA, 4, 2, 1; 1992 LR, 4, 2, 1; 1994 AH₂, 6, 3, 2; 1994 TF₂, 4, 2, 2; 1995 DF₃, 4, 2, 1; 1995 UO₅, 6, 3, 34; 1996 TL₆₆, 4, 2, 1; 1997 RT, 4, 2, 1; (126), 6, 4, 3; (132), 5, 4, 3; (253), 5, 2, 2; (313), 4, 3, 2; (347), 5, 4, 3; (433), 9, 6, 38; (1193), 4, 2, 1; (1580), 2, 1, 0; (1980), 3, 2, 1; (2340), 4, 2, 1; (2703), 10, 6, 38; (2968), 4, 2, 1, 0; (3102), 2, 1, 0; (3361), 3, 2, 1; (3362), 4, 2, 1; (3521), 4, 2, 1; (3688), 4, 2, 1; (3691), 4, 2, 37; (3757), 4, 2, 1; (3840), 11, 7, 38; (4486), 4, 2, 1; (4680), 4, 2, 1; (5164), 4, 2, 1; (5279), 2, 1, 0; (5324), 3, 2, 1; (5786), 4, 2, 1; [159, 37, 0*, 1997/09/26-1997/11/03]

721 Lime Creek

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

[lindh@csb.cambridge.ne.us]

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

GSC

1997 UF₇ *, 4, 2, 1; (1928), 4, 2, 1; [8, 2, 1*, 1997/10/27–1997/10/31]**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 UW₃, 6, 2, 1; 1997 VA₃ *, 8, 3, 2; 1997 VY₃ *, 6, 2, 1; (2818), 6, 2, 2; (4721), 6, 2, 1; (5819), 6, 2, 1; (6253), 6, 2, 2; (6293), 6, 2, 2; (6369), 6, 2, 2; (6388), 6, 2, 3; (6594), 6, 2, 1; [68, 11, 2*, 1997/10/22–1997/11/08]**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, D. Borgman, M. Eastman, K. Rivich

Measurer W. G. Dillon

0.46-m reflector + CCD

USNO-SA1.0, GSC

1981 WC, 3, 1, 0; 1990 RM₅, 5, 2, 1; 1997 SM₅, 5, 2, 3; 1997 SY₁₇, 2, 1, 0; [15, 4, 0*, 1997/09/26–1997/10/05]**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

(1213), 2, 1, 0; (1214), 2, 1, 0; (1224), 3, 2, 3; [7, 3, 0*, 1997/10/19–1997/10/22]

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

(142), 2, 1, 0; (258), 2, 1, 0; (376), 2, 1, 0; (419), 2, 1, 0; (4680), 3, 1, 0; [11, 5, 0*, 1997/10/29]

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

1983 RG₂, 3, 2, 5; 1989 CD₈, 6, 3, 4; 1989 WA₂, 6, 3, 2; 1990 SG₃, 2, 1, 0; 1992 UG₄, 5, 3, 5; 1992 WS₂, 2, 1, 0; 1993 VR₂, 4, 2, 1; 1994 WK₁, 2, 1, 0; 1997 TB₂₅, 3, 1, 0; 4038 P-L, 2, 1, 0; (142), 4, 2, 1; (258), 6, 3, 6; (376), 5, 2, 1; (3568), 8, 4, 21; (5819), 4, 2, 1; [62, 15, 0*, 1997/10/20–1997/11/10]**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, M. O. Weaver

Measurers D. R. DeGraff, A. M. Robbins

0.81-m $f/4$ reflector + CCD

USNO-A1.0

1997 US₂, 6, 1, 0; 1997 UF₉, 5, 1, 0; 1997 UH₉, 7, 1, 0; 1997 UZ₁₀, 4, 1, 0; 1997 VG₆, 5, 1, 0; (142), 6, 3, 7; (258), 6, 3, 7; (376), 4, 2, 6; (3568), 3, 2, 6; (3750), 4, 2, 6; [50, 10, 0*, 1997/10/19–1997/11/10]**809 European Southern Observatory**

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

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

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

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

H. Bönnhardt, ESO La Silla Observatory, Alonso de Cordova 3107, Vitacura,

Santiago 19001, Chile [hboehna@eso.org] (5)

7 = 3 + 4

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

Berlin, Germany [Gerhard.Hahn@DLR.de] (9)

Observers G. Pizarro (4), O. Pizarro (4), H. Bönnhardt (5), O. R. Hainaut (5),

A. Natheus (9), S. Mottola (9), G. Hahn (9)

Measurers E. W. Elst (4), O. R. Hainaut (5), G. Hahn (9), S. Mottola (9)

1.0-m Schmidt, 0.60-m Bochum $f/15$ reflector + CCD, 3.56-m $f/5.2$ reflector + CCD(4) 1984 MP, 3, 1, 0; 1991 GQ, 3, 1, 0; 1991 RS₂, 3, 1, 0; 1991 RU₁₇, 3, 1, 0; 1993 FV₃₁, 6, 2, 1; 1993 MB, 6, 2, 1; 1994 TU₂, 3, 1, 0; 1994 TX₂, 3, 1, 0; 1994 WR₂, 3, 1, 0; 1995 SS, 3, 1, 0; 1996 CT₇, 3, 1, 0; 1996 KS₇, 3, 1, 0; 1997 GV₂₁, 6, 2, 1; 1997 GB₄₁, 6, 2, 1; 1997 GS₄₄ *, 6, 2, 1; 1997 GT₄₄ *, 6, 2, 1; 1997 GU₄₄ *, 6, 2, 1; 1997 GV₄₄ *, 6, 2, 1; 1997 GW₄₄ *, 6, 2, 1; 1997 GX₄₄ *, 6, 2, 1; 1997 GY₄₄ *, 6, 2, 1; 1997 GZ₄₄ *, 6, 2, 1; 1997 HX₃, 3, 1, 0; 1997 JN, 3, 1, 0; 1997 JU₅, 3, 1, 0; 1997 JH₆, 3, 1, 0; 1997 JK₆, 3, 1, 0; 1997 JW₆, 3, 1, 0; 1997 JE₁₀, 3, 1, 0; 1997 JB₁₆, 3, 1, 0; 1997 JG₁₆, 3, 1, 0; 1997 JH₁₆, 3, 1, 0; 1997 JJ₁₆, 3, 1, 0; 1997 JK₁₆, 3, 1, 0; 1997 JL₁₆, 3, 1, 0; 1997 JN₁₆, 3, 1, 0; 1997 JO₁₆, 3, 1, 0; 1997 JP₁₆, 3, 1, 0; 1997 JQ₁₆, 3, 1, 0; 1997 LK₁₁, 3, 1, 0; 4033 T-1, 6, 2, 1; 3180 T-2, 3, 1, 0; 3340 T-3, 3, 1, 0; (57), 6, 2, 1; (1335), 3, 1, 0; (1412), 3, 1, 0; (1635), 3, 1, 0; (2814), 3, 1, 0; (3277), 6, 2, 1; (3668), 3, 1, 0; (4032), 3, 1, 0; (4180), 6, 2, 1; (4431), 3, 1, 0; (4968), 6, 2, 1; (4971), 6, 2, 1; (5286), 3, 1, 0; (5760), 3, 1, 0; (6045), 3, 1, 0; (6093), 6, 2, 1; (7056), 3, 1, 0; [237, 60, 8*, 1996/04/18–1997/05/04](5) 1996 TO₆₆, 24, 3, 2; [24, 1, 0*, 1997/10/21–1997/10/23](7) 1993 TH₄₈ *, 6, 2, 12; [6, 1, 1*, 1993/10/10–1993/10/22]

(9) 1995 FH, 2, 1, 0; 1995 FQ, 5, 2, 421; (3676), 5, 1, 0; [12, 3, 0*, 1996/09/04–1997/10/31]

816 Rand Observatory

G. R. Viscome, 100 Sentinel Road, Lake Placid, NY 12946, U.S.A.

[GRViscome@compuserve.com]

0.37-m $f/6$ reflector + CCD

GSC, USNO-SA1.0

1969 TQ₁, 5, 1, 0; 1996 QN₁, 11, 4, 31; 1997 SL₁, 4, 2, 2; 1997 SR₃, 9, 3, 15; 1997 SS₃, 9, 3, 15; 1997 SC₁₁, 3, 1, 0; 1997 TX₁₆, 6, 2, 13; 1997 TC₁₈, 7, 2, 13; 1997 TE₂₅ *, 9, 3, 27; [63, 9, 1*, 1997/10/06–1997/11/08]**817 Sudbury**

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

[dicicco@skypub.com]

0.41-m Schmidt-Cassegrain + CCD

GSC

1996 ER, 9, 3, 6; 1996 TW, 8, 3, 8; 1997 UT₂, 3, 1, 0; (7969), 7, 2, 2; [27, 4, 0*, 1997/10/21–1997/10/29]**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

1990 QC₃, 3, 1, 0; 1990 QW₁₀, 12, 4, 10; 1991 AQ₂, 6, 2, 1; 1997 PP₂, 3, 1, 0; 1997 QU, 3, 1, 0; 1997 QV, 3, 1, 0; 1997 TZ₂₄ *, 6, 2, 1; 1997 TA₂₅ *, 12, 4, 19; (7944), 15, 5, 20; [63, 9, 2*, 1997/09/28–1997/10/26]

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

(3568), 5, 2, 1; [5, 1, 0*, 1997/10/23–1997/10/24]

834 Buenos Aires-AAAA

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

0.25-m $f/6.8$ reflector + CCD

GSC

(631), 2, 1, 0; (640), 6, 3, 6; (674), 3, 1, 0; (760), 3, 1, 0; (774), 3, 1, 0; (1388), 3, 1, 0; (2938), 3, 1, 0; [23, 7, 0*, 1997/07/17–1997/09/18]

844 Los Molinos

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

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

0.35-m reflector + CCD

GSC

(1386), 3, 1, 0; (2693), 3, 1, 0; (5870), 2, 1, 0; [8, 3, 0*, 1997/09/12–1997/10/20]

861 Barão Geraldo

P. R. Holvorcem, Departamento de Matematica/IMECC, Universidade Estadual de Campiñas, Campiñas, SP, BR-13081-970, Brazil [holvorce@ime.unicamp.br]

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

GSC

1977 QQ₅, 2, 1, 0; 1997 SE₅, 8, 3, 10; 1997 TD, 9, 3, 10; 1997 TT₂₅, 2, 1, 0; 1997 UR, 2, 1, 0; (2100), 3, 1, 0; [26, 6, 0*, 1997/10/17–1997/10/28]

864 Kumamoto Civil Astronomical Observatory

J. Kobayashi, 2016 Tukahara, Jhonan, Shimomashiki-Gun, Kumamoto-Ken, 861-42

Japan [nag00633@niftyserve.or.jp]

0.41-m $f/5.0$ reflector + CCD

GSC

1997 VX₅ *, 8, 2, 2; [8, 1, 1*, 1997/11/06–1997/11/08]

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

1996 HK₁, 3, 1, 0; 1997 SF₁₁, 11, 4, 35; 1997 SL₁₆, 6, 2, 1; 1997 TT₂₅, 4, 1, 0; 1997 UE₂₁ *, 8, 3, 14; 1997 UF₂₁ *, 9, 3, 8; 1997 UM₂₁ *, 11, 3, 9; 1997 VN₆ *, 5, 2, 1; (5353), 3, 1, 0; [60, 9, 4*, 1997/10/01–1997/11/07]

886 Susono

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

0.25-m $f/6.3$ reflector + CCD

GSC

1979 MD₂, 4, 2, 1; 1992 UM₃, 4, 2, 1; 1993 JG, 4, 2, 1; 1993 YR, 4, 2, 1; 1995 BU₂, 4, 2, 1; 1995 BT₃, 4, 2, 1; 1997 SB₂₅, 4, 2, 1; 1997 SC₂₅, 4, 2, 1; 1997 TD₁₇, 4, 2, 4; 1997 TF₁₇, 4, 2, 1; 1997 TG₁₉, 4, 2, 4; 1997 TH₁₉, 8, 4, 7; 1997 TJ₁₉, 4, 2, 1; 1997 UE₁, 4, 2, 1; 1997 UF₁, 4, 2, 5; 1997 UG₁, 4, 2, 5; 1997 UH₁, 4, 2, 5; 1997 UP₇ *, 14, 7, 14; 7581 P-L, 4, 2, 1; 4408 T-1, 4, 2, 1; (7486), 4, 2, 1; [98, 21, 1*, 1997/10/10–1997/11/09]

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

1988 TQ₄, 4, 2, 6; 1997 RZ₇, 2, 1, 0; 1997 TH₁₉, 2, 1, 0; 1997 TJ₁₉, 2, 1, 0; 1997 UD₁₅ *, 5, 3, 6; 1997 VE₄ *, 4, 2, 2; 1997 VO₆ *, 4, 2, 4; [23, 7, 3*, 1997/10/11–1997/11/08]

894 Otomo

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

0.25-m $f/3.4$ reflector

PPM

1992 EQ₉, 2, 1, 0; 1997 TU₂₅ *, 4, 2, 4; 1997 TV₂₅ *, 4, 2, 4; (3975), 2, 1, 0; [12, 4, 2*, 1997/10/08–1997/10/12]

897 YGCO Chiyoda Station

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

[kojitaku@scorpius.bekkoame.or.jp]

0.25-m $f/6.0$ reflector + CCD

GSC

1997 TD, 3, 1, 0; 1997 UR, 5, 1, 0; 1997 UF₉, 3, 1, 0; 1997 UH₉, 7, 2, 5; 1997 US₉, 3, 1, 0; (6961), 3, 1, 0; [24, 6, 0*, 1997/10/05–1997/11/09]

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

1972 TC, 2, 1, 0; 1982 BS, 2, 1, 0; 1983 WM, 4, 2, 1; 1990 SK, 2, 1, 0; 1994 AQ₂, 2, 1, 0; 1997 SF₄, 2, 1, 0; 1997 UR, 2, 1, 0; 1997 UO₁, 4, 2, 3; 1997 UF₁₅, 4, 1, 0; 1997 VB, 4, 2, 1; 1997 VH, 6, 2, 1; 1997 VT, 2, 1, 0; 1997 VL₂ *, 6, 3, 6; 1997 VX₅, 2, 1, 0; 1997 VY₅ *, 7, 2, 1; 1997 VG₆, 2, 1, 0; 6038 P-L, 4, 2, 15; 4171 T-3, 2, 1, 0; (142), 2, 1, 0; (258), 2, 1, 0; (308), 2, 1, 0; (376), 2, 1, 0; [67, 22, 2*, 1997/10/19–1997/11/10]

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

GSC

1991 DD, 2, 1, 0; 1993 JG, 6, 3, 21; 1997 QD₂, 2, 1, 0; 1997 QN₃, 4, 2, 1; 1997 RO₃, 4, 2, 1; 1997 RR₃, 2, 1, 0; 1997 SB₂₅, 2, 1, 0; 1997 SC₂₅, 2, 1, 0; 1997 SG₂₅, 2, 1, 0; 1997 SJ₂₅, 4, 2, 30; 1997 SK₂₅, 2, 1, 0; 1997 SL₂₅, 2, 1, 0; 1997 TB₁₀, 4, 2, 3; 1997 TD₁₇, 2, 1, 0; 1997 TF₁₇, 2, 1, 0; 1997 TG₁₇, 2, 1, 0; 1997 TH₁₇, 4, 2, 21; 1997 TC₁₈, 4, 2, 2; 1997 UC, 2, 1, 0; 1997 UE₁ *, 6, 3, 4; 1997 UF₁ *, 6, 3, 4; 1997 UG₁ *, 6, 3, 4; 1997 UH₁ *, 4, 2, 1; 1997 UE₂ *, 2, 1, 0; 1997 UF₂ *, 2, 1, 0; 1997 UU₂, 2, 1, 0; 1997 UY₃, 4, 2, 1; 1997 UA₇, 4, 2, 3; 1997 UB₇, 4, 2, 3; 1997 UZ₈, 4, 2, 1; 1997 UA₉, 4, 2, 1; 1997 UY₁₄ *, 6, 3, 9; 1997 UZ₁₄ *, 6, 3, 9; 1997 UA₁₅ *, 6, 3, 9; 1997 UB₁₅ *, 6, 3, 9; 1997 UC₁₅ *, 5, 3, 9; 1997 VB₃, 4, 2, 1; 1997 VU₄ *, 4, 2, 2; 1997 VV₄ *, 4, 2, 2; 1997 VW₄ *, 4, 2, 2; 1997 VX₄ *, 4, 2, 2; 1997 VY₄ *, 3, 2, 1; 1997 VZ₄ *, 4, 2, 1; 1997 VA₅ *, 4, 2, 1; 1997 VB₅ *, 4, 2, 2; 1997 VP₆ *, 4, 2, 3; 1997 VQ₆ *, 4, 2, 3; 4581 P-L, 4, 2, 2; [178, 48, 21*, 1997/09/05–1997/11/08]

908 Tsukioka Toyama

M. Aoki, 6-1339, Tsukioka-Cho, Toyama, 939 Japan

0.43-m reflector $f/6$ + CCD

GSC

1997 VG₅ *, 7, 2, 1; [7, 1, 1*, 1997/11/08–1997/11/09]

910 Caussols-ODAS

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

[maury@obs-azur.fr]

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

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

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

Measurers A. Maury, G. Hahn

0.90-m Schmidt + CCD

GSC

1987 VR₃, 3, 1, 0; 1988 FS₂, 3, 1, 0; 1988 RZ₂, 3, 1, 0; 1990 SK₁₁, 3, 1, 0; 1992 SQ₂₄, 3, 1, 0; 1993 VM₂, 3, 1, 0; 1994 WL₁, 3, 1, 0; 1996 RU₂, 3, 1, 0; 1997 RT₃, 3, 1, 0; 1997 SV₂₃, 3, 1, 0; 1997 SE₃₀, 3, 1, 0; 1997 SB₃₃, 3, 1, 0; 1997 TF₉, 3, 1, 0; 1997 TR₉, 3, 1, 0; 1997 TG₁₀, 3, 1, 0; 1997 TS₁₉, 3, 1, 0; 1997 TN₂₁, 3, 1, 0; 1997 TE₂₅, 3, 1, 0; 1997 UX₃, 3, 1, 0; 1997 US₁, 3, 1, 0; 1997 UT₁, 3, 1, 0; 1997 UX₂, 6, 1, 0; 1997 UT₃, 3, 1, 0; 1997 UL₅, 3, 1, 0; 1997 UM₅, 3, 1, 0; 1997 UP₇, 6, 2, 57; 1997 US₈, 6, 2, 28; 1997 UG₉, 3, 1, 0; 1997 UN₉, 3, 1, 0; 1997 UO₉, 3, 1, 0; 1997 UU₁₄, 3, 1, 0; 1997 VB₁, 3, 1, 0; 3078 P-L, 3, 1, 0; 2034 T-2, 3, 1, 0; (30), 3, 1, 0; (203), 3, 1, 0; (569), 3, 1, 0; (659), 3, 1, 0; (823), 3, 1, 0; (1074), 3, 1, 0; (1111), 3, 1, 0; (1512), 3, 1, 0; (1983), 3, 1, 0; (2114), 3, 1, 0; (2773), 3, 1, 0; (2784), 3, 1, 0; (3576), 3, 1, 0; (3591), 3, 1, 0; (3755), 3, 1, 0; (3763), 3, 1, 0; (4239), 3, 1, 0; (5243), 3, 1, 0; (5479), 3, 1, 0; (5663), 3, 1, 0; (5832), 3, 1, 0; (6365), 3, 1, 0; (6977), 3, 1, 0; [180, 57, 0*, 1997/08/05–1997/11/08]

950 La Palma

A. Fitzsimmons, Physics Department, Queen's University, Belfast BT7 1NN,

Northern Ireland [a.fitzsimmons@queens-belfast.ac.uk]

Observers M. E. Fletcher, A. Fitzsimmons, M. J. Irwin, P. Sorenson, M. Asif

Measurer A. Fitzsimmons

2.5-m Isaac Newton Telescope + CCD

GSC

1993 SB₃, 3, 1, 0; 1993 SC₃, 3, 1, 0; 1994 TB₃, 3, 1, 0; 1994 VK₈, 5, 2, 1; 1996 TP₆₆, 6, 2, 1; 1997 CU₂₆, 2, 1, 0; 1997 CS₂₉, 2, 2, 1; 1997 CT₂₉, 2, 2, 1; 1997 RY₆, 6, 2, 1; 1997 TX₈, 8, 3, 3; [40, 10, 0*, 1997/10/24–1997/10/30]

951 Highworth

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

[JC34@dia1.pipex.com]

0.30-m Newtonian reflector + CCD

GSC

(640), 4, 2, 1; (6249), 4, 2, 3; [8, 2, 0*, 1997/10/31–1997/11/03]

952 Marxuquera

J. J. Gomez D., Cardenal Cisneros 55-4-8, E-46700 Gandia, Spain

[astsaf@arrakis.es]

Observers A. Ferrer, J. J. Gomez

Measuer J. J. Gomez

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

GSC

1995 BT₃, 2, 1, 0; 4835 T-1, 5, 1, 0; [7, 2, 0*, 1997/10/24]

954 Teide Observatory

R. Casas, Instituto de Astrofisica de Canarias, Via Lactea, E-38200 La Laguna,

Tenerife, Canary Islands, Spain [rcr@ll1.iac.es]

Observers M. Serra, D. Drozdova, M. Kidger, A. Osoz, P. Santos

Measurer R. Casas

0.8-m $f/11.3$ Cassegrain + CCD

GSC 1.2

1996 TL₆₆, 3, 1, 0; (1116), 22, 3, 2; [25, 2, 0*, 1997/10/27–1997/11/04]

957 Merignac

J. Montanne, 29, rue Louis Aragon, F-33700 Merignac, France

[montanne@quaternet.fr]

0.20-m $f/6.15$ reflector + CCD

1997 SE₅, 11, 3, 8; (68), 3, 1, 0; (258), 4, 2, 1; (1736), 4, 2, 1; [22, 4, 0*, 1997/10/24–1997/11/01]

958 Observatoire de Dax

P. Dupouy, Observatoire de Dax, F-40100 Dax, France

[100766.566@compuserve.com]

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

Measurer P. Dupouy

0.254-m $f/6.7$ reflector + CCD

GSC

1997 RE₃, 1, 1, 0; 1997 SE₅, 15, 2, 1; 1997 UP₉, 2, 1, 0; 1997 UR₉, 5, 2, 1; 1997 UW₁₀, 2, 1, 0; [25, 5, 0*, 1997/09/29–1997/11/11]

959 Ramonville Saint Agne

C. Buil, 10 Domaine de la Cheneraie, F-31520 Ramonville Saint Agne

[c.buil@donald.cst.cnes.fr]

Observers C. Buil, V. Desnoux

0.21-m $f/3.6$ reflector + CCD

GSC

1997 TB₁₈, 2, 1, 0; 1997 TG₂₄, 2, 1, 0; 1997 TJ₂₄, 3, 1, 0; 1997 UG₃, 2, 1, 0; 1997 UP₉ *, 10, 3, 3; 1997 UV₁₀ *, 12, 3, 3; 1997 UW₁₀ *, 10, 3, 3; [41, 7, 3*, 1997/10/27–1997/11/01]

966 Church Stretton

S. P. Laurie, Toleman, 10 Hazler Orchard, Church Stetton, Shropshire SY6 7AL,

England [100336.3635@compuserve.com]

0.25-m Schmidt Cassegrain + focal reducer + CCD

GSC

1981 SN₁, 4, 2, 19; 1985 QL₄, 2, 1, 0; 1989 BA₁, 4, 2, 21; 1994 YO, 4, 2, 19; 1997 SM₃, 6, 3, 23; 1997 SN₃, 2, 1, 0; 1997 SE₅, 2, 1, 0; 1997 TM₂₆ *, 6, 3, 16; 1997 UK₈ *, 7, 3, 7; 1997 UJ₁₅ *, 5, 2, 3; 1997 UK₁₅ *, 5, 2, 2; [47, 11, 4*, 1997/10/01–1997/10/31]

975 Valencia

A. Lopez, Observatorio Astronómico de Valencia, Avda. Blasco Ibanez 13, E-46010

Valencia, Spain [Alvaro.Lopez@uv.es]

Observers A. Lopez G., A. Flores M., J. A. Morano F.

0.15-m $f/15$ refractor

PPM, GSC

(3), 5, 1, 0; (6), 4, 2, 11; (7), 2, 1, 0; (8), 14, 6, 35; (13), 2, 1, 0; (14), 6, 3, 8; (15), 4, 2, 3; (16), 6, 2, 451; (18), 2, 1, 0; (25), 4, 2, 10; (29), 2, 1, 0; (40), 7, 3, 20; (42), 8, 3, 6; (88), 2, 1, 0; (532), 4, 2, 5; (747), 4, 2, 6; [76, 16, 0*, 1994/05/18–1996/01/02]

ORBITAL ELEMENTS

Orbital elements have been computed by the following contributors:

E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A. [elgb@lowell.edu]
 D. W. E. Green, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [dgreen@cfa.harvard.edu]
 T. Kobayashi, 1717-2 Shimo-Koizumi, Oizumi-machi, Ora-gun, Gunma-ken, 370-05 Japan [kobataka@oaa.iiijnet.or.jp]
 B. G. Marsden, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [bmarsden@cfa.harvard.edu]
 S. Nakano, 3-19, 1 chome, Takenokuchi, Sumoto, Hyogo-ken 656, Japan [snakano@cfa.harvard.edu]
 N. K. Sumzina, Institute for Theoretical Astronomy, Naberezhnaya Kutuzova 10, St. Petersburg 191187, Russia [shor@ita.spb.su]
 T. Urata, 1-8, Dobayashi 1 Chome, Shimizu, Shizuoka-Ken, 424 Japan
 G. V. Williams, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [gwilliams@cfa.harvard.edu]

C/1997 BA₆ (Spacewatch)

Epoch 1999 Dec. 8.0 TT = JDT 2451520.5

<i>T</i> 1999 Nov. 27.3635 TT		Nakano	
<i>q</i>	(2000.0)	P	Q
3.435629			
<i>z</i> +0.000233	ω 285.9376	+0.0105955	+0.7657314
± 0.000028	Ω 317.6639	+0.0018139	-0.6431229
<i>e</i> 0.999198	<i>i</i> 72.7179	-0.9999422	+0.0069472

From 111 observations 1997 Jan. 11–Nov. 8, mean residual 0''6.

C/1997 T1 (Utsunomiya)*T* 1997 Dec. 10.0770 TT

<i>q</i> 1.359625		Marsden	
<i>q</i>	(2000.0)	P	Q
	ω 95.9210	+0.4324983	-0.6398650
	Ω 53.7126	-0.7205719	-0.6687800
<i>e</i> 1.0	<i>i</i> 127.9944	+0.5419607	-0.3785579

From 428 observations 1997 Oct. 5–Nov. 10.

P/1997 T3*T* 1998 Mar. 7.6739 TT

<i>q</i> 4.248250		Nakano	
<i>q</i>	(2000.0)	P	Q
<i>n</i> 0.0572413	ω 333.7486	+0.7985441	-0.5972072
<i>a</i> 6.668009	Ω 63.1258	+0.5660554	+0.7024965
<i>e</i> 0.362891	<i>i</i> 4.8428	+0.2047157	+0.3870946

P 17.2

From 96 observations 1997 Oct. 5–Nov. 6.

C/1997 T4 (SOHO)*T* 1997 Oct. 6.90 TT

<i>q</i> 0.0058		Marsden	
<i>q</i>	(2000.0)	P	Q
	ω 85.53	+0.08585	-0.99629
	Ω 0.55	-0.98000	-0.08540
<i>e</i> 1.0	<i>i</i> 146.21	+0.17950	+0.01024

From 16 observations 1997 Oct. 6.

C/1997 T5 (SOHO)*T* 1997 Oct. 8.02 TT

<i>q</i> 0.0062		Marsden	
<i>q</i>	(2000.0)	P	Q
	ω 78.57	+0.19437	-0.98092
	Ω 359.73	-0.95860	-0.18934
<i>e</i> 1.0	<i>i</i> 144.28	+0.20808	+0.04400

From 13 observations 1997 Oct. 7.

P/1997 V1 (Larsen)*T* 1997 Aug. 16.2731 TT

<i>q</i> 3.285990		Marsden	
<i>q</i>	(2000.0)	P	Q
<i>n</i> 0.0909154	ω 127.3605	+0.9848678	-0.0241927
<i>a</i> 4.898288	Ω 234.6608	-0.0247134	+0.9604848
<i>e</i> 0.329155	<i>i</i> 12.1442	+0.1715364	+0.2772790

P 10.8

From 113 observations 1997 Nov. 3–9.

55P/Tempel-Tuttle

Epoch 1998 Mar. 8.0 TT = JDT 2450880.5

<i>T</i> 1998 Feb. 28.1019 TT		Nakano	
<i>q</i>	(2000.0)	P	Q
<i>n</i> 0.0296594	ω 172.4971	+0.4626793	+0.8513371
<i>a</i> 10.336209	Ω 235.2580	+0.7969410	-0.2772229
<i>e</i> 0.905516	<i>i</i> 162.4858	+0.3883463	-0.4453905

P 33.2From 73 observations 1865–1997, mean residual 1''2. Nongravitational parameters
 $A_1 = -0.41$, $A_2 = +0.0092$.**62P/Tsuchinshan 1**

Epoch 1998 Apr. 17.0 TT = JDT 2450920.5

<i>T</i> 1998 Apr. 19.0598 TT		Nakano	
<i>q</i>	(2000.0)	P	Q
<i>n</i> 1.495858	ω 22.7712	-0.4872438	-0.8543296
<i>a</i> 0.1484144	Ω 96.8111	+0.7705454	-0.5180685
<i>e</i> 0.576612	<i>i</i> 10.4954	+0.4109177	-0.0415447

P 6.64From 71 observations 1965–1997, mean residual 1''3. Nongravitational parameters
 $A_1 = +0.15$, $A_2 = +0.0099$.

(7975)* 1974 FD = 1974 HK = 1950 TK₁ = 1981 SX₄ = 1986 RS₇
 = 1988 AO₄

Discovered 1974 Mar. 22 by C. Torres at Cerro El Roble.

Id. C. M. Bardwell (d, *MPC* 5347), T. B. Spahr (*MPC* 30445)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 128.74028		Williams	
<i>M</i>	(2000.0)	P	Q
<i>n</i> 0.19009250	ω 273.78474	+0.00000675	+0.99992916
<i>a</i> 2.9956614	Ω 356.15477	-0.83253278	-0.00658812
<i>e</i> 0.0752163	<i>i</i> 10.22344	-0.55397578	+0.00991302
<i>P</i> 5.18	<i>H</i> 12.6	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1950 10 13	024	0.9+	0.4-	1997 09 28	118	(2.4-	5.0-)	1997 10 21	658	0.1-	0.1-
1974 03 22	805	1.1-	0.2-	1997 09 28	118	(2.3-	4.9-)	1997 10 28	608	0.3-	0.1-
1974 03 23	805	1.0+	0.5+	1997 09 28	118	(2.1-	4.9-)	1997 10 28	608	0.2+	0.3+
1974 04 22	805	0.5-	0.4-	1997 09 29	118	0.5+	0.5+	1997 10 30	566	0.2-	0.2+
1974 04 24	805	0.2+	0.8-	1997 09 29	118	0.5+	0.4+	1997 10 30	566	0.2-	0.0
1974 04 25	805	0.7+	0.0	1997 09 29	118	0.4+	0.5+	1997 10 30	566	0.2-	0.2+

1981 09 25	095	(0.7+ 4.5+)	1997 09 29	118	0.4+ 0.4+	1997 10 30	608	0.1+ 0.5+
1986 09 07	095	1.2- 0.9-	1997 10 14	608	1.0+ 0.5-	1997 10 30	608	0.1+ 0.6+
1988 01 13	033	1.4- 0.3-	1997 10 14	608	0.5+ 0.6-	1997 11 11	658	0.4- 0.7-
1988 01 13	033	1.5- 0.6-	1997 10 15	608	0.5+ 0.3+	1997 11 11	658	0.0 1.1-
1997 09 25	118	0.2+ 0.7+	1997 10 15	608	0.6+ 0.3+	1997 11 11	658	0.7- 0.9-
1997 09 25	118	0.2+ 0.7+	1997 10 21	658	0.1- 0.0			
1997 09 25	118	0.1+ 0.7+	1997 10 21	658	0.1- 0.2-			

(7976)* 1977 QT₂ = 1992 AK₃

Discovered 1977 Aug. 21 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. B. G. Marsden (*MPC* 20921)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

			Marsden		
<i>M</i>	358.29207	(2000.0)	P	Q	
<i>n</i>	0.29687168	ω 90.77417	+0.78799190	-0.61492209	
<i>a</i>	2.2254792	Ω 307.17267	+0.54847631	+0.72372182	
<i>e</i>	0.0967629	<i>i</i> 2.20465	+0.27971861	+0.31320529	
<i>P</i>	3.32	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1977 08 21	095	0.1- 0.1+	1997 09 30	900	0.4- 0.4-	1997 10 30	704	0.6+ 0.1-
1977 08 23	095	0.7- 0.6-	1997 09 30	900	0.6- 0.4-	1997 10 30	704	0.9- 0.1-
1977 09 09	095	0.5+ 0.7+	1997 10 03	886	0.9- 0.2-	1997 10 30	704	(2.0+ 2.3+)
1989 03 07	675	0.1+ 0.5+	1997 10 03	886	1.4- 0.7+	1997 10 30	704	1.1+ 0.4-
1989 03 07	675	0.3+ 0.0	1997 10 05	610	0.7+ 0.4+	1997 10 30	704	1.9+ 0.4-
1992 01 11	303	0.3- 0.6+	1997 10 05	610	0.5+ 0.3+	1997 10 30	704	0.3+ 0.9-
1992 01 12	303	0.3+ 0.1-	1997 10 05	610	0.4+ 0.4+	1997 10 30	704	0.5+ 1.2+
1997 09 27	886	0.9- 0.0	1997 10 07	367	0.1- 0.6-	1997 10 30	704	(1.1- 2.0-)
1997 09 27	886	1.7- 0.5-	1997 10 07	367	0.2- 0.2+	1997 10 30	704	0.3- 0.7-
1997 09 28	355	0.0 0.0	1997 10 10	610	0.6+ 1.2+	1997 10 30	566	0.5- 0.1+
1997 09 28	355	0.4- 0.5-	1997 10 10	610	0.7+ 1.1+	1997 10 30	566	0.3- 0.1+
1997 09 28	355	0.1- 0.0	1997 10 10	610	0.8+ 1.1+	1997 10 30	566	0.3- 0.1+
1997 09 28	355	0.2+ 0.1+	1997 10 10	704	0.7+ 1.3-			

(7977)* 1977 QQ₅

Discovered 1977 Aug. 21 by R. H. McNaught at Siding Spring.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

			Williams		
<i>M</i>	25.55558	(2000.0)	P	Q	
<i>n</i>	0.29674751	ω 247.71705	+0.86289295	-0.40405437	
<i>a</i>	2.2260999	Ω 134.51316	+0.44717597	+0.89029198	
<i>e</i>	0.4659757	<i>i</i> 25.19583	-0.23547699	+0.21004821	
<i>P</i>	3.32	<i>H</i> 15.4	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1977 08 21	413	(0.1+ 2.9+)	1995 02 21	413	0.1- 0.3-	1996 04 24	381	0.1+ 0.6+
1977 08 21	413	(1.7- 4.9+)	1995 02 21	413	0.1- 0.0	1996 04 28	658	(3.6+ 0.5+)
1977 10 12	413	0.2- 0.5-	1995 02 22	658	1.4- 0.7+	1996 04 28	658	0.7- 1.6+
1977 10 12	413	0.1- 0.6-	1995 02 22	658	1.0- 0.9+	1996 04 28	658	0.1- 0.4-
1977 10 19	413	0.9+ 0.7-	1995 02 22	658	1.2- 0.5+	1996 06 21	413	0.2- 0.2+
1977 10 19	413	0.1+ 0.6+	1995 02 23	658	0.2+ 0.4+	1996 06 21	413	0.2- 0.1-
1978 01 06	413	(1.2- 9.6-)	1995 02 23	658	0.3+ 0.3+	1997 05 17	381	0.3+ 0.6-
1994 12 07	557	0.1- 0.1+	1995 02 23	658	0.1- 0.3+	1997 05 17	381	0.7+ 0.1-
1994 12 07	557	0.4+ 0.1+	1995 02 27	360	0.0 0.3-	1997 05 31	360	0.0 0.4-
1994 12 07	557	0.1+ 0.1-	1995 02 27	360	0.3+ 0.4-	1997 05 31	360	0.1+ 0.3-
1994 12 16	557	0.3+ 0.8+	1995 03 07	413	0.0 0.6-	1997 05 31	360	0.3+ 0.0
1994 12 16	557	0.3+ 0.5+	1995 03 07	413	0.0 0.6-	1997 06 08	046	0.6- 0.3+
1994 12 16	557	0.0 0.1+	1995 03 21	413	0.5+ 0.2+	1997 06 08	046	0.1+ 0.8-
1994 12 19	413	0.1+ 0.1+	1995 03 21	413	0.4+ 0.3+	1997 06 08	046	0.6- 0.7-
1994 12 19	413	0.6+ 0.8-	1995 05 03	104	0.8+ 0.4+	1997 06 08	046	1.1- 0.1-
1994 12 19	413	0.6+ 0.0	1995 05 03	104	0.2+ 0.1-	1997 07 14	046	0.0 0.2-
1995 01 12	413	0.1- 0.0	1995 05 03	104	0.2+ 0.1-	1997 07 14	046	0.1- 0.2-
1995 01 12	413	0.0 0.0	1995 05 03	104	0.0 0.4+	1997 07 14	046	0.0 0.4-
1995 01 13	413	0.1- 0.0	1995 05 03	104	0.3+ 0.5+	1997 07 23	118	0.7- 1.4+
1995 01 13	413	0.0 0.0	1996 02 16	696	0.1+ 1.1+	1997 07 23	118	0.5- 1.4+
1995 01 13	413	0.2+ 0.6-	1996 02 26	413	0.1+ 0.6+	1997 08 02	046	0.5- 0.4+

1995 01 22	658	0.1- 0.2-	1996 02 29	413	0.0 0.6-	1997 08 02	046	0.3- 0.5+
1995 01 22	658	0.4- 0.3-	1996 02 29	413	0.3- 0.4-	1997 08 02	046	0.1+ 0.6+
1995 01 22	658	0.0 0.7-	1996 03 27	413	0.3- 0.4-	1997 08 02	046	0.1- 0.1+
1995 01 24	658	0.3- 0.2-	1996 03 27	413	0.2- 0.1+	1997 08 11	900	0.5+ 0.5-
1995 01 24	658	0.1- 0.4-	1996 04 13	608	0.1- 1.7+	1997 08 11	900	0.9+ 0.7-
1995 01 24	658	0.4+ 0.1-	1996 04 13	608	0.6+ 1.0+	1997 08 28	360	0.4+ 0.3+
1995 01 24	658	0.1+ 0.0	1996 04 18	696	0.7- 0.4+	1997 08 28	360	0.3+ 0.2+
1995 01 28	385	0.8+ 0.6-	1996 04 18	696	0.2- 0.3-	1997 08 28	360	0.3+ 0.3+
1995 01 28	385	0.4- 0.2+	1996 04 18	696	0.2+ 0.6-	1997 10 11	422	0.5- 1.1+
1995 02 01	413	0.3+ 0.7-	1996 04 19	696	0.6- 0.2-	1997 10 11	422	0.8- 1.3+
1995 02 01	413	0.4+ 0.4-	1996 04 19	696	0.0 0.0	1997 10 11	422	0.5- 0.8+
1995 02 10	360	0.2- 0.0	1996 04 22	608	(2.2+ 0.0)	1997 10 18	861	0.1- 0.8-
1995 02 10	360	0.1- 0.4+	1996 04 22	608	(2.0+ 0.2-)	1997 10 18	861	0.2- 0.2-
1995 02 20	104	0.7+ 0.2+	1996 04 23	684	1.8+ 0.9-	1997 11 03	360	0.3- 0.0
1995 02 20	104	0.0 0.2-	1996 04 23	684	0.6- 0.3+	1997 11 03	360	0.2- 0.1+
1995 02 20	104	0.6+ 0.6-	1996 04 23	684	0.4+ 0.3-	1997 11 03	360	0.4- 0.1-
1995 02 21	658	0.4- 0.4+	1996 04 23	381	0.8+ 0.2-	1997 11 06	422	0.5- 0.0
1995 02 21	658	0.1- 0.7+	1996 04 23	381	0.6+ 0.1-	1997 11 06	422	0.3- 0.1-
1995 02 21	658	0.6- 0.9+	1996 04 24	381	0.1+ 0.9+			

(7978)* 1978 SR₄ = 1981 QY₄

Discovered 1978 Sept. 27 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. S. J. Bus (*MPC* 20628)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

			Williams		
<i>M</i>	42.03255	(2000.0)	P	Q	
<i>n</i>	0.31212315	ω 145.07595	+0.99983319	+0.01525148	
<i>a</i>	2.1523789	Ω 214.05441	-0.01794169	+0.92312884	
<i>e</i>	0.1494326	<i>i</i> 1.02826	+0.00341904	+0.38418814	
<i>P</i>	3.16	<i>H</i> 15.2	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1978 09 27	095	1.4- 1.3+	1981 08 30	675	0.2+ 0.1+	1997 10 12	691	1.0- 0.4-
1978 10 03	095	0.4+ 1.3-	1981 08 31	675	0.5+ 0.6-	1997 10 21	691	0.0 0.0
1978 10 07	095	0.1+ 0.4+	1990 05 26	675	0.4+ 1.5-	1997 10 21	691	0.1+ 0.1+
1978 10 27	675	1.3- 0.3-	1990 05 26	675	1.0- 0.2-	1997 10 21	691	0.4+ 0.2+
1978 10 27	675	1.0+ 0.7+	1994 12 03	098	0.6+ 0.3-	1997 11 03	704	1.1+ 0.0
1978 10 28	675	0.9- 0.9-	1994 12 03	098	0.1+ 1.6-	1997 11 03	704	0.0 0.4+
1978 10 28	675	2.0+ 0.8+	1997 10 11	691	0.5- 0.1-	1997 11 03	704	0.4+ 0.1-
1978 10 29	675	1.3- 0.0	1997 10 11	691	0.7- 0.2-	1997 11 03	704	0.7+ 0.2+
1978 10 29	675	1.4+ 0.7+	1997 10 11	691	0.6- 0.4-	1997 11 03	704	1.2+ 0.2-
1978 11 28	675	0.7- 0.1+	1997 10 12	691	0.3- 0.2-			
1978 11 29	675	0.7- 0.2-	1997 10 12	691	0.9- 0.3-			

(7979)* 1978 SV₇ = 1990 EM₅

Discovered 1978 Sept. 26 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 17198)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

			Williams		
<i>M</i>	359.08706	(2000.0)	P	Q	
<i>n</i>	0.20521749	ω 33.71271	+0.95509020	-0.29437117	
<i>a</i>	2.8466002	Ω 343.30712	+0.23909711	+0.83315897	
<i>e</i>	0.0736786	<i>i</i> 6.77519	+0.17502939	+0.46817918	
<i>P</i>	4.80	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1954 11 23	675	0.3+ 0.4-	1990 03 02	809	1.4+ 0.1-	1992 09 24	801	0.1- 1.3-
1954 11 23	675	0.6+ 0.3-	1990 03 03	809	0.8- 0.5+	1992 10 02	801	0.5+ 0.5-
1978 09 26	095	(1.9+ 5.9-)	1990 03 03	809	0.6- 0.4+	1992 10 02	801	0.1+ 0.0
1978 10 02	095	1.8+ 0.1-	1990 03 03	809	0.4- 0.3+	1997 09 01	367	0.6- 0.3+
1978 10 08	095	1.2- 1.0+	1992 07 26	801	0.6- 0.2-	1997 09 01	367	0.7- 0.1+
1978 10 27	675	0.7- 0.2+	1992 07 26	801	0.6- 0.5-	1997 09 25	610	0.9+ 0.4+
1978 10 28	675	0.1- 0.0	1992 08 02	801	0.4- 0.1+	1997 09 25	610	1.0+ 0.3+
1978 11 01	095	(2.1+ 5.9+)	1992 08 02	801	0.6- 0.0	1997 09 25	610	1.1+ 0.1+
1988 11 09	675	0.3- 0.8-	1992 08 24	801	0.2+ 0.2-	1997 10 25	610	0.8- 1.1+

1988 11 09	675	1.4−	0.8−	1992 08 24	801	0.2+	0.3−	1997 10 25	610	0.2−	1.2+
1990 03 02	809	0.7+	0.1−	1992 08 30	801	0.0	0.1+	1997 10 25	610	0.2+	1.3+
1990 03 02	809	1.0+	0.3−	1992 08 30	801	0.2−	0.3−				

(7980)* 1978 TD₂

Discovered 1978 Oct. 3 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20843796	ω	356.66368	+0.99997798	+0.00646660		
<i>a</i>	2.8172032	Ω	2.96703	−0.00522608	+0.90567267		
<i>e</i>	0.0795757	<i>i</i>	1.64687	−0.00408876	+0.42392828		
<i>P</i>	4.73	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 10 03	095	0.9−	0.3−	1994 01 07	411	0.1−	1.3+	1995 04 05	691	0.1+	0.3−
1978 10 07	095	0.5+	0.6+	1994 01 09	411	0.2−	0.8−	1997 09 28	691	0.6−	0.4−
1978 10 27	675	0.1−	0.3−	1994 01 09	411	1.7−	1.0+	1997 09 28	691	0.7−	0.5−
1978 10 28	675	1.0+	0.7−	1994 01 09	411	0.1−	0.4+	1997 09 28	691	0.7−	0.5−
1978 10 29	675	0.1−	0.3−	1995 03 27	691	0.0	0.2−	1997 11 03	704	0.5+	0.7+
1994 01 07	675	1.5+	1.7−	1995 03 27	691	0.2−	0.1+	1997 11 03	704	0.9+	1.4+
1994 01 07	675	1.0+	0.1+	1995 03 27	691	0.3−	0.0	1997 11 03	704	0.2+	0.6−
1994 01 07	411	0.8+	0.6+	1995 04 05	691	0.1−	0.4−	1997 11 03	704	0.7+	0.4−
1994 01 07	411	1.1−	0.7−	1995 04 05	691	0.1+	0.2−	1997 11 03	704	0.4−	0.3+

(7981)* 1978 VL₁₀

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

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20075549	ω	242.77746	+0.71717543	−0.69680690		
<i>a</i>	2.8886245	Ω	161.38707	+0.65089255	+0.66414837		
<i>e</i>	0.1035258	<i>i</i>	1.96314	+0.24899456	+0.27086359		
<i>P</i>	4.91	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1953 10 31	675	1.1+	0.2−	1994 01 02	411	0.6+	1.1−	1997 09 25	610	0.9+	0.1−
1953 10 31	675	0.8+	0.1−	1994 01 03	411	1.5+	0.4+	1997 09 25	610	0.7+	0.5+
1978 11 05	675	1.0−	0.3+	1994 01 03	411	0.3+	0.9−	1997 09 25	610	0.6+	1.2+
1978 11 06	675	0.9−	0.4+	1994 01 03	411	0.4+	1.2−	1997 10 03	141	0.5−	0.2+
1978 11 07	675	0.7−	2.0+	1995 04 05	691	0.7−	0.4−	1997 10 03	141	0.6−	0.1+
1978 11 08	675	0.0	0.5+	1995 04 05	691	0.7−	0.7−	1997 10 03	141	1.5−	0.2−
1978 11 29	675	1.1−	0.5−	1995 04 05	691	0.5−	0.6−	1997 10 05	610	0.3−	1.4−
1978 11 30	675	1.2−	0.7+	1997 08 28	589	0.6+	1.1−	1997 10 05	610	0.1+	0.8−
1994 01 02	411	0.7+	1.5−	1997 08 28	589	0.7+	1.4−	1997 10 05	610	0.7+	0.3−

(7982)* 1979 MX₅ = 1980 WD₃

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

Id. S. J. Bus (*MPC* 18803)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28640550	ω	38.15237	−0.91878537	+0.39460267		
<i>a</i>	2.2793717	Ω	165.07719	−0.37191204	−0.85588707		
<i>e</i>	0.1019108	<i>i</i>	2.45999	−0.13234375	−0.33428440		
<i>P</i>	3.44	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 06 23	413	0.0	0.2+	1992 02 25	675	0.6+	1.5−	1997 09 27	104	0.1+	0.9+
1979 06 24	413	1.4−	0.2−	1992 03 02	809	1.2−	1.2+	1997 09 27	104	0.1−	0.7+
1979 06 25	413	1.4−	0.7+	1992 03 04	809	0.4+	1.3+	1997 09 29	104	0.3+	0.2+
1979 06 29	413	(2.6−	0.1+)	1992 03 07	809	0.7+	0.4+	1997 09 29	104	0.2+	0.3+
1979 07 24	413	0.7+	1.1−	1992 04 06	809	0.2−	0.7−	1997 09 29	104	0.0	0.1+
1979 07 26	675	1.6+	1.2+	1994 12 11	104	0.5+	0.5−	1997 10 30	566	0.6−	0.5+
1979 07 27	675	0.2−	1.1−	1994 12 11	104	0.1+	0.5−	1997 10 30	566	0.4−	0.4+
1979 07 27	675	1.8+	0.3+	1994 12 11	104	0.1+	0.6−	1997 10 30	566	0.1−	0.4+

1979 08 23	675	1.3−	0.3−	1994 12 12	104	0.1+	0.1−	1997 11 03	704	0.2−	1.2−
1980 11 29	675	0.3−	1.0+	1994 12 12	104	0.0	0.1−	1997 11 03	704	0.1+	0.7−
1980 12 01	675	0.3−	0.8+	1994 12 12	104	0.2−	0.2−	1997 11 03	704	0.0	0.7−
1992 02 25	675	0.1−	0.2+	1997 09 27	104	0.5+	1.1+	1997 11 03	704	0.1−	1.3−

(7983)* 1980 FY = 1978 TS₆ = 1983 CE₅

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

Id. T. Kobayashi (*MPC* 13152)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.31032930	ω	277.16057	−0.52543419	+0.85057994		
<i>a</i>	2.1606655	Ω	321.11892	−0.76696317	−0.48408228		
<i>e</i>	0.0388798	<i>i</i>	1.89904	−0.36835636	−0.20537312		
<i>P</i>	3.18	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 12 09	675	0.4+	0.7−	1983 02 14	381	1.7+	0.6−	1996 03 17	801	0.4+	0.8−
1950 12 09	675	0.0	0.2−	1991 11 08	801	1.0+	0.3+	1996 03 17	801	0.0	0.4−
1978 10 02	095	(1.9−	2.9−)	1991 11 08	801	0.7+	0.3+	1996 03 23	801	1.1−	0.1+
1978 10 27	675	0.0	1.0−	1991 12 01	675	0.5−	0.2−	1997 09 20	557	0.8+	0.2+
1978 10 28	675	0.7+	0.2−	1991 12 01	675	0.3+	0.7+	1997 09 20	557	0.5+	0.1+
1978 10 29	675	0.3−	0.6−	1991 12 03	675	0.5−	0.1+	1997 09 20	557	0.6+	0.2+
1978 11 28	675	0.2−	0.6−	1991 12 03	675	0.3+	0.2−	1997 09 21	557	0.3+	0.0
1978 11 29	675	0.1−	0.1−	1991 12 06	675	0.7+	0.5+	1997 09 21	557	0.4+	0.2−
1980 02 21	095	0.2−	0.7−	1991 12 06	675	0.9−	1.3−	1997 09 27	886	0.7−	0.4+
1980 03 16	809	0.2−	0.6+	1992 01 01	801	0.2+	0.1+	1997 09 27	886	1.6−	0.1−
1980 03 16	809	0.1+	0.4+	1992 01 08	801	0.0	0.1+	1997 10 03	886	(2.5−	1.5−)
1980 03 16	809	0.2+	0.5+	1992 01 08	801	0.6−	0.1−	1997 10 03	886	0.6+	0.3+
1980 03 16	809	0.5−	0.2−	1994 10 03	675	0.1−	0.5−	1997 10 30	704	0.0	0.1+
1980 03 17	809	0.1+	0.6+	1994 10 03	675	0.4−	0.1−	1997 10 30	704	0.8+	0.0
1980 03 17	809	0.1−	0.0	1994 11 06	691	0.9−	0.2+	1997 10 30	704	1.2+	0.1+
1980 03 17	809	0.2−	0.3+	1994 11 06	691	1.1−	0.2+	1997 10 30	704	1.3+	0.4+
1980 03 17	809	0.2+	0.1−	1994 11 06	691	0.9−	0.3+	1997 10 30	704	0.1−	0.3−
1980 03 23	809	0.4−	0.0	1994 11 10	691	1.6−	0.7+				

(7984)* 1980 SM = 1995 DJ₁₂

Discovered 1980 Sept. 29 by Z. Vávrová at Kleť.

Id. B. G. Marsden (*MPC* 25210)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23073648	ω	27.16176	+0.98913650	−0.13725988		
<i>a</i>	2.6326424	Ω	340.51270	+0.08894031	+0.84380852		
<i>e</i>	0.1984353	<i>i</i>	9.07519	+0.11704106	+0.51879371		
<i>P</i>	4.27	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 09 08	095	0.1+	0.4+	1995 02 22	033	0.2+	0.2−	1997 08 27	046	0.4+	0.1−
1980 09 29	046	0.1+	0.6−	1995 02 23	033	0.4+	0.5+	1997 10 04	046	0.3−	0.2+
1980 09 29	046	0.0	1.5−	1995 02 24	033	0.2+	1.6+	1997 10 04	046	0.7−	0.2+
1980 10 01	046	2.1+	0.7−	1997 08 07	046	0.1+	0.3+	1997 10 04	046	0.9−	0.2+
1980 10 01	046	1.5+	0.8−	1997 08 07	046	0.3+	0.3+	1997 10 05	046	0.3−	0.3+
1980 10 03	046	0.4+	0.3−	1997 08 07	046	0.2+	0.4+	1997 10 05	046	0.3−	0.2+
1980 10 03	046	0.3+	1.4−	1997 08 07	046	0.1−	0.6+	1997 10 05	046	0.5−	0.2+
1980 10 08	095	1.9−	1.1+	1997 08 08	046	0.3−	0.5+	1997 10 30	046	0.7−	0.1−
1980 10 12	095	0.8−	1.2+	1997 08 08	046	0.1−	0.3+	1997 10 30	046	0.6−	0.5+
1991 03 09	675	1.4−	0.6+	1997 08 26	046	0.4+	0.1+	1997 10 30	046	0.4−	0.1+
1991 03 09	675	1.1+	0.7+	1997 08 26	046	0.4+	0.2+	1997 11 02	046	0.5−	0.1+
1995 02 02	691	0.6−	0.0	1997 08 26	046	0.5+	0.2+	1997 11 02	046	0.5−	0.2+
1995 02 02	691	0.7−	0.2+	1997 08 27	046	0.4+	0.1−	1997 11 02	046	0.5−	0.1+
1995 02 02	691	2.0+	1.2−	1997 08 27	046	0.5+	0.1−				

1981 03 11	413	(1.5− 3.8−)	1993 10 10	675	0.5+ 0.7−	1997 09 07	910	0.2+ 1.1+
1981 03 15	413	(8.2− 1.8+)	1994 12 08	691	0.4− 0.5−	1997 09 07	910	0.2− 1.3+
1981 04 26	413	0.8− 1.5−	1994 12 08	691	0.1+ 0.5−	1997 09 07	910	0.0 1.2+
1981 05 01	413	(3.7− 0.5+)	1994 12 08	691	0.6− 0.7−	1997 10 28	691	0.0 0.6+
1993 09 14	809	1.5+ 0.9−	1996 03 24	809	0.4− 0.3+	1997 10 28	691	0.0 0.0
1993 09 14	809	0.3+ 0.8−	1996 03 24	809	0.1− 0.0	1997 10 28	691	0.4− 0.4+

(7990)* 1981 SN₁ = 1988 DL₂

Discovered 1981 Sept. 26 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (*MPC* 13301)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		19.15221		(2000.0)		P		Q	
<i>n</i>		0.18497738		ω		227.80460		+0.97207040	−0.23355954
<i>a</i>		3.0506354		Ω		145.68355		+0.22555365	+0.90265311
<i>e</i>		0.3140978		<i>i</i>		2.33834		+0.06484358	+0.36147933
<i>P</i>		5.33		<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1949 11 23	675	0.8− 0.2−	1988 01 19	071	1.1+ 0.4+	1997 08 05	910	1.3− 0.1−
1949 11 23	675	0.6− 1.4−	1988 01 19	071	0.6+ 1.4+	1997 10 02	966	1.8− 0.8+
1954 07 03	675	(3.0− 2.3+)	1988 02 21	809	2.1+ 1.4+	1997 10 03	966	1.1− 1.3+
1954 07 03	675	0.2− 1.5+	1988 02 21	809	0.4+ 0.3+	1997 10 21	966	0.3− 0.6+
1981 09 26	688	0.7+ 1.7−	1988 02 21	809	0.2− 0.3−	1997 10 21	966	0.0 0.1+
1981 09 26	688	(0.7+ 2.4−)	1988 02 23	809	1.0+ 1.7+	1997 11 03	704	0.1− 1.1−
1981 10 06	095	(2.0− 2.6+)	1988 02 23	809	1.3− 0.7+	1997 11 03	704	0.5− 0.3−
1981 10 06	095	1.6+ 0.6+	1988 02 23	809	1.4− 2.1+	1997 11 03	704	0.2+ 0.0
1981 10 26	095	(2.5− 2.5+)	1992 12 21	801	0.0 0.6−	1997 11 03	704	0.4+ 0.2−
1981 10 27	095	1.3+ 0.5−	1992 12 21	801	0.1+ 0.7−	1997 11 03	704	(0.8− 3.0+)
1981 11 02	688	(1.4+ 3.6−)	1992 12 27	801	0.3+ 0.9−	1997 11 04	426	0.4+ 0.1+
1981 11 02	688	(2.4+ 4.6−)	1992 12 27	801	0.5+ 0.8−	1997 11 04	426	0.4+ 0.0
1981 11 02	095	1.0+ 1.1+	1994 03 06	691	0.6− 1.8−	1997 11 04	426	0.4+ 0.1−
1986 08 08	095	(71.1− 27.8−)	1994 03 06	691	0.9− 0.4−	1997 11 05	426	0.2+ 0.6+
1988 01 18	071	(5.2+ 6.2−)	1994 03 06	691	0.4− 0.4−	1997 11 05	426	0.6+ 0.1−
1988 01 18	071	0.7− 0.2−	1997 08 04	910	1.6− 0.0	1997 11 05	426	0.1− 0.1+
1988 01 18	071	(1.8+ 5.2−)	1997 08 05	910	1.6− 0.2+			

(7991)* 1981 UT₇ = 1981 WX = 1953 UL = 1986 QB₄

Discovered 1981 Oct. 30 by H. Kosai and K. Hurukawa at the Kiso Station of the Tokyo Astronomical Observatory.

Id. S. Nakano (d, *MPC* 10752), B. G. Marsden (*MPC* 14473)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		15.26927		(2000.0)		P		Q	
<i>n</i>		0.17766640		ω		206.86236		+0.96153162	+0.27391967
<i>a</i>		3.1337608		Ω		137.22336		−0.24625713	+0.89281202
<i>e</i>		0.2027227		<i>i</i>		1.73940		−0.12171428	+0.35756776
<i>P</i>		5.55		<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1953 10 17	760	0.3+ 1.9−	1992 11 27	675	0.9+ 0.5−	1997 09 03	952	0.2− 0.1−
1953 10 17	760	2.4− 1.0−	1992 11 27	675	0.7− 0.6+	1997 09 03	952	0.1− 0.2+
1981 10 24	095	(2.7+ 1.4−)	1996 05 14	566	0.7− 0.2−	1997 09 03	952	0.5+ 0.1−
1981 10 30	381	0.8+ 0.9+	1996 05 14	566	0.9− 0.1−	1997 09 04	751	0.0 0.6+
1981 10 30	381	1.1+ 0.7+	1996 05 14	566	0.7− 0.1+	1997 09 04	751	0.1+ 0.3+
1981 11 24	688	(2.6− 3.7−)	1996 05 24	367	0.3− 0.3+	1997 09 04	751	0.3+ 0.7+
1981 11 24	688	1.5+ 1.8−	1996 05 24	367	0.3− 0.2+	1997 09 04	886	0.8− 0.0
1986 08 30	095	1.3+ 1.4+	1996 05 24	367	0.5+ 0.6−	1997 09 04	886	0.4− 0.1+
1986 09 07	095	2.0+ 1.5+	1997 08 30	619	0.4+ 0.2−	1997 09 05	751	0.1+ 0.2+
1986 09 12	095	2.3+ 0.8−	1997 08 30	619	0.4+ 0.4−	1997 09 05	751	0.4+ 0.1+
1992 10 21	675	1.5− 0.5+	1997 08 31	952	0.7− 0.7−	1997 09 05	751	0.1− 0.6+
1992 10 21	675	0.1− 0.1−	1997 08 31	952	0.1− 0.1−	1997 09 10	886	0.6− 0.2+
1992 10 21	675	0.2− 0.6+	1997 08 31	952	0.8− 0.6−	1997 09 10	886	0.3− 0.5+
1992 10 21	675	0.1− 0.7+	1997 08 31	619	0.1+ 0.5−	1997 10 22	118	0.1− 0.4−
1992 10 22	675	1.1− 0.8−	1997 08 31	619	1.1− 0.1−	1997 10 22	118	0.2− 0.8−
1992 10 22	675	0.7− 0.4+	1997 08 31	619	0.1+ 0.5−			

(7992)* 1981 WC = 1992 YG = 1996 MC

Discovered 1981 Nov. 28 by T. Furuta at Tokai.

Id. G. V. Williams (*MPC* 27442, *MPC* 30650)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		16.66599		(2000.0)		P		Q	
<i>n</i>		0.18253477		ω		306.53567		+0.96934945	−0.19460516
<i>a</i>		3.0777900		Ω		65.12035		+0.24246571	+0.85625390
<i>e</i>		0.3313230		<i>i</i>		9.51525		−0.03964886	+0.47849566
<i>P</i>		5.40		<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 10 24	095	(3.7+ 4.8−)	1996 06 18	735	1.5− 0.6−	1997 07 04	735	0.9− 1.0−
1981 11 24	688	1.3+ 1.6−	1996 06 18	735	1.6− 1.3−	1997 07 04	735	1.1− 1.3−
1981 11 24	688	0.6+ 1.2−	1996 06 20	735	0.0 0.3−	1997 08 31	735	0.2+ 0.0
1981 11 28	879	(3.8+ 1.3+)	1996 06 20	735	0.3+ 0.3−	1997 08 31	735	0.1+ 0.0
1981 11 28	879	1.4+ 0.5−	1996 06 21	770	0.4− 0.4−	1997 09 28	735	0.1+ 0.3−
1981 11 29	879	1.9− 0.2+	1996 06 21	770	1.0− 0.9−	1997 09 28	735	0.4+ 0.2−
1981 11 29	879	0.7− 1.5−	1996 06 21	770	0.2+ 1.2−	1997 09 28	735	0.7+ 0.2−
1981 12 02	688	0.9+ 2.2−	1996 06 22	735	0.0 0.0	1997 10 22	423	0.0 0.4+
1981 12 02	688	0.9+ 2.2−	1996 06 22	735	0.3− 0.3−	1997 10 22	423	0.1+ 0.8+
1981 12 20	688	(1.2+ 2.8−)	1996 06 22	735	0.0 0.1−	1997 10 22	423	0.2− 0.8+
1981 12 20	688	2.5+ 1.2−	1996 07 14	735	0.7+ 1.6−	1997 10 22	423	0.1+ 0.6+
1992 12 18	885	0.2+ 0.4+	1996 07 14	735	0.0 0.3+	1997 10 23	423	0.2− 1.2+
1992 12 18	885	0.7− 0.7−	1996 07 15	735	0.5− 0.9−	1997 10 23	423	0.5− 0.3+
1996 06 17	735	0.0 0.1+	1996 07 15	735	0.5− 0.6−	1997 10 23	423	0.8− 0.7+
1996 06 17	735	1.0+ 0.3−	1996 07 15	735	0.9− 1.0−	1997 10 23	423	0.0 1.2+
1996 06 17	735	1.4+ 0.1−	1997 07 04	735	1.1− 1.0−			

(7993)* 1982 UD₂ = 1987 UF

Discovered 1982 Oct. 16 by A. Mrkos at Kleť.

Id. E. Bowell (*MPC* 12707)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		33.24879		(2000.0)		P		Q	
<i>n</i>		0.19698236		ω		326.99461		+0.98482447	−0.17078739
<i>a</i>		2.9253949		Ω		42.87314		+0.16743844	+0.88819727
<i>e</i>		0.1304163		<i>i</i>		2.59979		+0.04566320	+0.42654105
<i>P</i>		5.00		<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 10 16	046	0.3−	1.1−	1992 11 29	801	0.0	0.1−	1997 10 05	910	0.3−	0.8+
1982 10 16	046	0.9−	2.1−	1992 11 29	801	0.3+	0.1−	1997 10 05	046	0.6−	0.5+
1982 10 20	046	1.1+	1.1−	1993 11 20	691	0.3−	0.6+	1997 10 05	046	0.7−	0.7+
1982 10 21	046	0.2+	2.6−	1993 11 20	691	0.0	0.1+	1997 10 05	046	0.7−	0.7+
1982 10 21	046	1.8−	2.6−	1993 11 20	691	0.3−	0.5−	1997 10 05	910	0.3−	0.8+
1982 10 21	046	1.2+	1.9−	1994 02 09	046	0.4+	0.1−	1997 10 05	910	0.2−	0.8+
1982 10 22	095	1.5−	0.9+	1994 02 09	046	0.5+	0.1−	1997 10 06	046	0.7−	0.6+
1982 11 09	095	(4.4+	0.6+)	1994 02 09	046	0.3+	0.0	1997 10 06	046	0.9−	0.6+
1982 11 14	095	1.4+	1.5+	1994 02 09	046	0.3+	0.1+	1997 10 06	046	0.8−	0.6+
1987 10 20	688	2.0+	0.4−	1994 02 12	675	0.2+	0.1+	1997 10 23	046	0.4−	1.0+
1987 10 20	688	1.2+	0.4+	1994 02 12	675	0.1−	1.1−	1997 10 23	046	0.5−	1.1+
1987 10 27	095	1.3+	2.4−	1994 02 15	675	(0.6+	3.0−)	1997 10 23	046	0.4−	1.1+
1987 11 19	688	1.6+	1.0+	1994 02 15	675	(2.5+	0.8−)	1997 10 29	704	0.6+	0.3−
1987 11 19	688	0.4−	1.6−	1994 02 16	046	0.8+	0.4+	1997 10 29	704	1.1−	0.1+
1987 11 21	095	(3.4+	0.3−)	1994 02 16	046	0.5+	0.3+	1997 10 29	704	1.6−	0.2+
1987 11 24	688	(3.9+	1.7−)	1994 02 16	046	0.5+	0.4+	1997 10 29	704	1.4−	0.0
1987 11 24	688	(5.2+	0.6+)	1994 02 16	046	0.1+	0.1+	1997 10 29	704	0.9−	0.5+
1989 01 30	046	(2.5+	2.1−)	1994 02 16	046	0.2+	0.1+	1997 10 30	046	0.6−	1.1+
1989 01 30	046	(0.3+	2.8−)	1994 03 09	046	0.1−	0.8+	1997 10 30	046	0.6−	1.1+
1989 01 31	046	0.6+	1.2−	1994 03 09	046	0.2+	0.8+	1997 10 30	046	0.6−	1.1+
1989 01 31	046	2.1−	0.9−	1994 03 09	046	0.3+	0.1−	1997 10 30	704	2.6+	1.8−
1989 02 01	046	0.7+	1.7−	1994 03 09	046	0.3+	0.4+	1997 10 30	704	2.7+	1.6−
1989 02 01	046	1.4−	1.5−	1994 03 09	046	0.3−	0.7+	1997 10 30	704	2.8+	1.2−
1989 02 02	675	1.1+	1.1+	1994 04 19	046	1.3−	0.5−	1997 10 30	704	2.5+	0.9−
1989 02 02	675	1.2+	0.5+	1994 04 19	046	0.3+	0.4−	1997 10 30	704	0.8+	0.4−
1991 07 16	675	(2.1+	8.0−)	1994 04 19	046	0.4+	1.0−	1997 10 31	704	1.2−	0.2+

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1991 07 16	675	(0.1− 12.9−)	1995 04 19	046	0.2− 0.6+	1997 10 31	704	0.1+ 0.8+
1992 10 25	894	0.5+ 0.1+	1995 04 19	046	0.5− 0.5+	1997 10 31	704	0.2− 0.4+
1992 10 25	894	0.4+ 1.7−	1995 04 19	046	0.3− 0.7+	1997 10 31	704	0.1− 2.4+
1992 10 26	894	1.3+ 0.9+	1995 04 22	046	1.1− 0.5+	1997 10 31	704	0.5− 0.2+
1992 10 26	894	1.3− 1.1−	1995 04 22	046	0.8− 0.3+	1997 11 06	704	0.7− 0.0
1992 10 27	376	1.3− 0.3+	1995 04 22	046	0.6− 0.3+	1997 11 06	704	0.4− 0.0
1992 10 27	376	0.5− 0.6+	1996 07 22	046	0.4+ 0.3−	1997 11 06	704	0.5− 0.6−
1992 10 31	364	0.3+ 1.7+	1996 07 22	046	0.5+ 0.3−	1997 11 06	704	0.8− 0.2−
1992 10 31	364	0.4+ 0.5+	1996 07 22	046	0.4+ 0.4−	1997 11 06	704	1.7− 1.0+
1992 11 21	801	0.1− 0.2−	1996 07 24	046	0.7+ 0.4−			
1992 11 21	801	0.1− 0.2−	1996 07 24	046	0.6+ 0.4−			

(7994)* 1983 CQ₂ = 1951 EB = 1977 AN = 1994 EJ₂

Discovered 1983 Feb. 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. G. V. Williams (*MPC* 23336, *MPC* 29609)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		271.79398		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>		0.18451808	ω	277.56411		−0.93075451		−0.36564414	
<i>a</i>		3.0556957	Ω	240.98866		+0.33575729		−0.85398867	
<i>e</i>		0.1071385	<i>i</i>	0.04148		+0.14478634		−0.37014553	
<i>P</i>		5.34	<i>H</i>	12.5		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1951 03 06	024	0.4+ 0.2+	1991 10 05	691	(2.2− 0.0)	1997 10 15	327	0.4+ 0.6+
1951 03 13	024	1.7+ 1.7+	1991 10 05	691	1.6− 0.2−	1997 10 15	327	0.3+ 0.1−
1977 01 13	095	(1.1+ 7.3+)	1991 10 05	691	(1.8− 2.5−)	1997 10 15	327	0.4+ 0.3−
1983 02 14	809	1.5− 0.1−	1994 03 11	399	0.2− 0.3−	1997 10 25	684	0.1+ 0.1−
1983 02 14	809	1.3− 0.7−	1994 03 11	399	0.0 1.7−	1997 10 25	684	0.1+ 0.0
1983 02 14	809	0.9− 1.4−	1994 03 12	399	0.7− 0.6−	1997 10 26	684	0.2− 0.0
1983 02 15	688	0.1− 2.4+	1994 03 12	399	0.1+ 0.4+	1997 10 26	684	0.2+ 0.2+
1983 02 15	688	1.3− 1.3+	1994 03 14	675	1.9+ 0.1+	1997 10 26	684	0.0 0.3+
1983 02 18	809	1.3− 0.3−	1994 03 14	675	0.2+ 0.2−	1997 10 29	566	0.2− 0.9+
1983 02 18	809	0.9− 0.4−	1994 04 03	675	0.0 0.4−	1997 10 29	566	0.2− 0.9+
1983 02 18	809	0.5− 0.5−	1994 04 03	675	0.6− 0.2−	1997 10 29	566	0.2− 0.9+
1983 02 20	809	0.6+ 0.6−	1994 04 04	675	0.2+ 0.8+	1997 11 06	369	0.5+ 0.5−
1983 02 20	809	0.5+ 0.5−	1994 04 04	675	1.1+ 1.2−	1997 11 06	369	0.3+ 0.2−
1983 02 20	809	1.0+ 0.5−	1996 09 10	566	0.0 1.1−	1997 11 06	369	0.2+ 0.2−
1989 05 07	675	0.2+ 0.0	1996 09 10	566	0.0 0.7−	1997 11 07	369	0.1+ 0.3−
1989 05 07	675	0.5− 0.2−	1996 09 10	566	0.3+ 1.3−	1997 11 07	369	0.0 0.3−
1991 09 17	675	0.3+ 0.8−	1997 10 15	327	0.4+ 0.5−	1997 11 07	369	0.3+ 0.6−

(7995)* 1983 PX = 1974 TF₁

Discovered 1983 Aug. 4 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. T. A. Vinogradova (*MPC* 14017)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		34.04400		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>		0.21098051	ω	112.40967		+0.65928680		+0.75020960	
<i>a</i>		2.7945238	Ω	199.10986		−0.73390386		+0.62754003	
<i>e</i>		0.2690736	<i>i</i>	8.83178		−0.16348099		+0.20827643	
<i>P</i>		4.67	<i>H</i>	13.5		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1974 10 10	808	0.1− 1.2−	1992 06 04	801	0.5+ 0.3+	1997 08 30	952	0.1+ 0.3−
1974 10 10	808	0.1+ 0.2+	1992 06 28	801	0.2+ 0.5−	1997 08 31	560	0.7− 0.0
1974 10 12	808	0.2+ 0.1−	1992 06 28	801	0.2+ 0.4−	1997 08 31	560	0.6− 0.3+
1974 10 12	808	1.3+ 0.2−	1992 06 30	801	0.1− 0.4−	1997 08 31	560	0.6− 0.1+
1983 08 04	095	1.5− 0.0	1992 06 30	801	0.0 0.3−	1997 09 03	952	0.5+ 0.1+
1983 08 06	095	0.0 1.0−	1992 07 29	801	0.1+ 0.4−	1997 09 03	952	0.7+ 0.3−
1983 09 01	095	0.7+ 2.1+	1992 07 29	801	0.1− 0.5−	1997 09 03	952	1.1+ 0.1−
1983 09 05	095	0.3+ 1.7−	1992 08 02	801	0.2+ 0.1+	1997 09 03	952	0.7+ 0.0
1983 09 11	095	1.6− 2.0+	1992 08 02	801	0.1+ 0.1−	1997 09 05	952	0.3− 0.1+
1983 09 14	095	(0.5+ 5.6+)	1996 03 23	566	0.5− 0.3+	1997 09 05	952	0.3− 0.1−
1988 10 07	675	0.1− 0.2+	1996 03 23	566	0.6− 0.3+	1997 09 06	952	0.0 0.3−

1988 10 07	675	0.4− 1.3+	1996 03 23	566	0.4− 0.2+	1997 09 06	952	0.0 0.0
1991 02 09	675	0.7− 0.2+	1997 08 25	629	1.0+ 0.9+	1997 10 31	566	0.3− 0.5−
1991 02 09	675	1.5+ 0.8+	1997 08 25	629	0.4+ 0.2−	1997 10 31	566	0.5− 0.0
1992 06 03	801	0.3+ 0.7+	1997 08 25	629	0.2− 0.6+	1997 10 31	566	0.5− 0.1+
1992 06 03	801	0.0 0.7+	1997 08 30	952	0.2− 0.2−			
1992 06 04	801	0.1+ 0.2+	1997 08 30	952	0.5− 0.5−			

(7996)* 1983 RX₃ = 1977 DE₅ = 1982 FN₃ = 1988 RG

Discovered 1983 Sept. 1 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. C. M. Bardwell (*MPC* 13677), W. Landgraf (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		346.88221		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>		0.20319168	ω	136.55472		+0.60748245		+0.79333772	
<i>a</i>		2.8654891	Ω	170.60948		−0.77903555		+0.60481127	
<i>e</i>		0.3213564	<i>i</i>	14.10162		−0.15514088		+0.06941606	
<i>P</i>		4.85	<i>H</i>	12.9		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 02 18	381	(65.9+ 96.1+)	1988 09 16	675	(3.0+ 1.2+)	1993 10 10	675	0.3− 0.1+
1977 02 19	381	0.3+ 1.2+	1988 09 16	675	(2.5+ 0.9+)	1993 10 12	801	0.3− 0.2+
1977 02 19	381	(4.4+ 1.7−)	1988 10 07	675	0.2+ 0.6−	1993 10 12	801	0.3− 0.3+
1982 03 22	809	0.0 0.7+	1988 10 07	675	0.3+ 0.7−	1993 10 12	675	0.2− 1.3+
1982 03 22	809	0.9+ 0.0	1988 10 09	675	1.1+ 0.2+	1993 10 12	675	0.4+ 1.2+
1982 03 22	809	1.6+ 0.5−	1988 10 09	675	0.9+ 0.0	1993 10 14	801	0.4− 0.2−
1983 09 01	095	0.3− 0.5−	1993 09 14	801	0.1+ 0.3+	1993 10 14	801	0.5− 0.3−
1983 09 05	095	1.9− 0.9+	1993 09 14	801	0.2+ 0.5+	1996 02 18	691	0.8− 0.3−
1983 09 11	095	0.7− 2.3+	1993 09 20	801	0.0 0.4+	1996 02 18	691	0.8− 0.0
1988 09 08	675	0.0 0.1−	1993 09 20	801	0.0 0.3+	1996 02 18	691	0.8− 0.1−
1988 09 09	675	0.0 1.0−	1993 09 21	675	0.2− 0.9−	1997 05 27	689	(16.4− 0.3+)
1988 09 11	675	1.1+ 0.4−	1993 09 21	675	0.1+ 0.7−	1997 07 09	599	0.0 0.1−
1988 09 11	675	0.7+ 1.0−	1993 10 10	675	0.3− 0.1+	1997 07 09	599	0.1− 0.3−

(7997)* 1985 CN₁ = 1978 EC = 1978 ER₆

Discovered 1985 Feb. 13 by H. Debehogne at the European Southern Observatory.

Id. L. D. Schmadel (*MPC* 10029), K. Hurukawa (*ibid.*), B. G. Marsden (*d*, *MPC* 9203)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		242.79855		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>		0.28280879	ω	144.43725		−0.92380264		−0.38266330	
<i>a</i>		2.2986567	Ω	13.08156		+0.33720031		−0.82869861	
<i>e</i>		0.1002949	<i>i</i>	3.17842		+0.18134122		−0.40844512	
<i>P</i>		3.49	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 03 06	095	0.3− 1.0+	1985 02 24	809	0.3+ 0.5−	1994 10 13	381	0.1− 0.1−
1978 03 11	049	(3.9+ 3.9−)	1985 02 24	809	0.2− 0.4−	1994 10 13	381	0.0 0.0
1978 03 11	049	1.0− 1.0+	1985 02 27	809	0.4+ 0.4+	1994 10 13	381	0.1− 0.0
1978 03 11	049	0.9− 0.3−	1985 02 27	809	0.1+ 0.4+	1994 10 13	381	0.1− 0.2−
1978 03 11	049	0.4− 0.3−	1985 02 27	809	0.6+ 0.3+	1994 10 13	381	0.1− 0.1−
1978 03 12	049	1.2+ 0.3−	1985 02 28	809	0.5+ 0.2−	1994 10 13	381	0.0 0.1−
1978 03 12	049	1.7− 0.5+	1985 02 28	809	1.0+ 0.2−	1994 10 13	381	0.0 0.1+
1985 02 13	809	0.6+ 0.5−	1985 02 28	809	1.3+ 0.2+	1994 10 14	381	0.5− 0.1−
1985 02 13	809	0.5+ 0.3−	1992 02 29	809	0.1− 1.0+	1994 10 14	381	0.1+ 0.5−
1985 02 13	809	0.1+ 0.7+	1992 02 29	046	(2.3− 0.3−)	1994 10 15	381	0.1− 0.3−
1985 02 15	809	0.9+ 1.2−	1992 02 29	046	0.2+ 1.4−	1994 10 15	381	0.0 0.2−
1985 02 15	809	0.8+ 0.8−	1992 03 03	809	0.8− 0.8+	1994 10 15	381	0.2− 0.0
1985 02 15	809	0.8+ 0.8−	1992 03 04	046	1.5− 0.7+	1994 10 15	381	0.2− 0.1−
1985 02 17	809	1.1− 0.5+	1992 03 04	046	(2.7+ 1.4−)	1994 11 27	010	(4.1+ 4.8+)
1985 02 17	809	0.7− 0.5+	1992 03 07	809	0.1− 0.2+	1994 11 27	010	(4.4+ 4.9+)
1985 02 17	809	0.1− 0.5+	1992 04 06	809	0.7− 0.2+	1994 11 28	010	(4.6+ 3.5+)
1985 02 18	809	0.1+ 0.1−	1993 07 25	675	0.3+ 0.5−	1994 11 28	010	(2.3+ 2.1+)
1985 02 18	809	0.9+ 0.0	1993 07 25	675	0.7− 0.9−	1994 11 28	010	(2.5+ 1.4+)

1985 02 18	809	1.3+	0.0	1994 10 13	381	0.2-	0.0	1994 11 29	010	(3.0+	2.1+)
1985 02 19	809	0.0	0.7+	1994 10 13	381	0.3+	0.2-	1997 09 23	557	0.3+	0.5+
1985 02 19	809	0.2+	0.5+	1994 10 13	381	0.0	0.0	1997 09 23	557	0.6+	0.4+
1985 02 19	809	0.9+	0.3+	1994 10 13	381	0.1-	0.5-	1997 09 25	557	0.1+	0.6+
1985 02 20	809	(3.0-	0.9-)	1994 10 13	381	0.1+	0.4-	1997 09 25	557	0.3+	0.5+
1985 02 20	809	(2.6-	0.4-)	1994 10 13	381	0.0	0.2-	1997 10 30	704	0.2-	0.5+
1985 02 20	809	2.0-	0.6-	1994 10 13	381	0.0	0.6-	1997 10 30	704	0.1-	0.6+
1985 02 21	809	0.3-	0.1-	1994 10 13	381	0.1+	0.1-	1997 10 30	704	0.2+	0.8+
1985 02 21	809	0.0	0.4-	1994 10 13	381	0.2+	0.0	1997 10 30	704	0.8-	0.6+
1985 02 21	809	0.7+	0.5-	1994 10 13	381	0.1-	0.1-	1997 10 30	704	1.1-	0.1+
1985 02 24	809	0.6-	0.4-	1994 10 13	381	0.1-	0.0				

(7998)* 1985 JK = 1989 OC₁ = 1990 WZ₄

Discovered 1985 May 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. B. G. Marsden (*MPC* 17631, unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	171.06674	(2000.0)		P	Q		
<i>n</i>	0.27417513	ω	135.74999	-0.42758481	+0.89928517		
<i>a</i>	2.3466627	Ω	108.73751	-0.85400220	-0.36849504		
<i>e</i>	0.1196600	<i>i</i>	5.57284	-0.29639750	-0.23557924		
<i>P</i>	3.59	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1985 05 15	688	0.2+	0.0	1990 11 17	809	1.5+	0.6-	1993 09 22	675	0.1+	1.1-
1985 05 15	688	2.1+	0.5-	1990 11 21	809	0.7-	0.6+	1993 09 22	675	0.6-	0.7+
1985 05 18	688	1.1-	0.5-	1990 11 21	809	0.0	0.1-	1993 10 13	675	0.4-	0.4+
1985 05 21	688	2.2-	0.2+	1990 11 21	809	0.8-	1.1+	1993 10 13	675	0.1+	0.3-
1985 05 24	675	0.6+	0.5-	1990 11 22	809	0.1-	0.4-	1995 01 28	691	1.1-	0.7-
1985 05 24	675	0.1-	0.9+	1990 11 22	809	0.1+	0.1-	1995 01 28	691	1.0-	0.8-
1989 07 05	675	0.7+	1.7+	1990 11 22	809	0.7+	0.1-	1995 01 28	691	0.9-	0.4-
1989 07 05	675	0.9-	2.0-	1992 04 03	675	1.2+	0.0	1997 09 25	557	0.5+	0.1-
1989 07 29	675	0.4-	1.1-	1992 04 03	675	0.6+	0.5+	1997 09 25	557	0.3+	0.1+
1989 07 29	675	0.3+	0.4+	1993 09 18	675	0.6+	0.9-	1997 09 25	557	0.8+	0.0
1990 11 14	675	1.2-	0.1+	1993 09 18	675	0.6+	0.7+	1997 10 20	557	0.2+	0.2+
1990 11 14	675	1.2+	0.5+	1993 09 21	675	0.9-	0.3+	1997 10 20	557	0.2-	0.2+
1990 11 16	809	1.2+	0.2-	1993 09 21	675	0.0	0.3+	1997 10 20	557	0.7-	0.1+

**(7999)* 1986 RA₃ = 1976 YH₆ = 1988 AT₃ = 1991 NE₈ = 1992 WR₉
= 1994 CD₁₉**

Discovered 1986 Sept. 11 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. E. Bowell (*MPC* 28840), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	318.06464	(2000.0)		P	Q		
<i>n</i>	0.18485241	ω	164.50466	+0.05285900	-0.97878261		
<i>a</i>	3.0520102	Ω	282.15482	+0.89333351	+0.13494308		
<i>e</i>	0.0794415	<i>i</i>	11.68352	+0.44627477	-0.15419135		
<i>P</i>	5.33	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 12 20	095	1.3-	0.7+	1991 07 12	675	0.8-	0.0	1997 08 13	596	0.3-	0.4-
1986 09 08	095	(2.7-	6.6+)	1991 07 12	675	0.3-	0.4-	1997 08 13	596	0.1+	0.0
1986 09 09	054	1.1-	1.2-	1991 08 08	675	1.0+	0.9-	1997 10 19	689	0.6-	0.2+
1986 09 11	688	(3.0+	2.6-)	1991 08 08	675	0.7+	0.8+	1997 10 20	689	0.0	0.2+
1986 09 11	688	1.7+	0.6-	1991 09 04	095	(0.8+	3.4-)	1997 10 30	566	0.2+	0.1-
1986 09 11	095	1.9-	2.0+	1992 11 26	675	0.5-	0.5-	1997 10 30	566	0.1+	0.1-
1986 10 05	688	1.2+	0.9+	1992 11 26	675	0.2-	0.5-	1997 10 30	566	0.0	0.1-
1986 10 05	688	0.0	0.4+	1994 02 10	675	0.5-	0.3+	1997 10 30	566	0.0	0.0
1988 01 12	033	1.6+	0.3-	1994 02 10	675	0.2-	0.5+	1997 10 30	566	0.2+	0.2-
1988 01 12	033	0.7+	0.5-	1997 08 13	596	0.3-	0.0	1997 10 30	566	0.1+	0.1-

(8000)* 1986 RL₅ = 1981 RS₃ = 1981 UG₁₁ = 1988 AS₄ = 1995 EE

Discovered 1986 Sept. 5 by H. Debehogne at the European Southern

Observatory.

Id. T. Kobayashi (*MPC* 25061)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	59.35971	(2000.0)		P	Q		
<i>n</i>	0.18401036	ω	302.47147	+0.67855631	+0.73390691		
<i>a</i>	3.0613139	Ω	10.43212	-0.60415777	+0.58138299		
<i>e</i>	0.0905848	<i>i</i>	9.75884	-0.41779747	+0.35124701		
<i>P</i>	5.36	<i>H</i>	12.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 09 03	095	(4.0+	2.4+)	1988 01 13	033	0.2-	1.0-	1995 03 21	411	0.5-	0.5+
1981 10 22	095	(4.2+	4.9+)	1988 01 13	033	0.2+	1.4-	1995 03 21	411	0.7+	0.0
1986 09 05	809	1.8+	0.5-	1992 10 25	372	0.4-	1.1+	1995 03 26	905	0.7+	0.9+
1986 09 05	809	1.9+	0.5-	1992 10 25	372	0.0	1.5+	1995 03 26	905	0.5+	1.2+
1986 09 05	809	1.9+	0.8-	1995 02 25	098	0.3-	0.4+	1997 08 29	587	0.0	0.1-
1986 09 07	809	0.1-	0.0	1995 02 25	098	0.3+	0.9-	1997 08 29	587	1.3+	1.3-
1986 09 07	809	0.2+	0.1+	1995 02 27	098	0.9-	0.2+	1997 08 31	587	0.6+	0.0
1986 09 07	809	0.4+	0.2+	1995 02 27	098	0.3-	0.9-	1997 08 31	587	0.5+	0.0
1986 09 09	809	0.4-	0.5+	1995 03 01	411	0.0	1.2-	1997 10 30	704	0.6+	0.0
1986 09 09	809	0.3-	0.5+	1995 03 01	411	0.1+	1.1-	1997 10 30	704	0.2+	0.5-
1986 09 09	809	0.4-	0.6+	1995 03 05	411	0.4-	0.1-	1997 10 30	704	0.8-	0.1-
1986 09 11	809	1.5-	0.4-	1995 03 05	411	0.2+	1.1-	1997 10 30	704	0.3+	0.2+
1986 09 11	809	1.3-	0.6-	1995 03 11	411	0.2-	0.1-	1997 10 30	704	1.4-	0.9-
1986 09 11	809	1.3-	0.6-	1995 03 11	411	1.5-	0.5-				

(8001)* 1986 TR₃ = 1969 RQ₁ = 1981 XC₁ = 1991 RK₁₂

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

Id. R. Nagata (*MPC* 19500), G. V. Williams (unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	67.15734	(2000.0)		P	Q		
<i>n</i>	0.17794799	ω	292.56747	+0.51914849	+0.85468213		
<i>a</i>	3.1304540	Ω	8.70835	-0.77968046	+0.47446047		
<i>e</i>	0.1716547	<i>i</i>	0.68804	-0.35011887	+0.21072666		
<i>P</i>	5.54	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1969 09 13	095	0.4+	0.8+	1991 09 06	809	0.7-	0.2+	1997 09 15	046	0.1+	0.3+
1981 12 04	511	1.5+	0.9+	1991 09 07	809	1.0+	0.9+	1997 09 15	046	0.3+	0.1+
1981 12 04	511	1.3+	1.4+	1991 09 07	809	0.2-	0.2+	1997 09 21	046	0.3-	0.2+
1986 10 03	095	2.0-	1.6+	1991 09 07	809	0.1-	0.6-	1997 09 21	046	0.1-	0.3+
1986 10 04	046	0.8+	1.4+	1992 10 25	675	0.1+	1.0-	1997 09 21	046	0.1-	0.4+
1986 10 04	046	1.3-	0.4+	1992 10 25	675	1.1-	2.5-	1997 10 18	046	0.2-	0.5+
1986 10 05	046	1.7-	0.2+	1994 01 05	691	0.7-	0.3-	1997 10 18	046	0.1-	0.5+
1986 10 05	046	2.0+	1.0+	1994 01 05	691	2.6-	0.8+	1997 10 18	046	0.2+	0.4+
1986 10 09	046	0.2-	2.5-	1994 01 05	691	1.0-	0.2-	1997 10 19	046	0.1+	0.4+
1986 10 09	046	1.7-	0.3+	1994 01 18	691	1.5-	0.7-	1997 10 19	046	0.1-	0.3+
1986 10 10	046	2.0+	3.7-	1994 01 18	691	1.7-	0.6-	1997 10 19	046	0.0	0.4+
1986 10 10	046	1.5+	2.9-	1994 01 18	691	0.9-	0.5-	1997 10 21	046	0.1-	0.4+
1991 08 12	095	1.5-	1.4-	1995 03 02	046	1.6+	1.6-	1997 10 21	046	0.1-	0.6+
1991 08 12	095	1.4+	2.5-	1995 03 02	046	1.9+	1.6-	1997 10 21	046	0.1+	0.3+
1991 08 16	809	1.2+	2.3-	1995 03 02	046	2.2+	0.5-	1997 10 22	046	0.2-	0.3+
1991 08 16	809	0.6+	2.5-	1996 06 07	046	0.2-	0.8+	1997 10 22	046	0.3-	0.4+
1991 08 16	809	1.2+	2.4-	1996 06 07	046	0.7-	0.7+	1997 10 22	046	0.2-	0.4+
1991 09 04	809	0.3-	0.5+	1996 06 07	046	0.5+	0.3+	1997 10 30	704	1.3+	0.5+
1991 09 04	809	0.6-	0.3+	1996 06 11	046	0.2-	0.7+	1997 10 30	704	0.8+	1.7+
1991 09 04	809	1.2-	0.3+	1996 06 11	046	0.0	0.7+	1997 10 30	704	0.2+	1.4+
1991 09 06	809	0.6+	0.0	1996 06 11	046	0.3-	0.9+	1997 10 30	704	0.0	1.7+
1991 09 06	809	0.8-	0.1-	1997 09 15	046	0.4+	0.3+	1997 10 30	704	0.9-	0.8+

1997 NOV. 14

M.P.C. 30853

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Williams					
M	17.29963		(2000.0)		P		Q				
n	0.26394851		ω	195.36512		+0.94370783		−0.33077257			
a	2.4068918		Ω	183.95270		+0.30681570		+0.87785493			
e	0.1790493		i	1.86719		+0.12361096		+0.34635275			
P	3.73 <th>H</th> <td colspan="2">14.9</td> <th>G</th> <td colspan="2">0.15</td> <th>U</th> <td colspan="2">1</td>		H	14.9		G	0.15		U	1	
Residuals in seconds of arc											
1982 09 27	095	0.9+	2.4−	1995 03 01	691	0.7−	0.1+	1997 09 23	046	0.2−	0.1−
1986 12 04	046	2.0+	1.8−	1996 05 22	046	0.0	0.4+	1997 09 23	046	0.2−	0.1−
1986 12 04	046	1.6+	0.0	1996 05 22	046	0.0	0.8−	1997 09 23	046	0.2−	0.2−
1986 12 05	046	0.0	2.3−	1996 05 22	046	0.0	1.0−	1997 10 18	046	0.4−	0.7+
1986 12 05	046	0.8−	0.6−	1996 06 05	046	(0.2−	2.3−)	1997 10 18	046	0.3−	0.8+
1986 12 07	046	0.9−	1.2−	1996 06 05	046	0.3+	1.2−	1997 10 18	046	0.3−	0.7+
1986 12 07	046	0.4−	0.8−	1996 06 05	046	0.4−	1.6−	1997 10 19	046	0.6−	0.3+
1993 07 17	691	0.5−	0.0	1997 08 12	046	0.2−	0.1+	1997 10 19	046	0.5−	0.3+
1993 07 17	691	0.1−	0.1−	1997 08 12	046	0.2−	0.1+	1997 10 19	046	0.5−	0.3+
1995 02 08	691	0.2+	0.7+	1997 08 12	046	0.2−	0.0	1997 10 30	704	0.8+	0.9+
1995 02 08	691	0.4+	0.8+	1997 08 13	046	0.2−	0.2−	1997 10 30	704	1.1+	1.1+
1995 02 08	691	0.5+	0.4+	1997 08 13	046	0.1−	0.2−	1997 10 30	704	1.1+	0.6+
1995 02 21	691	0.0	0.0	1997 08 13	046	0.2−	0.3−	1997 10 30	704	0.9+	0.0
1995 02 21	691	0.3−	0.4+	1997 09 21	046	0.5−	0.1−	1997 10 30	704	0.1−	0.6+
1995 03 01	691	0.1−	1.0+	1997 09 21	046	0.6−	0.1−				
1995 03 01	691	0.4−	0.4−	1997 09 21	046	0.5−	0.0				

(8003)* 1987 RJ = 1982 BT₁₀ = 1984 XC

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

Id. S. Nakano (*MPC* 12448)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Nakano					
M	34.17414		(2000.0)		P		Q				
n	0.29744225	ω	287.16073		+0.99865451		−0.02027557				
a	2.2226323	Ω	74.02110		+0.03809043		+0.91136810				
e	0.1197393	i	2.84576		−0.03518945		+0.41109256				
P	3.31	H	13.8	G	0.15	U	2				
Residuals in seconds of arc											
1956 03 10	675	0.8−	0.2−	1987 09 19	071	(1.6−	5.1−)	1993 05 15	809	0.1−	0.5−
1956 03 10	675	0.8+	0.2−	1987 09 20	071	(0.9−	4.6−)	1993 05 15	809	0.4−	0.6−
1982 01 19	095	(5.3+	1.5+)	1987 09 21	071	(0.1−	3.2−)	1993 05 15	809	0.6+	0.9−
1984 12 01	046	(4.2−	3.0−)	1987 09 21	071	0.5−	0.2−	1993 05 23	809	0.7−	0.1+
1984 12 01	046	(2.9−	3.4−)	1987 09 22	071	(0.4+	2.5−)	1993 05 23	809	0.8−	0.1−
1987 09 01	809	0.7−	1.1+	1987 09 22	071	0.4−	0.4−	1993 05 23	809	0.6+	0.4−
1987 09 01	809	0.8−	1.0+	1987 09 22	071	0.5+	0.1+	1997 10 10	367	0.6−	0.6−
1987 09 01	809	0.8−	2.0+	1987 09 29	688	0.2−	0.7−	1997 10 10	367	0.5−	0.5−
1987 09 01	809	0.1−	1.8+	1987 09 29	688	0.5−	0.6−	1997 10 30	704	0.4+	0.6+
1987 09 02	809	0.3−	0.6−	1987 10 16	688	1.6+	0.2−	1997 10 30	704	1.3+	0.2+
1987 09 02	809	0.1−	0.6−	1987 10 16	688	(2.3+	0.7+)	1997 10 30	704	0.1−	0.6+
1987 09 02	809	0.6+	0.1−	1987 10 26	688	(2.9+	1.5−)	1997 10 30	704	0.1+	0.8+
1987 09 03	809	0.0	1.3−	1987 10 26	688	(2.5+	1.3−)	1997 10 30	704	0.4+	1.4+
1987 09 03	809	0.5+	1.2−	1990 04 27	413	1.2+	0.1−	1997 11 03	592	0.1−	0.5−
1987 09 19	688	0.8+	0.8+	1990 04 30	413	(6.8+	1.2+)	1997 11 03	592	0.2−	0.6−
1987 09 19	688	0.2−	0.9−	1993 05 14	809	0.0	0.5+	1997 11 03	592	0.0	0.5−
1987 09 19	071	(1.1−	3.2−)	1993 05 14	809	0.2−	0.6+	1997 11 03	592	0.1+	0.5−
1987 09 19	071	(3.6−	5.5−)	1993 05 14	809	0.1+	0.8+	1997 11 03	592	0.2−	0.7−

(8004)* 1987 RX = 1982 VE₅ = 1996 DA₆

Discovered 1987 Sept. 12 by H. Debehogne at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 27554), G. V. Williams (*MPC* 29911)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5						Williams					
<i>M</i>		295.91794		(2000.0)		P		Q			
<i>n</i>	0.17339417	ω	176.12150			+0.81441142		+0.58002791			
<i>a</i>	3.1850266	Ω	148.40578			−0.53329176		+0.75991849			
<i>e</i>	0.2411295	<i>i</i>	1.89984			−0.22876613		+0.29341356			
<i>P</i>	5.68	<i>H</i>	12.9			<i>G</i>	0.15	<i>U</i>	1		
Residuals in seconds of arc											
1982 11 14	381	1.9−	0.5+	1993 09 21	675	0.6−	0.4−	1997 03 10	809	1.4+	0.9+
1982 11 14	381	0.3+	0.6+	1993 10 12	675	0.2+	1.1+	1997 03 11	809	(0.8+	2.7+)
1987 08 28	095	0.7+	1.5+	1993 10 12	675	0.6+	0.6−	1997 03 11	809	(1.6+	3.1+)
1987 08 31	095	0.1+	1.3+	1996 02 16	010	1.5+	1.0+	1997 03 11	809	(1.4+	3.0+)
1987 09 12	809	0.5−	0.5−	1996 02 16	010	(3.1+	0.7+)	1997 04 03	704	0.9−	0.1−
1987 09 12	809	0.4+	0.6−	1996 02 16	010	(2.9+	0.1+)	1997 04 03	704	0.9−	0.6+
1987 09 12	809	0.2+	0.8−	1996 02 17	010	0.7+	0.3−	1997 04 06	566	0.6+	0.6+
1993 09 18	691	0.8−	0.2+	1996 02 17	010	0.2−	1.4−	1997 04 06	566	1.5−	0.5+
1993 09 18	691	0.6−	0.2+	1996 02 17	010	0.9+	1.0−	1997 04 06	566	1.4−	0.1+
1993 09 18	691	0.7−	0.5+	1997 03 10	809	(1.4+	2.1+)				
1993 09 21	675	1.1+	0.4−	1997 03 10	809	1.4+	1.2+				

(8005)* 1988 MJ = 1987 DO₃ = 1989 WW₆ = 1996 GU₁₃

Discovered 1988 June 16 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 27306)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5					Williams						
<i>M</i>	79.40538	(2000.0)		P	Q						
<i>n</i>	0.24223518	ω	165.59844	+0.59044325	+0.80356416						
<i>a</i>	2.5486561	Ω	140.51120	−0.75169399	+0.58147001						
<i>e</i>	0.1530130	<i>i</i>	6.79510	−0.29382462	+0.12718987						
<i>P</i>	4.07	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1987 02 23	010	1.3+	0.6+	1989 11 28	511	0.6+	0.1−	1996 06 16	689	0.4+	0.0
1987 02 23	010	1.0+	1.7+	1991 02 07	675	0.6+	0.3−	1996 06 17	689	0.3+	0.3+
1987 02 23	010	(0.9−	3.3+)	1991 02 07	675	0.6+	0.3−	1996 06 18	689	0.4+	0.4+
1988 06 13	675	0.9+	0.1+	1995 02 03	691	0.5−	0.2−	1996 06 19	689	0.6+	0.1−
1988 06 13	675	1.0+	0.3+	1995 02 03	691	0.4−	0.3−	1997 09 22	127	0.3+	0.0
1988 06 16	675	0.2−	0.4−	1995 02 03	691	0.2−	0.4−	1997 09 22	127	0.7+	0.5−
1988 06 19	675	0.9−	0.9+	1996 04 11	691	1.2−	0.2−	1997 09 24	127	(3.1+	1.0+)
1988 07 12	675	0.4+	0.7−	1996 04 11	691	1.2−	0.4−	1997 09 24	127	(3.5+	0.4+)
1988 07 15	675	0.7+	0.2+	1996 04 11	691	1.1−	0.2−	1997 10 31	566	1.2+	1.3+
1989 11 28	511	1.9−	1.2−	1996 04 15	691	0.8−	0.3−	1997 10 31	566	0.7+	0.7+
1989 11 28	511	1.3−	1.4−	1996 04 15	691	0.2+	0.2−	1997 10 31	566	0.1−	0.6+
1989 11 28	511	1.4−	0.1−	1996 04 15	691	0.7−	0.1−				

(8006)* 1988 QU = 1949 QR₂ = 1995 DB₅

Discovered 1988 Aug. 22 at Osservatorio S. Vittore, Bologna.

Id. K. Ichikawa (*MPC* 25637), S. Nakano (unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5				Williams							
<i>M</i>	81.42063	(2000.0)		P		Q					
<i>n</i>	0.22731071	ω	146.80014	+0.45013844		+0.88278834					
<i>a</i>	2.6590272	Ω	149.32118	−0.86588566		+0.46829685					
<i>e</i>	0.0332386	<i>i</i>	15.27129	−0.21821413		−0.03718625					
<i>P</i>	4.34	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1949 08 22	024	0.2+	2.8+	1996 05 24	552	0.2+	0.4−	1996 07 22	552	0.2+	1.2−
1988 08 17	552	0.4−	0.5+	1996 05 25	292	1.7−	0.8−	1996 08 17	552	0.8−	0.1+
1988 08 17	552	1.2+	0.5−	1996 05 25	292	0.3−	0.2−	1996 08 17	552	0.7−	0.5+
1988 08 18	552	1.5−	0.9+	1996 06 05	610	0.6−	0.4+	1996 08 17	552	0.7−	0.3+
1988 08 18	552	0.6−	1.3+	1996 06 05	610	0.2+	0.7+	1997 09 08	552	1.0−	0.5−
1988 08 22	552	0.7−	1.4−	1996 06 05	610	1.3+	1.1+	1997 09 08	552	0.7−	0.6−
1988 08 22	552	0.4+	0.7−	1996 06 05	610	2.1+	1.3+	1997 09 08	552	0.5−	0.5−
1988 09 03	552	0.4−	0.1+	1996 06 08	292	1.1−	1.1+	1997 09 24	552	0.1+	0.6+
1988 09 03	552	0.5−	1.1−	1996 06 08	292	0.5−	0.4−	1997 09 24	552	0.0	0.8+

1988 09 10	675	0.4+	0.0	1996 06 09	552	0.4-	0.8+	1997 09 25	552	0.0	0.0
1988 09 10	675	0.4-	0.1+	1996 06 09	552	0.8-	0.7+	1997 09 25	552	0.1+	0.2+
1995 02 22	691	0.5+	0.2+	1996 06 13	801	0.2-	1.1+	1997 09 25	552	0.0	0.3+
1995 02 22	691	0.6+	0.2-	1996 06 13	801	0.5-	0.3+	1997 10 25	552	0.9+	0.4+
1995 03 01	691	0.6-	0.7+	1996 06 14	552	0.6-	0.2+	1997 10 25	552	0.4+	0.4-
1995 03 01	691	0.6-	0.2-	1996 06 14	552	0.7-	0.1+	1997 10 31	684	0.5+	0.2-
1995 03 01	691	0.5-	0.4-	1996 06 15	801	0.1+	0.4+	1997 10 31	684	0.5+	0.2-
1996 05 16	801	1.2+	0.4+	1996 06 15	801	0.1+	0.2-	1997 10 31	684	0.6+	0.2-
1996 05 16	801	1.0+	0.3+	1996 07 10	108	1.2+	0.8-	1997 11 01	684	0.5+	0.3-
1996 05 20	801	0.0	0.5-	1996 07 21	552	0.5+	1.9-	1997 11 01	684	0.5+	0.4-
1996 05 20	801	0.3+	0.6+	1996 07 21	552	0.5+	1.2-	1997 11 01	684	0.4+	0.2-
1996 05 24	552	0.2+	0.8-	1996 07 21	552	0.9+	2.0-				
1996 05 24	552	0.4-	0.6-	1996 07 22	552	0.9+	1.8-				

(8007)* 1988 RU₆ = 1979 OL = 1987 HY

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

Id. S. Nakano (*MPC* 14953)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	166.53406		(2000.0)		P		Q
<i>n</i>	0.23057575	ω	25.64303	-0.71619734		+0.69782438	
<i>a</i>	2.6338657	Ω	198.62127	-0.64564314		-0.66801053	
<i>e</i>	0.1429298	<i>i</i>	1.81699	-0.26496474		-0.25846287	
<i>P</i>	4.27	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 08 14	675	0.0	0.0	1988 09 15	809	0.7-	0.1-	1991 03 20	809	0.6+	1.0+
1950 08 14	675	1.7+	0.2+	1988 09 16	675	0.2-	0.2-	1991 03 21	801	0.1-	0.4+
1979 07 24	675	2.2-	1.3+	1988 09 16	675	1.0-	0.3+	1991 03 21	801	0.4-	0.0
1979 07 25	675	(2.8-	1.6+)	1988 09 18	809	0.8-	0.2+	1992 06 28	675	0.6-	0.0
1987 04 21	675	0.5+	0.2+	1988 09 18	809	0.6-	0.3+	1992 06 28	675	0.4-	0.4-
1987 04 21	675	(0.8-	3.8+)	1988 09 18	809	0.5-	0.2+	1992 07 24	809	(4.3+	0.6-)
1987 04 23	046	0.3-	2.3-	1988 09 20	809	0.2-	0.0	1992 07 24	809	1.7+	1.7-
1987 04 23	046	(2.7-	2.3-)	1988 09 20	809	0.0	0.1+	1992 07 24	809	(2.1+	2.7-)
1987 04 24	046	1.7-	1.7-	1988 09 20	809	0.1-	0.0	1992 07 30	801	0.6+	0.2+
1987 04 24	046	1.1-	1.3-	1988 11 04	807	2.1+	0.3-	1992 07 30	801	0.7+	0.3+
1987 04 27	046	2.0+	0.7-	1988 11 06	807	1.3+	0.7-	1992 07 30	809	(2.8+	3.8-)
1987 04 27	046	0.8+	1.3-	1991 02 13	675	0.1+	0.7-	1992 07 30	809	(3.2+	3.1-)
1988 09 08	809	0.1-	0.3-	1991 02 13	675	0.3-	1.1-	1992 07 30	809	(2.2+	2.7-)
1988 09 08	809	0.0	0.4-	1991 03 12	675	0.9-	1.0-	1992 08 03	801	0.4+	0.9+
1988 09 08	809	0.0	0.4-	1991 03 12	675	0.5-	0.4-	1992 08 03	801	0.5+	1.2+
1988 09 09	809	0.2+	0.2+	1991 03 17	801	0.1-	0.5+	1992 08 04	675	1.0+	0.8+
1988 09 09	809	0.4+	0.3+	1991 03 17	801	0.1-	0.4+	1996 06 05	689	0.4-	0.5+
1988 09 09	809	0.5+	0.6+	1991 03 17	809	0.1-	0.5+	1997 09 26	557	0.9+	0.3-
1988 09 12	675	0.8-	0.2-	1991 03 17	809	0.4+	0.5+	1997 09 26	557	0.9+	0.6-
1988 09 12	675	0.5-	0.7+	1991 03 17	809	0.4+	0.6+	1997 09 26	557	0.7+	0.8-
1988 09 12	809	0.2+	0.3-	1991 03 18	402	0.5-	0.9+	1997 10 04	557	0.6+	1.1-
1988 09 12	809	0.2+	0.2-	1991 03 18	402	0.2+	1.8+	1997 10 04	557	0.5+	0.7-
1988 09 12	809	0.2+	0.3-	1991 03 19	809	0.1+	0.1+	1997 10 30	704	(2.2+	0.8-)
1988 09 14	809	0.9-	0.1+	1991 03 19	809	0.2-	0.2+	1997 10 30	704	0.9-	0.2-
1988 09 14	809	0.9-	0.1-	1991 03 19	402	0.7-	1.3-	1997 10 30	704	0.1-	0.4+
1988 09 14	809	0.7-	0.1-	1991 03 19	402	0.5+	0.4+	1997 10 30	704	0.9+	0.3-
1988 09 15	809	1.0-	0.1-	1991 03 20	809	0.4+	0.9+				
1988 09 15	809	0.8-	0.2-	1991 03 20	809	0.5+	0.9+				

(8008)* 1988 TQ₄ = 1988 VE₁₁ = 1937 VF = 1974 TN₁ = 1979 XQ₁
= 1990 DR₃

Discovered 1988 Oct. 10 by Y. Oshima at the Gekko Observatory.

Id. H. Oishi (*MPC* 17823)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	3.17431		(2000.0)		P		Q
<i>n</i>	0.21265706	ω	256.62562	+0.90715971		-0.42038211	
<i>a</i>	2.7798168	Ω	128.22993	+0.39458058		+0.83462008	
<i>e</i>	0.0795920	<i>i</i>	1.34532	+0.14617598		+0.35593288	
<i>P</i>	4.63	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1

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

1937 11 03	024(0.02+	0.04-)	X	1991 05 13	801	0.2-	0.5-	1994 01 17	010	(2.3-	0.0)
1974 10 12	808	0.9-	0.7+	1991 05 13	801	0.1-	0.7-	1994 01 17	010	0.9-	0.5-
1974 10 12	808	0.4+	0.5-	1991 05 14	801	0.1+	0.7-	1994 01 17	010	1.5-	0.2-
1979 12 14	095	(1.7-	2.8+)	1991 05 14	801	0.2+	1.0-	1995 04 01	801	0.5-	1.1-
1988 10 10	888	0.2-	1.2+	1991 05 18	675	0.6+	0.3+	1995 04 01	801	1.6-	1.1-
1988 10 10	888	0.7-	1.4+	1991 05 18	675	0.5+	0.2-	1996 06 04	689	1.1-	1.6-
1988 11 04	327	0.9+	0.6+	1992 07 26	801	0.9-	0.0	1997 10 05	905	0.2+	0.4+
1988 11 04	327	1.0+	0.7+	1992 07 26	801	0.8-	0.1+	1997 10 05	905	0.4-	0.6+
1988 11 08	399	0.8-	0.9-	1992 07 31	801	0.6-	0.3+	1997 10 27	888	0.7-	0.3+
1988 11 08	399	0.7+	1.2-	1992 07 31	801	0.7-	0.2+	1997 10 27	888	0.1+	0.0
1988 11 08	399	0.4+	0.4-	1992 08 02	675(12.9+	7.7-		1997 10 28	704	1.9+	0.9-
1990 02 25	809	0.6+	0.2-	1992 08 06	675	0.5+	0.5-	1997 10 28	704	0.8+	1.8-
1990 02 25	809	1.1+	0.1-	1992 08 06	675	0.4+	0.6-	1997 10 28	704	(3.1+	2.4-)
1990 02 25	809	1.4+	0.1-	1993 11 13	801	0.6-	0.3-	1997 10 28	704	2.0+	1.1-
1990 02 26	809	0.9-	0.1-	1993 11 13	801	0.5-	0.3-	1997 10 28	704	0.2+	1.1-
1990 02 26	809	0.5-	0.2+	1993 12 22	596	0.2-	1.3-	1997 11 02	888	0.2-	0.1-
1990 02 26	809	0.1-	0.6+	1993 12 22	596	0.8+	0.3-	1997 11 02	888	0.2+	0.0

(8009)* 1989 BA₁ = 1988 VK₆ = 1988 XP₂

Discovered 1989 Jan. 25 by C. Pollas at Caussols.

Id. B. G. Marsden (*MPC* 14359)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	353.41242		(2000.0)		P		Q
<i>n</i>	0.21345647	ω	166.65119	+0.55509254		-0.62766656	
<i>a</i>	2.7728721	Ω	246.72277	+0.69813304		+0.70829818	
<i>e</i>	0.1603114	<i>i</i>	36.45363	+0.45219744		-0.32303000	
<i>P</i>	4.62	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 08 05	675	1.0-	2.0-	1989 01 25	010	2.1-	1.6+	1992 07 27	658	0.4-	0.5+
1987 08 05	675	0.5+	0.3-	1989 01 25	010	0.3-	0.9+	1992 07 28	658	0.2+	1.6+
1988 11 03	033	0.9-	0.2-	1989 01 31	010	0.9+	1.2-	1992 07 28	658	0.6+	1.8+
1988 11 04	033	0.3-	1.4-	1989 01 31	010	0.4-	0.1+	1992 07 28	658	0.7+	0.9+
1988 11 04	033	0.0	0.7-	1989 01 31	010	0.2-	0.6+	1997 08 04	046	0.3-	0.4+
1988 11 09	675	0.5-	1.0-	1989 02 06	010	(3.4+	2.4-)	1997 08 04	046	0.4-	0.4+
1988 12 08	010	(2.7-	5.5+)	1989 02 06	010	(5.2-	2.9+)	1997 08 04	046	0.3-	0.4+
1988 12 09	010	(5.9-	2.9-)	1990 01 30	474	0.2+	0.2+	1997 08 10	046	0.0	0.6+
1988 12 09	010	(4.9-	5.9+)	1990 01 30	474	0.2+	0.1+	1997 08 10	046	0.3+	0.3+
1988 12 09	010	(9.4-	14.7+)	1990 02 27	474	1.2+	0.1-	1997 08 10	046	0.1+	0.6+
1988 12 13	010	1.3+	1.5+	1990 02 27	474	0.4+	0.4+	1997 10 02	966	0.3-	0.0
1988 12 13	010	0.5+	1.4+	1990 03 23	474	0.2+	0.8+	1997 10 02	966	0.9-	0.9-
1988 12 13	010	0.3-	1.5+	1990 03 23	474	0.3-	1.3+	1997 10 23	966	0.4+	0.5-
1989 01 09	413	0.8+	1.1-	1992 07 27	658	0.4-	0.4+	1997 10 23	966	0.4+	0.2-
1989 01 09	413	0.8+	0.8-	1992 07 27	658	0.2-	0.1+				

(8010)* 1989 GB₁ = 1972 HN₁ = 1986 TE₁₀

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

Id. H. Kaneda (*MPC* 16877)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	271.86966		(2000.0)		P		Q
<i>n</i>	0.17482942	ω	251.53157	-0.40470833		-0.91213359	
<i>a</i>	3.1675711	Ω	222.52751	+0.87107981		-0.36291488	
<i>e</i>	0.0996954	<i>i</i>	5.51720	+0.27826450		-0.19053900	
<i>P</i>	5.64	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

1997 NOV. 14

M.P.C. 30855

Residuals in seconds of arc

1951 07 30	675	1.0+	0.6-	1991 09 07	801	1.2-	0.6-	1997 09 11	627	(2.7+	0.3-)
1951 07 30	675	0.5-	0.5+	1991 09 07	801	0.3-	0.7-	1997 09 11	627	0.5-	0.2-
1972 04 19	805	1.4-	1.5+	1991 09 09	801	0.3-	0.0	1997 09 11	627	0.4-	0.8-
1972 04 19	805	0.2+	0.2-	1991 09 09	801	0.2-	0.2+	1997 09 14	557	0.3-	0.1-
1986 10 03	095	2.0-	0.4+	1991 09 14	675	0.9+	0.0	1997 09 15	557	0.3-	0.1+
1986 10 08	095	1.7+	2.5+	1991 09 14	675	0.4+	1.1-	1997 09 16	557	0.0	0.2-
1989 04 03	809	0.1+	1.4-	1991 10 08	801	0.8+	0.3+	1997 09 16	557	0.2-	0.1+
1989 04 03	809	0.4-	0.8-	1991 10 08	801	0.0	0.1-	1997 09 30	566	0.1+	0.6+
1989 04 03	809	0.2-	1.3-	1991 10 11	801	0.3+	0.3-	1997 09 30	566	0.2+	0.6+
1989 04 05	809	(5.5+	2.7-)	1991 10 11	801	0.2+	0.6-	1997 09 30	566	0.1-	0.5+
1989 04 05	809	(5.1+	2.2-)	1992 10 25	675	0.6+	0.1-	1997 10 23	684	0.5-	0.0
1989 04 05	809	(5.5+	2.7-)	1992 10 25	675	0.4+	1.0-	1997 10 23	684	0.6-	0.5+
1989 04 08	809	1.0+	0.1+	1992 10 28	801	1.0+	0.5-	1997 10 23	684	0.6-	0.7+
1989 04 08	809	0.9+	0.0	1992 10 28	801	0.9+	0.5-	1997 10 24	684	0.0	0.2+
1989 04 08	809	0.0	0.0	1994 03 12	801	0.2+	0.4-	1997 10 24	684	0.3-	0.2+
1989 04 10	809	0.9+	1.1-	1994 03 12	801	(1.1+	2.4-)	1997 10 24	684	0.5-	0.1-
1989 04 10	809	0.8+	1.3-	1994 03 12	675	1.4-	0.0	1997 10 30	704	2.3+	0.8-
1989 04 10	809	0.4+	1.5-	1994 03 12	675	1.8-	1.2-	1997 10 30	704	1.3+	1.1-
1991 08 06	675	1.7-	0.4+	1994 03 14	675	1.0-	0.1-	1997 10 30	704	1.8+	1.5-
1991 08 06	675	1.5-	0.2+	1994 03 14	675	0.0	1.1-	1997 10 30	704	1.5+	1.9-
1991 08 08	675	0.6-	1.2-	1994 03 21	801	0.3-	0.1-	1997 10 30	704	1.0+	2.3-
1991 08 08	675	0.1-	1.4-	1994 03 21	801	1.0-	0.9+				

(8011)* 1989 WG₇ = 1976 UV₁ = 1986 AC₂

Discovered 1989 Nov. 29 by K. Endate and K. Watanabe at Kitami.

Id. H. Kaneda (*MPC* 17209)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23296710	ω	224.03756	-0.19227210	-0.98104446		
<i>a</i>	2.6158108	Ω	237.06195	+0.90813281	-0.16854796		
<i>e</i>	0.1612845	<i>i</i>	1.64892	+0.37192236	-0.09562089		
<i>P</i>	4.23	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1976 10 22	381	1.3-	0.7-	1989 11 29	400	1.9-	1.8-	1997 08 11	557	0.1+	0.5-
1976 10 22	381	0.8-	0.0	1989 12 01	400	(3.1-	1.4+)	1997 10 30	704	0.4+	1.2-
1976 10 26	095	1.4+	0.5+	1989 12 01	400	1.9-	0.0	1997 10 30	704	1.9+	0.5-
1986 01 12	688	1.2+	0.0	1989 12 06	400	(3.5-	0.5-)	1997 10 30	704	0.6+	0.9+
1986 01 12	688	0.8+	0.5-	1993 10 15	400	0.7-	0.8+	1997 10 30	704	0.8-	0.5+
1986 01 17	688	0.0	1.4-	1993 10 15	400	0.8-	1.4+	1997 10 30	704	1.5-	0.4-
1986 01 17	688	0.7+	0.2-	1993 10 16	400	0.4+	0.0	1997 10 30	566	0.1+	0.1-
1986 02 05	675	(2.7-	1.2+)	1993 10 16	400	1.2+	1.6+	1997 10 30	566	0.2-	0.1-
1986 02 07	675	(3.3-	0.2+)	1995 04 04	399	0.8-	1.1+	1997 10 30	566	0.6+	1.2+
1986 02 07	675	0.6+	1.4+	1995 04 04	399	0.1+	0.7+				
1989 11 29	400	(3.4-	0.3-)	1997 08 11	557	0.7+	0.6-				

(8012)* 1990 HO₃ = 1977 CV₁ = 1991 RR₂₈ = 1992 YL₄

Discovered 1990 Apr. 29 by A. Żytkow and M. J. Irwin at Siding Spring.

Id. K. Kinoshita (*MPC* 23973)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18071987	ω	355.84128	+0.40611446	-0.91280650		
<i>a</i>	3.0983617	Ω	70.19325	+0.83973062	+0.35418011		
<i>e</i>	0.1565079	<i>i</i>	2.62404	+0.36044907	+0.20332424		
<i>P</i>	5.45	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 12 22	675	0.9-	0.8+	1992 12 29	033	0.7-	0.2+	1997 10 30	704	1.6+	1.3-
1954 12 22	675	1.6+	0.2-	1992 12 30	033	0.0	0.9+	1997 10 30	704	1.4+	1.2-
1977 02 11	675	0.9-	0.7+	1993 01 01	033	1.3-	0.1-	1997 10 30	704	1.3+	1.2-
1977 02 12	675	0.9+	0.2+	1994 04 02	691	0.3-	1.2-	1997 10 30	704	1.4+	0.9-
1989 04 01	675	0.6+	0.9+	1994 04 02	691	0.2-	0.9-	1997 10 31	704	0.7+	1.2+
1989 05 07	675	0.2-	1.0-	1994 04 02	691	0.0	0.8-	1997 10 31	704	1.2+	1.1+
1989 05 07	675	0.5-	0.4+	1997 09 04	910	1.0-	0.2-	1997 10 31	704	0.2+	1.7+

1990 04 29	413	0.5+	0.2-	1997 09 04	910	0.7-	0.4-	1997 10 31	704	0.2+	1.4+
1990 05 01	413	0.6+	0.1-	1997 09 04	910	0.9-	0.4-	1997 10 31	704	(1.8+	2.1-)
1990 05 02	413	0.4+	0.5-	1997 09 05	910	0.7-	0.7-	1997 11 06	704	0.2+	0.1+
1991 09 15	691	1.1-	0.2+	1997 09 05	910	0.4-	0.7-	1997 11 06	704	0.0	0.4-
1991 09 15	691	1.2-	0.2+	1997 09 05	910	0.9-	0.5-	1997 11 06	704	0.4-	0.3-
1991 09 15	691	1.3-	0.2+	1997 10 29	704	0.4-	0.1-	1997 11 06	704	0.5-	0.1+
1991 09 17	691	1.6+	0.4-	1997 10 29	704	1.0+	0.0	1997 11 06	704	0.5-	0.4-
1991 09 17	691	0.5-	0.3+	1997 10 29	704	0.2-	0.2-				
1991 09 17	691	0.7-	0.2+	1997 10 29	704	0.4+	0.5-				

(8013)* 1990 KA

Discovered 1990 May 18 by E. F. Helin at Palomar.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30247378	ω	146.55606	-0.29938366	+0.94568387		
<i>a</i>	2.1979150	Ω	105.74597	-0.90172290	-0.23703040		
<i>e</i>	0.4329384	<i>i</i>	7.56402	-0.31187374	-0.22248283		
<i>P</i>	3.26	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1951 09 01	675	0.0	0.1+	1990 05 29	589	(0.7- 7.7+)	1990 07 21	413	0.9+	0.3-	
1990 03 23	675	1.4-	1.6-	1990 05 29	589	(7.5+ 5.3+)	1990 07 21	413	0.0	0.2-	
1990 03 23	675	0.5+	0.6-	1990 05 31	691	1.5+	1.7-	1990 07 22	801	0.1-	0.5+
1990 03 25	675	(2.1- 0.7-)		1990 05 31	691	0.3- 1.1-		1990 07 22	801	0.5-	1.2-
1990 03 25	675	1.7-	1.2-	1990 05 31	691	0.1+	0.8+	1993 01 26	691	0.4-	1.0-
1990 04 25	675	(1.8+ 3.3-)		1990 05 31	691	0.8-	1.4+	1993 01 26	691	0.3-	0.4-
1990 04 25	675	(0.7+ 3.9-)		1990 05 31	691	0.4+	0.9+	1993 01 26	691	0.4-	0.4-
1990 05 18	675	0.2-	0.5+	1990 05 31	691	0.7-	1.4+	1993 03 03	691	0.3-	0.0
1990 05 18	675	(0.9- 2.3-)		1990 05 31	691	(0.3+ 2.1+)		1993 03 03	691	0.4-	0.1-
1990 05 20	675	(3.3- 5.3-)		1990 05 31	691	(1.3- 2.2+)		1993 03 03	691	0.3+	0.1+
1990 05 20	675	1.0-	0.4+	1990 05 31	691	1.9-	0.6-	1994 11 09	691	0.7-	0.0
1990 05 21	675	(0.1- 2.0-)		1990 05 31	691	0.0	1.3+	1994 11 09	691	0.7-	0.6-
1990 05 21	675	(1.7- 3.0-)		1990 05 31	691	0.6-	1.3+	1994 11 09	691	0.4-	0.5-
1990 05 22	675	(2.3+ 1.4-)		1990 05 31	691	(1.7- 2.6-)		1996 02 14	709	1.4+	0.0
1990 05 23	675	1.0+	1.5-	1990 06 14	413	(1.2- 3.8+)		1996 02 14	709	0.4+	0.2+
1990 05 24	372	0.6-	1.7+	1990 06 14	413	1.1+	1.4-	1996 02 14	709	0.4+	1.2+
1990 05 24	372	0.3-	0.1-	1990 06 15	413	0.6-	1.6-	1996 02 14	709	0.9+	1.0+
1990 05 25	801	0.4+	0.4-	1990 06 19	568	1.6-	0.4+	1996 02 14	709	0.7+	0.5+
1990 05 25	801	0.4+	0.3-	1990 06 19	046	(8.0- 0.4+)		1996 02 14	709	0.2-	0.7+
1990 05 25	675	1.7+	1.0+	1990 06 19	046	(4.2- 8.9+)		1996 02 16	696	0.2+	0.2+
1990 05 25	675	1.2+	0.1-	1990 06 20	801	0.3-	0.1+	1996 02 16	696	1.0+	0.1+
1990 05 25	871	0.3+	1.4-	1990 06 20	801	0.4-	0.7+	1997 08 30	711	(2.6- 2.2-)	
1990 05 26	413	0.8+	0.3-	1990 06 21	657	(3.6- 0.7-)		1997 08 31	711	(3.1- 2.1-)	
1990 05 26	592	0.8+	1.7+	1990 06 24	589	(0.8+ 4.8-)		1997 10 08	608	0.8-	0.3+
1990 05 26	592	0.9+	0.2+	1990 06 24	589	(3.4+ 3.1-)		1997 10 08	608	0.6-	0.1-
1990 05 26	592	0.6+	1.8+	1990 06 24	589	(5.1+ 0.1+)		1997 10 09	608	0.0	0.6+
1990 05 26	592	1.7+	0.8+	1990 06 24	589	1.1+	1.7-	1997 10 09	608	0.4-	0.7+
1990 05 27	801	0.7+	0.1-	1990 06 24	589	(0.6+ 4.4+)		1997 10 23	608	0.4+	0.2+
1990 05 27	801	0.6+	0.1-	1990 06 24	589	(0.3+ 10.1+)		1997 10 23	608	0.5-	0.4+
1990 05 28	091	1.9-	1.4+	1990 06 25	801	0.7-	0.1+	1997 10 24	608	0.5+	0.4+
1990 05 29	589	(0.8- 5.0+)		1990 06 25	801	0.8-	0.1+	1997 10 24	608	0.6+	0.4+
1990 05 29	589	(2.7+ 1.2+)		1990 06 25	675	(0.0 2.4-)		1997 11 07	381	1.7-	1.0+
1990 05 29	589	(8.1+ 1.9-)		1990 06 27	675	(2.1- 3.8-)		1997 11 07	381	1.6-	1.2+
1990 05 29	589	(5.8- 8.8+)		1990 06 27	675	1.8-	1.6-	1997 11 07	381	0.2+	0.0

Residuals in seconds of arc

1990 06 14	413	1.2−	0.6+	1990 06 29	413	0.3−	0.2−	1990 11 14	675	0.6−	0.1+
1990 06 22	413	(1.2−	3.0+)	1990 06 29	413	0.2−	0.2−	1990 11 14	675	1.5+	1.2+
1990 06 22	413	(1.2+	4.4−)	1990 06 29	413	0.3−	0.3+	1990 11 15	801	0.2−	0.4+
1990 06 26	675	0.3−	0.4−	1990 06 29	413	0.4−	0.1−	1990 11 15	801	0.3−	0.2+
1990 06 26	675	0.3−	0.4−	1990 07 01	474	0.5−	1.5+	1990 11 20	801	0.0	0.0
1990 06 27	675	(3.6−	3.4−)	1990 07 01	474	(0.5+	2.4+)	1990 11 20	801	0.2+	0.3+
1990 06 27	675	(3.5−	1.8−)	1990 07 01	474	(1.3−	3.2+)	1990 12 07	688	0.6−	0.2−
1990 06 28	675	1.2−	0.2+	1990 07 01	474	(0.3−	4.5+)	1990 12 07	688	0.1−	1.2−
1990 06 28	675	(2.9−	1.3−)	1990 07 03	801	0.4+	0.4+	1997 05 31	696	0.4−	0.4−
1990 06 28	474	0.1−	0.0	1990 07 03	801	0.5+	0.6+	1997 05 31	696	0.5−	0.3−
1990 06 28	474	0.5−	1.6+	1990 07 03	801	0.0	0.2−	1997 05 31	696	0.7−	0.3−
1990 06 28	474	(2.7−	0.3+)	1990 07 03	801	0.3+	0.2−	1997 06 01	696	0.3+	0.6−
1990 06 28	413	(0.5+	2.6−)	1990 07 03	801	0.1+	0.0	1997 06 01	696	0.1+	0.4−
1990 06 28	413	0.5+	0.9−	1990 07 03	801	0.3+	0.1−	1997 06 01	696	0.2+	0.7−
1990 06 29	675	(1.0−	3.1−)	1990 07 03	801	0.1+	1.4−	1997 06 11	696	0.4+	0.8+
1990 06 29	675	(0.9−	2.3−)	1990 07 03	801	0.2+	0.1+	1997 06 11	696	0.4+	0.6+
1990 06 29	568	1.4+	0.1+	1990 07 08	657	(1.6+	4.1−)	1997 06 11	696	0.9+	0.6+
1990 06 29	568	0.4+	0.3−	1990 08 28	688	0.3+	0.6+	1997 11 02	711	0.5−	0.4−
1990 06 29	413	0.3−	0.0	1990 08 28	688	1.0+	0.6−	1997 11 06	381	0.3+	0.1+
1990 06 29	413	0.1−	0.2−	1990 11 13	675	1.3−	0.4−	1997 11 06	381	0.4+	0.5+
1990 06 29	413	0.5+	0.4−	1990 11 13	675	0.8+	1.2−				

(8015)* 1990 QT₂ = 1975 EF₆ = 1980 TC₈ = 1985 DS₃ = 1987 XS

Discovered 1990 Aug. 24 by H. E. Holt at Palomar.

Id. B. G. Marsden (*MPC* 17639), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	4.40914		<i>P</i>		<i>Q</i>
<i>n</i>	0.29321957	ω	36.36864	+0.43892716	−0.89849783
<i>a</i>	2.2439203	Ω	27.59773	+0.82094071	+0.39799610
<i>e</i>	0.1501074	<i>i</i>	0.82601	+0.36523868	+0.18520463
<i>P</i>	3.36	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1975 03 15	095	1.8−	1.1+	1990 08 24	675	0.1−	0.5−	1997 09 16	327	0.5−	0.2−
1980 10 10	095	0.4−	0.8+	1990 08 29	675	1.2+	0.7−	1997 09 16	327	0.6−	0.2−
1980 10 15	095	(4.0+	2.1+)	1990 08 29	675	(2.3+	0.9+)	1997 09 16	327	0.5−	0.2−
1985 02 20	675	0.4+	1.1−	1990 09 14	675	0.6+	1.5−	1997 09 17	327	0.5−	0.1−
1985 02 22	675	1.6+	0.8−	1990 09 14	675	0.4+	0.9−	1997 09 17	327	0.8−	0.5−
1987 12 14	046	0.6+	1.3+	1990 09 18	675	0.5+	0.9−	1997 09 17	327	0.8−	0.3−
1987 12 14	046	1.1+	0.0	1990 09 18	675	0.7+	0.7−	1997 09 17	327	0.7−	0.1−
1987 12 15	046	0.4+	1.2+	1990 10 22	675	1.0−	0.5+	1997 10 28	704	(0.0	2.0−)
1987 12 15	046	(4.0+	1.2+)	1990 10 22	675	0.1+	0.3+	1997 10 28	704	1.6+	1.5−
1987 12 15	046	1.9−	0.4+	1992 03 25	691	1.8−	1.3−	1997 10 28	704	0.7+	0.6−
1987 12 15	046	1.6+	1.2−	1992 03 25	691	1.5−	1.1−	1997 10 28	704	0.0	0.3−
1987 12 23	400	0.9−	0.8−	1992 04 03	303	0.9−	1.4−	1997 10 28	704	(0.9−	2.4+)
1987 12 23	400	0.6−	0.2−	1992 04 03	303	1.0+	1.8−				
1990 08 24	675	0.7+	0.2+	1992 04 03	303	(2.4−	0.6−)				

(8016)* 1990 QW₁₀ = 1990 QH₁₈ = 1996 DQ

Discovered 1990 Aug. 27 by H. E. Holt at Palomar.

Id. S. Nakano (d, *MPC* 20912), G. V. Williams (*MPC* 26740)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	88.65339		<i>P</i>		<i>Q</i>
<i>n</i>	0.28801375	ω	277.18025	+0.18940375	+0.98188318
<i>a</i>	2.2708785	Ω	3.75176	−0.86354351	+0.16929741
<i>e</i>	0.1575139	<i>i</i>	4.93148	−0.46735300	+0.08511057
<i>P</i>	3.42	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1990 08 27	675	0.8+	0.5+	1996 03 26	566	0.5+	0.1+	1997 10 06	824	0.0	0.1−
1990 08 27	675	1.4+	0.2+	1996 03 26	566	0.4+	0.3+	1997 10 07	824	0.3+	0.3+
1990 08 28	095	(2.1+	2.7−)	1996 03 26	566	0.1+	0.3+	1997 10 07	824	0.3+	0.3+
1990 08 28	095	1.0−	1.9−	1996 04 21	566	0.4+	0.5−	1997 10 07	824	0.4+	0.2+
1990 09 20	675	0.8−	0.2−	1996 04 21	566	0.3+	0.5−	1997 10 08	824	0.3−	0.6−

1990 09 20	675	0.2−	0.9+	1996 04 21	566	0.6−	0.1−	1997 10 08	824	0.1−	0.6−
1994 11 27	675	0.5+	1.4−	1997 09 28	824	0.7+	0.8+	1997 10 08	824	0.3−	0.6−
1994 11 27	675	0.3−	0.6+	1997 09 28	824	0.8+	0.9+	1997 10 30	704	0.6−	0.9−
1996 02 19	411	0.4−	1.1+	1997 09 28	824	0.8+	1.0+	1997 10 30	704	0.5−	0.8+
1996 02 19	411	0.5+	0.3−	1997 10 03	691	1.8−	0.6−	1997 10 30	704	0.4+	0.3+
1996 02 21	411	0.3+	0.0	1997 10 03	691	1.7−	0.6−	1997 10 30	704	1.2+	0.5+
1996 02 21	411	0.0	0.3+	1997 10 03	691	(2.1−	0.4−)	1997 10 30	704	(2.3−	0.4−)
1996 02 23	411	0.5−	0.2−	1997 10 06	824	0.1−	0.0				
1996 02 23	411	0.9−	0.5−	1997 10 06	824	0.1+	0.2−				

(8017)* 1990 RM₅ = 1979 OE₁₅ = 1993 KN₃ = 1994 WP₁₁ = 3264 T-1

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

Id. G. V. Williams (*MPC* 24563)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	18.35889		<i>P</i>		<i>Q</i>
<i>n</i>	0.27261805	ω	309.16047	+0.87929160	+0.47626151
<i>a</i>	2.3555897	Ω	22.39916	−0.43316572	+0.80367596
<i>e</i>	0.2404616	<i>i</i>	0.69318	−0.19802458	+0.35676313
<i>P</i>	3.62	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	1

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

1971 03 24	675	(0.00+	0.03+)	1990 09 23	095	0.0	1.3−	1994 11 29	010	1.0+	0.2+
1971 03 25	675	0.6−	2.3−	1990 09 26	095	0.7−	0.4+	1996 02 14	691	0.7−	0.1−
1971 03 26	675	0.5+	2.4−	1990 09 26	095	0.1−	1.0−	1996 02 14	691	0.9−	0.1+
1971 03 26	675	0.1−	0.8−	1990 10 11	095	(6.2−	1.4−)	1996 02 14	691	0.4−	0.0
1971 03 27	675	0.0	1.6−	1990 10 15	095	0.6+	1.6+	1996 02 15	566	0.6+	0.3+
1971 04 02	675	1.8−	0.1+	1993 05 25	691	0.0	0.8+	1996 02 15	566	(2.3+	0.2−)
1979 07 21	095	0.9−	0.5+	1993 05 25	691	0.1−	0.9+	1996 02 15	566	0.5+	0.2−
1979 07 30	095	0.9+	0.6−	1993 05 25	691	0.1−	0.5+	1997 06 24	689	0.7−	0.2−
1990 09 15	675	1.1+	1.0−	1994 11 27	010	0.0	0.3+	1997 09 26	735	1.0+	0.3+
1990 09 15	095	1.9−	1.0−	1994 11 27	010	0.7−	0.5−	1997 09 26	735	1.3−	0.5+
1990 09 15	095	(0.3−	2.3+)	1994 11 28	010	0.0	0.2−	1997 09 27	735	1.0+	0.2+
1990 09 17	675	1.0+	0.9−	1994 11 28	010	0.3−	0.5+	1997 09 27	735	1.2+	0.1+
1990 09 17	675	0.9+	1.3−	1994 11 28	010	0.8+	0.2+	1997 09 27	735	0.8+	0.2+

(8018)* 1990 SW = 1989 GU₄ = 1017 T-1

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

Id. S. Nakano (*MPC* 17216), G. V. Williams (*MPC* 19305)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	69.75028		<i>P</i>		<i>Q</i>
<i>n</i>	0.27499830	ω	84.19199	+0.33923268	+0.93848470
<i>a</i>	2.3419775	Ω	205.92878	−0.91091894	+0.31058587
<i>e</i>	0.1160908	<i>i</i>	8.49036	−0.23483585	+0.15094002
<i>P</i>	3.58	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1971 03 24	675	0.4+	2.0−	1990 09 16	675	0.8+	0.5−	1994 11 27	675	0.0	0.3+
1971 03 25	675	1.9−	0.6+	1990 09 16	675	1.1+	0.4−	1996 02 25	292	0.2−	1.2−
1971 03 25	675	0.7−	0.2−	1990 09 17	675	0.7+	0.1−	1996 02 25	292	0.7−	0.0
1971 03 26	675	0.2+	0.5−	1990 09 17	675	0.5+	1.3+	1996 03 10	292	1.4−	1.7−
1989 04 05	809	0.0	0.1+	1990 09 18	675	1.2+	1.3−	1996 03 10	292	0.3−	0.4−
1989 04 05	809	1.6+	1.0−	1990 09 18	675	0.5+	1.8−	1997 08 05	127	0.3−	0.5−
1989 04 06	809	0.6+	1.3+	1990 09 20	675	0.3+	1.3−	1997 08 05	127	0.5−	0.7−
1989 04 06	809	0.0	0.4+	1990 09 20	675	0.2+	0.1−	1997 08 06	127	0.9−	0.7−
1989 04 06	809	1.3+	0.3−	1990 10 10	400	1.2−	0.6−	1997 08 06	127	0.8−	0.9−
1989 04 09	809	0.4−	0.2−	1990 10 10	400	1.4−	0.5−	1997 08 23	689	0.3+	1.1+
1989 04 09	809	0.6−	0.2+	1990 10 10	400	(3.1+	1.4+)	1997 09 07	689	0.5+	0.9+
1989 04 09	809	0.3+	0.6−	1994 11 27	675	0.3+	0.8+				

1997 NOV. 14

M.P.C. 30857

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	293.82654		(2000.0)	P		Q	
<i>n</i>	0.27026497	ω	231.46084	-0.44728694	-0.89196446		
<i>a</i>	2.3692427	Ω	245.22871	+0.84149413	-0.39475429		
<i>e</i>	0.1463481	<i>i</i>	4.15775	+0.30302150	-0.22038251		
<i>P</i>	3.65	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1981 05 08	675	2.4-	0.4-	1993 08 16	010	1.1+	1.0+
1981 05 09	675	(6.1+	8.4-)	1993 08 16	010	0.5-	0.9+
1990 10 14	033	0.2+	0.1-	1993 08 16	010	1.3+	0.9-
1990 10 15	033	0.3+	0.4+	1993 08 19	010	1.3+	0.4+
1990 10 15	033	0.4+	0.4+	1993 08 19	010	0.6+	0.4+
1990 10 18	033	1.3+	0.0	1993 08 20	010	0.4+	0.6+
1990 10 18	033	0.3+	0.3+	1995 02 03	033	1.4+	0.8+
1990 11 13	675	0.9+	0.2-	1995 02 03	033	0.7+	1.5+
1990 11 13	675	0.5+	0.2-	1997 09 27	411	0.6+	0.2+
1990 11 22	885	0.5-	1.6-	1997 09 27	411	0.3+	0.5+
1990 11 22	885	1.5-	0.4-	1997 09 28	113	1.4+	0.5-
1990 11 22	885	(0.0	3.0-)	1997 09 28	113	1.5-	0.4+
1993 08 15	010	0.6-	1.3+	1997 10 21	113	1.8-	0.2+
1993 08 15	010	0.8+	1.2+	1997 10 21	113	1.4-	0.5-

(8020)* 1990 TV₁₃ = 1968 TC = 1979 VC

Discovered 1990 Oct. 14 by F. Börngen and L. D. Schmadel at Tautenburg.

Id. T. B. Spahr (*MPC* 30448)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	10.09074		(2000.0)	P		Q	
<i>n</i>	0.27132069	ω	339.52156	+0.99223006	-0.10532381		
<i>a</i>	2.3630928	Ω	26.78841	+0.12439893	+0.84883506		
<i>e</i>	0.1400011	<i>i</i>	8.45022	-0.00210154	+0.51805979		
<i>P</i>	3.63	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1968 10 15	095	0.9+	1.5-	1997 09 20	113	0.8-	0.2+
1979 11 10	095	2.6+	3.4-	1997 09 20	113	0.5-	0.1+
1979 11 11	095	(3.9+	10.8+)	1997 09 20	113	1.0-	0.5+
1990 10 14	033	0.2-	0.2+	1997 09 21	113	0.4-	0.1-
1990 10 14	033	1.0-	0.2-	1997 09 21	113	0.3-	0.1-
1990 10 14	033	0.3-	0.2-	1997 09 21	113	0.1-	0.6+
1990 10 24	400	1.3+	0.9+	1997 09 25	113	1.0+	0.4-
1990 10 24	400	1.6-	0.3+	1997 09 25	113	0.2+	0.1-
1990 10 24	400	(2.5+	1.9-)	1997 09 25	113	1.6-	0.0
1996 04 20	691	0.3+	0.2+	1997 09 25	113	0.5-	0.8-
1996 04 20	691	0.3+	0.0	1997 09 26	113	0.5-	0.8+
1996 04 20	691	0.3+	0.3+	1997 09 26	113	0.4-	0.8-
1997 08 22	426	0.9+	1.0-	1997 09 26	113	0.2-	1.3-
1997 08 22	426	1.0+	0.5-	1997 09 26	113	0.7-	1.5-
1997 08 22	426	0.7+	0.9-	1997 09 28	113	1.7-	0.4+
1997 08 26	367	0.8+	1.3-	1997 09 28	113	0.3-	0.4+
1997 08 26	367	0.9+	0.9-	1997 10 06	113	0.5+	1.1+
1997 09 05	426	0.2-	0.1-	1997 10 06	113	0.5-	0.4+
1997 09 05	426	0.8-	0.2+	1997 10 06	113	0.3-	0.2-
1997 09 20	113	0.1+	0.9-	1997 10 21	113	0.1+	0.4+
1997 09 20	113	(3.1+	2.6-)	1997 10 21	113	0.2-	0.7+
1997 09 20	113	1.2-	1.9+	1997 10 21	113	0.2+	0.7+

(8021)* 1990 UO₂ = 1939 VL

Discovered 1990 Oct. 22 by C. S. Shoemaker at Palomar.

Id. G. V. Williams (*MPC* 17965)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	341.51998		(2000.0)	P		Q	
<i>n</i>	0.27046717	ω	161.92498	+0.75493803	-0.56145592		
<i>a</i>	2.3680617	Ω	237.07886	+0.54078218	+0.82529300		
<i>e</i>	0.2251872	<i>i</i>	23.80974	+0.37097601	-0.06048728		
<i>P</i>	3.64	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1939 11 13	062	0.4-	1.8+	1993 06 24	801	0.5+	0.4-
1939 11 13	062	0.5+	0.1-	1993 07 16	801	0.4-	0.4-
1990 10 22	675	0.1-	1.0-	1993 07 16	801	0.1+	0.6-
1990 10 25	675	0.3+	0.5-	1993 07 21	801	0.3+	0.8-
1990 10 26	675	0.5+	0.6-	1997 08 04	127	0.8-	0.7-
1990 11 13	675	0.3-	0.6-	1997 08 04	127	0.8-	0.5-
1990 11 14	095	(1.5-	6.4+)	1997 08 05	127	0.4-	0.3-
1990 11 15	675	1.3-	0.8-	1997 08 05	127	0.8-	0.0
1991 02 17	801	0.2+	0.6-	1997 08 06	127	0.5+	0.3+
1991 02 17	801	0.8+	0.9-	1997 08 06	127	0.8+	0.4+

(8022)* 1990 VD₇ = 1990 UM₆ = 1940 EE = 1969 TF₃ = 1983 TP₁

Discovered 1990 Nov. 10 by A. Mrkos at Kleť.

Id. S. Nakano (*MPC* 20928)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	160.41751		(2000.0)	P		Q	
<i>n</i>	0.28440279	ω	267.29885	-0.27346328	+0.96178587		
<i>a</i>	2.2900597	Ω	346.80646	-0.85708325	-0.25007637		
<i>e</i>	0.0039316	<i>i</i>	3.42361	-0.43660753	-0.11148879		
<i>P</i>	3.47	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1940 03 12	053(82.1+	47.1+)	X	1996 05 23	046	0.6-	0.0
1940 03 27	053(22.2+	5.5-)	X	1996 05 23	046	0.2+	0.6-
1940 03 29	053(10.3-	38.5-)	X	1996 05 23	046	0.4-	0.9-
1940 04 10	053(36.6+	54.2+)	X	1996 05 23	046	1.1+	1.3-
1969 10 09	095	(2.8-	4.6-)	1996 06 05	046	1.0+	0.7-
1983 10 12	688	0.8-	2.1-	1996 06 05	046	0.2+	0.6+
1983 10 12	688	(0.2-	2.6-)	1996 06 05	046	0.1+	0.0
1990 10 24	046	0.5+	0.2-	1996 06 06	046	0.5-	0.2+
1990 10 24	046	0.7+	0.1-	1996 06 06	046	1.4-	0.6-
1990 11 10	046	0.1-	1.6+	1996 06 06	046	0.0	0.5-
1990 11 10	046	0.0	1.1+	1997 10 05	046	0.2-	0.5+
1990 11 13	046	0.4+	1.5+	1997 10 05	046	0.0	0.7+
1990 11 13	046	0.4+	0.6-	1997 10 05	046	0.1-	0.8+
1994 12 31	411	0.2-	0.5+	1997 10 06	046	0.2-	0.7+
1994 12 31	411	0.1+	1.6+	1997 10 06	046	0.2-	0.7+
1995 01 31	046	0.1+	0.9-	1997 10 06	046	0.3-	0.8+
1995 01 31	046	0.2+	1.2-	1997 10 22	704	0.7-	0.2+
1995 01 31	046	0.3-	0.9-	1997 10 22	704	0.0	1.3-
1995 02 04	046	0.1-	0.4-	1997 10 22	704	1.0-	0.6-
1995 02 04	046	0.1+	0.7-	1997 10 22	704	1.2+	0.9-
1995 02 04	046	0.1+	0.4-	1997 10 22	704	1.3-	0.8-

(8023)* 1991 DD = 1993 TR₁₈

Discovered 1991 Feb. 17 by T. Urata at the Nihondaira Observatory.

Id. E. Bowell (*MPC* 22954), G. V. Williams (*ibid.*)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	300.68860		(2000.0)	P		Q	
<i>n</i>	0.25918401	ω	93.68404	-0.63116883	-0.77523940		
<i>a</i>	2.4362990	Ω	35.49238	+0.69338173	-0.57843328		
<i>e</i>	0.1319026	<i>i</i>	2.47730	+0.34763154	-0.25380861		
<i>P</i>	3.80	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 09 27	675	0.6+	0.8+	1993 10 13	675	0.4+	1.4-	1996 07 25	608	0.0	0.1+
1989 09 27	675	0.1-	1.4+	1993 10 13	675	0.0	0.5-	1997 10 11	385	0.6+	0.7-
1989 09 29	675	0.5-	0.2+	1993 10 19	905	0.9+	0.4+	1997 10 11	385	0.3+	0.4-
1989 09 29	675	0.2-	0.5-	1993 10 19	905	0.7+	1.1-	1997 10 20	557	0.2+	0.1+
1991 02 08	881	(2.4+	0.8-)	1993 10 20	809	0.1+	0.4-	1997 10 20	557	0.2+	0.1-
1991 02 17	385	(2.0-	2.4+)	1993 10 20	809	0.4-	0.2-	1997 10 20	557	0.6+	0.3+
1991 02 17	385	1.5-	0.6+	1993 10 20	809	0.3+	0.6-	1997 10 26	385	0.7+	0.1+
1991 02 19	385	1.8-	0.1+	1993 10 22	809	(4.0+	0.0)	1997 10 26	385	0.6+	0.2+
1991 02 19	385	1.6+	0.2+	1993 10 22	809	1.3+	0.8+	1997 10 31	704	0.4+	0.5+
1991 02 20	385	1.1-	1.6+	1993 10 22	809	(4.3-	2.9+)	1997 10 31	704	0.3-	0.4+
1991 02 20	385	0.7+	1.2-	1995 03 26	905	0.2+	0.9-	1997 10 31	704	0.3-	1.1+
1991 03 09	887	0.8+	0.5+	1995 03 26	905	0.6+	0.1+	1997 10 31	704	0.7-	0.4+
1991 03 09	887	1.7+	0.3-	1995 03 27	905	0.6+	0.3-	1997 10 31	704	0.3+	0.1-
1993 10 09	809	(2.8+	1.1+)	1995 03 27	905	0.5+	0.5-	1997 10 31	385	1.2+	0.3-
1993 10 09	809	(2.5+	1.6+)	1995 04 26	801	0.7-	0.4+	1997 10 31	385	1.1+	0.2-
1993 10 09	809	(3.0+	1.8+)	1995 04 26	801	0.6-	0.3+	1997 11 04	905	0.3-	0.1+
1993 10 10	675	0.1+	2.0-	1995 05 02	801	0.7-	0.2-	1997 11 04	905	0.8+	0.8-
1993 10 10	675	0.2+	1.1-	1995 05 02	801	0.7-	0.3-	1997 11 06	704	1.7-	0.8+
1993 10 11	809	(3.3+	1.3+)	1996 07 11	385	0.1+	0.2-	1997 11 06	704	0.9-	0.7+
1993 10 11	809	(2.6+	0.4+)	1996 07 11	385	0.8-	0.0	1997 11 06	704	1.2-	0.2+
1993 10 11	809	(3.0+	1.0+)	1996 07 11	385	0.2-	0.4+	1997 11 06	704	1.3-	0.0
1993 10 12	809	0.1+	0.9+	1996 07 23	608	0.1+	0.4+	1997 11 06	704	0.8-	0.2-
1993 10 12	809	1.0-	0.7+	1996 07 23	608	0.3+	0.3+				
1993 10 12	809	1.6-	0.2+	1996 07 25	608	0.1+	0.1+				

(8024)* 1991 FN

Discovered 1991 Mar. 17 by E. F. Helin at Palomar.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	180.28309	(2000.0)	<i>Q</i>
<i>n</i>	0.35716402	ω 161.30578	-0.98196114
<i>a</i>	1.9673921	Ω 8.75997	+0.09582377
<i>e</i>	0.0581354	<i>i</i> 20.34524	+0.16300346
<i>P</i>	2.76	<i>H</i> 14.5	<i>G</i> 0.15
			<i>U</i> 2

Residuals in seconds of arc

1991 03 17	675	0.4+	0.5-	1991 03 27	809	0.7-	0.9+	1992 11 24	675	0.1+	0.6+
1991 03 17	675	0.2-	0.5-	1991 03 27	809	0.2-	0.8+	1992 11 24	675	0.8-	0.1-
1991 03 18	675	1.2-	0.6+	1991 03 27	809	0.7+	0.7+	1995 11 21	608	0.3-	0.3+
1991 03 18	675	1.0+	1.0-	1991 04 10	675	1.5+	0.3+	1995 11 21	608	0.1-	0.0
1991 03 22	809	(0.5-	2.8+)	1991 04 10	675	0.5+	0.0	1997 09 30	424	0.4-	0.4-
1991 03 22	809	(0.2-	2.8+)	1991 04 12	675	0.4+	0.1+	1997 09 30	424	0.9-	0.5+
1991 03 22	809	(0.2+	2.7+)	1991 04 12	675	0.1+	0.6-	1997 10 05	424	0.3-	0.1-
1991 03 23	809	1.1-	0.3+	1991 05 07	675	0.7+	0.9+	1997 10 05	424	0.1+	0.0
1991 03 23	809	0.6-	0.2+	1991 05 07	675	(3.7-	1.5+)	1997 10 05	424	(2.3-	2.3+)
1991 03 23	809	0.3-	0.1-	1991 05 10	675	(2.7-	0.0)	1997 10 05	424	1.8+	0.4+
1991 03 25	809	0.5-	0.0	1991 05 10	675	(2.6-	3.1+)	1997 11 01	424	0.5-	0.5+
1991 03 25	809	0.2+	0.2-	1992 11 19	675	(2.1+	0.2+)	1997 11 01	424	0.0	0.5+
1991 03 25	809	0.9+	0.4-	1992 11 19	675	0.8-	1.0+				

(8025)* 1991 FB₄ = 1974 RS = 1992 PR₅

Discovered 1991 Mar. 22 by H. Debehogne at the European Southern Observatory.

Id. G. V. Williams (*MPC* 25064)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	127.18131	(2000.0)	<i>Q</i>
<i>n</i>	0.21727060	ω 261.76405	-0.27185064
<i>a</i>	2.7403250	Ω 352.43859	-0.84990619
<i>e</i>	0.1127675	<i>i</i> 4.40842	-0.45139416
<i>P</i>	4.54	<i>H</i> 13.2	<i>G</i> 0.15
			<i>U</i> 1

Residuals in seconds of arc

1974 09 11	095	0.2+	0.3-	1991 05 15	675	0.3+	0.9+	1997 09 23	966	1.6-	0.9-
1991 03 22	809	0.3-	0.3-	1991 05 15	675	0.3+	1.1-	1997 09 23	966	0.9+	0.1+
1991 03 22	809	0.1-	0.2-	1991 05 17	675	0.2-	1.0+	1997 10 30	704	0.8+	0.4-

1991 03 22	809	0.4-	0.4-	1991 05 17	675	0.2+	0.6+	1997 10 30	704	0.6+	0.8+
1991 03 23	809	0.8-	0.6-	1992 08 03	675	0.4-	0.7-	1997 10 30	704	0.3+	0.4+
1991 03 23	809	0.5-	0.7-	1992 08 03	675	0.1+	1.7-	1997 10 30	704	0.4+	0.3+
1991 03 23	809	0.4-	0.8-	1992 08 06	675	0.3+	1.5-	1997 10 30	704	0.1+	0.4+
1991 03 25	809	1.4+	1.2+	1992 08 06	675	0.7-	0.4-	1997 10 31	426	0.6+	0.1+
1991 03 25	809	1.4+	1.1+	1993 12 09	675	0.3-	0.0	1997 10 31	426	0.3+	0.3+
1991 03 25	809	1.5+	1.1+	1993 12 09	675	0.8+	0.0	1997 10 31	426	0.3+	0.3+
1991 03 27	809	0.5-	0.4-	1995 02 02	691	1.4-	0.7-	1997 11 01	426	0.7+	0.0
1991 03 27	809	0.4-	0.4-	1995 02 02	691	1.2-	0.7-	1997 11 01	426	0.1-	0.1+
1991 03 27	809	0.0	0.8-	1995 02 02	691	1.2-	0.4-	1997 11 01	426	0.3+	0.1+
1991 04 19	675	0.2-	0.7-	1997 09 22	966	0.9-	0.3-				
1991 04 19	675	0.5+	0.3-	1997 09 23	966	1.2-	0.6+				

(8026)* 1991 JA₁ = 1989 UF₂

Discovered 1991 May 8 by E. F. Helin at Palomar.

Id. D. W. E. Green (*MPC* 18638)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Green			
<i>M</i>	44.89077	(2000.0)	<i>Q</i>
<i>n</i>	0.36902303	ω 145.47104	+0.97752079
<i>a</i>	1.9250133	Ω 217.82733	+0.00053062
<i>e</i>	0.0749357	<i>i</i> 19.93166	+0.21083837
<i>P</i>	2.67	<i>H</i> 14.7	<i>G</i> 0.15
			<i>U</i> 2

Residuals in seconds of arc

1989 10 27	675	0.8-	0.3-	1994 09 01	675	2.0+	0.8-	1997 09 12	608	0.9-	0.4+
1989 10 27	675	0.3-	1.0+	1994 09 01	675	1.6+	0.2+	1997 09 12	608	0.8-	0.4+
1989 10 29	675	1.0+	0.9-	1996 02 25	424	1.2+	0.8+	1997 10 29	566	0.6-	0.4-
1989 10 29	675	0.4+	1.3-	1996 02 25	424	0.1+	0.4+	1997 10 29	566	0.8-	0.5-
1991 05 08	675	0.2+	1.6-	1996 02 25	424	0.3+	0.9-	1997 10 29	566	0.8-	0.4-
1991 05 08	675	1.9-	1.4+	1997 08 14	608	0.5-	0.9+	1997 11 03	704	0.6+	0.4-
1991 05 10	675	0.2-	0.1+	1997 08 14	608	0.6+	1.0+	1997 11 03	704	0.9+	0.5+
1991 05 10	675	0.9-	0.9-	1997 08 15	608	0.4-	0.9+	1997 11 03	704	0.3+	0.6-
1991 06 15	675	(2.1+	0.6-)	1997 08 15	608	0.5-	0.9+	1997 11 03	704	0.3+	0.0
1991 06 15	675	0.5+	0.4-	1997 09 05	608	0.0	0.8+	1997 11 03	704	0.7+	0.1-

(8027)* 1991 PB₁₂ = 1974 SG₂ = 1988 AN

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

Id. G. V. Williams (*MPC* 20822)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams			
<i>M</i>	82.79228	(2000.0)	<i>Q</i>
<i>n</i>	0.17314618	ω 26.89187	+0.22740957
<i>a</i>	3.1880670	Ω 256.48467	-0.91575171
<i>e</i>	0.1667531	<i>i</i> 7.67514	-0.33118530
<i>P</i>	5.69	<i>H</i> 12.1	<i>G</i> 0.15
			<i>U</i> 1

Residuals in seconds of arc

1974 09 20	095	(0.9+	5.2+)	1991 09 04	095	(2.3-	0.5-)	1997 09 20	557	0.7-	0.1-
1974 09 22	095	2.2-	1.4+	1991 09 10	675	0.6+	0.5-	1997 09 20	557	0.2-	0.5-
1988 01 11	033	0.3+	0.1+	1991 09 10	675	0.6+	0.3-	1997 09 21	557	0.5-	0.5-
1988 01 11	033	0.4+	0.0	1992 11 28	675	0.6+	0.6-	1997 09 21	557	0.3-	0.6-
1991 08 07	675	1.8+	0.5-	1992 11 28	675	0.1-	0.9-	1997 10 28	684	0.3-	0.1+
1991 08 07	675	1.6+	0.4-	1996 07 18	801	0.4-	0.2-	1997 10 28	684	0.2-	0.1+
1991 08 10	675	0.5+	0.4+	1996 07 18	801	0.1-	0.3-	1997 10 29	684	0.5-	0.3+
1991 08 10	675	0.7+	0.2+	1996 07 18	689	0.5-	0.3+	1997 10 29	684	0.3-	0.3+
1991 09 04	095	0.1-	1.2+	1997 09 20	557	0.4-	0.2-	1997 10 29	684	0.3-	0.2+

(8028)* 1991 QE = 1981 UY₂₀ = 1981 WO₇ = 1986 TS₁

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

Id. B. G. Marsden (*MPC* 19033)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	36.99909	(2000.0)	P	Q
<i>n</i>	0.18001839	ω	310.03461	+0.86051055 +0.48702338
<i>a</i>	3.1064054	Ω	22.11715	-0.25425306 +0.66476556
<i>e</i>	0.2195253	<i>i</i>	23.38423	-0.44144873 +0.56647593
<i>P</i>	5.48	<i>H</i>	12.3	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1981 10 22	675	(4.3+ 1.9-)	1991 09 27	413	0.6- 1.2-	1997 10 30	704	1.8- 0.4-
1981 10 22	675	(5.6+ 1.8-)	1992 12 22	801	0.1- 0.8-	1997 10 30	704	1.3- 0.4+
1981 10 23	675	(5.7+ 1.5-)	1992 12 22	801	0.0 0.7-	1997 10 30	704	1.3- 0.2+
1981 10 23	675	(7.2+ 1.3-)	1992 12 25	801	0.0 0.5-	1997 10 30	704	0.5- 0.4-
1981 11 25	095	1.4+ 0.1-	1992 12 25	801	0.2+ 0.3+	1997 10 30	704	0.7- 0.6-
1986 10 06	688	0.8+ 0.2-	1997 09 30	566	0.5+ 0.1+	1997 10 30	704	0.6- 0.1+
1986 10 07	688	(3.3- 0.4-)	1997 09 30	566	0.7+ 0.5+	1997 10 30	704	0.8- 0.3-
1986 10 07	688	0.7- 1.1-	1997 09 30	566	0.6+ 0.8+	1997 10 30	704	1.0- 0.0
1991 08 30	413	1.2+ 0.5+	1997 09 30	900	0.7+ 0.3+	1997 10 30	704	0.9- 0.3-
1991 08 30	413	0.1- 1.8+	1997 09 30	900	0.7+ 0.4+	1997 10 31	566	1.0+ 0.2+
1991 09 01	413	0.8+ 1.0-	1997 10 07	367	1.0+ 0.2-	1997 10 31	566	1.2+ 0.9+
1991 09 06	413	0.2- 0.3-	1997 10 07	367	0.7+ 0.1+	1997 10 31	566	1.1+ 0.6+
1991 09 13	413	0.9- 1.4-	1997 10 30	704	1.2- 0.1+			

(8029)* 1991 RR₃₀ = 1964 VP₂ = 1975 TP₄ = 1975 VW₆ = 1977 CS₂
 = 1977 EH = 1986 TF₆ = 1994 CO₁₅

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

Id. G. V. Williams (*MPC* 23782)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	349.72913	(2000.0)	P	Q
<i>n</i>	0.17657095	ω	15.42423	+0.76198877 -0.64577123
<i>a</i>	3.1467087	Ω	25.00160	+0.58135080 +0.64912760
<i>e</i>	0.1308570	<i>i</i>	6.58997	+0.28531449 +0.40201104
<i>P</i>	5.58	<i>H</i>	12.0	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1964 11 12	330	(17.0- 5.2-)	1991 09 15	675	0.1+ 0.2-	1997 09 30	566	0.4- 0.1-
1975 10 14	095	0.5- 0.8-	1991 09 15	675	0.3+ 0.1+	1997 09 30	566	1.1- 0.9+
1975 11 06	095	1.0- 1.5-	1991 09 16	675	(4.2+ 4.3-)	1997 10 25	124	0.6- 0.3+
1977 02 11	675	1.3- 1.0-	1991 09 16	675	(2.9- 0.5-)	1997 10 25	124	0.1- 0.4-
1977 02 12	675	0.3- 1.3-	1994 02 08	809	(4.5+ 1.9+)	1997 10 25	124	0.2+ 0.9-
1977 03 09	095	0.3+ 0.6-	1994 02 08	809	(3.8+ 1.0+)	1997 10 26	124	0.4- 1.2+
1977 03 13	095	0.6+ 0.9+	1994 02 08	809	(3.7+ 1.7+)	1997 10 26	124	0.1- 0.2+
1986 10 03	095	2.4+ 0.4-	1994 02 10	809	1.1+ 0.6+	1997 10 26	124	0.4+ 0.6-
1986 10 08	095	2.2+ 1.8+	1994 02 10	809	0.6+ 0.9+	1997 10 30	704	0.8+ 0.3+
1986 10 10	046	(6.3- 0.7-)	1994 02 10	809	0.4- 0.7+	1997 10 30	704	0.2+ 0.3+
1986 10 10	046	(7.9- 0.2-)	1994 02 13	809	0.3+ 0.1+	1997 10 30	704	0.1- 1.0+
1991 08 06	675	0.3+ 0.5+	1994 02 13	809	0.2- 0.2+	1997 10 30	704	0.4- 0.1-
1991 08 06	675	0.5+ 0.3+	1994 02 13	809	0.4- 0.5+	1997 10 30	704	1.9- 0.6+
1991 09 07	399	1.3- 1.1-	1996 06 19	689	0.3+ 0.1+			
1991 09 07	399	0.8+ 1.0-	1997 09 30	566	0.9- 0.2-			

(8030)* 1991 SK = 1980 TU₁₂ = 1986 UF₄ = 1992 WW₃

Discovered 1991 Sept. 29 by R. H. McNaught at Siding Spring.

Id. S. Nakano (*MPC* 21266)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	37.37677	(2000.0)	P	Q
<i>n</i>	0.17016245	ω	327.35559	+0.93084849 +0.36456330
<i>a</i>	3.2252266	Ω	11.34495	-0.30235572 +0.80655871
<i>e</i>	0.0804614	<i>i</i>	7.24051	-0.20518799 +0.46535647
<i>P</i>	5.79	<i>H</i>	11.8	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1980 10 10	095	(5.0- 1.3+)	1991 09 17	675	0.6+ 0.7-	1997 09 03	557	0.0 0.0
1986 10 31	675	0.2+ 0.7-	1991 09 17	675	0.0 0.9-	1997 09 03	557	0.0 0.1-
1986 10 31	675	0.4+ 1.5-	1991 09 29	413	0.7+ 0.4+	1997 10 30	704	1.4+ 0.2-

1986 11 05	675	(25.7- 0.8+)	1991 09 30	413	0.1- 0.1-	1997 10 30	704	1.3+ 0.2-
1986 11 05	675	(25.7- 0.6+)	1991 09 30	095	1.6+ 1.0-	1997 10 30	704	0.2+ 0.7-
1991 09 09	095	0.4- 1.5-	1991 09 30	095	1.8+ 1.0-	1997 10 30	704	0.9+ 0.3+
1991 09 09	095	1.5- 0.8+	1992 11 24	896	(7.0- 1.4-)	1997 10 30	704	0.5- 0.5-
1991 09 11	675	0.4- 1.7+	1992 11 24	896	(6.5- 1.0+)	1997 10 30	566	0.0 0.5+
1991 09 11	675	0.7- 0.3+	1992 11 26	896	(4.9- 0.7-)	1997 10 30	566	0.1+ 0.4+
1991 09 15	675	0.8+ 0.4-	1992 11 26	896	(4.1- 0.5+)	1997 10 30	566	0.3- 0.5+
1991 09 15	675	0.7+ 0.4-	1995 03 28	801	0.2- 0.7-	1997 10 30	628	1.0- 0.5+
1991 09 15	095	0.1- 1.0+	1995 03 28	801	0.2- 0.7-	1997 10 30	628	0.8- 0.5+
1991 09 15	095	0.7- 0.2-	1995 04 01	801	0.7- 0.4-	1997 10 30	628	0.8- 0.5+
1991 09 16	675	0.2- 0.9-	1995 04 01	801	0.5- 1.0-	1997 10 30	628	0.9- 0.2+
1991 09 16	675	0.7- 0.9-	1997 09 02	557	0.1- 0.0			
1991 09 17	675	0.3+ 1.4+	1997 09 02	557	0.2- 0.3-			

(8031)* 1992 ER = 1976 SH = 1978 CE = 1978 ES₄

Discovered 1992 Mar. 7 by S. Ueda and H. Kaneda at Kushiro.

Id. H. Kaneda (*MPC* 20035)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	284.70719	(2000.0)	P	Q
<i>n</i>	0.28390332	ω	116.75049	-0.54627580 -0.83747421
<i>a</i>	2.2927449	Ω	6.42168	+0.71370563 -0.47465936
<i>e</i>	0.0626521	<i>i</i>	7.61552	+0.43841422 -0.27080516
<i>P</i>	3.47	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1954 04 02	675	1.1+ 0.3-	1992 03 07	399	0.2+ 0.7-	1997 10 22	104	0.7- 0.3+
1954 04 02	675	0.1+ 0.2+	1992 03 07	399	(0.8+ 2.8-)	1997 10 22	104	0.9- 0.1+
1954 05 23	675	0.4+ 0.4-	1992 03 08	399	(0.6- 2.8-)	1997 10 22	104	0.3- 0.4+
1954 05 23	675	0.0 0.5+	1992 03 08	399	1.8- 1.9-	1997 10 28	566	1.5+ 1.1+
1976 09 20	049	0.7- 2.0-	1992 03 24	399	0.3+ 1.5+	1997 10 28	566	0.9+ 0.4+
1976 09 20	049	(1.8+ 3.1-)	1992 03 24	399	0.1+ 0.1-	1997 10 28	566	0.8+ 0.7+
1976 09 20	049	0.6+ 1.5-	1992 03 26	399	0.3- 0.4+	1997 10 30	704	0.5+ 0.1+
1976 09 20	049	0.2- 1.3-	1992 03 26	399	0.3- 0.1+	1997 10 30	704	0.5+ 0.3+
1978 02 10	801	(4.5+ 0.5+)	1993 08 13	675	0.4+ 0.3-	1997 10 30	704	0.1+ 0.3+
1978 03 06	095	(3.1+ 0.4-)	1993 08 13	675	0.5+ 0.2-	1997 10 30	704	0.1+ 0.8+
1991 12 02	691	1.1- 0.6-	1997 08 04	910	1.6- 0.5-	1997 10 30	704	0.6+ 0.1+
1991 12 02	691	0.6- 0.6-	1997 08 05	910	1.8- 0.8-			
1991 12 02	691	0.1- 0.8-	1997 08 05	910	0.4- 0.4-			

(8032)* 1992 ES₁ = 1970 GX₁ = 1981 FK₁

Discovered 1992 Mar. 8 by S. Ueda and H. Kaneda at Kushiro.

Id. H. Kaneda (*MPC* 20154)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	146.33319	(2000.0)	P	Q
<i>n</i>	0.26756351	ω	216.05427	-0.31162451 +0.94554269
<i>a</i>	2.3851633	Ω	36.05656	-0.83012317 -0.22276102
<i>e</i>	0.1776065	<i>i</i>	9.19147	-0.46236965 -0.23733216
<i>P</i>	3.68	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1970 04 12	805	0.1- 0.3-	1993 09 22	675	0.4+ 0.6-	1997 10 29	704	1.2+ 1.1-
1970 04 12	805	0.8- 0.1-	1993 10 13	675	0.1+ 0.5+	1997 10 29	704	0.2+ 0.7-
1970 04 12	805	0.5- 0.0	1993 10 13	675	0.0 2.1-	1997 10 30	704	0.5+ 0.6-
1981 03 29	095	1.2+ 1.4-	1997 09 01	910	0.5- 0.4-	1997 10 30	704	1.2+ 1.4-
1989 08 01	675	0.8+ 0.5-	1997 09 01	910	0.2- 0.3-	1997 10 30	704	0.1+ 1.7-
1989 08 01	675	1.0+ 0.7-	1997 09 01	910	0.5- 0.4-	1997 10 30	704	0.4+ 1.4-
1992 03 08	399	0.2- 0.1+	1997 09 09	910	0.4- 0.0	1997 10 30	704	0.4+ 0.4-
1992 03 08	399	0.3- 0.4+	1997 09 09	910	0.5- 0.2-	1997 11 03	704	0.9+ 1.0+
1992 03 26	399	(3.2- 0.2-)	1997 09 09	910	0.4- 0.1-	1997 11 03	704	0.8+ 1.4+
1992 03 26	399	(4.6- 0.4-)	1997 10 22	704	0.6- 0.8+	1997 11 03	704	1.0+ 1.6+
1992 04 03	399	0.9- 1.3-	1997 10 22	704	0.3+ 1.5+	1997 11 03	704	1.1+ 1.2+
1992 04 03	399	1.7- 2.1-	1997 10 22	704	0.3+ 1.5-	1997 11 03	704	0.1+ 2.1+
1992 04 07	399	1.1- 0.9-	1997 10 22	704	0.2+ 0.4-	1997 11 03	691	1.4- 0.4+
1992 04 07	399	0.2- 1.9-	1997 10 22	704	0.9- 0.8+	1997 11 03	691	1.5- 0.6+
1993 09 18	675	0.2+ 1.4-	1997 10 29	704	0.3- 1.9-	1997 11 03	691	1.5- 0.2+

1993 09 18 675 0.0 0.8- 1997 10 29 704 0.3+ 1.1-
 1993 09 22 675 0.8+ 1.0- 1997 10 29 704 1.2+ 1.0-

(8033)* 1992 FY₁ = 1976 YA₇ = 1978 JC₂ = 1985 HL₁ = 1990 TV₁₄

Discovered 1992 Mar. 26 by S. Ueda and H. Kaneda at Kushiro.

Id. K. Ichikawa (MPC 20343)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	255.42177		(2000.0)	P	Q
<i>n</i>	0.27476178	ω	84.16896	-0.68485512	-0.71925609
<i>a</i>	2.3433213	Ω	49.76257	+0.59324825	-0.64344023
<i>e</i>	0.0736312	<i>i</i>	8.80172	+0.42311934	-0.26202165
<i>P</i>	3.59	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1976 12 20	095	0.5-	0.6+	1992 04 07	399	1.0-	0.1-	1996 05 11	399	1.0+	1.1-
1978 05 06	095	1.3-	0.2+	1992 04 07	399	1.4-	0.5+	1997 08 31	557	1.2-	0.4-
1985 04 23	688	2.1+	0.0	1993 08 13	675	0.5+	1.0+	1997 08 31	557	1.3-	0.6-
1985 04 23	688	1.9+	0.1-	1995 01 10	801	1.1+	0.4+	1997 09 02	557	0.8-	0.6-
1990 10 12	413	0.9-	0.5-	1995 01 10	801	1.4+	0.8-	1997 09 02	557	1.0-	0.4-
1990 10 12	413	0.3+	0.2+	1995 01 30	801	0.5-	0.4+	1997 09 30	566	1.3+	0.2-
1992 03 26	399	0.1+	0.3+	1995 01 30	801	0.0	0.4+	1997 09 30	566	1.1+	0.0
1992 03 26	399	1.2-	0.3+	1995 02 03	801	0.1-	0.0	1997 09 30	566	1.5+	0.0
1992 04 03	399	0.7-	1.0-	1995 02 03	801	0.5+	0.3-				
1992 04 03	399	0.2+	0.2+	1996 05 11	399	0.9-	0.3-				

(8034)* 1992 LR

Discovered 1992 June 3 by C. S. Shoemaker at Palomar.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	64.29828		(2000.0)	P	Q
<i>n</i>	0.39801659	ω	67.76551	+0.51417670	+0.85721803
<i>a</i>	1.8303547	Ω	233.20782	-0.79933956	+0.46698684
<i>e</i>	0.4091107	<i>i</i>	2.02355	-0.31093181	+0.21702661
<i>P</i>	2.48	<i>H</i>	17.9	<i>G</i>	0.15
				<i>U</i>	0

Residuals in seconds of arc

1992 05 21	413	0.4+	0.0	1992 07 30	801	0.7-	0.8-	1997 07 31	046	0.4+	0.2-
1992 05 21	413	0.2-	0.5-	1992 07 30	595	1.3+	0.3+	1997 07 31	046	0.6+	0.3-
1992 05 27	675	(0.8-	3.8-)	1992 07 30	595	1.3+	1.3+	1997 07 31	046	0.1-	0.1+
1992 05 27	675	(5.2-	1.7-)	1992 07 31	323	0.4-	0.2+	1997 08 14	608	0.9+	0.2-
1992 05 30	675	0.9+	0.6+	1992 08 01	104	(4.1-	1.1-)	1997 08 14	608	0.5+	0.1-
1992 05 30	675	0.6-	0.6-	1992 08 01	104	2.0+	0.7+	1997 08 15	608	0.2+	0.2+
1992 06 02	402	1.3+	0.1-	1992 08 02	675	0.6+	1.8-	1997 08 15	608	0.2+	0.2+
1992 06 02	402	0.6+	0.1-	1992 08 02	104	(3.0+	0.9+)	1997 08 16	118	0.0	0.5-
1992 06 03	675	0.6-	0.8+	1992 08 02	104	1.9-	0.2+	1997 08 16	118	0.1+	0.4-
1992 06 03	675	0.5-	0.7+	1992 08 03	801	0.6-	0.2-	1997 08 16	118	0.1+	0.5-
1992 06 05	675	0.5-	0.0	1992 08 03	801	0.6-	0.3-	1997 08 17	118	0.3+	0.2-
1992 06 05	675	1.2-	0.2+	1992 08 03	675	(1.0+	3.6-)	1997 08 17	118	0.1-	0.3-
1992 06 05	413	0.5-	0.1+	1992 08 03	675	0.1-	1.8-	1997 08 17	118	0.1+	0.1-
1992 06 05	413	(0.5-	2.3-)	1992 08 05	413	0.2+	0.1-	1997 08 24	402	0.3+	0.1-
1992 06 06	675	0.8-	0.4-	1992 08 05	413	0.2-	0.1-	1997 08 24	402	0.0	0.0
1992 06 06	675	0.5-	0.2-	1992 08 17	323	0.3+	0.4+	1997 08 24	402	0.1-	0.2+
1992 06 08	675	0.4-	0.4-	1992 08 17	595	(3.2-	0.7+)	1997 08 25	402	0.1+	0.1-
1992 06 08	675	0.3+	0.0	1992 08 17	595	(2.1+	0.7+)	1997 08 25	402	0.1-	0.2+
1992 06 23	474	1.0+	0.6-	1992 08 18	323	0.3+	0.0	1997 08 25	402	0.0	0.1-
1992 06 23	474	(2.1+	0.9-)	1992 08 18	595	0.4+	0.5-	1997 08 25	118	0.1-	0.1+
1992 06 23	413	0.8+	0.6-	1992 08 18	595	0.1+	1.3+	1997 08 25	118	0.3+	0.2-
1992 06 23	413	0.2-	1.0-	1992 08 19	595	0.8-	1.2-	1997 08 27	118	0.4-	0.1-
1992 06 23	589	0.7+	1.3+	1992 08 19	595	0.1-	0.5-	1997 08 27	118	0.2-	0.1-
1992 06 23	589	1.5+	2.0+	1992 08 20	413	0.0	0.1-	1997 08 31	360	0.2-	0.1-
1992 06 23	589	1.2+	1.6+	1992 08 20	413	0.2-	0.1-	1997 08 31	360	0.2-	0.0
1992 06 23	589	0.9+	0.5+	1992 08 20	104	(1.6+	2.8+)	1997 08 31	360	0.1-	0.2-
1992 06 23	589	0.7+	1.0+	1992 08 20	104	(2.9+	2.3+)	1997 09 02	608	0.4-	0.2+
1992 06 24	657	0.1-	0.9-	1992 08 21	323	1.4+	0.5-	1997 09 02	608	0.4-	0.1+
1992 06 24	657	0.2+	0.0	1992 08 21	595	1.7+	0.0	1997 09 03	608	0.4-	0.1+
1992 06 24	474	0.1+	1.3+	1992 08 21	595	1.3-	0.6+	1997 09 03	608	0.6-	0.0

1992 06 24	474	0.7+	1.3+	1992 08 22	413	0.0	0.4-	1997 09 03	608	0.4-	0.1+
1992 06 25	675	0.0	0.9-	1992 08 22	413	0.1+	0.4-	1997 09 03	608	0.7-	0.2+
1992 06 25	657	0.4+	0.4-	1992 08 24	801	0.3+	0.2-	1997 09 04	608	1.0-	0.1-
1992 06 25	657	0.9+	0.1-	1992 08 24	801	0.3+	0.2-	1997 09 10	610	(1.0+	2.8+)
1992 06 25	657	0.5+	0.3-	1992 08 24	675	0.8+	1.1-	1997 09 10	610	(0.4+	2.2+)
1992 06 25	657	0.8+	0.4-	1992 08 24	675	0.2+	0.8-	1997 09 10	610	0.2-	1.6+
1992 06 25	675	0.3-	0.1-	1992 08 24	587	0.8-	0.5-	1997 09 10	360	0.1+	0.0
1992 06 25	589	(6.9+	11.6-)	1992 08 24	587	0.3-	0.4+	1997 09 10	360	0.3+	0.0
1992 06 25	589	(8.1+	2.2-)	1992 08 24	587	0.1+	1.2+	1997 09 10	360	0.5+	0.1+
1992 06 25	589	(4.4+	1.5-)	1992 08 24	587	0.1+	0.2-	1997 09 11	608	0.1-	0.3+
1992 06 26	675	0.4-	0.2+	1992 08 26	801	0.4+	0.2-	1997 09 12	608	0.2-	0.2+
1992 06 26	675	1.2-	0.3+	1992 08 26	801	0.4+	0.1-	1997 09 18	608	0.9-	0.5+
1992 06 26	657	0.3+	0.3-	1992 08 27	046	0.7+	1.0-	1997 09 18	608	0.8-	0.5+
1992 06 26	657	0.5+	0.5-	1992 08 27	046	(2.1+	0.7+)	1997 09 24	402	0.2+	0.2+
1992 06 26	657	0.6+	0.3-	1992 08 28	323	0.1+	1.0-	1997 09 24	402	0.0	0.1+
1992 06 26	589	0.2+	0.2-	1992 08 30	104	0.7-	0.4+	1997 09 24	402	0.3+	0.0
1992 06 26	589	0.1+	0.2-	1992 08 30	104	1.1+	0.7+	1997 09 25	557	0.3+	0.1+
1992 06 26	589	0.8-	0.8-	1992 09 05	413	(2.2-	0.4+)	1997 09 25	557	0.4+	0.1+
1992 06 26	589	0.0	0.0	1992 09 05	413	(2.0-	0.5+)	1997 09 26	557	0.7+	0.2+
1992 06 27	675	1.2-	1.0-	1992 09 06	413	1.0+	0.3-	1997 09 26	557	0.6+	0.2+
1992 06 27	675	0.7-	0.5-	1992 09 06	413	0.0	0.1-	1997 09 27	046	0.4+	0.1+
1992 06 27	589	0.4+	0.7-	1992 09 06	413	0.0	0.1-	1997 09 27	046	0.8+	0.2+
1992 06 27	589	0.6+	1.2-	1992 09 06	413	0.0	0.1-	1997 09 27	046	0.8+	0.2+
1992 06 27	589	0.0	0.0	1992 09 06	413	0.1-	0.6-	1997 09 28	402	0.1-	0.2+
1992 06 27	589	0.6+	0.7-	1992 09 06	413	0.2-	0.6-	1997 09 28	402	0.2-	0.1+
1992 06 27	589	0.2+	0.9-	1992 09 06	413	0.1+	0.3+	1997 09 28	402	0.1-	0.1+
1992 06 28	675	0.3+	1.0-	1992 09 06	413	0.0	0.4+	1997 09 28	557	0.2-	0.4+
1992 06 28	675	(2.5+	0.7+)	1992 09 06	413	0.1+	0.4+	1997 09 28	557	0.1-	0.2+
1992 06 29	675	0.7+	0.2-	1992 09 06	413	0.1-	0.3+	1997 09 29	557	0.1-	0.4+
1992 06 29	675	0.8-	1.1-	1992 09 24	801	0.2-	0.0	1997 09 29	557	0.2-	0.4+
1992 06 29	589	0.5-	0.2-	1992 09 24	801	0.4-	0.0	1997 09 29	402	0.4+	0.7+
1992 06 29	589	0.7-	0.2-	1992 09 27	670	0.1+	0.1-	1997 09 29	402	0.5-	0.6+
1992 06 29	589	0.6-	0.4-	1992 09 27	670	0.7+	0.5-	1997 09 29	402	0.5-	0.8+
1992 06 29	589	0.4-	0.3-	1992 09 27	670	0.3+	1.6-	1997 09 30	360	0.6-	0.9+
1992 06 29	589	0.5-	0.3-	1992 09 30	801	0.1+	0.5+	1997 09 30	360	0.5-	0.7+
1992 07 03	657	0.7-	1.1+	1992 09 30	801	0.1+	0.4+	1997 09 30	360	0.8-	1.1+
1992 07 03	657	0.9-	1.2+	1992 10 04	675	0.6-	1.1-	1997 10 07	557	0.1-	0.2+
1992 07 03	657	0.8-	0.9+	1992 10 04	675	1.0+	1.0-	1997 10 07	557	0.2-	0.4+
1992 07 03	657	0.2-	1.1+	1992 10 13	413	0.3+	1.0+	1997 10 07	557	0.2-	0.4+
1992 07 03	657	0.4-	1.1+	1992 10 13	413	0.2+	0.4+	1997 10 07	557	0.4+	0.4+
1992 07 03	657	0.1-	0.9+	1997 03 15	691	0.3+	0.7-	1997 10 08	608	0.1-	1.1+
1992 07 03	413	0.2+	0.3+	1997 03 15	691	0.4+	0.7-	1997 10 08	608	0.5-	1.3+
1992 07 03	413	0.2+	0.3+	1997 03 15	691	0.8+	0.3-	1997 10 09	608	0.7-	0.2+
1992 07 03	589	(1.1+	3.8+)	1997 05 15	696	0.1+	0.1+	1997 10 09	608	0.5-	0.6+
1992 07 03	589	(2.0+	3.4+)	1997 05 15	696	0.3+	0.1+	1997 10 18	658	0.2-	0.7+
1992 07 03	589	(1.9+	2.5+)	1997 05 15	696	0.3+	0.1+	1997 10 18	658	0.1+	0.2+
1992 07 03	589	0.5+	2.0+	1997 05 17	046	0.4-	0.7+</				

1997 NOV. 14

1992 07 26	658	0.8-	0.2-	1997 07 19	385	0.5+	0.0	1997 11 02	711	0.6-	0.1+
1992 07 27	323	1.8+	0.3-	1997 07 19	385	0.7+	0.9+	1997 11 03	711	0.4-	0.4+
1992 07 28	801	0.6-	0.3-	1997 07 19	385	1.0+	0.2-	1997 11 03	711	0.4+	0.6+
1992 07 28	801	0.4-	0.5-	1997 07 29	658	1.0-	0.1-	1997 11 05	381	1.2-	0.1-
1992 07 29	104	0.6-	0.2+	1997 07 29	658	0.7-	0.1-	1997 11 05	381	0.6-	0.1-
1992 07 29	104	0.2+	0.6+	1997 07 29	658	0.4-	0.3+	1997 11 05	381	0.1-	0.2-
1992 07 30	801	0.6-	0.8-	1997 07 31	046	0.4+	0.2-				

(8035)* 1992 TB

Discovered 1992 Oct. 2 by Spacewatch at Kitt Peak.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5				Williams			
<i>M</i>	280.04197			P		Q	
<i>n</i>	0.63411407	ω	5.91335	-0.98071525	+0.18965812		
<i>a</i>	1.3418103	Ω	185.71121	-0.19305605	-0.97769108		
<i>e</i>	0.4623525	<i>i</i>	28.31081	-0.03044586	+0.09027709		
<i>P</i>	1.55	<i>H</i>	17.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1992 10 02	691	0.9-	0.9-	1995 01 13	413	1.6+	0.2-	1995 08 28	711	1.2+	0.1-
1992 10 02	691	1.3-	1.2-	1995 02 01	413	0.5+	0.5+	1995 08 28	711	0.9+	0.6-
1992 10 02	691	1.3-	1.2-	1995 02 01	413	0.5+	0.6+	1995 08 29	587	0.2+	0.2-
1992 10 03	691	0.3-	0.4-	1995 02 01	413	0.4+	0.6+	1995 08 29	587	0.6-	0.8+
1992 10 03	691	0.2-	0.8-	1995 06 24	658	0.4+	0.2-	1995 08 29	587	0.5-	1.0+
1992 10 03	691	0.2+	0.9-	1995 06 24	658	0.3+	0.2-	1995 08 30	587	0.3+	0.2-
1992 10 04	691	0.7-	0.1-	1995 06 24	658	0.5+	0.1+	1995 08 30	587	0.6+	0.8+
1992 10 04	691	0.5-	1.0+	1995 06 25	658	0.2-	0.3+	1995 08 30	587	0.1-	0.1+
1992 10 04	691	1.3-	0.4-	1995 06 25	658	0.1-	0.2+	1995 09 15	658	0.3+	0.6+
1992 10 04	691	1.0-	0.2+	1995 06 25	658	0.1+	0.0	1995 09 15	658	0.4+	0.5+
1992 10 04	691	0.5-	0.6+	1995 07 07	608	1.2+	0.4+	1995 09 15	658	0.6+	0.5+
1992 10 04	691	0.6-	0.7+	1995 07 07	608	1.6+	0.7+	1995 10 17	608	0.7+	0.5+
1992 10 18	691	1.0-	0.9-	1995 07 20	413	0.8+	0.7+	1995 10 17	608	0.5+	0.1-
1992 10 18	691	0.6-	0.8-	1995 07 20	413	1.2+	0.6+	1995 10 18	608	0.6+	0.0
1992 10 18	691	0.5-	1.0-	1995 07 27	608	0.6+	0.2-	1995 10 18	608	1.3+	0.2+
1992 12 17	691	0.2+	0.8+	1995 07 27	608	0.6+	0.3-	1995 10 19	413	0.3+	0.0
1992 12 17	691	1.5-	0.6+	1995 07 28	608	0.6+	0.1-	1995 10 19	413	0.3+	0.0
1992 12 17	691	1.1-	1.0+	1995 07 28	608	0.8+	0.1-	1995 10 26	691	1.1-	0.4+
1992 12 17	691	(0.6-	2.7+)	1995 08 02	608	0.8+	0.3+	1995 10 26	691	0.5-	0.1+
1994 09 28	691	1.9-	0.1-	1995 08 02	608	0.0	0.2+	1995 10 26	691	0.9-	0.1+
1994 09 28	691	1.8-	0.7-	1995 08 06	104	0.7+	0.8+	1995 11 16	691	2.0-	0.7-
1994 09 29	691	(2.6-	0.4+)	1995 08 06	104	0.7+	0.7+	1995 11 16	691	1.0-	0.5-
1994 09 29	691	1.4-	0.1+	1995 08 06	104	0.9+	1.0+	1995 11 16	691	0.9-	0.5-
1994 09 29	691	1.8-	0.2+	1995 08 06	104	0.3+	0.1+	1997 10 05	557	1.1-	0.2-
1994 11 09	608	1.0+	1.0+	1995 08 16	360	0.8+	0.6+	1997 10 05	557	0.7-	0.7-
1994 11 09	608	1.1+	0.4+	1995 08 16	360	0.7+	0.2+	1997 10 06	046	0.9-	0.4-
1994 11 11	413	0.4+	0.8+	1995 08 16	360	0.7+	0.3+	1997 10 06	046	0.6-	0.3-
1994 11 11	413	0.2+	1.1+	1995 08 20	658	0.4-	1.0-	1997 10 06	046	0.1-	0.4-
1994 12 18	413	0.9+	0.2-	1995 08 20	658	(0.7-	2.1-)	1997 10 07	046	0.7-	0.1-
1994 12 18	413	1.1+	0.0	1995 08 20	658	0.3-	1.2-	1997 10 07	046	1.1-	0.2+
1994 12 19	413	0.8+	0.1+	1995 08 21	658	0.4-	0.1+	1997 10 07	046	0.9-	0.5-
1994 12 19	413	0.9+	0.1+	1995 08 21	658	0.0	0.2+	1997 10 09	608	0.8-	0.1-
1994 12 20	413	0.9+	0.2+	1995 08 21	658	0.7-	0.1-	1997 10 09	608	0.9-	0.7+
1994 12 20	413	0.9+	0.0	1995 08 26	711	1.0+	0.6-	1997 10 23	608	0.4-	0.3-
1995 01 12	413	1.4+	0.2-	1995 08 26	711	1.0+	0.5-	1997 10 23	608	0.4+	1.1+
1995 01 12	413	1.4+	0.4-	1995 08 27	658	0.6-	0.1-	1997 11 06	381	0.8-	0.4+
1995 01 13	413	1.4+	0.4-	1995 08 27	658	0.0	0.2+	1997 11 06	381	0.7-	0.2+
1995 01 13	413	1.2+	0.2-	1995 08 27	658	0.1+	0.1+	1997 11 06	381	0.6-	0.3+

(8036)* 1992 UG₄ = 1971 SL₃ = 1987 WB₄

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

Id. S. Nakano (*MPC* 21590)

M.P.C. 30861

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 46.21905				(2000.0)				P				Q			
<i>n</i>	0.18923845	ω	270.89891	+0.88627144	+0.45127878										
<i>a</i>	3.0046677	Ω	62.28154	-0.36413862	+0.81800868										
<i>e</i>	0.1612537	<i>i</i>	6.76381	-0.28622718	+0.35666406										
<i>P</i>	5.21	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	1								

Residuals in seconds of arc

1971 09 26	805	0.2+	0.2+	1992 10 31	376	0.3+	2.0+	1997 09 26	327	0.1-	0.0
1971 09 27	805	0.1-	0.5-	1992 11 21	400	1.1+	0.0	1997 09 26	327	0.3+	0.1+
1987 11 24	688	0.0	1.4-	1992 11 21	400	0.3+	0.6+	1997 09 26	327	0.0	0.1+
1987 11 24	688	0.7+	0.3-	1994 01 14	033	0.4+	0.7-	1997 09 28	327	0.1-	0.2+
1990 04 01	675	0.6+	0.8+	1994 01 15	033	0.2+	0.1-	1997 09 28	327	0.1-	0.0
1990 04 01	675	0.8-	1.4+	1994 01 15	033	0.2-	0.0	1997 09 28	327	0.0	0.1+
1992 10 22	675	1.3-	1.4-	1996 04 19	689	1.3+	0.7+	1997 09 28	327	0.1+	0.3+
1992 10 22	675	0.3-	0.6-	1997 09 22	127	0.3+	1.4-	1997 11 03	758	0.7-	1.3+
1992 10 26	400	0.7+	0.5+	1997 09 22	127	0.5+	1.5-	1997 11 03	758	1.4+	2.2+
1992 10 28	400	1.4-	1.4+	1997 09 24	127	0.4-	1.4-	1997 11 07	758	0.9-	0.3+
1992 10 28	400	0.3-	1.8+	1997 09 24	127	0.6-	1.2-	1997 11 08	758	(0.6-	2.9+)
1992 10 31	376	0.2-	0.2-	1997 09 26	327	0.2-	0.2-	1997 11 08	758	0.3-	0.2+

(8037)* 1993 HO₁

Discovered 1993 Apr. 20 by R. H. McNaught at Siding Spring.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 281.65978				(2000.0)				P				Q			
<i>n</i>	0.35185828	ω	105.46345	-0.61569841	-0.78698090										
<i>a</i>	1.9871205	Ω	22.68301	+0.67772992	-0.55458520										
<i>e</i>	0.4168926	<i>i</i>	5.90977	+0.40199207	-0.27036330										
<i>P</i>	2.80	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	2								

Residuals in seconds of arc

1979 03 08	413	0.8-	0.5+	1993 05 25	413	0.3-	0.2+	1996 02 29	413	0.2-	0.2+
1979 03 08	413	0.8+	0.3+	1993 05 26	413	0.2+	0.8-	1996 05 28	413	0.3-	0.5+
1993 04 19	675	0.5-	0.2-	1993 06 30	413	0.3+	0.1-	1996 05 28	413	0.6-	0.9+
1993 04 19	675	(4.9-	1.1-)	1993 07 01	413	0.3+	0.2-	1996 06 09	413	0.6-	0.1+
1993 04 19	675	0.0	0.0	1993 07 01	413	0.5+	0.3-	1996 06 21	413	0.7-	0.0
1993 04 20	413	0.6-	0.2+	1993 07 30	413	0.8-	0.2-	1996 06 21	413	0.2-	0.2+
1993 04 20	413	0.0	0.4-	1993 07 30	413	0.6+	0.3+	1996 07 19	413	1.2+	0.6-
1993 04 26	675	(2.3+	0.5+)	1993 07 31	413	0.5+	1.0+	1996 07 19	413	0.3+	0.2+
1993 04 26	675	0.9+	0.4-	1993 07 31	413	(2.3-	1.2+)	1997 08 13	608	(2.2-	1.5+)
1993 04 26	413	0.5-	0.0	1994 08 15	413	0.0	0.3+	1997 08 13	608	(2.4-	1.3+)
1993 04 26	413	0.8-	0.1+	1994 08 15	413	0.2-	0.3+	1997 08 30	711	0.5+	0.6-
1993 04 29	413	0.5-	0.1-	1994 08 16	413	0.2-	0.6+	1997 08 30	711	0.1-	0.5-
1993 04 30	413	0.2+	0.1-	1994 08 16	413	0.8-	0.3+	1997 08 31	711	0.3-	0.4-
1993 05 10	413	0.0	0.2-	1994 08 30	608	0.9+	0.4-	1997 08 31	711	0.3-	0.6-
1993 05 10	413	0.1+	0.0	1994 08 30	608	0.0	0.0	1997 09 02	608	0.3-	0.4-
1993 05 10	413	0.2+	0.1-	1994 09 08	608	0.3+	0.0	1997 09 02	608	0.1-	0.0
1993 05 10	413	0.0	0.3-	1994 09 08	608	0.9+	0.0	1997 09 03	608	0.8-	0.2-
1993 05 11	413	0.4+	0.1-	1994 09 08	608	1.1+	0.7+	1997 09 03	608	0.5-	0.5-
1993 05 11	413	0.1+	0.2-	1996 01 26	413	0.4+	0.1+	1997 11 07	381	1.4+	0.3+
1993 05 11	413	0.1+	0.1-	1996 01 26	413	0.3+	0.2-	1997 11 07	381	0.2+	0.2+
1993 05 11	413	0.2+	0.1-	1996 02 29	413	0.3-	0.4+				

(8038)* 1993 JG = 1987 SV₇

Discovered 1993 May 11 by Y. Shimizu and T. Urata at the Nachi-Katsuura

Observatory.

Residuals in seconds of arc

1986 03 04	675	1.3+	1.6-	1993 05 27	385	0.0	0.8+	1996 05 15	385	0.1+	1.1+
1987 09 18	010	1.0-	1.3-	1993 05 27	385	0.6-	1.5+	1997 09 29	905	1.1-	1.0+
1987 09 18	010	0.6+	0.9-	1996 04 12	385	0.4-	0.1+	1997 09 29	905	0.7+	1.3+
1987 09 18	010	0.0	0.2+	1996 04 12	385	0.1-	0.3-	1997 10 06	905	0.2+	0.5+
1987 09 18	010	0.4+	0.5-	1996 04 12	385	0.5-	0.2-	1997 10 06	905	1.2-	1.3+
1993 05 11	905	0.6+	0.8-	1996 04 13	385	0.7-	0.2-	1997 10 20	905	0.3+	0.3-
1993 05 11	905	0.8-	1.3-	1996 04 13	385	0.9-	0.2-	1997 10 20	905	0.6+	0.2-
1993 05 20	905	0.4-	0.5-	1996 04 13	385	0.7-	0.1+	1997 10 21	886	0.3-	0.0
1993 05 20	905	1.3+	0.9-	1996 05 09	385	0.3-	0.4+	1997 10 21	886	0.4+	1.4-
1993 05 20	385	0.5-	0.4+	1996 05 09	385	1.3-	0.7+	1997 10 22	886	0.2+	0.1-
1993 05 20	385	0.8+	0.3+	1996 05 09	385	0.2+	0.3-	1997 10 22	886	1.0+	0.9-
1993 05 25	905	1.2+	0.6-	1996 05 15	385	0.6+	0.2+				
1993 05 25	905	0.7-	0.3-	1996 05 15	385	1.2+	0.5+				

(8039)* 1993 RB₁₆ = 1980 FU₂

Discovered 1993 Sept. 15 by H. Debehogne and E. W. Elst at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 25642)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	308.11940		(2000.0)	P	Q	
<i>n</i>	0.26232952	ω	102.71517	-0.38658945	-0.92220991	
<i>a</i>	2.4167846	Ω	10.04076	+0.82535359	-0.35021432	
<i>e</i>	0.1471937	<i>i</i>	2.89374	+0.41150947	-0.16394758	
<i>P</i>	3.76	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1980 03 16	809	0.2-	0.0	1993 09 22	809	1.2-	0.2+	1997 09 28	691	0.3+	0.0
1980 03 16	809	0.4+	0.5+	1993 09 22	809	0.5-	1.6-	1997 09 28	691	0.2+	0.0
1980 03 16	809	0.5-	0.3+	1993 09 22	809	1.7+	1.5-	1997 10 03	691	0.3-	0.1-
1980 03 16	809	0.0	0.0	1993 09 23	675	0.7+	0.2+	1997 10 03	691	0.3-	0.2-
1980 03 17	809	0.9+	0.1+	1993 09 23	675	1.3+	1.1+	1997 10 03	691	0.5-	0.1+
1980 03 17	809	0.5-	0.6+	1995 02 05	691	0.4-	0.3-	1997 10 10	691	1.0-	0.1+
1980 03 17	809	0.4+	0.2+	1995 02 05	691	0.3-	0.4-	1997 10 10	691	0.9-	0.1-
1980 03 17	809	0.5+	0.5+	1995 02 05	691	0.2-	0.4-	1997 10 10	691	0.9-	0.3-
1993 09 15	809	(1.3- 2.5-)		1995 02 23	691	0.6+	0.5-	1997 10 30	704	1.5+	0.1+
1993 09 15	809	(2.4- 4.1-)		1995 02 23	691	0.3+	0.2+	1997 10 30	704	1.2+	0.6+
1993 09 15	809	(2.0- 2.5-)		1995 03 31	691	0.3-	0.5-	1997 10 30	704	0.7+	0.8+
1993 09 20	691	0.8-	0.0	1995 03 31	691	0.3-	0.2-	1997 10 30	704	0.7-	0.1-
1993 09 20	691	0.0	0.9+	1995 03 31	691	0.8-	0.6-				
1993 09 20	691	0.5-	0.3-	1997 09 28	691	0.2+	0.1-				

(8040)* 1993 SY₃ = 1981 WQ₆ = 1989 UF₅

Discovered 1993 Sept. 16 by K. Endate and K. Watanabe at Kitami.

Id. K. Ichikawa (*MPC* 22693)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	350.79326		(2000.0)	P	Q	
<i>n</i>	0.24232232	ω	194.03410	+0.74448341	-0.66591670	
<i>a</i>	2.5480451	Ω	207.90239	+0.62200842	+0.71790471	
<i>e</i>	0.1717413	<i>i</i>	5.88136	+0.24259013	+0.20289844	
<i>P</i>	4.07	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1955 04 16	675	0.6-	0.5-	1995 03 03	400	1.2+	0.2+	1997 09 14	557	0.5+	0.2-
1981 11 24	095	(0.3+ 4.4+)		1995 03 03	400	0.7-	0.2+	1997 09 15	557	0.6+	0.1-
1989 10 30	807	0.1+	0.0	1995 03 04	400	0.7+	0.1+	1997 09 30	566	0.7+	0.1-
1989 11 01	807	0.0	0.2-	1995 03 04	400	0.4+	0.4+	1997 09 30	566	0.3+	0.7-
1991 02 10	675	1.0-	0.2-	1996 05 13	596	0.1-	0.9+	1997 09 30	566	0.0	0.5-
1991 02 10	675	0.1-	1.4+	1996 05 13	596	0.7+	0.7+	1997 10 29	704	0.4-	0.8-
1991 03 13	675	0.3+	1.7-	1996 05 13	596	0.4+	0.8+	1997 10 29	704	0.3-	0.2+
1991 03 13	675	1.0-	0.0	1997 09 06	750	0.0	0.7-	1997 10 29	704	1.3-	0.9+
1993 09 16	400	0.9+	0.7+	1997 09 06	750	(2.7+ 0.0)		1997 10 29	704	(0.1+ 2.8-)	
1993 09 16	400	0.5-	0.9+	1997 09 11	750	0.9+	1.0-	1997 10 29	704	(1.7- 2.9-)	
1993 09 18	400	0.2+	1.4+	1997 09 11	750	0.6-	0.1+	1997 10 29	704	1.1-	0.1+
1993 09 18	400	0.1-	0.5-	1997 09 11	627	(0.9+ 2.4+)		1997 10 29	704	1.1-	1.0+

1993 10 11	400	(1.9- 2.6-)		1997 09 11	627	1.0+	0.5+	1997 10 29	704	1.3-	0.3+
1993 10 11	400	(0.3- 2.7-)		1997 09 11	627	0.2-	0.5-	1997 10 29	704	1.7-	2.0-
1993 10 14	675	0.4+	1.2+	1997 09 12	750	0.3+	0.2-	1997 10 29	704	(0.1- 2.4-)	
1993 10 14	675	0.4+	1.4+	1997 09 12	750	1.0+	0.7-				

(8041)* 1993 VR₂ = 1959 XH = 1976 YL₄ = 1992 KS

Discovered 1993 Nov. 15 by F. Uto at Kashiwara.

Id. S. Nakano (*MPC* 22961)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	34.63339		(2000.0)	P	Q	
<i>n</i>	0.23194216	ω	104.56638	+0.97416936	+0.13080743	
<i>a</i>	2.6235112	Ω	248.18518	-0.18554261	+0.92828309	
<i>e</i>	0.1863671	<i>i</i>	11.43599	+0.12871677	+0.34810907	
<i>P</i>	4.25	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1959 12 01	024	(2.7- 4.2+)		1996 05 23	365	(0.1+ 3.0+)		1997 10 28	127	0.1+	0.3+
1976 12 18	095	(0.1- 4.9+)		1997 08 08	124	0.8-	0.3+	1997 10 28	127	0.3+	0.1+
1976 12 20	095	(2.5+ 3.2+)		1997 08 08	124	0.2+	0.6+	1997 10 30	127	0.0	0.2-
1992 05 27	675	0.3+	0.4-	1997 08 08	124	0.4+	0.1+	1997 10 30	127	0.0	0.4-
1992 05 28	675	0.8+	0.1-	1997 10 05	127	0.4+	0.0	1997 10 30	127	0.1+	0.6-
1992 05 30	675	0.6-	0.4-	1997 10 05	127	0.4+	0.4-	1997 10 30	127	0.1-	0.5-
1992 05 30	675	0.3-	0.2+	1997 10 05	127	0.1-	0.1-	1997 10 30	127	0.1+	0.2-
1993 11 11	400	0.6+	0.3+	1997 10 18	138	0.7+	0.4+	1997 10 30	127	0.0	0.5-
1993 11 11	400	(2.5- 2.1-)		1997 10 18	138	(0.1+ 2.9+)		1997 10 30	127	0.1-	0.2-
1993 11 15	365	0.1-	0.9+	1997 10 18	138	1.4+	0.8+	1997 10 30	127	0.1-	0.5-
1993 11 15	365	(2.3- 0.4-)		1997 10 23	758	0.8-	0.5+	1997 10 30	127	0.1-	0.5-
1993 11 16	365	0.3+	0.2+	1997 10 23	758	0.3-	0.4+	1997 10 31	127	0.5-	0.8-
1993 11 16	365	(3.3+ 0.4-)		1997 10 24	758	0.2-	0.9+	1997 10 31	127	0.1-	0.4-
1993 12 07	365	0.7-	1.5-	1997 10 24	758	0.1+	0.1+	1997 10 31	127	0.7-	0.4-
1993 12 07	365	(0.2- 2.4-)		1997 10 27	127	0.2+	0.0	1997 11 01	138	0.2-	0.2+
1996 05 14	365	0.8+	0.1+	1997 10 27	127	0.0	0.2-	1997 11 01	138	0.4-	0.4+
1996 05 14	365	0.5+	0.2-	1997 10 27	127	0.1+	0.2-	1997 11 01	138	0.3-	0.4+
1996 05 23	365	1.4-	0.2-	1997 10 28	127	0.2+	0.2+				

(8042)* 1994 AX₂ = 1984 EZ₁ = 1987 XH₁ = 1989 EH₄

Discovered 1994 Jan. 12 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 23128), A. Lowe (unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	199.76004		(2000.0)	P	Q	
<i>n</i>	0.18844228	ω	263.51744	-0.92509647	+0.33461674	
<i>a</i>	3.0131250	Ω	295.90762	-0.21823634	-0.85538297	
<i>e</i>	0.1056679	<i>i</i>	11.51239	-0.31075622	-0.39541321	
<i>P</i>	5.23	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1984 03 05	413	0.4-	0.5+	1994 01 13	691	1.2-	0.3-	1996 08 20	566	0.6-	0.4+
1984 03 05	413	0.1-	0.2+	1994 01 13	691	1.4-	0.4-	1996 08 20	566	0.3-	0.4+
1984 03 07	413	0.9-	0.8-	1994 01 15	399	0.3+	1.1+	1996 08 20	104	0.6+	0.1+
1984 03 07	413	0.4+	1.4-	1994 01 15	399	1.7+	0.9+	1996 08 20	104	0.6+	0.1+
1987 12 12	054	0.5-	0.8+	1994 01 18	691	1.0-	0.6+	1996 08 20	104	0.4+	0.1+
1987 12 12	054	0.4-	1.0-	1994 01 18	691	0.7-	0.8-	1997 09 25	557	0.3+	0.1-
1989 03 02	809	0.3+	1.0+	1994 01 18	691	1.3-	0.7-	1997 09 25	557	0.2+	0.0
1989 03 02	809	0.8+	0.4+	1994 02 03	399	0.4-	0.5-	1997 09 25	557	0.1+	0.1-
1989 03 02	809	0.2+	0.4+	1994 02 03	399	1.0+	0.5-	1997 09 26	557	0.1+	0.0
1989 03 03	809	1.3+	1.2+	1994 02 04	399	0.0	0.0	1997 09 26	557	0.1+	0.0
1989 03 03	809	1.6+	1.3+	1994 02 04	399	0.7+	0.6-	1997 10 30	566	0.1-	0.7+
1989 03 03	809	0.8+	1.5+	1996 08 19	566	1.0-	1.0+	1997 10 30	566	0.2+	0.3+
1994 01 12	399	1.9+	0.2-	1996 08 19	566	0.8-	0.6+	1997 10 30	566	0.0	0.3+
1994 01 12	399	0.4+	0.9+	1996 08 19	566	0.8-	0.7+				
1994 01 13	691	1.7-	0.5-	1996 08 20	566	0.2-	0.1+				

1997 NOV. 14

M.P.C. 30863

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	333.97263		(2000.0)	P	Q
<i>n</i>	0.27657223	ω	343.86400	+0.52201929	-0.84111209
<i>a</i>	2.3330838	Ω	74.47292	+0.79789162	+0.42292727
<i>e</i>	0.0959709	<i>i</i>	8.44586	+0.30143792	+0.33713941
<i>P</i>	3.56	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1951 12 01	675	0.2+	0.8+	1995 01 02	411	0.5-	0.1+	1996 05 18	691	0.3+	0.4+
1951 12 01	675	1.1-	1.3+	1995 01 02	411	0.6-	0.3+	1997 09 04	124	0.5-	0.4-
1976 12 20	095	(1.7-	3.6-)	1996 04 20	411	0.9-	0.5+	1997 09 04	124	1.7+	1.3+
1987 12 24	010	0.5-	0.4-	1996 04 20	411	0.2+	0.6+	1997 09 09	124	0.2+	0.2-
1987 12 24	010	1.0+	0.2-	1996 04 22	411	0.7+	0.6+	1997 09 09	124	1.2+	1.0-
1987 12 24	010	0.7+	1.3+	1996 04 22	411	0.3+	0.6+	1997 10 31	684	0.3-	0.1+
1994 12 06	411	0.4+	0.4-	1996 05 09	411	0.3-	0.4-	1997 10 31	684	0.3-	0.1+
1994 12 06	411	0.6+	0.2-	1996 05 09	411	0.1+	0.8-	1997 10 31	684	0.3-	0.1+
1994 12 07	411	0.5+	0.1-	1996 05 10	411	0.7-	0.2+	1997 11 01	684	0.4-	0.1+
1994 12 07	411	0.1+	0.7-	1996 05 10	411	0.3-	0.8-	1997 11 01	684	0.6-	0.1-
1994 12 14	411	0.2-	0.8-	1996 05 18	691	0.3+	0.0	1997 11 01	684	0.7-	0.2-
1994 12 14	411	0.9-	1.2-	1996 05 18	691	0.4+	0.0				

(8044)* 1994 YT = 1977 GD₁ = 1978 RM₄ = 1992 HW₄

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

Id. K. Kinoshita (*MPC* 24903)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	163.67162		(2000.0)	P	Q
<i>n</i>	0.26570027	ω	319.22433	-0.48786955	+0.87186286
<i>a</i>	2.3963011	Ω	281.53478	-0.78908730	-0.46148904
<i>e</i>	0.1336310	<i>i</i>	2.50812	-0.37326202	-0.16396043
<i>P</i>	3.71	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1977 04 10	381	0.5+	0.4+	1994 11 29	691	1.6-	0.1-	1997 10 05	910	0.6+	0.8+
1977 04 10	381	0.4+	0.6+	1994 11 29	691	0.9-	0.1-	1997 10 05	910	0.6+	0.9+
1978 09 05	095	(5.6-	0.9-)	1994 11 29	691	0.9-	0.1+	1997 10 22	704	1.0+	0.3-
1989 07 29	675	0.1+	2.0-	1994 12 28	411	1.0+	1.3+	1997 10 22	704	0.1+	0.7+
1989 07 29	675	(0.5-	2.9-)	1994 12 28	411	0.7+	0.0	1997 10 22	704	1.2+	0.8+
1992 04 23	809	0.3+	1.0-	1994 12 29	411	0.9+	1.2-	1997 10 22	704	1.8+	0.3-
1992 04 23	809	0.4+	0.9-	1994 12 29	411	0.0	1.4-	1997 10 22	704	0.5+	0.2+
1992 04 23	809	0.7+	0.8-	1995 01 05	411	0.1-	0.8-	1997 11 03	704	0.4-	1.1-
1992 04 24	809	1.3-	0.0	1995 01 05	411	0.3+	0.4-	1997 11 03	704	0.8-	1.4-
1992 04 24	809	1.2-	0.6-	1995 01 10	411	0.8-	0.8+	1997 11 03	704	0.5+	1.2-
1993 09 15	095	1.3-	0.8+	1995 01 10	411	0.8-	0.8+	1997 11 03	704	0.4-	1.0-
1993 09 23	095	(3.2-	1.4+)	1997 10 05	910	0.5+	0.8+	1997 11 03	704	1.9-	0.7-

(8045)* 1995 AW = 1949 BH = 1970 CU = 1973 YV₃ = 1991 BT₄

Discovered 1995 Jan. 6 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24755)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	204.73412		(2000.0)	P	Q
<i>n</i>	0.23516769	ω	248.23418	-0.97940333	+0.07536531
<i>a</i>	2.5994669	Ω	295.66882	+0.02238524	-0.88148089
<i>e</i>	0.1351563	<i>i</i>	11.99529	-0.20066892	-0.46616683
<i>P</i>	4.19	<i>H</i>	11.8	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1949 01 28	012	1.4-	0.1+	1995 01 23	896	0.3-	0.9+	1995 02 05	894	(2.6-	0.5-)
1970 02 10	805	0.5+	0.2-	1995 01 23	896	0.1-	0.7+	1995 02 05	894	1.6-	0.1+
1970 02 10	805	1.0+	0.2+	1995 01 24	896	0.6+	0.1+	1995 02 27	411	0.5+	0.0
1970 02 10	805	1.7+	0.1-	1995 01 24	896	1.5+	0.1+	1995 02 27	411	0.2+	0.2-
1973 12 26	095	0.1-	0.7+	1995 01 25	894	0.6-	1.2+	1995 03 20	411	0.1+	0.3+
1991 01 17	675	0.9-	1.2-	1995 01 25	894	0.2+	0.3+	1995 03 20	411	0.6+	0.7+
1991 01 17	675	1.6-	0.1-	1995 01 27	905	0.1+	0.1+	1997 09 27	138	0.7+	0.4-
1995 01 06	411	0.2+	0.5-	1995 01 27	905	0.4+	0.1+	1997 09 27	138	0.3+	0.1+

1995 01 06	411	0.2+	0.7-	1995 01 27	894	0.2-	0.1-	1997 09 27	138	0.3+	0.8-
1995 01 07	411	0.3+	0.5-	1995 01 27	894	0.9-	0.1+	1997 09 27	138	0.3+	0.6-
1995 01 07	411	0.1+	0.6-	1995 01 28	905	0.2+	0.1+	1997 10 21	684	0.5-	0.0
1995 01 10	411	0.3+	0.4-	1995 01 28	905	0.4-	0.5-	1997 10 21	684	0.3-	0.1+
1995 01 10	411	0.2+	0.3-	1995 01 31	905	0.5-	0.6-	1997 10 21	684	0.4-	0.1+
1995 01 12	411	0.2+	0.1-	1995 01 31	905	0.2-	0.1+	1997 10 23	684	0.2-	0.5+
1995 01 12	411	0.4+	0.2-	1995 02 01	894	0.5-	0.4+	1997 10 23	684	0.2-	0.2+
1995 01 12	411	0.3+	0.2-	1995 02 01	894	0.5-	0.0	1997 10 23	684	0.2-	0.7+

(8046)* 1995 BU

Discovered 1995 Jan. 25 by T. Kobayashi at Oizumi.

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	285.81781		(2000.0)	P	Q
<i>n</i>	0.26044574	ω	346.30219	-0.47034271	-0.83476003
<i>a</i>	2.4284241	Ω	130.89215	+0.84114306	-0.52219028
<i>e</i>	0.0294403	<i>i</i>	22.25313	+0.26693836	+0.17462245
<i>P</i>	3.78	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1989 08 29	675	0.4-	0.4-	1995 02 06	411	0.2+	0.3-	1996 05 03	118	0.4+	0.5+
1989 08 29	675	0.5-	0.0	1995 02 10	411	0.3+	0.2-	1996 05 15	801	0.4+	0.6+
1989 09 01	675	0.5+	1.6-	1995 02 10	411	0.2+	0.2-	1996 05 16	801	0.2+	0.3+
1989 09 01	675	0.5+	0.2-	1995 02 17	411	0.6-	0.0	1996 05 20	801	0.6+	1.5-
1989 09 04	675	0.3+	0.1-	1995 02 17	411	0.3+	0.5+	1996 05 20	801	0.0	0.8-
1989 09 04	675	0.5-	0.0	1995 04 01	801	0.0	0.3-	1996 05 25	118	0.2-	0.1-
1993 07 27	675	1.0-	1.0+	1995 04 01	801	0.1-	0.2-	1996 05 25	118	0.0	0.3-
1993 07 27	675	0.9+	0.2+	1995 04 03	801	0.2-	1.0-	1996 05 25	118	0.3-	0.2-
1995 01 25	411	0.1-	0.4-	1995 04 03	801	0.0	0.4-	1996 06 10	596	0.2+	0.1+
1995 01 25	411	0.0	0.4-	1995 04 27	801	0.4+	0.2-	1996 06 10	596	0.4+	0.2-
1995 01 26	411	0.1+	0.2+	1995 04 27	801	0.5+	0.1+	1996 06 10	596	0.5+	0.1+
1995 01 26	411	0.1+	0.3+	1995 05 02	801	0.1-	0.3+	1996 07 04	118	0.3-	0.6-
1995 01 26	411	0.1-	0.1+	1995 05 02	801	0.3+	0.2+	1996 07 04	118	0.3-	0.7-
1995 01 31	411	0.4-	0.1+	1996 04 24	118	0.1+	0.4+	1996 08 01	118	1.2-	1.2+
1995 01 31	411	0.3-	0.3+	1996 04 24	118	0.4+	0.1+	1996 08 01	118	1.1-	1.1+
1995 02 06	411	0.0	0.2-	1996 05 03	118	0.2+	0.6+				

(8047)* 1995 BT₃ = 1979 XE₁ = 1986 RU₁₆ = 1993 ON₁

Discovered 1995 Jan. 31 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24905)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	1.43806		(2000.0)	P	Q
<i>n</i>	0.27074963	ω	249.85341	+0.67415218	-0.73820487
<i>a</i>	2.3664144	Ω	157.70323	+0.69901399	+0.62723047
<i>e</i>	0.1672674	<i>i</i>	3.61546	+0.23853363	+0.24826500
<i>P</i>	3.64	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1979 12 14	095	0.9-	0.3-	1995 02 06	399	1.0-	0.7+	1997 10 11	886	0.5-	0.1+
1979 12 18	095	0.9+	0.1-	1995 02 06	399	1.7-	1.1+	1997 10 24	952	0.9-	0.5+
1986 09 14	095	(2.5+	4.3+)	1995 02 06	411	1.1+	0.1+	1997 10 24	952	0.7-	0.5+
1993 07 24	691	0.3+	1.0+	1995 02 06	411	1.5+	0.7+	1997 10 30	704	0.6+	0.9-
1993 07 24	691	0.4+	0.4-	1995 02 10	411	0.7+	0.0	1997 10 30	704	0.5+	0.1-
1993 07 24	691	0.2-	0.0	1995 02 10	411	0.9+	1.0-	1997 10 30	704	0.1+	1.2-
1993 07 25	691	0.3-	0.4+	1995 02 19	887	0.5+	0.2+	1997 10 30	704	0.0	0.5-
1993 07 25	691	0.3-	1.1+	1995 02 19	887	0.3+	0.1+	1997 10 30	704	0.4+	2.1-
1993 07 25	691	0.3-	0.2+	1995 02 19	887	0.5+	0.1+	1997 11 01	138	0.2+	0.6+
1995 01 31	411	0.4-	0.0	1997 08 31	124	0.6-	1.0+	1997 11 01	138	0.0	0.2+
1995 01 31	411	0.7-	0.3+	1997 08 31	124	0.7-	0.0	1997 11 01	138	0.9-	1.3+
1995 02 01	411	0.5-	0.4-	1997 08 31	124	1.2-	1.0-	1997 11 03	704	1.7+	0.6+
1995 02 01	411	0.9+	0.4+	1997 10 10	886	0.8-	0.2-	1997 11 03	704	0.7+	2.0+
1995 02 03	399	(2.9-	1.3+)	1997 10 10	886	0.5-	0.4-	1997 11 03	704	0.9+	0.8+
1995 02 03	399	1.4-	0.8+	1997 10 11	886	0.3-	0.4-	1997 11 03	704	1.0+	0.1+

(8048)* 1995 DB₁ = 1970 JO = 1990 FL₃

Discovered 1995

Id. B. G. Marsden (*MPC* 25333)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	258.48996	(2000.0)		P		Q	
<i>n</i>	0.18912047	ω	54.58581	+0.09345330	−0.99172070		
<i>a</i>	3.0059173	Ω	30.41384	+0.84775893	+0.03287656		
<i>e</i>	0.0702278	<i>i</i>	10.01875	+0.52208359	+0.12413371		
<i>P</i>	5.21	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1970 05 03	805	0.5−	0.4+	1995 03 05	897	0.4−	0.3+	1996 04 21	046	0.4−	0.3+
1970 05 03	805	0.0	0.2+	1995 03 06	046	0.1−	0.2+	1996 04 21	046	0.7+	0.4−
1970 05 03	805	0.6+	0.4−	1995 03 06	046	0.2−	0.1+	1996 04 21	046	0.7−	0.4+
1980 05 11	046	(6.3+	0.9−)	1995 03 06	046	0.0	0.1−	1996 05 23	046	0.0	0.6+
1980 05 11	046	(5.6+	2.3+)	1995 03 07	118	0.5−	0.2+	1996 05 23	046	0.3+	0.3+
1990 03 24	046	(10.2+	6.0−)	1995 03 07	118	0.3−	0.2+	1996 05 23	046	0.2+	0.2−
1990 03 24	046	(7.8+	5.3−)	1995 03 08	684	(3.1−	0.7+)	1996 05 26	046	0.2−	1.0−
1995 02 22	046	0.3+	0.2−	1995 03 08	684	0.3+	0.4+	1996 06 05	046	0.4+	0.1+
1995 02 22	046	0.4+	0.3−	1995 03 09	684	0.9−	1.0−	1996 06 05	046	0.2−	0.1−
1995 02 22	046	0.4+	0.2−	1995 03 09	684	(2.8−	0.4−)	1996 06 05	046	0.1+	0.2+
1995 02 22	046	0.3+	0.2−	1995 03 10	046	0.8+	1.6−	1996 06 06	046	0.4+	0.4+
1995 02 23	046	0.4+	0.0	1995 03 10	046	1.0+	1.7−	1996 06 06	046	0.1−	0.2−
1995 02 23	046	0.5+	0.1−	1995 03 10	046	0.5−	0.2−	1996 06 06	046	0.5−	0.2−
1995 02 23	046	0.2−	0.1−	1995 03 11	540	0.2+	0.0	1997 09 26	426	0.1+	0.5+
1995 02 23	046	0.0	0.2−	1995 03 11	540	0.2−	0.3−	1997 09 26	426	0.7−	0.3−
1995 02 23	046	0.2−	0.0	1995 03 11	540	0.4−	0.5−	1997 09 26	426	0.2+	0.1−
1995 02 24	360	0.1+	0.3−	1995 03 11	540	0.1+	0.9−	1997 09 28	426	0.4−	0.4+
1995 02 24	360	0.2+	0.1−	1995 03 11	540	0.1−	1.2−	1997 09 28	426	0.6−	0.4+
1995 02 24	360	0.0	0.0	1995 03 24	046	0.6−	0.3+	1997 09 28	426	0.2−	0.1−
1995 02 27	046	0.1+	0.4+	1995 03 24	046	0.1+	0.3+	1997 10 06	046	0.2+	0.3+
1995 02 27	046	0.1+	0.4+	1995 05 02	046	0.3+	0.2+	1997 10 06	046	0.2−	0.2−
1995 02 27	046	0.2+	0.2+	1995 05 02	046	0.2+	0.2+	1997 10 06	046	0.0	0.0
1995 03 01	046	0.4−	1.4+	1995 05 02	046	0.0	0.1−	1997 10 18	046	0.5+	0.6−
1995 03 01	046	0.1−	1.4+	1995 05 02	046	0.8+	0.7−	1997 10 18	046	0.2+	0.8−
1995 03 01	046	0.4−	1.6+	1995 05 27	046	0.2+	0.1−	1997 10 18	046	0.8+	0.5+
1995 03 01	897	0.3−	0.3−	1995 05 27	046	0.2−	0.2−	1997 10 19	046	0.7+	0.8−
1995 03 01	897	0.0	0.2−	1995 05 27	046	0.2+	0.3+	1997 10 19	046	0.4+	1.0−
1995 03 01	897	0.2−	0.0	1996 04 18	046	0.2+	0.4−	1997 10 19	046	0.0	0.8−
1995 03 05	897	1.0−	0.5+	1996 04 18	046	0.1−	0.0				
1995 03 05	897	0.3−	0.3+	1996 04 18	046	0.1−	0.4+				

(8049)* 1996 FL₂ = 1978 QY = 1979 VK₂ = 1989 WW₁ = 1991 EV₅ = 1994 WC₁₂

Discovered 1996 Mar. 17 at Haleakala by the JPL Near-Earth Asteroid

Tracking program.

Id. T. B. Spahr (*MPC* 30458)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	31.41580	(2000.0)		P		Q	
<i>n</i>	0.19959288	ω	285.80056	−0.05966341	+0.99819646		
<i>a</i>	2.8998310	Ω	340.77525	−0.90795517	−0.05703165		
<i>e</i>	0.0348734	<i>i</i>	1.15564	−0.41479837	−0.01874072		
<i>P</i>	4.94	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 08 31	095	0.1+	0.7+	1993 09 14	691	0.4+	0.0	1996 02 15	566	0.8−	0.4+
1979 11 14	095	0.9−	1.2+	1993 09 14	691	0.3−	0.6−	1996 03 17	566	0.2−	0.3−
1989 11 29	400	(3.2+	0.9−)	1993 09 14	691	0.1−	0.2−	1996 03 17	566	0.2−	0.3−
1989 11 29	400	(5.5+	2.6+)	1994 11 27	010	1.2−	0.6−	1996 03 17	566	0.1−	0.3−
1991 02 18	675	1.4+	0.2−	1994 11 27	010	0.5−	0.3−	1996 03 23	566	0.5+	0.2−
1991 02 18	675	0.9−	1.7+	1994 11 28	010	0.8−	0.4−	1996 03 23	566	0.1+	0.1−
1991 02 19	675	1.1−	1.7+	1994 11 28	010	1.1+	0.6−	1996 03 23	566	0.1+	0.4−
1991 03 07	046	(2.9−	1.3−)	1994 11 28	010	1.3+	0.3+	1996 05 20	327	0.5+	0.4−
1991 03 07	046	(3.8−	2.4−)	1994 11 29	010	1.0+	0.1−	1996 05 20	327	0.3−	0.5−
1991 03 18	675	0.7+	0.1−	1996 02 15	566	0.3−	0.4+	1996 05 20	327	0.5−	0.3−
1991 03 18	675	1.4+	1.4−	1996 02 15	566	0.2−	0.5+				

(8050)* 1996 ST = 1971 QK₂ = 1986 HD = 1990 TS₇ = 1993 RN₇

Discovered 1996 Sept. 18 by the Beijing Schmidt CCD Asteroid Program at

Xinglong.

Id. G. V. Williams (*MPC* 28305)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	134.44204	(2000.0)		P		Q	
<i>n</i>	0.31610080	ω	142.76906	+0.99805075	+0.05976408		
<i>a</i>	2.1342845	Ω	213.81793	−0.06215100	+0.92576475		
<i>e</i>	0.1598847	<i>i</i>	1.85037	−0.00565260	+0.37334687		
<i>P</i>	3.12	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 08 19	808	0.1+	0.2−	1993 09 22	809	0.0	0.7−	1996 09 20	327	0.3+	0.2+
1986 04 29	675	0.9−	1.2−	1993 09 22	809	0.5−	0.3−	1996 09 20	327	0.2+	0.1−
1986 04 29	675	(2.1+	5.7−)	1993 09 22	809	0.7−	1.2−	1996 09 20	327	0.2+	0.1+
1990 10 13	033	0.7+	0.0	1993 09 22	675	0.9−	1.7−	1996 09 22	327	0.2+	0.4+
1990 10 13	033	1.0+	0.0	1993 09 22	675	1.3−	0.9−	1996 09 22	327	0.1+	0.6+
1990 10 14	033	0.4+	0.3+	1993 09 23	095	1.7−	0.3+	1996 09 22	327	0.4+	0.1+
1990 10 18	033	0.3+	0.5−	1993 09 24	809	0.6−	0.2+	1996 09 22	327	0.1+	0.2+
1993 09 15	809	1.3+	1.4+	1993 09 24	809	(3.1−	1.7−)	1996 10 09	327	0.4+	0.0
1993 09 15	809	0.1+	0.5+	1993 09 24	809	(2.5−	2.7−)	1996 10 09	327	0.0	0.2−
1993 09 15	809	0.8+	1.2+	1996 08 18	010	(2.3−	2.6−)	1996 10 09	327	0.4+	0.4+
1993 09 17	809	(2.6+	1.7+)	1996 08 18	010	(2.1−	2.3−)	1996 10 12	327	0.2+	0.2−
1993 09 17	809	(2.2+	1.1+)	1996 08 18	010	(2.1−	3.0−)	1996 10 12	327	0.2−	0.5+
1993 09 17	809	1.4+	2.0+	1996 08 20	010	(0.7+	4.5+)	1996 10 12	327	0.2+	0.8−
1993 09 18	809	(3.0+	3.7+)	1996 08 20	010	(1.4+	2.8+)	1996 12 01	327	0.8−	0.7−
1993 09 18	809	(2.7+	3.7+)	1996 08 20	010	(1.3+	3.7+)	1996 12 01	327	1.2+	0.2−
1993 09 18	809	(2.0+	3.4+)	1996 09 18	327	0.0	0.3−	1996 12 01	327	0.7−	0.8−
1993 09 18	675	1.2−	0.9−	1996 09 18	327	0.2+	0.4−				
1993 09 18	675	0.6−	0.5−	1996 09 18	327	0.1+	0.2+				

(8051)* 1997 PP₄ = 1987 TJ = 1994 TX₁₆

Discovered 1997 Aug. 13 by L. Tesi and G. Cattani at San Marcello Pistoiese.

Id. G. V. Williams (*MPC* 30678)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	355.18947	(2000.0)		P		Q	
<i>n</i>	0.29087768	ω	228.93582	+0.88864140	−0.45720465		
<i>a</i>	2.2559482	Ω	158.19796	+0.44434286	+0.83907939		
<i>e</i>	0.1408909	<i>i</i>	5.52868	+0.11347196	+0.29480447		
<i>P</i>	3.39	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 09 18	095	1.1−	0.8+	1997 08 15	104	0.2+	0.1+	1997 09 19	104	0.5+	1.7−
1987 10 03	399	0.2+	0.2−	1997 08 16	104	0.6−	0.9+	1997 09 19	104	1.3+	1.5−
1987 10 03	399	1.7−	0.9−	1997 08 22	104	0.4−	0.9−	1997 09 19	104	0.3−	0.6−
1987 10 03	399	2.3+	0.9+	1997 08 22	104	0.3+	0.9−	1997 09 19	104	0.6−	0.1−
1994 10 05	033	0.7−	0.6−	1997 08 22	104	0.5+	0.8−	1997 09 30	104	0.5−	0.3−
1994 10 05	033	0.1−	0.1−	1997 08 31	104	(2.0+	0.3−)	1997 09 30	104	0.3−	0.1−
1994 10 06	033	1.1+	1.2−	1997 08 31	104	1.7+	0.0	1997 09 30	104	0.4−	0.4−
1996 04 21	691	0.1+	0.0	1997 09 17	104	(0.4+	2.3+)	1997 10 19	104	(2.4−	1.0−)
1996 04 21	691	0.1−	0.5−	1997 09 17	104	0.0	1.2+	1997 10 19	104	0.4−	0.0
1996 04 21	691	0.3−	0.5−	1997 09 17	104	0.7−	1.5+	1997 11 02	104	0.4−	0.6+
1997 08 13	104	0.5−	0.5−	1997 09 17	104	(3.1−	0.9−)	1997 11 02	104	0.0	0.7+
1997 08 13	104	0.8−	0.3+	1997 09 18	104	0.2+	0.6+	1997 11 02	104	0.3−	0.7+
1997 08 13	104	1.3−	1.3+	1997 09 18	104	0.1−	0.1−	1997 11 02	104	0.4−	0.6+
1997 08 15	104	0.4+	0.9−	1997 09 18	104	0.2+	0.1−				
1997 08 15	104	1.7+	0.8+	1997 09 19	104	0.5+	0.0				

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	101.49269	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18713252	ω	70.98959	+0.25215116
<i>a</i>	3.0271681	Ω	214.00160	+0.22009565
<i>e</i>	0.0571317	<i>i</i>	9.00687	+0.15100519
<i>P</i>	5.27	<i>H</i>	13.0	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1960 09 24	675	0.1–	0.9–	1989 02 07	809	(0.8–	3.6–)	1992 11 18	691	0.7–	0.2+
1960 09 26	675	0.7–	0.1–	1989 02 07	809	(0.8+	4.0–)	1992 11 18	691	0.8–	0.1+
1960 09 28	675	0.3–	2.3–	1989 02 27	888	1.3+	2.0–	1992 11 18	691	0.2–	0.3+
1960 09 29	675	0.4+	0.4+	1989 02 27	888	(3.1+	1.3–)	1997 09 26	557	0.0	0.4+
1960 10 22	675	0.3–	0.9+	1989 03 02	809	0.0	0.4+	1997 09 26	557	0.1–	0.3+
1960 10 25	675	0.4+	1.4+	1989 03 02	809	0.5–	0.8+	1997 09 26	557	0.1–	0.1+
1960 10 26	675	0.8+	0.5+	1989 03 02	809	0.4–	0.5+	1997 10 04	557	0.2–	0.1+
1976 10 22	381	0.3–	0.2+	1989 03 03	809	0.1+	0.5–	1997 10 04	557	0.0	0.1+
1976 10 22	381	0.2–	0.6+	1989 03 03	809	0.0	0.4–	1997 10 04	557	0.2–	0.0
1976 10 24	381	0.3+	0.5–	1989 03 03	809	0.7–	0.6–	1997 10 30	704	0.9+	0.9–
1989 02 04	809	(0.1–	3.8–)	1991 07 13	675	0.5–	0.9–	1997 10 30	704	0.2–	0.3–
1989 02 04	809	(0.3+	3.7–)	1991 07 13	675	0.5–	1.2–	1997 10 30	704	0.0	0.2–
1989 02 04	809	(0.1–	3.7–)	1991 07 19	675	(2.5–	0.6–)	1997 10 30	704	1.1+	0.6–
1989 02 05	888	(3.1+	2.7–)	1991 07 19	675	0.7+	0.2+	1997 10 30	704	0.8+	0.1+
1989 02 05	888	(1.7+	3.5–)	1991 08 09	675	0.2+	0.4+				
1989 02 07	809	(1.3–	3.0–)	1991 08 09	675	0.1–	0.2+				

(8053)* 4082 P-L = 1992 EV = 1993 RP₉

Discovered 1960 Sept. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. B. G. Marsden (*MPC* 24114)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	168.13051	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26780589	ω	262.08114	–0.70365770
<i>a</i>	2.3837240	Ω	323.17962	–0.64061752
<i>e</i>	0.1641906	<i>i</i>	1.57258	–0.30736792
<i>P</i>	3.68	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 2

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

1960 09 25	675	0.6+	0.4–	1992 03 07	399	1.5+	0.3–	1996 04 08	689	(0.03–	0.01+)
1960 09 26	675	0.3+	0.1+	1992 03 08	399	0.5–	1.4+	1997 09 23	557	0.1–	0.5–
1960 09 28	675	0.4–	1.5–	1992 03 08	399	1.4–	1.4+	1997 09 23	557	0.3–	0.5–
1960 10 17	675	0.3–	0.3+	1993 09 14	809	1.2+	1.6+	1997 09 25	557	0.3–	0.4–
1960 10 17	675	0.3–	0.9+	1993 09 14	809	0.9+	0.9+	1997 09 25	557	0.4–	0.3–
1960 10 22	675	0.6+	0.3–	1993 09 14	809	0.3–	0.7+	1997 09 25	557	0.1–	0.4–
1960 10 22	675	1.2+	1.0–	1993 09 19	809	1.2–	1.9+	1997 10 29	566	0.6–	0.0
1960 10 24	675	0.7–	0.1–	1993 09 19	809	1.2–	1.6+	1997 10 29	566	0.3–	0.4–
1960 10 25	675	0.5+	0.1+	1993 09 19	809	(2.7–	1.3+)	1997 10 29	566	0.2–	0.3–
1960 10 26	675	0.6+	0.1–	1994 11 30	104	0.7+	0.7+				
1992 03 07	399	1.1+	0.0	1994 11 30	104	0.9+	0.7+				

(8054)* 4581 P-L = 1987 VZ

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

Id. S. Nakano (*MPC* 12947)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	25.05642	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.29444743	ω	334.05682	+0.87616450
<i>a</i>	2.2376777	Ω	54.70850	+0.45036844
<i>e</i>	0.1255748	<i>i</i>	2.82386	+0.17176740
<i>P</i>	3.35	<i>H</i>	14.1	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1960 09 24	675	0.0	0.3–	1987 11 18	327	0.8–	0.3+	1992 03 08	809	0.8–	2.1–
1960 09 26	675	0.3–	0.3+	1987 11 23	046	1.3+	1.7–	1992 03 09	809	0.8–	1.6–

1960 09 27	675	0.2+	1.0+	1987 11 23	046	0.5+	1.9–	1992 04 06	809	0.8–	2.0+
1960 09 28	675	0.0	0.0	1987 11 26	046	(2.4+	0.3–)	1996 05 26	816	0.2+	0.9–
1960 10 22	675	0.1+	1.4+	1987 11 26	046	(3.6+	1.4+)	1997 10 05	910	0.1+	0.4+
1960 10 25	675	0.1–	0.1–	1987 11 26	046	1.6–	2.0–	1997 10 05	910	0.2+	0.4+
1960 10 26	675	0.1+	0.1+	1987 11 27	046	0.1–	1.6–	1997 10 05	910	0.1+	0.4+
1987 10 23	095	(3.3–	1.2+)	1990 08 26	675	0.6+	1.6–	1997 10 26	905	0.5+	0.6+
1987 10 28	095	(1.3–	3.1+)	1990 08 26	675	0.2+	1.9–	1997 10 26	905	0.7–	0.7+
1987 11 15	046	(5.1–	2.9–)	1990 09 16	675	0.2+	1.0–	1997 10 28	905	0.6+	1.2+
1987 11 15	046	(5.5–	3.3–)	1990 09 16	675	0.3–	0.7–	1997 10 28	905	0.7+	1.3+
1987 11 18	327	0.4–	0.6+	1992 02 29	809	1.4+	0.2–				

(8055)* 5004 P-L = 1992 UD₄

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

Id. S. Nakano (*MPC* 21600)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	39.72986	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18703355	ω	120.83989	+0.85884154
<i>a</i>	3.0282359	Ω	209.21572	–0.51042587
<i>e</i>	0.2277469	<i>i</i>	10.97780	–0.04308878
<i>P</i>	5.27	<i>H</i>	13.0	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1960 09 24	675	0.6–	1.2+	1992 10 28	400	0.1–	0.4+	1997 10 01	566	0.0	0.0
1960 10 17	675	1.0+	0.5–	1992 10 28	400	0.5–	0.6+	1997 10 01	566	0.5+	0.0
1960 10 22	675	0.5–	0.5+	1992 11 21	400	(3.0–	0.8+)	1997 10 01	566	0.1–	0.4+
1960 10 25	675	0.4–	1.3+	1992 11 21	400	1.3+	0.4+	1997 10 30	704	0.1+	0.1–
1960 10 26	675	0.1–	0.2–	1992 11 30	675	1.2+	0.8–	1997 10 30	704	0.6+	0.5–
1992 10 22	675	0.1+	0.4–	1992 11 30	675	1.5–	0.4+	1997 10 30	704	0.1–	0.9–
1992 10 22	675	0.2–	0.6–	1996 05 22	566	0.2+	0.0	1997 10 30	704	0.8–	0.4+
1992 10 26	400	0.6–	0.8–	1996 05 22	566	0.0	0.2–	1997 10 30	704	0.5+	1.9–
1992 10 26	400	0.2+	0.8+	1996 05 22	566	0.2–	0.3–				

(8056)* 6038 P-L = 1952 UF₁ = 1993 UL₃

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

Id. S. Nakano (*MPC* 22821)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	350.60525	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.24022570	ω	58.70021	+0.54566393
<i>a</i>	2.5628493	Ω	358.21627	+0.72163373
<i>e</i>	0.2074967	<i>i</i>	6.97882	+0.42602304
<i>P</i>	4.10	<i>H</i>	13.7	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1952 10 24	760	(2.1+	3.9+)	1991 04 15	675	0.1–	0.1+	1997 10 03	910	0.9+	0.4–
1952 10 24	760	1.5+	1.5–	1991 04 16	675	0.2–	0.3–	1997 10 03	910	1.0+	0.3–
1960 09 24	675	0.8–	0.1–	1991 04 16	675	0.1–	0.6+	1997 10 03	910	0.9+	0.3–
1960 09 25	675	0.5+	0.0	1993 10 20	399	0.5+	0.3+	1997 10 04	910	0.5+	0.1+
1960 09 26	675	0.1–	0.6–	1993 10 20	399	1.2–	0.3+	1997 10 04	910	0.5+	0.1+
1960 09 28	675	0.2–	1.0+	1993 11 07	399	0.1–	0.0	1997 10 04	910	0.5+	0.2+
1960 10 17	675	0.3–	0.5+	1993 11 07	399	0.3+	0.3+	1997 10 19	900	1.0–	0.5+
1960 10 22	675	0.0	0.3–	1993 11 09	399	0.4–	0.9–	1997 10 19	900	1.3–	0.1+
1960 10 24	675	0.0	0.5–	1993 11 09	399	1.2–	0.5+	1997 10 20	367	0.2–	0.4+
1960 10 26	675	0.2–	0.3–	1997 09 22	689	0.9–	0.2–	1997 10 20	367	0.3–	0.6+
1991 04 14	675	1.0+	1.3–	1997 10 02	910	0.5+	0.3–	1997 11 03	900	0.3–	0.3+
1991 04 14	675	1.0–	0.2+	1997 10 02	910	0.6+	0.4–	1997 11 03	900	0.2–	0.3+
1991 04 15	675	(2.8+	0.3–)	1997 10 03	910	0.6+	0.3–				

(8057)* 4034 T-1 = 1982 QC₃ = 1995 ET₈

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 25436)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 122.97686 (2000.0)		P		Q	
<i>n</i>	0.20451164	ω	101.90156	-0.15741694	+0.98714918
<i>a</i>	2.8531462	Ω	158.98148	-0.93327012	-0.13960491
<i>e</i>	0.0369848	<i>i</i>	4.39778	-0.32284174	-0.07776229
<i>P</i>	4.82	<i>H</i>	12.4	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		1	
1949 11 23	675 0.3-	0.1+	1982 08 17	095 (0.3+	5.1+)
1949 11 23	675 0.3+	0.5-	1995 02 24	033 0.6+	0.4-
1951 02 04	675 0.6+	0.8+	1995 03 05	033 0.7-	0.6+
1951 02 04	675 0.6-	0.4+	1995 03 05	033 0.0	0.5+
1971 03 24	675 1.2+	1.8-	1995 03 07	033 (2.8-	1.2-)
1971 03 26	675 (3.2+	2.7-)	1997 10 01	124 (4.3+	1.2+)
1971 03 26	675 0.7-	1.3-	1997 10 01	124 (4.3+	0.4+)
1971 03 26	675 1.0-	1.5-	1997 10 01	124 (2.8+	0.4+)
1971 03 27	675 0.1+	1.2-	1997 10 02	124 0.7+	0.3-
1971 03 27	675 1.6-	0.2+	1997 10 02	124 0.7+	0.7+
1971 04 02	675 0.3+	0.5-	1997 10 02	124 0.1+	0.9-
1971 04 16	675 1.1+	0.2-	1997 10 02	124 1.2+	0.4-
1971 04 16	675 0.9+	1.3-	1997 10 03	886 (1.2-	2.5-)
1971 05 13	675 0.5-	0.3-	1997 10 03	886 1.6-	0.9-
1971 05 14	675 1.3-	1.1-	1997 10 08	886 0.0	0.8-
1971 05 16	675 1.3-	1.1+	1997 10 08	886 0.7-	0.2+

(8058)* 3241 T-3 = 1987 RM₅ = 1987 WC₃

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 16039)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 4.55204 (2000.0)		P		Q	
<i>n</i>	0.29351714	ω	341.14975	+0.94919754	-0.31372393
<i>a</i>	2.2424034	Ω	37.16248	+0.29368027	+0.85516769
<i>e</i>	0.2118023	<i>i</i>	2.32650	+0.11303064	+0.41263243
<i>P</i>	3.36	<i>H</i>	15.0	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		2	
1977 10 07	675 0.5-	0.9-	1977 10 22	675 1.7+	1.3-
1977 10 11	675 1.8-	0.0	1977 10 22	675 2.0+	0.4+
1977 10 11	675 2.2-	0.1+	1987 09 04	095 0.2+	0.3-
1977 10 12	675 0.6+	0.5+	1987 11 17	010 0.0	0.5+
1977 10 12	675 1.2+	1.0+	1987 11 17	010 (3.0-	0.7-)
1977 10 16	675 0.4+	0.5+	1992 01 12	372 0.3-	0.9+
1977 10 16	675 0.3+	0.8+	1992 01 12	372 0.9+	1.6+
1977 10 17	675 0.7-	0.1-	1992 01 15	372 0.9+	1.9+
1977 10 17	675 0.6-	0.2-	1992 01 15	372 0.5+	2.0+
1977 10 21	675 0.7-	1.1-	1994 11 27	010 0.3-	0.2+
1977 10 21	675 0.6+	0.5-	1994 11 27	010 0.8-	0.3-

1951 RX = 1961 VS = 1997 TF₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 0.79444 (2000.0)		P		Q	
<i>n</i>	0.29935723	ω	38.59644	+0.95381949	-0.29815688
<i>a</i>	2.2131433	Ω	338.66449	+0.24467064	+0.84162330
<i>e</i>	0.2090848	<i>i</i>	5.75467	+0.17425456	+0.45030290
<i>P</i>	3.29	<i>H</i>	15.3	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		3	
1951 09 04	024 1.1-	1.7+	1951 10 04	024 (8.2-	0.4+)
1951 09 05	024 (3.8-	0.4+)	1961 11 10	760 1.2-	0.5+
1951 09 06	024 1.0-	1.0-	1961 11 10	760 0.8+	0.3+
1951 09 26	024 2.1+	1.5-	1997 10 03	910 0.1-	0.1+
1951 10 03	024 0.9+	0.7-	1997 10 03	910 0.0	0.1+

1973 SS = 1996 RO₃₃Id. G. V. Williams (*MPC* 29606)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 281.04682 (2000.0)		P		Q	
<i>n</i>	0.08404048	ω	17.94853	-0.42268188	-0.90456657
<i>a</i>	5.1619094	Ω	97.08594	+0.82446585	-0.40930472
<i>e</i>	0.0859996	<i>i</i>	3.21599	+0.37629255	-0.11928521
<i>P</i>	11.73	<i>H</i>	11.5	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		5	
1973 09 19	675 (3.3+	1.9-)	1973 09 30	675 (0.8+	2.9-)
1973 09 19	675 1.1-	0.6+	1973 09 30	675 0.4-	0.2-
1973 09 20	675 0.4+	1.1+	1973 10 04	675 (5.1+	2.8-)
1973 09 24	675 0.2-	1.5-	1973 10 04	675 1.4-	1.3+
1973 09 24	675 (1.5+	3.8+)	1973 10 05	675 (2.6+	3.3-)
1973 09 25	675 (2.3+	3.9-)	1973 10 05	675 0.3+	0.2+
1973 09 25	675 (0.8+	3.0+)	1996 09 15	809 0.4+	0.1-
1973 09 29	675 1.2+	2.0-	1996 09 16	809 0.4-	0.1+
1973 09 29	675 1.4+	0.6+	1997 11 02	046 0.1+	0.2-

1973 SF₁ = 1997 VP₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 4.04218 (2000.0)		P		Q	
<i>n</i>	0.08392419	ω	339.99081	+0.93392839	-0.34444294
<i>a</i>	5.1666765	Ω	40.56260	+0.34470748	+0.79702454
<i>e</i>	0.1511322	<i>i</i>	8.45274	+0.09462836	+0.49609570
<i>P</i>	11.74	<i>H</i>	11.5	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		6	
1973 09 19	675 0.4+	0.5+	1973 09 29	675 1.6+	2.2-
1973 09 19	675 0.4+	0.8-	1973 09 29	675 0.2+	1.1+
1973 09 20	675 0.5-	0.3+	1973 09 30	675 0.2+	0.3+
1973 09 24	675 1.5-	1.0-	1973 09 30	675 0.3+	1.5+
1973 09 24	675 0.6-	1.1+	1973 10 04	675 0.5+	0.8-
1973 09 25	675 0.3-	0.1+	1973 10 04	675 0.5-	1.1+
1973 09 25	675 0.7+	0.8-	1973 10 05	675 0.0	0.6-

1975 VW₅ = 1997 GS₄₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 315.57047 (2000.0)		P		Q	
<i>n</i>	0.25739733	ω	270.34472	+0.92048027	+0.36608590
<i>a</i>	2.4475600	Ω	68.18461	-0.27351732	+0.85343856
<i>e</i>	0.1451430	<i>i</i>	8.46964	-0.27911351	+0.37097673
<i>P</i>	3.83	<i>H</i>	13.5	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		5	
1975 11 05	095 0.3-	1.9+	1997 04 11	809 0.1+	1.6+
1975 11 06	095 0.3+	1.9-	1997 04 11	809 0.3+	0.9+
1975 11 24	033 0.1-	0.3-	1997 04 11	809 0.0	0.2+
1975 11 25	033 0.2+	0.3+	1997 04 12	809 0.4+	0.5-

1976 SD₅ = 1976 UP₆ = 1997 TE₂₄Id. C. M. Bardwell (d, *MPC* 9064), H. Oishi (d, *ibid.*), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 7.29430 (2000.0)		P		Q	
<i>n</i>	0.18768421	ω	179.06268	+0.84268669	-0.53044473
<i>a</i>	3.0212330	Ω	213.49888	+0.49288242	+0.82897541
<i>e</i>	0.1095370	<i>i</i>	9.62034	+0.21667038	+0.17727990
<i>P</i>	5.25	<i>H</i>	13.5	<i>G</i>	0.15
Residuals in seconds of arc		<i>U</i>		5	
1976 09 24	095 0.7+	0.6-	1997 10 07	620 0.0	0.4+
1976 10 22	381 0.5-	0.3+	1997 10 07	620 0.1+	0.7+
1976 10 22	381 0.3-	1.0+	1997 10 11	620 1.7-	0.3-

1997 NOV. 14

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1976 10 24	381	0.1−	0.3+	1997 10 11	620	0.7−	0.6−	1997 11 06	620	0.7+	0.3−
1997 10 07	620	0.0	0.1−	1997 10 11	620	0.3−	0.9−	1997 11 07	620	1.1+	0.7−
1997 10 07	620	0.1−	0.0	1997 10 31	620	1.7+	0.5−				

1978 SC₅ = 1997 SC₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	25.78750		(2000.0)	P	Q
<i>n</i>	0.25980285	ω	308.47835	+0.97795279	−0.20591481
<i>a</i>	2.4324286	Ω	63.42931	+0.20164948	+0.88793041
<i>e</i>	0.1983111	<i>i</i>	2.22659	+0.05427555	+0.41131335
<i>P</i>	3.79	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1978 09 27	095	0.0	0.6+	1997 09 30	905	0.3+	0.9−	1997 10 21	886	0.4−	0.1+
1978 10 03	095	0.4−	0.3−	1997 09 30	905	1.6−	0.2−	1997 10 22	886	0.5−	0.3+
1978 10 07	095	0.2+	0.3+	1997 10 06	905	0.3+	0.3+	1997 10 22	886	1.0+	0.2+
1997 09 28	905	1.3+	0.7−	1997 10 06	905	0.8+	0.5+				
1997 09 28	905	0.4−	0.4+	1997 10 21	886	0.6−	0.6−				

1978 SS₆ = 1938 DP₂ = 1997 TJ₁₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	22.12537		(2000.0)	P	Q
<i>n</i>	0.25953491	ω	37.75737	+0.98638212	−0.16296960
<i>a</i>	2.4341025	Ω	331.59822	+0.13726078	+0.88993107
<i>e</i>	0.1907174	<i>i</i>	2.67075	+0.09060794	+0.42598544
<i>P</i>	3.80	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1938 02 20	029(49.6+ 44.7+)Y	1978 10 08	095	1.6−	0.4+	1997 10 12	411	0.4+	0.3+	
1938 02 20	029(49.5+ 38.8+)Y	1978 11 01	095	0.9−	1.7+	1997 10 12	411	0.0	0.3+	
1938 02 25	029 0.5−	0.9−	Y 1997 10 08	411	0.1−	0.2−	1997 10 12	411	0.0	0.1−
1938 02 25	029 0.0	0.4−	Y 1997 10 08	411	0.5+	0.2−	1997 10 25	411	0.4−	0.8+
1978 09 26	095 1.9+	2.6−	1997 10 10	411	0.1−	1.0−	1997 10 25	411	0.5−	1.1+
1978 10 02	095 1.0+	0.5−	1997 10 10	411	0.1+	0.4−				

1978 SW₇ = 1974 RT₁ = 1997 UO₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	352.32570		(2000.0)	P	Q
<i>n</i>	0.25597388	ω	47.54627	+0.93521924	−0.35223296
<i>a</i>	2.4566254	Ω	333.01854	+0.29708171	+0.83596255
<i>e</i>	0.1397052	<i>i</i>	4.55266	+0.19263289	+0.42083080
<i>P</i>	3.85	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1974 09 14	095	0.2+	0.3−	1978 11 29	675	0.5+	0.2+	1997 10 18	327	0.1−	0.1−
1978 09 26	095	0.8−	0.1+	1997 10 17	327	0.7+	0.2+	1997 10 18	327	0.6+	0.4+
1978 10 02	095	0.8+	0.4+	1997 10 17	327	0.8−	0.3−	1997 10 19	327	0.1+	0.0
1978 10 08	095	0.3+	0.7−	1997 10 17	327	0.0	0.1−	1997 10 19	327	0.1+	0.0
1978 10 27	675	0.4−	0.2−	1997 10 17	327	0.5−	0.0	1997 10 19	327	0.2+	0.1+
1978 10 28	675	0.0	0.2+	1997 10 18	327	0.3−	0.2+				
1978 11 28	675	0.5−	0.1−	1997 10 18	327	0.1−	0.1+				

1978 UX₅ = 1997 UG₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	17.72255		(2000.0)	P	Q
<i>n</i>	0.30954543	ω	145.09946	+0.98624130	−0.15622911
<i>a</i>	2.1643116	Ω	223.98883	+0.12835773	+0.92970787
<i>e</i>	0.0738257	<i>i</i>	4.46284	+0.10417482	+0.33352024
<i>P</i>	3.18	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1978 10 27	675	0.1−	0.9−	1978 11 29	675	0.2−	0.1+	1997 10 17	327	0.2+	0.2−
1978 10 28	675	0.2+	0.3+	1997 10 17	327	0.0	0.2+	1997 10 19	327	0.4−	0.0

1978 10 29	675	0.1−	0.4+	1997 10 17	327	0.1+	0.2−	1997 10 19	327	0.3−	0.3−
1978 11 28	675	0.2+	0.0	1997 10 17	327	0.2+	0.2+	1997 10 19	327	0.1+	0.3+

1979 MM₃

Id. E. Bowell (1989 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	221.10190		(2000.0)	P	Q
<i>n</i>	0.20321631	ω	254.48523	+0.92845462	−0.26228009
<i>a</i>	2.8652576	Ω	120.07097	+0.32612646	+0.91455338
<i>e</i>	0.1156218	<i>i</i>	17.69384	−0.17780199	+0.30789815
<i>P</i>	4.85	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1979 06 23	413	0.7−	0.6−	1979 07 24	413	0.3+	0.3−	1989 09 01	675	1.1+	0.1+
1979 06 24	413	0.4−	0.3+	1979 07 25	675	0.9+	0.3−	1989 09 01	675	0.2+	0.8−
1979 06 25	413	0.5−	0.1−	1979 08 23	675	0.2−	0.2+	1989 09 04	675	0.6+	1.6+
1979 06 29	413	0.5−	0.0	1989 08 29	675	1.1−	0.1−				
1979 07 24	675	1.0+	1.0+	1989 08 29	675	0.9−	1.0−				

1979 SC = 1987 YA₅

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

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	174.86442		(2000.0)	P	Q
<i>n</i>	0.28375363	ω	226.28038	−0.17438704	+0.98364330
<i>a</i>	2.2935511	Ω	33.75376	−0.87847721	−0.13471978
<i>e</i>	0.1261455	<i>i</i>	4.65696	−0.44482238	−0.11956768
<i>P</i>	3.47	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1979 09 16	801	1.0−	0.6−	1979 09 20	675	0.6+	0.2−	1993 09 21	675	0.5+	0.2−
1979 09 17	801	0.1+	0.1−	1979 09 21	675	0.1+	0.3−	1993 09 21	675	0.3−	0.2+
1979 09 17	801	0.1−	1.1+	1987 12 24	010	0.8−	0.2−	1993 09 23	675	0.3−	0.2+
1979 09 18	801	0.4+	0.0	1987 12 24	010	0.8+	0.1+				

1980 UN₁ = 1997 UY₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	47.66582		(2000.0)	P	Q
<i>n</i>	0.23349416	ω	75.38862	+0.98722001	+0.15329400
<i>a</i>	2.6118729	Ω	275.77956	−0.15780411	+0.90218790
<i>e</i>	0.2371556	<i>i</i>	2.50945	−0.02223781	+0.40318476
<i>P</i>	4.22	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1980 10 14	675	1.0+	1.2−	1997 10 20	327	0.2−	0.5+	1997 10 30	566	0.2+	0.2−
1980 10 14	675	0.8−	0.7+	1997 10 20	327	0.3−	0.6+	1997 10 30	566	0.0	0.7−
1980 10 31	675	0.1−	0.1+	1997 10 21	327	0.2+	0.2−	1997 10 30	566	0.1+	0.6−
1980 11 02	675	0.1−	0.2+	1997 10 21	327	0.2+	0.3+				
1997 10 20	327	0.1+	0.2+	1997 10 21	327	0.2−	0.0				

1981 EU₂₅ = 1978 PD₂ = 1997 QA₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	52.41721		(2000.0)	P	Q
<i>n</i>	0.25900306	ω	124.44550	+0.43746917	+0.89914221
<i>a</i>	2.4374335	Ω	171.46792	−0.85075759	+0.41845711
<i>e</i>	0.2180433	<i>i</i>	4.95203	−0.29125974	+0.12820663
<i>P</i>	3.81	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1978 08 08	095	0.3−	0.8+	1981 03 11	413	1.4+	1.6−	1981 05 01	413	0.2−	0.6+
1981 02 09	413	0.9+	0.4−	1981 03 15	413	(2.9−	0.1+)	1981 05 02	413	1.6−	2.1+
1981 02 12	413	0.3+	0.6−	1981 03 15	413	0.9+	1.0−	1997 08 30	566	0.5+	0.4−
1981 02 13	413	(2.5+ 0.8−)		1981 04 06	413	(3.6−	1.9+)	1997 08 30	566	0.5+	0.6−
1981 03 02	413	0.3+	0.6−	1981 04 06	413	1.3−	0.2+	1997 08 30	566	0.5+	0.2−
1981 03 02	413	0.5−	0.5−	1981 04 10	413	2.0−	1.6+	1997 09 29	327	0.3−	0.5−

1981 03 06 413 (3.4− 0.2+) 1981 04 10 413 1.9− 0.2+ 1997 09 29 327 0.3− 0.4−
 1981 03 06 413 3.0+ 1.6− 1981 04 26 413 (2.3+ 1.8−) 1997 09 29 327 0.5− 0.3−

1981 EA₃₄ = 1997 UN₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21874180	ω	226.69800	+0.23017189	−0.97019251		
<i>a</i>	2.7280241	Ω	210.24057	+0.93074814	+0.24221909		
<i>e</i>	0.1300583	<i>i</i>	8.65763	+0.28412815	−0.00751043		
<i>P</i>	4.51	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02 413 0.7− 0.3+ 1981 03 11 413 0.9+ 0.6− 1997 10 24 691 0.2− 0.1+
 1981 02 14 413 0.9+ 0.6− 1981 03 15 413 2.3− 1.6+ 1997 10 24 691 0.3+ 0.2+
 1981 03 01 413 (9.8− 5.2+) 1981 03 15 413 0.2+ 1.3+ 1997 10 25 691 0.1− 0.1+
 1981 03 07 413 0.2− 0.4− 1981 05 02 413 0.5− 1.3− 1997 10 25 691 0.3− 0.1+
 1981 03 07 413 0.7+ 0.1+ 1981 05 03 413 1.0+ 0.1− 1997 10 25 691 0.1− 0.6+
 1981 03 11 413 0.2+ 0.7− 1997 10 24 691 0.4+ 1.2−

1981 ET₄₁

Id. H. E. Holt (1993 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27661872	ω	190.24784	+0.99769101	−0.06597519		
<i>a</i>	2.3328224	Ω	173.47011	+0.06788873	+0.96198446		
<i>e</i>	0.1342149	<i>i</i>	8.15029	+0.00194310	+0.26501541		
<i>P</i>	3.56	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 09 413 0.0 0.2+ 1981 03 15 413 1.3− 0.0 1993 09 18 675 0.5+ 0.3−
 1981 02 13 413 0.2− 0.4+ 1981 03 15 413 0.6+ 1.2− 1993 09 18 675 0.1− 0.1−
 1981 03 02 413 0.3− 1.1− 1981 04 06 413 1.3− 1.0+ 1993 09 22 675 0.6− 0.0
 1981 03 06 413 0.3− 0.5+ 1981 04 06 413 0.4+ 0.6− 1993 09 22 675 0.4+ 0.5−
 1981 03 11 413 0.2+ 0.2+ 1981 04 26 413 (3.2+ 1.8−)
 1981 03 11 413 1.4+ 0.0 1981 05 01 413 0.5+ 0.4−

1982 VP₃ = 1997 VB₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19533086	ω	199.87891	−0.15324452	+0.96627848		
<i>a</i>	2.9418609	Ω	61.79159	−0.87191874	−0.03366608		
<i>e</i>	0.0585234	<i>i</i>	13.58124	−0.46505250	−0.25528903		
<i>P</i>	5.05	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1982 11 14 381 0.4+ 0.6+ 1982 12 14 381 0.3+ 0.1+ 1997 11 02 399 1.4− 1.0−
 1982 11 14 381 0.2− 0.5− 1982 12 14 381 0.2+ 0.2− 1997 11 02 399 0.2− 1.0+
 1982 12 13 381 0.7− 0.2+ 1997 11 01 399 0.1+ 0.0
 1982 12 13 381 0.1+ 0.2− 1997 11 01 399 1.5+ 0.0

1984 BQ

Id. H. E. Holt (1993 observations), E. Bowell (1989 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26713266	ω	133.35901	−0.98897929	+0.10135224		
<i>a</i>	2.3877273	Ω	52.74875	−0.14056037	−0.87172452		
<i>e</i>	0.0653044	<i>i</i>	7.79247	+0.04650536	−0.47939971		
<i>P</i>	3.69	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1984 01 26 046 (3.1+ 0.0) 1984 02 01 046 1.6− 1.9− 1993 09 19 675 0.4− 0.9+
 1984 01 26 046 0.9+ 0.3+ 1984 02 01 046 0.1− 0.7− 1993 09 19 675 0.3+ 0.6−
 1984 01 27 046 1.0+ 0.4+ 1984 02 04 046 1.7− 0.6+ 1993 09 23 675 0.1+ 0.6−
 1984 01 28 046 0.1+ 1.7+ 1984 02 04 046 1.1− 1.0− 1993 09 23 675 0.4+ 0.2−

1984 01 29 046 0.1+ 0.7+ 1989 08 29 675 0.1− 0.1− 1993 10 10 675 0.1− 0.3−
 1984 01 29 046 2.5+ 0.1− 1989 08 29 675 0.0 0.3+ 1993 10 10 675 0.2− 0.6+

1985 RG₃

Id. E. Bowell (1993 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25133057	ω	282.02529	+0.92437097	−0.37075656		
<i>a</i>	2.4867903	Ω	99.78980	+0.37579486	+0.84435627		
<i>e</i>	0.1762766	<i>i</i>	5.23294	+0.06570033	+0.38678427		
<i>P</i>	3.92	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1985 09 06 809 0.1+ 0.6− 1985 09 10 809 0.4− 0.2+ 1993 09 18 675 0.2− 1.3−
 1985 09 06 809 0.0 0.6− 1985 09 10 809 0.4− 0.2+ 1993 09 18 675 0.3+ 0.3−
 1985 09 06 809 0.1+ 0.4− 1985 09 10 809 0.2− 0.1+ 1993 09 23 675 0.3+ 0.5−
 1985 09 08 809 0.1− 0.1+ 1985 09 11 809 0.2− 0.5+ 1993 09 23 675 0.5+ 0.0
 1985 09 08 809 0.3+ 0.1+ 1985 09 11 809 0.2+ 0.5+ 1993 10 12 675 0.0 0.6+
 1985 09 08 809 0.2+ 0.2+ 1985 09 11 809 0.2+ 0.4+ 1993 10 12 675 0.7− 0.9+

1986 TR₁₁ = 1997 TB₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26873158	ω	72.46718	+0.65117954	+0.74753733		
<i>a</i>	2.3782468	Ω	238.89279	−0.74133767	+0.58961128		
<i>e</i>	0.2775330	<i>i</i>	8.79886	−0.16243050	+0.30585369		
<i>P</i>	3.67	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1986 10 03 095 1.8− 0.5+ 1997 10 17 557 0.3+ 0.3− 1997 10 27 557 0.5+ 0.1+
 1986 10 07 095 1.4+ 1.9+ 1997 10 17 557 0.1+ 0.4− 1997 10 27 557 0.4+ 0.0
 1986 10 11 095 0.4+ 2.0− 1997 10 19 557 0.0 0.1− 1997 10 30 566 0.2− 0.2+
 1997 10 12 557 0.1+ 0.4− 1997 10 19 557 0.1+ 0.0 1997 10 30 566 0.1− 0.0
 1997 10 12 557 0.3+ 0.2− 1997 10 21 758 0.9− 0.1+ 1997 10 30 566 0.3− 0.3+
 1997 10 12 557 0.2+ 0.3− 1997 10 21 758 0.5− 0.6+
 1997 10 17 557 0.5+ 0.3− 1997 10 21 758 0.5− 0.3+

1986 WB

Id. E. Bowell (1989 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27944239	ω	342.66757	+0.68463196	−0.71965462		
<i>a</i>	2.3170809	Ω	63.95044	+0.68307158	+0.57809852		
<i>e</i>	0.1275960	<i>i</i>	7.39641	+0.25434680	+0.38457682		
<i>P</i>	3.53	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1986 11 22 881 0.8− 0.6− Y 1986 12 03 046 (4.8− 0.7−) 1987 01 04 881 0.4− 0.0
 1986 11 22 881 1.8− 0.9+ Y 1986 12 03 046 2.3− 1.4− 1987 01 04 881 (0.6+ 5.7−)
 1986 11 29 881 0.9− 0.1+ 1986 12 04 010 (0.9+ 3.6−) 1989 08 29 675 0.1+ 0.3+
 1986 11 29 881 1.2+ 1.2+ 1986 12 05 881 0.1+ 0.8+ 1989 08 29 675 0.5− 0.1+
 1986 11 30 046 2.1− 1.5− 1986 12 05 881 1.3+ 0.6+ 1989 09 01 675 0.5− 1.2−
 1986 11 30 046 (3.3− 0.4−) 1986 12 06 054 1.0− 1.5+ 1989 09 01 675 0.7+ 0.2+
 1986 12 01 046 0.6+ 1.4− 1986 12 08 888 2.3+ 0.2+ 1989 09 04 675 0.1+ 0.1+
 1986 12 01 046 1.6+ 1.3− 1986 12 08 888 0.0 1.1+ 1989 09 04 675 0.2+ 0.3+
 1986 12 02 688 0.7− 0.8+ 1986 12 26 881 0.7+ 1.5−
 1986 12 02 688 0.6+ 0.6+ 1986 12 26 881 1.7+ 0.1+

1986 WO₁ = 1986 XG = 1982 RQ₁Id. S. Nakano (d, *MPC* 11613; *MPC* 11733)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	19.53477		(2000.0)	P	Q
<i>n</i>	0.26599993	ω	15.91776	+0.86663871	-0.49883713
<i>a</i>	2.3945011	Ω	14.01831	+0.45317076	+0.77865199
<i>e</i>	0.2204443	<i>i</i>	2.35237	+0.20874291	+0.38060819
<i>P</i>	3.71	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 09 15	046	2.4-	0.5+	1986 11 29	046	0.3+	0.3-	1997 10 29	704	0.4-	0.0
1982 09 15	046	0.1+	1.5+	1986 12 04	046	0.1+	0.2-	1997 10 29	704	0.1-	0.1-
1982 09 15	046	0.5-	1.7+	1986 12 04	046	(3.1-	0.6-)	1997 10 30	704	(2.4+	0.7-)
1982 09 15	046	1.3-	0.6+	1986 12 06	054	0.6+	0.7-	1997 10 30	704	(2.9+	0.5-)
1982 09 16	095	(8.9+	4.0+)	1995 02 22	046	0.5+	1.0+	1997 10 30	704	(3.1+	0.8-)
1982 09 16	095	0.5+	0.6-	1995 02 22	046	0.8+	1.1+	1997 10 30	704	(2.7+	0.2+)
1982 09 16	046	(5.2+	0.5-)	1995 02 22	046	0.8-	1.5+	1997 10 30	704	0.2-	0.2-
1982 09 16	046	(6.2+	1.0+)	1995 03 01	046	0.9+	0.7+	1997 11 01	367	0.3+	0.1-
1982 09 17	046	1.6+	0.0	1995 03 01	046	0.2+	0.2+	1997 11 01	367	0.4+	0.2-
1982 09 17	046	(6.3+	0.3+)	1995 03 01	046	0.6+	0.4+	1997 11 02	367	0.5+	0.1+
1986 11 25	046	0.9-	1.4-	1997 10 29	704	0.7-	0.1+	1997 11 02	367	0.6+	0.1+
1986 11 25	046	1.5-	0.1+	1997 10 29	704	0.1-	0.3-				
1986 11 29	046	1.6+	1.3+	1997 10 29	704	0.3-	0.6+				

1988 QA = 1997 VD₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	27.54305		(2000.0)	P	Q
<i>n</i>	0.22614577	ω	206.93702	+0.99953926	-0.02368813
<i>a</i>	2.6681510	Ω	154.39903	+0.02894479	+0.93209538
<i>e</i>	0.2151668	<i>i</i>	2.51717	-0.00913599	+0.36143752
<i>P</i>	4.36	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1988 08 08	095	1.3+	0.9-	1988 08 22	552	(0.4+	3.7-)	1988 09 10	552	0.7-	0.4+
1988 08 08	095	0.1-	1.1+	1988 08 23	046	0.1-	0.5+	1997 11 03	046	0.4-	0.1-
1988 08 17	552	(1.6+	2.8+)	1988 08 24	046	0.3-	0.5+	1997 11 03	046	0.5-	0.4-
1988 08 17	046	1.8-	1.8-	1988 09 03	552	0.7+	0.3+	1997 11 03	046	0.5-	0.4-
1988 08 17	046	2.1-	0.6-	1988 09 03	552	(0.2-	2.2+)	1997 11 04	046	0.7-	0.1+
1988 08 17	552	(2.9+	3.9+)	1988 09 03	552	0.6+	0.3+	1997 11 04	046	0.4-	0.3-
1988 08 18	552	1.4+	0.3+	1988 09 03	552	0.8+	1.1+	1997 11 04	046	0.4+	0.2+
1988 08 18	046	(0.9-	3.4-)	1988 09 07	552	0.3-	0.4-	1997 11 04	046	0.6+	0.3+
1988 08 18	046	1.0-	0.7+	1988 09 07	552	0.2+	0.0	1997 11 04	046	0.9+	0.3+
1988 08 18	552	1.5+	0.5+	1988 09 10	675	0.2-	0.1-	1997 11 04	046	0.5+	0.3+
1988 08 22	552	0.3+	0.8-	1988 09 10	552	0.1-	1.2-				

1988 RX₂

Id. T. Kobayashi (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	47.19005		(2000.0)	P	Q
<i>n</i>	0.22645596	ω	236.18225	+0.97933670	-0.20217580
<i>a</i>	2.6657140	Ω	135.48140	+0.18780658	+0.90009327
<i>e</i>	0.1086919	<i>i</i>	0.40508	+0.07502211	+0.38594955
<i>P</i>	4.35	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1988 09 08	033	0.3-	0.0	1988 10 07	675	0.6-	0.9-	1988 10 14	046	1.0+	1.8+
1988 09 08	033	0.1+	0.3-	1988 10 07	675	0.1-	1.1-	1997 11 06	411	1.0+	0.6-
1988 09 09	033	0.2+	0.1+	1988 10 13	675	0.5-	0.3+	1997 11 06	411	0.6-	0.0
1988 09 10	033	0.4+	0.4-	1988 10 13	675	0.2-	0.2+	1997 11 07	411	0.1+	0.1+
1988 09 11	033	0.0	0.0	1988 10 14	046	0.1-	0.4+	1997 11 07	411	0.5-	0.1+

1988 VE₁ = 1997 UG

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	70.87124		(2000.0)	P	Q
<i>n</i>	0.21344598	ω	267.42689	+0.67487712	+0.73066578
<i>a</i>	2.7729629	Ω	45.60258	-0.60650207	+0.62895062
<i>e</i>	0.1447159	<i>i</i>	8.31173	-0.42035236	+0.26560994
<i>P</i>	4.62	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1988 11 02	372	(4.2-	6.5-)	Y	1988 11 13	372	1.1-	1.1-	1997 10 21	557	0.0	0.1+
1988 11 06	372	0.4-	0.7-		1988 11 18	372	0.4-	1.9-	1997 10 21	557	0.2+	0.0
1988 11 08	372	(6.1-	1.2+)		1988 11 18	372	1.4+	1.4-	1997 10 21	557	0.1+	0.0
1988 11 08	372	1.9-	1.3+		1988 11 30	372	(6.8+	0.8+)	1997 10 23	557	0.2+	0.1-
1988 11 10	372	(5.0-	1.0-)		1988 11 30	372	1.6-	1.4+	1997 10 23	557	0.2+	0.1-
1988 11 10	372	2.0+	2.4+		1997 10 19	557	0.4-	0.1+				
1988 11 13	372	1.9+	0.0		1997 10 19	557	0.3-	0.0				

1989 RB₆ = 1982 UY₅ = 1982 VH₆ = 1990 UZ₁₂

Id. E. Bowell (1956, 1990 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	29.90839		(2000.0)	P	Q
<i>n</i>	0.12574622	ω	289.44488	+0.73622056	+0.66908995
<i>a</i>	3.9458396	Ω	28.83476	-0.51469007	+0.65095750
<i>e</i>	0.2130705	<i>i</i>	12.14651	-0.43940120	+0.35857074
<i>P</i>	7.84	<i>H</i>	11.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1956 05 08	675	0.3-	0.4-	1989 08 29	675	0.2-	0.2+	1990 10 22	675	0.4-	0.6+
1982 10 20	095	0.1+	0.7-	1989 09 01	675	0.3-	0.6+	1990 10 23	095	(1.2+	5.3+)
1982 11 08	095	1.4+	1.6-	1989 09 01	675	1.3+	1.2-	1990 11 13	675	0.0	0.4+
1989 08 01	675	0.3-	0.5+	1989 09 04	675	0.4+	0.4-	1990 11 13	675	0.2-	0.1+
1989 08 01	675	0.5-	0.8+	1989 09 04	675	0.4-	0.1-				
1989 08 29	675	0.2-	0.2-	1990 10 22	675	0.4-	1.0+				

1989 SY = 1991 HL₄

Id. H. E. Holt (1993 observations), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	333.39798		(2000.0)	P	Q
<i>n</i>	0.23979544	ω	45.87681	+0.31939047	-0.94269679
<i>a</i>	2.5659140	Ω	25.96384	+0.79428214	+0.21077645
<i>e</i>	0.2835891	<i>i</i>	12.73377	+0.51682261	+0.25864272
<i>P</i>	4.11	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1989 09 30	675	0.2-	1.9-	1989 10 20	403	1.8+	2.4+	1989 11 19	026	0.4-	0.0
1989 09 30	675	1.1-	2.6-	1989 10 23	403	2.2-	0.0	1991 04 19	809	0.2+	1.0+
1989 09 30	400	0.6+	0.2-	1989 10 23	403	1.3-	1.0-	1991 04 19	809	0.7+	0.6+
1989 09 30	400	0.4+	1.4+	1989 10 23	095	2.9-	2.3+	1991 04 19	809	0.5+	0.5+
1989 09 30	400	1.3-	0.6+	1989 10 23	095	2.4+	0.5+	1993 09 18	675	0.3+	0.5-
1989 10 08	400	0.3-	1.4+	1989 10 23	026	2.4-	0.7+	1993 09 18	675	0.4+	0.9-
1989 10 08	400	2.1+	1.0-	1989 10 24	026	0.4-	0.1+	1993 09 21	675	0.6-	0.5+
1989 10 08	400	0.1-	0.8+	1989 11 04	095	0.9+	0.2-	1993 09 21	675	1.0-	0.4+
1989 10 08	897	3.2-	1.4+	1989 11 04	095	0.3+	0.8-	1993 09 23	675	0.7-	0.4+
1989 10 08	897	1.5+	0.1-	1989 11 08	026	3.1+	0.4-	1993 10 12	675	0.6+	0.3+
1989 10 10	400	1.2+	0.9-	1989 11 08	026	0.7-	0.8-	1993 10 12	675	0.8+	0.2-
1989 10 10	400	0.9+	1.6-	1989 11 17	026	0.8+	0.5-				
1989 10 20	403	1.5+	1.9+	1989 11 18	026	1.9-	0.2-				

1989 UH₇ = 1993 SR₇ = 1996 FS₁₆ = 1997 SH₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	43.25194		(2000.0)	P		Q					
<i>n</i>	0.22882794	ω	117.50325	+0.68318725		+0.73009902					
<i>a</i>	2.6472605	Ω	195.61720	-0.68756682		+0.63643958					
<i>e</i>	0.0616230	<i>i</i>	3.09013	-0.24598180		+0.24879727					
<i>P</i>	4.31	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1989 10 23	033	0.2+	0.3-	1993 09 24	809	1.0+	0.7+	1997 09 26	327	0.1-	0.0
1989 10 23	033	0.5+	0.3+	1993 09 24	809	0.4-	0.2+	1997 09 26	327	0.1+	0.1-
1989 10 25	033	0.0	0.3+	1996 03 22	809	(3.1-	0.1-)	1997 09 26	327	0.1+	0.2-
1989 10 25	033	0.4+	0.7+	1996 03 22	809	(3.9-	0.7+)	1997 09 26	327	0.2+	0.2-
1989 10 27	033	1.4-	0.4+	1996 03 22	809	(3.2-	0.4-)	1997 09 26	327	0.2+	0.4-
1993 09 17	809	1.7-	0.4+	1996 03 24	809	0.4+	0.7-	1997 09 29	327	0.3+	0.1-
1993 09 17	809	1.2-	0.0	1996 03 24	809	0.7-	0.2-	1997 09 29	327	0.1+	0.4-
1993 09 17	809	1.4-	0.2-	1996 03 24	809	0.7-	1.0-	1997 09 29	327	0.4+	0.2-
1993 09 18	809	2.2+	0.9+	1996 03 26	809	0.8+	1.9+	1997 10 17	327	0.5-	0.1+
1993 09 18	809	1.0+	1.6+	1996 03 26	809	0.5+	1.6+	1997 10 17	327	0.4-	0.1-
1993 09 18	809	0.9+	1.7+	1996 03 26	809	0.0	1.9+	1997 10 17	327	0.3-	0.3+
1993 09 22	809	0.1+	0.3-	1996 03 26	809	0.4+	0.5+	1997 10 17	327	0.0	0.5-
1993 09 22	809	1.0-	0.8-	1996 03 26	809	0.1+	0.1+	1997 10 19	327	0.1+	0.2+
1993 09 22	809	2.2-	0.1+	1996 03 26	809	0.6+	0.6+	1997 10 19	327	0.2-	0.3+
1993 09 24	809	1.3+	0.0	1997 09 26	327	0.1+	0.1-	1997 10 19	327	0.2+	0.1-

1989 VS₂ = 1989 WX₄ = 1989 WP₇ = 1989 XJ₃Id. S. Nakano (d, *MPC* 22572), H. E. Holt (1993 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	12.27372		(2000.0)	P		Q			
<i>n</i>	0.22764538	ω	267.36517	+0.82484597	+0.52358949				
<i>a</i>	2.6564205	Ω	60.97982	-0.37116111	+0.78605985				
<i>e</i>	0.1904054	<i>i</i>	14.11614	-0.42646050	+0.32857870				
<i>P</i>	4.33	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1989 11 02	400	(4.5- 2.7+)	1989 11 21	095	(2.7- 1.4-)	1993 09 20	675	0.5- 0.6+	
1989 11 02	400	0.2- 0.5+	1989 12 02	808	0.0 0.2-	1993 09 20	675	0.6- 0.7+	
1989 11 17	400	0.0 1.6-	1989 12 02	808	0.3- 0.7+	1993 10 10	675	0.3+ 0.1-	
1989 11 17	400	0.4+ 0.6+	1993 09 19	675	0.5+ 0.7-	1993 10 10	675	0.3+ 0.1+	
1989 11 21	095	(3.3- 3.2+)	1993 09 19	675	0.0 0.6-				

1990 FK₁ = 1984 FE₂ = 1997 UT₁₀

Id. G. V. Williams, T. B. Spahr

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	92.07696		(2000.0)	P			Q				
n	0.17344292	ω	68.92438	-0.43417859			+0.90067645				
a	3.1844297	Ω	175.24460	-0.88251619			-0.42161720				
e	0.1683016	i	11.45113	-0.18070453			-0.10498035				
P	5.68	H	12.0	G	0.15		U	4			
Residuals in seconds of arc											
1984 03 30	095	0.2+	0.9+	1990 04 19	400	1.2-	1.4-	1997 10 31	557	0.2+	0.1+
1990 03 27	400	1.9+	0.7-	1990 04 19	400	0.1+	1.2-	1997 10 31	557	0.1-	0.5+
1990 03 27	400	1.1+	0.7+	1990 04 20	400	0.1+	0.5-	1997 11 03	557	0.1-	0.2-
1990 03 29	400	0.1+	0.5-	1990 04 20	400	0.6+	1.3+	1997 11 03	557	0.2+	0.0
1990 03 29	400	0.9-	0.3-	1997 10 30	557	0.1+	0.1+	1997 11 05	557	0.2-	0.3+
1990 04 01	675	0.9-	1.7+	1997 10 30	557	0.2-	0.4+	1997 11 05	557	0.0	0.4+
1990 04 01	675	0.8-	1.0+	1997 10 30	557	0.1-	0.5-				

1990 RF₅ = 1983 RW₅ = 1997 TY₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	48.43364		(2000.0)		P		Q				
<i>n</i>	0.28642652	ω	123.99540		+0.94493054		+0.32386411				
<i>a</i>	2.2792602	Ω	217.17007		-0.32006050		+0.88444917				
<i>e</i>	0.1963280	<i>i</i>	4.47101		-0.06831944		+0.33594895				
<i>P</i>	3.44	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1983 09 03	095	0.2-	0.6+	1990 09 20	675	(0.0	3.0-)	1997 10 14	620	1.2-	0.5+
1990 08 29	095	0.3-	0.5+	1990 09 20	675	0.3+	1.3-	1997 10 14	620	1.3-	1.2+
1990 08 29	095	0.0	0.5-	1990 09 22	095	(2.8-	3.3-)	1997 10 14	620	0.9-	0.3+
1990 09 15	675	(0.7+	2.8-)	1990 09 22	095	0.2+	0.4+	1997 10 24	620	0.3+	0.2+
1990 09 15	675	(0.4+	2.6-)	1997 10 11	620	0.1-	0.2-	1997 10 24	620	0.4+	0.0
1990 09 18	095	0.1+	0.1-	1997 10 11	620	1.0+	0.6-				
1990 09 18	095	(2.8+	1.0+)	1997 10 11	620	1.7+	1.0-				

1990 TG₅ = 1997 UN₂₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	33.34823		(2000.0)			P		Q			
<i>n</i>	0.29192378	ω	83.85638			+0.93990958		−0.33628351			
<i>a</i>	2.2505555	Ω	295.78162			+0.28156837		+0.86123440			
<i>e</i>	0.1851621	<i>i</i>	3.75812			+0.19310421		+0.38103636			
<i>P</i>	3.38	<i>H</i>	14.3			<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc											
1990 09 16	675	1.4+	0.1+	1990 09 20	675	0.7−	0.4−	1997 10 25	408	0.6−	0.7−
1990 09 16	675	1.5+	0.8−	1990 09 26	095	0.8+	0.4+	1997 10 25	408	0.9+	1.6−
1990 09 18	095	0.3−	0.8−	1990 09 26	095	0.3−	0.5+	1997 10 27	408	0.3−	0.8+
1990 09 18	095	1.6−	1.9−	1990 10 09	413	1.6−	0.3+	1997 10 27	408	1.4−	0.2+
1990 09 19	675	1.3+	0.3+	1990 10 09	413	0.4−	1.8+	1997 10 27	408	0.8+	0.2−
1990 09 19	675	0.4+	0.3+	1990 10 11	413	0.1−	1.3+				
1990 09 20	675	0.7−	0.1−	1997 10 25	408	0.9+	0.7+				

1990 TO₉ = 1997 VB

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	12.68143		(2000.0)	P		Q					
<i>n</i>	0.28572754	ω	126.42611	+0.72232178	-0.68929141						
<i>a</i>	2.2829758	Ω	277.22208	+0.61507916	+0.67730813						
<i>e</i>	0.1364469	<i>i</i>	3.23212	+0.31611529	+0.25715960						
<i>P</i>	3.45	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1990 10 10	033	0.0	0.4+	1997 10 30	566	0.4-	0.4+	1997 11 03	367	0.1-	0.2-
1990 10 11	033	0.3-	0.0	1997 11 01	367	1.7+	0.4+	1997 11 03	900	0.3-	0.0
1990 10 11	033	0.3-	0.3+	1997 11 01	367	1.6+	0.3+	1997 11 03	900	0.5-	0.1-
1990 10 12	033	0.2+	0.1-	1997 11 02	367	0.3-	0.2+	1997 11 03	402	0.3-	0.1-
1990 10 13	033	0.6+	0.3-	1997 11 02	367	0.1-	0.2-	1997 11 03	402	0.3-	0.1-
1990 10 14	033	0.1-	0.6-	1997 11 02	900	0.5-	0.3+	1997 11 03	402	0.2-	0.1-
1997 10 30	566	0.2-	0.4+	1997 11 02	900	0.2+	0.0	1997 11 08	367	0.1+	0.5-
1997 10 30	566	0.4-	0.3+	1997 11 03	367	0.2-	0.4-	1997 11 08	367	0.1+	0.5-

1991 AQ₂ = 1993 PB₈Id. G. V. Williams (*MPC* 23781)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	297.73546		(2000.0)	P		Q					
n	0.25554942	ω	179.37567	-0.28232943		-0.95931685					
a	2.4593449	Ω	287.02361	+0.88015148		-0.25856133					
e	0.1747002	i	0.06780	+0.38160642		-0.11338971					
P	3.86	H	15.5	G	0.15	U	4				
Residuals in seconds of arc											
1991 01 15	033	0.2-	1.4+	1991 02 09	675	0.1+	0.1-	1993 08 24	809	0.3-	0.9+
1991 01 15	033	1.3+	0.7+	1991 02 11	675	0.5+	1.5-	1997 10 07	824	0.3+	0.3-

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1991 01 15	033	0.8+	0.2+	1991 02 11	675	0.1-	0.5-	1997 10 07	824	0.4+	0.2-
1991 01 15	033	0.1-	0.1-	1993 08 15	809	(3.8-	1.4-)	1997 10 07	824	0.1+	0.4-
1991 01 16	033	0.6+	0.6+	1993 08 15	809	(3.2-	0.9-)	1997 10 08	824	0.4-	0.6-
1991 01 22	675	0.7-	1.0+	1993 08 15	809	(5.2-	2.4-)	1997 10 08	824	0.7+	0.8-
1991 01 22	675	0.8-	0.6+	1993 08 24	809	0.4-	1.7+	1997 10 08	824	0.2+	0.7-
1991 02 09	675	0.9-	1.3-	1993 08 24	809	0.7-	0.7+				

1991 CP₁

Id. H. E. Holt (1993 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	307.52702		(2000.0)	P	Q		
<i>n</i>	0.25995555	ω	7.79280	-0.50454197	-0.85948745		
<i>a</i>	2.4314760	Ω	112.54095	+0.78727869	-0.49696234		
<i>e</i>	0.1293000	<i>i</i>	5.09156	+0.35444274	-0.11962336		
<i>P</i>	3.79	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 01 17	033	0.4+	0.2-	1991 02 12	875	0.9+	1.2-	1993 09 21	675	0.2+	1.4-
1991 01 17	033	0.2-	0.2-	1991 02 17	875	0.0	0.3+	1993 09 21	675	0.4-	0.6+
1991 01 18	033	0.2-	0.3-	1991 02 17	875	0.8+	1.0-	1993 09 23	675	0.2+	0.8+
1991 02 07	875	1.2-	0.6+	1991 02 20	875	0.6+	0.1+				
1991 02 07	875	0.2+	1.8+	1991 02 20	875	1.4-	0.1+				

1991 FX₂ = 1991 GL₂ = 1997 VJ₂Id. S. Nakano (d, *MPC* 19821; unpublished)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	31.88503		(2000.0)	P	Q		
<i>n</i>	0.23676132	ω	1.75166	+0.93971452	-0.33429532		
<i>a</i>	2.5877891	Ω	18.28750	+0.31088637	+0.74748444		
<i>e</i>	0.1703602	<i>i</i>	13.26409	+0.14242992	+0.57403279		
<i>P</i>	4.16	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 03 20	809	0.2-	0.1-	1991 04 08	809	0.5-	0.8+	1991 04 20	675	0.8+	0.2-
1991 03 20	809	0.1-	0.0	1991 04 08	809	(2.5-	0.4-)	1997 11 01	399	0.1-	0.2+
1991 03 20	809	0.1+	0.2-	1991 04 10	809	1.3+	0.5-	1997 11 01	399	0.2-	0.0
1991 03 21	809	0.2-	0.5+	1991 04 10	809	0.1-	0.9-	1997 11 02	399	0.7+	0.3-
1991 03 21	809	0.2+	0.2+	1991 04 10	809	1.3-	1.1-	1997 11 02	399	0.4-	0.1+
1991 03 21	809	0.5+	0.1+	1991 04 15	675	1.1-	0.8+				
1991 04 08	809	(3.2+	2.3+)	1991 04 20	675	0.6+	0.6+				

1991 PE₆ = 1997 UW₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	97.53150		(2000.0)	P	Q		
<i>n</i>	0.18552805	ω	257.27555	+0.25225571	+0.96742990		
<i>a</i>	3.0445960	Ω	27.36355	-0.86902082	+0.23609237		
<i>e</i>	0.1573829	<i>i</i>	2.63481	-0.42564055	+0.09132244		
<i>P</i>	5.31	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 06	809	0.9+	0.5+	1991 08 14	809	0.8-	0.4-	1991 09 06	809	0.2+	0.4-
1991 08 06	809	0.8+	1.2+	1991 08 14	809	0.4-	0.2+	1991 09 06	809	0.0	0.8-
1991 08 06	809	0.9+	1.3+	1991 08 14	809	0.1+	0.2+	1997 10 24	126	0.2-	0.0
1991 08 06	675	0.1+	0.1+	1991 09 04	809	0.4+	0.5+	1997 10 25	126	0.2+	0.0
1991 08 06	675	1.4-	0.6-	1991 09 04	809	0.1-	0.5+	1997 10 25	126	0.1+	0.4-
1991 08 10	675	0.5-	0.2-	1991 09 04	809	0.5-	0.4+	1997 10 25	126	0.7-	0.1+
1991 08 10	675	0.6-	1.9-	1991 09 06	809	1.0+	0.7-	1997 10 25	126	0.5+	0.4+

1991 PC₁₆ = 1986 UT₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	51.39702		(2000.0)	P	Q		
<i>n</i>	0.17670336	ω	241.31980	+0.82107414	+0.57075942		
<i>a</i>	3.1451366	Ω	83.87580	-0.52071797	+0.75496833		
<i>e</i>	0.2087663	<i>i</i>	0.48536	-0.23385905	+0.32288775		
<i>P</i>	5.58	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1986 10 23	381	1.1-	1.2-	1986 10 25	381	1.3+	1.1+	1991 08 10	675	0.0	0.1-
1986 10 23	381	0.6-	1.5-	1986 10 25	381	1.9-	1.0-	1991 08 10	675	0.5+	0.3-
1986 10 25	381	0.4+	1.7+	1991 08 06	675	0.2+	0.5-	1991 09 12	675	0.1-	1.1+
1986 10 25	381	2.0+	0.6+	1991 08 06	675	0.2-	0.9-	1991 09 12	675	0.4-	0.8+

1991 RR₁

Id. T. Kobayashi (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	87.61978		(2000.0)	P	Q		
<i>n</i>	0.18477542	ω	94.81622	+0.80861617	+0.57465898		
<i>a</i>	3.0528579	Ω	230.16929	-0.58358271	+0.75623930		
<i>e</i>	0.1402385	<i>i</i>	9.45280	-0.07463985	+0.31284049		
<i>P</i>	5.33	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 07	399	0.8+	0.3+	1991 09 15	399	0.2+	0.3+	1997 11 06	411	0.3+	0.3-
1991 09 07	399	0.0	0.8-	1991 09 30	399	1.8-	2.1+	1997 11 06	411	0.5+	0.9+
1991 09 13	399	0.2-	0.2+	1991 10 18	399	1.1+	1.0-	1997 11 07	411	0.3-	0.5-
1991 09 13	399	0.3+	1.2-	1991 10 18	399	0.3-	0.1+	1997 11 07	411	0.6-	0.2-

1992 CF = 1997 UL₂₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	128.86446		(2000.0)	P	Q		
<i>n</i>	0.26837731	ω	308.93946	-0.58991289	+0.79076252		
<i>a</i>	2.3803392	Ω	284.14069	-0.67887984	-0.59526838		
<i>e</i>	0.0563513	<i>i</i>	9.70057	-0.43717839	-0.14265412		
<i>P</i>	3.67	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 02 08	894	0.1+	0.4-	1992 02 26	894	1.2+	0.7+	1997 10 23	327	0.0	0.2-
1992 02 08	894	0.6-	1.1+	1992 02 27	894	0.4-	0.5-	1997 10 23	327	0.2+	0.0
1992 02 10	894	1.0+	0.3-	1992 02 27	894	1.5-	1.8-	1997 10 24	327	1.0-	0.6+
1992 02 10	894	0.6+	0.7-	1992 03 03	894	0.5-	0.4+	1997 10 24	327	0.1+	0.1-
1992 02 21	894	1.7+	0.2-	1992 03 03	894	0.7+	0.8+	1997 10 24	327	0.0	0.3-
1992 02 21	894	2.3-	1.0+	1997 10 23	327	0.2+	0.2+	1997 10 24	327	0.5+	0.3-

1992 EE = 1993 QF₇Id. G. V. Williams (*MPC* 23339)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	191.17278		(2000.0)	P	Q		
<i>n</i>	0.27466907	ω	216.57636	-0.87360108	+0.48641823		
<i>a</i>	2.3438486	Ω	352.48496	-0.41540325	-0.76119189		
<i>e</i>	0.1667692	<i>i</i>	6.48887	-0.25349810	-0.42893381		
<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	399	0.5-	0.5+	1993 08 15	809	0.9-	1.3+	1997 10 08	691	0.4+	0.8+
1992 03 02	399	1.9+	0.4-	1993 08 20	809	(2.4+	2.9+)	1997 10 08	691	1.4-	0.0
1992 03 03	399	(2.5+	1.0+)	1993 08 20	809	(2.0+	2.8+)	1997 10 20	327	0.4+	0.7+
1992 03 03	399	0.5+	1.9+	1993 08 20	809	(0.6+	2.5+)	1997 10 20	327	0.0	0.1-
1992 03 23	399	1.6+	1.3+	1993 08 24	809	0.7+	1.6+	1997 10 20	327	0.3+	0.4+
1992 03 23	399	(3.0+	0.8+)	1993 08 24	809	(1.6+	2.9+)	1997 10 21	327	0.7+	0.3+
1992 04 07	399	0.1+	1.3+	1993 08 24	809	(1.8+	2.1+)	1997 10 21	327	0.3-	1.1+
1992 04 07	399	1.0-	0.2+	1993 09 10	691	1.5-	0.8-	1997 10 21	327	0.5+	0.3+
1993 07 26	675	0.7+	0.1+	1993 09 10	691	1.1-	0.2-	1997 10 29	566	0.0	0.1-

1993 08 15 809 0.9+ 1.6+ 1993 09 10 691 1.0- 0.2- 1997 10 29 566 0.2+ 0.1-
 1993 08 15 809 0.1- 1.1+ 1997 10 08 691 1.8- 1.1- 1997 10 29 566 0.4+ 0.3-

1992 FD₁ = 1997 UV₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28677227	<i>ω</i>	175.28351	-0.93203852	+0.36092986		
<i>a</i>	2.2774278	<i>Ω</i>	25.94626	-0.33481547	-0.82386155		
<i>e</i>	0.1198256	<i>i</i>	4.21439	-0.13857417	-0.43701463		
<i>P</i>	3.44	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 03 23 400 1.6- 1.4+ 1992 03 30 691 1.0- 0.1+ 1997 10 20 327 0.1- 0.0
 1992 03 23 400 1.4+ 0.3- 1992 03 30 691 1.0- 0.2- 1997 10 21 327 0.0 0.4-
 1992 03 26 399 0.6+ 0.0 1992 03 30 691 1.2- 0.2- 1997 10 21 327 0.2+ 0.3+
 1992 03 26 399 1.7- 2.8- 1997 10 20 327 0.5+ 0.2+ 1997 10 21 327 0.2- 0.4-
 1992 03 28 400 2.1+ 0.1- 1997 10 20 327 0.1- 0.2+
 1992 03 28 400 2.4+ 2.1+ 1997 10 20 327 0.2- 0.0

1992 JR₃ = 1997 UB

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24608931	<i>ω</i>	339.16897	-0.42721412	+0.90340014		
<i>a</i>	2.5219756	<i>Ω</i>	265.52481	-0.82422890	-0.40587115		
<i>e</i>	0.1048435	<i>i</i>	2.11701	-0.37166493	-0.13833579		
<i>P</i>	4.01	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 05 07 809 0.7- 0.2+ 1992 05 12 809 0.1- 0.4+ 1997 10 18 595 0.5- 0.2-
 1992 05 07 809 0.2- 0.2+ 1992 05 12 809 0.2- 0.2+ 1997 10 19 595 0.8+ 0.1-
 1992 05 07 809 0.2+ 0.2+ 1992 05 13 809 0.6- 0.1- 1997 10 19 595 0.3- 0.2+
 1992 05 11 809 0.4+ 0.5- 1992 05 13 809 0.4- 0.1- 1997 10 29 595 0.7+ 1.8-
 1992 05 11 809 0.8+ 0.2- 1992 05 13 809 0.1- 0.4- 1997 10 29 595 0.9- 1.8+
 1992 05 11 809 1.0+ 0.2- 1997 10 18 595 0.1- 0.0
 1992 05 12 809 0.1- 0.3+ 1997 10 18 595 0.2+ 0.1+

1992 RF₅ = 1997 SQ₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20757101	<i>ω</i>	150.32629	+0.80571732	+0.59228565		
<i>a</i>	2.8250421	<i>Ω</i>	173.34972	-0.55025456	+0.75110268		
<i>e</i>	0.0471923	<i>i</i>	2.05887	-0.21917918	+0.29162043		
<i>P</i>	4.75	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 02 809 0.8+ 0.6+ 1992 10 04 691 0.3- 0.1- 1997 09 29 595 0.4- 0.1+
 1992 09 02 809 0.4+ 0.4+ 1997 09 22 595 0.7+ 0.5- 1997 11 01 595 0.0 0.4+
 1992 09 02 809 0.1- 0.1+ 1997 09 23 595 0.7- 0.3- 1997 11 02 595 0.6+ 0.2+
 1992 09 03 809 0.7- 1.0- 1997 09 23 595 0.0 0.6- 1997 11 02 595 0.6- 0.7+
 1992 10 04 691 0.2- 0.3+ 1997 09 23 595 0.7+ 0.2+ 1997 11 02 595 0.3+ 0.1-
 1992 10 04 691 0.1- 0.1+ 1997 09 29 595 0.8- 0.2- 1997 11 02 595 0.4+ 0.1-

1992 UG₃ = 1987 UV₇ = 1991 NN₄Id. G. V. Williams (*MPC* 27914, unpublished); 1992 UG₃ = 1984 BF₂ (*ibid.*) is invalid

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19984589	<i>ω</i>	248.54206	+0.76091119	-0.64851359		
<i>a</i>	2.8973829	<i>Ω</i>	151.87458	+0.61064140	+0.70473536		
<i>e</i>	0.0665705	<i>i</i>	2.56275	+0.21938834	+0.28771199		
<i>P</i>	4.93	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 10 23 095 0.6- 3.6+ 1992 10 27 402 1.3+ 0.1+ 1997 10 10 327 0.3- 0.3-
 1991 07 08 809 0.4+ 0.5- 1992 10 27 402 0.2- 0.7- 1997 10 10 327 0.1- 0.2-
 1991 07 08 809 0.0 0.4- 1992 10 28 402 0.1- 0.0 1997 10 10 327 0.1- 0.2-
 1991 07 08 809 0.2- 0.2- 1992 10 28 402 0.1- 0.5+ 1997 10 29 704 0.7- 0.9+
 1992 10 22 675 0.7- 0.5+ 1992 11 02 010 0.4- 0.8- 1997 10 29 704 0.4+ 0.4+
 1992 10 22 675 0.8- 0.0 1992 11 02 010 1.5- 1.1- 1997 10 29 704 0.4+ 0.6+
 1992 10 22 399 1.9+ 0.9+ 1992 11 02 010 1.1- 1.0- 1997 10 29 704 0.2- 0.0
 1992 10 22 399 0.1- 0.0 1997 10 09 327 0.4- 0.4- 1997 10 29 704 0.7- 0.5-
 1992 10 24 402 0.5- 1.8+ 1997 10 09 327 0.2- 0.3- 1997 10 30 704 1.7+ 1.3-
 1992 10 24 402 0.5+ 1.1+ 1997 10 09 327 0.4- 0.5- 1997 10 30 704 1.6+ 1.2-
 1992 10 25 675 0.7- 0.1- 1997 10 09 327 0.2+ 0.5- 1997 10 30 704 2.0+ 0.6-
 1992 10 25 675 0.0 0.9+ 1997 10 09 327 0.1+ 0.4- 1997 10 30 704 1.7+ 1.7-
 1992 10 26 400 1.0- 1.2+ 1997 10 09 327 0.2+ 0.2- 1997 10 30 704 2.2- 0.2+
 1992 10 26 400 1.3+ 0.7- 1997 10 09 327 0.5- 0.3-

1993 OB = 1997 UU₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26334220	<i>ω</i>	84.06486	+0.92818417	-0.10006554		
<i>a</i>	2.4105848	<i>Ω</i>	281.27427	-0.07156472	+0.89718630		
<i>e</i>	0.2972774	<i>i</i>	21.43634	+0.36517480	+0.43016697		
<i>P</i>	3.74	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 06 21 675 (0.6- 2.5-) 1993 11 11 801 0.5+ 0.9- 1997 10 31 138 0.1- 0.8-
 1993 06 24 675 0.7+ 0.8- 1993 11 11 801 0.4- 0.4- 1997 10 31 138 0.1+ 0.7-
 1993 06 24 675 0.4+ 1.3- 1993 11 16 801 0.2+ 0.5- 1997 10 31 138 0.3- 1.0-
 1993 07 16 675 (1.7- 3.5+) 1993 11 16 801 1.1+ 0.4- 1997 10 31 138 0.3+ 0.8-
 1993 07 16 675 (2.1- 3.9+) 1997 10 18 138 0.2+ 1.4+ 1997 10 31 138 0.3+ 0.8-
 1993 07 20 675 0.2- 1.4+ 1997 10 18 138 0.3+ 0.3+ 1997 11 02 138 0.0 0.0
 1993 07 20 675 0.3- 0.8+ 1997 10 18 138 0.1+ 0.7+ 1997 11 02 138 0.6- 0.2+
 1993 10 18 801 0.4- 0.1+ 1997 10 18 138 0.2+ 0.8+ 1997 11 02 138 0.7- 0.2-
 1993 10 18 801 0.7- 0.5+ 1997 10 18 138 0.1- 1.1+

1993 RD₂ = 1997 UG₂₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23441236	<i>ω</i>	152.83570	+0.84619626	+0.53233365		
<i>a</i>	2.6050479	<i>Ω</i>	174.80684	-0.52420757	+0.83966418		
<i>e</i>	0.1246423	<i>i</i>	15.33201	-0.09569912	+0.10763340		
<i>P</i>	4.20	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 09 15 400 0.7+ 1.6- 1993 09 21 675 0.3+ 0.1- 1997 10 16 327 0.3+ 0.4-
 1993 09 15 400 0.6- 0.2- 1993 09 21 675 0.1+ 0.5- 1997 10 16 327 0.5+ 0.1-
 1993 09 16 400 1.4+ 0.4+ 1993 10 08 400 1.2+ 0.4- 1997 10 16 327 0.5- 0.2-
 1993 09 16 400 0.8- 0.4+ 1993 10 08 400 0.3- 2.1- 1997 10 18 327 0.0 0.4+
 1993 09 18 675 0.9+ 0.8+ 1993 10 12 400 0.7- 0.5+ 1997 10 18 327 0.1- 0.1+
 1993 09 18 675 0.2+ 0.7+ 1993 10 12 400 1.4+ 0.2+ 1997 10 18 327 0.1+ 0.2+
 1993 09 19 400 0.9- 0.7+ 1993 10 15 675 0.4- 0.4+ 1997 10 18 327 0.2- 0.0
 1993 09 19 400 1.8- 0.1- 1993 10 15 675 0.6- 0.8+

1993 RQ₄ = 1997 NV₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22279374	<i>ω</i>	190.93412	+0.60310139	-0.79712887		
<i>a</i>	2.6948467	<i>Ω</i>	221.98224	+0.73510025	+0.56964951		
<i>e</i>	0.1430120	<i>i</i>	2.50437	+0.30967134	+0.20021237		
<i>P</i>	4.42	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 09 15 809 0.9+ 0.3+ 1993 09 18 809 (4.1+ 6.0+) 1993 10 17 033 0.5+ 0.4-
 1993 09 15 809 0.6+ 0.6+ 1993 09 18 809 (3.1+ 5.4+) 1993 10 17 033 0.5+ 1.1+
 1993 09 15 809 1.0- 0.5+ 1993 09 18 809 (2.9+ 5.3+) 1997 07 02 691 0.6+ 0.4+

1997 NOV. 14

M.P.C. 30873

1993 09 16	809	1.8−	0.7−	1993 09 18	675	1.9+	0.4+	1997 07 02	691	0.7+	0.2+
1993 09 16	809	2.2−	0.9−	1993 09 22	675	1.2+	1.0+	1997 07 02	691	0.6+	0.4+
1993 09 16	809	2.0−	0.3+	1993 09 22	675	1.7+	0.0	1997 07 09	691	0.6−	0.6−
1993 09 17	809	0.0	1.0−	1993 09 23	809	0.6+	0.6+	1997 07 09	691	0.6−	0.3−
1993 09 17	809	0.9+	1.1−	1993 09 23	809	0.1−	0.4+	1997 07 09	691	0.6−	0.0
1993 09 17	809	0.4−	0.5−	1993 09 23	809	1.5−	0.4−				

1993 RH₉ = 1997 UW

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	341.39252		(2000.0)				
<i>n</i>	0.26354420	ω	167.73961	+0.13494904	−0.99061359		
<i>a</i>	2.4093528	Ω	274.50180	+0.90723579	+0.13236048		
<i>e</i>	0.1825012	<i>i</i>	1.25067	+0.39838672	+0.03413815		
<i>P</i>	3.74	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 14	809	0.5−	0.6+	1993 09 20	691	0.2+	2.0−	1997 10 28	557	0.5−	0.1−
1993 09 14	809	1.4−	0.1−	1993 09 20	691	0.3−	1.5−	1997 10 29	557	0.9−	0.0
1993 09 14	809	1.4+	1.8+	1997 10 22	557	0.4+	0.5−	1997 10 29	557	0.8−	0.2−
1993 09 19	809	0.1−	1.1+	1997 10 22	557	0.3+	0.2−	1997 11 03	557	0.4+	1.0+
1993 09 19	809	0.7+	0.2+	1997 10 22	557	0.4+	0.3−	1997 11 03	557	0.5+	0.8+
1993 09 19	809	(3.6+	1.0+)	1997 10 22	557	0.3+	0.4−				
1993 09 20	691	(0.3+	2.4−)	1997 10 28	557	0.1−	0.1−				

1993 TU₃₆ = 1988 FT₁ = 1995 CX₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	65.18425		(2000.0)				
<i>n</i>	0.26134570	ω	242.05951	+0.90321329	+0.38901472		
<i>a</i>	2.4228460	Ω	94.56186	−0.30122073	+0.87548887		
<i>e</i>	0.1743749	<i>i</i>	10.47964	−0.30573163	−0.28668237		
<i>P</i>	3.77	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 03 18	033	0.2−	0.2+	1993 09 20	675	0.3−	0.1+	1993 10 15	675	0.1+	0.1+
1988 03 18	033	0.1+	0.4−	1993 09 20	675	0.4−	0.3+	1993 10 15	675	0.2+	0.1−
1993 09 19	675	0.2−	0.2−	1993 10 13	675	0.2+	0.2−	1995 02 03	033	0.1+	0.1−
1993 09 19	675	0.4+	0.8+	1993 10 13	675	0.1+	0.9−	1995 02 03	033	0.1−	0.4+

1993 UM₈ = 1972 TF₉ = 1991 FW₂Id. T. Kobayashi (*MPC* 24112), G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	316.37019		(2000.0)				
<i>n</i>	0.23619540	ω	259.25570	+0.09362010	−0.99530092		
<i>a</i>	2.5919210	Ω	185.55395	+0.98378892	+0.09629550		
<i>e</i>	0.1031691	<i>i</i>	14.80178	+0.15295309	−0.01016177		
<i>P</i>	4.17	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1972 10 09	033	0.2+	0.5+	1993 10 10	809	(4.2+	1.2−)	1997 10 19	327	0.5+	0.6−
1972 10 09	033	0.8+	0.5+	1993 10 10	809	(4.8+	0.2−)	1997 10 19	327	0.9+	1.0−
1972 10 09	033	0.5−	0.0	1993 10 10	809	(5.2+	0.0)	1997 10 29	566	0.5−	0.5−
1972 10 09	033	0.6−	0.6−	1993 10 20	809	0.4+	0.6−	1997 10 29	566	0.0	0.5−
1991 03 20	809	1.0−	1.3−	1993 10 20	809	0.9+	0.2−	1997 10 29	566	0.2−	0.2−
1991 03 20	809	0.7−	1.2−	1993 10 20	809	0.2−	0.4−	1997 10 30	566	0.1−	0.9−
1991 03 20	809	0.4−	1.0−	1993 10 21	809	0.0	1.2+	1997 10 30	566	0.1+	0.8−
1991 03 21	809	0.2+	0.1−	1993 10 21	809	0.5−	0.6+	1997 10 30	566	0.1+	0.8−
1991 03 21	809	0.5+	0.0	1993 10 21	809	1.1−	1.0+				
1991 03 21	809	0.9+	0.2−	1997 10 19	327	0.1+	0.4−				

1993 VA₅ = 1997 UV₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	330.88382		(2000.0)				
<i>n</i>	0.23142050	ω	20.32615	+0.19524950	−0.97517999		
<i>a</i>	2.6274522	Ω	58.54468	+0.88206586	+0.12806293		
<i>e</i>	0.2472949	<i>i</i>	7.03049	+0.42876270	+0.18062081		
<i>P</i>	4.26	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 11 11	399	0.5−	0.2+	1993 11 18	894	0.3+	0.5+	1997 10 29	566	0.1+	0.1+
1993 11 11	399	0.2+	0.9−	1993 11 18	894	1.2−	2.0−	1997 10 29	566	0.4−	0.1+
1993 11 15	894	0.5+	0.2−	1993 12 04	894	1.3−	0.4+	1997 10 29	566	0.1−	0.5−
1993 11 15	894	0.4−	0.7+	1993 12 04	894	1.3−	0.1+	1997 10 30	566	0.3+	0.2+
1993 11 16	894	0.4+	1.1+	1993 12 08	894	2.2+	0.4−	1997 10 30	566	0.1−	0.1+
1993 11 16	894	1.3+	0.5+	1993 12 08	894	0.3−	0.0	1997 10 30	566	0.2+	0.1+

1994 GT = 1983 CT₈

Id. T. Kobayashi (1997 observations), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
				P	Q		
<i>M</i>	267.38003		(2000.0)				
<i>n</i>	0.18668036	ω	111.19461	−0.99725768	+0.04760451		
<i>a</i>	3.0320542	Ω	71.56909	−0.06687261	−0.90763804		
<i>e</i>	0.1771717	<i>i</i>	3.42424	+0.03170437	−0.41704557		
<i>P</i>	5.28	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 02 10	095	0.1+	0.2+	1994 04 14	675	0.5−	0.7+	1994 05 06	400	0.4−	0.5+
1994 04 08	400	1.1+	0.7+	1994 04 14	675	0.4−	0.2−	1994 05 06	400	1.5+	1.3−
1994 04 08	400	2.1+	0.8+	1994 04 15	675	2.2−	0.8+	1997 11 06	411	0.0	0.4+
1994 04 09	400	0.2−	0.6+	1994 04 15	675	2.1−	0.7−	1997 11 06	411	0.1+	1.0−
1994 04 13	400	0.7+	0.2−	1994 04 16	400	0.7−	0.1−				
1994 04 13	400	1.0+	1.5−	1994 04 16	400	0.1−	0.4−				

1994 VC₇ = 1986 WM₇ = 1993 SP₁₅

Id. G. V. Williams, T. B. Spahr, H. E. Holt

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	222.20333		(2000.0)				
<i>n</i>	0.12355482	ω	263.18758	+0.69326925	+0.69374422		
<i>a</i>	3.9923590	Ω	52.65512	−0.52526114	+0.67183420		
<i>e</i>	0.1595830	<i>i</i>	14.21225	−0.49343540	+0.25953375		
<i>P</i>	7.98	<i>H</i>	10.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1986 11 28	046	0.6+	1.2+	1993 10 10	675	0.3+	1.2+	1994 11 27	408	0.0	1.1+
1986 11 28	046	1.6−	0.5+	1993 10 10	675	0.1−	1.0+	1994 11 27	408	0.7+	0.3+
1993 09 19	675	0.1−	0.1−	1994 11 05	675	0.2−	0.8−	1994 11 27	408	0.5+	0.0
1993 09 19	675	0.1+	0.3−	1994 11 05	675	0.3−	0.8−	1994 11 28	675	0.5−	0.4−
1993 09 20	675	0.1−	0.9−	1994 11 11	408	0.4−	0.4−	1994 11 28	675	0.4−	0.2+
1993 09 20	675	0.1−	0.5−	1994 11 11	408	0.0	0.2−	1994 11 30	400	0.2+	0.1+
1993 09 23	675	0.0	0.4−	1994 11 12	408	1.1+	0.1+	1994 11 30	400	1.9+	0.6−
1993 09 23	675	0.0	0.1+	1994 11 12	408	1.5−	0.5−				

1994 XH

Id. E. Bowell (1990 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
				P	Q		
<i>M</i>	321.89519		(2000.0)				
<i>n</i>	0.25756471	ω	63.07486	+0.91470290	−0.40340119		
<i>a</i>	2.4464995	Ω	320.70300	+0.35590164	+0.83248195		
<i>e</i>	0.2134957	<i>i</i>	2.19066	+0.19144877	+0.37979111		
<i>P</i>	3.83	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 22	675	0.5+	0.3-	1994 12 03	411	0.7-	0.5-	1994 12 09	411	0.2-	0.1-
1990 10 22	675	0.5-	0.2+	1994 12 03	411	0.2-	0.4+	1994 12 09	411	0.1-	0.3-
1990 11 13	675	0.4+	0.3+	1994 12 06	411	0.8+	0.2+	1994 12 24	411	0.3-	0.2+
1990 11 13	675	0.4-	0.3-	1994 12 06	411	0.6+	0.6+	1994 12 24	411	0.1+	0.6-

1994 YF₂ = 1978 ET₅ = 1997 UJ₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	270.22058		(2000.0)	P		Q	
n	0.28581304	ω	96.92229	-0.92557501	-0.37347498		
a	2.2825205	Ω	61.16390	+0.31343065	-0.84767173		
e	0.1268544	i	4.04974	+0.21230197	-0.37678784		
P	3.45	H	14.0	G	0.15	U	4

Residuals in seconds of arc

1978 03 06	095	0.3-	0.6-	1995 01 28	399	0.2-	0.4+	1997 10 30	566	0.5+	0.3+
1994 12 30	399	(0.9+	3.2-)	1995 01 28	399	1.2+	0.3-	1997 10 30	566	0.9+	0.3+
1994 12 30	399	0.3-	0.7-	1995 02 03	399	0.2-	0.6+	1997 10 30	566	0.5+	0.4+
1995 01 02	399	0.3-	1.0+	1995 02 03	399	1.1-	0.2-	1997 11 01	399	(5.1-	1.9-)
1995 01 02	399	0.2-	1.2-	1997 10 29	566	0.4+	0.4-	1997 11 01	399	(4.6-	0.5-)
1995 01 27	399	0.2+	0.4-	1997 10 29	566	0.3+	0.0	1997 11 02	399	1.3-	0.3-
1995 01 27	399	0.7+	1.5+	1997 10 29	566	0.6+	0.3-	1997 11 02	399	1.6-	0.4-

1995 AG = 1984 YL₄

Id. T. Kobayashi (1997 observations), S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	347.45405		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29824551	ω	165.04178	+0.11208144	-0.99198533
a	2.2186397	Ω	278.49728	+0.90553828	+0.12613495
e	0.0587097	i	3.38135	+0.40919211	-0.00742165
P	3.30	H	13.9	G 0.15	U 3

Residuals in seconds of arc

1984 12 28	095	0.0	0.0	1995 01 20	411	0.1+	0.0	1995 01 25	411	0.4-	0.4-
1995 01 02	411	0.3+	0.2-	1995 01 20	411	0.2+	0.1-	1995 01 29	411	0.7+	0.3+
1995 01 02	411	0.4-	0.5-	1995 01 23	411	0.3+	0.2+	1995 01 29	411	0.2+	0.3-
1995 01 05	411	0.0	0.2-	1995 01 23	411	0.6-	0.7+	1997 11 01	411	0.3+	0.4-
1995 01 05	411	0.3+	0.5+	1995 01 24	411	0.2+	0.3-	1997 11 01	411	0.3-	0.4+
1995 01 10	411	0.2-	0.5+	1995 01 24	411	0.2+	0.6-				
1995 01 10	411	0.2+	0.4+	1995 01 25	411	1.1-	0.1-				

1995 BT₂ = 1988 BH₃ = 1990 SS₂₈ = 1997 UD₁₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	356.28229		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29142811	ω	358.29407	+0.30196817	-0.95104888
a	2.2531067	Ω	74.12605	+0.87545947	+0.24935234
e	0.1267138	i	3.91878	+0.37734061	+0.18256351
P	3.38	H	13.0	G 0.15	U 2

Residuals in seconds of arc

1988 01 21	511	2.0-	2.2+	1995 01 26	400	(2.5+	3.9-)	1997 10 31	888	0.2-	0.8-
1988 01 21	511	2.4+	0.3+	1995 01 28	400	0.8-	0.2-	1997 11 02	888	0.7+	0.6-
1988 01 22	511	0.1-	0.8-	1995 01 28	400	0.7-	0.5-	1997 11 02	888	0.2+	0.5-
1988 01 22	511	0.8-	0.9+	1995 02 08	400	0.2-	0.1+	1997 11 10	385	0.7-	0.3+
1990 09 24	095	0.6+	0.5+	1995 02 08	400	0.5+	0.1-	1997 11 10	385	0.1-	0.2+
1990 09 24	095	0.3-	0.9-	1997 10 27	888	0.5-	0.1-	1997 11 10	385	0.1-	0.1-
1995 01 26	400	0.6+	1.5-	1997 10 27	888	0.8+	0.5+				

1995 CQ = 1995 EN₁ = 1997 TG₂₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	298.51209		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.27939306	ω	152.69788	-0.56130527	-0.82683060
a	2.3173536	Ω	331.40548	+0.74498145	-0.48590578
e	0.1804627	i	4.29965	+0.36047057	-0.28327856
P	3.53	H	14.0	G 0.15	U 4

Residuals in seconds of arc

1995 02 01	894	0.1+	1.9-	1997 10 05	327	0.7+	0.5+	1997 10 20	327	0.4+	0.2+
1995 02 01	894	0.6+	0.1+	1997 10 08	132	0.7-	1.8+	1997 10 24	132	1.6+	0.4+
1995 02 03	894	1.2+	0.4-	1997 10 08	132	0.0	0.1-	1997 10 24	132	(2.3+	0.0)
1995 02 03	894	0.9-	0.9+	1997 10 08	132	1.1-	0.1+	1997 10 25	132	0.2+	0.3+
1995 02 06	894	0.7-	1.2+	1997 10 09	627	0.5-	0.3+	1997 10 25	124	1.0-	0.5+
1995 02 06	894	0.9-	0.0	1997 10 09	627	0.2+	0.9+	1997 10 25	124	0.7-	0.8-
1995 03 09	104	0.4-	0.1-	1997 10 09	627	0.0	0.9+	1997 10 25	124	0.2+	1.2-
1995 03 09	104	0.0	0.6-	1997 10 11	327	0.2-	0.1-	1997 10 26	124	0.2+	0.0
1995 03 09	104	0.3+	0.3-	1997 10 11	327	0.3-	0.5-	1997 10 26	124	0.1+	0.9-
1995 03 09	104	0.5-	0.1+	1997 10 11	327	0.3-	0.5-	1997 10 26	124	0.2-	0.6-
1995 03 10	104	1.1+	0.3+	1997 10 11	327	0.3-	0.6-	1997 10 27	959	1.3-	0.8+
1995 03 10	104	0.1-	0.5-	1997 10 13	327	0.0	1.1-	1997 10 27	959	0.3+	0.1-
1995 03 10	104	0.2-	0.4-	1997 10 13	327	0.0	0.9-	1997 11 01	132	1.5-	0.4+
1995 03 10	104	0.1+	0.5+	1997 10 13	327	0.2+	1.0-	1997 11 01	132	(2.2-	0.8+)
1995 03 10	104	0.4+	1.3+	1997 10 13	327	0.1+	0.6-	1997 11 01	132	1.2+	1.2+
1997 10 05	327	0.4+	0.1+	1997 10 20	327	0.3+	0.0	1997 11 02	627	0.1+	1.1+
1997 10 05	327	0.8+	0.5+	1997 10 20	327	0.7+	0.2+	1997 11 02	627	0.4+	0.9-

1995 CW

Id. H. E. Holt (1993 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	201.99814		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28049610	ω	97.12418	-0.57376336	+0.81504446
a	2.3112744	Ω	137.52684	-0.79065615	-0.52552474
e	0.0696896	i	6.85635	-0.21367843	-0.24398007
P	3.51	H	14.0	G 0.15	U 4

Residuals in seconds of arc

1993 09 23	675	0.1+	0.9-	1995 02 06	897	0.4+	0.4+	1995 02 10	897	0.4-	0.1-
1993 09 23	675	0.2-	0.2+	1995 02 06	897	0.4-	0.3-	1995 02 19	897	0.6-	0.4+
1993 10 10	675	0.6-	1.2-	1995 02 07	897	0.1-	0.6-	1995 02 19	897	0.1-	0.0
1993 10 12	675	0.6+	1.3+	1995 02 07	897	0.8-	0.2-	1995 03 01	897	0.1+	0.5-
1993 10 12	675	0.1+	0.6+	1995 02 07	897	1.5+	1.2+	1995 03 01	897	0.3+	0.3+
1995 02 06	897	0.2+	0.1-	1995 02 10	897	0.2+	0.7-	1995 03 01	897	0.4-	0.0

1995 DR₁

Id. H. E. Holt (1993 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	326.37045		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.27367212	ω	337.89577	-0.41057175	-0.90621948		
a	2.3495373	Ω	136.17009	+0.85689592	-0.42132170		
e	0.0650992	i	8.38455	+0.31170534	-0.03541573		
P	3.60	H	14.0	G	0.15	U	4

Residuals in seconds of arc

1993 09 18	675	0.8-	0.8-	1993 10 10	675	1.2+	1.5+	1995 02 27	411	0.2+	0.5+
1993 09 18	675	0.0	0.1-	1993 10 10	675	0.1-	0.1+	1995 02 27	411	0.2+	0.2+
1993 09 23	675	0.6+	0.4-	1995 02 22	411	0.2-	0.4+	1995 03 05	411	0.0	0.2+
1993 09 23	675	0.3+	0.6+	1995 02 22	411	0.4-	0.4-	1995 03 05	411	0.1-	0.4+
1993 10 09	675	0.2-	0.2-	1995 02 26	411	0.5+	0.5-	1995 03 20	411	0.6-	0.0
1993 10 09	675	1.1-	0.7-	1995 02 26	411	0.1+	0.9-	1995 03 20	411	0.2+	0.0

1997 NOV. 14

M.P.C. 30875

1995 FD

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	240.21872			(2000.0)			P			Q		
<i>n</i>	0.23395366			ω	169.83290		−0.99959892			−0.02673415		
<i>a</i>	2.6084518			Ω	8.65155		+0.01959577			−0.89112017		
<i>e</i>	0.1434942			<i>i</i>	3.56084		+0.02044518			−0.45297917		
<i>P</i>	4.21			<i>H</i>	15.0		<i>G</i>	0.15		<i>U</i>	4	
Residuals in seconds of arc												
1995 03 28	657	0.5+	0.7−	1995 04 05	691	1.0−	0.1+	1995 05 22	658	0.7+	0.4+	
1995 03 28	657	1.2+	1.7+	1995 04 05	104	0.0	0.2−	1995 05 23	104	0.7+	0.7+	
1995 03 28	657	0.8−	1.3+	1995 04 05	104	0.1+	0.6+	1995 05 23	104	0.6+	0.7+	
1995 03 29	657	0.7+	0.1+	1995 04 05	104	0.9+	0.0	1995 05 23	104	0.9+	0.4−	
1995 03 29	657	0.8−	0.2−	1995 04 05	104	0.0	0.3+	1995 06 20	104	1.1−	0.8+	
1995 03 29	657	0.6−	0.6−	1995 04 05	104	0.5+	0.7−	1995 06 20	104	0.3−	0.6−	
1995 03 30	657	0.9−	1.1+	1995 04 22	658	0.2−	0.4−	1995 06 20	104	0.8−	0.9−	
1995 03 30	657	0.5−	0.5+	1995 04 22	658	0.0	0.4−	1997 10 19	658	1.7+	0.2+	
1995 03 30	657	0.5+	0.2−	1995 04 23	658	0.9−	0.4−	1997 10 19	658	1.0+	0.2+	
1995 03 30	657	0.5+	0.6−	1995 04 23	658	0.8−	0.4−	1997 10 19	658	0.6+	0.2+	
1995 04 01	658	0.6+	0.4−	1995 04 23	658	0.9−	0.4−	1997 10 20	658	0.7−	0.5−	
1995 04 01	658	0.7+	0.0	1995 05 03	104	0.2+	0.6−	1997 10 20	658	1.3−	0.7−	
1995 04 01	658	0.8+	0.1−	1995 05 03	104	0.4+	0.7−	1997 10 20	658	0.7−	0.6−	
1995 04 05	691	1.0−	0.2+	1995 05 03	104	0.0	1.1−					
1995 04 05	691	1.1−	0.1+	1995 05 22	658	0.7+	0.3+					

1995 FQ

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	119.08702		(2000.0)	P		Q					
<i>n</i>	0.21821810	<i>ω</i>	44.77754	+0.65184097	+0.72300630						
<i>a</i>	2.7323869	<i>Ω</i>	267.33211	−0.74402961	+0.55134125						
<i>e</i>	0.1154574	<i>i</i>	13.24308	−0.14670818	+0.41627480						
<i>P</i>	4.52	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1995 03 30	809	0.3−	0.5+	1995 03 31	809	0.2+	0.1−	1995 05 07	809	0.8+	0.1−
1995 03 30	809	0.1−	0.1+	1995 04 06	809	0.3+	0.4−	1996 09 04	809	0.0	0.0
1995 03 30	809	0.1−	0.3−	1995 04 06	809	0.0	0.3−	1996 09 04	809	0.0	0.0
1995 03 30	809	0.6−	0.4+	1995 04 06	809	0.1+	0.3−	1996 09 04	809	0.0	0.1+
1995 03 30	809	0.2−	0.1+	1995 04 24	809	0.5−	0.5+	1997 10 31	809	0.0	0.1+
1995 03 30	809	0.1−	0.2−	1995 04 24	809	0.5−	0.5+	1997 10 31	809	0.1+	0.1+
1995 03 31	809	0.3+	0.2−	1995 05 07	809	0.8+	0.0				

1995 FW₁₉ = 1983 RF₈ = 1997 TF₂₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	84.47469		(2000.0)	P		Q					
<i>n</i>	0.21744296	ω	298.85642	+0.63462205	+0.77262489						
<i>a</i>	2.7388767	Ω	10.58968	−0.67177662	+0.56268785						
<i>e</i>	0.0614640	<i>i</i>	5.45876	−0.38206156	+0.29399517						
<i>P</i>	4.53	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1983 09 11	095	0.4−	0.7+	1995 04 04	691	0.2−	0.1+	1997 10 11	620	0.3+	0.6+
1995 03 23	691	0.2−	0.0	1997 09 28	691	0.0	0.2−	1997 10 31	620	0.9+	0.1+
1995 03 23	691	0.2−	0.1−	1997 09 28	691	0.5−	0.5−	1997 10 31	620	0.3+	0.4+
1995 03 23	691	0.0	0.1−	1997 09 28	691	0.6−	0.4−	1997 10 31	620	0.0	0.6+
1995 03 27	675	1.7+	0.9+	1997 10 07	620	1.5−	1.8−	1997 11 06	620	0.6+	0.0
1995 03 31	691	0.3−	0.1+	1997 10 07	620	0.4−	0.2+	1997 11 06	620	0.0	0.4+
1995 03 31	691	0.1+	0.0	1997 10 07	620	0.9−	1.6+	1997 11 07	620	1.3+	0.5+
1995 04 04	691	0.1−	0.2−	1997 10 11	620	0.2+	1.1−				
1995 04 04	691	0.6−	0.1+	1997 10 11	620	0.2+	0.2−				

1995 GE = 1984 SQ₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	357.60661		(2000.0)	P			Q				
<i>n</i>	0.22884789	ω	225.22809		+0.76240607		−0.64675776				
<i>a</i>	2.6471067	Ω	174.93545		+0.64031355		+0.74932463				
<i>e</i>	0.1831091	<i>i</i>	13.76774		+0.09346406		+0.14218648				
<i>P</i>	4.31	<i>H</i>	14.0	<i>G</i>	0.15		<i>U</i>	1			
Residuals in seconds of arc											
1954 11 20	675	0.5−	0.4−	1995 04 07	587	0.0	0.8+	1996 06 10	587	0.2+	0.3−
1954 11 20	675	0.5+	0.3−	1995 04 07	587	0.3+	0.0	1997 09 26	587	0.0	0.0
1984 09 23	071	(5.9+ 6.9+)		1995 04 17	587	0.2+	0.3+	1997 09 26	587	0.0	0.1+
1984 09 23	071	(4.9+ 3.2+)		1995 04 17	587	0.3+	0.2+	1997 09 27	886	0.5−	0.6+
1984 09 24	071	0.4+	0.6−	1995 04 28	587	0.4+	0.5+	1997 09 27	886	0.4−	0.3+
1988 08 13	675	0.8+	0.0	1995 04 28	587	0.1−	0.7+	1997 09 27	587	0.5−	0.2+
1988 08 13	675	0.9−	0.1−	1995 05 20	587	0.4−	1.1+	1997 09 27	587	1.2−	0.2−
1995 04 02	587	0.9−	0.4−	1995 05 20	587	0.1+	1.5+	1997 10 03	758	1.0+	0.8+
1995 04 02	587	0.6+	1.0−	1996 06 08	587	0.4+	0.5+	1997 10 03	758	0.6−	1.1+
1995 04 03	587	0.3+	0.6+	1996 06 09	587	0.8−	0.1−	1997 10 04	758	0.7−	0.3−
1995 04 03	587	0.0	0.9−	1996 06 09	587	0.0	0.7−	1997 10 04	758	0.3−	0.4−
1995 04 03	587	0.3−	0.2+	1996 06 09	587	0.1+	0.0	1997 10 06	758	3.2+	0.8+
1995 04 07	587	0.0	0.0	1996 06 10	587	0.1+	0.2+	1997 10 06	758	0.7−	0.7+

1995 HH₃ = 1997 UD₁₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	135.98499		(2000.0)	P			Q				
n	0.18055823	ω	176.67973	−0.02437368			+0.99729852				
a	3.1002106	Ω	91.91563	−0.91879938			+0.00496859				
e	0.1624090	i	3.97563	−0.39397160			−0.07328694				
P	5.46	H	16.0	G	0.15		U	5			
Residuals in seconds of arc											
1995 04 26	691	0.2+	0.4−	1995 05 01	691	0.0	0.1−	1997 10 28	691	0.1−	0.0
1995 04 26	691	0.4+	0.3+	1995 05 04	691	0.2−	0.3−	1997 10 28	691	0.4−	0.1−
1995 04 26	691	0.1+	0.0	1995 05 04	691	0.6−	0.1+	1997 11 02	691	0.1−	0.1+
1995 05 01	691	0.2+	0.0	1995 05 04	691	0.1−	0.3+	1997 11 02	691	0.5+	0.2+
1995 05 01	691	0.0	0.0	1997 10 28	691	0.5−	0.3−	1997 11 02	691	0.5+	0.2+

1995 KZ₁ = 1985 SL₁ = 1997 VU₄

Id. T. Urata, T. B. Spahr

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	164.55143		(2000.0)	P				Q			
n	0.17214968	ω	19.31825	−0.44989793		+0.87163729					
a	3.2003580	Ω	224.52722	−0.85155083		−0.48432604					
e	0.0909520	i	16.10506	−0.26917101		+0.07534403					
P	5.73	H	12.0	G	0.15	U	4				
Residuals in seconds of arc											
1985 09 16	675	0.2+	0.2−	1995 05 23	010	1.3−	0.8+	1997 11 04	905	0.6+	0.4+
1985 09 16	675	0.2−	0.1+	1995 05 23	010	(4.4− 2.9+)		1997 11 04	905	0.6+	0.6−
1995 05 22	010	0.8−	0.4+	1995 05 28	675	1.8+	0.8−	1997 11 06	905	0.2−	0.1−
1995 05 22	010	1.8−	0.2+	1995 05 28	675	1.0+	0.7−	1997 11 06	905	1.1−	0.7+
1995 05 22	010	(3.1− 0.3+)		1995 05 30	675	1.0+	0.2+				
1995 05 23	010	(3.6− 2.5+)		1995 05 30	675	0.3+	0.1+				

1996 ER = 1980 FS₂Id. G. V. Williams (*MPC* 30668)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	73.74815		(2000.0)	P		Q		Williams		
<i>n</i>	0.30789228	ω	133.26902	+0.62454610	+0.78095963					
<i>a</i>	2.1720518	Ω	175.36522	−0.73826577	+0.59313782					
<i>e</i>	0.1206862	<i>i</i>	4.72044	−0.25476622	+0.19567723					
<i>P</i>	3.20	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4			

Residuals in seconds of arc

1980 03 16	809	0.6−	0.0	1996 03 16	709	0.3+	0.4+	1997 10 23	817	0.2−	0.2+
1980 03 16	809	0.2−	0.0	1996 03 16	709	0.3+	0.1+	1997 10 23	817	0.0	0.3+
1980 03 16	809	0.6−	0.5−	1996 03 16	709	0.5+	0.2+	1997 10 24	817	0.5+	0.2−
1980 03 16	809	0.0	0.8−	1996 03 16	709	0.3+	0.3+	1997 10 24	817	0.1−	0.3+
1980 03 17	809	0.3+	0.2−	1996 03 16	709	0.3+	0.4+	1997 10 29	817	0.3+	0.0
1980 03 17	809	0.3−	0.3+	1996 03 17	817	1.0+	0.3+	1997 10 29	817	0.0	0.4−
1980 03 17	809	0.6−	0.4−	1996 03 17	817	0.8+	0.5+	1997 10 29	817	0.3+	0.0
1980 03 17	809	1.1+	1.3−	1996 03 17	817	0.4+	0.9+	1997 10 29	385	0.2+	0.1+
1996 03 14	817	0.4−	0.1−	1996 03 18	566	0.2+	0.2−	1997 10 29	385	0.6−	0.3−
1996 03 14	817	0.6−	0.1−	1996 03 18	566	0.3−	0.3+	1997 11 01	385	0.1−	0.1+
1996 03 14	817	0.7−	0.1+	1996 03 18	566	0.1−	0.1−	1997 11 01	385	0.2+	0.7−
1996 03 14	817	0.5−	0.1+	1997 10 23	817	0.2−	0.2+				
1996 03 14	817	0.4−	0.2−	1997 10 23	817	0.4−	0.5+				

1996 FE

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	341.07316		(2000.0)	P	Q
n	0.36827577	ω	245.83193	-0.00747824	-0.98516133
a	1.9276164	Ω	206.39524	$+0.99874778$	$+0.00112394$
e	0.0943033	i	22.68731	$+0.04946654$	-0.17162718
P	2.68	H	15.5	G 0.15	U 4

Residuals in seconds of arc

1996 03 16	566	0.4−	0.1+	1996 03 25	608	0.1+	0.2−	1997 10 30	566	0.6+	0.4+
1996 03 16	566	0.0	0.2+	1996 04 09	608	0.5+	0.3+	1997 10 30	566	0.3+	0.6+
1996 03 16	566	0.8+	0.3+	1996 04 09	608	0.5+	0.2+	1997 11 01	372	(1.7+	2.3+)
1996 03 17	566	0.1−	0.2+	1996 05 21	566	0.0	0.0	1997 11 01	372	0.6−	0.7+
1996 03 17	566	0.3−	0.0	1996 05 21	566	0.2−	0.7+	1997 11 03	372	0.6+	0.6−
1996 03 17	566	0.7−	0.5−	1996 05 21	566	0.1+	0.3−	1997 11 03	372	1.3−	0.2−
1996 03 20	566	0.2−	0.0	1996 05 22	566	0.1−	0.1−	1997 11 03	372	0.7−	0.5−
1996 03 20	566	0.8−	0.0	1996 05 22	566	0.2+	0.4−	1997 11 06	424	0.6+	0.9−
1996 03 20	566	0.3−	0.2−	1996 05 22	566	0.6+	0.4−	1997 11 06	424	(2.3+	1.5−)
1996 03 25	608	0.0	0.2−	1997 10 30	566	0.4+	0.4+				

1996 JZ₁₁ = 1997 UJ₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	139.79000		(2000.0)	P	Q
n	0.27863013	ω	154.35382	−0.12053790	+0.99136715
a	2.3215819	Ω	108.68791	−0.91991232	−0.09201278
e	0.2377383	i	3.12210	−0.37313796	−0.09340679
P	3.54	H	16.5	G 0.15	U 5

Residuals in seconds of arc

1996 05 09	691	0.6−	0.1+	1996 05 15	691	0.3+	0.1−	1997 10 25	691	0.5−	0.6−
1996 05 09	691	0.4−	0.1−	1996 05 21	691	0.0	0.1−	1997 10 25	691	0.3+	0.3+
1996 05 09	691	0.7−	0.1−	1996 05 21	691	0.2+	0.3−	1997 11 01	691	0.0	0.1−
1996 05 15	691	0.8+	0.1+	1996 05 21	691	0.1−	0.2−	1997 11 01	691	0.2+	0.3+
1996 05 15	691	0.4+	0.2+	1997 10 25	691	0.1−	0.4−	1997 11 01	691	0.3+	0.1+

1996 KW

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

$\dot{M}$	41.15831		(2000.0)	P	Q
n	0.22527777	ω	278.12251	+0.86178742	+0.47069586
a	2.6750003	Ω	54.00349	−0.32210783	+0.79578519
e	0.2565612	i	13.51852	−0.39187878	+0.38101356
P	4.38	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1996 05 09	691	1.2−	0.6+	1996 05 24	552	0.2−	0.5+	1997 10 05	552	0.1−	0.2−
1996 05 09	691	0.2+	1.9+	1996 05 24	552	0.2+	0.5+	1997 10 05	552	0.4−	0.8+
1996 05 09	691	0.5−	0.2+	1996 06 13	552	0.6+	1.2−	1997 10 25	552	1.2+	0.4−
1996 05 15	691	0.2−	0.9−	1996 06 13	552	1.6−	1.0−	1997 10 25	552	1.0+	0.6+
1996 05 15	691	0.0	0.1+	1996 07 11	552	0.6+	0.1−	1997 10 29	566	0.6−	0.4−
1996 05 15	691	0.0	0.1+	1996 07 11	552	0.2+	0.2+	1997 10 29	566	0.5−	0.4−

1996 05 16	552	0.4−	0.8−	1996 07 11	552	0.1−	1.3+	1997 10 29	566	0.3−	0.5−
1996 05 16	552	0.8−	0.6−	1996 07 13	552	0.2−	0.1−	1997 11 02	552	0.3+	1.0−
1996 05 16	552	1.6+	1.6−	1996 07 13	552	0.3+	0.4+	1997 11 02	552	0.0	0.6+
1996 05 16	552	0.8+	0.7−	1996 07 13	552	0.4+	0.3+				

1996 LL

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	30.67303		(2000.0)	P	Q
n	0.23648328	ω	176.90734	+0.99250221	−0.11439749
a	2.5898170	Ω	189.97452	+0.10613141	+0.98127109
e	0.1027114	i	14.38838	+0.06062582	+0.15498470
P	4.17	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1996 06 06	327	0.5+	0.4−	1996 06 17	327	0.3−	0.0	1997 10 31	426	0.3+	0.2+
1996 06 06	327	0.1+	0.2−	1996 06 21	658	0.3+	0.4+	1997 10 31	426	0.7+	0.5+
1996 06 06	327	0.5−	0.2−	1996 06 21	658	0.0	0.5+	1997 10 31	426	0.3+	0.1−
1996 06 06	327	0.4−	1.1−	1996 06 21	658	0.0	0.5+	1997 11 01	700	0.4−	0.2+
1996 06 07	327	0.3−	0.4−	1997 10 29	426	0.4+	0.1−	1997 11 01	700	0.2−	0.2+
1996 06 07	327	0.1+	0.1−	1997 10 29	426	0.9+	0.2−	1997 11 01	700	0.2−	0.3+
1996 06 07	327	0.1−	0.1−	1997 10 29	426	0.8+	0.4−	1997 11 02	700	0.8−	0.1+
1996 06 13	327	0.2+	0.4+	1997 10 31	700	(2.2−	0.1−)	1997 11 02	700	0.3−	0.6−
1996 06 13	327	0.4−	0.8+	1997 10 31	700	0.5−	0.2−	1997 11 03	700	0.6+	1.0+
1996 06 13	327	0.5+	0.1−	1997 10 31	700	0.3+	0.2+	1997 11 03	700	0.2−	0.1−
1996 06 17	327	0.2+	0.0	1997 10 31	700	0.1−	0.5+	1997 11 03	700	0.3−	1.1−
1996 06 17	327	0.1−	0.1−	1997 10 31	700	1.2−	0.2−				

1996 LV₃ = 1978 WP₄Id. B. G. Marsden (*MPC* 28863)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	75.47244		(2000.0)	P	Q
n	0.25595102	ω	240.67588	+0.68566671	+0.72559495
a	2.4567717	Ω	72.73362	−0.64498251	+0.64259621
e	0.1628327	i	3.48685	−0.33742959	+0.24613426
P	3.85	H	14.5	G 0.15	U 2

Residuals in seconds of arc

1978 11 29	675	0.1+	0.3+	1996 03 27	809	(2.4−	0.0)	1997 09 28	608	0.7−	0.4+
1978 11 30	675	0.0	0.3+	1996 03 27	809	(2.9−	0.1+)	1997 09 28	608	0.2+	0.0
1992 04 26	691	0.4−	0.3+	1996 06 08	809	(5.8+	3.1+)	1997 10 21	327	0.5+	0.9−
1992 04 26	691	0.3−	0.5+	1996 06 08	809	(6.3+	3.1+)	1997 10 21	327	0.6+	0.9−
1996 03 24	809	0.5+	1.4−	1996 06 08	809	(6.1+	4.2+)	1997 10 21	327	0.5+	1.2−
1996 03 24	809	0.4+	1.3−	1996 06 10	809	(8.4+	4.9+)	1997 10 29	566	0.0	0.4−
1996 03 24	809	0.4+	2.0−	1996 06 10	809	(8.4+	5.1+)	1997 10 29	566	0.1+	0.3−
1996 03 27	809	1.9−	0.4+	1996 06 10	809	(8.9+	4.0+)	1997 10 29	566	0.1+	0.3−

1996 NA

Id. P. Comba (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

M	199.98950		(2000.0)	P	Q
n	0.36741889	ω	158.37832	-0.10257555	$+0.91127663$
a	1.9306123	Ω	103.91167	-0.96223166	$+0.01073678$
e	0.0644117	i	24.25927	-0.25216756	-0.41165474
P	2.68	H	15.5	G 0.15	U 3

Residuals in seconds of arc

1996 07 08	684	0.6−	0.0	1996 07 18	684	0.5+	0.2+	1996 08 08	684	0.2−	0.0
1996 07 08	684	0.6−	0.0	1996 07 18	684	0.4+	0.3+	1996 08 08	684	0.1+	0.2−
1996 07 08	684	0.4−	0.3+	1996 07 18	684	0.4+	0.2+	1997 11 07	684	0.3+	0.0
1996 07 09	684	0.3+	0.2−	1996 07 19	684	0.1+	0.1−	1997 11 07	684	0.1+	0.0
1996 07 09	684	0.0	0.6−	1996 07 19	684	0.1+	1.0+	1997 11 08	684	0.1+	0.1−
1996 07 09	684	0.2+	0.2−	1996 08 07	684	0.2−	0.2−	1997 11 08	684	0.3−	0.1+
1996 07 09	684	0.1+	0.3−	1996 08 07	684	0.2−	0.2−	1997 11 08	684	0.2−	0.2−

1997 NOV. 14

M.P.C. 30877

1996 NW

Id. A. Nakamura (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	46.04024		(2000.0)	P		Q	
<i>n</i>	0.21793809	ω	111.93526	+0.95511320	−0.29239614		
<i>a</i>	2.7347269	Ω	265.09164	+0.25112232	+0.88432814		
<i>e</i>	0.1029797	<i>i</i>	2.73686	+0.15715077	+0.36396186		
<i>P</i>	4.52	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 07 15	557	0.2−	0.5−	1996 07 16	360	0.2−	0.3+	1996 08 10	360	0.3+	0.4−
1996 07 15	557	0.5+	0.4−	1996 07 16	360	0.3−	0.1+	1996 08 19	360	0.5+	0.7−
1996 07 15	557	0.5−	0.1−	1996 07 20	360	0.1−	0.3+	1996 08 19	360	0.1−	0.2−
1996 07 15	566	0.3+	0.1+	1996 07 20	360	0.2−	0.3+	1996 08 19	360	0.9+	0.1−
1996 07 15	566	0.4+	0.1−	1996 07 23	360	0.2−	0.1+	1997 11 01	360	0.2+	0.1−
1996 07 15	566	0.3+	0.3+	1996 07 23	360	0.7−	0.3+	1997 11 01	360	0.2+	0.2+
1996 07 15	360	0.4+	0.5+	1996 07 23	360	0.1−	0.1+	1997 11 01	360	0.0	0.1+
1996 07 15	360	0.1+	0.1+	1996 08 06	360	0.8−	0.2−	1997 11 03	360	0.2−	0.1−
1996 07 15	360	0.2+	0.2+	1996 08 06	360	0.6−	0.3−	1997 11 03	360	0.3−	0.1+
1996 07 16	360	0.3−	0.5+	1996 08 10	360	0.4+	0.2−				

1996 NS₃ = 1997 VM

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	135.69945		(2000.0)	P		Q	
<i>n</i>	0.24377463	ω	166.08569	+0.54128668	+0.84028874		
<i>a</i>	2.5379148	Ω	136.67455	−0.77562864	+0.51293765		
<i>e</i>	0.0899123	<i>i</i>	2.53855	−0.32466744	+0.17552720		
<i>P</i>	4.04	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 07 14	809	0.2−	0.1−	1996 08 08	809	(0.4−	2.8+)	1996 08 20	566	0.2−	0.0
1996 07 14	809	0.6+	0.4−	1996 08 08	809	(0.1−	3.2+)	1997 11 02	684	0.5−	0.2+
1996 07 14	809	1.5−	0.8−	1996 08 09	809	(1.8+	4.4+)	1997 11 02	684	0.2+	0.0
1996 07 16	809	0.3+	0.4+	1996 08 09	809	(1.2+	3.8+)	1997 11 03	684	0.1+	0.1−
1996 07 16	809	0.2+	0.4+	1996 08 09	809	(2.3+	3.8+)	1997 11 03	684	0.0	0.1−
1996 07 16	809	0.8+	0.6+	1996 08 20	566	0.2+	0.1−	1997 11 03	684	0.2+	0.1−
1996 08 08	809	(0.6−	3.3+)	1996 08 20	566	0.1−	0.1+				

1996 PD₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	57.04803		(2000.0)	P		Q	
<i>n</i>	0.23180572	ω	307.79306	+0.84940491	−0.52327113		
<i>a</i>	2.6245405	Ω	83.85640	+0.50327765	+0.76408019		
<i>e</i>	0.0138687	<i>i</i>	3.95325	+0.15881724	+0.37731788		
<i>P</i>	4.25	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 08 13	108	0.7−	0.4+	1996 08 16	108	(1.0+	3.2−)	1996 09 08	104	0.9−	0.2+
1996 08 13	108	0.2−	0.8−	1996 08 19	104	0.3−	1.1+	1996 09 08	104	0.1−	0.3+
1996 08 13	108	0.1+	1.0−	1996 08 19	104	0.0	1.4+	1996 09 08	104	0.5+	0.2+
1996 08 13	108	(1.4+	2.8−)	1996 08 19	104	0.5−	1.1+	1996 09 14	108	(2.0+	0.1−)
1996 08 14	108	0.7−	1.4−	1996 08 23	108	1.3+	1.7−	1996 09 14	108	1.3+	0.6+
1996 08 14	108	(2.5+	0.4+)	1996 08 24	108	0.0	1.2−	1996 10 06	104	0.1+	0.2+
1996 08 15	108	0.9+	0.7−	1996 09 04	596	0.2+	0.1+	1996 10 06	104	0.3+	0.0
1996 08 15	104	0.3+	0.1−	1996 09 04	596	0.0	0.9+	1996 10 06	104	0.3+	0.0
1996 08 15	104	0.1+	0.5−	1996 09 04	596	0.7−	0.5+	1997 09 30	104	0.2−	1.6+
1996 08 15	104	0.4+	0.5−	1996 09 07	108	(0.6−	3.6−)	1997 09 30	104	0.2−	1.1+
1996 08 15	108	0.1−	0.2+	1996 09 07	108	1.8−	0.3−	1997 09 30	104	0.0	0.1−
1996 08 15	108	1.5+	0.3+	1996 09 08	104	0.3−	0.1+	1997 10 27	104	0.4−	1.5−
1996 08 15	108	(0.5+	3.0−)	1996 09 08	104	0.5−	0.4+	1997 10 27	104	0.6+	1.1−

1996 PJ₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	54.07140		(2000.0)	P		Q	
<i>n</i>	0.17265946	ω	26.03910	+0.99606325	−0.02185220		
<i>a</i>	3.1940555	Ω	334.76278	−0.02981614	+0.83008498		
<i>e</i>	0.1242116	<i>i</i>	11.62426	+0.08348059	+0.55720859		
<i>P</i>	5.71	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 08 15	108	0.9+	1.5−	1996 09 06	108	1.8−	1.3+	1996 10 03	108	1.0−	0.2+
1996 08 16	108	0.2+	0.5−	1996 09 06	108	0.5−	0.2−	1996 10 03	108	(2.8−	0.2−)
1996 08 17	108	0.3−	0.7−	1996 09 07	108	0.6+	1.4−	1996 10 03	108	(2.7−	1.8−)
1996 08 17	108	0.9−	0.3−	1996 09 07	108	0.0	1.0+	1997 09 30	104	0.7−	0.4−
1996 08 17	108	(2.8+	1.1+)	1996 09 08	809	0.3−	0.1+	1997 09 30	104	0.1+	0.0
1996 08 17	108	0.8−	1.4+	1996 09 08	809	0.1−	0.1+	1997 09 30	104	0.4−	0.5+
1996 08 19	108	1.2+	1.4+	1996 09 08	809	0.4−	1.0+	1997 10 13	104	0.5−	0.2−
1996 08 19	108	0.4−	0.8+	1996 09 08	104	0.3+	0.3+	1997 10 13	104	0.4−	0.3−
1996 08 19	108	0.7+	0.5−	1996 09 08	104	0.0	0.3−	1997 10 13	104	0.4−	0.4−
1996 08 19	108	1.1+	0.9−	1996 09 08	104	0.3−	0.1−	1997 10 13	104	0.3−	0.2−
1996 08 23	108	0.0	0.6−	1996 09 10	108	(2.8+	0.2+)	1997 10 27	104	0.7+	0.3+
1996 08 23	108	0.9−	1.9−	1996 09 10	108	0.9+	0.4−	1997 10 27	104	0.6+	0.1+
1996 09 06	596	0.2+	0.4+	1996 09 10	108	0.2+	0.5+	1997 10 27	104	0.7+	0.1+
1996 09 06	596	0.1+	0.1−	1996 09 14	108	0.6+	0.1+	1997 10 27	104	0.4+	0.1+
1996 09 06	596	0.1−	1.6+	1996 09 14	108	0.9+	0.8−				

1996 QD

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	134.94121		(2000.0)	P		Q	
<i>n</i>	0.23031098	ω	85.07190	+0.40221539	+0.91044844		
<i>a</i>	2.6358840	Ω	209.24599	−0.89862889	+0.37242467		
<i>e</i>	0.1708619	<i>i</i>	11.38830	−0.17518246	+0.17995416		
<i>P</i>	4.28	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 08 16	557	0.1−	0.1+	1996 08 23	557	0.8+	0.0	1996 10 12	557	0.1−	0.1−
1996 08 16	557	0.2−	0.2−	1996 08 23	557	0.3+	0.2−	1996 11 19	557	0.4+	1.1+
1996 08 18	557	0.5+	0.1+	1996 09 02	557	0.1+	0.4−	1997 11 01	557	0.1−	0.0
1996 08 18	557	0.0	0.4+	1996 09 02	557	0.2−	0.1−	1997 11 01	557	0.1+	0.1+
1996 08 18	557	0.1−	0.4+	1996 09 02	557	0.2+	0.1+	1997 11 02	557	0.4−	0.2−
1996 08 19	557	0.3−	0.1−	1996 09 19	557	0.5−	0.4−	1997 11 02	557	0.3+	0.6−
1996 08 19	557	0.1−	0.2−	1996 09 19	557	0.2−	0.5−	1997 11 02	557	0.2−	0.5+
1996 08 19	557	0.3−	0.0	1996 09 19	557	0.1−	0.6−	1997 11 10	557	0.2+	0.1−
1996 08 20	557	0.0	0.0	1996 10 08	557	0.2−	0.1+	1997 11 10	557	0.2+	0.0
1996 08 20	557	0.2−	0.1−	1996 10 08	557	0.1−	0.2+				
1996 08 23	557	0.3+	0.5+	1996 10 12	557	0.1+	0.5+				

1996 TW

Id. D. di Cicco (1997 observations)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	78.77739		(2000.0)	P		Q	
<i>n</i>	0.08347232	ω	314.08267	+0.78433699	+0.61883365		
<i>a</i>	5.1853061	Ω	8.03178	−0.44333240	+0.60781684		
<i>e</i>	0.0900699	<i>i</i>	17.98092	−0.43390306	+0.49759783		
<i>P</i>	11.81	<i>H</i>	11.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 10 05	817	0.3−	0.4+	1996 10 07	817	0.7+	0.0	1996 11 28	817	0.3−	0.1+
1996 10 05	817	0.4−	1.2−	1996 10 07	817	0.3+	0.1+	1996 11 28	817	0.4−	0.2−
1996 10 05	817	0.2−	0.1+	1996 10 12	817	0.2+	0.0	1997 10 21	817	0.3+	0.1−
1996 10 05	817	0.5−	0.4−	1996 10 12	817	0.3+	0.0	1997 10 21	817	0.2−	0.0
1996 10 05	817	0.0	0.3+	1996 10 16	817	0.5+	0.2−	1997 10 21	817	0.1+	0.0
1996 10 05	817	1.6−	0.1−	1996 10 16	817	0.2+	0.4−	1997 10 23	817	0.2+	0.1−
1996 10 06	817	0.3+	0.1+	1996 10 16	817	0.2+	0.1−	1997 10 23	817	0.0	0.1+
1996 10 06	817	0.1+	0.1+	1996 11 05	817	0.3−	0.4+	1997 10 23	817	0.0	0.3+
1996 10 06	817	0.2+	0.1+	1996 11 05	817	0.1+	0.3+	1997 10 29	817	0.1−	0.2−

1996 10 06	817	0.1+	0.1+	1996 11 12	817	0.3+	0.0	1997 10 29	817	0.2-	0.1+
1996 10 07	817	0.5+	0.1+	1996 11 12	817	0.0	0.4+				

1996 UX₃ = 1997 TH₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	322.79827		(2000.0)	P		Q	
<i>n</i>	0.08373258	ω	234.14769	+0.10675010		-0.97840497	
<i>a</i>	5.1745557	Ω	211.17952	+0.98632124		+0.12669038	
<i>e</i>	0.1629549	<i>i</i>	19.99134	+0.12559786		-0.16331953	
<i>P</i>	11.77	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 10 29	327	0.2-	0.5+	1996 11 02	327	1.2+	0.4-	1997 10 07	620	0.7+	1.1-
1996 10 29	327	0.9-	0.5+	1996 11 09	327	1.4-	0.9-	1997 10 24	620	0.2-	0.3-
1996 10 29	327	0.5-	0.0	1996 11 09	327	0.1-	0.4+	1997 10 24	620	0.5-	0.5+
1996 11 01	327	0.4-	0.1+	1996 11 09	327	0.2-	0.6-	1997 10 25	620	0.6-	0.9+
1996 11 01	327	0.3-	0.2-	1997 10 03	620	2.1+	2.3+	1997 11 06	620	1.3+	0.9-
1996 11 01	327	0.2+	0.5+	1997 10 03	620	0.2+	0.2+	1997 11 06	620	0.2+	0.1-
1996 11 02	327	1.0+	0.1-	1997 10 04	620	1.2-	1.3-	1997 11 06	620	0.4-	0.4+
1996 11 02	327	0.6+	0.3+	1997 10 07	620	1.6-	0.1+				
1996 11 02	327	0.9+	0.2-	1997 10 07	620	0.0	0.7-				

1996 VB₈ = 1980 RP₈ = 1980 TG₁₀ = 1986 LA₁ = 1988 AOId. D. J. Asher (*MPC* 30460), G. V. Williams (d)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	205.62330		(2000.0)	P		Q	
<i>n</i>	0.31186120	ω	130.16131	+0.50562824		+0.86269538	
<i>a</i>	2.1535840	Ω	170.19732	-0.80808609		+0.47755415	
<i>e</i>	0.1947790	<i>i</i>	3.31235	-0.30222005		+0.16642931	
<i>P</i>	3.16	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 09 06	095	0.1+	0.6-	1988 01 11	033	1.0-	0.3-	1996 11 06	399	0.7-	0.5-
1980 10 15	095	0.8+	0.8+	1995 03 27	691	0.5+	0.1+	1996 11 06	399	1.1+	0.5+
1986 06 06	675	(7.8+	1.5+)	1995 03 27	691	0.3+	0.3-	1996 11 15	399	0.7-	0.8+
1986 06 06	675	1.8-	0.8+	1995 03 27	691	0.5+	0.5-	1996 11 15	399	1.6-	0.8+
1986 06 08	675	1.1+	0.9-	1996 11 03	399	0.7+	1.2-				
1988 01 11	033	0.5-	0.1-	1996 11 03	399	1.1+	0.4-				

1997 CT₂₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
<i>M</i>	190.52429		(2000.0)	P		Q	
<i>n</i>	0.00342587	ω	230.14647	+0.56872109		+0.82235381	
<i>a</i>	43.5801992	Ω	74.52268	-0.74915316		+0.52643056	
<i>e</i>	0.0303951	<i>i</i>	1.01342	-0.33959662		+0.21588210	
<i>P</i>	288	<i>H</i>	5.0	<i>G</i>	0.15		

Residuals in seconds of arc

1997 02 02	568	0.5+	0.0	1997 02 07	568	0.4-	0.1+	1997 03 04	696	1.0+	0.7-
1997 02 02	568	0.4+	0.1-	1997 02 07	568	0.3-	0.4+	1997 10 26	950	0.4+	0.1-
1997 02 04	568	0.1+	0.4+	1997 03 04	696	1.0-	0.4-	1997 10 27	950	0.3-	0.2+
1997 02 04	568	0.2-	0.5+	1997 03 04	696	0.2-	0.3-				

1997 QD₂ = 1949 KQ = 1990 HA₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	119.81187		(2000.0)	P		Q	
<i>n</i>	0.18918877	ω	96.25576	-0.49866403		+0.85930137	
<i>a</i>	3.0051938	Ω	143.11547	-0.85119097		-0.46066822	
<i>e</i>	0.0698907	<i>i</i>	10.92312	-0.16373188		-0.22222952	
<i>P</i>	5.21	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1949 05 29	760	0.8+	0.3+	1997 08 28	905	0.6-	0.8-	1997 09 11	385	0.2-	1.0+
1949 05 29	760	0.8-	0.3-	1997 08 28	905	0.3-	0.5-	1997 09 29	905	0.1-	0.7-

1990 04 19	095	0.1-	0.3-	1997 09 04	385	0.4-	0.6+	1997 09 29	905	0.4-	0.0
1990 04 19	095	0.1+	0.5+	1997 09 04	385	0.4-	0.5+	1997 10 20	385	0.7+	0.2-
1997 08 27	905	0.0	0.5-	1997 09 09	905	0.0	0.9+	1997 10 20	385	1.3+	0.5+
1997 08 27	905	0.4+	1.1-	1997 09 11	385	0.1+	0.4+				

1997 QR₃ = 1976 SO

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	344.92231		(2000.0)	P		Q	
<i>n</i>	0.28442730	ω	245.43379	+0.24983042		-0.96816392	
<i>a</i>	2.2899282	Ω	190.13602	+0.91737371		+0.24181856	
<i>e</i>	0.1243756	<i>i</i>	5.08583	+0.30985520		+0.06467153	
<i>P</i>	3.47	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1976 09 29	049	0.5-	1.3-	1997 09 09	910	0.3-	0.7+	1997 10 22	704	1.2-	1.3+
1976 09 29	049	0.0	0.6-	1997 09 28	046	0.2+	0.1+	1997 10 22	704	1.7-	0.6+
1976 09 30	049	0.6+	0.1+	1997 09 28	046	0.5-	0.3+	1997 10 29	704	1.7+	1.0+
1976 09 30	049	0.5+	0.0	1997 09 28	046	0.4-	0.1+	1997 10 29	704	0.1+	1.0+
1997 08 30	910	0.8+	0.4-	1997 09 28	046	0.4-	0.3-	1997 10 29	704	0.5+	1.0+
1997 08 30	910	0.9+	0.5+	1997 09 29	046	0.4-	0.1+	1997 10 29	704	1.1+	0.5+
1997 08 30	910	0.8+	0.1+	1997 09 29	046	0.4-	0.4+	1997 10 29	704	0.4+	1.2+
1997 09 01	910	0.1+	0.1+	1997 09 29	046	0.3-	0.3+	1997 10 30	704	1.1+	1.9-
1997 09 01	910	0.0	0.1+	1997 09 29	046	0.5-	0.1+	1997 10 30	704	1.2+	1.9-
1997 09 01	910	0.1+	0.1-	1997 09 29	046	0.7-	0.1+	1997 10 30	704	0.9+	1.4-
1997 09 09	910	0.3-	0.8+	1997 10 22	704	1.8-	0.0	1997 10 30	704	0.5+	1.7-
1997 09 09	910	0.2-	0.9+	1997 10 22	704	2.0-	0.5+	1997 10 30	704	0.6+	1.6-

1997 RY₂ = 1996 HL₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>	16.89663		(2000.0)	P		Q	
<i>n</i>	0.21456414	ω	140.46881	+0.94681429		+0.32109936	
<i>a</i>	2.7633207	Ω	200.83052	-0.30811990		+0.88595265	
<i>e</i>	0.1044510	<i>i</i>	3.37358	-0.09276221		+0.33463876	
<i>P</i>	4.59	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	0.2-	0.5-	1996 04 18	809	0.5-	0.4+	1997 09 05	426	0.0	1.1-
1996 04 17	809	0.4+	0.7-	1997 09 03	426	0.3-	0.5+	1997 09 29	327	0.3+	0.1+
1996 04 17	809	0.5-	0.1-	1997 09 03	426	0.3+	0.3+	1997 09 29	327	0.2-	0.4+
1996 04 18	809	0.1-	0.6+	1997 09 03	426	0.2+	0.6+	1997 09 29	327	0.1-	0.3-
1996 04 18	809	1.0+	0.2+	1997 09 05	426	0.2-	0.4-				

1997 RS₅ = 1996 HE₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	183.28449		(2000.0)	P		Q	
<i>n</i>	0.30127355	ω	26.87749	-0.80803966		+0.58911574	
<i>a</i>	2.2037486	Ω	189.21967	-0.54470739		-0.74956479	
<i>e</i>	0.0254311	<i>i</i>	1.36482	-0.22442319		-0.30181993	
<i>P</i>	3.27	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	0.5-	0.5+	1996 04 18	809	0.4+	1.3-	1997 09 09	684	0.0	0.1-
1996 04 17	809	0.3-	0.2+	1997 09 08	684	0.3-	0.9+	1997 10 10	376	0.1-	0.5-
1996 04 17	809	1.2-	0.2+	1997 09 08	684	0.4+	0.3-	1997 10 10	376	0.3+	0.3-
1996 04 18	809	0.9+	0.1+	1997 09 09	684	0.0	0.2+				
1996 04 18	809	0.5+	0.0	1997 09 09	684	0.2-	0.1-				

1997 RP₇ = 1974 OP₁ = 1978 QO₃ = 1982 UG₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>	66.88807		(2000.0)	P		Q	
<i>n</i>	0.26473616	ω	79.33026	+0.95856961		+0.27402261	
<i>a</i>	2.4021154	Ω	264.73237	-0.28222374		+0.87650842	
<i>e</i>	0.1343756	<i>i</i>	4.48222	-0.03865310		+0.39578352	
<i>P</i>	3.72	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

1997 NOV. 14

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Residuals in seconds of arc

1974 07 19	808	0.3−	0.3−	1982 10 22	095	0.9−	0.1+	1997 11 01	411	0.8−	0.7+
1974 07 19	808	0.2+	0.1+	1997 09 11	721	0.5+	0.3−	1997 11 01	411	0.6+	0.7−
1978 08 27	808	0.5+	0.3−	1997 09 11	721	0.3−	0.0	1997 11 03	411	0.4+	0.0
1978 08 27	808	0.2−	0.4+	1997 09 12	721	0.5−	0.3−	1997 11 03	411	0.8+	0.3−
1982 10 21	095	0.7+	0.2+	1997 09 12	721	1.0−	0.4+				

1997 ST = 1980 WD₄ = 1995 BO₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	1.69386		(2000.0)	P		Q	
n	0.28843978	ω	208.16207	+0.51837615		−0.85461906	
a	2.2686419	Ω	210.64286	+0.79529370		+0.49477305	
e	0.0709190	i	3.39761	+0.31431527		+0.15756234	
P	3.42	H	14.0	G	0.15	U	3

Residuals in seconds of arc

1980 11 29	675	0.1+	0.7+	1997 09 16	327	0.0	0.0	1997 10 13	327	0.3+	0.8+
1980 12 01	675	0.2−	0.1−	1997 09 16	327	0.1+	0.0	1997 10 19	327	0.6−	0.0
1995 01 29	905	1.1−	0.9+	1997 09 17	327	0.0	0.0	1997 10 19	327	0.3−	0.1+
1995 01 29	905	0.9+	0.0	1997 09 17	327	0.0	0.1−	1997 10 19	327	0.2−	0.5+
1995 01 31	905	0.1+	0.3−	1997 09 17	327	0.5−	0.1+	1997 10 24	327	0.1+	0.4−
1995 01 31	905	0.0	0.8−	1997 10 13	327	0.5+	0.1−	1997 10 24	327	0.3+	0.2−
1997 09 16	327	0.1+	0.7−	1997 10 13	327	0.0	0.1−	1997 10 24	327	0.3+	0.5−

1997 SU = 1993 SZ₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	24.56478		(2000.0)	P		Q
n	0.26468562	ω	178.50715	+0.86440470	−0.50029053	
a	2.4024212	Ω	211.67093	+0.46031168	+0.82753874	
e	0.1273673	i	5.47982	+0.20228116	+0.25473325	
P	3.72	H	13.0	G 0.15	U	4

Residuals in seconds of arc

1993 09 19	400	(0.7+	2.7−)	1997 09 17	327	0.0	0.0	1997 10 19	327	0.0	0.0
1993 09 19	400	0.1−	0.0	1997 09 17	327	0.1−	0.3−	1997 10 19	327	0.1−	0.0
1993 09 21	400	0.0	0.8−	1997 10 12	327	0.2+	0.6−	1997 10 19	327	0.2+	0.7−
1993 09 21	400	0.0	1.0+	1997 10 12	327	0.3+	0.2−	1997 10 24	327	0.2+	0.3+
1997 09 16	327	0.2−	0.0	1997 10 12	327	0.0	0.3−	1997 10 24	327	1.2−	0.4+
1997 09 16	327	0.1+	0.1+	1997 10 13	327	0.1+	0.0	1997 10 24	327	0.2+	1.1+
1997 09 16	327	0.1+	0.2−	1997 10 13	327	0.3+	0.0				
1997 09 17	327	0.2−	0.2+	1997 10 13	327	0.1+	0.2−				

1997 SV = 1986 VC₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	40.15668		(2000.0)	P		Q
n	0.27071061	ω	343.41606	+0.95873411	−0.27616002	
a	2.3666418	Ω	32.85653	+0.27293578	+0.82750343	
e	0.1198293	i	7.15354	+0.07959249	+0.48884938	
P	3.64	H	14.0	G 0.15	U	5

Residuals in seconds of arc

1986 11 03	046	1.1−	1.7−	1997 09 16	327	0.4−	0.2−	1997 09 30	327	1.4+	1.1+
1986 11 03	046	0.0	0.8+	1997 09 17	327	0.5−	0.0	1997 09 30	327	1.1+	0.9+
1986 11 07	046	0.0	0.5−	1997 09 17	327	0.6−	0.1−	1997 11 02	327	0.4−	0.1+
1986 11 07	046	2.1+	0.8−	1997 09 17	327	0.4−	0.3+	1997 11 02	327	0.4−	0.1+
1997 09 16	327	0.3−	0.4−	1997 09 17	327	0.6−	0.4−	1997 11 02	327	0.5−	0.1+
1997 09 16	327	0.7−	0.3−	1997 09 30	327	1.4+	1.2+				

1997 SL₁ = 1996 LJ₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	287.20798		(2000.0)	P		Q	
n	0.28405912	ω	282.52005	−0.15397298		−0.98806694	
a	2.2919065	Ω	176.33008	+0.92911009		−0.14616287	
e	0.0265710	i	3.58834	+0.33622428		−0.04858132	
P	3.47	H	15.5	G	0.15	U	5

Residuals in seconds of arc

1996 06 08	809	0.6−	0.8+	1997 09 23	816	0.2+	0.5+	1997 09 25	540	0.4−	0.2+
1996 06 08	809	0.9−	0.9+	1997 09 23	684	0.1−	0.2−	1997 09 25	540	0.6+	0.0
1996 06 08	809	0.7−	1.0+	1997 09 23	684	0.0	0.1−	1997 09 25	540	0.2−	0.0
1996 06 10	809	0.3+	0.1−	1997 09 23	684	0.2−	0.1−	1997 09 26	540	0.2−	0.5−
1996 06 10	809	0.6+	1.2−	1997 09 23	540	0.6−	0.1+	1997 09 26	540	0.9−	0.3+
1996 06 10	809	1.3+	1.6−	1997 09 23	540	0.0	0.3−	1997 09 26	540	0.1+	0.8−
1997 09 22	816	0.0	0.3+	1997 09 24	684	0.3−	0.1−	1997 09 27	816	0.5+	0.4+
1997 09 22	816	0.2+	0.2+	1997 09 24	684	0.1−	0.1−	1997 09 28	816	0.1−	0.1+
1997 09 22	540	0.3+	0.0	1997 09 24	684	0.2−	0.0	1997 09 28	816	0.1+	0.2+
1997 09 22	540	0.9−	0.0	1997 09 25	816	0.6+	0.1−	1997 09 28	816	0.2+	0.1−
1997 09 22	540	0.4−	0.3−	1997 09 25	816	0.1+	0.4−	1997 10 06	816	0.1+	0.4−
1997 09 22	540	0.0	0.0	1997 09 25	816	0.5+	0.1−	1997 10 08	816	0.2+	0.0
1997 09 23	816	0.2+	0.9+	1997 09 25	816	0.3+	0.1+	1997 10 08	816	0.2+	0.3−
1997 09 23	816	0.1+	0.6+	1997 09 25	816	0.1−	0.1+	1997 10 08	816	0.1+	0.2−

1997 SB₃ = 1996 JA₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	356.08226		(2000.0)	P	Q
n	0.28812497	ω	205.10357	+0.71316383	−0.70044178
a	2.2702941	Ω	199.44412	+0.65647076	+0.68129610
e	0.1398609	i	4.80853	+0.24585260	+0.21264276
P	3.42	H	15.5	G 0.15	U 4

Residuals in seconds of arc

1996 05 12	691	0.3−	0.2+	1997 09 24	595	1.4+	0.1−	1997 10 28	704	(0.1+	3.8−)
1996 05 12	691	0.1−	0.2+	1997 09 25	595	1.4−	0.4+	1997 10 28	704	1.9−	1.9−
1996 05 12	691	0.4−	0.4+	1997 09 25	595	0.7−	0.5+	1997 10 28	704	(0.8+	3.6−)
1996 05 18	691	0.4+	0.3−	1997 10 11	595	0.6+	0.4−	1997 11 03	595	0.2+	0.6+
1996 05 18	691	0.5+	0.1−	1997 10 13	595	0.8+	0.8+	1997 11 03	595	0.3+	0.6+
1996 05 18	691	0.1−	0.4−	1997 10 13	595	0.8+	0.1+				
1997 09 24	595	0.2−	0.8−	1997 10 28	704	(0.4−	3.6−)				

1997 SN₃ = 1992 PX₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

$\dot{M}$	317.08301		(2000.0)	P		Q	
n	0.21519831	ω	290.13279	+0.18600146		−0.98121776	
a	2.7578892	Ω	149.00828	+0.93449409		+0.16058675	
e	0.1382604	i	5.69972	+0.30351978		+0.10688123	
P	4.58	H	14.0	G	0.15	U	5

Residuals in seconds of arc

1992 08 08	010	0.2+	0.1−	1997 09 22	966	1.5−	0.1+	1997 10 01	966	0.7+	0.5−
1992 08 08	010	0.5−	0.0	1997 09 22	966	1.2−	2.3+	1997 10 01	966	0.4+	0.6−
1992 08 08	010	0.8−	1.7−	1997 09 23	966	0.3+	0.1+	1997 10 02	966	1.7+	0.3−
1992 08 09	010	2.3+	0.8+	1997 09 23	966	0.8−	0.1−	1997 10 02	966	0.3+	0.7−
1992 08 09	010	0.3−	0.6+	1997 09 23	966	0.9+	0.9−	1997 10 27	966	0.9−	1.6+
1992 08 09	010	0.9−	0.4+	1997 09 23	966	0.1−	0.0	1997 10 28	966	0.1+	0.8−

1997 SB₄ = 1988 RU₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	43.94867	(2000.0)	P	Q
<i>n</i>	0.22386041	ω	167.80029	+0.88851758 +0.45880178
<i>a</i>	2.6862794	Ω	164.88537	-0.42292751 +0.82406899
<i>e</i>	0.3126155	<i>i</i>	1.34446	-0.17795737 +0.33228186
<i>P</i>	4.40	<i>H</i>	16.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1988 09 14	807	0.2+	0.1+	1997 09 27	557	0.3-	0.1+	1997 10 07	557	0.3-	0.6-
1988 09 15	807	0.2-	0.2-	1997 09 28	557	0.2+	0.4-	1997 10 19	557	0.1+	0.1-
1997 09 26	557	0.1+	0.9+	1997 10 05	557	0.0	0.4+	1997 10 19	557	0.3+	0.2-
1997 09 27	557	0.0	0.2-	1997 10 05	557	0.0	0.2+				
1997 09 27	557	0.2+	0.2+	1997 10 07	557	0.3-	0.2-				

1997 SJ₄ = 1988 AZ = 1996 RF₂₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	326.19937	(2000.0)	P	Q
<i>n</i>	0.08300100	ω	195.22309	+0.37788744 -0.92328702
<i>a</i>	5.2049174	Ω	232.62259	+0.85824685 +0.37722416
<i>e</i>	0.1557973	<i>i</i>	4.97139	+0.34729445 +0.07240864
<i>P</i>	11.87	<i>H</i>	10.3	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1988 01 11	033	0.1-	0.1-	1997 09 28	411	0.9-	0.5-	1997 10 12	411	0.3+	0.6+
1988 01 11	033	0.1+	0.1+	1997 09 30	411	0.7+	0.5-	1997 10 12	411	0.5+	0.7+
1996 09 11	809	(1.8+	3.6+)	1997 09 30	411	0.1-	0.8-	1997 10 25	411	0.7-	1.0+
1996 09 13	809	0.1-	0.1+	1997 10 05	411	0.0	1.2+	1997 10 25	411	0.2-	0.9-
1996 09 13	809	0.1+	0.1+	1997 10 05	411	0.2+	0.5-	1997 11 06	411	0.4-	0.3-
1997 09 27	411	0.1-	0.1-	1997 10 08	411	0.1+	1.0+	1997 11 06	411	0.1+	0.1+
1997 09 27	411	0.3+	0.0	1997 10 08	411	1.0-	0.1-				
1997 09 28	411	0.6+	2.1-	1997 10 12	411	0.4+	0.9+				

1997 ST₄ = 1992 EL₂₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	50.11779	(2000.0)	P	Q
<i>n</i>	0.27018915	ω	128.75321	+0.82213527 +0.56849299
<i>a</i>	2.3696859	Ω	196.67084	-0.54947979 +0.77855697
<i>e</i>	0.1334038	<i>i</i>	6.03386	-0.14888102 +0.26582846
<i>P</i>	3.65	<i>H</i>	16.0	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1992 03 03	809	0.3-	0.1+	1997 10 03	589	0.9-	1.3+	1997 10 22	012	0.0	0.0
1992 03 05	809	0.3+	0.1-	1997 10 03	589	0.7+	2.0+	1997 10 22	012	0.2+	0.0
1997 09 25	560	(2.8-	1.2-)	1997 10 03	589	0.2+	0.1-	1997 10 22	012	0.1-	0.1+
1997 09 25	560	1.3-	1.8-	1997 10 03	560	0.3+	0.4-	1997 10 24	560	0.6+	0.3-
1997 09 25	560	(2.6-	2.6-)	1997 10 03	560	0.4+	0.3+	1997 10 24	560	0.4-	0.4-
1997 09 26	560	0.3+	1.0-	1997 10 03	560	0.2-	0.5+	1997 10 24	560	0.6+	0.5+
1997 09 26	560	0.2-	0.6-	1997 10 04	589	1.0+	0.2-	1997 10 28	560	0.6-	0.4-
1997 09 26	560	0.2+	0.5-	1997 10 04	589	0.5+	0.1+	1997 10 28	560	0.1-	0.2-
1997 09 27	560	(1.5-	2.9+)	1997 10 04	560	(1.8+	2.6+)	1997 10 28	560	0.1-	0.1+
1997 09 27	560	(0.3+	2.4+)	1997 10 04	560	0.6-	0.1+				
1997 09 27	560	0.3-	1.8+	1997 10 04	560	0.3-	0.8-				

1997 SR₈ = 1989 EE₁₀ = 1991 PD₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	185.65255	(2000.0)	P	Q
<i>n</i>	0.17513963	ω	181.79020	-0.99981914 -0.01846214
<i>a</i>	3.1638297	Ω	357.13995	+0.01838729 -0.87711239
<i>e</i>	0.0955506	<i>i</i>	5.24857	+0.00485713 -0.47993022
<i>P</i>	5.63	<i>H</i>	13.5	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1989 03 05	033	0.6+	0.8+	1997 08 10	327	1.1+	0.1+	1997 09 29	691	0.2-	0.2-
1989 03 05	033	0.3+	1.0+	1997 08 10	327	0.7+	0.0	1997 09 29	691	0.1-	0.1+
1991 08 06	809	1.4+	0.2+	1997 09 04	327	1.2+	0.1+	1997 10 06	691	0.4-	0.1-
1991 08 06	809	1.0+	0.6-	1997 09 04	327	1.1+	0.7+	1997 10 06	691	0.6-	0.0
1991 08 06	809	0.5+	1.0-	1997 09 04	327	1.2+	0.3+	1997 10 06	691	0.5-	0.0
1991 08 14	809	0.5-	0.5+	1997 09 27	691	0.7-	0.0	1997 10 21	691	0.1-	0.1-
1991 08 14	809	1.2-	1.0+	1997 09 27	691	0.7-	0.2-	1997 10 21	691	0.1+	0.1-
1991 08 14	809	1.8-	1.4+	1997 09 27	691	1.6-	0.2+	1997 10 21	691	1.9-	0.3+
1997 08 10	327	0.9+	0.4-	1997 09 29	691	0.0	0.3-				

1997 SB₁₀ = 1978 EV₇ = 1990 AA₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	320.01914	(2000.0)	P	Q
<i>n</i>	0.24013746	ω	250.20398	-0.54671858 -0.83509921
<i>a</i>	2.5634771	Ω	233.08785	+0.79390868 -0.49389122
<i>e</i>	0.1634700	<i>i</i>	4.36787	+0.26609735 -0.24224117
<i>P</i>	4.10	<i>H</i>	13.5	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1978 03 05	095	0.3+	0.7+	1997 09 19	327	0.3+	0.4+	1997 09 27	327	0.1+	0.1+
1990 01 04	511	0.3-	0.6-	1997 09 26	327	0.1+	0.1+	1997 09 27	327	0.0	0.2+
1990 01 04	511	0.2+	0.1-	1997 09 26	327	0.1-	0.0	1997 11 06	411	0.5-	0.7-
1997 09 19	327	0.2-	0.2+	1997 09 26	327	0.1-	0.4+	1997 11 06	411	0.4+	0.3+
1997 09 19	327	0.1-	0.1-	1997 09 27	327	0.3+	0.1+				

1997 SE₁₆ = 1992 ER₂₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	162.05932	(2000.0)	P	Q
<i>n</i>	0.27669696	ω	216.73067	-0.62866214 +0.77747407
<i>a</i>	2.3323826	Ω	14.34614	-0.69529195 -0.55164309
<i>e</i>	0.0845896	<i>i</i>	4.12701	-0.34835759 -0.30203307
<i>P</i>	3.56	<i>H</i>	14.2	<i>G</i> 0.15 <i>U</i> 7

Residuals in seconds of arc

1992 03 02	809	0.1+	0.3+	1997 09 27	376	0.3-	0.3-	1997 09 30	376	0.3-	1.7-
1992 03 05	809	0.1-	0.3-	1997 09 27	376	0.4+	0.3+	1997 10 10	376	0.7+	0.4+
1997 09 27	376	0.4+	0.1+	1997 09 30	376	0.5-	1.3+	1997 10 10	376	0.3-	0.2-

1997 SG₁₆ = 1985 DY₂ = 1990 EN₈ = 1992 TP

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Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	252.32332	(2000.0)	P	Q
<i>n</i>	0.20447694	ω	315.04394	-0.79572990 -0.60563684
<i>a</i>	2.8534690	Ω	187.68480	+0.56419563 -0.73870279
<i>e</i>	0.0108300	<i>i</i>	1.81475	+0.22022083 -0.29584151
<i>P</i>	4.82	<i>H</i>	13.1	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1985 02 24	675	(5.1+	0.3+)	1992 10 02	691	0.2-	0.1+	1997 09 30	358	1.4+	2.0-
1985 02 24	675	(7.8+	0.7-)	1992 10 02	691	0.1+	0.3+	1997 09 30	358	1.9+	0.7+
1985 02 27	675	0.7+	1.8+	1992 10 02	691	0.0	0.2+	1997 10 02	358	0.9-	0.2+
1985 02 27	675	(6.9-	0.1-)	1992 10 04	691	0.3-	0.5+	1997 10 02	358	1.7+	0.9+
1990 03 05	809	0.4-	0.3-	1992 10 04	691	0.3-	0.4+	1997 10 08	376	0.1-	0.1+
1990 03 05	809	0.1-	0.2-	1992 10 04	691	0.1-	0.5+	1997 10 08	376	0.3+	0.2-
1990 03 05	809	0.0	0.5-	1997 09 27	376	1.0-	0.2-	1997 10 10	376	0.5-	0.2-
1990 03 06	809	0.0	0.2-	1997 09 27	376	1.0-	0.2-	1997 10 10	376	0.3-	0.2-
1990 03 06	809	0.0	0.2-	1997 09 30	376	0.1-	0.5-				
1990 03 06	809	0.2-	0.3-	1997 09 30	376	0.6-	0.7-				

1997 NOV. 14

M.P.C. 30881

1997 SG₂₁ = 1986 RV₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	11.90883		(2000.0)	P		Q		Williams	
<i>n</i>	0.18459166	ω	177.26364	+0.88315035		−0.46147157			
<i>a</i>	3.0548836	Ω	210.67078	+0.42718642		+0.86535200			
<i>e</i>	0.0916485	<i>i</i>	9.50084	+0.19379684		+0.19547353			
<i>P</i>	5.34	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1986 09 08	095	0.1+	0.2+	1997 09 29	691	0.2+	0.2+	1997 10 23	684	0.7+	0.2−
1986 09 11	095	0.1−	0.2−	1997 10 03	691	0.4−	0.3−	1997 10 23	684	0.1−	0.4−
1997 09 29	691	0.2+	0.1+	1997 10 03	691	0.3−	0.4−	1997 10 24	684	0.2−	0.1+
1997 09 29	691	0.2+	0.1+	1997 10 03	691	0.2−	0.2+	1997 10 24	684	0.0	0.6+

1997 SH₂₅ = 1980 DE = 1980 DZ₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	335.28878		(2000.0)	P		Q		Urata	
<i>n</i>	0.26258727	ω	343.70336	+0.35591659		−0.93348900			
<i>a</i>	2.4152028	Ω	85.43041	+0.86223719		+0.30993741			
<i>e</i>	0.1586642	<i>i</i>	2.52049	+0.36037538		+0.18038041			
<i>P</i>	3.75	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1980 02 18	801	0.6+	0.3−	1997 09 29	905	0.2+	0.0	1997 10 20	385	0.4+	0.2−
1980 02 20	095	0.6−	0.4+	1997 09 30	905	0.8+	0.0	1997 10 20	385	0.3−	0.5+
1997 09 29	905	0.9−	0.3+	1997 09 30	905	0.5−	0.0	1997 10 21	385	0.0	0.1+
1997 09 29	905	0.0	0.0	1997 10 20	385	0.4+	0.3−	1997 10 21	385	0.2−	0.4−

1997 SJ₂₅ = 1991 RF₃₇ = 1995 FH₁₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	71.44620		(2000.0)	P		Q		Urata	
<i>n</i>	0.17583167	ω	213.94978	+0.40287317		+0.91380604			
<i>a</i>	3.1555228	Ω	79.85527	−0.82768186		+0.38776457			
<i>e</i>	0.1687010	<i>i</i>	2.99867	−0.39068650		+0.12081871			
<i>P</i>	5.61	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1991 09 15	675	1.3+	0.7−	1995 04 04	691	0.0	0.0	1997 09 30	905	0.6+	0.1−
1991 09 15	675	1.2−	0.5+	1995 04 04	691	0.2+	0.1−	1997 09 30	905	1.5+	0.0
1995 03 29	691	0.2−	0.1−	1997 09 05	905	0.7−	0.5+	1997 10 05	905	0.5−	0.5−
1995 03 29	691	0.1+	0.2+	1997 09 05	905	1.3−	1.0+	1997 10 05	905	0.6−	0.0
1995 03 29	691	0.1−	0.1+	1997 09 29	905	1.6+	0.6−				
1995 04 04	691	0.0	0.0	1997 09 29	905	0.8−	0.1+				

1997 SW₃₀ = 1996 FT₂₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	108.98984		(2000.0)	P		Q		Williams	
<i>n</i>	0.24399251	ω	77.52462	−0.35894820		+0.93304193			
<i>a</i>	2.5364037	Ω	171.32197	−0.90659910		−0.34235836			
<i>e</i>	0.1784263	<i>i</i>	9.25588	−0.22188794		−0.11056001			
<i>P</i>	4.04	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1996 03 23	691	0.1+	0.6−	1997 09 27	106	0.3−	0.5−	1997 10 29	106	0.1+	0.1−
1996 03 23	691	0.3+	0.2−	1997 09 27	106	0.2−	0.2−	1997 10 29	106	0.4+	0.5+
1996 03 23	691	0.4−	0.3−	1997 09 29	106	0.6+	0.0	1997 11 01	106	0.0	0.1−
1996 04 22	691	0.1+	0.3−	1997 10 05	106	0.3−	0.6−	1997 11 01	106	0.1+	0.1+
1996 04 22	691	0.2−	0.7+	1997 10 19	106	0.0	0.2+				
1996 04 22	691	0.1+	0.4+	1997 10 19	106	0.1−	0.2+				

1997 SQ₃₂ = 1975 SO = 1995 BF₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	15.01967		(2000.0)	P		Q		Williams	
<i>n</i>	0.26831307	ω	18.93338	+0.96310861		−0.26910368			
<i>a</i>	2.3807192	Ω	356.67512	+0.24165459		+0.86847208			
<i>e</i>	0.2361503	<i>i</i>	2.21308	+0.11842664		+0.41634055			
<i>P</i>	3.67	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1975 09 30	675	0.1−	0.6+	1995 02 05	691	0.1−	0.3+	1997 10 17	327	0.1−	0.2−
1975 10 01	675	0.5−	0.7+	1997 09 30	327	0.5−	0.0	1997 10 17	327	0.0	0.4−
1975 10 02	675	0.1−	0.3+	1997 09 30	327	0.4−	0.2+	1997 10 18	327	0.3+	0.0
1995 01 29	691	0.7−	1.0−	1997 09 30	327	0.3−	0.1+	1997 10 18	327	0.2−	0.3−
1995 01 29	691	0.3+	0.3+	1997 10 10	327	0.3+	0.1+	1997 10 18	327	0.2+	0.2−
1995 01 29	691	0.2+	0.2+	1997 10 10	327	0.2+	0.0	1997 10 19	327	0.2+	0.2−
1995 02 05	691	0.3+	0.2+	1997 10 10	327	0.4+	0.0	1997 10 19	327	0.5+	0.3−
1995 02 05	691	0.1−	0.2+	1997 10 17	327	0.1+	0.2−	1997 10 19	327	0.1+	0.2−

1997 SY₃₂ = 1977 CO₂ = 1996 RL₃₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	7.61493		(2000.0)	P		Q		Williams	
<i>n</i>	0.08194566	ω	6.98579	+0.87597575		−0.48032809			
<i>a</i>	5.2495096	Ω	21.89146	+0.43662279		+0.75066890			
<i>e</i>	0.0914743	<i>i</i>	6.80433	+0.20500494		+0.45363105			
<i>P</i>	12.03	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1977 02 11	675	0.1−	0.2−	1996 09 22	809	0.4+	0.3−	1997 10 04	691	0.3+	0.1−
1977 02 12	675	0.1−	0.1−	1997 09 29	691	0.3+	0.3+	1997 10 11	691	0.1+	0.2−
1996 09 14	809	0.1−	0.1+	1997 09 29	691	0.4+	0.3+	1997 10 11	691	0.2−	0.1+
1996 09 15	809	0.1−	0.1+	1997 09 29	691	0.4+	0.1−	1997 10 23	691	0.6−	0.1+
1996 09 15	809	0.2−	0.1+	1997 10 04	691	0.1+	0.1+	1997 10 23	691	0.6−	0.1−
1996 09 22	809	0.3+	0.4−	1997 10 04	691	0.3+	0.2−	1997 10 23	691	0.6−	0.1−

1997 SW₃₃ = 1977 EQ₃ = 1991 RV₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	346.26387		(2000.0)	P		Q		Nakano	
<i>n</i>	0.17792095	ω	47.75711	+0.07878250		−0.99546550			
<i>a</i>	3.1307712	Ω	37.82307	+0.88712362		+0.04561370			
<i>e</i>	0.1462779	<i>i</i>	4.98706	+0.45475819		+0.08347352			
<i>P</i>	5.54	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1977 03 15	381	0.3−	0.8−	1991 10 07	691	0.7−	0.1−	1997 09 19	327	0.4+	0.5−
1977 03 15	381	0.3−	0.5−	1991 10 07	691	0.9−	0.2−	1997 11 01	411	0.4−	0.8+
1991 09 10	675	0.5+	0.4+	1997 09 17	327	0.4+	0.2−	1997 11 01	411	0.3−	1.2−
1991 09 10	675	1.5+	0.0	1997 09 17	327	0.5+	0.3−	1997 11 05	411	0.7−	0.2+
1991 09 16	675	0.7+	0.8−	1997 09 17	327	0.9+	0.8−	1997 11 05	411	0.9−	0.2−
1991 09 16	675	0.1−	0.4−	1997 09 19	327	0.0	1.7+				
1991 10 07	691	0.4−	0.4−	1997 09 19	327	0.8+	0.8+				

1997 TL₆ = 1996 FC₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	79.07603		(2000.0)	P		Q		Williams	
<i>n</i>	0.25897644	ω	215.73898	+0.41552456		+0.90763680			
<i>a</i>	2.4376006	Ω	78.87973	−0.81981539		+0.40202961			
<i>e</i>	0.1887933	<i>i</i>	3.47377	−0.39400769		+0.12069644			
<i>P</i>	3.81	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1996 03 19	691	0.4−	0.1−	1997 10 04	910	0.2+	0.0	1997 10 24	327	0.3−	0.0
1996 03 19	691	0.3−	0.1−	1997 10 04	910	0.2+	0.0	1997 10 24	327	0.7−	0.4−
1996 03 19	691	0.4−	0.1−	1997 10 04	910	0.1+	0.0	1997 10 24	327	0.4−	0.3+
1996 03 23	691	0.6+	0.5+	1997 10 11	327	0.5−	0.2−	1997 10 24	327	0.1−	0.1−

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1996 03 23	691	0.4+	0.1−	1997 10 11	327	0.1−	0.0	1997 10 25	327	1.2+	0.0
1996 03 23	691	0.2+	0.2−	1997 10 11	327	0.1−	0.1−	1997 10 25	327	0.4+	0.1−
1997 10 02	910	0.1+	0.0	1997 10 13	327	0.3+	0.8+	1997 10 25	327	0.3−	0.2+
1997 10 02	910	0.0	0.1−	1997 10 13	327	0.1+	0.0				
1997 10 02	910	0.1−	0.1−	1997 10 13	327	0.0	0.3−				

1997 TC₉ = 1996 JS₁₄

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Marsden			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.22467298	ω	134.31848	+0.97029279	+0.22784663		
<i>a</i>	2.6797985	Ω	212.76386	−0.24161206	+0.92991286		
<i>e</i>	0.2284525	<i>i</i>	8.64548	+0.01247041	+0.28870050		
<i>P</i>	4.39	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 05 12	691	0.1+	0.1+	1997 10 06	691	0.1−	0.3−	1997 10 26	684	0.1+	0.6+
1996 05 12	691	0.5+	0.1+	1997 10 24	684	0.4+	0.2−	1997 10 27	684	0.2+	0.1−
1996 05 12	691	0.0	0.1+	1997 10 24	684	0.2+	0.3−	1997 10 27	684	0.2−	0.4−
1996 05 18	691	0.0	0.1+	1997 10 24	684	0.2+	0.2−	1997 10 27	684	0.0	0.0
1996 05 18	691	0.2−	0.0	1997 10 25	684	0.0	1.8+	1997 10 28	684	0.3−	0.3−
1996 05 18	691	0.3−	0.3−	1997 10 25	684	0.0	0.9−	1997 10 28	684	0.3−	0.3−
1997 10 02	691	0.2−	0.0	1997 10 25	684	0.0	0.3+	1997 10 29	684	0.2−	0.0
1997 10 02	691	0.0	0.3+	1997 10 25	684	0.1+	0.5−	1997 10 29	684	0.7−	0.1−
1997 10 02	691	0.0	0.0	1997 10 25	684	0.1+	0.0	1997 10 29	684	0.7−	0.1−
1997 10 06	691	0.3−	0.1−	1997 10 26	684	0.7+	0.8+				
1997 10 06	691	0.1+	0.4−	1997 10 26	684	1.1+	0.4+				

1997 TF₉ = 1978 VP₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.25585928	ω	228.53988	−0.47139919	−0.88117168		
<i>a</i>	2.4573589	Ω	249.61955	+0.82025764	−0.42293838		
<i>e</i>	0.1281988	<i>i</i>	2.22062	+0.32397562	−0.21132817		
<i>P</i>	3.85	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 11 05	675	0.7−	0.1+	1997 10 02	691	0.0	0.1−	1997 10 11	691	0.8−	0.4+
1978 11 06	675	0.2−	0.9−	1997 10 06	691	0.5+	0.1−	1997 10 31	910	0.1+	0.1+
1978 11 07	675	0.2+	0.2+	1997 10 06	691	0.6+	0.2−	1997 10 31	910	0.3+	0.2−
1978 11 08	675	0.6+	0.6+	1997 10 06	691	0.5+	0.0	1997 10 31	910	0.1+	0.0
1997 10 02	691	0.0	0.0	1997 10 11	691	0.7−	0.2+				
1997 10 02	691	0.1+	0.0	1997 10 11	691	0.8−	0.2−				

1997 TU₉ = 1959 EY = 1986 LV

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.22138209	ω	339.88217	−0.97488363	+0.21814234		
<i>a</i>	2.7062903	Ω	212.82049	−0.19132458	−0.92347783		
<i>e</i>	0.4269827	<i>i</i>	4.75161	−0.11400354	−0.31559883		
<i>P</i>	4.45	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1959 03 06	690	0.2−	0.0	1997 10 05	557	0.7+	0.2−	1997 10 21	691	0.4−	0.3+
1959 03 07	690	0.0	0.3−	1997 10 05	557	0.7+	0.8−	1997 10 21	691	2.5−	0.5−
1986 06 09	046	0.1−	0.3−	1997 10 05	557	0.1+	0.0	1997 10 21	691	0.7−	0.2+
1986 06 09	046	0.9+	1.3−	1997 10 05	557	0.8+	0.3+	1997 10 21	557	0.9+	0.1+
1986 06 10	046	2.1+	0.8+	1997 10 05	557	1.4+	0.2−	1997 10 21	557	0.7+	0.1−
1986 06 10	046	2.9−	0.4+	1997 10 05	557	0.6+	0.3−	1997 10 31	557	0.6+	0.1+
1997 10 04	691	0.9−	0.2−	1997 10 10	691	0.5−	0.0	1997 10 31	557	0.0	0.1−
1997 10 04	691	0.9−	0.1+	1997 10 10	691	0.7−	0.1−	1997 11 01	557	0.9+	0.5+
1997 10 04	691	1.0−	0.0	1997 10 10	691	0.6−	0.1−	1997 11 01	557	0.9+	0.4+

1997 TA₁₀ = 1985 QU₅ = 1985 SO₃ = 1986 XV₃Id. G. V. Williams; 1993 FG₃₃ = 1985 SO₃ = 1997 AV₂₄ (*MPC* 30659) is invalid

1997 NOV. 14

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.17367116	ω	349.22909	+0.91461516	−0.40264104		
<i>a</i>	3.1816391	Ω	34.58802	+0.37562222	+0.81240253		
<i>e</i>	0.0554235	<i>i</i>	3.72382	+0.14962303	+0.42176097		
<i>P</i>	5.68	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 08 24	095	1.9+	1.0+	1997 10 07	557	0.4+	0.7+	1997 10 30	704	(2.9+	3.1−)
1985 09 20	095	2.3−	0.4−	1997 10 12	557	0.7−	1.3+	1997 10 30	704	0.3−	0.2+
1986 12 04	046	(5.5+	0.1+)	1997 10 12	557	0.9−	0.7+	1997 10 30	704	(2.6+	2.3−)
1986 12 04	046	(3.0+	2.4−)	1997 10 22	557	0.5+	0.2−	1997 10 30	704	0.3−	0.5−
1986 12 04	010	(4.6−	6.1−)	1997 10 22	557	0.3+	0.3−	1997 10 30	704	(2.3+	0.5−)
1986 12 07	046	1.8+	0.3−	1997 10 28	557	0.2−	0.4−	1997 10 30	704	0.1−	1.0+
1986 12 07	046	1.7−	0.8+	1997 10 28	557	0.0	0.3−	1997 11 01	360	0.2−	0.5−
1986 12 09	046	0.5−	1.2+	1997 10 29	704	1.7+	0.6−	1997 11 01	360	0.4−	0.5−
1986 12 09	046	(2.8−	1.6+)	1997 10 29	704	0.4+	0.4−	1997 11 01	360	0.2−	0.6−
1997 10 05	557	0.5+	0.7+	1997 10 29	704	0.4+	1.0+	1997 11 03	691	1.0−	0.7−
1997 10 05	557	0.8+	0.7+	1997 10 29	704	0.2−	0.3−	1997 11 03	691	1.0−	0.6−
1997 10 05	557	0.6+	0.6+	1997 10 29	704	0.5+	0.3+	1997 11 03	691	1.1−	0.8−
1997 10 06	557	0.5+	0.6+	1997 10 30	704	0.2−	0.5−	1997 11 04	557	0.1+	1.1−
1997 10 06	557	0.6+	0.5+	1997 10 30	704	(3.4+	2.3−)	1997 11 04	557	0.1+	0.8−
1997 10 07	557	0.3−	0.3+	1997 10 30	704	0.4+	0.1+	1997 11 04	557	0.3+	1.1−

1997 TB₁₀ = 1994 GR₁₁

Id. G. V. Williams

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Nakano			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.18714114	ω	213.33372	+0.29067502	−0.95677203		
<i>a</i>	3.0270751	Ω	219.77036	+0.88116911	+0.27165493		
<i>e</i>	0.2815624	<i>i</i>	0.87446	+0.37289279	+0.10387916		
<i>P</i>	5.27	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 04 12	691	0.1−	0.2−	1997 10 06	557	0.0	0.1−	1997 11 01	557	0.2+	0.3+
1994 04 12	691	0.4+	0.2+	1997 10 06	557	0.0	0.3−	1997 11 05	905	0.6−	0.9+
1994 04 15	691	0.1−	0.3−	1997 10 12	557	0.2+	0.2−	1997 11 05	905	1.0−	0.5+
1994 04 15	691	0.2−	0.1+	1997 10 12	557	0.0	0.2+	1997 11 08	905	0.6+	0.6−
1997 10 06	557	0.2−	0.1−	1997 10 21	557	0.2+	0.4−	1997 11 08	905	0.6+	0.6−
1997 10 06	557	0.0	0.0	1997 10 21	557	0.1−	0.3−				
1997 10 06	557	0.2+	0.0	1997 11 01	557	0.0	0.2+				

1997 TG₁₀ = 1996 FS₂₃ = 1996 GN₂₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.28352713	ω	90.59682	+0.44106730	+0.89656846		
<i>a</i>	2.2947725	Ω	205.69510	−0.85596382	+0.40674176		
<i>e</i>	0.1304848	<i>i</i>	5.33405	−0.26978802	+0.17528872		
<i>P</i>	3.48	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 27	809	0.7−	0.5+	1997 10 05	910	0.6+	0.5+	1997 10 20	557	0.3+	0.1−
1996 03 27	809	0.4+	0.3−	1997 10 05	910	0.4+	0.6+	1997 10 20	557	0.0	0.3−
1996 03 27	809	0.1+	0.6−	1997 10 05	910	0.6+	0.5+	1997 10 23	557	0.5−	0.8−
1996 04 15	809	0.4+	0.1+	1997 10 06	557	0.7−	0.0	1997 10 23	557	0.3−	1.0−
1996 04 15	809	0.6+	0.5+	1997 10 06	557	0.7−	0.3+	1997 10 29	557	0.1+	0.2+
1996 04 15	809	0.6−	0.6+	1997 10 06	557	0.4−	0.1+	1997 10 29	557	0.5+	0.2+
1996 04 17	809	(0.4+	2.8−)	1997 10 07	557	0.0	0.1−	1997 11 01	557	0.3+	0.9+
1996 04 17	809	(0.7+	3.8−)	1997 10 07	557	0.0	0.5+	1997 11 01	557	0.0	0.8+
1996 04 17	809	(0.2+	3.1−)	1997 10 20	557	0.4−	1.1−				

1997 NOV. 14

M.P.C. 30883

1997 TW₁₅ = 1992 GD₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	86.33893		(2000.0)	P	Q
<i>n</i>	0.23664189	ω	45.04843	+0.09695217	+0.99501826
<i>a</i>	2.5886597	Ω	230.52948	-0.92141689	+0.08091341
<i>e</i>	0.1869904	<i>i</i>	1.72332	-0.37628604	+0.05823814
<i>P</i>	4.16	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1992 04 04	809	0.7+	0.6+	1997 10 04	691	0.2-	0.4+	1997 10 10	327	1.1+	0.2+
1992 04 04	809	0.1-	0.8+	1997 10 04	691	0.2-	0.2+	1997 10 17	327	0.0	0.2-
1992 04 04	809	0.1-	0.2+	1997 10 09	691	0.7-	0.1-	1997 10 17	327	0.6+	0.2-
1992 04 06	809	0.5+	0.6-	1997 10 09	691	0.7-	0.1+	1997 10 17	327	0.4-	0.1+
1992 04 06	809	0.3-	0.4-	1997 10 09	691	0.6-	0.0	1997 10 19	327	0.1+	0.7-
1992 04 06	809	0.7-	0.8-	1997 10 10	327	0.9+	0.2-	1997 10 19	327	0.3-	0.1-
1997 10 04	691	0.3-	0.4+	1997 10 10	327	0.9+	0.1+	1997 10 19	327	0.1-	0.3-

1997 TW₁₆ = 1980 PQ₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	113.22956		(2000.0)	P	Q
<i>n</i>	0.29495454	ω	338.76919	-0.39211763	+0.91887313
<i>a</i>	2.2351122	Ω	268.12285	-0.83757170	-0.37629088
<i>e</i>	0.2330965	<i>i</i>	2.51007	-0.38041742	-0.11864799
<i>P</i>	3.34	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1980 08 03	675	0.2-	0.3-	1997 10 10	691	1.1-	0.3+	1997 10 25	589	0.2+	1.7-
1980 08 05	675	0.3+	0.0	1997 10 10	691	1.3-	0.3+	1997 10 26	589	0.2+	0.2-
1997 10 08	589	0.8+	0.2+	1997 10 19	589	0.6-	0.5-	1997 10 26	589	0.4+	0.3-
1997 10 08	589	0.9+	0.9+	1997 10 19	589	0.2+	0.0	1997 10 26	589	0.6+	0.7+
1997 10 08	589	0.1-	0.6+	1997 10 20	589	0.1-	0.2-	1997 10 26	589	0.1-	0.3-
1997 10 09	589	0.4-	0.5+	1997 10 20	589	0.3+	0.3+	1997 10 26	589	0.5-	1.6-
1997 10 09	589	0.5+	0.8+	1997 10 20	589	1.2+	0.6-	1997 11 02	589	0.1+	0.2-
1997 10 09	589	0.3+	0.6+	1997 10 25	589	0.3+	0.7-	1997 11 02	589	0.9-	0.8+
1997 10 10	691	1.2-	0.5+	1997 10 25	589	0.2+	0.8-	1997 11 02	589	0.1+	0.3+

1997 TH₁₇ = 1978 GS₂ = 1983 CC₄ = 1991 RQ₃₈ = 1995 KS₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	265.12350		(2000.0)	P	Q
<i>n</i>	0.18180228	ω	349.80484	-0.74454126	-0.66055868
<i>a</i>	3.0860515	Ω	148.17963	+0.62465902	-0.74036821
<i>e</i>	0.0842378	<i>i</i>	10.55060	+0.23549823	-0.12456786
<i>P</i>	5.42	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1978 04 11	095	1.6-	1.0+	1995 05 25	693	0.7-	0.2+	1997 10 20	905	0.3+	0.1+
1983 02 14	381	1.6+	0.3+	1997 09 29	905	1.0-	0.2-	1997 10 20	905	0.6-	1.2-
1991 09 12	808	1.1+	1.0+	1997 09 29	905	1.3-	0.3+	1997 10 28	566	0.4+	0.6-
1991 09 12	808	0.2+	1.4+	1997 10 06	905	0.9+	0.9+	1997 10 28	566	0.3+	0.9-
1995 05 24	693	0.9+	0.8-	1997 10 06	905	0.3+	0.6+	1997 10 28	566	0.7-	1.4-
1995 05 24	693	0.5+	1.0-	1997 10 10	385	0.1+	0.1+				
1995 05 25	693	0.7-	0.2+	1997 10 10	385	0.0	0.0				

1997 TM₁₇ = 1993 OK

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	112.27298		(2000.0)	P	Q
<i>n</i>	0.28514016	ω	24.74936	+0.21433373	+0.96991061
<i>a</i>	2.2861100	Ω	257.79524	-0.91468514	+0.15783151
<i>e</i>	0.1447977	<i>i</i>	6.78507	-0.34265455	+0.18537160
<i>P</i>	3.46	<i>H</i>	12.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 07 16	675	1.2-	0.6+	1997 10 08	411	0.5+	0.5+	1997 10 12	411	0.4+	0.1-
1993 07 16	675	0.9+	0.8+	1997 10 08	411	0.1-	0.5-	1997 10 12	411	0.0	1.0+

1993 07 20	675	0.0	1.0-	1997 10 10	411	0.0	0.0	1997 10 25	411	0.5-	0.2-
1993 07 20	675	0.3+	0.5-	1997 10 10	411	0.1+	0.2+	1997 10 25	411	0.4-	0.8-

1997 TU₁₈ = 1992 BW₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	309.90543		(2000.0)	P	Q
<i>n</i>	0.29514800	ω	262.66045	+0.17538012	-0.98448910
<i>a</i>	2.2341354	Ω	177.22501	+0.93784425	+0.16558431
<i>e</i>	0.1925403	<i>i</i>	5.68705	+0.29948286	+0.05799173
<i>P</i>	3.34	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 01 29	675	0.2+	0.1+	1997 10 06	327	0.0	0.3-	1997 10 17	327	0.1+	0.0
1992 01 29	675	0.1-	0.3-	1997 10 09	327	0.1-	0.2-	1997 10 17	327	0.1+	0.1+
1992 01 31	675	0.1+	0.3-	1997 10 09	327	0.3-	0.3+	1997 10 19	327	0.1+	0.0
1992 01 31	675	0.2-	0.5+	1997 10 09	327	0.2+	0.1+	1997 10 19	327	0.0	0.1-
1997 10 06	327	0.1+	0.1+	1997 10 17	327	0.0	0.0	1997 10 19	327	0.0	0.0
1997 10 06	327	0.1+	0.1-	1997 10 17	327	0.2-	0.0				

1997 TG₁₉ = 1974 HC₁ = 1980 BD

Id. T. Urata

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	96.26420		(2000.0)	P	Q
<i>n</i>	0.30833839	ω	234.21810	+0.12986281	+0.99104347
<i>a</i>	2.1699563	Ω	43.27670	-0.89443559	+0.13063401
<i>e</i>	0.2935293	<i>i</i>	2.60196	-0.42792597	+0.02770567
<i>P</i>	3.20	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1974 04 22	805	0.1-	0.1+	1997 10 12	385	0.1+	0.1-	1997 10 13	402	0.1+	0.3-
1974 04 24	805	0.1+	0.1-	1997 10 12	385	0.2-	0.1-	1997 10 13	355	1.2+	0.3+
1980 01 25	801	0.0	0.0	1997 10 12	385	0.1-	0.0	1997 10 13	355	0.9+	0.4+
1997 10 08	888	0.2+	1.9+	1997 10 12	385	0.3-	0.5-	1997 10 21	367	0.2-	0.7-
1997 10 08	888	0.7-	1.9+	1997 10 13	367	0.4+	0.6+	1997 10 21	367	0.8-	1.3-
1997 10 10	888	0.4-	0.5-	1997 10 13	367	0.8+	1.0+	1997 10 21	886	0.3-	1.0-
1997 10 10	888	0.8-	0.5-	1997 10 13	402	0.3+	0.3-	1997 10 21	886	0.4+	0.2+
1997 10 11	888	0.6-	1.6-	1997 10 13	402	0.6+	0.4-	1997 10 25	886	0.2-	0.2+
1997 10 11	888	0.5-	1.7-	1997 10 13	367	0.1+	0.5+	1997 10 25	886	0.0	1.8+

1997 TH₁₉ = 1990 TZ₁₂

Id. T. Urata

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	52.50992		(2000.0)	P	Q
<i>n</i>	0.27701713	ω	324.42205	+0.82729636	+0.56176395
<i>a</i>	2.3305851	Ω	1.40238	-0.50110013	+0.73909239
<i>e</i>	0.3196983	<i>i</i>	3.31547	-0.25392794	+0.37170378
<i>P</i>	3.56	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1990 10 14	033	0.4-	0.6-	1997 10 11	888	0.8-	0.4-	1997 10 28	886	0.1-	0.5-
1990 10 15	033	0.3+	0.2-	1997 10 22	886	1.1-	0.6-	1997 10 29	886	1.0-	0.3-
1990 10 15	033	0.1-	0.0	1997 10 22	886	1.3-	0.7+	1997 10 29	886	0.0	0.3-
1990 10 18	033	0.3+	0.3+	1997 10 23	399	0.9-	2.9+	1997 10 30	566	0.4+	0.6-
1990 10 18	033	0.1-	0.7+	1997 10 23	399	0.7+	0.0	1997 10 30	566	0.5+	0.2-
1997 10 08	888	0.4+	0.4-	1997 10 25	399	1.4+	1.3+	1997 10 30	566	0.3+	0.4-
1997 10 08	888	2.2+	0.1-	1997 10 25	399	1.1+	0.7-	1997 10 30	566	0.5+	0.0
1997 10 10	888	0.4-	0.0	1997 10 26	886	0.6-	0.0	1997 10 30	566	0.3+	0.3-
1997 10 10	888	0.4-	0.1-	1997 10 26	886	0.2-	0.0	1997 10 30	566	0.9+	0.2-
1997 10 11	888	0.8-	0.1+	1997 10 28	886	1.0-	0.0				

1997 TO₁₉ = 1990 SN₁₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	64.27483		(2000.0)	P		Q	
<i>n</i>	0.28764679	ω	116.92873	+0.84297058	+0.53611573		
<i>a</i>	2.2728094	Ω	210.71136	-0.51929776	+0.78933838		
<i>e</i>	0.1640555	<i>i</i>	4.99904	-0.14046504	+0.29920703		
<i>P</i>	3.43	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 09 16	675	0.2+	0.2+	1997 10 11	557	0.9+	0.3+	1997 10 22	557	0.1+	0.0
1990 09 16	675	0.2-	0.5-	1997 10 11	691	0.9-	0.0	1997 10 22	557	0.3+	0.2-
1990 09 19	675	0.2+	0.7+	1997 10 11	691	0.9-	0.1-	1997 10 28	557	0.1-	0.1+
1990 09 19	675	0.1-	0.5-	1997 10 11	691	0.9-	0.1-	1997 10 28	557	0.1-	0.1+
1997 10 02	691	0.1-	0.2-	1997 10 12	557	0.5+	0.0	1997 11 04	557	0.7-	0.2-
1997 10 02	691	0.1-	0.2+	1997 10 12	557	0.9+	0.0	1997 11 04	557	0.0	0.3-
1997 10 02	691	0.3-	0.1+	1997 10 17	557	0.4+	0.3-				
1997 10 11	557	0.8+	0.1+	1997 10 17	557	0.0	0.4+				

1997 TR₂₃ = 1996 HX₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	114.26969		(2000.0)	P		Q	
<i>n</i>	0.27845953	ω	64.47474	+0.20052230	+0.97777157		
<i>a</i>	2.3225299	Ω	217.25685	-0.93126002	+0.17081791		
<i>e</i>	0.1078687	<i>i</i>	5.80837	-0.30421306	+0.12158950		
<i>P</i>	3.54	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	0.5+	0.1-	1997 10 09	691	0.4-	0.1-	1997 10 23	691	0.2+	0.1+
1996 04 17	809	1.4-	0.8+	1997 10 09	691	0.6-	0.1+	1997 10 23	691	0.2+	0.3+
1996 04 17	809	1.0-	0.7-	1997 10 09	691	0.8-	0.0	1997 10 23	691	0.1+	0.1+
1996 04 18	809	1.0+	1.0-	1997 10 11	691	0.7+	0.2-	1997 10 28	691	0.2-	0.1-
1996 04 18	809	0.7+	0.9+	1997 10 11	691	0.7+	0.1+	1997 10 28	691	0.1-	0.3+
1996 04 18	809	0.4+	0.5+	1997 10 11	691	0.7+	0.2-	1997 10 28	691	0.7-	0.0

1997 TO₂₄ = 1977 VR

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	53.43031		(2000.0)	P		Q	
<i>n</i>	0.19916165	ω	297.61915	+0.90188862	+0.42579350		
<i>a</i>	2.9040153	Ω	37.30862	-0.34179347	+0.80644110		
<i>e</i>	0.3443757	<i>i</i>	6.89650	-0.26414794	+0.41030800		
<i>P</i>	4.95	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 11 11	805	0.8-	0.1-	1997 10 08	327	0.0	0.1-	1997 10 22	327	0.2+	0.0
1977 11 12	805	0.8+	0.1+	1997 10 12	327	0.2+	0.3-	1997 10 22	327	0.3+	0.5-
1997 09 26	327	0.0	0.1+	1997 10 12	327	0.2+	0.0	1997 10 27	327	0.2-	0.3+
1997 09 26	327	0.1-	0.4-	1997 10 12	327	0.0	0.1-	1997 10 27	327	0.3-	0.1+
1997 09 26	327	0.1+	0.6+	1997 10 15	327	0.7-	0.1+	1997 10 27	327	0.2-	0.2+
1997 10 08	327	0.0	0.1-	1997 10 15	327	0.2+	0.2-	1997 10 27	327	0.1-	0.1-
1997 10 08	327	0.2-	0.1-	1997 10 15	327	0.2-	1.0+				
1997 10 08	327	0.2-	0.1-	1997 10 22	327	0.9+	0.3-				

1997 TE₂₅ = 1996 HD₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	40.13392		(2000.0)	P		Q	
<i>n</i>	0.23788579	ω	157.16896	+0.98873475	+0.14873414		
<i>a</i>	2.5796278	Ω	194.30794	-0.14566489	+0.93035811		
<i>e</i>	0.2921524	<i>i</i>	3.89459	-0.03442876	+0.33512973		
<i>P</i>	4.14	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	(3.1+	0.0)	1997 10 12	816	0.0	0.2-	1997 10 26	816	0.3+	0.0
1996 04 17	809	0.1+	1.4+	1997 10 15	608	0.9-	1.3+	1997 10 28	400	0.8+	0.2-
1996 04 17	809	(0.5-	2.9+)	1997 10 15	608	1.3-	1.2+	1997 10 28	400	0.1+	1.0-

1996 04 18	809	0.1-	2.0+	1997 10 19	658	0.3-	0.2-	1997 10 28	400	0.1-	0.3+
1996 04 18	809	0.3+	1.9+	1997 10 19	658	0.2-	0.3+	1997 10 30	400	1.0+	0.1-
1996 04 18	809	1.1+	0.8+	1997 10 19	658	0.4-	0.2-	1997 10 30	400	0.6+	0.8+
1997 09 07	910	0.0	0.3+	1997 10 20	658	0.1-	0.1+	1997 11 08	816	0.0	0.9+
1997 09 07	910	0.0	0.3+	1997 10 20	658	0.5-	0.1-	1997 11 08	816	0.1-	0.9+
1997 09 07	910	0.2-	0.5+	1997 10 20	658	0.2-	0.1-	1997 11 08	816	0.1-	1.0+
1997 10 12	816	0.1-	0.1-	1997 10 26	816	0.3+	0.2-				
1997 10 12	816	0.1-	0.1-	1997 10 26	816	0.3+	0.2-				

1997 TP₂₅ = 1991 PZ₂₆ = 1992 WP₈ = 1996 NF₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	9.78588		(2000.0)	P		Q	
<i>n</i>	0.19328882	ω	260.35767	+0.70046700	-0.71365904		
<i>a</i>	2.9625446	Ω	145.17530	+0.65888574	+0.64339522		
<i>e</i>	0.1659171	<i>i</i>	0.60827	+0.27425455	+0.27700788		
<i>P</i>	5.10	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 08 05	809	0.3+	0.4+	1996 07 14	566	0.6-	0.4-	1997 10 19	327	0.0	0.3+
1991 08 05	809	0.2-	0.1-	1996 07 22	566	0.6+	0.4-	1997 10 19	327	0.1-	0.1-
1991 08 05	809	0.2-	0.2+	1996 07 22	566	0.2+	0.0	1997 10 22	327	0.2+	0.1+
1992 11 25	675	0.2+	1.2-	1996 07 22	566	0.1+	0.8-	1997 10 22	327	0.5+	0.1+
1992 11 25	675	0.2+	0.1-	1997 10 12	327	0.3+	0.1+	1997 10 22	327	0.5-	0.0
1992 11 28	675	0.3+	2.0-	1997 10 12	327	0.3-	0.3+	1997 10 22	327	0.0	0.0
1992 11 28	675	0.1+	0.8-	1997 10 12	327	0.0	0.2+	1997 10 22	327	0.0	0.4+
1996 07 14	566	0.2-	0.0	1997 10 12	327	0.0	0.1+	1997 10 22	327	1.8-	1.6+
1996 07 14	566	0.1+	0.4-	1997 10 13	327	0.2+	0.2+	1997 10 25	327	0.0	0.1+
1996 07 14	566	0.2+	0.2-	1997 10 13	327	0.3+	0.0	1997 10 25	327	0.3-	0.5-
1996 07 14	566	0.1-	0.3-	1997 10 13	327	0.2+	0.1+	1997 10 25	327	0.0	0.0
1996 07 14	566	0.1+	0.2+	1997 10 19	327	0.4+	0.2+				

1997 TW₂₅ = 1990 RZ₁₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	299.67488		(2000.0)	P		Q	
<i>n</i>	0.28648366	ω	339.16824	-0.30575254	-0.95029903		
<i>a</i>	2.2789571	Ω	128.58795	+0.88382639	-0.30621620		
<i>e</i>	0.1050714	<i>i</i>	4.30772	+0.35407103	-0.05624403		
<i>P</i>	3.44	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 09 14	809	1.1+	0.5+	1997 10 12	360	0.4+	0.3-	1997 10 24	360	0.5+	0.0
1990 09 14	809	0.2+	0.1-	1997 10 12	360	0.2+	0.1-	1997 10 24	360	0.6+	0.1+
1990 09 14	809	0.4+	0.5-	1997 10 12	360	0.2+	0.1-	1997 10 24	360	0.5+	0.1+
1990 09 25	809	0.0	0.1+	1997 10 21	360	0.9-	0.0	1997 11 01	360	0.0	0.2+
1990 09 25	809	1.3-	0.1+	1997 10 21	360	1.1-	0.1-	1997 11 01	360	0.5+	0.2+
1990 09 25	809	0.4-	0.2+	1997 10 21	360	0.9-	0.1-				

1997 UF₂ = 1990 SV₁₉ = 1993 KJ₃

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	52.13405		(2000.0)	P		Q	
<i>n</i>	0.28532956	ω	130.71719	+0.92905208	+0.36777677		
<i>a</i>	2.2850982	Ω	207.77347	-0.36002329	+0.87392020		
<i>e</i>	0.2386410	<i>i</i>	4.92822	-0.08512029	+0.31781084		
<i>P</i>	3.45	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 09 18	675	0.1+	0.4+	1993 05 29	010	0.1-	0.4-	1997 10 22	704	0.0	0.2-
1990 09 18	675	0.2-	0.2-	1997 10 21	905	0.2-	0.3-	1997 10 25	385	0.1+	0.6+
1993 05 27	010	0.5-	1.3-	1997 10 21	905	1.8-	0.2-	1997 10 25	385	0.2+	0.2+
1993 05 27	010	0.2-	0.3+	1997 10 22	704	0.0	0.0	1997 10 31	385	0.0	0.6+
1993 05 28	010	0.3-	0.7+	1997 10 22	704	0.3-	0.4-	1997 10 31	385	0.2-	0.2+
1993 05 29	010	1.7+	0.5+	1997 10 22	704	1.7+	0.2-				
1993 05 29	010	0.5-	0.2+	1997 10 22	704	0.5+	0.5-				

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1997 UV₂ = 1948 TM₂ = 1990 DO₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	279.21882		(2000.0)	P		Q					
<i>n</i>	0.22232457	ω	238.35540	-0.80170208	-0.59734168						
<i>a</i>	2.6986366	Ω	264.95627	+0.55540965	-0.73125894						
<i>e</i>	0.1381257	<i>i</i>	1.22927	+0.22089339	-0.32930727						
<i>P</i>	4.43	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1948 10 09	012	0.1+	0.2-	1990 03 01	809	0.1-	0.4-	1997 11 01	385	0.5+	0.1+
1990 02 24	809	1.0-	0.5-	1990 03 01	809	0.0	0.1-	1997 11 01	385	0.1+	0.7+
1990 02 24	809	0.5-	0.6-	1997 10 25	385	0.2+	0.3-	1997 11 02	691	0.5-	0.1-
1990 02 24	809	0.3-	0.6-	1997 10 25	385	1.0-	2.0+	1997 11 02	691	0.4-	0.2-
1990 02 25	809	0.1+	1.0+	1997 10 26	385	0.4-	0.4-	1997 11 02	691	0.5-	0.1-
1990 02 25	809	0.8+	0.8+	1997 10 26	385	0.5+	0.3-	1997 11 06	385	1.0+	0.8-
1990 02 25	809	1.3+	0.9+	1997 10 29	385	0.6+	0.8-	1997 11 06	385	0.3+	0.1+
1990 03 01	809	0.4-	0.6-	1997 10 29	385	0.5-	0.3+				

**1997 UK₃ = 1964 VU₂ = 1964 WN₁ = 1975 WY = 1982 RG₂
= 1986 VZ₆ = 1993 SD₄**

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	10.42676		(2000.0)	P		Q					
<i>n</i>	0.26822046	ω	179.91457	+0.65871529	-0.75036958						
<i>a</i>	2.3812671	Ω	228.88323	+0.69026303	+0.63185449						
<i>e</i>	0.2537726	<i>i</i>	4.19676	+0.29938457	+0.19417877						
<i>P</i>	3.67	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1964 11 12	330	0.2-	2.2+	1993 09 16	691	0.8-	0.6+	1997 10 26	411	0.4-	0.1-
1964 11 30	330	2.2-	0.6-	1993 09 16	691	0.5-	0.4+	1997 10 27	411	0.1-	0.3-
1975 11 28	095	2.7+	0.2+	1993 09 19	675	1.0+	0.7-	1997 10 27	411	0.1-	0.2+
1982 09 11	095	1.7-	1.1+	1993 09 19	675	0.1+	0.7-	1997 11 06	411	0.3-	0.4-
1986 11 06	688	(1.0-	4.3-)	1993 09 21	675	2.5+	0.3-	1997 11 06	411	0.0	0.4-
1986 11 06	688	2.1+	0.4-	1993 09 21	675	0.6+	0.4-				
1993 09 16	691	0.9-	0.3+	1997 10 26	411	1.5-	0.4-				

1997 UM₃ = 1975 XU₁ = 1980 BY₄ = 1993 QT₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	8.56374		(2000.0)	P		Q					
n	0.26843556	ω	62.72919	+0.61794429		-0.78619343					
a	2.3799948	Ω	349.09698	+0.70826456		+0.56034577					
e	0.1997091	i	2.02659	+0.34133000		+0.26060029					
P	3.67	H	13.3	G	0.15	U	2				
Residuals in seconds of arc											
1975 12 01	095	0.1-	0.2+	1993 08 24	675	0.9-	0.1+	1997 10 27	411	0.2-	0.3-
1980 01 22	095	2.0+	1.3-	1993 08 24	675	0.5-	0.1-	1997 11 01	411	0.4-	0.8+
1980 01 23	095	2.4-	0.2-	1997 10 26	411	0.7+	0.1+	1997 11 01	411	0.6-	0.1-
1993 08 20	675	0.2+	1.8-	1997 10 26	411	0.0	0.4-	1997 11 06	411	0.0	0.0
1993 08 20	675	1.8+	0.5+	1997 10 27	411	0.5+	0.3+	1997 11 06	411	0.1-	0.0

1997 UN₃ = 1989 YM₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i>	354.08093		(2000.0)	P		Q					
<i>n</i>	0.23832210	ω	204.52319	+0.30552823	-0.95070060						
<i>a</i>	2.5764784	Ω	227.73452	+0.88503249	+0.30411520						
<i>e</i>	0.2038455	<i>i</i>	4.11562	+0.35124066	+0.06068214						
<i>P</i>	4.14	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1989 12 26	033	0.8-	0.3+	1997 10 26	411	0.8+	0.1+	1997 11 01	411	0.1-	0.4+
1989 12 26	033	(0.1+	2.7-)	1997 10 27	411	0.6-	0.6+	1997 11 06	411	0.1-	0.1+
1989 12 26	033	0.8+	0.2-	1997 10 27	411	0.3-	0.1+	1997 11 06	411	0.2+	0.3-
1997 10 26	411	0.2+	0.3-	1997 11 01	411	0.1-	0.6-				

1997 UP₃ = 1982 VB₆ = 1991 AV₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	316.88625		(2000.0)	P		Q					
n	0.26533121	ω	185.22497	-0.28473128	-0.95764087						
a	2.3985226	Ω	281.32296	+0.88108730	-0.24375605						
e	0.0367330	i	2.51552	+0.37764171	-0.15331980						
P	3.71	H	13.3	G	0.15	U	6				
Residuals in seconds of arc											
1982 11 08	095	0.4-	1.0+	1991 01 15	675	0.4+	0.4-	1997 10 27	411	0.6+	0.7-
1991 01 13	675	0.5-	0.4+	1997 10 26	411	0.6+	0.4-	1997 11 01	411	0.2-	0.6-
1991 01 13	675	1.3-	0.5+	1997 10 26	411	0.0	0.4-	1997 11 01	411	0.2-	0.1-
1991 01 14	675	1.9+	0.7-	1997 10 27	411	0.2+	0.7-	1997 11 06	411	0.4-	0.8+
1991 01 14	675	0.5-	0.4+	1997 10 27	411	0.2+	0.3+	1997 11 06	411	0.6-	0.5+

1997 UQ₃ = 1993 TH₄₈

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	325.71421		(2000.0)	P		Q					
n	0.26147929	ω	61.51795	-0.27851922	-0.96024255						
a	2.4220207	Ω	44.66738	+0.87145469	-0.26098635						
e	0.1369955	i	1.54936	+0.40372486	-0.09909775						
P	3.77	H	14.1	G	0.15	U	5				
Residuals in seconds of arc											
1993 10 10	809	1.1+	0.3+	1997 10 22	327	1.1-	0.4-	1997 10 27	411	0.2-	0.1-
1993 10 10	809	0.2+	0.0	1997 10 22	327	0.5+	0.2-	1997 11 01	411	0.6+	0.0
1993 10 10	809	1.3-	0.6-	1997 10 22	327	0.2+	0.4+	1997 11 01	411	1.0+	0.7-
1993 10 22	809	0.3+	0.6-	1997 10 26	411	0.7-	0.2+	1997 11 06	411	0.2+	0.5-
1993 10 22	809	0.3-	0.8+	1997 10 26	411	0.1+	1.0+	1997 11 06	411	0.8-	0.3-
1993 10 22	809	(3.4-	1.1-)	1997 10 27	411	0.3+	0.8+				

1997 UV₃ = 1974 VU

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

M	24.90274		(2000.0)			P		Q			
n	0.25721771	ω	0.44185			+0.88372552		-0.46755366			
a	2.4486994	Ω	27.46349			+0.42924983		+0.79225525			
e	0.1892276	i	2.55537			+0.18647733		+0.39207805			
P	3.83	H	14.4		G	0.15		U	6		
Residuals in seconds of arc											
1974 11 12	095	0.0	0.4+	1997 10 27	411	0.0	0.0	1997 11 01	411	0.3-	0.3-
1974 11 17	095	0.0	0.5-	1997 10 29	566	0.1-	0.6+	1997 11 06	411	0.1+	0.2+
1997 10 26	411	0.3-	0.6-	1997 10 29	566	0.3+	0.3+	1997 11 06	411	0.1-	0.1+
1997 10 26	411	0.1+	0.3-	1997 10 29	566	0.1+	0.1+				
1997 10 27	411	0.3+	0.2+	1997 11 01	411	0.1-	0.3-				

1997 UW₃ = 1980 FW₃ = 1991 BV₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

$\dot{M}$	1.59541		(2000.0)		P		Q				
n	0.26279448	ω	52.89017		+0.46851002		-0.88342190				
a	2.4139331	Ω	9.18260		+0.79381049		+0.41697369				
e	0.1488128	i	2.87574		+0.38776703		+0.21377249				
P	3.75	H	14.5	G	0.15	U	4				
Residuals in seconds of arc											
1980 03 16	809	0.3-	0.1-	1991 01 18	033	0.3-	0.0	1997 11 06	411	0.4-	0.6-
1980 03 16	809	0.2+	0.0	1997 10 26	411	1.5+	0.5+	1997 11 06	411	0.3+	0.6-
1980 03 16	809	0.2+	0.2-	1997 10 26	411	0.2+	0.0	1997 11 07	727	0.1-	0.0
1980 03 16	809	1.5+	0.0	1997 10 27	411	0.1+	0.7-	1997 11 07	727	0.0	0.1-
1980 03 17	809	0.4-	0.6+	1997 10 27	411	0.1-	0.1-	1997 11 07	727	0.3-	0.0
1980 03 17	809	1.2-	0.4+	1997 10 29	566	0.1-	0.4+	1997 11 08	727	0.2+	0.0
1980 03 17	809	0.7-	0.1+	1997 10 29	566	0.3+	0.3+	1997 11 08	727	0.2+	0.5+
1980 03 17	809	0.7+	0.6-	1997 10 29	566	0.1-	0.4+	1997 11 08	727	0.0	0.4+

1991 01 17 033 0.2+ 0.4- 1997 11 01 411 0.7- 0.3-
 1991 01 17 033 0.1+ 0.3+ 1997 11 01 411 0.9- 0.2+

1997 UY₃ = 1989 YO₇

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 350.51009		(2000.0)		P		Q	
<i>n</i>	0.23730924	ω	200.45924	+0.23589017	-0.97098003		
<i>a</i>	2.5838043	Ω	235.91599	+0.89807687	+0.23331473		
<i>e</i>	0.1522809	<i>i</i>	2.72780	+0.37123277	+0.05255484		
<i>P</i>	4.15	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 12 26 033 0.2- 0.1+ 1997 10 27 411 0.1- 0.7- 1997 11 06 905 1.1+ 0.1+
 1989 12 26 033 0.0 0.5- 1997 10 27 411 0.0 0.6- 1997 11 06 411 0.7- 0.2+
 1989 12 26 033 0.1+ 0.4+ 1997 11 01 411 0.3+ 0.1+ 1997 11 06 411 0.5- 0.3+
 1997 10 26 411 0.4+ 0.0 1997 11 01 411 0.4- 0.6+ 1997 11 07 905 0.5+ 0.9-
 1997 10 26 411 0.2- 0.8+ 1997 11 06 905 0.4- 0.4- 1997 11 07 905 0.1- 0.4+

1997 UU₄ = 1996 HH₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 42.87448		(2000.0)		P		Q	
<i>n</i>	0.27104662	ω	306.77958	+0.98690727	+0.14101573		
<i>a</i>	2.3646855	Ω	45.26370	-0.08874054	+0.88004706		
<i>e</i>	0.2841533	<i>i</i>	6.32720	-0.13468167	+0.45346635		
<i>P</i>	3.64	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 19 691 0.4- 0.0 1996 04 24 691 0.5+ 0.1+ 1997 10 24 327 0.3+ 0.2-
 1996 04 19 691 0.1- 0.0 1997 10 19 327 0.2- 0.2- 1997 10 24 327 0.1+ 0.1-
 1996 04 19 691 0.0 0.2+ 1997 10 19 327 1.4- 0.4+ 1997 11 02 327 0.3+ 0.2+
 1996 04 24 691 0.1- 0.1+ 1997 10 19 327 0.2- 0.2+ 1997 11 02 327 0.5+ 0.2-
 1996 04 24 691 0.4+ 0.1+ 1997 10 24 327 0.1- 0.3+ 1997 11 02 327 0.5+ 0.1-

1997 UO₇ = 1993 SK₁₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 13.02733		(2000.0)		P		Q	
<i>n</i>	0.25598571	ω	222.77689	+0.82957281	-0.55828567		
<i>a</i>	2.4565498	Ω	171.13966	+0.52999558	+0.78088630		
<i>e</i>	0.1476637	<i>i</i>	4.18025	+0.17582275	+0.28023865		
<i>P</i>	3.85	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 09 16 809 0.9+ 0.3- 1997 10 25 369 0.4+ 0.3- 1997 10 29 566 1.0+ 0.2-
 1993 09 16 809 0.2+ 1.0- 1997 10 26 369 1.6- 1.1- 1997 10 29 566 0.3+ 0.1+
 1993 09 16 809 0.8- 0.2+ 1997 10 26 369 0.7- 0.9- 1997 11 01 369 0.1+ 1.0+
 1993 09 23 809 0.2+ 0.2+ 1997 10 26 369 0.2- 0.1- 1997 11 01 369 0.6- 0.7+
 1993 09 23 809 0.1- 0.5+ 1997 10 29 566 0.7+ 0.1- 1997 11 01 369 0.3+ 0.6+
 1993 09 23 809 0.4- 0.8+ 1997 10 29 566 0.2+ 0.4+ 1997 11 01 369 0.5- 0.4+
 1997 10 25 369 0.4+ 0.2- 1997 10 29 566 0.4+ 0.0
 1997 10 25 369 0.2- 0.6- 1997 10 29 566 0.2+ 0.1+

1997 UY₇ = 1995 EV₁

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 23.90175		(2000.0)		P		Q	
<i>n</i>	0.27346471	ω	91.79304	+0.93552748	-0.35284118		
<i>a</i>	2.3507252	Ω	288.86845	+0.31650878	+0.85869696		
<i>e</i>	0.2170701	<i>i</i>	1.03374	+0.15687744	+0.37167543		
<i>P</i>	3.60	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 03 01 691 0.3+ 0.7- 1997 10 22 704 0.8+ 0.8- 1997 10 30 557 0.6- 0.0
 1995 03 01 691 0.0 0.1- 1997 10 22 704 0.3+ 0.4- 1997 11 01 557 0.8- 0.3+
 1995 03 07 691 0.3+ 0.2+ 1997 10 28 557 0.3+ 0.5+ 1997 11 01 557 0.9- 0.3+

1995 03 07 691 0.1- 0.1+ 1997 10 28 557 0.4+ 0.6+ 1997 11 03 557 0.5+ 0.1+
 1995 03 07 691 0.5- 0.4+ 1997 10 29 557 0.3- 0.2- 1997 11 03 557 0.6+ 0.1+
 1997 10 22 704 0.2- 0.1- 1997 10 29 557 0.2- 0.2- 1997 11 03 557 0.6+ 0.1+
 1997 10 22 704 0.0 0.3- 1997 10 30 557 0.5- 0.1-

1997 UB₈ = 1990 WY₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 356.12376		(2000.0)		P		Q	
<i>n</i>	0.27667551	ω	221.43303	+0.45364612	-0.87841694		
<i>a</i>	2.3325031	Ω	202.86849	+0.88500410	+0.46387186		
<i>e</i>	0.3115755	<i>i</i>	22.75214	+0.10475176	-0.11491988		
<i>P</i>	3.56	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 25 413 0.2+ 0.4- 1997 10 28 566 0.4+ 0.2+ 1997 10 30 566 0.3- 0.3-
 1990 11 25 413 0.6- 0.5+ 1997 10 28 566 0.8+ 0.5+ 1997 11 01 670 0.0 0.3-
 1990 11 27 413 0.5+ 0.1- 1997 10 29 566 0.3+ 0.0 1997 11 01 670 0.4+ 0.2-
 1997 10 05 691 0.2- 0.3- 1997 10 29 566 0.2+ 0.0 1997 11 01 670 0.1+ 0.5-
 1997 10 05 691 0.2- 0.2- 1997 10 29 566 0.4+ 0.3+ 1997 11 06 424 0.7- 0.2+
 1997 10 05 691 0.3- 0.7+ 1997 10 30 566 0.2- 0.2- 1997 11 06 424 0.5- 0.4+
 1997 10 28 566 0.8+ 0.4- 1997 10 30 566 0.1- 0.3- 1997 11 06 424 0.7- 0.5+

1997 UK₈ = 1986 TG₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 266.85391		(2000.0)		P		Q	
<i>n</i>	0.17663214	ω	123.49787	-0.99433171	-0.07947658		
<i>a</i>	3.1459820	Ω	52.04418	+0.03971057	-0.89379053		
<i>e</i>	0.4350981	<i>i</i>	5.13892	+0.09862821	-0.44138642		
<i>P</i>	5.58	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1986 10 07 675 0.1- 0.7+ 1997 10 21 966 0.8+ 0.6+ 1997 10 23 966 0.1- 1.9-
 1986 10 07 675 0.5- 1.2+ 1997 10 22 966 0.6- 1.2+ 1997 10 28 966 0.8- 1.0+
 1986 10 08 675 0.6- 1.5- 1997 10 22 966 0.1- 0.3- 1997 10 29 966 0.7+ 0.2-
 1986 10 08 675 1.1+ 0.4- 1997 10 23 966 0.1+ 0.4-

1997 US₈ = 1988 BB₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 205.46902		(2000.0)		P		Q	
<i>n</i>	0.17380409	ω	45.19295	-0.86006418	+0.51014481		
<i>a</i>	3.1800166	Ω	165.47660	-0.47506825	-0.79617389		
<i>e</i>	0.1242908	<i>i</i>	1.47885	-0.18601013	-0.32536043		
<i>P</i>	5.67	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1988 01 22 303 0.1- 1.3- 1997 09 07 910 0.0 0.3- 1997 10 25 400 1.3+ 1.2+
 1988 01 22 303 0.5- 0.6+ 1997 09 07 910 0.2+ 0.3- 1997 10 25 400 1.2+ 1.7+
 1988 01 22 303 0.3- 0.9+ 1997 09 07 910 0.0 0.1- 1997 10 26 400 0.2- 1.6-
 1988 01 23 303 1.0+ 0.2- 1997 10 05 910 0.2+ 0.1+ 1997 10 26 400 2.9- 2.7-
 1988 01 23 303 (6.3+ 8.7-) 1997 10 05 910 0.1+ 0.2+ 1997 10 28 400 0.9+ 1.0+
 1988 01 23 303 (6.4+ 8.0-) 1997 10 05 910 0.1- 0.3+ 1997 10 28 400 0.7- 0.4+

1997 UZ₈ = 1978 SA₂ = 1992 JC₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

<i>M</i> 95.34498		(2000.0)		P		Q	
<i>n</i>	0.26671132	ω	102.80221	+0.77215019	+0.63411139		
<i>a</i>	2.3902413	Ω	217.86626	-0.60587719	+0.71520260		
<i>e</i>	0.0769363	<i>i</i>	3.83656	-0.19156438	+0.29391834		
<i>P</i>	3.70	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 09 26 095 0.1- 0.2+ 1992 05 03 809 0.4- 0.2+ 1997 11 05 905 0.1+ 0.5+
 1992 05 02 809 0.4+ 0.3+ 1997 10 29 411 0.3+ 0.2- 1997 11 06 905 0.5+ 0.2+
 1992 05 02 809 0.7+ 0.1- 1997 10 29 411 1.4- 1.1+ 1997 11 06 905 0.4+ 0.3-

1997 NOV. 14

M.P.C. 30887

1992 05 02	809	1.0+	0.2-	1997 10 30	411	0.7+	0.1-	1997 11 07	411	0.3-	0.0
1992 05 03	809	0.9-	0.1+	1997 10 30	411	0.0	0.6-	1997 11 07	411	0.3-	0.2+
1992 05 03	809	0.6-	0.3+	1997 11 05	905	0.2-	0.1-				

1997 UA₉ = 1970 EK = 1989 YX₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	236.00525		(2000.0)	P	Q
n	0.24084236	ω	132.10109	-0.96938613	+0.18218184
a	2.5584727	Ω	59.01967	-0.24015206	-0.84315529
e	0.0226124	i	11.07032	+0.05116177	-0.50586454
P	4.09	H	12.3	G 0.15	U 3

Residuals in seconds of arc

1970 03 07	095	0.0	0.0	1997 10 29	411	0.2+	0.1-	1997 11 05	905	0.2+	0.1-
1989 12 28	511	0.4-	0.2+	1997 10 29	411	0.7-	0.3-	1997 11 06	905	0.3+	0.1+
1989 12 28	511	0.2+	0.9-	1997 10 30	411	0.1-	0.9+	1997 11 06	905	0.1-	0.2+
1989 12 29	511	0.1+	1.3+	1997 10 30	411	0.5-	0.2+	1997 11 07	411	0.5+	0.4-
1989 12 29	511	0.1+	0.6-	1997 11 05	905	0.6+	0.0	1997 11 07	411	0.5-	0.4-

1997 UJ₁₁ = 1990 WS₁₃ = 1990 XW

Id. B. G. Marsden, S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	315.73710		(2000.0)	P	Q
<i>n</i>	0.27747127	ω	76.33084	−0.52507830	−0.79767934
<i>a</i>	2.3280414	Ω	49.38279	+0.54774152	−0.58352631
<i>e</i>	0.1960864	<i>i</i>	23.00444	+0.65136166	−0.15233093
<i>P</i>	3.55	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1990 11 20	095	(3.8-	5.0+)	1997 10 29	566	0.2+	0.2-	1997 11 01	400	0.3+	0.1+
1990 11 20	095	(1.3+	10.0-)	1997 11 01	684	0.2-	0.1-	1997 11 02	684	0.0	0.1+
1990 12 15	675	0.7+	0.0	1997 11 01	684	0.3-	0.1-	1997 11 02	684	0.1+	0.1+
1990 12 15	675	0.5+	0.2+	1997 11 01	684	0.2-	0.1-	1997 11 02	684	0.0	0.0
1990 12 18	675	0.6-	0.5+	1997 11 01	670	0.0	0.2+	1997 11 02	400	0.3+	0.5-
1990 12 18	675	0.6-	0.8-	1997 11 01	670	0.6-	0.7+	1997 11 03	684	0.0	0.1+
1997 10 29	566	0.1+	0.2-	1997 11 01	670	0.1-	0.3-	1997 11 03	684	0.1+	0.1+
1997 10 29	566	0.1+	0.3-	1997 11 01	400	0.1+	0.0	1997 11 03	684	0.0	0.2+

1997 UV₁₄ = 1992 UA₄

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	77.32230		(2000.0)	P	Q
n	0.20167544	ω	137.49191	+0.93175942	+0.35934430
a	2.8798334	Ω	201.61453	-0.35933617	+0.89220837
e	0.0278236	i	8.10334	-0.05197990	+0.27356151
P	4.89	H	13.0	G 0.15	U 6

Residuals in seconds of arc

1992 10 26	400	1.0+	0.1+	1997 10 31	426	0.5+	0.2-	1997 11 04	426	0.5-	0.3+
1992 10 26	400	1.0-	0.5-	1997 10 31	426	0.3+	0.2-	1997 11 04	426	0.7-	0.0
1992 10 28	400	0.5+	0.8-	1997 11 01	426	0.0	0.2+	1997 11 04	426	0.4-	0.0
1992 10 28	400	0.6-	1.2+	1997 11 01	426	0.0	0.0	1997 11 11	426	0.3+	0.4-
1997 10 31	426	0.0	0.1+	1997 11 01	426	0.2+	0.0	1997 11 11	426	0.4+	0.1+

1997 VT = 1982 VO₁₀ = 1982 XA₃ = 1989 PZ = 1996 KS₇

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	51.07187		(2000.0)	P	Q
n	0.26153903	ω	231.19454	+0.97322503	+0.22623653
a	2.4216519	Ω	115.69609	-0.19443620	+0.90455528
e	0.1852532	i	2.58372	-0.12258716	+0.36138176
P	3.77	H	14.5	G 0.15	U 2

Residuals in seconds of arc

1982 11 12	095	0.8-	0.3-	1996 04 18	809	0.1-	1.4+	1996 05 23	809	0.2+	0.6-
1982 12 13	381	0.8+	0.7-	1996 05 19	809	(0.4-	3.0+)	1996 05 23	809	0.5-	0.2-

1982 12 14	381	0.1-	0.7-	1996 05 19	809	(1.7-	4.0+)	1997 11 02	367	0.2-	0.9+
1982 12 14	381	0.7+	0.3+	1996 05 19	809	(0.1+	4.0+)	1997 11 02	367	0.2-	0.7+
1989 08 01	675	0.0	0.6-	1996 05 22	809	1.5+	0.9+	1997 11 03	367	0.2-	0.9+
1989 08 01	675	(1.3-	6.5-)	1996 05 22	809	0.4-	1.4+	1997 11 03	367	0.1-	1.1+
1996 04 18	809	(0.1+	2.5+)	1996 05 22	809	0.8+	0.8+	1997 11 04	900	0.0	0.9+
1996 04 18	809	0.0	1.5+	1996 05 23	809	0.0	0.5-	1997 11 04	900	1.0-	0.7+

1997 VG₂ = 1986 WV₁₀

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	1.98547		(2000.0)	P	Q
n	0.26872083	ω	149.01687	+0.37861566	-0.92470448
a	2.3783102	Ω	278.70982	+0.84075485	+0.36152245
e	0.2056640	i	2.29866	+0.38701611	+0.11926078
P	3.67	H	15.4	G 0.15	U 6

Residuals in seconds of arc

1986 11 30	381	0.9+	0.7+	1997 11 01	411	0.5+	0.2+	1997 11 08	411	0.1-	0.1-
1986 11 30	381	1.1-	0.0	1997 11 01	411	0.6-	0.4+	1997 11 08	411	0.2+	0.1-
1986 12 01	381	0.3+	0.1+	1997 11 05	411	0.5+	0.4-				
1986 12 01	381	0.2-	0.6-	1997 11 05	411	0.4-	0.2-				

1997 VM₂ = 1981 UX₂₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	125.58841		(2000.0)	P	Q
n	0.18215035	ω	77.36532	-0.10289277	+0.99446893
a	3.0821188	Ω	186.83473	-0.96749445	-0.10498022
e	0.0168575	i	10.20592	-0.23101419	-0.00327205
P	5.41	H	13.3	G 0.15	U 5

Residuals in seconds of arc

1981 10 25	675	0.3-	0.5-	1997 11 05	402	0.3-	0.1-	1997 11 06	402	0.3-	0.1-
1981 10 26	675	0.3+	0.5+	1997 11 05	402	0.2+	0.3-	1997 11 06	402	0.4-	0.0
1997 11 04	402	0.3+	0.0	1997 11 05	402	0.1-	0.0	1997 11 09	402	0.0	0.1+
1997 11 04	402	0.1+	0.3+	1997 11 05	402	0.2-	0.3-	1997 11 09	402	0.0	0.1+
1997 11 04	402	0.0	0.4+	1997 11 06	402	0.5+	0.0	1997 11 09	402	0.2+	0.0

1997 VX₅ = 1980 PE₄ = 1988 NH₁ = 1995 EB₉

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

M	100.28677		(2000.0)	P	Q
n	0.24397310	ω	156.81495	+0.80532977	+0.59128823
a	2.5365383	Ω	166.67570	-0.56878463	+0.79096178
e	0.0532314	i	10.67417	-0.16711675	+0.15734578
P	4.04	H	13.2	G 0.15	U 1

Residuals in seconds of arc

1980 08 04	675	0.1+	0.2-	1995 03 07	033	0.6-	0.5+	1997 11 08	864	0.3-	0.0
1980 08 05	675	0.1-	0.6+	1997 11 06	864	0.4+	0.4+	1997 11 08	864	0.2+	0.1-
1988 07 15	413	0.3-	0.4-	1997 11 06	864	0.2+	0.6-	1997 11 08	864	0.3-	0.2-
1988 07 15	413	0.4+	0.1+	1997 11 06	864	0.3-	0.2-	1997 11 10	900	0.3-	0.2+
1995 03 05	033	0.0	0.2-	1997 11 06	864	0.1-	0.1+	1997 11 10	900	0.1-	0.1-
1995 03 05	033	0.6+	0.2-	1997 11 06	864	0.6+	0.4+				

2573 P-L = 1996 FK₁₇Id. G. V. Williams (*MPC* 28312)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

M	54.97997		(2000.0)	P	Q
n	0.24070892	ω	301.56326	+0.83871450	+0.54350948
a	2.5594182	Ω	25.56178	-0.46912394	+0.75280473
e	0.2253295	i	4.51836	-0.27655147	+0.37132531
P	4.09	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1960 09 24	675	0.3-	0.4+	1960 10 26	675	0.2+	0.9+	1997 10 24	684	(1.0+	2.5+)
1960 09 26	675	0.3+	0.2-	1996 03 22	809	0.1+	1.3+	1997 10 24	684	1.2+	1.0+

1960 09 28	675	0.2−	0.1−	1996 03 22	809	0.1+	1.1+	1997 10 24	684	(0.9+	2.9+)
1960 09 29	675	0.1+	0.5−	1996 03 22	809	0.6−	0.9+	1997 10 25	684	1.0−	0.9+
1960 10 17	675	0.6−	0.3−	1996 03 26	809	(2.7+	2.6+)	1997 10 25	684	0.9−	0.6+
1960 10 22	675	0.4−	0.8+	1996 03 26	809	1.6+	1.4+	1997 10 25	684	0.8−	0.6+
1960 10 25	675	0.0	1.0+	1996 03 26	809	1.5+	1.6+				

3520 P-L = 1997 VA₂

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	31.86629		(2000.0)	P	Q
<i>n</i>	0.18832309	ω	141.10200	+0.90212936	−0.40539606
<i>a</i>	3.0143962	Ω	243.41449	+0.34299952	+0.88150679
<i>e</i>	0.1237979	<i>i</i>	9.50701	+0.26175171	+0.24207399
<i>P</i>	5.23	<i>H</i>	12.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 10 17	675	0.1+	0.4−	1960 10 24	675	0.8+	0.5−	1960 10 26	675	0.3−	0.8+
1960 10 17	675	0.1+	0.3+	1960 10 24	675	1.3−	0.8+	1997 11 01	411	0.4−	0.5−
1960 10 22	675	0.8−	0.1−	1960 10 25	675	0.6+	0.6−	1997 11 01	411	0.7−	0.2−
1960 10 22	675	0.4+	0.6+	1960 10 25	675	0.2+	0.2−	1997 11 05	411	0.3+	0.5+
1960 10 22	675	0.4−	0.3−	1960 10 26	675	0.7+	0.4−	1997 11 05	411	0.8+	0.2+

4033 P-L = 1997 UT₁₉

Id. S. Nakano

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	359.18415		(2000.0)	P	Q
<i>n</i>	0.26660706	ω	86.83356	+0.71761329	−0.69618412
<i>a</i>	2.3908644	Ω	317.28692	+0.62736907	+0.65801156
<i>e</i>	0.2042024	<i>i</i>	1.60026	+0.30238919	+0.28696421
<i>P</i>	3.70	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.1−	0.2−	1997 10 25	369	0.4+	0.3+	1997 11 02	046	0.1+	0.0
1960 09 25	675	0.0	0.4−	1997 10 25	369	0.6−	0.8−	1997 11 03	046	0.1+	0.6+
1960 09 26	675	0.0	0.2+	1997 10 26	369	0.2−	0.9+	1997 11 03	046	0.2−	0.5−
1960 09 28	675	0.3+	0.5−	1997 10 26	369	0.3−	0.1−	1997 11 03	046	0.1+	0.3−
1960 10 17	675	0.7−	1.0+	1997 11 01	369	0.1+	0.3+	1997 11 03	046	0.6−	0.5−
1960 10 22	675	0.3−	0.9+	1997 11 01	369	0.3+	0.2−	1997 11 04	046	0.1−	0.3+
1960 10 24	675	0.5+	0.3+	1997 11 01	369	0.1−	0.2−	1997 11 04	046	0.3+	0.3+
1960 10 26	675	0.3−	0.4−	1997 11 02	046	0.2+	0.2−	1997 11 04	046	0.2+	0.0
1997 10 20	369	(2.1−	2.6−)	1997 11 02	046	0.0	0.1−	1997 11 04	046	0.1+	0.0
1997 10 20	369	0.3−	1.1−	1997 11 02	046	0.2+	0.1−	1997 11 04	046	0.0	0.0
1997 10 20	369	1.2+	0.4+	1997 11 02	046	0.0	0.0	1997 11 04	046	0.4−	0.2+

4595 P-L = 1995 DJ₅Id. G. V. Williams (*MPC* 25076)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	36.85938		(2000.0)	P	Q
<i>n</i>	0.26756845	ω	189.20490	+0.99477648	−0.10204196
<i>a</i>	2.3851340	Ω	176.64837	+0.09633102	+0.92976163
<i>e</i>	0.1883819	<i>i</i>	2.62967	+0.03376525	+0.35373824
<i>P</i>	3.68	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1960 09 24	675	0.1+	1.0−	1995 02 22	691	0.7+	0.4−	1995 03 07	691	0.6−	0.3−
1960 09 26	675	0.9+	0.7−	1995 02 22	691	0.1−	0.3−	1996 05 20	691	0.2−	0.5−
1960 09 27	675	0.3+	0.1−	1995 02 22	691	0.3−	0.4−	1996 05 20	691	0.0	0.3−
1960 09 28	675	0.3−	0.6−	1995 03 01	691	0.1−	0.4−	1997 10 29	566	0.4−	0.9+
1960 10 17	675	1.0+	0.2−	1995 03 01	691	0.2+	0.4−	1997 10 29	566	0.1−	0.8+
1960 10 22	675	0.5−	0.6−	1995 03 01	691	0.5+	0.2−	1997 10 29	566	0.2−	0.8+
1960 10 25	675	0.0	0.8−	1995 03 07	691	0.8−	0.1−				
1960 10 26	675	0.1+	0.2−	1995 03 07	691	0.4−	0.6−				

6199 P-L = 1997 VL

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Marsden

<i>M</i>	29.12394		(2000.0)	P	Q
<i>n</i>	0.29461969	ω	173.60787	+0.90645288	−0.42150733
<i>a</i>	2.2368054	Ω	211.36265	+0.38521524	+0.85047981
<i>e</i>	0.1674190	<i>i</i>	2.86081	+0.17306759	+0.31466755
<i>P</i>	3.35	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.1+	0.3−	1960 10 26	675	0.3+	0.5+	1997 11 03	684	0.1−	0.1−
1960 09 25	675	1.0+	0.4+	1997 11 02	684	0.1−	0.0	1997 11 05	684	0.1+	0.2+
1960 09 26	675	0.2+	0.5+	1997 11 02	684	0.0	0.1−	1997 11 05	684	0.0	0.1+
1960 09 28	675	1.3−	0.1−	1997 11 02	684	0.2+	0.1−	1997 11 05	684	0.1+	0.4+
1960 10 17	675	0.2−	1.1−	1997 11 03	684	0.2−	0.3−				

6579 P-L = 1975 XO₂ = 1997 VT₃

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	349.46867		(2000.0)	P	Q
<i>n</i>	0.26927150	ω	16.09343	+0.12748457	−0.99055515
<i>a</i>	2.3750666	Ω	66.60455	+0.90382364	+0.09506075
<i>e</i>	0.0893179	<i>i</i>	3.15293	+0.40847339	+0.09881268
<i>P</i>	3.66	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1960 09 24	675	0.5−	0.3+	1960 10 22	675	2.1−	0.2+	1997 11 06	411	1.0+	0.3+
1960 09 26	675	0.3+	0.9−	1960 10 24	675	0.2+	0.1−	1997 11 07	411	0.7−	0.0
1960 09 27	675	0.9+	0.4−	1960 10 26	675	0.0	0.5+	1997 11 07	411	0.2−	0.5+
1960 09 28	675	0.6+	0.7−	1975 12 02	095	0.2+	0.8−				
1960 10 17	675	0.5+	1.4+	1997 11 06	411	0.2−	0.2−				

2034 T-2 = 1996 TV₅Id. G. V. Williams (*MPC* 28082)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	2.82125		(2000.0)	P	Q
<i>n</i>	0.17538870	ω	69.35838	−0.58830822	−0.80850742
<i>a</i>	3.1608336	Ω	56.68697	+0.73531840	−0.54232324
<i>e</i>	0.1399014	<i>i</i>	0.99169	+0.33645252	−0.22847594
<i>P</i>	5.62	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1973 09 19	675	0.5+	1.1+	1973 09 30	675	0.9−	1.5−	1995 07 24	691	0.7−	1.0+
1973 09 19	675	1.2−	1.2+	1973 09 30	675	1.9+	0.6+	1995 07 24	691	0.8−	1.0+
1973 09 19	675	0.2−	0.9+	1973 09 30	675	0.2+	0.1+	1995 08 01	691	0.1+	1.0+
1973 09 19	675	(2.6−	0.1+)	1973 09 30	675	1.8−	1.1−	1995 08 01	691	0.1−	1.0+
1973 09 20	675	0.4−	0.7+	1973 09 30	675	1.1+	1.1−	1995 08 01	691	0.1−	0.8+
1973 09 24	675	0.1+	0.9−	1973 09 30	675	1.1+	1.0+	1996 10 03	327	0.5+	0.1+
1973 09 24	675	0.2+	0.5+	1973 10 04	675	0.9+	2.0+	1996 10 03	327	0.1+	0.1+
1973 09 24	675	1.0+	0.7−	1973 10 04	675	1.2−	0.9−	1996 10 03	327	0.3+	0.1+
1973 09 24	675	0.5+	0.0	1973 10 04	675	(2.6+	1.1−)	1996 10 05	327	0.7+	1.0+
1973 09 25	675	2.0+	1.0−	1973 10 04	675	0.5+	1.2+	1996 10 05	327	0.2+	0.8+
1973 09 25	675	1.3−	0.5−	1973 10 05	675	(0.1+	2.6−)	1996 10 05	327	0.9+	0.3+
1973 09 25	675	1.3+	1.6−	1973 10 05	675	1.5+	0.8−	1996 10 08	691	1.4−	0.3+
1973 09 25	675	1.4−	0.2−	1973 10 05	675	1.4−	0.3+	1996 10 08	691	1.3−	0.5+
1973 09 29	675	0.4−	0.6−	1973 10 05	675	0.9+	1.9−	1996 10 08	691	1.2−	0.5+
1973 09 29	675	(1.1+	3.1−)	1973 10 05	675	0.6−	0.3−	1997 11 08	910	0.1−	0.9+
1973 09 29	675	0.3−	0.4−	1973 10 05	675	0.9−	0.5−	1997 11 08	910	0.3+	0.7+
1973 09 29	675	1.3+	2.1−	1995 07 24	691	0.7−	0.8+	1997 11 08	910	0.6+	0.8+

2185 T-2

Id. T. Kobayashi (1997 observations)

1997 NOV. 14

M.P.C. 30889

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Nakano

<i>M</i>	347.10333	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.16973386	ω 58.67604	+0.01632191	-0.99976869
<i>a</i>	3.2306536	Ω 30.39823	+0.90769780	+0.00894146
<i>e</i>	0.1459619	<i>i</i> 1.58613	+0.41930692	+0.01956084
<i>P</i>	5.81	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1973 09 19	675	(3.3+ 1.6+)	1973 09 29	675	1.0+ 0.4+	1973 10 05	675	0.5- 0.3-
1973 09 19	675	0.4- 0.3+	1973 09 29	675	0.6- 0.4+	1977 11 06	411	1.1- 0.0
1973 09 20	675	0.8+ 0.4-	1973 09 30	675	1.7- 0.7-	1977 11 06	411	0.0 0.8+
1973 09 24	675	1.3- 0.9+	1973 09 30	675	0.2+ 0.7+	1977 11 07	411	0.3+ 0.4-
1973 09 24	675	0.7- 1.0+	1973 10 04	675	0.1- 0.2-	1977 11 07	411	0.8+ 0.4-
1973 09 25	675	0.7+ 2.0-	1973 10 04	675	1.5+ 0.8+			
1973 09 25	675	1.2+ 0.6-	1973 10 05	675	0.2- 0.2-			

3281 T-2 = 1997 QB₅

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

Williams

<i>M</i>	33.10661	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28612096	ω 171.51684	+0.88819680	+0.45876133
<i>a</i>	2.2808826	Ω 161.11235	-0.42601747	+0.84297919
<i>e</i>	0.1816394	<i>i</i> 4.49796	-0.17209172	+0.28093437
<i>P</i>	3.44	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1973 09 19	675	0.1- 0.4+	1973 10 04	675	0.6+ 0.4+	1997 09 06	292	0.4- 0.2+
1973 09 19	675	0.9- 0.5+	1973 10 05	675	1.1+ 0.2-	1997 09 06	292	0.1+ 0.2-
1973 09 20	675	0.5- 0.4+	1973 10 05	675	1.0- 0.9-	1997 09 07	292	0.7+ 0.6-
1973 09 24	675	1.4+ 0.5+	1973 10 05	675	0.6+ 0.5+	1997 09 07	292	0.3- 0.1-
1973 09 24	675	1.4+ 0.2+	1973 10 05	675	0.7- 0.5-	1997 09 07	292	0.5- 1.0+
1973 09 25	675	0.7+ 0.4-	1973 10 04	292	0.2+ 1.4-	1997 09 19	292	0.0 0.6+
1973 09 25	675	0.5+ 0.1+	1973 10 04	292	1.6- 0.3+	1997 09 19	292	1.7- 0.1+
1973 09 29	675	0.1+ 0.0	1973 10 04	292	0.3- 0.9+	1997 09 19	292	0.6+ 0.8+
1973 09 29	675	1.0- 0.3-	1973 10 04	292	0.6+ 0.2+	1997 09 22	292	0.8- 1.5-
1973 09 29	675	0.1- 0.3-	1973 10 04	292	1.4+ 0.6-	1997 09 22	292	0.1+ 1.0-
1973 09 29	675	0.5- 0.8+	1973 10 04	292	1.6+ 0.8+	1997 09 22	292	1.1- 0.2+
1973 09 30	675	(1.7+ 3.0-)	1973 10 04	292	0.6+ 0.7-	1997 09 28	292	1.2+ 0.2-
1973 09 30	675	0.3- 0.5-	1973 10 04	292	0.9+ 1.1+	1997 09 28	292	0.1+ 0.1-
1973 09 30	675	(0.2+ 3.0-)	1973 10 04	292	0.2+ 1.3-	1997 09 28	292	1.1+ 0.5-
1973 09 30	675	0.1+ 0.3-	1973 10 04	292	0.5- 0.8+	1997 10 29	566	0.0 0.6+
1973 10 04	675	1.1- 0.1+	1973 10 04	292	0.6- 0.9+	1997 10 29	566	0.3+ 0.9-
1973 10 04	675	(0.3+ 2.8+)	1973 10 04	292	0.4- 0.4+	1997 10 29	566	0.2- 0.0
1973 10 04	675	0.5- 0.0	1973 10 04	292	1.1- 0.7-			

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
(75)	8.96	0.23	19971218	2.44326	338.83426	359.56017	5.01778	0.3091714	2.6697254	315	32 1910-1996	0.63 M-v 0	Bowell	29652	(75)
(104)	8.27	0.15	19971218	348.04503	29.14671	41.94585	2.79892	0.1482946	3.1542373	258	46 1910-1993	1.26 M-v 1	Sumzina	30777	(104)
(110)	7.80	0.20	19971218	304.85669	283.61824	57.10391	5.96969	0.0802709	2.7321424	222	38 1901-1994	1.12 M-v 1	Sumzina	29652	(110)
(198)	8.33	0.15	19971218	192.46346	88.37723	268.72595	9.29559	0.2293394	2.4588552	93	31 1908-1995	1.08 M-v 1	Sumzina	22947	(198)
(200)	8.26	0.15	19971218	330.73415	85.12676	324.81349	6.91058	0.1316078	2.7377506	198	35 1920-1997	0.97 M-v 1	Sumzina	30446	(200)
(218)	8.60	0.32	19971218	72.63868	61.63639	170.92936	15.22213	0.1142854	2.6694599	111	31 1901-1997	1.21 M-v 1	Sumzina	28882	(218)
(233)	8.21	0.15	19971218	34.60872	124.42244	222.32683	7.66558	0.1010338	2.6593122	113	35 1912-1993	1.19 M-v 1	Sumzina	30778	(233)
(299)	11.4	0.15	19971218	75.70737	151.17156	241.69828	1.60020	0.0610534	2.4345451	91	17 1932-1995	1.10 M-v 1	Sumzina	29652	(299)
(372)	7.2	0.15	19971218	153.16684	116.36125	327.52794	23.86785	0.2635291	3.1417061	131	40 1904-1996	1.18 M-v 1	Sumzina	30778	(372)
(384)	9.64	0.15	19971218	61.99923	34.10193	48.15973	5.60672	0.1483568	2.6523658	114	37 1907-1996	1.16 M-v 1	Sumzina	30778	(384)
(461)	10.48	0.15	19971218	192.46073	301.61762	157.52406	1.43872	0.1548018	3.1112639	136	30 1900-1996	1.27 M-v 1	Sumzina	30649	(461)
(530)	9.29	0.15	19971218	350.79580	201.78364	129.27445	8.56539	0.2223125	3.1856989	130	36 1904-1996	1.13 M-v 1	Sumzina	26914	(530)
(595)	8.0	0.15	19971218	280.33710	267.84175	24.62309	17.92526	0.0533393	3.2068065	95	29 1906-1996	1.28 M-v 1	Sumzina	26914	(595)
(631)	8.70	0.15	19971218	219.69018	279.08528	224.86713	18.90794	0.0828853	2.7928963	72	24 1907-1997	1.12 M-v 1	Sumzina	30779	(631)
(647)	11.41	0.15	19971218	177.67261	175.81369	255.04634	7.32168	0.1945147	2.4405751	62	14 1907-1995	0.93 M-v 1	Sumzina	20497	(647)
(760)	7.96	0.15	19971218	174.87712	199.88637	332.02880	12.51376	0.2208038	3.1713735	134	25 1914-1997	1.05 M-v 1	Sumzina	27725	(760)
(780)	9.0	0.15	19971218	204.39543	217.14273	145.23254	19.05523	0.0898382	3.1176926	66	17 1909-1991	1.05 M-v 1	Sumzina	26917	(780)
(805)	9.82	0.15	19971218	34.97925	134.42908	166.55422	15.71920	0.1880495	3.1947371	51	16 1928-1996	1.04 M-v 1	Sumzina	26917	(805)
(807)	10.56	0.15	19971218	343.29856	343.36594	132.42825	11.31133	0.0638118	3.0179326	32	13 1909-1993	1.12 M-v 1	Sumzina	26917	(807)
(858)	10.0	0.15	19971218	121.69368	177.18440	67.39356	8.87881	0.1042904	2.8091916	37	19 1908-1997	0.90 M-v 1	Bowell	22697	(858)
(874)	10.0	0.15	19971218	163.34669	14.80578	190.90959	11.14946	0.0733930	3.1547965	80	18 1917-1992	1.21 M-v 1	Sumzina	21967	(874)
(883)	12.59	0.15	19971218	10.47319	41.86407	285.79155	4.71914	0.1989814	2.2383657	89	17 1917-1991	1.24 M-v 1	Sumzina	30779	(883)
(940)	9.55	0.15	19971218	181.20941	272.33772	68.62026	6.21214	0.1772147	3.3595309	119	29 1920-1997	1.12 M-v 1	Sumzina	27930	(940)
(971)	10.05	0.15	19971218	233.42320	5.95538	83.87482	13.76940	0.1617938	2.6421097	63	17 19 8-1997	0.81 M-v 1	Bowell	28838	(971)
(972)	9.5	0.15	19971218	123.56437	93.64688	281.96997	8.37327	0.2257995	3.0686716	109	21 1906-1996	1.28 M-v 1	Sumzina	26919	(972)
(991)	11.12	0.15	19971218	236.80325	250.73045	63.83368	2.09113	0.1427224	3.1534401	83	20 1936-1992	1.22 M-v 1	Sumzina	26919	(991)
(1027)	10.6	0.15	19971218	325.04350	135.47215	29.49978	1.25662	0.1320345	3.1528714	129	26 1908-1996	1.23 M-v 1	Sumzina	22697	(1027)
(1040)	10.4	0.15	19971218	112.98583	159.71835	280.32459	16.67806	0.1930310	3.1121638	45	9 1925-1997	1.07 M-v 1	Sumzina	30090	(1040)
(1044)	10.9	0.15	19971218	233.23520	226.24087	60.19084	4.26736	0.1416148	2.5766790	123	27 1924-1994	1.22 M-v 1	Sumzina	26919	(1044)
(1066)	12.5	0.15	19971218	40.99837	16.78679	345.41865	4.82172	0.2085157	2.4024949	110	19 1930-1995	1.15 M-v 1	Sumzina	29315	(1066)

(1080)	12.20	0.15	19971218	192.56068	57.20563	2.16911	4.59227	0.2579945	2.4183214	79	16	1906-1995	1.12	M-v	1	Sumzina	29653	(1080)
(1128)	10.7	0.15	19971218	163.72190	234.38867	59.41407	1.01756	0.0453632	2.7872948	160	37	1920-1996	1.27	M-v	1	Sumzina	26920	(1128)
(1159)	11.55	0.15	19971218	261.65683	313.67589	348.03607	13.04896	0.0578717	2.3796271	64	22	1929-1995	1.17	M-v	1	Sumzina	29653	(1159)
(1169)	13.0	0.15	19971218	306.47140	176.50047	255.28277	4.04586	0.1537317	2.3188459	44	15	1930-1996	0.98	M-v	1	Sumzina	22271	(1169)
(1179)	12.9	0.15	19971218	228.95391	233.99123	7.19514	8.70650	0.1758582	2.6162624	32	10	1931-1994	1.08	M-v	2	Sumzina	26921	(1179)
(1276)	10.4	0.15	19971218	213.35541	331.49264	114.91892	23.38637	0.1061360	3.1685149	48	15	1933-1992	1.14	M-v	1	Sumzina	29910	(1276)
(1299)	11.4	0.15	19971218	257.06368	259.74305	165.91038	7.87761	0.1874192	2.8039558	91	22	1934-1993	1.23	M-v	1	Sumzina	22271	(1299)
(1316)	13.3	0.15	19971218	51.55413	148.15967	238.38043	23.93480	0.3184926	2.4119569	33	8	1933-1995	1.29	M-v	2	Sumzina	26922	(1316)
(1317)	9.91	0.15	19971218	339.08482	29.99507	7.24993	20.68271	0.2453630	3.1862432	47	17	1935-1992	1.12	M-v	1	Sumzina	26922	(1317)
(1422)	13.42	0.15	19971218	44.00957	170.50688	201.79854	2.67436	0.1672198	2.2472237	101	13	1936-1996	1.21	M-v	2	Sumzina	27118	(1422)
(1430)	12.8	0.15	19971218	252.31340	351.63345	327.72249	3.29000	0.1959448	2.5618792	53	18	1937-1997	1.29	M-v	1	Sumzina	26923	(1430)
(1450)	11.9	0.15	19971218	110.74758	13.42783	75.02186	4.86321	0.1698112	2.6122729	73	17	1915-1993	1.17	M-v	1	Sumzina	20498	(1450)
(1455)	12.8	0.15	19971218	14.40496	100.09887	128.52767	7.75292	0.1240121	2.2465590	33	9	1937-1997	1.02	M-v	2	Sumzina	28314	(1455)
(1497)	11.9	0.15	19971218	45.74389	25.62819	301.00290	1.06312	0.0824128	2.8936975	146	26	1933-1992	1.08	M-v	1	Sumzina	30685	(1497)
(1503)	10.6	0.15	19971218	288.19831	176.92864	317.12810	12.37845	0.1032533	2.6253434	66	16	1935-1996	1.18	M-v	1	Sumzina	30271	(1503)
(1557)	11.3	0.15	19971218	14.47402	358.64153	355.58060	10.32276	0.1077487	3.0086384	44	19	1903-1992	1.27	M-v	1	Sumzina	30287	(1557)
(1576)	11.04	0.15	19971218	300.28400	240.51318	167.19965	0.94094	0.1782467	3.1417129	144	22	1931-1996	0.98	M-v	1	Sumzina	22076	(1576)
(1579)	10.68	0.15	19971218	205.31227	282.79201	184.68230	8.75277	0.1432219	3.4234183	79	20	1929-1992	1.19	M-v	1	Sumzina	30468	(1579)
(1586)	11.9	0.15	19971218	177.51450	29.24522	125.96548	4.05379	0.1017317	2.4326764	137	19	1939-1996	1.01	M-v	1	Sumzina	30287	(1586)
(1621)	11.63	0.15	19971218	102.09345	238.34314	182.03479	3.16788	0.1190196	2.2302386	99	22	1926-1994	1.12	M-v	1	Sumzina	30685	(1621)
(1669)	10.97	0.15	19971218	286.14735	181.26446	19.13101	0.94560	0.1177329	3.1363160	132	20	1934-1996	1.21	M-v	1	Sumzina	25225	(1669)
(1773)	11.9	0.15	19971218	254.74848	167.27675	74.90584	5.39626	0.1270828	2.4368156	79	19	1949-1994	1.27	M-v	1	Sumzina	28612	(1773)
(2199)	13.1	0.15	19971218	260.56235	142.32653	147.14207	8.18846	0.2005858	2.2417845	76	10	1941-1994	1.29	M-v	1	Sumzina	29656	(2199)
(2287)	13.0	0.15	19971218	44.64731	214.14758	93.43024	5.28837	0.1704027	2.2399903	44	13	1930-1997	0.92	M-v	1	Williams	28613	(2287)
(2340)	19.2	0.15	19971218	194.79098	39.80221	211.65251	5.84901	0.4499143	0.8438068	51	5	1976-1997	0.89	M-v	3	Williams	30289	(2340)
(2358)	11.0	0.15	19971218	326.38489	45.56728	344.98614	9.71994	0.0982781	3.0249617	53	11	1929-1997	0.83	M-v	1	Williams	27911	(2358)
(2480)	12.8	0.15	19971218	145.09493	13.64272	35.31167	2.92107	0.1201028	2.2256098	103	12	1959-1992	1.28	M-v	2	Sumzina	29657	(2480)
(2521)	11.7	0.15	19971218	7.30822	247.01071	281.57053	7.72646	0.0922274	2.7932665	55	8	1960-1992	1.07	M-v	1	Sumzina	29657	(2521)
(2585)	12.5	0.15	19971218	263.91093	246.99269	136.70219	5.98743	0.2348757	2.4250432	36	11	1930-1993	1.00	M-v	2	Sumzina	24895	(2585)
(2609)	13.3	0.15	19971218	78.13286	244.37803	304.13964	5.72127	0.0873838	2.2212222	37	10	1947-1995	1.20	M-v	2	Sumzina	25649	(2609)
(2611)	12.2	0.15	19971218	77.48517	136.95311	72.55480	3.32560	0.0477075	3.0436519	53	12	1970-1996	1.25	M-v	1	Sumzina	30781	(2611)
(2652)	13.6	0.15	19971218	4.77208	293.13429	64.76305	6.98796	0.0841652	2.6360769	73	10	1953-1996	0.81	M-v	1	Bowell	28844	(2652)
(2688)	11.6	0.15	19971218	248.30923	180.45197	95.67038	3.46725	0.1508840	3.1612972	62	9	1950-1995	1.29	M-v	1	Sumzina	29658	(2688)
(2700)	12.1	0.15	19971218	89.54788	275.72186	171.66132	2.39566	0.0458319	2.9070213	73	13	1953-1997	0.85	M-v	1	Sumzina	30781	(2700)
(2809)	13.60	0.15	19971218	35.82465	347.84719	357.54395	2.47416	0.1787057	2.4281289	42	7	1950-1997	0.70	M-v	2	Marsden	30091	(2809)
(2825)	13.4	0.15	19971218	179.28401	81.43774	329.70020	3.52349	0.1742453	2.2453069	64	7	1938-1990	1.16	M-v	2	Sumzina	21575	(2825)
(2831)	12.6	0.15	19971218	92.58963	272.62621	82.10590	4.22003	0.1975719	2.2256129	45	11	1930-1993	1.22	M-v	2	Sumzina	30273	(2831)
(2930)	12.4	0.15	19971218	272.32980	100.95840	359.60785	4.07337	0.0220486	2.7798492	36	9	1955-1995	1.21	M-v	1	Sumzina	28085	(2930)
(2945)	12.2	0.15	19971218	124.39174	242.35487	95.97949	2.62876	0.1375705	2.6696558	43	9	1935-1996	0.87	M-v	2	Sumzina	27934	(2945)
(2956)	12.4	0.15	19971218	128.72282	122.22147	112.47023	2.86509	0.0911106	2.7644960	99	10	1974-1996	0.97	M-v	1	Sumzina	30781	(2956)
(2961)	13.0	0.15	19971218	148.51001	196.07631	221.31056	4.54381	0.1379539	2.2678143	73	9	1941-1992	1.10	M-v	1	Sumzina	29613	(2961)
(2983)	11.2	0.15	19971218	141.88174	86.22404	248.29403	4.26605	0.0574046	2.8477935	43	12	1933-1991	1.12	M-v	1	Sumzina	29658	(2983)
(3124)	13.46	0.15	19971218	252.86631	171.21952	161.23777	5.90834	0.0773716	2.7452885	52	10	1953-1997	1.16	M-v	1	Sumzina	30687	(3124)
(3392)	14.2	0.15	19971218	236.15550	239.75233	266.97383	26.33999	0.2801332	2.1397665	50	6	1979-1997	0.79	M-v	2	Marsden	20031	(3392)
(3469)	11.0	0.15	19971218	81.47591	66.44753	219.65516	9.22778	0.0848404	3.0171647	31	11	1940-1995	1.05	M-v	1	Sumzina	30687	(3469)
(3521)	14.4	0.15	19971218	26.98835	34.94468	59.01337	3.87069	0.0675191	2.2619013	37	5	1982-1997	0.78	M-v	2	Williams	24106	(3521)
(3757)	18.95	0.15	19971218	7.27331	17.04751	75.06357	3.87114	0.4457468	1.8352312	49	3	1982-1997	0.94	M-v	1	Williams	29661	(3757)
(3761)	11.1	0.15	19971218	30.49682	84.91479	207.39079	16.20719	0.2825897	3.1243342	25	7	1936-1992	1.09	M-v	1	Sumzina	29661	(3761)
(3798)	13.6	0.15	19971218	298.78084	244.25129	314.70196	2.43280	0.0776123	2.1681706	38	6	1950-1993	1.29	M-v	2	Sumzina	28074	(3798)
(3799)	11.7	0.15	19971218	205.43340	96.18201	157.05333	1.34729	0.1510488	3.1453476	37	10	1955-1996	0.74	M-v	1	Sumzina	25641	(3799)
(3802)	13.7	0.15	19971218	131.59898	145.93524	139.35159	4.43420	0.1640493	2.2843447	48	8	1975-1993	1.01	M-v	2	Sumzina	29317	(3802)
(3826)	13.7	0.15	19971218	7.01168	257.91645	211.37724	4.61484	0.1323787	2.2396419	30	7	1953-1993	1.05	M-v	2	Sumzina	29661	(3826)
(3857)	13.4	0.15	19971218	215.21367	177.32135	49.08530	3.10051	0.1626675	2.3917302	25	8	1958-1989	1.28	M-v	2	Sumzina	30092	(3857)

(3879)	13.3	0.15	19971218	332.92668	31.56732	322.25284	8.66151	0.2568502	2.3554823	35	7	1947-1995	1.28	M-v	2	Sumzina	27936	(3879)
(3892)	12.7	0.15	19971218	148.54154	72.65035	159.65242	13.75608	0.1392468	2.6056800	58	7	1941-1996	0.77	M-v	1	Sumzina	30471	(3892)
(3896)	11.3	0.15	19971218	201.01947	321.49798	233.11956	9.66995	0.0456702	3.0033168	65	6	1950-1989	1.13	M-v	2	Sumzina	29944	(3896)
(3920)	13.2	0.15	19971218	229.20242	237.23040	116.60515	9.04716	0.2715410	2.2543771	24	6	1948-1996	0.93	M-v	2	Sumzina	30291	(3920)
(3924)	12.0	0.15	19971218	313.55196	95.13736	332.00356	6.72012	0.1087874	2.6998239	23	8	1955-1988	1.12	M-v	2	Sumzina	30291	(3924)
(3925)	10.9	0.15	19971218	213.88585	208.98129	163.93007	15.60485	0.1902461	3.1601065	49	7	1948-1993	1.13	M-v	1	Sumzina	23522	(3925)
(3930)	12.3	0.15	19971218	0.77531	250.43059	37.77808	1.23393	0.1535036	3.1323926	61	10	1949-1996	0.94	M-v	1	Sumzina	30079	(3930)
(3936)	13.0	0.15	19971218	208.49818	37.30856	240.91098	5.63834	0.1268200	2.4287029	47	11	1972-1992	1.28	M-v	1	Sumzina	26564	(3936)
(3951)	12.8	0.15	19971218	171.28087	151.79202	270.32990	5.41871	0.1746800	2.3383834	61	6	1976-1991	1.19	M-v	2	Sumzina	24408	(3951)
(3955)	11.3	0.15	19971218	227.73222	76.14919	24.01433	10.42561	0.0712390	3.0257719	24	6	1956-1990	1.02	M-v	1	Sumzina	28887	(3955)
(3957)	12.5	0.15	19971218	314.89922	133.13688	182.03994	5.72202	0.1951086	3.0841735	51	9	1933-1993	0.96	M-v	1	Sumzina	23783	(3957)
(3971)	11.8	0.15	19971218	342.01354	82.02322	285.32697	12.99931	0.1842048	2.8508856	22	5	1955-1997	0.64	M-v	1	Bowell	25975	(3971)
(3983)	12.4	0.15	19971218	330.72330	223.92284	329.80215	2.61734	0.1163950	2.4484208	48	9	1956-1991	1.28	M-v	2	Sumzina	28887	(3983)
(3992)	11.7	0.15	19971218	22.95650	155.99459	169.07560	10.42876	0.0877491	3.0167769	62	7	1953-1996	0.73	M-v	1	Sumzina	27121	(3992)
(4008)	13.1	0.15	19971218	268.79367	327.47117	167.37502	25.51399	0.2090103	2.3591507	27	3	1977-1988	0.95	M-v	2	Sumzina	23525	(4008)
(4016)	13.9	0.15	19971218	253.57032	36.12969	103.71156	0.78998	0.2256811	2.4107875	65	8	1949-1992	0.93	M-v	1	Sumzina	26743	(4016)
(4020)	13.0	0.15	19971218	30.29366	177.16736	195.14513	9.53804	0.1573965	2.7763309	40	8	1953-1997	1.08	M-v	2	Sumzina	28317	(4020)
(4022)	12.7	0.15	19971218	245.07228	33.67674	278.73094	5.09466	0.1276664	2.3579629	24	9	1952-1997	1.19	M-v	2	Sumzina	28887	(4022)
(4039)	13.0	0.15	19971218	222.06121	126.38504	275.87438	5.05249	0.0627988	2.4159568	54	7	1954-1995	0.66	M-v	1	Sumzina	28588	(4039)
(4056)	12.4	0.15	19971218	22.74364	355.08249	142.62136	13.15013	0.1052304	2.6471713	38	6	1942-1994	1.05	M-v	2	Sumzina	29317	(4056)
(4077)	11.4	0.15	19971218	45.09172	241.74874	70.89627	11.40771	0.0935237	3.0172755	26	9	1935-1996	1.11	M-v	1	Sumzina	30758	(4077)
(4105)	12.3	0.15	19971218	282.10793	61.58796	204.70133	6.36874	0.1910710	2.7033085	44	12	1936-1997	0.86	M-v	1	Sumzina	26759	(4105)
(4133)	12.8	0.15	19971218	108.05697	246.47050	324.91384	12.09663	0.1168172	2.5850975	33	8	1942-1996	1.23	M-v	2	Sumzina	22412	(4133)
(4149)	12.3	0.15	19971218	15.89972	74.16346	155.21152	12.93827	0.1236463	2.6639817	44	6	1977-1990	1.12	M-v	1	Sumzina	25531	(4149)
(4343)	11.9	0.15	19971218	28.02010	279.06648	221.86652	6.93808	0.1705295	2.7874820	31	10	1956-1995	0.84	M-v	1	Sumzina	24112	(4343)
(4384)	12.1	0.15	19971218	39.36927	43.68795	316.61528	13.29726	0.1795057	2.6193952	20	6	1933-1991	1.23	M-v	2	Sumzina	27558	(4384)
(4392)	14.1	0.15	19971218	212.61179	293.73465	32.01798	5.88816	0.1238755	2.3078294	41	8	1970-1996	1.24	M-v	2	Sumzina	28616	(4392)
(4419)	12.6	0.15	19971218	129.22435	284.33749	239.64397	0.37179	0.2125995	3.0650116	42	11	1932-1996	1.22	M-v	1	Sumzina	28888	(4419)
(4441)	13.6	0.15	19971218	13.38586	246.43736	62.52685	2.30996	0.0466615	2.9614668	40	9	1978-1996	1.17	M-v	1	Sumzina	30760	(4441)
(4444)	13.0	0.15	19971218	197.93808	181.56215	121.48516	7.39230	0.1346260	2.3243431	25	5	1985-1992	0.81	M-v	2	Sumzina	25228	(4444)
(4497)	11.5	0.15	19971218	179.07921	302.22386	93.54342	9.74866	0.2678921	2.4266541	40	7	1931-1997	0.89	M-v	2	Sumzina	29137	(4497)
(4515)	13.4	0.15	19971218	102.30623	103.06072	338.19430	1.97006	0.1535554	2.4137179	43	12	1953-1997	0.78	M-v	1	Sumzina	28888	(4515)
(4519)	13.3	0.15	19971218	226.24555	185.54760	162.70525	3.20459	0.0597301	2.2031051	45	12	1955-1996	1.13	M-v	2	Sumzina	29662	(4519)
(4522)	12.1	0.15	19971218	141.24102	228.36665	132.11898	12.50279	0.2031761	2.6716437	35	8	1950-1991	1.16	M-v	2	Sumzina	27313	(4522)
(4530)	12.0	0.15	19971218	162.19335	16.10635	165.08255	5.20031	0.0886105	3.1280793	37	8	1953-1996	1.00	M-v	2	Sumzina	29663	(4530)
(4584)	12.4	0.15	19971218	298.89001	64.72132	25.75434	7.69766	0.1986286	2.7919864	17	6	1971-1990	1.19	M-v	2	Sumzina	25532	(4584)
(4622)	12.3	0.15	19971218	70.32704	208.74519	170.62299	1.72026	0.1388826	3.2032504	70	6	1954-1996	1.03	M-v	1	Sumzina	26744	(4622)
(4634)	13.3	0.15	19971218	284.77959	49.97422	18.37604	5.84781	0.0293920	2.4215013	43	7	1979-1996	1.10	M-v	1	Sumzina	29318	(4634)
(4650)	13.4	0.15	19971218	17.93574	91.47507	307.06549	4.74666	0.1472224	2.2369532	32	7	1930-1995	0.99	M-v	2	Sumzina	29620	(4650)
(4669)	13.7	0.15	19971218	58.05812	261.53361	104.53912	4.48635	0.1889726	2.1988018	30	6	1974-1996	1.24	M-v	2	Sumzina	29945	(4669)
(4677)	12.0	0.15	19971218	61.52693	55.45542	12.26090	0.48725	0.1867312	3.1412129	43	8	1954-1996	1.09	M-v	1	Sumzina	25219	(4677)
(4717)	11.2	0.15	19971218	285.53610	246.69908	73.57460	10.77772	0.0928909	3.0172426	47	9	1931-1994	0.98	M-v	1	Sumzina	29945	(4717)
(4729)	13.0	0.15	19971218	62.26599	127.47829	252.09819	2.27946	0.1742274	2.2204292	72	8	1947-1993	0.70	M-v	1	Sumzina	26744	(4729)
(4734)	14.5	0.15	19971218	0.42010	23.76304	5.35775	0.97869	0.1921340	2.4157269	42	7	1981-1997	0.74	M-v	1	Williams	24584	(4734)
(4744)	11.1	0.15	19971218	145.98048	185.46849	348.48242	10.18053	0.1818656	2.8065258	59	7	1955-1996	1.01	M-v	1	Sumzina	30080	(4744)
(4760)	13.7	0.15	19971218	141.31979	129.99873	178.02854	9.85332	0.1277949	2.3259581	41	7	1955-1995	1.03	M-v	2	Sumzina	29921	(4760)
(4833)	9.1	0.15	19971218	8.22338	279.34911	101.76658	34.67595	0.0936715	5.2562486	28	7	1975-1997	0.80	M-v	1	Williams	30276	(4833)
(4836)	9.5	0.15	19971218	288.68230	32.72322	82.03808	19.43427	0.1086914	5.1672486	36	6	1986-1997	0.68	M-v	1	Williams	24764	(4836)
(4865)	12.1	0.15	19971218	201.93873	58.79094	43.85735	10.10050	0.0612597	3.0508747	63	5	1988-1996	0.79	M-v	1	Bowell	30783	(4865)
(5634)	14.7	0.15	19971218	152.05721	30.12395	261.46882	3.36111	0.0833215	2.1461516	37	6	1978-1997	0.92	M-v	2	Williams	30784	(5634)
(5702)	13.6	0.15	19971218	187.79320	223.91978	353.13907	5.33632	0.1265292	2.2608051	31	8	1931-1997	0.97	M-v	2	Williams	29114	(5702)
(5922)	11.8	0.15	19971218	10.26214	143.96631	232.64232	7.83740	0.1098076	3.0020711	48	7	1950-1997	0.86	M-v	1	Bowell	29140	(5922)
(6388)	12.4	0.15	19971218	348.70486	173.62420	234.71352	12.55691	0.1452503	2.5910652	36	5	1950-1997	0.85	M-v	1	Williams	29926	(6388)

(7469)	11.8	0.15	19971218	76.70607	18.96226	81.39772	7.77970	0.1077942	3.0570062	30	5	1979-1997	0.74	M-v	1	Bowell	30797	(7469)
(7634)	13.5	0.15	19971218	271.91707	270.08219	93.06469	2.59573	0.1976376	3.1779466	51	5	1982-1997	0.67	M-v	1	Bowell	22701	(7634)
1957 JP	12.0	0.15	19971218	149.87951	212.16266	54.58661	14.09635	0.1393812	2.6352743	35	6	1957-1997	0.68	M-v	1	Marsden	29652	1957 JP
1958 TL ₁	12.5	0.15	19971218	7.70715	161.93976	203.75985	17.69052	0.1895759	3.1573806	44	3	1958-1997	0.89	M-v	3	Williams	30777	1958 TL ₁
1966 BL	12.5	0.15	19971218	306.77083	195.72198	300.71413	7.00411	0.1652827	2.7777334	12	3	1966-1996	0.63	M-v	4	Williams	23682	1966 BL
1967 HA	13.0	0.15	19971218	192.45075	225.46214	331.77820	14.07007	0.0463210	2.5502692	29	5	1967-1997	0.62	M-v	2	Williams	27929	1967 HA
1967 JP	13.0	0.15	19971218	201.89145	263.92715	327.17917	4.13906	0.1135195	3.1245201	28	11	1955-1997	0.69	M-v	1	Williams	30286	1967 JP
1969 TQ ₁	13.0	0.15	19971218	11.98783	330.58266	68.69914	2.97911	0.1624932	3.1478600	26	5	1969-1997	0.75	M-v	1	Marsden	29652	1969 TQ ₁
1972 TC	13.0	0.15	19971218	2.64438	159.13336	247.42225	12.60643	0.1700436	2.5788772	20	3	1972-1997	0.44	M-v	2	Williams	22967	1972 TC
1973 AW ₃	12.0	0.15	19971218	102.88017	83.15102	65.79958	7.71472	0.0687187	2.7792530	20	8	1973-1997	0.95	M-v	1	Williams	29939	1973 AW ₃
1973 SD ₁	10.5	0.15	19971218	6.94355	32.38413	6.34553	7.10517	0.0934659	5.1425946	46	6	1973-1997	0.90	M-v	1	Williams	29652	1973 SD ₁
1973 SJ ₁	12.0	0.15	19971218	199.47857	8.62040	181.93457	2.63505	0.1233417	3.9584765	32	4	1973-1997	0.71	M-v	1	Williams	30647	1973 SJ ₁
1973 SO ₁	11.0	0.15	19971218	307.00773	272.11713	176.67813	8.46823	0.1288696	5.2285912	48	5	1973-1997	0.80	M-v	1	Williams	30777	1973 SO ₁
1973 SP ₁	11.0	0.15	19971218	277.93353	310.37381	156.07197	4.14917	0.0577443	5.2218440	38	5	1973-1997	0.71	M-v	1	Williams	30777	1973 SP ₁
1975 SX	13.5	0.15	19971218	258.64652	158.14263	201.31812	1.51557	0.1456980	3.3097750	17	2	1975-1993	0.87	M-v	6	Williams	24116	1975 SX
1975 SK ₁	14.0	0.15	19971218	256.75650	161.29806	2.39348	2.49713	0.0551702	2.3633396	35	4	1975-1997	0.74	M-v	2	Williams	28610	1975 SK ₁
1975 UA	15.5	0.15	19971218	352.63632	205.38130	224.29150	20.27805	0.0873598	1.9640487	33	3	1975-1997	0.65	M-v	3	Williams	24099	1975 UA
1976 DJ ₁	12.0	0.15	19971218	207.39689	95.91249	114.01549	5.97584	0.1354560	3.9863242	24	7	1954-1997	0.68	M-v	1	Williams	29131	1976 DJ ₁
1976 UY	12.5	0.15	19971218	21.53866	153.23239	238.17271	11.15388	0.2103618	2.6424078	17	3	1976-1997	0.80	M-v	4	Williams	23968	1976 UY
1976 UR ₁₅	14.0	0.15	19971218	338.22106	338.97913	49.57486	9.89980	0.0563700	2.6355308	30	5	1976-1997	0.71	M-v	2	Williams	30684	1976 UR ₁₅
1977 DF ₂	13.5	0.15	19971218	211.34048	120.41348	4.96203	5.08812	0.0409270	2.7691508	29	5	1977-1996	0.84	M-v	1	Williams	28610	1977 DF ₂
1977 EZ	12.5	0.15	19971218	264.72611	156.01107	329.47264	12.50954	0.0989839	2.3866642	26	6	1951-1997	0.68	M-v	2	Williams	27930	1977 EZ
1977 EA ₆	14.5	0.15	19971218	317.92906	111.47371	307.58570	4.10732	0.1043899	2.3980919	20	5	1977-1997	0.73	M-v	2	Williams	30778	1977 EA ₆
1977 TD	15.0	0.15	19971218	284.49163	73.26346	102.91472	31.60910	0.0890581	1.8111471	47	3	1977-1997	0.50	M-v	2	Marsden	27565	1977 TD
1977 XP ₂	13.5	0.15	19971218	130.30894	139.41552	145.22280	2.62569	0.0573932	2.9444288	29	5	1977-1997	0.80	M-v	2	Williams	28313	1977 XP ₂
1978 RK	12.5	0.15	19971218	126.47012	23.73031	1.79756	18.07685	0.1749623	3.1659944	14	3	1978-1992	0.63	M-v	3	Williams	23787	1978 RK
1978 RR	13.5	0.15	19971218	98.64799	285.47060	3.55628	7.57589	0.2057504	2.7845438	30	5	1978-1997	0.96	M-v	1	Williams	24758	1978 RR
1978 RM ₇	15.0	0.15	19971218	190.99917	15.54828	238.40205	1.43745	0.1893003	2.3508217	30	5	1978-1996	0.75	M-v	1	Williams	27930	1978 RM ₇
1978 SE ₃	14.0	0.15	19971218	65.37923	97.25895	210.22379	3.03152	0.1129982	2.4330349	30	7	1978-1997	0.90	M-v	2	Williams	30778	1978 SE ₃
1978 SA ₈	14.0	0.15	19971218	32.62112	163.52349	211.98741	2.61461	0.1895325	2.4234083	33	3	1978-1997	0.58	M-v	2	Williams	30778	1978 SA ₈
1978 UK ₇	15.0	0.15	19971218	1.83338	199.22586	201.85731	1.64838	0.1738428	2.4360027	36	4	1978-1997	0.76	M-v	2	Williams	28610	1978 UK ₇
1979 FD ₃	14.5	0.15	19971218	185.21396	99.17377	126.86893	2.94939	0.1250426	2.2358705	46	7	1953-1997	0.75	M-v	2	Williams	29653	1979 FD ₃
1979 MD ₂	14.0	0.15	19971218	340.10535	248.34220	186.20702	3.38219	0.1802462	2.2984570	30	6	1954-1997	0.82	M-v	2	Williams	30778	1979 MD ₂
1979 MN ₃	14.5	0.15	19971218	284.94726	266.33217	235.56249	1.97494	0.0687122	2.2738476	16	4	1954-1997	1.08	M-v	4	Williams	23990	1979 MN ₃
1979 MK ₅	14.5	0.15	19971218	259.93233	321.25842	221.44203	2.63907	0.0870514	2.5869903	15	3	1979-1997	0.32	M-v	4	Marsden	25423	1979 MK ₅
1979 MM ₆	14.5	0.15	19971218	194.88742	340.66503	233.52333	4.25448	0.1068772	3.1218864	15	3	1979-1997	0.86	M-v	5	Williams	30778	1979 MM ₆
1979 ME ₈	15.5	0.15	19971218	311.21734	281.81902	193.39282	3.92190	0.1358245	2.2792607	29	4	1978-1997	0.89	M-v	1	Williams	20808	1979 ME ₈
1979 QC ₁	14.0	0.15	19971218	351.36199	60.45627	326.46221	11.68511	0.1734737	2.3469473	32	4	1954-1997	0.77	M-v	3	Williams	30779	1979 QC ₁
1979 QV ₁	14.5	0.15	19971218	246.96218	243.72777	315.02782	6.41549	0.1235447	2.2698368	21	4	1979-1996	0.60	M-v	2	Williams	29653	1979 QV ₁
1979 SJ	15.0	0.15	19971218	61.99071	339.27273	0.20968	5.47854	0.2151945	2.3273292	60	4	1979-1997	0.71	M-v	1	Marsden	28314	1979 SJ
1979 TY ₁	14.5	0.15	19971218	54.47255	31.35808	33.20803	8.50211	0.1492594	2.2936144	15	3	1951-1986	0.95	M-v	4	Williams	25536	1979 TY ₁
1980 EB	14.5	0.15	19971218	190.36982	210.93205	2.70248	2.03847	0.0942029	2.4487565	23	5	1954-1997	0.84	M-v	2	Williams	30779	1980 EB
1980 FF ₁₂	14.0	0.15	19971218	152.30688	251.85031	350.63912	2.88091	0.0879145	2.1718263	43	7	1955-1997	0.92	M-v	2	Williams	28610	1980 FF ₁₂
1980 PV ₁	12.5	0.15	19971218	346.94007	310.70897	287.28202	6.75962	0.1813437	2.7877089	17	8	1979-1997	0.91	M-v	2	Williams	29653	1980 PV ₁
1980 RP	12.5	0.15	19971218	61.48968	344.00157	335.97269	17.07338	0.2140787	3.1186934	30	6	1950-1997	1.04	M-v	2	Williams	27118	1980 RP
1980 RU	13.0	0.15	19971218	39.00435	29.55830	344.86171	15.31875	0.1416340	2.5761730	22	7	1954-1997	0.94	M-v	2	Williams	27930	1980 RU
1980 RE ₁	14.5	0.15	19971218	87.85212	133.18482	182.94966	8.70099	0.1738895	2.5693158	23	4	1976-1997	0.96	M-v	2	Marsden	27565	1980 RE ₁
1980 RV ₂	14.5	0.15	19971218	94.39478	11.58873	339.46145	2.69244	0.1879334	2.2117437	13	4	1980-1995	0.85	M-v	2	Williams	24758	1980 RV ₂
1981 DM	14.5	0.15	19971218	172.31587	338.53452	262.73238	6.62248	0.0840978	2.3585332	20	3	1979-1993	1.16	M-v	4	Williams	22429	1981 DM
1981 EA ₅	15.0	0.15	19971218	349.25068	167.62530	257.13092	8.67438	0.1554553	2.7391722	17	4	1979-1997	0.86	M-v	3	Williams	20497	1981 EA ₅
1981 EB ₁₀	15.5	0.15	19971218	239.49859	340.14093	204.15688	4.51151	0.1004365	2.3390082	34	3	1981-1997	0.97	M-v	4	Williams	30754	1981 EB ₁₀
1981 EZ ₁₀	14.0	0.15	19971218	108.79648	27.27835	265.18836	3.25116	0.0419399	2.7831454	32	8	1951-1997	0.87	M-v	1	Williams	27930	1981 EZ ₁₀
1981 EH ₁₃	16.0	0.15	19971218	59.67366	65.08279	256.75837	2.98834	0.2147300	2.3990244	33	5	1978-1997	0.58	M-v	2	Williams	24580	1981 EH ₁₃

1981 EY ₁₄	15.0	0.15	19971218	341.26337	216.07360	278.25611	3.68589	0.1163805	2.2872579	36	5	1979–1996	0.71	M-v	2	Williams	22823	1981 EY ₁₄
1981 EG ₂₁	13.0	0.15	19971218	6.16341	247.25141	160.71025	5.98492	0.0895515	3.3883380	23	4	1981–1997	0.92	M-v	1	Williams	28084	1981 EG ₂₁
1981 EM ₂₄	14.0	0.15	19971218	2.62979	50.87279	333.84885	2.84944	0.1002293	2.7900467	19	3	1981–1997	0.89	M-v	4	Williams	22697	1981 EM ₂₄
1981 EB ₂₅	14.0	0.15	19971218	330.50865	136.81764	178.88897	11.57480	0.2377675	2.9854194	22	3	1981–1997	1.03	M-v	4	Williams	30075	1981 EB ₂₅
1981 EP ₂₅	14.0	0.15	19971218	171.42496	274.18968	233.72306	1.48444	0.0902392	2.9007863	17	3	1978–1993	0.76	M-v	4	Williams	24911	1981 EP ₂₅
1981 EX ₂₅	15.5	0.15	19971218	91.61350	129.69052	179.95806	4.08244	0.1136903	2.3714524	36	5	1981–1997	0.92	M-v	1	Williams	27454	1981 EX ₂₅
1981 EX ₂₆	15.0	0.15	19971218	90.40628	79.05396	199.27279	2.98237	0.2507048	2.4227246	37	3	1981–1997	0.87	M-v	4	Williams	30779	1981 EX ₂₆
1981 EV ₂₇	14.5	0.15	19971218	35.47049	180.09181	178.60835	4.89027	0.0628933	2.7916999	20	4	1978–1997	0.75	M-v	2	Williams	21101	1981 EV ₂₇
1981 EQ ₂₈	13.5	0.15	19971218	346.27677	257.99651	157.54716	3.38818	0.1973960	2.7540250	35	5	1981–1997	0.77	M-v	1	Williams	30779	1981 EQ ₂₈
1981 EF ₃₀	14.0	0.15	19971218	278.01265	333.90681	162.58572	6.09326	0.0655351	2.3413255	37	6	1951–1997	0.90	M-v	1	Williams	29132	1981 EF ₃₀
1981 EM ₃₀	14.0	0.15	19971218	32.03378	234.98917	137.57558	2.63940	0.2484401	2.7588891	21	5	1978–1997	0.88	M-v	2	Williams	23132	1981 EM ₃₀
1981 EU ₃₃	15.0	0.15	19971218	73.65799	105.42820	234.20959	5.69335	0.1355845	2.3544410	14	4	1977–1997	1.04	M-v	2	Williams	22697	1981 EU ₃₃
1981 EW ₃₈	15.0	0.15	19971218	204.11482	304.21222	281.82446	4.11745	0.0620166	2.7498302	20	4	1969–1997	0.67	M-v	3	Williams	22697	1981 EW ₃₈
1981 EB ₃₉	16.0	0.15	19971218	128.12025	77.77278	182.58391	8.81132	0.2198486	2.3928305	21	4	1981–1996	1.06	M-v	2	Williams	27118	1981 EB ₃₉
1981 JM ₂	14.5	0.15	19971218	99.75587	66.34065	215.21906	1.65022	0.1791094	2.4294897	33	6	1978–1997	0.62	M-v	1	Williams	28611	1981 JM ₂
1981 KJ	12.5	0.15	19971218	319.55503	263.36648	36.06695	15.21527	0.1471709	3.1278161	27	4	1975–1993	0.71	M-v	2	Williams	22697	1981 KJ
1981 SN	14.0	0.15	19971218	49.90320	155.90205	216.18002	5.17629	0.1570263	2.4835406	38	7	1981–1997	0.81	M-v	3	Marsden	25078	1981 SN
1981 SC ₇	13.5	0.15	19971218	4.06027	344.47696	40.50161	8.64809	0.2421772	2.5307230	24	6	1969–1997	0.79	M-v	3	Williams	30468	1981 SC ₇
1981 UR ₂₇	12.0	0.15	19971218	70.00071	203.08975	13.12194	13.47169	0.1103715	2.6600535	22	6	1949–1997	0.60	M-v	1	Williams	30287	1981 UR ₂₇
1982 BS	13.0	0.15	19971218	352.47181	119.23104	296.38029	12.75415	0.1677235	2.5914917	21	5	1953–1997	0.78	M-v	2	Williams	30780	1982 BS
1982 HO ₁	14.0	0.15	19971218	246.84198	192.59237	61.84466	6.76903	0.1753660	2.2103991	17	4	1982–1993	0.69	M-v	3	Williams	30650	1982 HO ₁
1982 KK ₁	14.0	0.15	19971218	140.29499	204.72261	96.67633	4.97415	0.0980980	2.2739500	22	4	1982–1996	0.55	M-v	2	Williams	30468	1982 KK ₁
1982 SO ₄	13.5	0.15	19971218	12.84076	54.61062	14.34959	7.55281	0.2887010	2.3926017	33	3	1982–1993	0.56	M-v	3	Williams	30468	1982 SO ₄
1982 SM ₆	14.0	0.15	19971218	33.64203	15.78302	6.40003	6.93682	0.1285014	2.3896531	25	4	1982–1997	0.92	M-v	2	Williams	29654	1982 SM ₆
1982 UZ ₂	12.5	0.15	19971218	329.78827	100.78467	188.73298	21.70870	0.1392130	2.2117893	20	4	1982–1993	0.97	M-v	1	Williams	27931	1982 UZ ₂
1982 UA ₇	12.5	0.15	19971218	249.40165	308.24715	67.77805	14.03023	0.1900843	2.5886252	12	4	1961–1993	0.71	M-v	2	Williams	22271	1982 UA ₇
1982 VY ₂	13.0	0.15	19971218	302.69972	353.93334	123.22404	3.01661	0.0519461	2.9295631	33	6	1982–1997	0.76	M-v	1	Williams	29654	1982 VY ₂
1983 RG ₂	14.5	0.15	19971218	31.01478	296.52538	70.21218	6.33802	0.2017925	2.2935578	24	5	1979–1997	0.63	M-v	2	Williams	30287	1983 RG ₂
1983 RP ₂	14.0	0.15	19971218	37.70111	222.85079	150.66367	4.16241	0.1706933	2.2715391	24	4	1983–1997	0.98	M-v	3	Williams	29654	1983 RP ₂
1983 WG	12.5	0.15	19971218	330.03125	29.24722	77.06132	11.29246	0.2181376	2.8032833	30	6	1958–1997	0.92	M-v	1	Williams	29654	1983 WG
1983 WM	13.5	0.15	19971218	337.75552	190.39944	253.44542	5.72363	0.0779318	2.3202610	31	3	1954–1997	1.01	M-v	4	Williams	22968	1983 WM
1983 WN	14.5	0.15	19971218	23.29342	110.80676	251.78586	9.32809	0.2490779	2.3308062	26	5	1951–1997	0.66	M-v	2	Williams	30780	1983 WN
1984 MP	12.5	0.15	19971218	29.17085	36.44635	225.73150	12.70837	0.1505993	2.6870061	48	5	1970–1997	0.80	M-v	2	Marsden	30287	1984 MP
1984 QB	13.0	0.15	19971218	74.17627	354.13804	310.57059	10.20383	0.2197754	2.6164623	17	5	1950–1997	0.88	M-v	2	Williams	28315	1984 QB
1984 QM	14.5	0.15	19971218	46.86508	343.14361	321.51634	3.26938	0.1788237	2.2052305	29	5	1970–1997	0.82	M-v	2	Marsden	30685	1984 QM
1984 SU ₃	14.0	0.15	19971218	37.43385	314.90252	43.39719	5.77132	0.3110004	2.6419163	15	5	1954–1997	0.81	M-v	2	Williams	30287	1984 SU ₃
1984 UD	13.5	0.15	19971218	310.00099	24.11997	27.45624	9.21011	0.2461691	2.7465692	28	4	1984–1996	1.16	M-v	2	Williams	30287	1984 UD
1984 WC ₂	13.5	0.15	19971218	292.73011	140.99618	271.37149	7.71621	0.1478985	2.7903523	25	5	1951–1997	0.45	M-v	1	Williams	30468	1984 WC ₂
1985 CR ₂	14.0	0.15	19971218	317.61532	190.25978	281.23200	0.56679	0.0573660	2.2631548	60	8	1963–1997	0.68	M-v	1	Williams	22599	1985 CR ₂
1985 HH	14.0	0.15	19971218	140.24178	80.18162	157.47901	2.46680	0.1797090	2.3760733	36	4	1982–1997	0.69	M-v	2	Williams	30780	1985 HH
1985 HS ₁	13.5	0.15	19971218	193.09567	31.51916	181.45217	23.24459	0.1988774	2.3228787	36	4	1985–1997	0.76	M-v	1	Williams	27726	1985 HS ₁
1985 JN ₁	14.0	0.15	19971218	189.51668	169.16955	81.51876	6.58392	0.1430834	2.3223207	19	5	1951–1993	0.68	M-v	2	Williams	27726	1985 JN ₁
1985 PN	12.0	0.15	19971218	8.56415	264.68579	152.11105	17.35619	0.1180738	3.1287629	20	4	1985–1997	0.59	M-v	2	Williams	27932	1985 PN
1985 PG ₂	14.0	0.15	19971218	40.88262	335.90723	63.00737	3.89710	0.1715579	2.4361758	48	7	1974–1997	0.83	M-v	2	Williams	25338	1985 PG ₂
1985 QL ₄	12.0	0.15	19971218	115.34577	153.66019	116.76989	6.80859	0.1269904	3.1947994	20	5	1951–1997	0.80	M-v	1	Williams	29655	1985 QL ₄
1985 RQ	15.0	0.15	19971218	24.63701	329.64516	18.44715	6.38707	0.2965514	2.5220823	27	6	1973–1997	0.80	M-v	3	Williams	30780	1985 RQ
1985 UY	12.0	0.15	19971218	321.16257	219.67329	177.92546	9.95230	0.0901190	3.4341111	23	3	1985–1997	0.47	M-v	3	Marsden	30780	1985 UY
1986 CP ₁	13.5	0.15	19971218	252.36270	129.52106	35.77168	4.09824	0.1238350	2.6615441	55	5	1954–1997	0.78	M-v	1	Williams	25225	1986 CP ₁
1986 JC	14.0	0.15	19971218	59.73730	176.28001	101.82387	8.32371	0.2404382	2.3386241	20	6	1954–1997	0.76	M-v	1	Williams	26924	1986 JC
1986 PM	13.5	0.15	19971218	140.45342	334.89503	297.58266	5.27119	0.1731050	2.2789640	13	4	1986–1997	0.95	M-v	2	Williams	25079	1986 PM
1986 PN ₄	11.5	0.15	19971218	43.21848	13.25583	310.87200	15.48513	0.1947737	3.0692990	22	3	1981–1997	0.89	M-v	3	Williams	30780	1986 PN ₄
1986 QZ ₁	12.5	0.15	19971218	336.50078	262.24033	148.82573	10.66438	0.0614068	3.0280306	27	3	1986–1997	0.73	M-v	2	Williams	30651	1986 QZ ₁
1986 QH ₂	13.0	0.15	19971218	354.43909	308.16121	129.55561	7.25424	0.0637899	2.2895675	33	3	1986–1997	0.49	M-v	3	Williams	24911	1986 QH ₂

1986 QS ₃	13.0	0.15	19971218	107.69265	148.43323	141.05652	11.25346	0.0691258	3.0064306	50	6	1986–1997	0.59	M-v	1	Williams	29655	1986 QS ₃
1986 RG ₃	14.5	0.15	19971218	111.49024	152.10395	163.77784	7.95568	0.2594654	2.2866381	19	5	1979–1996	0.90	M-v	2	Williams	30685	1986 RG ₃
1986 UH ₃	14.5	0.15	19971218	259.20933	72.52410	313.19548	0.70449	0.2387989	2.5680488	48	5	1986–1997	0.88	M-v	2	Williams	29940	1986 UH ₃
1986 VY	14.0	0.15	19971218	20.06240	73.60092	338.45367	3.99280	0.2206543	2.3590302	21	5	1962–1997	0.81	M-v	2	Williams	28883	1986 VY
1986 XT	14.0	0.15	19971218	281.33278	18.03592	355.16304	3.30660	0.2959675	2.5597840	51	6	1986–1997	0.76	M-v	2	Williams	29940	1986 XT
1986 XF ₁	14.0	0.15	19971218	36.44681	93.91606	287.58304	2.54310	0.1940605	2.3736458	33	8	1955–1997	0.76	M-v	1	Williams	28883	1986 XF ₁
1987 OT	13.5	0.15	19971218	128.28291	120.85039	173.14654	8.66508	0.2664258	2.7158307	20	4	1977–1996	0.96	M-v	2	Williams	28071	1987 OT
1987 RZ	13.0	0.15	19971218	274.87051	227.39040	125.62368	2.02952	0.2076250	3.1978065	37	6	1981–1996	0.90	M-v	2	Williams	30446	1987 RZ
1987 SU ₁	14.5	0.15	19971218	31.76938	122.12386	254.74629	6.02158	0.1331977	2.2092188	18	4	1954–1997	0.75	M-v	3	Williams	28296	1987 SU ₁
1987 SF ₅	15.0	0.15	19971218	14.88608	74.45471	325.57718	3.23629	0.1477460	2.2151397	24	3	1987–1997	0.64	M-v	4	Williams	24560	1987 SF ₅
1987 SM ₁₂	13.5	0.15	19971218	357.55629	42.43219	340.93723	1.23687	0.0758358	2.9021770	35	4	1980–1997	0.46	M-v	4	Marsden	22078	1987 SM ₁₂
1987 SG ₁₃	14.5	0.15	19971218	352.17661	28.08681	22.43760	4.72353	0.1138774	2.2210480	32	5	1954–1997	0.76	M-v	2	Williams	30780	1987 SG ₁₃
1987 VR	13.0	0.15	19971218	296.65527	218.31720	212.52693	9.00210	0.0756849	3.0618935	47	3	1987–1997	0.54	M-v	3	Williams	30780	1987 VR
1987 WU ₂	13.0	0.15	19971218	34.22754	58.05277	307.05224	9.48220	0.2836664	2.8611993	20	5	1958–1997	0.90	M-v	2	Williams	29655	1987 WU ₂
1987 YU ₁	10.5	0.15	19971218	344.92277	176.47609	227.57843	21.10296	0.1252556	5.1703488	16	3	1986–1997	0.76	M-v	3	Marsden	16428	1987 YU ₁
1988 AA ₂	14.0	0.15	19971218	319.83923	356.81331	92.42133	5.32503	0.1676377	2.3072881	25	3	1988–1997	0.65	M-v	4	Marsden	30755	1988 AA ₂
1988 BM ₃	14.0	0.15	19971218	252.52594	242.73907	298.09908	1.64112	0.1860750	2.3224827	31	3	1988–1995	0.73	M-v	4	Williams	24736	1988 BM ₃
1988 BX ₃	14.0	0.15	19971218	174.20004	359.91553	232.83014	5.73920	0.0687010	2.3478425	25	4	1974–1997	0.35	M-v	1	Williams	28883	1988 BX ₃
1988 CT ₂	14.0	0.15	19971218	59.81174	147.87932	121.98303	3.00979	0.1078864	2.4659790	42	6	1985–1997	0.85	M-v	1	Williams	30469	1988 CT ₂
1988 CY ₂	15.0	0.15	19971218	149.83489	314.95070	332.42538	3.46202	0.0913375	2.2962536	21	2	1988–1993	0.68	M-v	5	Williams	24101	1988 CY ₂
1988 DD	14.0	0.15	19971218	273.81046	28.61630	125.29898	12.28229	0.1731776	2.3218742	45	4	1988–1996	0.70	M-v	2	Williams	28883	1988 DD
1988 FM	13.0	0.15	19971218	115.47222	182.79452	15.22692	13.70978	0.1127217	2.5655817	17	6	1951–1996	0.96	M-v	3	Williams	29133	1988 FM
1988 FS ₂	14.0	0.15	19971218	195.28964	202.45548	8.12920	2.53933	0.1370812	2.4091753	39	4	1988–1997	0.76	M-v	2	Williams	24912	1988 FS ₂
1988 FW ₂	14.0	0.15	19971218	306.75244	289.32515	201.52391	6.11710	0.0660380	2.3306764	28	3	1988–1995	0.93	M-v	4	Williams	25225	1988 FW ₂
1988 GB	16.5	0.15	19971218	154.89698	222.41944	21.87127	19.27976	0.3328923	1.9743607	59	4	1988–1997	0.81	M-v	2	Marsden	27324	1988 GB
1988 GD	13.5	0.15	19971218	173.21561	127.63473	100.51182	5.21338	0.1067982	2.4292877	25	5	1988–1996	0.67	M-v	1	Williams	30686	1988 GD
1988 GL	13.5	0.15	19971218	166.46913	149.19090	67.96565	15.24314	0.1909631	2.4440783	38	4	1988–1996	0.83	M-v	3	Williams	30469	1988 GL
1988 NR	13.0	0.15	19971218	45.35939	85.33652	260.17991	13.58682	0.1503597	2.6165610	29	5	1988–1997	0.72	M-v	1	Williams	29133	1988 NR
1988 NU	14.5	0.15	19971218	55.32132	95.57660	229.53816	4.68972	0.2098014	2.6374968	32	3	1988–1997	0.91	M-v	4	Williams	30780	1988 NU
1988 RZ ₂	14.5	0.15	19971218	112.20346	264.06677	12.69616	4.97741	0.2343795	2.6739655	22	5	1978–1997	0.68	M-v	1	Williams	29941	1988 RZ ₂
1988 RY ₅	13.0	0.15	19971218	331.79238	164.08007	185.22937	1.98778	0.0924103	2.8290415	36	3	1979–1993	0.96	M-v	4	Williams	30469	1988 RY ₅
1988 SZ ₂	13.0	0.15	19971218	210.42384	80.69370	124.45051	2.99298	0.0353061	3.9755698	32	5	1981–1997	0.79	M-v	1	Williams	29656	1988 SZ ₂
1988 TR	12.5	0.15	19971218	34.31209	244.21499	131.06811	3.40927	0.0998910	2.6970258	14	4	1977–1997	0.80	M-v	2	Williams	30447	1988 TR
1988 UO	12.0	0.15	19971218	55.33421	309.36836	31.37623	9.72049	0.1870009	2.7281693	23	3	1988–1997	0.56	M-v	4	Williams	30288	1988 UO
1988 VF ₂	14.0	0.15	19971218	264.33805	303.33273	33.86724	7.49249	0.1622562	2.3188035	21	5	1981–1997	0.83	M-v	2	Williams	29316	1988 VF ₂
1988 XG ₂	13.5	0.15	19971218	344.34409	180.60975	264.87514	7.09156	0.1955476	2.7985055	28	7	1954–1997	0.93	M-v	1	Williams	27728	1988 XG ₂
1989 CD ₈	11.5	0.15	19971218	359.87411	132.45820	263.20009	9.32314	0.1065210	3.0127489	33	6	1982–1997	0.62	M-v	1	Williams	27566	1989 CD ₈
1989 EG ₁	14.5	0.15	19971218	238.10002	4.36089	159.07026	5.46109	0.1026626	2.2301656	42	4	1989–1997	0.74	M-v	2	Williams	27566	1989 EG ₁
1989 GE	13.5	0.15	19971218	153.75941	205.49289	52.98759	7.89631	0.1880998	2.2681168	22	4	1989–1997	1.00	M-v	2	Williams	29657	1989 GE
1989 LT	14.0	0.15	19971218	105.10572	247.76040	0.84118	1.69681	0.1440426	2.4115061	38	5	1989–1997	0.82	M-v	1	Williams	30686	1989 LT
1989 PU	14.0	0.15	19971218	18.44404	193.93909	138.05154	29.67753	0.2454902	2.5386315	42	3	1989–1997	0.96	M-v	3	Williams	30781	1989 PU
1989 QV	13.0	0.15	19971218	80.75930	37.05915	24.75040	23.56511	0.1331131	3.1661454	21	3	1989–1996	0.79	M-v	3	Williams	29134	1989 QV
1989 RD ₁	13.0	0.15	19971218	314.40217	261.31638	87.07398	13.28447	0.1936440	2.6662137	17	2	1989–1997	0.70	M-v	3	Williams	29913	1989 RD ₁
1989 SE	14.5	0.15	19971218	13.83291	347.10378	8.11770	7.62673	0.2900371	2.5460058	25	4	1981–1997	0.82	M-v	3	Williams	30686	1989 SE
1989 SU	13.5	0.15	19971218	43.56710	31.75014	292.30285	4.10791	0.2372954	2.5314201	24	3	1989–1997	0.84	M-v	5	Williams	30781	1989 SU
1989 SX	14.5	0.15	19971218	3.01682	354.81096	27.91745	6.68591	0.3017705	2.5573751	65	4	1989–1997	0.92	M-v	3	Williams	30686	1989 SX
1989 SS ₁	15.5	0.15	19971218	40.36973	256.84357	61.63397	3.72385	0.2691220	2.5454669	30	4	1981–1997	0.95	M-v	3	Williams	30289	1989 SS ₁
1989 SN ₄	13.5	0.15	19971218	152.29812	52.66574	157.28831	4.25429	0.1287223	2.6008277	39	5	1979–1997	1.01	M-v	3	Williams	30781	1989 SN ₄
1989 TM ₁	13.5	0.15	19971218	321.61515	38.23832	21.95981	9.92520	0.1659632	2.5959870	23	3	1989–1997	0.70	M-v	3	Williams	30781	1989 TM ₁
1989 TL ₁₅	14.0	0.15	19971218	347.00499	87.55309	322.59457	1.42368	0.1503602	2.5252787	33	7	1969–1997	0.82	M-v	4	Williams	30781	1989 TL ₁₅
1989 UA	13.0	0.15	19971218	350.44924	7.10194	45.59903	10.77220	0.0979392	2.5456016	41	5	1954–1997	0.69	M-v	2	Williams	25226	1989 UA
1989 UK ₁	14.0	0.15	19971218	332.05196	225.07909	217.77037	11.60827	0.2740123	2.5576289	30	3	1989–1997	0.82	M-v	4	Williams	30781	1989 UK ₁
1989 UL ₁	12.5	0.15	19971218	47.63576	293.80076	44.59959	10.25844	0.1123665	2.5594675	37	5	1971–1997	0.83	M-v	3	Williams	27325	1989 UL ₁

1989 UB ₃	14.0	0.15	19971218	328.65077	19.61669	61.46607	5.42441	0.2585742	2.5708307	42	4	1989–1997	0.93	M-v	3	Williams	30781	1989 UB ₃
1989 UG ₃	13.5	0.15	19971218	326.15523	320.02546	87.87426	4.91086	0.1614577	2.6108925	27	4	1982–1993	0.63	M-v	2	Williams	30289	1989 UG ₃
1989 UW ₅	14.5	0.15	19971218	345.46867	349.82770	58.23615	4.64566	0.2241005	2.5604104	20	3	1989–1996	0.73	M-v	5	Williams	30289	1989 UW ₅
1989 UA ₆	12.0	0.15	19971218	109.84671	214.58485	58.31004	3.64289	0.1653487	3.9689091	27	5	1977–1997	0.75	M-v	1	Williams	29657	1989 UA ₆
1989 VA	17.5	0.15	19971218	187.24660	2.78738	225.65404	28.78557	0.5947055	0.7286728	120	5	1989–1997	0.67	M-v	3	Marsden	29941	1989 VA
1989 WA ₂	12.5	0.15	19971218	18.99496	315.37913	72.05784	16.29168	0.1450627	2.5666322	50	5	1989–1997	0.71	M-v	2	Williams	27325	1989 WA ₂
1990 BE ₁	13.0	0.15	19971218	7.78460	278.94563	125.66630	12.41675	0.2910825	2.6266141	19	4	1984–1997	0.64	M-v	2	Williams	23237	1990 BE ₁
1990 DW ₂	12.0	0.15	19971218	7.41877	261.97351	338.00068	1.95850	0.0251819	3.3651232	28	5	1978–1994	0.73	M-v	1	Williams	25649	1990 DW ₂
1990 QE ₂	14.5	0.15	19971218	113.85912	310.56591	335.44372	5.01919	0.1599429	2.2291213	18	4	1980–1997	0.80	M-v	2	Williams	29298	1990 QE ₂
1990 QC ₃	15.0	0.15	19971218	1.09826	227.46684	162.81234	3.47089	0.1885154	2.2994884	43	3	1990–1997	0.67	M-v	3	Williams	30470	1990 QC ₃
1990 QW ₁₇	13.5	0.15	19971218	36.06448	70.81926	288.79210	4.66353	0.2113791	2.2637668	17	3	1990–1997	0.54	M-v	4	Williams	24563	1990 QW ₁₇
1990 RR ₅	14.0	0.15	19971218	28.38908	175.23456	210.07469	1.67562	0.1437548	2.2645389	24	3	1973–1997	0.66	M-v	2	Williams	30756	1990 RR ₅
1990 SK	14.5	0.15	19971218	16.11318	326.48598	47.17547	26.06489	0.2689359	2.2884642	21	4	1976–1997	0.54	M-v	3	Williams	22699	1990 SK
1990 SG ₃	14.0	0.15	19971218	59.98995	197.48446	131.18848	4.04501	0.1906305	2.2874395	17	5	1983–1997	0.74	M-v	2	Williams	30781	1990 SG ₃
1990 SX ₅	15.5	0.15	19971218	0.20766	342.59187	51.10405	2.38517	0.1601056	2.3099363	21	3	1990–1997	0.52	M-v	3	Marsden	24564	1990 SX ₅
1990 SM ₆	13.5	0.15	19971218	306.31596	72.73285	31.11115	4.39414	0.0645176	2.2767143	37	7	1983–1997	0.84	M-v	1	Williams	24912	1990 SM ₆
1990 SZ ₇	14.0	0.15	19971218	283.12167	99.74743	40.62668	6.54483	0.1063093	2.2415938	22	3	1990–1997	0.59	M-v	3	Williams	19866	1990 SZ ₇
1990 SK ₁₁	14.0	0.15	19971218	33.33246	106.93587	271.31645	2.41591	0.1087678	2.2584114	35	6	1987–1997	0.86	M-v	2	Williams	27454	1990 SK ₁₁
1990 SL ₂₇	14.0	0.15	19971218	19.85102	209.73982	169.33612	3.52253	0.1517729	2.2885394	16	4	1983–1997	0.69	M-v	3	Williams	30654	1990 SL ₂₇
1990 TX	14.0	0.15	19971218	6.50695	298.62556	76.01238	4.46861	0.2666719	2.3409287	42	4	1965–1997	0.62	M-v	2	Williams	30687	1990 TX
1990 TB ₁	14.0	0.15	19971218	97.41115	301.34829	0.08467	7.80141	0.1431709	2.2812868	25	4	1990–1997	0.62	M-v	1	Williams	27325	1990 TB ₁
1990 TK ₃	12.5	0.15	19971218	263.85475	1.55763	32.56842	17.09314	0.1747732	2.5814451	43	5	1990–1997	0.83	M-v	2	Williams	30289	1990 TK ₃
1990 TK ₄	15.5	0.15	19971218	305.75793	237.96219	228.77325	2.95303	0.1248705	2.3229695	17	2	1990–1997	0.63	M-v	5	Williams	30756	1990 TK ₄
1990 TK ₈	12.5	0.15	19971218	314.26460	171.95596	42.97565	10.83570	0.0670210	3.0244541	36	7	1988–1997	0.69	M-v	1	Williams	29658	1990 TK ₈
1990 TF ₁₃	13.0	0.15	19971218	79.93128	59.84341	85.31018	10.09915	0.1035515	2.7815848	17	3	1990–1997	0.66	M-v	3	Williams	29942	1990 TF ₁₃
1990 TK ₁₅	13.0	0.15	19971218	352.32921	38.70455	342.49429	6.30338	0.1279909	2.3693515	22	4	1950–1997	0.47	M-v	2	Williams	30687	1990 TK ₁₅
1990 UA ₁	12.0	0.15	19901105	318.10812	220.78615	237.00889	12.05239	0.1287465	2.6702099	16	1	36 days	0.91			Williams		1990 UA ₁
1990 UD ₁	14.0	0.15	19901016	26.30643	39.10569	320.68909	2.81585	0.2069589	3.0071665	14	1	24 days	1.19			Williams		1990 UD ₁
1990 UF ₂	14.0	0.15	19971218	264.58852	338.01758	205.55055	6.89658	0.1360001	2.2556240	27	6	1980–1997	0.99	M-v	2	Williams	25080	1990 UF ₂
1990 UB ₃	14.5	0.15	19971218	352.47933	99.62183	353.79821	2.39817	0.1650031	2.2710313	22	2	1990–1995	0.71	M-v	5	Williams	25440	1990 UB ₃
1990 UC ₃	11.5	0.15	19901105	223.58596	273.59689	281.48849	4.82228	0.1977673	2.7882754	8	1	36 days	1.48			Williams		1990 UC ₃
1990 UU ₃	13.5	0.15	19971218	335.26890	99.55903	189.28535	11.89810	0.1698318	2.6333903	21	4	1976–1997	0.46	M-v	2	Williams	29914	1990 UU ₃
1990 VD ₃	14.0	0.15	19971218	247.10557	228.05851	277.50099	3.23402	0.0615138	2.3726137	14	2	1990–1992	0.73	M-v	4	Williams	21575	1990 VD ₃
1990 VE ₃	15.0	0.15	19901105	30.60526	333.36502	25.22737	6.50986	0.2103405	2.2774886	5	1	12 days	0.54			Williams		1990 VE ₃
1990 VN ₄	14.5	0.15	19971218	108.36880	349.72003	205.92384	12.60020	0.1155020	2.6420307	31	2	1990–1997	0.53	M-v	4	Williams	30273	1990 VN ₄
1990 VZ ₄	13.0	0.15	19971218	277.02516	97.61553	188.39444	9.99417	0.0996590	2.9192037	21	3	1989–1993	0.79	M-v	4	Williams	29942	1990 VZ ₄
1990 VQ ₆	13.0	0.15	19971218	191.79301	237.38568	118.55594	10.62538	0.0839186	2.9915028	42	4	1990–1997	0.64	M-v	1	Williams	29134	1990 VQ ₆
1990 VF ₈	13.0	0.15	19901016	32.70063	326.58875	25.28341	8.35672	0.1779669	2.7370705	8	1	28 days	0.84		D	Williams		1990 VF ₈
1990 VR ₈	14.5	0.15	19971218	324.64275	87.67480	87.08551	3.81798	0.0950801	2.1498239	23	5	1949–1995	0.77	M-v	2	Williams	27934	1990 VR ₈
1990 WB ₂	14.0	0.15	19971218	241.59400	61.38149	110.20462	7.28604	0.1456085	2.3641315	27	5	1977–1997	0.72	M-v	2	Williams	29658	1990 WB ₂
1990 WX ₃	14.0	0.15	19971218	72.03641	307.00807	95.79625	6.69408	0.1688147	2.2085441	27	4	1980–1995	0.72	M-v	2	Williams	28844	1990 WX ₃
1991 AV ₂	14.5	0.15	19971218	284.95502	188.69811	319.61999	1.56943	0.1450970	2.4176916	38	3	1991–1997	0.75	M-v	4	Williams	29135	1991 AV ₂
1991 CL	12.5	0.15	19971218	149.46556	49.69156	128.77687	13.94381	0.1548979	2.7716197	19	3	1989–1993	0.54	M-v	3	Williams	28845	1991 CL
1991 CU	13.0	0.15	19971218	4.65539	214.10428	140.63236	9.97832	0.0941020	2.5823550	28	4	1981–1997	0.46	M-v	3	Williams	30687	1991 CU
1991 DK	11.5	0.15	19971218	18.18086	19.51801	357.18462	15.64928	0.1430087	2.5786995	59	5	1972–1997	0.60	M-v	2	Williams	30781	1991 DK
1991 DY	13.0	0.15	19971218	188.12901	341.81752	188.80475	7.09600	0.1437971	2.6695485	23	3	1991–1996	0.80	M-v	4	Williams	27455	1991 DY
1991 DK ₁	12.5	0.15	19971218	166.88506	179.15177	29.26687	6.64501	0.0384336	5.1950788	31	4	1991–1997	0.50	M-v	1	Williams	30781	1991 DK ₁
1991 EL ₄	13.5	0.15	19971218	123.26082	86.58100	181.56266	12.82031	0.1691829	2.6713904	35	4	1991–1997	0.60	M-v	1	Williams	27325	1991 EL ₄
1991 FK ₁	13.5	0.15	19971218	317.90018	270.74877	218.00696	21.18300	0.2881914	2.3946385	33	4	1991–1997	0.73	M-v	2	Marsden	27934	1991 FK ₁
1991 GQ	12.5	0.15	19971218	108.99324	298.11006	219.53042	15.62686	0.0656663	3.1797427	27	6	1988–1997	0.82	M-v	1	Marsden	30091	1991 GQ
1991 GB ₁	14.0	0.15	19971218	112.41013	221.88321	24.16307	20.99472	0.0439458	1.9619364	40	5	1989–1997	0.80	M-v	2	Williams	26757	1991 GB ₁
1991 GJ ₁	13.0	0.15	19971218	276.80119	97.04974	35.24917	13.76036	0.1360479	2.5797042	36	4	1989–1997	0.56	M-v	2	Williams	28614	1991 GJ ₁
1991 GH ₃	13.5	0.15	19971218	325.86236	189.40005	255.04078	0.95026	0.1366198	2.5639384	31	5	1989–1997	0.87	M-v	2	Williams	29658	1991 GH ₃

1991 PT ₈	13.5	0.15	19971218	336.19312	280.90092	154.87452	11.80620	0.1152445	2.9824201	21	5	1991–1997	0.65	M-v	1	Williams	30781	1991 PT ₈
1991 PZ ₁₁	12.5	0.15	19971218	264.14890	284.18785	305.18368	11.59351	0.1291463	2.6499854	18	5	1991–1997	0.63	M-v	1	Williams	26580	1991 PZ ₁₁
1991 QG	14.0	0.15	19971218	64.18968	162.10809	199.92148	7.39123	0.3982172	3.0139955	37	7	1986–1997	0.81	M-v	2	Marsden	27935	1991 QG
1991 RP ₂	12.5	0.15	19971218	168.69104	47.86657	213.10743	9.40169	0.0554252	3.0013955	43	4	1989–1997	0.59	M-v	1	Williams	28846	1991 RP ₂
1991 RS ₂	14.0	0.15	19971218	199.49129	242.35257	210.35187	6.47803	0.0648345	2.3059755	31	2	1991–1997	0.63	M-v	4	Marsden	30290	1991 RS ₂
1991 RV ₃	13.0	0.15	19971218	147.86472	292.96643	340.88300	9.05585	0.0719757	3.0592565	26	6	1951–1997	0.74	M-v	1	Williams	28086	1991 RV ₃
1991 RE ₇	11.5	0.15	19971218	96.93783	280.21513	8.01017	17.59274	0.1591340	3.1760409	18	3	1991–1997	0.66	M-v	2	Williams	25214	1991 RE ₇
1991 RA ₁₅	13.5	0.15	19971218	98.37233	134.06183	146.01167	0.08382	0.1545735	3.1630558	34	6	1984–1997	0.84	M-v	1	Williams	30782	1991 RA ₁₅
1991 RP ₁₅	12.5	0.15	19971218	4.77004	14.43181	47.64022	1.45271	0.1416034	3.0748039	27	8	1975–1996	0.79	M-v	1	Williams	29659	1991 RP ₁₅
1991 RU ₁₇	13.5	0.15	19971218	290.41474	179.28362	191.25619	3.30764	0.0298084	2.2458489	24	5	1985–1997	1.88	M-v	3	Marsden	30290	1991 RU ₁₇
1991 RJ ₂₂	14.0	0.15	19971218	6.46869	214.51219	120.63599	4.48088	0.2112964	2.1454554	28	3	1991–1997	0.63	M-v	4	Williams	29659	1991 RJ ₂₂
1991 RO ₂₃	11.5	0.15	19971218	33.96980	351.28067	8.32410	16.03040	0.1377596	3.1664479	22	4	1972–1997	0.63	M-v	2	Williams	30782	1991 RO ₂₃
1991 SL ₂	12.0	0.15	19971218	13.93435	327.10993	68.25708	10.26769	0.1409589	3.1766149	16	5	1980–1997	0.77	M-v	1	Williams	28086	1991 SL ₂
1991 TE ₅	12.5	0.15	19971218	257.59579	295.87421	15.38396	13.99707	0.0909305	2.5450441	29	6	1969–1997	0.66	M-v	2	Williams	29135	1991 TE ₅
1991 WA	17.0	0.15	19971218	53.83124	241.76496	66.74975	39.65331	0.6426634	1.5751670	142	6	1991–1997	0.68	M-v	3	Marsden	29660	1991 WA
1992 AB	14.0	0.15	19971218	344.11715	55.61000	88.90039	40.75554	0.5526003	3.2875596	53	6	1992–1997	0.60	M-v	1	Marsden	30782	1992 AB
1992 BG	13.5	0.15	19971218	168.29971	58.41022	147.14193	9.89565	0.1537134	2.3295134	30	4	1985–1997	0.66	M-v	2	Williams	30782	1992 BG
1992 BO	13.5	0.15	19971218	187.54380	213.20438	19.56565	4.76553	0.1105624	2.2422004	24	4	1950–1997	0.78	M-v	2	Williams	28316	1992 BO
1992 CD ₁	13.5	0.15	19971218	229.22132	311.03207	187.96671	2.91648	0.1290034	2.3633357	34	3	1992–1997	0.84	M-v	4	Williams	30470	1992 CD ₁
1992 CA ₂	14.0	0.15	19971218	291.59945	330.14358	139.83345	4.27862	0.0537204	2.2658073	29	7	1951–1997	0.73	M-v	1	Williams	27935	1992 CA ₂
1992 CN ₃	14.5	0.15	19971218	229.74778	332.36076	213.98099	3.29480	0.0854187	2.2193743	26	5	1969–1997	0.83	M-v	2	Williams	30782	1992 CN ₃
1992 DA	13.5	0.15	19971218	194.53435	164.67723	27.70918	3.71465	0.1685060	2.3409687	23	5	1954–1997	0.84	M-v	2	Williams	28886	1992 DA
1992 DN ₆	13.0	0.15	19971218	67.77676	185.05964	136.95888	3.12522	0.2407703	2.3653639	20	4	1986–1997	0.60	M-v	2	Williams	27455	1992 DN ₆
1992 DA ₉	14.0	0.15	19971218	137.55914	298.20930	9.73995	7.75260	0.1770414	2.2261910	21	3	1989–1993	0.74	M-v	4	Williams	30290	1992 DA ₉
1992 DB ₉	14.0	0.15	19971218	52.38350	306.26235	11.51793	7.31608	0.1055126	2.4021904	16	3	1992–1997	0.61	M-v	3	Williams	27326	1992 DB ₉
1992 DC ₁₀	13.5	0.15	19971218	29.05215	95.57160	261.99073	3.66955	0.0717538	2.3178779	28	5	1976–1997	0.79	M-v	2	Williams	30782	1992 DC ₁₀
1992 EK ₁	13.5	0.15	19971218	215.55348	282.27367	334.24572	6.14624	0.1017127	2.1781138	28	5	1990–1996	0.74	M-v	1	Williams	28316	1992 EK ₁
1992 EA ₇	14.0	0.15	19971218	106.40001	249.70736	31.38423	6.90388	0.1616325	2.3791858	21	6	1952–1997	0.69	M-v	1	Williams	30782	1992 EA ₇
1992 EQ ₉	14.0	0.15	19971218	331.02883	243.43546	194.07750	2.57716	0.1196518	2.2356662	24	3	1977–1997	0.58	M-v	2	Williams	30274	1992 EQ ₉
1992 HL ₄	14.0	0.15	19971218	210.28604	207.33063	24.19936	8.21305	0.1401048	2.2885853	17	4	1979–1993	0.76	M-v	2	Williams	25427	1992 HL ₄
1992 JQ	13.5	0.15	19971218	109.99001	54.33890	184.69194	12.34408	0.1826327	2.6184248	31	3	1992–1996	0.72	M-v	3	Williams	29660	1992 JQ
1992 JD ₃	14.0	0.15	19971218	248.06175	158.94921	48.20604	6.63328	0.1125861	2.2677298	25	5	1971–1993	1.06	M-v	3	Williams	27913	1992 JD ₃
1992 KQ	12.5	0.15	19971218	62.34032	201.43757	103.69423	14.87691	0.1756766	2.6636415	25	4	1987–1997	0.67	M-v	2	Williams	30688	1992 KQ
1992 LK	14.0	0.15	19971218	178.13269	224.80073	75.53171	6.46032	0.2265701	2.2932344	24	3	1982–1997	0.62	M-v	3	Williams	25441	1992 LK
1992 LN	13.5	0.15	19971218	210.06768	123.78468	88.74837	7.42292	0.0647894	2.3807455	39	3	1992–1995	0.59	M-v	3	Williams	25227	1992 LN
1992 NS	13.5	0.15	19971218	90.48950	64.23496	218.36320	10.89498	0.1805512	2.6627794	29	3	1992–1997	0.91	M-v	3	Williams	30782	1992 NS
1992 OY ₇	13.0	0.15	19971218	19.02313	50.79506	278.50566	8.75691	0.2712796	2.8729169	30	2	1992–1997	0.81	M-v	4	Williams	30657	1992 OY ₇
1992 RZ	13.0	0.15	19971218	306.83577	162.80117	280.49898	0.94965	0.0280639	2.8799471	21	3	1978–1997	0.60	M-v	5	Williams	23869	1992 RZ
1992 SQ ₂₄	13.0	0.15	19971218	210.02782	308.45858	204.04017	10.11299	0.0509275	2.9910488	25	4	1987–1997	0.77	M-v	4	Williams	25428	1992 SQ ₂₄
1992 TA	17.0	0.15	19971218	340.54714	80.54330	355.39351	26.00717	0.2888699	1.8501615	47	3	1992–1997	0.72	M-v	2	Williams	30782	1992 TA
1992 TW	14.0	0.15	19971218	359.70781	189.42263	188.51966	10.67812	0.1116617	2.9752068	34	4	1992–1997	0.56	M-v	1	Williams	27446	1992 TW
1992 TX	12.5	0.15	19971218	23.24336	354.39975	17.14028	1.86701	0.0856617	2.8787304	31	6	1987–1997	0.79	M-v	2	Williams	27455	1992 TX
1992 UZ ₂	13.5	0.15	19971218	9.30677	338.28243	70.18984	3.12554	0.0694872	2.8991824	35	7	1955–1997	0.74	M-v	1	Williams	29661	1992 UZ ₂
1992 UE ₃	13.0	0.15	19971218	5.99812	326.36333	87.93674	3.09141	0.0680488	2.8525164	21	5	1983–1997	0.55	M-v	1	Williams	29661	1992 UE ₃
1992 UM ₃	12.0	0.15	19971218	289.00918	232.56285	239.59576	9.07402	0.0645928	3.0182466	39	4	1992–1997	0.62	M-v	1	Williams	29661	1992 UM ₃
1992 UP ₆	12.0	0.15	19971218	23.76013	154.14213	218.66725	12.80886	0.1609043	2.9724593	19	4	1982–1997	1.03	M-v	4	Williams	29661	1992 UP ₆
1992 WL	12.0	0.15	19971218	280.24930	79.23159	46.63339	10.78046	0.0414053	3.0212476	33	5	1954–1997	0.78	M-v	1	Williams	29943	1992 WL
1992 WS ₂	12.0	0.15	19971218	69.16939	279.27879	23.38219	1.11994	0.1719002	3.1405856	28	7	1975–1997	0.94	M-v	1	Williams	25641	1992 WS ₂
1992 WP ₃	12.5	0.15	19971218	9.52125	102.80574	281.02053	9.50013	0.1215241	3.0503962	19	7	1949–1997	0.88	M-v	2	Williams	28887	1992 WP ₃
1992 WH ₈	14.5	0.15	19971218	283.64579	329.09917	2.37972	1.00560	0.1104672	2.1628993	36	7	1956–1997	0.89	M-v	2	Williams	29943	1992 WH ₈
1992 YC ₁	13.0	0.15	19971218	254.86286	93.95296	83.20455	2.51880	0.1341124	3.1288050	23	3	1992–1997	0.68	M-v	4	Williams	27915	1992 YC ₁
1992 YH ₂	13.0	0.15	19971218	356.73504	322.58929	86.81216	10.48848	0.0644201	3.1763319	23	4	1982–1997	0.62	M-v	2	Marsden	30782	1992 YH ₂
1992 YS ₂	12.5	0.15	19971218	352.65626	13.76931	78.07107	3.20970	0.0377519	2.9277642	24	3	1991–1997	0.74	M-v	4	Williams	21977	1992 YS ₂

1992 YE ₃	11.5	0.15	19971218	261.47984	57.16745	105.05402	12.11967	0.1297706	3.1581338	29	4	1983–1997	0.75	M-v	1	Williams	23520	1992 YE ₃
1993 BC ₅	12.5	0.15	19971218	345.37413	282.93644	155.24867	0.49574	0.1626988	3.2233919	32	3	1993–1997	0.67	M-v	4	Williams	28317	1993 BC ₅
1993 CK ₁	13.5	0.15	19971218	35.09813	155.44010	29.28569	8.57548	0.1266865	2.5808017	16	3	1956–1995	0.53	M-v	4	Williams	26421	1993 CK ₁
1993 DJ	14.0	0.15	19971218	223.73401	74.74833	141.62301	23.56982	0.0469801	1.9289860	28	3	1993–1997	0.75	M-v	3	Williams	27936	1993 DJ
1993 FB ₂₄	14.5	0.15	19971218	46.40239	336.05273	353.95680	4.82066	0.1811689	2.1871075	23	4	1981–1997	0.59	M-v	2	Williams	27105	1993 FB ₂₄
1993 FV ₃₁	14.0	0.15	19971218	136.74244	32.28806	107.23531	3.31699	0.0411897	2.4330208	44	3	1993–1997	0.86	M-v	2	Marsden	30092	1993 FV ₃₁
1993 FW ₃₁	11.0	0.15	19971218	160.48241	306.45883	32.37447	10.94035	0.0890706	3.1776468	14	3	1989–1995	0.54	M-v	3	Williams	25975	1993 FW ₃₁
1993 HS	14.0	0.15	19971218	116.51947	245.49519	20.74047	2.75205	0.1222457	2.1808517	31	5	1991–1997	0.71	M-v	2	Williams	29944	1993 HS
1993 KO	14.0	0.15	19971218	150.23069	25.50196	198.76040	5.73433	0.1187975	2.2212551	33	4	1987–1997	0.85	M-v	2	Williams	30758	1993 KO
1993 MB	14.0	0.15	19971218	19.44114	63.58719	203.75647	13.26907	0.1848582	2.6773509	30	3	1949–1997	0.83	M-v	2	Williams	30688	1993 MB
1993 OV ₁	16.5	0.15	19971218	95.19770	323.37089	310.99697	11.18784	0.4373527	2.3377899	68	4	1975–1997	0.77	M-v	2	Marsden	26927	1993 OV ₁
1993 OM ₃	14.5	0.15	19971218	187.08333	92.97330	120.63313	6.40366	0.1090923	2.2336234	33	5	1986–1997	0.74	M-v	2	Williams	28888	1993 OM ₃
1993 OO ₃	15.5	0.15	19971218	30.77816	62.60924	299.46284	1.38944	0.2177137	2.3731110	18	4	1975–1997	0.58	M-v	1	Williams	25441	1993 OO ₃
1993 OW ₃	14.0	0.15	19971218	49.41479	201.11100	127.48039	3.21313	0.2176428	2.3927968	28	4	1977–1997	0.68	M-v	1	Williams	30660	1993 OW ₃
1993 OD ₈	15.5	0.15	19971218	80.83916	64.07202	282.82392	2.85173	0.2201461	2.2390213	17	2	1990–1993	0.83	M-v	5	Williams	24394	1993 OD ₈
1993 OQ ₈	15.5	0.15	19971218	28.98105	247.20663	108.89118	2.23670	0.1983786	2.3857895	28	5	1984–1997	0.98	M-v	2	Williams	30758	1993 OQ ₈
1993 ON ₉	14.0	0.15	19971218	332.39907	168.40444	284.96188	3.04064	0.1221443	2.2085153	54	5	1982–1997	0.81	M-v	2	Williams	25651	1993 ON ₉
1993 PB	16.5	0.15	19971218	299.53158	212.22417	316.02858	40.87474	0.6070735	1.4236346	80	3	1993–1997	0.58	M-v	4	Marsden	30782	1993 PB
1993 PZ ₂	12.0	0.15	19971218	187.55195	120.05348	220.92442	4.84918	0.2638049	3.9421066	30	6	1978–1994	0.86	M-v	1	Williams	29662	1993 PZ ₂
1993 PU ₇	13.5	0.15	19971218	266.88398	96.42961	330.64549	1.81200	0.0532351	2.7093557	13	4	1926–1993	0.69	M-v	2	Williams	29103	1993 PU ₇
1993 QN ₄	14.5	0.15	19971218	1.99267	283.41234	143.06367	6.29447	0.1989215	2.3782086	19	4	1975–1997	1.10	M-v	2	Williams	29618	1993 QN ₄
1993 QX ₄	12.5	0.15	19971218	238.90911	322.17082	160.37823	15.33109	0.0499729	2.5632520	25	4	1975–1997	0.63	M-v	2	Williams	30688	1993 QX ₄
1993 QA ₉	14.5	0.15	19971218	97.86097	132.70261	140.91471	3.13989	0.1796608	2.4432156	24	2	1993–1997	0.54	M-v	5	Williams	30758	1993 QA ₉
1993 RE	14.0	0.15	19971218	10.48667	146.67931	256.56412	1.72622	0.1672940	2.4333556	61	6	1982–1997	0.87	M-v	1	Williams	30471	1993 RE
1993 RR	16.0	0.15	19971218	358.47962	36.82473	4.01993	7.49179	0.3467363	2.5682132	59	3	1993–1997	0.61	M-v	2	Williams	30759	1993 RR
1993 RS	14.0	0.15	19930910	324.59556	45.80561	351.65686	22.49698	0.0478475	1.8835541	16	1	22 days	1.35			Williams		1993 RS
1993 RC ₂	14.0	0.15	19971218	352.41964	37.36358	4.02231	13.31084	0.2829874	2.5499414	19	3	1989–1997	0.85	M-v	4	Williams	30688	1993 RC ₂
1993 RF ₂	14.5	0.15	19971218	119.33277	325.75825	353.88937	4.80956	0.1827817	2.2585664	27	2	1976–1993	0.75	M-v	5	Williams	30471	1993 RF ₂
1993 RH ₂	14.5	0.15	19971218	26.26257	349.08232	3.39520	14.11543	0.2015453	2.5308582	30	4	1985–1997	0.65	M-v	3	Williams	30471	1993 RH ₂
1993 RM ₂	14.0	0.15	19930930	327.09961	224.65166	195.14631	23.82407	0.2756516	2.3852106	10	1	35 days	0.87			Williams		1993 RM ₂
1993 RJ ₃	15.5	0.15	19930910	353.67926	124.01847	243.37238	6.35433	0.1613819	2.2313447	6	1	7 days	0.65			Williams		1993 RJ ₃
1993 RZ ₃	14.5	0.15	19930910	111.26440	249.87905	344.21434	3.85539	0.1410533	2.2919236	15	1	8 days	1.35			Williams		1993 RZ ₃
1993 RD ₄	14.5	0.15	19930910	301.72987	96.81693	339.71732	3.92113	0.1732441	2.6506752	18	1	8 days	0.92			Williams		1993 RD ₄
1993 RE ₄	14.0	0.15	19930910	1.36208	12.45876	346.09787	5.41066	0.1463843	3.2218923	14	1	8 days	0.87			Williams		1993 RE ₄
1993 RF ₄	16.0	0.15	19930910	338.29094	188.32037	199.02017	2.26383	0.1595850	2.2921916	18	1	8 days	0.78			Williams		1993 RF ₄
1993 RH ₄	14.5	0.15	19930910	46.08638	315.58606	350.08467	4.43296	0.0899382	2.6811573	17	1	8 days	0.88			Williams		1993 RH ₄
1993 RJ ₄	14.5	0.15	19930910	324.94269	55.41861	346.20795	3.52055	0.0984376	2.6016677	17	1	8 days	0.89			Williams		1993 RJ ₄
1993 RL ₄	14.5	0.15	19930910	61.79892	48.66531	241.80489	2.19204	0.0706401	2.4094974	15	1	8 days	0.83			Williams		1993 RL ₄
1993 RM ₄	15.0	0.15	19930910	35.81747	62.27105	237.26264	1.77706	0.2719232	2.9036693	15	1	8 days	1.03			Williams		1993 RM ₄
1993 RN ₄	12.5	0.15	19930910	89.80624	73.58361	184.38897	23.68227	0.1205891	3.2537270	14	1	8 days	1.60		E	Williams		1993 RN ₄
1993 RO ₄	15.0	0.15	19930910	313.71717	237.66327	196.96863	5.35259	0.2771682	2.7463044	11	1	7 days	1.37		E	Williams		1993 RO ₄
1993 RP ₄	16.0	0.15	19930910	34.77501	116.44343	197.65987	4.69981	0.1324759	2.4028338	14	1	8 days	0.80		E	Williams		1993 RP ₄
1993 RR ₄	16.5	0.15	19930910	349.75646	127.17067	245.56077	1.39433	0.2068774	2.2496929	12	1	8 days	1.36		E	Williams		1993 RR ₄
1993 RT ₄	16.5	0.15	19930910	23.12278	86.82613	237.28738	1.21410	0.1806173	2.2368622	14	1	8 days	1.18		E	Williams		1993 RT ₄
1993 RV ₄	15.5	0.15	19930910	15.01519	75.14433	265.49934	0.84510	0.0725196	2.1437817	18	1	8 days	1.26		E	Williams		1993 RV ₄
1993 RW ₄	13.0	0.15	19930910	281.76298	253.07838	214.03349	1.42549	0.2380879	3.0975587	16	1	8 days	1.18		E	Williams		1993 RW ₄
1993 RX ₄	14.0	0.15	19930910	263.44394	285.13281	188.35311	12.23766	0.1499537	2.4869708	16	1	8 days	0.71		E	Williams		1993 RX ₄
1993 RY ₄	15.5	0.15	19930910	326.75129	60.01930	339.84385	4.65811	0.1089056	2.2951415	12	1	7 days	1.31		E	Williams		1993 RY ₄
1993 RZ ₄	14.0	0.15	19930910	141.07910	215.70422	353.62550	4.92056	0.1728862	2.3911424	10	1	3 days	1.08		E	Williams		1993 RZ ₄
1993 RB ₅	14.5	0.15	19930910	29.83996	119.57849	193.95966	1.33236	0.2238303	2.9554731	16	1	8 days	0.91		E	Williams		1993 RB ₅
1993 RC ₅	13.0	0.15	19930910	288.42939	246.07700	209.14365	3.45135	0.1860902	3.2256941	17	1	8 days	1.35		E	Williams		1993 RC ₅
1993 RD ₅	14.5	0.15	19930910	157.98398	321.59160	239.66129	1.56924	0.0345648	2.3973126	15	1	7 days	1.19		E	Williams		1993 RD ₅
1993 RE ₅	16.0	0.15	19930910	336.71058	210.76220	182.84373	2.56342	0.2120545	2.3954289	19	1	8 days	1.29		E	Williams		1993 RE ₅

1993 RF ₅	16.0	0.15	19930910	355.55711	48.81495	315.16419	2.39334	0.1005619	2.1563753	11	1	3 days	0.52	E	Williams	1993 RF ₅
1993 RG ₅	15.0	0.15	19930910	38.33179	325.33015	328.96248	2.09087	0.2816778	2.5548322	19	1	8 days	0.97	E	Williams	1993 RG ₅
1993 RH ₅	15.0	0.15	19930910	330.37373	55.77375	345.02973	4.79546	0.1674851	2.5670671	10	1	7 days	1.06	E	Williams	1993 RH ₅
1993 RK ₅	15.5	0.15	19930910	53.60808	82.27024	217.49311	1.95188	0.0611291	2.1867663	11	1	7 days	1.30	E	Williams	1993 RK ₅
1993 RL ₅	14.5	0.15	19971218	51.92405	70.66469	307.53926	2.59243	0.0608846	2.3456935	18	4	1979–1995	0.85	M-v	4 Williams	30471 1993 RL ₅
1993 RN ₅	13.5	0.15	19930910	243.17988	135.93508	0.64926	10.18036	0.1949552	2.7598285	19	1	8 days	1.11	E	Williams	1993 RN ₅
1993 RO ₅	14.5	0.15	19930910	117.27401	37.87137	198.10157	6.54480	0.0760490	2.2875248	11	1	7 days	0.88	E	Williams	1993 RO ₅
1993 RQ ₅	14.5	0.15	19971218	228.53491	300.63716	183.36096	7.05989	0.0501281	2.7025159	49	4	1979–1997	0.77	M-v	4 Williams	30782 1993 RQ ₅
1993 RR ₅	14.5	0.15	19930910	96.44523	299.28160	319.51842	3.23374	0.0504802	2.3511577	8	1	7 days	0.68	E	Williams	1993 RR ₅
1993 RS ₅	15.0	0.15	19930910	320.20902	195.03810	206.75297	3.65478	0.0296086	2.2195281	10	1	7 days	0.72	E	Williams	1993 RS ₅
1993 RT ₅	14.0	0.15	19930930	333.68957	41.78059	3.49791	15.12346	0.2055907	3.1842420	18	1	33 days	0.88		Williams	1993 RT ₅
1993 RU ₅	15.5	0.15	19930910	303.94522	111.95061	319.14972	1.45649	0.1495584	2.2672320	16	1	8 days	1.15	E	Williams	1993 RU ₅
1993 RV ₅	14.5	0.15	19930910	64.14799	102.62203	192.75573	2.17092	0.0128664	2.5604990	16	1	8 days	0.94	E	Williams	1993 RV ₅
1993 RW ₅	15.0	0.15	19930910	282.93151	129.75404	322.84673	1.54948	0.1333035	2.3316073	14	1	8 days	1.18	E	Williams	1993 RW ₅
1993 RX ₅	15.5	0.15	19930910	49.90013	103.26963	191.48238	2.36175	0.1465821	2.2600420	19	1	8 days	1.04	E	Williams	1993 RX ₅
1993 RY ₅	13.5	0.15	19930910	190.38885	342.46394	190.83189	17.42769	0.0837391	2.5778430	13	1	7 days	1.26	E	Williams	1993 RY ₅
1993 RE ₆	13.0	0.15	19930910	232.97109	324.09375	182.62944	10.42816	0.2199948	2.7569999	11	1	7 days	1.16	E	Williams	1993 RE ₆
1993 RF ₆	14.0	0.15	19930910	297.67039	255.56561	186.38361	13.90754	0.1687766	2.5912208	11	1	7 days	0.58	E	Williams	1993 RF ₆
1993 RG ₆	16.0	0.15	19930910	335.42551	66.12614	330.11042	1.71096	0.2171381	2.2839653	11	1	7 days	0.74	E	Williams	1993 RG ₆
1993 RH ₆	15.5	0.15	19930910	1.64511	102.59407	254.35339	1.09712	0.1368347	2.3176473	11	1	7 days	0.75	E	Williams	1993 RH ₆
1993 RJ ₆	15.0	0.15	19930910	2.80599	358.77545	354.89832	9.10299	0.2842186	2.7574128	9	1	7 days	0.87	E	Williams	1993 RJ ₆
1993 RL ₆	13.5	0.15	19930910	75.65239	73.78297	185.71465	7.93259	0.2319193	2.7495791	13	1	7 days	0.88	E	Williams	1993 RL ₆
1993 RN ₆	14.0	0.15	19930910	26.74795	128.74761	189.78490	12.86376	0.2320014	3.0032189	11	1	7 days	0.95	E	Williams	1993 RN ₆
1993 RP ₆	15.0	0.15	19930910	35.62481	338.16702	340.05831	3.06605	0.0809582	2.2128119	11	1	7 days	1.04	E	Williams	1993 RP ₆
1993 RR ₆	15.5	0.15	19930910	356.12481	51.05870	314.73860	1.14229	0.2281950	2.6753045	11	1	7 days	0.65	E	Williams	1993 RR ₆
1993 RT ₆	13.5	0.15	19930910	280.30503	207.48900	247.25388	1.18369	0.1076777	2.9113964	13	1	28 days	0.88		Williams	1993 RT ₆
1993 RU ₆	15.5	0.15	19930910	340.61132	22.89099	3.77053	6.44735	0.1830202	2.3691073	12	1	7 days	0.83	E	Williams	1993 RU ₆
1993 RV ₆	13.5	0.15	19930910	310.04452	80.00429	359.77308	23.96139	0.2531222	3.0933460	11	1	7 days	0.60	E	Williams	1993 RV ₆
1993 RW ₆	15.5	0.15	19930910	338.67703	163.58436	224.87296	1.46716	0.1572672	2.2975505	11	1	7 days	0.56	E	Williams	1993 RW ₆
1993 RY ₆	14.0	0.15	19930910	281.30270	269.71317	198.09883	7.34435	0.2391619	2.3952110	13	1	9 days	1.31	E	Williams	1993 RY ₆
1993 RZ ₆	14.5	0.15	19930910	325.63271	46.11079	354.58284	4.66388	0.0854769	2.3519357	15	1	7 days	0.72	E	Williams	1993 RZ ₆
1993 RC ₇	15.0	0.15	19930910	53.44802	298.25164	345.20122	2.20602	0.2305498	2.7730902	13	1	7 days	1.04	E	Williams	1993 RC ₇
1993 RE ₇	16.0	0.15	19930910	23.88979	320.12987	0.22622	6.86484	0.2220089	2.2376648	13	1	7 days	0.92	E	Williams	1993 RE ₇
1993 RF ₇	15.0	0.15	19930910	16.58400	64.03287	271.08014	1.70985	0.2032024	2.6130374	11	1	9 days	0.77	E	Williams	1993 RF ₇
1993 RJ ₇	14.5	0.15	19930910	278.96961	119.60061	341.78452	2.42970	0.1629626	2.4290709	13	1	9 days	0.83	E	Williams	1993 RJ ₇
1993 RL ₇	13.5	0.15	19930910	67.23994	116.37396	158.94845	1.01186	0.1803763	3.1835090	10	1	7 days	1.23	E	Williams	1993 RL ₇
1993 RM ₇	15.0	0.15	19930910	52.06662	61.71449	222.44039	0.56359	0.2301923	2.4855788	13	1	9 days	0.99	E	Williams	1993 RM ₇
1993 RO ₇	15.0	0.15	19971218	306.73855	69.24834	10.06235	3.64210	0.1802257	2.6067465	21	2	1993–1995	0.69	M-v	5 Williams	25216 1993 RO ₇
1993 RP ₇	13.5	0.15	19930910	221.55323	318.29536	191.71719	6.67727	0.1197585	2.6867871	15	1	9 days	1.04	E	Williams	1993 RP ₇
1993 RQ ₇	15.5	0.15	19930910	46.59391	109.43809	177.60118	2.69406	0.2583136	2.4702306	11	1	3 days	0.79	E	Williams	1993 RQ ₇
1993 RS ₇	14.5	0.15	19930910	336.98499	210.53529	190.45937	2.00136	0.2591625	3.2147424	15	1	9 days	1.37	E	Williams	1993 RS ₇
1993 RU ₇	14.0	0.15	19930910	250.44996	180.18496	302.43601	1.65271	0.0999340	2.4542412	12	1	9 days	1.42	E	Williams	1993 RU ₇
1993 RY ₇	14.5	0.15	19930910	77.35236	336.12028	290.34248	1.23160	0.1609241	2.4386561	13	1	9 days	0.93	E	Williams	1993 RY ₇
1993 RA ₈	12.5	0.15	19930910	162.63316	9.63982	191.80381	8.87516	0.0252539	3.3250347	13	1	9 days	1.17	E	Williams	1993 RA ₈
1993 RB ₈	15.0	0.15	19930910	5.93163	170.92874	180.35109	7.55009	0.1984309	2.6387117	13	1	7 days	1.11	E	Williams	1993 RB ₈
1993 RC ₈	15.0	0.15	19930910	334.97718	44.05279	358.81235	9.45671	0.2533177	2.7556816	14	1	9 days	1.03	E	Williams	1993 RC ₈
1993 RA ₁₄	15.0	0.15	19930910	302.14643	107.37144	329.16458	2.00141	0.1843893	2.4847549	15	1	8 days	1.03	E	Williams	1993 RA ₁₄
1993 RC ₁₄	15.5	0.15	19930910	275.54807	98.32560	352.96682	7.02088	0.0721327	2.2418563	11	1	8 days	1.17	E	Williams	1993 RC ₁₄
1993 RD ₁₄	13.0	0.15	19930910	271.85340	110.59520	350.22269	5.58521	0.0952107	3.1174716	19	1	8 days	0.95	E	Williams	1993 RD ₁₄
1993 RG ₁₄	13.0	0.15	19930910	48.76584	290.80537	358.70941	2.70803	0.2303238	3.9775682	15	1	8 days	1.09	E	Williams	1993 RG ₁₄
1993 RM ₁₄	13.5	0.15	19930910	316.83283	222.20240	192.43818	1.68904	0.1129360	2.9407702	13	1	7 days	0.62	E	Williams	1993 RM ₁₄
1993 RN ₁₄	14.5	0.15	19930910	354.21379	30.44060	340.32902	5.09136	0.1998415	3.1668407	12	1	7 days	0.89	E	Williams	1993 RN ₁₄
1993 RO ₁₄	15.0	0.15	19930910	326.88409	216.49300	183.86849	6.70947	0.1072016	2.3683860	13	1	7 days	1.15	E	Williams	1993 RO ₁₄

1993 RP ₁₄	14.5	0.15	19930910	343.87423	22.62807	4.50198	10.23045	0.2380388	3.1483581	12	1	7 days	1.00	E	Williams	1993 RP ₁₄		
1993 RQ ₁₄	14.0	0.15	19930910	298.29636	86.07316	3.56702	9.88156	0.2333590	2.8716532	12	1	7 days	1.19	E	Williams	1993 RQ ₁₄		
1993 RR ₁₄	14.5	0.15	19930910	284.87463	162.04403	277.41425	1.14273	0.0276457	2.4090784	11	1	7 days	0.37	E	Williams	1993 RR ₁₄		
1993 RS ₁₄	15.5	0.15	19930910	49.33477	109.32826	177.10792	1.73493	0.2283346	2.3276449	11	1	7 days	1.02	E	Williams	1993 RS ₁₄		
1993 RT ₁₄	14.0	0.15	19930910	63.17849	280.30094	355.53628	10.97838	0.2106723	2.8263579	11	1	7 days	0.84	E	Williams	1993 RT ₁₄		
1993 RU ₁₄	15.0	0.15	19930910	29.77563	315.13989	3.69884	10.92051	0.1719270	2.6057278	11	1	7 days	1.10	E	Williams	1993 RU ₁₄		
1993 RV ₁₄	14.5	0.15	19930910	118.76353	23.02114	211.09956	2.51306	0.1037372	2.4119790	11	1	9 days	0.96	E	Williams	1993 RV ₁₄		
1993 SB	8.0	0.15	19971218	324.52701	77.89004	354.80806	1.93178	0.3213936	39.6329728	38	5	1993–1997	0.74	M-v	3	Marsden	28317	1993 SB
1993 SC	7.0	0.15	19971218	37.54113	318.50470	354.61522	5.14198	0.1913060	39.8800010	80	5	1993–1997	0.58	M-v	3	Marsden	30782	1993 SC
1993 SG ₁	14.0	0.15	19971218	13.67568	175.38966	174.75333	13.86465	0.2923336	2.5824688	35	3	1989–1997	0.51	M-v	2	Williams	30782	1993 SG ₁
1993 SK ₁	13.5	0.15	19971218	115.22228	273.72566	57.72113	2.49161	0.0840567	2.2585733	24	4	1983–1995	0.82	M-v	3	Williams	30291	1993 SK ₁
1993 SR ₁	14.5	0.15	19971218	78.45030	329.78283	37.92297	3.85815	0.2162251	2.2917555	12	4	1958–1993	0.55	M-v	3	Williams	30471	1993 SR ₁
1993 SS ₁	13.5	0.15	19971218	318.16813	285.38287	146.87612	4.02004	0.1477778	2.5795368	16	2	1993–1995	0.84	M-v	4	Williams	25331	1993 SS ₁
1993 ST ₁	12.5	0.15	19930930	349.26989	210.72235	173.15466	11.07993	0.1002612	3.1294727	8	1	26 days	1.11			Williams		1993 ST ₁
1993 SH ₂	14.5	0.15	19971218	10.36033	48.47929	356.15970	3.27960	0.1982464	2.4352896	43	4	1974–1997	0.92	M-v	2	Williams	29137	1993 SH ₂
1993 SK ₂	13.5	0.15	19930910	28.79340	313.36613	359.30352	14.14341	0.2480157	2.6138865	16	1	26 days	1.40			Williams		1993 SK ₂
1993 SK ₃	13.0	0.15	19971218	215.29760	128.44583	311.13780	2.26929	0.2741087	3.2387460	35	4	1982–1995	0.64	M-v	2	Williams	30471	1993 SK ₃
1993 SL ₃	13.0	0.15	19971218	133.97134	285.30940	16.31428	23.98132	0.2190155	2.2732135	26	5	1982–1997	0.77	M-v	2	Williams	25340	1993 SL ₃
1993 SV ₃	14.5	0.15	19930930	30.07890	297.66919	16.09335	22.72467	0.2870375	2.4266340	15	1	33 days	1.52			Williams		1993 SV ₃
1993 SW ₃	14.0	0.15	19971218	117.28893	279.54130	55.35611	6.21815	0.2007898	2.2354954	19	3	1973–1993	0.55	M-v	3	Williams	30471	1993 SW ₃
1993 SA ₄	13.0	0.15	19930930	12.17000	173.42821	178.28004	8.56369	0.1832141	2.7147352	13	1	28 days	0.72			Williams		1993 SA ₄
1993 SF ₄	14.5	0.15	19930930	0.97530	255.74361	105.83450	6.77005	0.1325993	2.2726946	11	1	29 days	0.38			Williams		1993 SF ₄
1993 ST ₄	14.5	0.15	19971218	160.24148	193.10362	57.60461	1.00445	0.0278510	2.3496266	29	5	1974–1997	0.70	M-v	1	Williams	29662	1993 ST ₄
1993 SQ ₅	15.5	0.15	19930910	41.76371	316.82402	356.28582	2.77582	0.0692639	2.1472880	15	1	7 days	0.97		E	Williams		1993 SQ ₅
1993 ST ₅	15.0	0.15	19930910	89.13635	67.68766	193.05083	2.01046	0.1002234	2.1371211	16	1	7 days	0.87		E	Williams		1993 ST ₅
1993 SV ₅	16.0	0.15	19930910	342.50860	208.87365	174.56074	1.91980	0.1557663	2.2179196	16	1	7 days	0.90			Williams		1993 SV ₅
1993 SW ₅	13.0	0.15	19930910	269.76906	94.24587	15.27969	2.12543	0.1298415	3.1052310	16	1	7 days	1.06		E	Williams		1993 SW ₅
1993 SX ₅	14.5	0.15	19930910	63.68600	273.28265	12.84674	3.61948	0.1160212	2.5707101	16	1	7 days	1.20		E	Williams		1993 SX ₅
1993 SY ₅	15.0	0.15	19930910	28.70660	135.54369	188.17897	3.92114	0.1379397	2.4391829	14	1	7 days	0.57			Williams		1993 SY ₅
1993 SZ ₅	13.5	0.15	19930910	236.93420	307.17830	194.19278	4.86913	0.1626594	2.5829933	14	1	7 days	1.28		E	Williams		1993 SZ ₅
1993 SK ₆	16.5	0.15	19930910	357.14713	357.45631	5.60325	2.58743	0.2522878	2.2886522	13	1	7 days	0.96			Williams		1993 SK ₆
1993 SL ₆	13.5	0.15	19971218	296.73114	219.48498	174.95386	2.04508	0.0682941	2.8300302	33	6	1979–1997	0.60	M-v	1	Williams	30471	1993 SL ₆
1993 SM ₆	16.5	0.15	19930910	2.67416	354.68776	359.33035	3.29924	0.2867396	2.5188894	13	1	7 days	1.19			Williams		1993 SM ₆
1993 SO ₆	14.5	0.15	19930910	333.89026	43.24382	2.29487	3.40420	0.2528320	2.8502337	14	1	7 days	0.84			Williams		1993 SO ₆
1993 SQ ₆	15.5	0.15	19930910	35.31774	295.61146	8.94388	2.67066	0.2432849	2.4305664	14	1	7 days	0.79		E	Williams		1993 SQ ₆
1993 SU ₆	14.0	0.15	19930910	66.69253	293.82806	348.22948	0.39242	0.1353399	2.6949033	13	1	7 days	0.67			Williams		1993 SU ₆
1993 SX ₆	14.5	0.15	19971218	321.70070	118.88981	8.43136	4.97676	0.0525278	2.2981964	21	2	1993–1995	0.56	M-v	5	Williams	24898	1993 SX ₆
1993 SZ ₆	15.0	0.15	19930910	336.73094	217.99242	173.28577	4.25887	0.1238397	2.4329622	10	1	5 days	1.33		E	Williams		1993 SZ ₆
1993 SE ₇	14.5	0.15	19930910	292.64744	268.63700	177.61700	6.11708	0.1379203	2.6225005	10	1	5 days	1.15		E	Williams		1993 SE ₇
1993 SH ₇	14.0	0.15	19930910	195.46400	358.90227	174.66507	5.88298	0.1924604	2.2655085	11	1	5 days	1.10		E	Williams		1993 SH ₇
1993 SG ₉	14.0	0.15	19930910	265.37792	284.67371	191.32545	16.96933	0.1638869	2.6946384	11	1	9 days	1.39		E	Williams		1993 SG ₉
1993 SH ₉	14.0	0.15	19930910	119.33718	42.80639	195.04837	11.87190	0.0623925	2.6088457	11	1	7 days	0.92		E	Williams		1993 SH ₉
1993 SL ₉	16.0	0.15	19930910	1.18911	355.46239	2.30947	7.01786	0.1601385	2.3135034	14	1	9 days	0.81			Williams		1993 SL ₉
1993 SN ₉	16.5	0.15	19930910	355.87341	50.70280	314.06627	0.49683	0.2387339	2.2755668	15	1	9 days	1.02			Williams		1993 SN ₉
1993 SP ₉	13.0	0.15	19930910	282.86976	93.80093	13.37841	1.23733	0.2233712	3.1972051	11	1	9 days	0.96		E	Williams		1993 SP ₉
1993 SQ ₉	15.0	0.15	19930910	65.40148	78.93263	206.98854	0.48121	0.0997719	2.4697730	11	1	6 days	1.05		E	Williams		1993 SQ ₉
1993 SQ ₁₀	14.5	0.15	19971218	321.23214	160.55091	2.21072	3.82905	0.1138965	2.1883183	25	4	1982–1995	0.83	M-v	2	Williams	25228	1993 SQ ₁₀
1993 SM ₁₂	16.0	0.15	19930910	34.34087	59.44125	250.37023	1.98002	0.1914211	3.0460771	42	1	14 days	0.57			Williams		1993 SM ₁₂
1993 SG ₁₃	15.0	0.15	19930910	13.71115	141.05161	194.50517	5.96443	0.2398791	2.8555427	13	1	7 days	0.89		E	Williams		1993 SG ₁₃
1993 SQ ₁₃	14.0	0.15	19971218	227.25373	45.75332	59.74110	0.93268	0.0328364	2.7972314	20	2	1991–1993	0.71	M-v	5	Williams	27916	1993 SQ ₁₃
1993 SW ₁₃	15.5	0.15	19930910	304.71361	83.79937	355.74444	9.73969	0.2308486	2.3959839	11	1	8 days	1.32		E	Williams		1993 SW ₁₃
1993 SY ₁₃	14.5	0.15	19930910	322.30155	44.29771	13.37019	5.22114	0.2284263	3.1811879	13	1	8 days	0.57		E	Williams		1993 SY ₁₃
1993 SA ₁₄	15.5	0.15	19930910	306.23957	60.63938	359.81819	19.41765	0.0989287	1.9259287	15	1	7 days	1.57			Williams		1993 SA ₁₄

1993 SB ₁₄	15.0	0.15	19930910	351.47651	192.34981	179.99485	10.31198	0.2261038	2.7636070	13	1	8 days	1.15		Williams	1993 SB ₁₄	
1993 SG ₁₄	16.0	0.15	19930910	22.46689	60.60997	259.90918	0.78034	0.2486995	2.4570445	11	1	7 days	1.44	E	Williams	1993 SG ₁₄	
1993 SN ₁₄	16.0	0.15	19930910	19.59517	335.31171	349.21088	2.27028	0.2607130	2.5576867	13	1	7 days	1.70	E	Williams	1993 SN ₁₄	
1993 SO ₁₄	16.0	0.15	19971218	120.47363	85.86875	177.35893	2.75178	0.2210523	2.4172547	13	2	1992–1993	0.78	M-v	6	Williams	30452 1993 SO ₁₄
1993 SH ₁₅	15.0	0.15	19930910	356.03958	285.80739	81.18337	5.40589	0.1920375	2.1796588	6	1	22 days	0.39		Williams	1993 SH ₁₅	
1993 TD	14.5	0.15	19971218	12.71809	32.50131	4.46072	10.95594	0.1838296	2.4816584	32	4	1989–1997	0.84	M-v	3	Williams	30688 1993 TD
1993 TE	14.5	0.15	19971218	26.82453	161.46488	192.43115	8.68747	0.2738072	2.5422782	71	6	1985–1997	0.62	M-v	2	Williams	30782 1993 TE
1993 TM	14.5	0.15	19930930	354.46940	354.76432	26.15143	7.13827	0.1223178	2.3546433	12	1	44 days	1.13		Williams	1993 TM	
1993 TM ₁₂	14.0	0.15	19971218	49.18467	295.38900	134.39573	2.44932	0.1146101	2.2326051	26	4	1986–1996	0.88	M-v	2	Williams	29137 1993 TM ₁₂
1993 TL ₁₃	14.5	0.15	19971218	102.49566	247.00742	48.29846	9.16541	0.1937430	2.4283047	32	3	1993–1997	0.61	M-v	3	Williams	27557 1993 TL ₁₃
1993 TJ ₁₄	14.0	0.15	19930930	45.78609	290.27654	24.51307	9.65226	0.1475806	2.7615191	18	1	31 days	0.85		Williams	1993 TJ ₁₄	
1993 TP ₁₅	14.0	0.15	19971218	358.80357	156.40665	126.47473	2.21597	0.1582680	3.0542414	32	3	1977–1997	0.85	M-v	4	Williams	30661 1993 TP ₁₅
1993 TS ₁₅	15.0	0.15	19971218	344.16721	215.63104	153.93590	2.42181	0.2014412	2.7064573	17	2	1984–1993	0.58	M-v	5	Williams	24111 1993 TS ₁₅
1993 TM ₁₆	12.5	0.15	19971218	31.15601	159.53402	85.59144	2.56956	0.0886598	3.1776609	36	7	1949–1996	0.73	M-v	1	Williams	27936 1993 TM ₁₆
1993 TK ₁₇	13.0	0.15	19930930	23.08394	324.32087	24.98307	21.76800	0.0668283	3.2455051	11	1	29 days	0.35		Williams	1993 TK ₁₇	
1993 TV ₁₇	14.0	0.15	19930930	336.40669	19.29785	32.72158	10.69385	0.2211264	3.1263527	12	1	29 days	0.46		Williams	1993 TV ₁₇	
1993 TL ₂₅	14.5	0.15	19971218	118.55008	150.58544	111.97696	3.20633	0.1082642	2.5435854	32	2	1993–1997	0.71	M-v	5	Williams	30759 1993 TL ₂₅
1993 TG ₃₁	14.0	0.15	19971218	171.09789	170.87048	69.50632	3.79454	0.1445456	2.4297786	19	2	1993–1997	0.57	M-v	6	Williams	30759 1993 TG ₃₁
1993 UV	12.5	0.15	19971218	340.54464	191.90002	217.85691	13.56006	0.2375156	2.6764751	30	2	1993–1997	0.51	M-v	3	Williams	30759 1993 UV
1993 UC ₁	12.5	0.15	19971218	64.14808	79.65481	261.50850	12.40738	0.1755808	2.4589494	19	7	1955–1997	0.94	M-v	2	Williams	29944 1993 UC ₁
1993 UH ₁	14.5	0.15	19971218	122.31559	105.09955	195.40664	22.91175	0.2345167	2.3260684	32	3	1993–1997	0.91	M-v	3	Williams	27456 1993 UH ₁
1993 UB ₃	13.5	0.15	19971218	8.87209	171.68345	240.24898	5.61133	0.0852120	2.3618651	25	6	1979–1997	0.79	M-v	1	Williams	27936 1993 UB ₃
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	30782 1993 UT ₆
1993 VE	12.5	0.15	19971218	64.67692	272.82612	39.30369	13.55733	0.1789610	2.6106077	30	4	1975–1997	0.70	M-v	1	Williams	28888 1993 VE
1993 VT	13.0	0.15	19971218	44.52837	268.45260	64.06339	12.11125	0.2149131	2.6387235	25	3	1993–1997	0.73	M-v	4	Williams	27558 1993 VT
1993 VY	14.0	0.15	19971218	51.76025	30.23872	26.26387	25.09083	0.1925984	2.2763396	12	1	70 days	0.83	M-v	5	Williams	30782 1993 VY
1993 VM ₂	15.0	0.15	19971218	306.32748	114.03256	11.87212	1.39420	0.2293188	2.5953484	57	3	1976–1997	0.69	M-v	4	Williams	30760 1993 VM ₂
1993 WD	17.0	0.15	19971218	265.90447	132.26906	56.58932	63.46102	0.2666092	1.0067146	290	6	1991–1997	0.61	M-v	3	Williams	30092 1993 WD
1993 WQ	13.5	0.15	19971218	12.06448	359.63298	47.58643	5.06077	0.2231202	2.5533301	28	4	1985–1997	0.55	M-v	3	Williams	30783 1993 WQ
1993 XK ₁	13.5	0.15	19971218	357.95430	316.28830	75.15063	3.40344	0.0549974	2.8766951	42	5	1954–1997	0.64	M-v	1	Williams	25539 1993 XK ₁
1993 YR	14.5	0.15	19971218	356.72817	196.25183	216.04761	11.66866	0.3173868	2.6199336	30	2	1993–1997	0.55	M-v	3	Williams	30760 1993 YR
1994 AH	12.5	0.15	19971218	71.89868	174.17871	136.46023	2.75435	0.0737717	2.9326754	36	3	1994–1997	0.66	M-v	3	Williams	30783 1994 AH
1994 AH ₂	16.5	0.15	19971218	326.29557	24.83654	164.35841	9.62218	0.7109874	2.5268378	173	4	1981–1997	0.66	M-v	1	Williams	26422 1994 AH ₂
1994 AQ ₂	13.5	0.15	19971218	329.90117	335.12882	109.12924	3.26361	0.0289126	2.8342493	42	6	1978–1997	0.59	M-v	1	Williams	28888 1994 AQ ₂
1994 BE	13.5	0.15	19971218	149.51494	62.99636	185.76249	6.86101	0.0452263	2.9695644	29	4	1994–1997	0.49	M-v	1	Williams	27730 1994 BE
1994 BW ₄	12.5	0.15	19971218	103.38864	343.80654	304.36453	9.53932	0.0887390	3.0221535	26	4	1987–1997	0.68	M-v	1	Williams	23243 1994 BW ₄
1994 CM	13.0	0.15	19971218	348.33251	45.95847	33.17836	8.60459	0.0851337	2.8473807	30	4	1989–1997	0.76	M-v	2	Williams	28590 1994 CM
1994 CV	14.5	0.15	19971218	4.17824	224.44607	183.85305	3.75153	0.1892426	2.5900450	19	3	1976–1997	0.67	M-v	3	Williams	30783 1994 CV
1994 CP ₁₀	13.0	0.15	19971218	85.61829	327.12637	355.33940	5.10132	0.1339717	3.1413191	27	6	1974–1997	0.92	M-v	1	Williams	29137 1994 CP ₁₀
1994 FQ	14.0	0.15	19971218	253.66744	344.48005	157.16188	16.40294	0.1210103	3.0892323	32	4	1994–1997	0.84	M-v	2	Williams	27730 1994 FQ
1994 LA ₁	14.0	0.15	19971218	229.16505	109.07952	141.07888	26.00667	0.2566891	3.1513017	22	4	1988–1995	0.80	M-v	2	Williams	25962 1994 LA ₁
1994 PP ₁	15.0	0.15	19971218	150.00536	190.04235	60.12882	23.39464	0.0542889	1.9384206	28	4	1989–1997	0.63	M-v	2	Williams	28888 1994 PP ₁
1994 PJ ₁₀	14.0	0.15	19971218	228.35272	92.67237	285.90061	1.47091	0.0927649	2.7265227	23	3	1990–1997	0.71	M-v	4	Williams	30291 1994 PJ ₁₀
1994 PC ₃₇	14.0	0.15	19971218	172.76628	126.94296	297.67877	2.49078	0.0814673	2.7800049	18	3	1990–1995	0.71	M-v	5	Williams	26422 1994 PC ₃₇
1994 TB	7.0	0.15	19971218	330.32417	98.01810	317.29785	12.11112	0.3210873	39.8448335	80	4	1994–1997	0.76	M-v	3	Marsden	30783 1994 TB
1994 TF ₂	19.0	0.15	19971218	305.46508	349.60227	175.32233	23.75545	0.2838919	0.9932022	117	4	1994–1997	0.69	M-v	3	Williams	30783 1994 TF ₂
1994 TU ₂	14.5	0.15	19971218	331.42744	149.27590	200.18102	3.18099	0.2570014	2.3787334	21	3	1994–1997	0.69	M-v	4	Marsden	30472 1994 TU ₂
1994 TX ₂	13.0	0.15	19971218	227.10977	206.17858	208.72851	10.42522	0.1015365	2.7410573	32	4	1988–1997	0.63	M-v	2	Marsden	29945 1994 TX ₂
1994 VO ₇	15.0	0.15	19971218	312.85931	221.17720	224.86632	2.15626	0.0678663	2.1771709	37	4	1978–1997	0.70	M-v	2	Williams	28617 1994 VO ₇
1994 VK ₈	6.5	0.15	19971218	233.94261	121.66877	72.40947	1.48229	0.0267892	42.8296254	61	4	1994–1997	0.65	M-v	5	Marsden	29138 1994 VK ₈
1994 WK ₁	14.5	0.15	19971218	46.98393	72.77756	287.71680	1.46826	0.0461990	2.1808225	24	6	1949–1997	0.55	M-v	1	Williams	27327 1994 WK ₁
1994 WL ₁	14.5	0.15	19971218	228.22343	272.21815	269.67488	3.33322	0.1012715	2.2411423	32	3	1982–1997	0.70	M-v	4	Williams	30760 1994 WL ₁
1994 WU ₁	14.5	0.15	19971218	54.75326	123.33122	172.91533	14.82625	0.1607349	2.4461014	99	3	1994–1997	0.63	M-v	2	Williams	30783 1994 WU ₁

1994 WR ₂	13.0	0.15	19971218	266.88249	318.81392	69.98820	9.00528	0.2321176	2.7780350	16	3	1952–1997	0.77	M-v	4	Marsden	30277	1994 WR ₂
1994 XS ₄	14.0	0.15	19971218	122.73128	160.80118	105.73957	7.41881	0.1355832	2.4121013	37	3	1993–1996	0.53	M-v	3	Williams	28889	1994 XS ₄
1994 YO	15.5	0.15	19971218	22.12571	272.45426	107.50040	3.88475	0.1650497	2.2491442	22	4	1992–1997	0.55	M-v	2	Williams	30292	1994 YO
1994 YQ ₁	13.5	0.15	19971218	16.93468	278.17138	83.39702	6.87881	0.1318405	2.4001847	19	4	1986–1997	0.66	M-v	3	Williams	27917	1994 YQ ₁
1994 YS ₁	14.5	0.15	19971218	45.33523	294.18742	74.32284	6.68696	0.1759412	2.1940924	26	5	1987–1997	0.63	M-v	1	Williams	27568	1994 YS ₁
1995 AL	14.0	0.15	19971218	93.11299	192.72440	100.86811	7.04537	0.0965326	2.4617910	36	4	1993–1997	0.51	M-v	1	Williams	30783	1995 AL
1995 AM	16.5	0.15	19971218	37.16124	257.39159	108.95400	4.78379	0.3597975	2.1571144	68	3	1994–1997	0.60	M-v	2	Williams	30783	1995 AM
1995 AA ₁	14.5	0.15	19971218	5.75778	301.31231	116.67173	5.91219	0.0902878	2.2692871	17	3	1993–1997	0.49	M-v	3	Williams	29622	1995 AA ₁
1995 AW ₂	13.5	0.15	19971218	243.18264	305.51925	248.16487	5.38996	0.1154443	2.2716679	14	3	1986–1995	0.56	M-v	5	Williams	24756	1995 AW ₂
1995 BB	13.5	0.15	19971218	330.73216	44.37168	306.25109	1.05841	0.0814883	2.8418246	31	4	1987–1995	0.84	M-v	3	Williams	28889	1995 BB
1995 BH ₁	15.5	0.15	19971218	353.44019	75.75380	309.31759	1.51594	0.2067601	2.3841826	56	3	1995–1997	0.49	M-v	4	Williams	30783	1995 BH ₁
1995 BO ₁	13.5	0.15	19971218	268.98959	277.55677	256.43355	3.61355	0.0782546	2.2467636	22	4	1980–1995	0.60	M-v	2	Marsden	28889	1995 BO ₁
1995 BG ₂	14.5	0.15	19971218	298.46491	7.82475	127.54839	3.71368	0.0986240	2.3259170	30	4	1990–1997	0.59	M-v	2	Williams	29664	1995 BG ₂
1995 BU ₂	12.5	0.15	19971218	139.02214	311.16600	299.34335	14.10391	0.0970669	2.5764918	31	2	1995–1997	0.60	M-v	4	Williams	30761	1995 BU ₂
1995 BR ₄	13.5	0.15	19971218	309.49958	341.05213	147.01218	7.13974	0.0943018	2.2392949	27	6	1990–1997	0.59	M-v	1	Williams	28617	1995 BR ₄
1995 BC ₁₆	14.0	0.15	19971218	92.54547	6.46975	314.70412	6.73689	0.1229445	2.3689678	20	6	1984–1997	0.72	M-v	2	Williams	27937	1995 BC ₁₆
1995 CP ₃	16.0	0.15	19971218	88.27730	124.51926	175.59768	2.86149	0.1749982	2.6010370	27	4	1993–1997	0.51	M-v	1	Williams	30783	1995 CP ₃
1995 DH	13.0	0.15	19971218	321.36238	250.47587	155.48568	28.17161	0.2442036	2.6691895	11	2	1993–1995	0.68	M-v	4	Williams	24908	1995 DH
1995 DA ₁	14.5	0.15	19971218	198.26127	103.98543	104.00606	9.06746	0.1290773	2.6230323	66	3	1995–1997	0.54	M-v	2	Marsden	30783	1995 DA ₁
1995 DU ₁	14.0	0.15	19971218	300.79444	21.63162	114.14904	24.69612	0.1908625	2.3204920	44	5	1955–1997	0.57	M-v	1	Williams	27568	1995 DU ₁
1995 DL ₂	13.0	0.15	19971218	87.80496	215.62513	97.25012	13.87787	0.2476070	2.5400727	42	3	1988–1996	0.50	M-v	3	Williams	27456	1995 DL ₂
1995 DU ₃	15.5	0.15	19971218	251.00517	139.99065	31.39609	0.36465	0.1657720	2.3954966	57	3	1995–1997	0.75	M-v	3	Williams	30783	1995 DU ₃
1995 DF ₈	16.0	0.15	19971218	350.82114	257.75140	154.61585	3.23579	0.1328327	2.5190471	20	3	1993–1997	0.83	M-c	5	Marsden	25229	1995 DF ₈
1995 DZ ₈	15.5	0.15	19971218	318.29300	101.05751	5.90079	2.62501	0.1247974	2.4022048	26	4	1984–1997	0.74	M-v	2	Williams	30783	1995 DZ ₈
1995 EH	13.0	0.15	19971218	201.56637	212.66960	13.98464	7.14235	0.0964768	2.4631137	25	7	1972–1997	0.69	M-v	2	Williams	28318	1995 EH
1995 ES	15.5	0.15	19971218	345.70313	106.75429	0.69586	7.14041	0.0966756	2.2611879	39	3	1995–1997	0.58	M-v	3	Marsden	27718	1995 ES
1995 EB ₁	14.0	0.15	19971218	359.99176	302.55110	116.96618	3.12569	0.1956985	2.3716649	33	5	1975–1997	0.82	M-v	2	Williams	25341	1995 EB ₁
1995 EF ₁	14.0	0.15	19971218	293.33061	92.88040	50.68084	2.98393	0.1503679	2.3849206	31	6	1958–1997	0.70	M-v	2	Williams	29138	1995 EF ₁
1995 ED ₈	13.5	0.15	19971218	257.56848	220.86585	351.92912	22.92125	0.2149533	2.3377604	22	4	1989–1997	0.88	M-v	2	Williams	28318	1995 ED ₈
1995 FE	13.5	0.15	19971218	295.36019	134.50620	6.95021	24.68149	0.2143222	2.3827554	26	4	1984–1997	0.64	M-v	2	Williams	25539	1995 FE
1995 FH	13.0	0.15	19971218	180.45494	1.95454	251.30000	14.35926	0.0551890	2.6387387	54	4	1982–1997	0.32	M-v	1	Williams	27937	1995 FH
1995 FP ₁₄	14.5	0.15	19971218	26.27038	277.43725	84.11461	3.72632	0.0878102	2.9350596	25	2	1995–1997	0.47	M-v	4	Williams	30761	1995 FP ₁₄
1995 GF	13.5	0.15	19971218	323.33604	45.54213	67.15039	6.68082	0.0794467	2.5494600	29	4	1985–1997	0.65	M-v	3	Williams	25442	1995 GF
1995 HA	15.0	0.15	19971218	108.99115	76.62855	212.85933	8.79445	0.0819361	3.0748146	44	3	1995–1997	0.62	M-v	3	Williams	30783	1995 HA
1995 HC	14.5	0.15	19971218	168.45946	134.49915	179.83838	2.36452	0.1744749	2.2502512	28	4	1949–1997	0.52	M-v	2	Williams	29664	1995 HC
1995 HE	14.5	0.15	19971218	311.03212	58.52795	28.12582	4.36649	0.1777757	2.7988038	39	3	1960–1997	0.53	M-v	3	Williams	30783	1995 HE
1995 JD	14.5	0.15	19971218	224.55131	340.49299	213.86838	4.38344	0.2359783	2.7452444	50	3	1995–1997	0.69	M-v	3	Williams	27718	1995 JD
1995 JJ	14.0	0.15	19971218	287.30511	10.29412	123.63947	5.44504	0.0667062	2.9844557	46	4	1994–1997	0.66	M-v	1	Williams	27937	1995 JJ
1995 OD ₁	14.5	0.15	19971218	335.97576	5.74942	154.64998	12.25393	0.0875025	3.0069108	34	3	1995–1997	0.55	M-v	3	Williams	28618	1995 OD ₁
1995 SS	15.5	0.15	19971218	54.68300	46.86260	225.29848	24.19916	0.0645183	1.8196992	34	2	1995–1997	0.55	M-v	3	Marsden	30472	1995 SS
1995 SK ₅₃	13.0	0.15	19971218	194.88764	316.19837	30.07649	10.62360	0.1327058	2.9224575	27	4	1990–1997	0.56	M-v	2	Williams	29139	1995 SK ₅₃
1995 TQ	13.0	0.15	19971218	189.44699	110.57185	242.03299	11.50278	0.1092540	2.9417192	30	3	1990–1997	0.49	M-v	3	Williams	29110	1995 TQ
1995 UO ₅	17.0	0.15	19971218	289.18551	150.88038	38.80535	36.14101	0.6440583	1.5599212	66	3	1995–1997	0.63	M-v	3	Williams	30784	1995 UO ₅
1995 VP	12.5	0.15	19971218	29.39025	306.55020	254.62215	6.07095	0.0565870	2.7945844	18	3	1985–1995	0.67	M-v	4	Williams	26760	1995 VP
1995 XN ₁	12.5	0.15	19971218	15.55325	174.74860	72.74069	14.10149	0.1324373	2.5936117	32	4	1978–1997	0.70	M-v	2	Williams	30292	1995 XN ₁
1996 AH ₆	16.7	0.15	19960118	93.77973	302.97937	65.63645	3.25735	0.1807485	2.3423687	11	1	13 days	0.35			Nakano		1996 AH ₆
1996 BQ ₂	11.5	0.15	19971218	176.58364	290.95652	139.07246	15.15722	0.0682939	3.4065386	21	4	1991–1997	0.71	M-v	1	Williams	30292	1996 BQ ₂
1996 CJ ₇	14.0	0.15	19971218	87.68863	121.12007	135.83533	7.45813	0.0930644	2.3513698	16	2	1996–1997	0.74	M-v	5	Williams	30761	1996 CJ ₇
1996 CT ₇	14.5	0.15	19971218	253.13773	192.62531	210.93461	6.13108	0.1324155	2.4253104	24	2	1996–1997	0.92	M-v	5	Marsden	30473	1996 CT ₇
1996 CV ₇	13.0	0.15	19971218	340.44942	162.13948	143.11207	10.93926	0.0922781	2.9977213	20	3	1993–1997	0.60	M-v	4	Williams	30083	1996 CV ₇
1996 DW	15.5	0.15	19971218	141.04935	226.56614	354.62224	7.51335	0.1642694	2.2880675	35	2	1996–1997	0.54	M-v	4	Williams	30762	1996 DW
1996 EH	13.5	0.15	19971218	129.22879	342.72544	246.44094	7.85871	0.1538020	2.3627650	20	5	1982–1997	0.65	M-v	2	Williams	30784	1996 EH
1996 EW ₁	13.0	0.15	19971218	300.46741	22.28865	330.49371	1.56448	0.0831183	3.0240601	31	5	1972–1996	0.73	M-v	2	Williams	27731	1996 EW ₁

1996 FF	15.0	0.15	19971218	313.38879	273.49847	203.72566	20.62666	0.0884505	1.9430692	35	4	1985–1997	0.60	M-v	2	Williams	27316	1996 FF
1996 FG ₃	18.5	0.15	19971218	108.32214	23.38230	300.47884	1.98149	0.3497340	1.0543530	177	3	1996–1997	0.61	M-v	4	Williams	29666	1996 FG ₃
1996 FL ₅	14.0	0.15	19971218	158.32069	189.20676	28.47112	7.32719	0.1435404	2.3178914	40	4	1978–1997	0.60	M-v	2	Williams	30784	1996 FL ₅
1996 GJ ₂	15.0	0.15	19971218	115.57775	86.44122	185.08234	4.28337	0.2110173	2.3889843	29	3	1993–1997	0.74	M-v	4	Williams	30784	1996 GJ ₂
1996 GB ₁₈	14.5	0.15	19971218	359.35118	359.52244	38.30317	5.29839	0.0534584	2.1865229	23	3	1981–1997	0.44	M-v	4	Williams	30762	1996 GB ₁₈
1996 GO ₁₈	14.5	0.15	19971218	65.67001	134.70814	201.38204	4.56963	0.1319903	2.2665826	19	3	1990–1997	0.56	M-v	4	Williams	29114	1996 GO ₁₈
1996 GA ₁₉	14.5	0.15	19971218	163.40405	177.76855	48.64354	4.38362	0.0571300	2.2663066	34	3	1989–1997	0.47	M-v	3	Williams	30784	1996 GA ₁₉
1996 GD ₂₁	16.0	0.15	19971218	141.16094	87.45238	178.05489	3.31068	0.0888897	2.2137590	23	3	1990–1997	0.76	M-v	4	Williams	27561	1996 GD ₂₁
1996 HQ	16.0	0.15	19971218	181.06958	147.26455	60.95621	7.21137	0.1022352	2.2924391	33	2	1996–1997	0.73	M-v	4	Williams	30762	1996 HQ
1996 HT	13.5	0.15	19971218	149.84240	294.31588	288.21398	3.82405	0.0441781	2.4895139	30	5	1984–1997	0.62	M-v	3	Williams	30784	1996 HT
1996 HU	15.0	0.15	19971218	27.86871	192.49405	175.11311	4.96407	0.2022453	2.4310052	39	2	1996–1997	0.51	M-v	3	Williams	30762	1996 HU
1996 HD ₁	14.0	0.15	19971218	119.12431	210.29086	80.90964	6.76806	0.1948315	2.2779124	33	4	1989–1997	0.59	M-v	1	Williams	29666	1996 HD ₁
1996 HK ₁	15.5	0.15	19971218	20.22350	342.75943	40.22463	6.87602	0.0937601	2.2235459	43	2	1996–1997	0.73	M-v	4	Williams	30763	1996 HK ₁
1996 HZ ₁	15.0	0.15	19971218	88.60181	210.36349	102.89744	6.92354	0.1208837	2.3663536	25	4	1986–1997	0.69	M-v	1	Williams	29114	1996 HZ ₁
1996 HB ₂	14.0	0.15	19971218	118.61045	256.96100	20.15318	4.46822	0.1497518	2.2665013	41	5	1980–1997	0.71	M-v	1	Williams	27318	1996 HB ₂
1996 HT ₂	14.5	0.15	19971218	97.36792	84.99359	199.08830	13.12533	0.0956267	2.4266155	19	2	1996–1997	0.87	M-v	4	Williams	30763	1996 HT ₂
1996 HA ₁₅	14.0	0.15	19971218	36.11298	320.24641	49.13319	5.43438	0.1585662	2.2495646	29	4	1987–1997	0.75	M-v	2	Williams	30459	1996 HA ₁₅
1996 HR ₁₈	15.0	0.15	19971218	76.03034	104.77081	221.67706	2.00402	0.1799728	2.3941847	20	3	1993–1996	0.79	M-v	4	Williams	27938	1996 HR ₁₈
1996 HQ ₂₂	15.0	0.15	19971218	25.25440	140.42415	215.45172	4.59655	0.2094457	2.6583220	26	2	1996–1997	0.74	M-v	4	Williams	30763	1996 HQ ₂₂
1996 HQ ₂₃	15.0	0.15	19971218	356.03233	266.54451	139.29436	1.10307	0.1471039	2.2277589	22	4	1977–1997	0.78	M-v	4	Williams	30785	1996 HQ ₂₃
1996 HD ₂₄	14.0	0.15	19971218	104.62708	89.38019	206.07165	6.19948	0.2050005	2.4426041	19	3	1993–1997	0.74	M-v	3	Williams	30763	1996 HD ₂₄
1996 JF	15.0	0.15	19971218	198.29884	117.69472	71.17452	5.43012	0.1416176	2.3028952	28	4	1982–1997	0.42	M-v	2	Williams	29140	1996 JF
1996 JV	13.0	0.15	19971218	111.31303	156.04043	118.51770	24.08052	0.1908956	2.4102730	40	5	1970–1997	0.58	M-v	1	Williams	28890	1996 JV
1996 JD ₁	15.0	0.15	19971218	122.88560	121.65929	165.24086	3.72475	0.1335452	2.2639822	26	4	1989–1997	0.69	M-v	1	Williams	28088	1996 JD ₁
1996 JT ₃	14.5	0.15	19971218	50.13946	167.45437	178.36749	4.93187	0.2252426	2.4522509	22	4	1978–1996	0.90	M-v	2	Williams	27721	1996 JT ₃
1996 KB	14.0	0.15	19971218	133.81319	7.54498	230.44194	2.75264	0.0912844	2.5307490	22	2	1993–1996	0.71	M-v	5	Williams	28303	1996 KB
1996 KL ₁	14.0	0.15	19971218	84.61089	142.15578	125.74393	17.96767	0.2987271	3.0995721	26	3	1991–1997	0.57	M-v	2	Williams	30764	1996 KL ₁
1996 KQ ₁	16.0	0.15	19971218	156.08757	74.61641	177.66882	9.56755	0.1969218	2.3317299	32	3	1992–1996	0.52	M-v	3	Williams	27569	1996 KQ ₁
1996 LA	13.5	0.15	19971218	143.23755	320.83285	223.18237	7.66983	0.1098205	3.0869435	74	4	1987–1997	0.52	M-v	2	Williams	30785	1996 LA
1996 LJ ₁	14.5	0.15	19971218	116.89547	49.09150	219.32487	14.37413	0.1267925	2.7730499	42	2	1996–1997	0.34	M-v	3	Williams	30785	1996 LJ ₁
1996 NC	14.5	0.15	19971218	18.22649	286.51004	102.63603	3.18942	0.0354302	2.8508816	19	3	1978–1997	0.49	M-v	4	Williams	27721	1996 NC
1996 NG	12.0	0.15	19971218	52.82559	242.54457	108.28931	6.29075	0.1620719	3.1331720	17	3	1991–1997	0.24	M-v	2	Williams	29140	1996 NG
1996 OJ	14.5	0.15	19971218	108.88408	159.56111	126.64520	2.15281	0.1753893	3.1058040	45	3	1991–1997	0.49	M-v	3	Williams	30785	1996 OJ
1996 OX	15.0	0.15	19971218	165.22741	130.60240	162.98917	4.30714	0.1390494	2.2072823	66	5	1992–1997	0.45	M-v	1	Williams	28077	1996 OX
1996 PE	14.5	0.15	19971218	81.12956	238.11851	107.67148	4.34805	0.1604378	2.7960793	38	4	1992–1997	0.46	M-v	1	Marsden	29666	1996 PE
1996 PF ₁	14.0	0.15	19971218	137.75132	256.04791	359.87550	4.89662	0.1305059	3.1040289	41	3	1989–1997	0.55	M-v	3	Williams	30764	1996 PF ₁
1996 PR ₁	13.5	0.15	19971218	106.58116	139.90406	163.63554	0.55691	0.3004318	3.0492176	19	3	1980–1997	0.51	M-v	4	Williams	27923	1996 PR ₁
1996 PS ₁	10.5	0.15	19971218	349.03832	184.81860	201.61948	21.27969	0.0861757	5.1758142	37	3	1993–1997	0.42	M-v	2	Williams	30764	1996 PS ₁
1996 PC ₃	15.5	0.15	19971218	60.98642	98.06329	329.83320	25.89030	0.3661787	2.5939279	30	2	1985–1996	0.59	M-v	4	Williams	28304	1996 PC ₃
1996 PJ ₆	17.5	0.15	19960805	349.91756	141.51189	197.41531	1.58345	0.1971743	2.1204742	12	1	5 days	0.92		E	Williams		1996 PJ ₆
1996 PK ₆	15.5	0.15	19960805	27.77675	331.67868	322.81575	8.11511	0.0956840	2.5454418	12	1	5 days	0.91			Williams		1996 PK ₆
1996 PT ₆	15.5	0.15	19960805	115.90964	287.81672	283.83899	2.02041	0.0120882	2.2288780	12	1	8 days	0.90		E	Williams		1996 PT ₆
1996 QN ₁	14.0	0.15	19971218	124.67020	322.05320	338.97353	9.80744	0.0815830	2.9833143	56	3	1991–1997	0.70	M-v	3	Williams	29947	1996 QN ₁
1996 QX ₁	13.5	0.15	19960825	314.21502	83.88496	312.22901	11.99528	0.1760537	2.6882477	9	1	20 days	1.06			Williams		1996 QX ₁
1996 RJ	9.5	0.15	19971218	12.40222	114.88507	259.55438	30.49685	0.0486556	5.2005231	34	3	1986–1997	0.53	M-v	2	Marsden	30785	1996 RJ
1996 RU ₂	15.5	0.15	19971218	197.60005	241.78978	44.80436	0.87775	0.1006154	2.1575040	21	4	1993–1997	0.60	M-v	2	Williams	29319	1996 RU ₂
1996 TK ₆	14.0	0.15	19960914	351.34606	184.71823	163.27870	11.28226	0.1314118	3.1343934	13	1	62 days	0.44			Williams		1996 TK ₆
1996 TY ₉	13.0	0.15	19971218	257.44581	344.70347	263.48127	29.71805	0.3157954	1.9970984	35	3	1991–1997	0.58	M-v	2	Williams	28864	1996 TY ₉
1996 TV ₁₀	14.0	0.15	19971218	230.51366	221.34123	43.91479	5.91657	0.1234640	2.2341267	16	4	1976–1996	0.73	M-v	3	Williams	29140	1996 TV ₁₀
1996 TU ₁₃	13.0	0.15	19971218	242.38162	206.33853	16.16410	12.99450	0.1370430	2.6212937	25	4	1969–1997	0.42	M-v	1	Williams	29631	1996 TU ₁₃
1996 TN ₄₉	12.5	0.15	19971218	323.97873	242.53333	206.86656	10.74666	0.0977051	5.1546268	44	2	1996–1997	0.76	M-v	4	Williams	30764	1996 TN ₄₉
1996 TL ₆₆	5.0	0.15	19971218	358.60529	183.55776	217.76196	23.95096	0.5849192	84.4749770	91	2	1996–1997	0.52	M-v	5	Marsden	30785	1996 TL ₆₆
1996 TO ₆₆	4.5	0.15	19971218	105.29445	246.40600	355.19925	27.33027	0.1276771	43.6946161	73	2	1996–1997	0.58	M-v	6	Marsden	30785	1996 TO ₆₆

1997 NOV. 14

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1996 TP ₆₆	6.5	0.15	19971218	357.27051	73.91058	316.64905	5.68526	0.3354956	39.7154534	36	2	1996–1997	0.58	M-v	5	Marsden	30785	1996 TP ₆₆
1996 VP ₅	12.0	0.15	19971218	59.94374	205.52417	232.16165	8.69873	0.0693168	3.1733936	17	4	1979–1996	0.47	M-v	2	Williams	28601	1996 VP ₅
1996 VR ₃₀	12.0	0.15	19971218	306.98920	278.10981	268.72781	6.65257	0.0243659	3.1777769	18	3	1989–1996	0.78	M-v	3	Williams	29947	1996 VR ₃₀
1996 WG ₃	13.0	0.15	19971218	200.64906	61.31518	208.09620	13.24385	0.1395729	2.6291814	31	5	1982–1997	0.64	M-v	2	Williams	29666	1996 WG ₃
1996 XX ₅	14.5	0.15	19971218	85.77249	131.04713	281.00224	2.13950	0.3124981	3.1799117	16	3	1990–1996	0.49	M-v	4	Williams	28871	1996 XX ₅
1996 YU ₂	12.5	0.15	19971218	114.85080	188.59637	186.74951	13.52505	0.1915822	3.0967764	30	6	1979–1997	0.63	M-v	2	Williams	29667	1996 YU ₂
1996 YH ₃	11.5	0.15	19971218	132.53966	261.28556	64.69129	16.93976	0.0929498	3.2138757	23	4	1979–1997	0.52	M-v	2	Williams	30671	1996 YH ₃
1997 BR	17.5	0.15	19971218	124.54260	133.67812	116.77864	17.24049	0.3056718	1.3353947	403	3	1980–1997	0.59	M-v	1	Williams	30786	1997 BR
1997 CU ₂₆	6.0	0.15	19971218	324.76697	242.53487	300.47753	23.42558	0.1700419	15.7233309	216	2	1997–1997	0.48	M-v	4	Williams	30765	1997 CU ₂₆
1997 CS ₂₉	5.0	0.15	19971218	292.68746	238.78361	304.31114	2.25368	0.0058634	43.7032172	33	2	1997–1997	0.25	M-v	E	Marsden	30765	1997 CS ₂₉
1997 GV ₂₁	15.0	0.15	19970422	113.87101	38.41685	58.91057	7.44317	0.0599030	2.3117129	34	1	51 days	0.89			Marsden		1997 GV ₂₁
1997 GB ₄₁	15.5	0.15	19970402	357.01242	145.85766	68.57836	6.10495	0.1643073	2.3486883	12	1	5 days	0.73		E	Marsden		1997 GB ₄₁
1997 HX ₃	14.5	0.15	19970512	71.17334	74.63985	72.46788	9.32028	0.1326098	2.3701350	21	1	39 days	1.91			Marsden		1997 HX ₃
1997 JN	15.5	0.15	19970512	174.80406	297.43005	119.01578	4.19349	0.1469223	2.2178450	15	1	37 days	1.08			Marsden		1997 JN
1997 JU ₅	15.5	0.15	19970422	346.19421	44.12055	201.59454	7.69477	0.1380987	2.7728162	15	1	6 days	1.61			Marsden		1997 JU ₅
1997 JH ₆	14.0	0.15	19970512	299.82534	205.91428	104.02625	5.34472	0.1573186	2.8732785	21	1	36 days	2.08			Marsden		1997 JH ₆
1997 JK ₆	16.0	0.15	19970422	279.18829	158.48326	184.05371	5.58137	0.2988829	2.3657429	8	1	5 days	0.55			Marsden		1997 JK ₆
1997 JW ₆	15.0	0.15	19970422	50.20539	324.79789	196.20983	5.32890	0.1519823	2.3905231	8	1	5 days	0.52			Marsden		1997 JW ₆
1997 JE ₁₀	12.5	0.15	19971218	119.91208	74.86593	75.44364	11.51508	0.0553721	2.9860740	38	4	1979–1997	0.76	M-v	1	Marsden	30293	1997 JE ₁₀
1997 JB ₁₆	10.5	0.15	19970512	322.81910	51.33246	220.20263	11.74872	0.0048603	5.2186737	15	1	36 days	1.51		E	Marsden		1997 JB ₁₆
1997 JG ₁₆	13.0	0.15	19970512	121.83350	30.37946	64.59631	17.72849	0.1818906	3.0551897	15	1	36 days	0.64			Marsden		1997 JG ₁₆
1997 JH ₁₆	14.5	0.15	19971218	7.46966	94.15890	202.79853	5.45084	0.1283686	2.3820829	18	2	1993–1997	0.70	M-v	5	Marsden	30474	1997 JH ₁₆
1997 JJ ₁₆	14.5	0.15	19971218	64.88360	52.46719	168.48608	2.29856	0.1197177	2.4777478	18	3	1977–1997	0.64	M-v	4	Marsden	30463	1997 JJ ₁₆
1997 JN ₁₆	13.5	0.15	19970512	263.37788	151.70857	196.71852	4.14723	0.1687271	2.5982412	18	1	36 days	1.04			Marsden		1997 JN ₁₆
1997 JP ₁₆	13.5	0.15	19970512	350.02892	132.14138	112.19061	3.52664	0.0454133	2.8658893	15	1	36 days	0.86			Marsden		1997 JP ₁₆
1997 JQ ₁₆	15.5	0.15	19970512	26.63692	69.62073	125.62248	2.21965	0.1738757	2.2255923	15	1	36 days	0.87			Marsden		1997 JQ ₁₆
1997 LQ ₂	15.5	0.15	19971218	358.43912	89.56819	249.31785	22.53388	0.2824248	2.2929650	54	1	134 days	0.46	M-v	4	Williams		1997 LQ ₂
1997 LY ₄	17.0	0.15	19971218	57.96444	51.10769	252.91549	8.35987	0.2717086	1.8032661	197	1	153 days	0.47	M-v	3	Marsden	30788	1997 LY ₄
1997 LK ₁₁	14.0	0.15	19970512	347.22121	148.24459	102.39474	2.91239	0.1186838	3.0589267	9	1	35 days	0.44			Marsden		1997 LK ₁₁
1997 MW ₁	19.5	0.15	19971218	355.12618	203.65425	260.11276	12.77083	0.3464729	0.9375986	134	1	113 days	0.64	M-v	5	Williams	30691	1997 MW ₁
1997 MD ₁₀	16.0	0.15	19971218	0.26425	68.92327	281.66327	59.12798	0.9430845	26.9877964	109	1	135 days	0.72	M-v	1	Marsden	30788	1997 MD ₁₀
1997 NU	12.5	0.15	19970731	38.37797	81.13701	122.12273	13.52372	0.1160142	2.6687053	19	1	59 days	0.62			Williams		1997 NU
1997 NV	14.5	0.15	19971218	347.51355	98.46508	263.36697	5.35501	0.1286938	2.3480641	52	3	1983–1997	0.55	M-v	3	Williams	30788	1997 NV
1997 NZ	12.5	0.15	19971218	34.28735	8.19496	284.77708	12.06474	0.1631946	2.6073782	39	4	1972–1997	0.49	M-v	2	Williams	30788	1997 NZ
1997 OM	15.0	0.15	19970731	328.74664	200.25887	144.79332	2.60618	0.0829545	2.8506922	28	1	15 days	0.64			Williams		1997 OM
1997 OT	15.0	0.15	19971218	26.45453	357.81275	326.19750	7.52547	0.1175105	3.1677092	15	1	64 days	0.39	M-v	6	Williams	30788	1997 OT
1997 OY	14.0	0.15	19971218	237.02555	148.26827	318.94014	8.21860	0.1439777	2.7383705	21	1	89 days	0.23	M-v	4	Williams	30788	1997 OY
1997 OC ₁	14.0	0.15	19971218	304.42115	265.01071	154.32972	8.47482	0.1869562	2.7353515	22	3	1993–1997	0.69	M-v	4	Williams	30674	1997 OC ₁
1997 OU ₂	16.0	0.15	19971218	27.96438	178.77543	150.51593	8.81575	0.2105127	2.2945631	29	2	1990–1997	0.70	M-v	4	Williams	30675	1997 OU ₂
1997 PJ	14.5	0.15	19971218	24.99123	116.43129	188.48713	7.25235	0.1220778	2.7421249	32	2	1993–1997	0.81	M-v	5	Williams	30768	1997 PJ
1997 PR	15.0	0.15	19971218	55.71629	333.96395	320.08291	8.54611	0.2109423	2.3860938	45	2	1986–1997	0.63	M-v	4	Williams	30788	1997 PR
1997 PX ₁	14.5	0.15	19971218	78.37937	179.46873	93.83732	5.93293	0.1228609	2.3367020	70	4	1964–1997	0.54	M-v	1	Marsden	30789	1997 PX ₁
1997 PC ₂	14.5	0.15	19971218	72.64349	325.17694	319.59184	1.33810	0.0716222	2.3591619	25	3	1989–1997	0.98	M-v	3	Williams	30677	1997 PC ₂
1997 PF ₂	17.0	0.15	19971218	31.46957	316.07881	33.16108	2.67286	0.2165162	2.2541060	33	1	89 days	0.46	M-v	4	Williams		1997 PF ₂
1997 PK ₂	14.5	0.15	19971218	46.08362	9.21027	302.53272	6.09535	0.1415988	2.3674726	33	1	80 days	0.45	M-v	4	Williams		1997 PK ₂
1997 PP ₂	15.0	0.15	19970820	327.85864	52.94966	310.82593	21.64189	0.0930617	3.1743955	19	1	52 days	0.48			Williams		1997 PP ₂
1997 PU ₂	14.5	0.15	19971218	187.24364	5.43033	150.49506	23.01893	0.1409223	2.2803735	47	1	71 days	0.45	M-v	5	Marsden		1997 PU ₂
1997 PD ₃	15.5	0.15	19971218	352.94651	247.08319	144.14362	2.53895	0.0948532	2.1460044	33	1	79 days	0.23	M-v	4	Williams		1997 PD ₃
1997 PA ₄	13.5	0.15	19970820	300.16429	93.64742	308.51107	24.26435	0.2651627	3.1713949	30	1	36 days	0.59			Williams		1997 PA ₄
1997 PC ₄	15.5	0.15	19971218	38.70361	142.77595	162.48999	5.33662	0.2346164	2.6053180	21	2	1996–1997	0.39	M-v	4	Williams	30678	1997 PC ₄
1997 PM ₄	15.0	0.15	19971218	15.34717	55.69777	308.29730	6.53437	0.2041148	2.5769149	38	1	76 days	0.21	M-v	3	Williams		1997 PM ₄
1997 PQ ₄	15.5	0.15	19971218	21.63704	200.11271	153.79142	7.71659	0.1863640	2.2707087	40	2	1996–1997	0.47	M-v	3	Williams	30789	1997 PQ ₄
1997 PL ₅	13.0	0.15	19970820	281.23317	88.23884	323.59959	6.54973	0.0146102	3.1673020	21	1	57 days	0.72			Williams		1997 PL ₅

1997 QA	14.0	0.15	19971218	55.02896	25.59267	317.86846	6.80842	0.0835033	2.4117097	38	1	64 days	0.48	M-v	5	Marsden	1997 QA
1997 QD	15.5	0.15	19971218	44.38512	346.05335	300.56780	13.01748	0.3103784	2.6293450	49	1	61 days	0.26	M-v	4	Marsden	1997 QD
1997 QJ	16.0	0.15	19970909	325.18254	258.48413	136.86441	1.42593	0.2968135	2.3943535	25	1	59 days	0.28			Marsden	1997 QJ
1997 QK	13.5	0.15	19970909	357.03095	38.32896	296.67774	9.15014	0.1426684	3.0304415	68	1	59 days	0.35			Marsden	1997 QK
1997 QM	14.5	0.15	19970909	117.49408	61.00917	169.47845	15.05407	0.0112278	2.5369289	43	1	46 days	0.48			Marsden	1997 QM
1997 QN	14.6	0.15	19971218	17.70421	132.49899	256.97407	5.01991	0.1011100	2.2884194	33	1	66 days	0.23	M-v	4	Nakano	1997 QN
1997 QP	13.5	0.15	19971218	139.01005	261.98418	328.08017	13.61836	0.0666138	2.5824165	29	1	64 days	0.14	M-v	4	Williams	1997 QP
1997 QR	16.5	0.15	19970909	335.83504	111.43763	281.41076	4.39360	0.2696556	2.6209536	31	1	55 days	0.29			Williams	1997 QR
1997 QU	15.5	0.15	19971218	356.39073	184.34746	196.92083	4.48207	0.2870279	2.5695173	32	2	1989–1997	0.73	M-v	4	Williams	30789 1997 QU
1997 QV	16.5	0.15	19970909	313.46120	229.03936	165.74617	10.52026	0.1767051	2.3220782	21	1	41 days	0.60			Williams	1997 QV
1997 QD ₁	15.5	0.15	19971218	330.34995	84.24498	322.45639	3.89902	0.0586682	2.1448682	33	3	1991–1997	0.41	M-v	3	Williams	30769 1997 QD ₁
1997 QG ₁	14.0	0.15	19971218	159.89432	342.16624	223.27652	5.41002	0.1037228	2.4610750	23	2	1996–1997	0.63	M-v	5	Williams	30769 1997 QG ₁
1997 QH ₁	14.0	0.15	19970909	64.85827	349.93144	277.29104	5.11819	0.1409586	2.2051603	19	1	57 days	0.38			Williams	1997 QH ₁
1997 QK ₁	20.0	0.15	19971218	26.04970	2.53297	307.14392	2.89000	0.6423765	2.7912073	136	1	72 days	0.68	M-v	5	Williams	30790 1997 QK ₁
1997 QN ₁	14.5	0.15	19971218	28.57593	114.31731	223.92462	4.55520	0.2013227	2.2353198	44	3	1987–1997	0.44	M-v	2	Williams	30790 1997 QN ₁
1997 QY ₁	14.0	0.15	19971218	0.24189	338.98383	44.62842	3.35046	0.2008197	2.4287196	21	5	1929–1997	0.78	M-v	2	Williams	30679 1997 QY ₁
1997 QA ₂	14.4	0.15	19971218	122.86861	351.16612	266.56668	4.03422	0.0307528	2.7686149	24	1	65 days	0.49	M-v	5	Nakano	1997 QA ₂
1997 QB ₂	15.2	0.15	19971218	14.59313	9.61183	357.44513	7.98135	0.2695845	2.4197570	26	1	60 days	0.64	M-v	5	Nakano	1997 QB ₂
1997 QC ₂	14.7	0.15	19971218	42.90473	175.99701	133.25462	6.59942	0.2873709	2.6827382	14	1	66 days	0.47	M-v	5	Nakano	1997 QC ₂
1997 QE ₂	13.5	0.15	19971218	334.02793	15.75315	30.89074	4.89425	0.1285119	2.8076058	18	2	1988–1997	1.06	M-v	5	Williams	30679 1997 QE ₂
1997 QF ₂	13.5	0.15	19971218	1.39333	5.05424	5.45062	12.92839	0.1448574	3.0609384	15	1	60 days	0.46	M-v	5	Williams	1997 QF ₂
1997 QR ₂	14.5	0.15	19970820	289.39621	274.86924	155.72477	12.95926	0.1367248	2.6237303	14	1	13 days	0.98			Williams	1997 QR ₂
1997 QV ₂	15.5	0.15	19970929	351.86407	78.43775	292.21427	4.65059	0.1830164	2.2614807	25	1	59 days	0.23			Williams	1997 QV ₂
1997 QY ₂	16.0	0.15	19971218	21.35356	29.64701	327.83592	5.22470	0.2418671	2.3543616	13	1	74 days	0.56	M-v	4	Williams	1997 QY ₂
1997 QN ₃	13.8	0.15	19970909	359.81971	358.88172	23.55443	7.29081	0.1252533	2.7239518	10	1	54 days	0.80			Nakano	1997 QN ₃
1997 QP ₃	15.5	0.15	19971218	70.65256	129.49413	188.17335	3.49165	0.1938761	2.4494328	23	2	1996–1997	0.56	M-v	5	Williams	30679 1997 QP ₃
1997 QV ₃	15.0	0.15	19971218	136.00835	74.46670	192.20150	5.89049	0.0933191	2.4767670	31	3	1989–1997	0.59	M-v	3	Williams	30769 1997 QV ₃
1997 QW ₃	16.0	0.15	19971218	25.34353	262.62701	109.32427	1.25719	0.2700239	3.0779815	12	1	61 days	0.27	M-v	6	Williams	1997 QW ₃
1997 QB ₄	15.0	0.15	19971218	20.28288	358.44950	353.44212	15.35815	0.1416381	2.5393672	14	2	1993–1997	0.73	M-v	4	Williams	30679 1997 QB ₄
1997 QQ ₄	15.0	0.15	19971218	40.28094	337.04662	23.97584	2.77355	0.0828595	2.6718759	15	1	64 days	0.16	M-v	4	Williams	1997 QQ ₄
1997 QU ₄	15.5	0.15	19970909	330.77377	52.32742	329.66950	6.86843	0.2117444	2.4006999	11	1	33 days	0.93			Williams	1997 QU ₄
1997 RC	14.0	0.15	19971218	307.88358	52.38441	63.33883	3.01383	0.0275884	2.8540354	41	1	62 days	0.25	M-v	5	Marsden	1997 RC
1997 RT	20.0	0.15	19971218	34.14954	5.98367	326.11410	6.18721	0.5240313	2.2461796	296	1	68 days	0.52	M-v	4	Williams	30790 1997 RT
1997 RA ₁	13.5	0.15	19971218	14.32108	9.89442	355.31948	8.85992	0.0307916	3.0612092	33	1	61 days	0.32	M-v	5	Williams	1997 RA ₁
1997 RB ₁	15.0	0.15	19970929	46.75974	13.32989	272.14115	4.57435	0.1305874	2.2844218	30	1	55 days	0.55			Marsden	1997 RB ₁
1997 RD ₁	16.0	0.15	19971218	24.92464	161.69431	170.24299	13.49474	0.4040735	2.6629805	206	1	65 days	0.48	M-v	3	Williams	30790 1997 RD ₁
1997 RJ ₁	13.5	0.15	19971218	2.86445	236.15343	128.18002	6.38013	0.1442555	3.2003904	18	4	1977–1997	0.73	M-v	2	Williams	30790 1997 RJ ₁
1997 RP ₁	15.6	0.15	19970929	358.55201	14.07753	346.09178	3.23505	0.2277665	2.3876384	15	1	59 days	0.50			Nakano	1997 RP ₁
1997 RC ₃	14.0	0.15	19970929	57.46705	103.82027	177.65656	11.41865	0.1690792	2.7137982	22	1	47 days	0.42			Williams	1997 RC ₃
1997 RE ₃	13.0	0.15	19970929	311.43277	110.47422	310.85887	4.75294	0.1508920	3.0849646	11	1	56 days	0.27			Williams	1997 RE ₃
1997 RO ₃	15.0	0.15	19971218	15.94962	208.06133	166.56008	5.14884	0.1122831	2.4030872	28	3	1986–1997	0.82	M-v	4	Williams	30680 1997 RO 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	30791 1997 RQ ₃
1997 RR ₃	13.0	0.15	19971218	302.54692	283.02959	177.51304	13.68210	0.1297353	2.5795038	23	3	1970–1997	0.58	M-v	4	Williams	30770 1997 RR ₃
1997 RS ₃	13.5	0.15	19970909	298.75522	73.14736	22.58874	5.09175	0.0986926	3.0494556	24	1	52 days	0.32			Williams	1997 RS ₃
1997 RT ₃	15.5	0.15	19971218	123.53958	252.13867	21.47652	3.42731	0.0768578	2.6468977	24	1	61 days	0.40	M-v	5	Williams	1997 RT ₃
1997 RH ₄	17.0	0.15	19971218	11.51154	32.66222	12.95482	6.35099	0.2835607	2.1932520	41	1	67 days	0.64	M-v	4	Marsden	1997 RH ₄
1997 RQ ₅	13.5	0.15	19970929	144.01934	39.13605	190.34723	0.57566	0.0952360	3.1245832	25	1	51 days	0.26			Marsden	1997 RQ ₅
1997 RX ₆	13.0	0.15	19971218	278.99117	101.37415	15.79298	1.86485	0.0166640	2.8981766	28	3	1977–1997	0.73	M-v	4	Williams	30770 1997 RX ₆
1997 RY ₆	7.5	0.15	19970929	2.23946	37.88286	318.47746	12.44707	0.0000000	41.3596691	20	1	52 days	0.39		E	Marsden	1997 RY ₆
1997 RJ ₇	14.0	0.15	19971218	44.47448	352.07969	322.14638	5.68883	0.1579984	3.1423824	25	2	1986–1997	0.35	M-v	4	Williams	30770 1997 RJ ₇
1997 RK ₇	15.0	0.15	19970929	356.79149	54.82411	302.87677	7.18238	0.2614898	2.4354177	37	1	56 days	0.20			Marsden	1997 RK ₇
1997 RL ₇	15.0	0.15	19970929	31.56544	304.38872	358.53522	13.00317	0.1925198	2.5393099	32	1	43 days	0.30			Marsden	1997 RL ₇
1997 RO ₇	13.5	0.15	19971218	87.14033	134.07990	138.98014	10.25954	0.0584640	3.1634928	22	2	1991–1997	0.64	M-v	5	Williams	30771 1997 RO ₇

1997 RZ ₇	13.0	0.15	19970929	344.84959	42.37028	339.69733	14.80943	0.1772286	2.5971220	12	1	53 days	0.41		Nakano	1997 RZ ₇
1997 RT ₈	15.0	0.15	19970929	39.16183	223.26444	92.39453	2.35722	0.1902665	2.3860812	27	1	51 days	0.40		Williams	1997 RT ₈
1997 RV ₈	13.0	0.15	19971218	47.23263	295.97876	36.74060	5.39997	0.1881994	2.4808974	16	1	60 days	0.31	M-v 5	Williams	1997 RV ₈
1997 RY ₈	13.0	0.15	19970929	235.41857	336.25723	172.29415	10.55251	0.0992360	3.0302053	22	1	47 days	0.26		Williams	1997 RY ₈
1997 RA ₉	15.0	0.15	19971218	27.49053	194.66501	179.33447	5.66836	0.0950618	2.2616527	42	2	1990–1997	0.50	M-v 4	Williams	1997 RA ₉
1997 RG ₉	13.0	0.15	19970929	74.19277	328.25491	299.64384	15.57342	0.1687561	3.1234205	18	1	45 days	0.32		Marsden	1997 RG ₉
1997 RH ₉	16.5	0.15	19970929	30.04029	331.67322	352.19887	13.63920	0.3308363	2.6208624	30	1	41 days	0.31		Marsden	1997 RH ₉
1997 RK ₉	15.0	0.15	19970929	284.87526	112.75419	345.63976	6.32536	0.1719840	2.4365420	10	1	51 days	0.18		Williams	1997 RK ₉
1997 RM ₉	15.0	0.15	19970929	45.68094	323.93957	356.60322	12.57952	0.1652625	2.7484827	27	1	51 days	0.33		Williams	1997 RM ₉
1997 RN ₉	16.0	0.15	19970929	337.65605	2.55506	33.19681	13.12306	0.1757210	2.5213312	19	1	32 days	0.30		Marsden	1997 RN ₉
1997 RP ₉	15.0	0.15	19971218	6.00454	216.79073	163.55149	2.60641	0.2094187	2.4329561	41	3	1986–1997	0.66	M-v 3	Williams	1997 RP ₉
1997 RR ₉	14.0	0.15	19970929	4.59442	175.24700	168.54432	7.57599	0.2504978	2.6874802	13	1	48 days	0.18		Williams	1997 RR ₉
1997 RT ₉	14.0	0.15	19971218	338.09980	240.56905	179.72790	5.23866	0.2091871	2.7243973	22	3	1979–1997	0.48	M-v 4	Marsden	1997 RT ₉
1997 RD ₁₀	14.5	0.15	19971218	22.69063	203.17532	161.66839	4.87268	0.2872503	2.5745101	24	2	1996–1997	0.28	M-v 3	Williams	1997 RD ₁₀
1997 RP ₁₀	13.0	0.15	19970909	58.12623	106.09460	158.21477	12.75111	0.1391454	2.6384602	23	1	29 days	1.08		Williams	1997 RP ₁₀
1997 SB	16.5	0.15	19970929	319.84972	196.31016	204.46279	22.45471	0.0954915	1.9783922	29	1	31 days	0.36		Marsden	1997 SB
1997 SC	15.5	0.15	19970929	24.89746	65.21995	271.25003	6.55044	0.2358183	2.7901940	44	1	36 days	0.62		Marsden	1997 SC
1997 SE	14.0	0.15	19970929	305.34256	235.84908	167.41680	15.87933	0.1273042	2.5350469	40	1	39 days	0.29		Marsden	1997 SE
1997 SF	14.0	0.15	19970929	316.72590	315.46324	87.27971	6.25160	0.1507907	3.1143799	30	1	29 days	0.32		Marsden	1997 SF
1997 SG	16.0	0.15	19970929	307.54919	73.38073	340.52114	3.17364	0.0587093	2.2372799	30	1	33 days	0.26		Marsden	1997 SG
1997 SH	14.0	0.15	19971218	80.56067	357.68193	274.70758	9.07365	0.0734231	2.9693119	29	2	1977–1997	0.56	M-v 5	Williams	1997 SH
1997 SL	15.5	0.15	19970929	337.12711	163.16439	219.50342	1.81060	0.2429529	2.8562569	26	1	57 days	0.39		Williams	1997 SL
1997 SN	15.0	0.15	19970929	133.67392	359.95833	219.49999	6.93546	0.0487143	2.2741767	20	1	45 days	0.24		Williams	1997 SN
1997 SO	16.0	0.15	19970929	26.29696	319.54621	4.27786	6.19578	0.2400626	2.4214562	17	1	45 days	0.31		Williams	1997 SO
1997 SQ	14.5	0.15	19971218	20.38964	303.84119	58.97205	0.17337	0.1593565	2.9691995	38	4	1982–1997	0.44	M-v 3	Williams	1997 SQ
1997 SR	14.0	0.15	19971218	34.69525	353.49335	324.33024	11.92107	0.1746097	2.7169557	27	1	63 days	0.34	M-v 4	Williams	1997 SR
1997 SX	12.7	0.15	19970929	41.45241	312.29024	46.62522	10.55558	0.1048694	3.0647596	17	1	56 days	0.62		Nakano	1997 SX
1997 SE ₁	15.0	0.15	19970929	113.82022	70.05209	156.82880	6.61771	0.0651517	2.3515547	22	1	31 days	0.61		Williams	1997 SE ₁
1997 SG ₁	13.5	0.15	19971218	276.47662	339.77133	161.02554	13.52542	0.1076756	2.6724353	40	2	1977–1997	0.64	M-v 5	Marsden	1997 SG ₁
1997 SH ₁	16.0	0.15	19970929	287.17760	312.46068	119.51773	5.09960	0.0993392	2.3020729	28	1	14 days	0.54		Marsden	1997 SH ₁
1997 SJ ₁	15.5	0.15	19970929	254.42461	125.17916	335.59209	2.24339	0.0431845	2.2991779	29	1	14 days	0.38		Marsden	1997 SJ ₁
1997 SK ₁	14.5	0.15	19970929	216.49069	159.99764	338.64485	3.89596	0.0848965	2.6273315	34	1	31 days	0.30		Marsden	1997 SK ₁
1997 SM ₁	13.5	0.15	19970929	144.34950	5.52273	199.20274	13.38368	0.1054275	2.6828425	19	1	44 days	0.14		Williams	1997 SM ₁
1997 SN ₁	14.0	0.15	19970929	75.87654	299.54129	336.62556	12.26784	0.1683408	2.6868359	21	1	45 days	0.22		Williams	1997 SN ₁
1997 SO ₁	17.0	0.15	19970929	351.87406	182.35603	192.52844	4.90043	0.1055641	2.1909385	12	1	19 days	0.29		Williams	1997 SO ₁
1997 SP ₁	15.5	0.15	19970929	335.61813	267.38873	137.26207	0.44285	0.1837385	2.2859636	19	1	44 days	0.36		Williams	1997 SP ₁
1997 SU ₁	16.0	0.15	19970929	344.45665	191.80977	182.46798	2.30106	0.1634337	2.5485375	29	1	31 days	0.28		Marsden	1997 SU ₁
1997 SV ₁	16.0	0.15	19970929	53.95457	318.76790	326.38259	1.20982	0.1273811	2.4051304	31	1	41 days	0.37		Marsden	1997 SV ₁
1997 SW ₁	16.5	0.15	19970929	340.09044	124.70197	259.67749	5.59467	0.2571793	2.5263284	29	1	30 days	0.30		Marsden	1997 SW ₁
1997 SX ₁	14.0	0.15	19970929	303.89602	248.53374	209.37157	4.41754	0.1463019	2.6369860	26	1	43 days	0.35		Williams	1997 SX ₁
1997 SY ₁	15.5	0.15	19970929	357.06760	3.38449	26.10054	1.66979	0.1815630	2.7471491	41	1	42 days	0.52		Williams	1997 SY ₁
1997 SZ ₁	14.5	0.15	19971218	343.51956	230.71488	200.65930	2.71249	0.1185334	2.4446050	41	3	1991–1997	0.60	M-v 3	Williams	1997 SZ ₁
1997 SA ₂	14.0	0.15	19971218	24.68135	351.45462	23.68295	2.75047	0.1096031	2.9850108	30	1	61 days	0.52	M-v 5	Williams	1997 SA ₂
1997 SB ₂	16.0	0.15	19970929	247.71880	123.11355	19.14956	3.69050	0.0532883	2.1846807	27	1	42 days	0.49		Williams	1997 SB ₂
1997 SC ₂	15.0	0.15	19971218	7.84849	195.14455	205.31170	3.17796	0.1056982	2.4328491	30	2	1993–1997	0.48	M-v 4	Williams	1997 SC ₂
1997 SE ₂	15.0	0.15	19970929	348.89832	137.39630	262.46371	0.95924	0.0678393	2.8667475	25	1	39 days	0.53		Williams	1997 SE ₂
1997 SG ₂	14.6	0.15	19970929	12.88023	13.49976	338.29158	7.56787	0.0748165	2.2217551	22	1	40 days	0.27		Nakano	1997 SG ₂
1997 SK ₂	16.5	0.15	19970929	14.28306	277.92530	69.56776	5.47638	0.1631694	2.3971142	32	1	29 days	0.43		Marsden	1997 SK ₂
1997 SL ₂	14.5	0.15	19970929	301.74457	303.60298	125.11037	6.80963	0.0208056	2.6785990	29	1	29 days	0.28		Marsden	1997 SL ₂
1997 SN ₂	15.5	0.15	19971218	326.34078	186.37918	230.34998	1.58807	0.1576010	2.3861504	22	3	1990–1997	0.67	M-v 5	Williams	1997 SN ₂
1997 SP ₂	16.0	0.15	19970929	16.61079	300.47263	31.59743	2.51122	0.2376601	2.3594645	19	1	41 days	0.18		Williams	1997 SP ₂
1997 SQ ₂	17.0	0.15	19970929	50.06332	281.27442	18.80317	2.18327	0.1861991	2.2107393	17	1	36 days	0.26		Williams	1997 SQ ₂
1997 SS ₂	17.0	0.15	19970929	14.09928	348.59934	11.05626	2.14985	0.2268161	2.3945199	20	1	38 days	0.59		Williams	1997 SS ₂

1997 ST ₂	15.5	0.15	19970929	340.23579	181.10951	228.96224	1.20896	0.0613114	2.8675406	26	1	37 days	0.43	Williams	1997 ST ₂
1997 SU ₂	15.5	0.15	19970929	19.06861	94.77436	255.80367	10.89578	0.1968072	2.7049357	21	1	38 days	0.28	Williams	1997 SU ₂
1997 SW ₂	16.0	0.15	19970929	322.10375	304.14358	106.59533	7.15833	0.1209467	2.2054572	17	1	39 days	0.42	Marsden	1997 SW ₂
1997 SX ₂	15.0	0.15	19970929	238.59950	161.86412	341.54925	3.50159	0.1504694	2.2587241	9	1	26 days	0.36	Williams	1997 SX ₂
1997 SY ₂	16.0	0.15	19970929	347.57543	33.07090	353.28631	3.88402	0.1592053	2.2936590	14	1	34 days	1.15	E Williams	1997 SY ₂
1997 SZ ₂	14.0	0.15	19970929	343.74831	73.51893	318.63348	1.09772	0.1362422	3.1063106	6	1	18 days	0.49	Williams	1997 SZ ₂
1997 SA ₃	14.0	0.15	19970929	184.72497	347.32832	199.90284	4.86366	0.1071321	2.6949423	10	1	18 days	0.78	Williams	1997 SA ₃
1997 SC ₃	15.5	0.15	19970929	7.73457	357.24000	1.09274	4.82104	0.1962240	2.5973504	16	1	40 days	0.98	Williams	1997 SC ₃
1997 SD ₃	16.5	0.15	19970929	356.12326	17.91470	356.52140	7.56118	0.1935337	2.5962671	13	1	31 days	0.70	Williams	1997 SD ₃
1997 SF ₃	15.5	0.15	19970929	346.57168	22.63031	347.24566	6.87589	0.1290420	2.2819355	26	1	28 days	0.21	Marsden	1997 SF ₃
1997 SG ₃	15.0	0.15	19970929	327.84965	131.58489	270.36756	1.65617	0.1883048	2.4669873	26	1	33 days	0.32	Marsden	1997 SG ₃
1997 SH ₃	14.5	0.15	19970929	10.47336	14.06689	348.47971	10.35858	0.0841845	3.1072338	29	1	29 days	0.29	Williams	1997 SH ₃
1997 SJ ₃	15.5	0.15	19970929	123.24929	289.37226	317.97403	2.61483	0.0772470	2.3323304	22	1	28 days	0.42	Marsden	1997 SJ ₃
1997 SM ₃	13.5	0.15	19970929	105.79697	267.41726	325.88013	14.86701	0.1097224	2.6369616	11	1	33 days	0.78	Williams	1997 SM ₃
1997 SP ₃	16.0	0.15	19970929	33.16411	309.08772	1.32923	7.31380	0.2192313	2.3426155	21	1	38 days	0.58	Williams	1997 SP ₃
1997 SQ ₃	16.0	0.15	19970929	17.57561	335.44087	5.93429	8.58072	0.1457673	2.2773852	25	1	40 days	0.49	Williams	1997 SQ ₃
1997 SR ₃	15.0	0.15	19970929	23.57304	314.18750	14.55729	2.30722	0.2121162	2.6527493	23	1	31 days	0.15	Williams	1997 SR ₃
1997 SS ₃	15.0	0.15	19970929	352.76045	330.62812	47.86090	5.98670	0.1990494	2.4588172	24	1	33 days	0.75	Williams	1997 SS ₃
1997 SX ₃	16.0	0.15	19970929	336.94795	273.11647	115.28645	4.79639	0.2545297	2.5991158	28	1	28 days	0.25	Williams	1997 SX ₃
1997 SY ₃	14.5	0.15	19970909	333.81476	63.46159	307.33438	8.43762	0.1329678	2.7580205	9	1	2 days	0.22	E Marsden	1997 SY ₃
1997 SZ ₃	16.5	0.15	19970929	341.50721	169.29795	227.49345	4.81596	0.2938733	2.4784300	18	1	36 days	0.56	Marsden	1997 SZ ₃
1997 SA ₄	17.0	0.15	19970929	23.32115	323.60643	14.37577	10.51439	0.2298336	2.2446275	17	1	23 days	0.49	Williams	1997 SA ₄
1997 SC ₄	15.0	0.15	19970929	340.63836	201.20667	212.70191	1.40802	0.0738921	2.9368107	28	1	35 days	0.89	E Williams	1997 SC ₄
1997 SD ₄	14.5	0.15	19970929	14.40244	160.28859	206.75462	4.70505	0.1628220	3.1160271	18	1	39 days	0.26	Williams	1997 SD ₄
1997 SE ₄	14.5	0.15	19970929	308.04906	54.54942	4.78398	1.73709	0.0816735	2.9180621	19	1	28 days	0.35	Williams	1997 SE ₄
1997 SF ₄	14.5	0.15	19970929	10.65696	141.29522	208.51684	9.66562	0.2118654	3.1688999	30	1	41 days	0.69	Williams	1997 SF ₄
1997 SG ₄	14.7	0.15	19971019	21.96341	141.19558	205.92654	5.78316	0.1718807	2.3892695	14	1	29 days	0.39	Nakano	1997 SG ₄
1997 SH ₄	14.6	0.15	19971019	19.08047	126.32665	224.31204	4.04760	0.1642896	2.9497339	15	1	32 days	0.50	Nakano	1997 SH ₄
1997 SK ₄	14.2	0.15	19971019	359.13505	73.65290	305.15315	2.64459	0.1089313	2.6658148	12	1	29 days	0.56	Nakano	1997 SK ₄
1997 SL ₄	13.5	0.15	19970929	328.01694	195.45427	222.80362	6.84882	0.1891554	2.7177163	17	1	33 days	0.42	Williams	1997 SL ₄
1997 SM ₄	14.1	0.15	19971019	41.48301	92.51409	217.12112	7.75886	0.2762075	2.6963788	12	1	29 days	0.51	Nakano	1997 SM ₄
1997 SN ₄	12.5	0.15	19970929	352.81462	1.25253	357.74838	13.18958	0.2563166	2.6148986	12	1	26 days	0.20	Williams	1997 SN ₄
1997 SO ₄	15.5	0.15	19970909	3.36989	145.61464	189.85273	2.42154	0.2150302	2.6041658	9	1	2 days	0.27	Marsden	1997 SO ₄
1997 SS ₄	14.5	0.15	19970929	45.69466	76.51903	242.29378	3.34928	0.0693765	2.7772890	25	1	25 days	0.81	Williams	1997 SS ₄
1997 SW ₄	17.0	0.15	19970929	22.05593	280.04333	72.67124	2.76461	0.1546832	2.1564208	15	1	27 days	0.45	Marsden	1997 SW ₄
1997 SZ ₄	14.0	0.15	19970929	35.47456	321.03747	8.47288	21.42063	0.0859627	3.1602040	9	1	40 days	0.57	Williams	1997 SZ ₄
1997 SE ₅	15.0	0.15	19971218	11.64585	56.38869	288.05780	2.61445	0.6675417	3.7230807	324	1	136 days	0.53	M-v 4 Williams	30792 1997 SE ₅
1997 SM ₅	18.0	0.15	19970929	346.82294	359.08792	23.04457	1.84247	0.1881692	2.4409852	9	1	7 days	0.51	Williams	1997 SM ₅
1997 SA ₆	17.0	0.15	19970929	329.78756	48.91914	356.62748	12.21926	0.2739129	3.1751793	12	1	35 days	0.28	Williams	1997 SA ₆
1997 SB ₆	15.0	0.15	19970929	3.16952	351.49766	357.71488	10.21421	0.1242571	3.1040952	15	1	41 days	0.21	Williams	1997 SB ₆
1997 SC ₆	16.5	0.15	19970929	51.05586	286.33944	357.43753	12.79593	0.1882162	2.7209488	12	1	35 days	0.22	Williams	1997 SC ₆
1997 SG ₆	16.5	0.15	19970929	349.02880	7.21365	4.56980	5.78812	0.1631076	2.3544438	15	1	31 days	0.25	Williams	1997 SG ₆
1997 SL ₇	14.5	0.15	19970929	67.20791	273.51046	356.87960	10.08474	0.1379055	3.0677754	12	1	30 days	0.13	Williams	1997 SL ₇
1997 SW ₉	13.5	0.15	19970929	247.25067	252.84184	238.04869	10.43986	0.0982391	3.0700504	22	1	22 days	0.47	Williams	1997 SW ₉
1997 SX ₉	15.5	0.15	19971019	79.20554	46.56849	229.34734	3.62569	0.1800921	2.2586047	23	1	42 days	0.72	Williams	1997 SX ₉
1997 SZ ₉	14.5	0.15	19971218	23.06165	80.33366	287.10093	6.19264	0.1449359	2.2937001	18	2	1992–1997	0.30	M-v 4 Williams	30773 1997 SZ ₉
1997 SD ₁₀	15.0	0.15	19971218	28.97038	259.75332	100.66439	2.53277	0.1992520	2.3955595	50	3	1986–1997	0.47	M-v 3 Williams	30773 1997 SD ₁₀
1997 SF ₁₀	15.0	0.15	19970929	339.02776	338.82059	64.37664	3.45966	0.1870408	2.4433257	31	1	47 days	0.36	Williams	1997 SF ₁₀
1997 SK ₁₀	14.0	0.15	19970929	349.21043	152.66603	204.19900	2.34073	0.1812731	3.1083601	21	1	37 days	0.26	Williams	1997 SK ₁₀
1997 SR ₁₀	14.0	0.15	19970929	70.53018	272.89269	4.76511	12.06858	0.1448982	2.5524298	15	1	22 days	0.38	Williams	1997 SR ₁₀
1997 SS ₁₀	14.5	0.15	19970929	259.91768	287.99878	185.84191	3.59464	0.0807939	2.3094533	20	1	32 days	0.86	E Williams	1997 SS ₁₀
1997 ST ₁₀	14.2	0.15	19970929	10.49386	353.32956	32.71554	6.65604	0.1514981	2.3126050	14	1	56 days	0.25	Nakano	1997 ST ₁₀
1997 SU ₁₀	14.5	0.15	19970909	1.69894	159.19194	230.34863	3.35790	0.1641744	2.2617312	9	1	8 days	0.45	E Williams	1997 SU ₁₀

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1997 SV ₁₀	15.0	0.15	19970929	103.21053	37.61431	186.52460	4.08886	0.1445294	2.1384606	9	1	2 days	0.18	E	Williams	1997 SV ₁₀
1997 SX ₁₀	13.8	0.15	19971019	41.71216	310.57995	357.88266	4.85819	0.2715002	3.1121867	10	1	29 days	0.60		Nakano	1997 SX ₁₀
1997 SC ₁₁	18.0	0.15	19970929	17.66281	163.56872	177.28119	2.85648	0.1570395	2.1611512	9	1	10 days	0.54		Williams	1997 SC ₁₁
1997 SF ₁₁	14.0	0.15	19970929	263.31534	265.64599	215.67286	12.70780	0.0555852	3.0991160	28	1	38 days	0.64		Williams	1997 SF ₁₁
1997 SH ₁₁	16.5	0.15	19970929	1.81492	350.31125	26.54772	4.76822	0.2577088	2.5885701	15	1	26 days	0.28		Williams	1997 SH ₁₁
1997 SJ ₁₁	15.5	0.15	19970929	8.04327	337.04394	30.11888	2.73934	0.2198186	2.4168239	18	1	27 days	0.29		Marsden	1997 SJ ₁₁
1997 SL ₁₁	17.0	0.15	19970929	42.76603	298.54276	358.42076	2.60612	0.1747849	2.3360989	15	1	59 days	0.20		Williams	1997 SL ₁₁
1997 SN ₁₁	15.5	0.15	19971218	339.28473	352.61839	52.22381	0.26468	0.1948016	3.0814011	15	1	70 days	0.34	M-v 5	Williams	1997 SN ₁₁
1997 SO ₁₁	16.5	0.15	19970929	282.59095	75.49446	4.28857	1.49176	0.0751686	2.6528606	12	1	24 days	0.39		Williams	1997 SO ₁₁
1997 SQ ₁₄	14.0	0.15	19970929	73.08294	58.28258	230.67169	5.69555	0.1406041	2.4501436	15	1	28 days	0.35		Williams	1997 SQ ₁₄
1997 SK ₁₅	15.5	0.15	19970929	356.12813	73.13355	281.00417	1.09043	0.3051851	2.6429853	12	1	13 days	0.27		Williams	1997 SK ₁₅
1997 SF ₁₆	13.5	0.15	19971019	44.46956	136.45507	189.44270	0.75966	0.1281654	3.0500696	10	1	30 days	0.49		Nakano	1997 SF ₁₆
1997 SJ ₁₆	16.0	0.15	19971019	350.33100	334.94184	53.94087	6.85013	0.0774271	2.6691183	18	1	37 days	0.35		Nakano	1997 SJ ₁₆
1997 SL ₁₆	14.0	0.15	19971019	103.93471	109.44976	147.63650	12.31417	0.1032677	2.5678237	41	1	34 days	0.57		Nakano	1997 SL ₁₆
1997 SO ₁₆	14.0	0.15	19970929	63.41117	280.90082	6.40619	6.88468	0.1305575	2.4572509	15	1	20 days	0.36		Williams	1997 SO ₁₆
1997 SL ₁₇	15.0	0.15	19970929	309.38247	79.15769	351.17309	10.17143	0.2334507	2.4230270	28	1	37 days	0.76		Williams	1997 SL ₁₇
1997 SP ₁₇	15.0	0.15	19970929	356.52151	183.32661	198.26310	7.00375	0.2992805	2.6243154	11	1	28 days	0.85		Williams	1997 SP ₁₇
1997 SQ ₁₇	14.0	0.15	19970929	59.06244	284.23689	14.26616	12.57468	0.1816090	2.4392507	20	1	24 days	0.73		Marsden	1997 SQ ₁₇
1997 SS ₁₇	16.0	0.15	19970929	352.55539	316.56175	71.47197	4.56497	0.1400611	2.1911778	19	1	30 days	0.51		Williams	1997 SS ₁₇
1997 ST ₁₇	15.0	0.15	19970929	23.83884	177.62545	160.66792	2.67928	0.2054893	2.3866993	12	1	36 days	0.32		Marsden	1997 ST ₁₇
1997 SX ₁₇	17.0	0.15	19970909	25.19472	305.96454	20.67359	14.38048	0.3096603	2.5295323	9	1	9 days	0.14		Williams	1997 SX ₁₇
1997 SY ₁₇	18.5	0.15	19970929	320.52881	256.44784	166.43463	2.35305	0.2276133	2.3595384	7	1	6 days	0.48	E	Williams	1997 SY ₁₇
1997 SF ₁₈	15.0	0.15	19970929	178.90709	148.91488	48.69530	3.62741	0.1255003	2.4052505	11	1	37 days	0.63		Marsden	1997 SF ₁₈
1997 SQ ₁₈	15.5	0.15	19970929	255.74383	112.87678	357.90778	6.19846	0.1029343	2.2710787	11	1	26 days	0.17		Williams	1997 SQ ₁₈
1997 SJ ₂₃	15.0	0.15	19971218	186.47842	204.25369	12.10502	3.20799	0.1598057	2.3950642	29	4	1988–1997	0.78	M-v 2	Williams	30773 1997 SJ ₂₃
1997 SV ₂₃	15.5	0.15	19970929	303.06471	79.06373	17.58267	2.70032	0.1463632	2.4531701	12	1	32 days	0.35		Williams	1997 SV ₂₃
1997 SW ₂₃	16.5	0.15	19970929	318.67642	136.68398	302.86761	0.47006	0.1344315	3.0588147	11	1	22 days	0.13		Williams	1997 SW ₂₃
1997 SU ₂₄	12.5	0.15	19970929	331.54238	32.90815	28.86223	15.51012	0.0326080	5.1219616	14	1	33 days	0.25		Williams	1997 SU ₂₄
1997 SX ₂₄	15.5	0.15	19970929	323.31403	219.84004	210.41778	3.72682	0.1334030	2.3090593	12	1	11 days	0.45		Williams	1997 SX ₂₄
1997 SA ₂₅	15.0	0.15	19970929	11.46240	160.39612	206.23111	12.52215	0.1941187	2.5522902	25	1	29 days	0.52		Williams	1997 SA ₂₅
1997 SB ₂₅	15.0	0.15	19970929	15.93801	303.29195	51.77002	2.20886	0.1806550	2.2416311	15	1	32 days	0.63		Williams	1997 SB ₂₅
1997 SD ₂₅	13.0	0.15	19970929	301.88900	252.84945	195.31440	10.41628	0.0676845	3.0368316	14	1	33 days	0.31		Williams	1997 SD ₂₅
1997 SF ₂₅	15.0	0.15	19970929	343.10959	10.45111	19.87935	6.66299	0.1312695	2.3971469	12	1	29 days	1.02	E	Williams	1997 SF ₂₅
1997 SG ₂₅	14.2	0.15	19970929	81.09339	197.84187	68.84929	3.03747	0.1803528	2.4009289	9	1	26 days	0.65		Nakano	1997 SG ₂₅
1997 SK ₂₅	13.8	0.15	19970929	347.61463	212.06745	172.29158	9.87234	0.0963285	2.9805064	9	1	22 days	0.72		Nakano	1997 SK ₂₅
1997 SL ₂₅	14.9	0.15	19971019	16.09233	171.93803	179.09988	13.63227	0.2039099	2.7168757	8	1	21 days	0.65		Nakano	1997 SL ₂₅
1997 SN ₂₅	13.3	0.15	19970929	30.63167	18.38957	314.66862	0.93915	0.1936922	2.9780572	17	1	10 days	1.00		Nakano	1997 SN ₂₅
1997 SO ₂₅	16.0	0.15	19970929	267.43721	208.58655	276.27389	2.78631	0.0958036	2.2337264	15	1	33 days	0.48		Williams	1997 SO ₂₅
1997 SP ₂₅	15.0	0.15	19970929	40.52647	161.06945	172.23999	4.57973	0.0945592	2.6955362	22	1	34 days	0.26		Williams	1997 SP ₂₅
1997 ST ₂₆	16.5	0.15	19970929	355.29713	354.67584	9.36816	3.94336	0.2028007	2.4496494	9	1	24 days	0.13		Williams	1997 ST ₂₆
1997 SE ₃₀	13.5	0.15	19970929	284.08926	247.36034	240.70650	1.96706	0.2178906	3.0732327	12	1	31 days	0.16		Williams	1997 SE ₃₀
1997 SM ₃₀	14.0	0.15	19970929	3.73376	4.62921	19.71160	4.82658	0.2126148	5.2108651	12	1	33 days	0.17		Williams	1997 SM ₃₀
1997 SO ₃₀	17.0	0.15	19970929	121.22369	238.18855	20.69781	5.01547	0.0741956	2.5538246	12	1	24 days	0.25		Williams	1997 SO ₃₀
1997 SR ₃₀	17.0	0.15	19970929	350.22800	15.80886	3.35655	2.10843	0.2341445	2.3013770	9	1	9 days	0.20		Williams	1997 SR ₃₀
1997 SA ₃₁	13.3	0.15	19970929	38.88358	132.27515	204.16665	18.74239	0.1034348	3.1952222	10	1	33 days	0.82		Nakano	1997 SA ₃₁
1997 SJ ₃₁	15.5	0.15	19970929	42.55088	333.09564	334.87784	0.70203	0.0304184	3.0445034	12	1	25 days	0.60		Williams	1997 SJ ₃₁
1997 SM ₃₁	17.0	0.15	19970929	293.33184	91.34496	356.92505	8.32491	0.2311228	2.5300571	12	1	30 days	0.21		Williams	1997 SM ₃₁
1997 SN ₃₁	14.5	0.15	19971218	149.80001	222.13722	358.79782	5.37928	0.0897847	2.2746442	21	2	1996–1997	0.38	M-v 4	Williams	30773 1997 SN ₃₁
1997 SR ₃₁	16.0	0.15	19971218	271.71051	117.01486	355.41807	3.66975	0.0863140	2.4208483	18	2	1995–1997	0.55	M-v 5	Williams	30773 1997 SR ₃₁
1997 SS ₃₁	14.0	0.15	19970929	284.19108	192.75281	238.63319	4.31613	0.1600331	3.1736358	14	1	34 days	0.43		Williams	1997 SS ₃₁
1997 SR ₃₂	15.0	0.15	19970929	338.26343	38.37603	357.22885	3.42311	0.1694376	2.2318165	21	1	19 days	0.70		Williams	1997 SR ₃₂
1997 SU ₃₂	13.5	0.15	19970929	277.44082	93.60718	29.21784	20.94186	0.0847001	5.2697476	12	1	25 days	0.19		Williams	1997 SU ₃₂
1997 SX ₃₂	14.0	0.15	19970929	232.73204	292.54870	228.59646	3.26253	0.0388005	5.1329368	12	1	24 days	0.21		Williams	1997 SX ₃₂

1997 SA ₃₃	18.0	0.15	19970929	8.99301	356.25713	15.85293	1.58015	0.1316834	2.5973120	9	1	22 days	0.25		Williams	1997 SA ₃₃
1997 SB ₃₃	18.0	0.15	19970929	355.53916	19.42678	10.87023	1.09051	0.2622038	2.7426077	12	1	32 days	0.18		Williams	1997 SB ₃₃
1997 SC ₃₃	14.5	0.15	19970929	3.25748	171.81142	214.56346	4.79416	0.1354043	5.2347691	9	1	22 days	0.21		Williams	1997 SC ₃₃
1997 SM ₃₃	15.5	0.15	19970929	359.78641	183.54665	199.25023	8.77449	0.2177686	2.4447322	13	1	36 days	0.30		Williams	1997 SM ₃₃
1997 SA ₃₄	13.0	0.15	19970929	330.27539	50.97701	37.35728	9.75624	0.2106761	2.9149792	10	1	48 days	0.30		Williams	1997 SA ₃₄
1997 SC ₃₄	13.5	0.15	19970909	346.56882	16.45908	45.77132	15.28733	0.1323307	3.0552821	10	1	21 days	0.23		Williams	1997 SC ₃₄
1997 TB	15.0	0.15	19970929	243.73411	301.39289	199.14307	14.86927	0.0612032	2.6653140	12	1	21 days	0.60		Williams	1997 TB
1997 TC	13.5	0.15	19971218	77.42849	263.41673	21.40906	2.13414	0.0764758	2.9383709	25	1	76 days	0.64	M-v 5	Williams	1997 TC
1997 TD	16.5	0.15	19971218	28.28494	170.58452	159.15648	12.89814	0.4691044	2.2533610	118	1	37 days	0.53	M-v 6	Williams	1997 TD
1997 TE	13.5	0.15	19970929	327.29588	35.49387	27.08154	9.41984	0.1901202	2.6242080	11	1	32 days	0.25		Marsden	1997 TE
1997 TR	14.0	0.15	19971019	20.09919	328.94840	5.69350	8.86080	0.1169476	3.0724935	30	1	30 days	0.50		Williams	1997 TR
1997 TS	16.0	0.15	19970929	68.25120	26.24975	283.64428	8.30242	0.0475467	2.3845720	16	1	26 days	0.32		Marsden	1997 TS
1997 TV	13.5	0.15	19970929	102.53449	266.14864	359.27303	9.07811	0.0623764	3.1592756	17	1	24 days	1.06		Williams	1997 TV
1997 TW	15.0	0.15	19970929	10.53313	158.13119	196.53698	16.89296	0.2486483	3.1045614	14	1	24 days	0.37		Williams	1997 TW
1997 TV ₃	14.0	0.15	19970929	33.85302	320.00875	12.73749	5.62672	0.1636918	3.1755028	12	1	24 days	0.57		Williams	1997 TV ₃
1997 TT ₅	16.0	0.15	19970929	343.96995	340.20102	55.42355	3.15651	0.2102246	2.3558470	15	1	27 days	0.14		Williams	1997 TT ₅
1997 TX ₇	16.0	0.15	19971019	334.71273	250.19033	167.81823	2.72455	0.1635131	2.3732559	36	1	35 days	0.29		Marsden	1997 TX ₇
1997 TY ₇	13.0	0.15	19971019	185.97757	117.44991	80.72073	2.17730	0.1530007	3.2025301	23	1	33 days	0.43		Marsden	1997 TY ₇
1997 TZ ₇	13.0	0.15	19971218	26.72260	286.30918	50.31370	16.91427	0.2501655	3.1112292	71	3	1981–1997	0.74	M-v 3	Williams	30773 1997 TZ ₇
1997 TX ₈	8.5	0.15	19970929	0.31307	117.38199	239.91835	8.96884	0.1863390	39.3116693	12	1	24 days	0.47	E	Marsden	1997 TX ₈
1997 TY ₈	15.0	0.15	19970929	85.91681	210.19264	68.62848	7.03257	0.0269008	2.8610295	20	1	24 days	0.31		Marsden	1997 TY ₈
1997 TM ₉	16.0	0.15	19970929	326.46729	210.32561	213.89509	10.65733	0.0594756	3.0027340	12	1	19 days	0.25		Williams	1997 TM ₉
1997 TO ₉	17.5	0.15	19970929	167.59056	2.03486	215.10305	5.70475	0.0888491	2.4003953	11	1	19 days	0.22		Williams	1997 TO ₉
1997 TP ₉	18.5	0.15	19970929	21.13445	353.52345	357.04130	1.25992	0.2016447	2.3693139	12	1	22 days	0.26		Williams	1997 TP ₉
1997 TR ₉	15.0	0.15	19970929	51.04206	76.59347	253.28094	0.88508	0.0626577	2.6648303	21	1	30 days	0.63		Williams	1997 TR ₉
1997 TT ₉	11.5	0.15	19971019	320.43450	27.34986	44.72512	9.97500	0.0654737	5.1260787	17	1	28 days	0.29		Williams	1997 TT ₉
1997 TV ₉	15.0	0.15	19970929	273.50687	77.26288	57.89208	4.89409	0.2382667	2.6095014	17	1	24 days	0.31		Williams	1997 TV ₉
1997 TW ₉	14.5	0.15	19971019	6.23672	288.53870	89.90767	2.92571	0.1288683	3.0610669	23	1	28 days	0.47		Williams	1997 TW ₉
1997 TX ₉	15.5	0.15	19970929	75.41090	240.04184	43.22229	6.41718	0.1861325	2.2524368	13	1	23 days	0.35		Williams	1997 TX ₉
1997 TY ₉	16.0	0.15	19970929	4.25893	285.44031	87.63140	2.30357	0.1819321	2.5461806	21	1	24 days	0.32		Williams	1997 TY ₉
1997 TZ ₉	15.0	0.15	19971019	5.33652	355.93661	28.80138	6.47363	0.1197312	2.6404259	28	1	33 days	0.39		Williams	1997 TZ ₉
1997 TC ₁₀	16.5	0.15	19971019	352.93189	7.71298	40.56590	2.18173	0.1680867	2.4422012	15	1	30 days	0.31		Williams	1997 TC ₁₀
1997 TH ₁₀	15.5	0.15	19971019	317.51260	231.84322	221.58698	3.42783	0.1351320	2.5809468	13	1	27 days	0.29		Williams	1997 TH ₁₀
1997 TJ ₁₀	15.0	0.15	19971019	58.29991	173.39395	159.86464	0.49908	0.0745482	2.5729191	18	1	30 days	0.29		Williams	1997 TJ ₁₀
1997 TD ₁₁	15.5	0.15	19970929	353.01911	132.44158	245.73157	0.33868	0.2024976	2.4264427	22	1	21 days	0.64	E	Williams	1997 TD ₁₁
1997 TE ₁₁	15.0	0.15	19970929	299.78943	249.20536	179.32594	9.13576	0.1423172	2.7890575	12	1	18 days	0.30		Williams	1997 TE ₁₁
1997 TT ₁₁	15.0	0.15	19970929	253.85755	95.52589	20.02649	1.90381	0.1403288	2.9573068	12	1	16 days	0.22		Williams	1997 TT ₁₁
1997 TW ₁₁	15.5	0.15	19970929	6.14124	176.57246	182.13546	12.19933	0.3091383	3.1669628	17	1	14 days	0.42		Williams	1997 TW ₁₁
1997 TB ₁₂	12.0	0.15	19971019	332.95164	194.35247	219.17430	9.88656	0.0710258	5.2397697	28	1	31 days	0.34		Marsden	1997 TB ₁₂
1997 TQ ₁₂	13.0	0.15	19970929	348.51113	167.53314	236.77238	3.82685	0.0627742	5.2571016	9	1	31 days	0.11		Williams	1997 TQ ₁₂
1997 TR ₁₂	17.0	0.15	19970929	20.02844	82.79678	273.49374	1.31459	0.1790993	2.9066529	20	1	22 days	0.39		Williams	1997 TR ₁₂
1997 TS ₁₂	17.0	0.15	19970929	332.88979	91.83081	329.21648	1.28493	0.1619391	2.5194165	12	1	22 days	0.18		Williams	1997 TS ₁₂
1997 TT ₁₂	15.0	0.15	19970929	337.55528	57.98783	1.86963	2.00458	0.1900245	3.0621174	12	1	31 days	0.15		Williams	1997 TT ₁₂
1997 TU ₁₂	18.5	0.15	19970929	6.08878	25.39718	346.91397	0.91035	0.2502562	2.5753773	15	1	31 days	0.49		Williams	1997 TU ₁₂
1997 TV ₁₂	14.5	0.15	19971019	169.47339	270.00146	312.57014	0.86638	0.0337837	2.9367149	17	1	33 days	0.45		Williams	1997 TV ₁₂
1997 TW ₁₂	17.5	0.15	19970929	0.92388	2.53185	19.36727	4.28819	0.1950638	2.4531059	11	1	32 days	0.49		Williams	1997 TW ₁₂
1997 TM ₁₃	16.0	0.15	19971019	58.68919	304.09350	340.23989	0.90587	0.1691241	2.4173481	9	1	31 days	0.22		Williams	1997 TM ₁₃
1997 TF ₁₆	17.0	0.15	19970929	292.87098	276.35028	171.98898	4.37036	0.2194436	2.6225390	9	1	14 days	0.16		Williams	1997 TF ₁₆
1997 TR ₁₆	16.0	0.15	19970929	121.25153	46.60850	174.20391	12.36837	0.1564490	2.6080886	9	1	13 days	0.33		Williams	1997 TR ₁₆
1997 TS ₁₆	15.0	0.15	19971218	11.67549	172.13568	203.02134	5.18717	0.1565469	2.4291587	33	2	1996–1997	0.56	M-v 4	Williams	30774 1997 TS ₁₆
1997 TX ₁₆	14.0	0.15	19971019	228.99780	125.97562	48.34831	11.21124	0.0278436	2.5145748	24	1	32 days	0.23		Williams	1997 TX ₁₆
1997 TY ₁₆	13.5	0.15	19971019	237.02583	319.58484	194.31075	16.84261	0.0926602	3.1506667	18	1	28 days	0.19		Marsden	1997 TY ₁₆
1997 TZ ₁₆	24.5	0.15	19971218	7.87940	66.81129	14.12841	3.78940	0.5979272	2.0210650	27	1	3 days	0.66	M-v 7	Marsden	1997 TZ ₁₆

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1997 TA ₁₇	15.5	0.15	19971019	4.54082	73.75366	306.36922	5.43394	0.1550262	2.5395023	18	1	26 days	0.20	Williams	1997 TA ₁₇
1997 TD ₁₇	15.3	0.15	19971019	345.36640	276.83351	126.58320	5.56444	0.1683592	2.3020392	10	1	19 days	0.50	Nakano	1997 TD ₁₇
1997 TF ₁₇	15.2	0.15	19971019	33.40625	184.65571	143.77211	6.31490	0.2565589	2.4096823	10	1	23 days	0.59	Nakano	1997 TF ₁₇
1997 TG ₁₇	15.0	0.15	19971019	26.02809	252.54738	89.87241	6.26097	0.2195908	2.5403926	8	1	21 days	0.65	Nakano	1997 TG ₁₇
1997 TL ₁₇	13.5	0.15	19971019	355.89887	163.87542	234.99063	10.88350	0.1578154	2.5050100	9	1	17 days	0.61	Nakano	1997 TL ₁₇
1997 TN ₁₇	12.1	0.15	19971019	96.92824	49.96033	231.44369	13.49088	0.1481020	2.6364189	8	1	17 days	0.56	Nakano	1997 TN ₁₇
1997 TW ₁₇	16.0	0.15	19970929	14.54198	172.38009	182.22938	3.20071	0.2292543	2.3524053	6	1	3 days	0.62	E Williams	1997 TW ₁₇
1997 TA ₁₈	14.3	0.15	19971019	21.85679	225.85324	187.59781	11.44341	0.1770624	2.6318404	15	1	29 days	0.30	Nakano	1997 TA ₁₈
1997 TB ₁₈	12.5	0.15	19971019	90.04882	283.84925	0.80320	9.79123	0.0953350	2.9697414	34	1	29 days	1.04	D Williams	1997 TB ₁₈
1997 TC ₁₈	13.5	0.15	19971019	287.41264	65.87787	55.33106	5.20581	0.0794574	2.2666972	22	1	28 days	0.26	Williams	1997 TC ₁₈
1997 TM ₁₈	13.0	0.15	19971218	96.39233	246.63686	27.15490	10.68102	0.1694109	2.5763622	27	2	1971–1997	0.41	M-v 5 Williams	30774 1997 TM ₁₈
1997 TR ₁₈	12.5	0.15	19970929	240.17333	283.09003	200.44441	9.40558	0.0458124	2.9930796	13	1	14 days	0.32	Williams	1997 TR ₁₈
1997 TS ₁₈	13.5	0.15	19970929	52.44708	300.21814	334.36855	8.38139	0.1377302	2.7571793	13	1	13 days	0.17	Williams	1997 TS ₁₈
1997 TT ₁₈	15.0	0.15	19970929	355.28386	10.09758	340.64432	13.21441	0.1794772	2.6105519	10	1	11 days	0.38	Williams	1997 TT ₁₈
1997 TX ₁₈	14.0	0.15	19970929	118.53643	127.79388	123.31835	2.98884	0.0219279	2.8466121	9	1	3 days	0.47	E Williams	1997 TX ₁₈
1997 TD ₁₉	13.2	0.15	19971019	61.85263	142.66512	169.78918	2.19831	0.1182354	2.9492143	6	1	19 days	0.21	Nakano	1997 TD ₁₉
1997 TJ ₁₉	13.5	0.15	19971019	348.54790	359.83395	46.28263	6.00381	0.0855494	2.7650549	13	1	22 days	0.44	Williams	1997 TJ ₁₉
1997 TM ₁₉	15.5	0.15	19971019	330.88736	89.01047	337.07914	12.32407	0.1544466	2.6490243	12	1	24 days	0.21	Williams	1997 TM ₁₉
1997 TN ₁₉	16.0	0.15	19971019	42.16161	123.12599	198.96986	24.46301	0.2347618	2.3118689	12	1	25 days	0.23	Williams	1997 TN ₁₉
1997 TP ₁₉	16.5	0.15	19971019	324.03538	332.44644	108.72884	0.16006	0.1788964	2.3940688	13	1	33 days	0.36	Williams	1997 TP ₁₉
1997 TS ₁₉	16.5	0.15	19970929	206.39477	300.93666	245.73239	2.61078	0.1669639	2.4705802	9	1	29 days	0.21	Williams	1997 TS ₁₉
1997 TV ₁₉	14.0	0.15	19970929	343.35256	122.40816	288.10302	1.44327	0.0805314	5.0990990	9	1	31 days	0.24	Williams	1997 TV ₁₉
1997 TY ₁₉	15.5	0.15	19970929	53.25723	79.90206	228.05196	1.63622	0.2183464	2.3395168	12	1	24 days	0.48	Williams	1997 TY ₁₉
1997 TA ₂₀	14.5	0.15	19970929	111.54360	47.17794	217.97589	4.67151	0.1369120	3.1727846	12	1	30 days	0.22	Williams	1997 TA ₂₀
1997 TL ₂₀	13.5	0.15	19970929	121.15873	61.86276	209.00687	1.01838	0.0060379	5.2560263	9	1	18 days	0.21	E Williams	1997 TL ₂₀
1997 TM ₂₀	15.5	0.15	19970929	223.49440	138.46210	29.71250	15.62696	0.0358311	3.1059916	12	1	21 days	0.21	Williams	1997 TM ₂₀
1997 TU ₂₀	17.0	0.15	19970929	6.76366	55.81087	298.06055	1.12370	0.2221809	2.6141120	9	1	10 days	0.22	Williams	1997 TU ₂₀
1997 TV ₂₀	16.5	0.15	19970929	248.51469	143.73733	345.98027	3.35713	0.1344794	2.3025476	12	1	14 days	0.25	Williams	1997 TV ₂₀
1997 TK ₂₁	17.0	0.15	19970929	25.63884	124.11995	226.34599	1.00704	0.1648151	2.9396677	9	1	17 days	0.19	Williams	1997 TK ₂₁
1997 TM ₂₁	16.0	0.15	19970929	354.26964	176.98912	216.98900	1.38565	0.0575141	2.9722136	8	1	17 days	0.28	Williams	1997 TM ₂₁
1997 TN ₂₁	16.5	0.15	19970929	115.02057	231.03641	25.44855	5.42941	0.1532065	2.2257860	14	1	34 days	0.29	Williams	1997 TN ₂₁
1997 TT ₂₁	14.0	0.15	19970929	339.47658	204.45661	211.64727	5.56401	0.0649036	5.1245717	9	1	17 days	0.14	Williams	1997 TT ₂₁
1997 TV ₂₁	17.0	0.15	19971019	321.46316	52.36753	27.24715	6.46826	0.1116486	2.7827763	12	1	29 days	0.12	Williams	1997 TV ₂₁
1997 TS ₂₂	14.0	0.15	19970929	288.57608	91.14584	351.62253	1.57356	0.0630170	2.9278198	18	1	19 days	0.64	Williams	1997 TS ₂₂
1997 TT ₂₂	15.5	0.15	19970929	0.86443	141.98487	221.69250	0.79510	0.1466200	2.3994617	12	1	12 days	0.55	Williams	1997 TT ₂₂
1997 TC ₂₃	16.0	0.15	19970929	59.80834	65.62414	232.44630	1.51363	0.2335346	2.3473958	9	1	15 days	0.12	Williams	1997 TC ₂₃
1997 TW ₂₃	16.5	0.15	19970929	68.42357	276.27229	27.54999	8.52839	0.1213158	2.3082673	9	1	12 days	0.22	Williams	1997 TW ₂₃
1997 TX ₂₃	15.5	0.15	19971019	23.50925	121.91539	239.94664	0.62195	0.1369406	3.0684502	12	1	21 days	0.21	Williams	1997 TX ₂₃
1997 TY ₂₃	17.0	0.15	19970929	38.45204	117.66023	210.80464	8.28995	0.2187418	2.7359566	9	1	10 days	0.22	Williams	1997 TY ₂₃
1997 TZ ₂₃	16.0	0.15	19971019	346.32477	186.92177	222.14922	1.26778	0.0733310	3.1564326	9	1	21 days	0.30	Williams	1997 TZ ₂₃
1997 TA ₂₄	18.0	0.15	19971019	316.04978	62.44922	28.93126	2.63434	0.1685216	2.3915407	12	1	21 days	0.23	Williams	1997 TA ₂₄
1997 TJ ₂₄	12.5	0.15	19970929	285.98007	235.30976	227.99899	9.03901	0.0708814	3.0492510	28	1	22 days	0.44	Williams	1997 TJ ₂₄
1997 TK ₂₄	14.5	0.15	19971019	337.83066	88.11222	322.14559	3.75831	0.0522223	2.7342441	19	1	28 days	0.33	Williams	1997 TK ₂₄
1997 TL ₂₄	16.5	0.15	19971019	2.82799	5.71230	32.33286	5.97570	0.2591921	2.2810980	9	1	25 days	0.16	Williams	1997 TL ₂₄
1997 TM ₂₄	14.5	0.15	19970929	2.28493	239.55136	154.12208	13.34241	0.1644556	2.7470261	9	1	13 days	0.26	Williams	1997 TM ₂₄
1997 TN ₂₄	13.5	0.15	19970929	257.80723	119.16425	40.36213	7.56013	0.0887222	2.4131517	10	1	7 days	0.17	Williams	1997 TN ₂₄
1997 TR ₂₄	12.5	0.15	19970929	287.53980	266.54339	193.06095	2.02917	0.2003246	3.0402154	12	1	10 days	0.22	Williams	1997 TR ₂₄
1997 TS ₂₄	15.0	0.15	19970929	354.99427	2.72417	8.61611	7.24954	0.1406653	2.3390042	12	1	10 days	0.27	Williams	1997 TS ₂₄
1997 TX ₂₄	12.4	0.15	19971019	176.95150	172.67959	30.63017	2.04766	0.2105416	3.0169071	8	1	6 days	1.04	E Nakano	1997 TX ₂₄
1997 TA ₂₅	15.0	0.15	19970929	21.86671	144.52741	190.00601	1.46704	0.1423643	3.0551956	12	1	19 days	0.23	Williams	1997 TA ₂₅
1997 TC ₂₅	24.5	0.15	19970929	5.01389	321.59747	17.89244	0.24847	0.6145942	2.5326488	13	1	13 days	0.41	Williams	1997 TC ₂₅
1997 TF ₂₅	16.0	0.15	19971019	344.32184	339.58446	53.82304	5.73597	0.1886809	2.3667120	10	1	17 days	0.19	Williams	1997 TF ₂₅
1997 TG ₂₅	16.0	0.15	19971019	4.34280	56.87689	326.85680	0.66597	0.1930632	2.3723622	20	1	25 days	0.43	Williams	1997 TG ₂₅

1997 TM ₂₅	14.5	0.15	19970929	8.30463	321.00611	35.88394	7.17481	0.2413512	2.2703715	9	1	7 days	0.26	Williams	1997 TM ₂₅
1997 TN ₂₅	15.0	0.15	19971019	37.26986	151.88434	172.76204	5.34821	0.2175445	2.2021805	13	1	19 days	0.22	Williams	1997 TN ₂₅
1997 TR ₂₅	12.5	0.15	19970929	355.01213	13.38428	34.29141	7.05503	0.2828760	2.5646824	9	1	10 days	0.07	Williams	1997 TR ₂₅
1997 TS ₂₅	10.0	0.15	19970929	291.11152	254.99242	250.74846	12.10388	0.1606525	5.1220536	9	1	10 days	0.37	Williams	1997 TS ₂₅
1997 TT ₂₅	19.0	0.15	19971019	354.25920	17.81402	30.40341	7.62268	0.4163954	2.1246024	101	1	29 days	0.48	Marsden	1997 TT ₂₅
1997 TA ₂₆	13.5	0.15	19970929	281.95562	79.76746	24.48704	17.51066	0.1326683	3.1978598	12	1	11 days	0.38	Williams	1997 TA ₂₆
1997 TB ₂₆	13.5	0.15	19970929	356.42904	217.53191	159.38893	5.88747	0.1769082	3.1037232	9	1	12 days	0.23	Williams	1997 TB ₂₆
1997 TC ₂₆	14.5	0.15	19970929	13.10664	306.43345	44.05725	5.56513	0.2069596	2.4543430	9	1	10 days	0.20	Williams	1997 TC ₂₆
1997 TE ₂₆	15.0	0.15	19971019	51.45215	46.63747	265.38088	3.10196	0.2116960	2.4073806	13	1	25 days	0.65	Williams	1997 TE ₂₆
1997 TF ₂₆	14.0	0.15	19971019	12.96255	29.75080	341.13576	4.60001	0.0715565	2.7315138	13	1	25 days	0.34	Williams	1997 TF ₂₆
1997 TH ₂₆	15.0	0.15	19971019	32.38443	12.06986	330.07115	3.26607	0.1556199	2.2094770	13	1	22 days	0.22	Williams	1997 TH ₂₆
1997 TK ₂₆	15.0	0.15	19970929	354.59131	168.60883	217.52522	11.14194	0.2933020	2.5209763	10	1	8 days	0.22	Williams	1997 TK ₂₆
1997 TL ₂₆	16.5	0.15	19971019	328.71143	41.15182	29.39131	7.10050	0.1070682	2.3497430	12	1	25 days	0.65	Williams	1997 TL ₂₆
1997 TM ₂₆	15.0	0.15	19970929	307.80301	11.40300	53.07651	4.64643	0.0837664	2.2732591	11	1	20 days	0.89	E Williams	1997 TM ₂₆
1997 TN ₂₆	13.5	0.15	19971019	38.81086	308.27542	28.31360	12.92622	0.1936883	2.6018916	12	1	19 days	0.70	Williams	1997 TN ₂₆
1997 UC	15.0	0.15	19970929	39.42096	127.13568	186.19387	14.35665	0.1821581	2.4505781	15	1	29 days	0.89	E Williams	1997 UC
1997 UE	15.5	0.15	19971019	292.41925	270.12921	186.52914	0.56159	0.0551362	2.3867589	9	1	9 days	0.23	E Marsden	1997 UE
1997 UF	15.5	0.15	19971019	188.68921	28.36543	170.25889	4.23275	0.0434401	2.3369143	10	1	21 days	0.31	Williams	1997 UF
1997 UH	14.0	0.15	19971019	147.41310	78.48202	157.25358	14.29121	0.1137450	2.6280688	10	1	20 days	0.14	Williams	1997 UH
1997 UJ	12.0	0.15	19971019	300.84205	248.27252	224.22366	11.48065	0.0821240	5.0559512	13	1	13 days	0.27	Williams	1997 UJ
1997 UR	23.0	0.15	19971218	19.15091	200.13973	214.13871	2.26878	0.3129993	1.4612033	139	1	18 days	0.74	M-v 6 Williams	1997 UR
1997 US	14.5	0.15	19971019	115.74321	41.56996	212.26131	8.56077	0.0534302	2.6475551	22	1	13 days	0.72	Williams	1997 US
1997 UT	15.5	0.15	19971019	338.17806	199.14901	216.97276	6.30274	0.0747729	2.2506970	17	1	14 days	0.57	Williams	1997 UT
1997 UU	16.0	0.15	19971019	307.57359	238.84509	219.68463	5.71549	0.0731796	2.2952676	8	1	11 days	0.19	Williams	1997 UU
1997 UV	14.0	0.15	19971019	270.37408	4.35740	145.51331	0.86490	0.1584951	3.1530719	8	1	11 days	0.25	Williams	1997 UV
1997 UX	16.0	0.15	19971019	36.77002	300.31137	31.84129	9.35539	0.2432879	2.4542456	11	1	10 days	0.27	Williams	1997 UX
1997 UB ₁	15.0	0.15	19971019	73.68906	269.02281	32.25481	4.45070	0.1482512	2.3060797	24	1	14 days	0.49	Williams	1997 UB ₁
1997 UC ₁	15.5	0.15	19971019	339.53370	202.92091	196.85265	7.75616	0.2296873	2.8104192	12	1	10 days	0.30	Williams	1997 UC ₁
1997 UD ₁	15.5	0.15	19971019	337.79361	150.02758	269.64229	8.58818	0.0916527	2.5979520	12	1	11 days	0.37	Williams	1997 UD ₁
1997 UE ₁	15.2	0.15	19971108	9.30339	348.99977	32.57702	5.98930	0.3181326	2.5793070	12	1	12 days	0.55	Nakano	1997 UE ₁
1997 UF ₁	15.0	0.15	19971019	0.74914	173.62486	218.04841	4.39472	0.1367726	2.3298219	20	1	16 days	0.66	Nakano	1997 UF ₁
1997 UG ₁	13.1	0.15	19971108	7.07532	357.49960	33.45965	9.74275	0.0904082	2.9932443	17	1	16 days	0.68	Nakano	1997 UG ₁
1997 UH ₁	13.8	0.15	19971108	331.91945	32.27834	41.84389	7.72727	0.0795553	2.3724490	23	1	15 days	0.73	Nakano	1997 UH ₁
1997 UJ ₁	15.5	0.15	19971019	348.11988	19.15626	25.23386	3.93998	0.1294019	2.7220707	17	1	9 days	0.41	Marsden	1997 UJ ₁
1997 UK ₁	15.5	0.15	19971019	326.52862	44.18962	29.77671	5.90528	0.1179041	2.6062137	12	1	7 days	0.13	Marsden	1997 UK ₁
1997 UL ₁	14.5	0.15	19971019	72.00775	277.92567	31.19211	9.36293	0.1024021	2.7506015	22	1	24 days	0.36	Williams	1997 UL ₁
1997 UO ₁	14.6	0.15	19971019	5.85499	140.01451	249.28358	3.78125	0.1944808	2.1824290	32	1	15 days	0.38	Nakano	1997 UO ₁
1997 US ₁	15.5	0.15	19971019	274.00323	264.78418	216.62874	13.74054	0.0338995	3.1873879	14	1	23 days	0.25	Williams	1997 US ₁
1997 UT ₁	17.0	0.15	19971019	20.10335	148.18205	217.32606	13.69927	0.1222392	3.0458287	9	1	9 days	0.19	Williams	1997 UT ₁
1997 UC ₂	15.0	0.15	19971019	56.92705	243.70586	95.01621	3.14319	0.0676524	2.7041747	12	1	2 days	0.12	Williams	1997 UC ₂
1997 UE ₂	15.0	0.15	19971019	330.15723	50.65144	33.75854	6.43058	0.2633477	2.5998203	24	1	10 days	1.14	E Williams	1997 UE ₂
1997 UG ₂	14.5	0.15	19971019	1.81739	167.64873	217.59134	1.82736	0.2384455	2.6988480	22	1	6 days	0.45	Williams	1997 UG ₂
1997 US ₂	19.5	0.15	19971019	310.13036	99.74358	66.39500	3.16502	0.6606469	1.6702007	55	1	17 days	0.97	Williams	1997 US ₂
1997 UT ₂	12.7	0.15	19971108	61.98168	270.36459	23.54217	16.57176	0.1894772	3.1236827	10	1	10 days	0.50	Nakano	1997 UT ₂
1997 UU ₂	13.5	0.15	19971019	348.55600	92.16326	313.78608	1.59070	0.0217477	2.8951603	10	1	16 days	0.44	Williams	1997 UU ₂
1997 UX ₂	16.0	0.15	19970929	50.20163	90.52112	215.16811	10.18073	0.2687599	2.2751259	35	1	34 days	0.38	Williams	1997 UX ₂
1997 UY ₂	14.7	0.15	19971108	3.04433	181.35475	222.67985	10.47261	0.2386665	2.3102868	21	1	8 days	0.33	Nakano	1997 UY ₂
1997 UZ ₂	15.5	0.15	19971019	287.99761	256.96964	219.14755	4.92954	0.2239183	2.6722230	9	1	2 days	0.63	E Williams	1997 UZ ₂
1997 UC ₃	15.0	0.15	19971019	66.95433	80.37733	205.35064	6.62856	0.1928144	2.3202788	10	1	15 days	0.92	Williams	1997 UC ₃
1997 UD ₃	15.5	0.15	19971019	354.29246	168.48035	214.00305	7.99479	0.1558755	2.7206324	7	1	15 days	0.34	Williams	1997 UD ₃
1997 UF ₃	13.5	0.15	19971019	61.11371	301.80951	356.60016	10.79898	0.1244803	3.1883708	6	1	12 days	0.40	E Williams	1997 UF ₃
1997 UG ₃	15.0	0.15	19971019	24.68877	17.58730	325.74188	3.16672	0.2573513	2.2923964	14	1	23 days	0.85	Williams	1997 UG ₃
1997 UH ₃	17.5	0.15	19971019	334.87897	38.92560	43.19778	24.02261	0.2684192	2.3371694	17	1	12 days	0.72	Williams	1997 UH ₃

1997 UJ ₃	12.7	0.15	19971108	92.92632	0.68411	304.99153	2.84020	0.0877542	2.7327566	8	1	11 days	0.39		Nakano	1997 UJ ₃
1997 UL ₃	13.0	0.15	19971019	29.23181	319.73322	39.54160	14.53996	0.1925385	2.5405484	13	1	11 days	0.49		Williams	1997 UL ₃
1997 UO ₃	14.1	0.15	19971108	339.02309	201.65474	238.74954	6.90649	0.2005257	2.3386144	9	1	11 days	0.46		Nakano	1997 UO ₃
1997 UR ₃	14.5	0.15	19971019	57.91000	302.62863	37.01976	3.20743	0.0719501	2.6761037	13	1	11 days	0.52		Williams	1997 UR ₃
1997 US ₃	12.7	0.15	19971108	8.56940	168.52494	228.96918	12.80882	0.1642766	2.7087461	8	1	11 days	0.62		Nakano	1997 US ₃
1997 UT ₃	14.0	0.15	19971218	2.05661	203.19715	213.67229	0.65697	0.1350639	3.2032145	14	1	67 days	0.30	M-v 6	Nakano	1997 UT ₃
1997 UU ₃	14.9	0.15	19971108	44.99320	109.28077	225.83679	24.67585	0.2818071	2.3343152	12	1	11 days	0.47		Nakano	1997 UU ₃
1997 UX ₃	15.8	0.15	19971108	15.77536	146.03472	228.46607	7.95156	0.3614832	2.6867683	11	1	11 days	0.70		Nakano	1997 UX ₃
1997 UZ ₃	14.5	0.15	19971019	273.01911	295.49618	211.03334	1.44465	0.1132031	2.8509529	8	1	5 days	0.19	E	Marsden	1997 UZ ₃
1997 UA ₄	15.0	0.15	19971019	189.84582	316.91913	254.10081	3.58953	0.0571408	2.3107094	33	1	17 days	0.70		Williams	1997 UA ₄
1997 US ₄	14.1	0.15	19971218	52.34525	126.38551	178.67201	7.18004	0.2917821	3.1991468	12	1	125 days	1.13	M-v 6	Nakano	1997 US ₄
1997 UX ₄	15.0	0.15	19971019	307.53024	111.60346	5.37324	2.82372	0.1949730	2.3563579	12	1	13 days	0.23		Williams	1997 UX ₄
1997 UZ ₄	12.5	0.15	19971019	30.49964	14.68182	47.42080	5.19544	0.2068881	3.2069139	9	1	13 days	0.53		Williams	1997 UZ ₄
1997 UA ₅	15.5	0.15	19971019	24.27605	303.29344	37.06230	6.94290	0.2281586	2.3392018	12	1	11 days	0.24		Williams	1997 UA ₅
1997 UF ₅	14.5	0.15	19971019	273.48631	115.31072	354.14665	5.67166	0.0296271	2.3331301	11	1	15 days	0.76	E	Williams	1997 UF ₅
1997 UG ₅	14.5	0.15	19971019	344.58723	22.73990	30.63773	15.56433	0.2219892	3.1241241	11	1	4 days	0.14		Marsden	1997 UG ₅
1997 UH ₅	14.5	0.15	19971019	223.98339	258.96102	300.60042	12.98839	0.1084855	2.6115579	8	1	3 days	0.10		Marsden	1997 UH ₅
1997 UJ ₅	15.0	0.15	19971019	10.63767	17.15337	353.88715	4.08488	0.0880176	2.2904430	14	1	9 days	0.24		Williams	1997 UJ ₅
1997 UK ₅	14.5	0.15	19971019	25.55520	31.81194	320.17491	13.50099	0.2144012	2.5485129	13	1	9 days	0.24		Williams	1997 UK ₅
1997 UL ₅	16.5	0.15	19971019	67.74741	277.87219	29.38808	8.79826	0.1412276	2.3887015	9	1	11 days	0.32		Williams	1997 UL ₅
1997 UM ₅	15.0	0.15	19971019	119.72748	227.41575	29.79265	4.30566	0.1640571	2.2187071	12	1	21 days	0.30		Williams	1997 UM ₅
1997 UN ₅	14.5	0.15	19970929	282.21997	96.11744	33.35195	9.94218	0.1822988	3.9509658	12	1	29 days	0.33		Williams	1997 UN ₅
1997 UR ₅	15.5	0.15	19971019	94.86447	257.64378	35.40776	11.10405	0.0482855	3.0115363	9	1	11 days	0.30	E	Williams	1997 UR ₅
1997 US ₅	16.0	0.15	19971019	25.61573	309.65606	33.72180	5.88890	0.3076045	2.6243387	9	1	11 days	0.16		Williams	1997 US ₅
1997 UW ₅	14.0	0.15	19971019	325.36677	42.15381	37.16565	8.78966	0.1513425	2.7998057	9	1	11 days	0.14		Williams	1997 UW ₅
1997 UB ₆	17.0	0.15	19971019	5.62519	168.14129	215.24002	6.14268	0.1658063	2.5314625	12	1	8 days	0.23		Marsden	1997 UB ₆
1997 UC ₆	17.5	0.15	19971019	121.85127	230.73345	31.74135	6.76096	0.0864268	2.3337501	10	1	21 days	0.32		Williams	1997 UC ₆
1997 UH ₆	17.5	0.15	19971019	353.99234	10.78356	30.68200	1.85722	0.1930876	3.0344993	11	1	21 days	0.33		Williams	1997 UH ₆
1997 UN ₆	16.5	0.15	19971019	278.68574	86.26650	36.25181	2.62361	0.0644487	2.9181426	9	1	9 days	0.27	E	Williams	1997 UN ₆
1997 UQ ₆	16.5	0.15	19971019	277.49746	91.76259	38.42208	2.57688	0.1169549	3.1465246	9	1	9 days	0.22	E	Williams	1997 UQ ₆
1997 UR ₆	16.0	0.15	19971019	250.39618	122.34279	37.84101	2.06262	0.1697502	2.4439235	9	1	9 days	0.20	E	Williams	1997 UR ₆
1997 UT ₆	14.5	0.15	19971019	96.49732	84.79242	206.83025	2.28696	0.0437182	2.1692941	10	1	6 days	1.05	E	Williams	1997 UT ₆
1997 UU ₆	17.0	0.15	19971019	257.48843	109.03217	40.89382	3.50910	0.1271464	2.3897038	9	1	9 days	0.49	E	Williams	1997 UU ₆
1997 UW ₆	16.5	0.15	19971019	193.32593	156.39770	46.98532	1.33775	0.0977141	2.7474960	8	1	9 days	0.40	E	Williams	1997 UW ₆
1997 UA ₇	13.3	0.15	19971019	13.93815	316.67983	53.11248	8.53904	0.3419098	3.0274065	10	1	14 days	0.28		Nakano	1997 UA ₇
1997 UB ₇	12.7	0.15	19971019	25.09043	306.52365	48.55205	16.59022	0.2849774	2.7818627	10	1	14 days	0.37		Nakano	1997 UB ₇
1997 UG ₇	13.5	0.15	19971019	145.58547	236.21331	340.57010	13.79131	0.2001942	2.6552858	16	1	7 days	0.67	E	Williams	1997 UG ₇
1997 UH ₇	14.5	0.15	19971019	56.54772	279.65377	10.41641	13.53615	0.1650182	2.7940346	9	1	3 days	0.32		Williams	1997 UH ₇
1997 UK ₇	14.5	0.15	19971019	56.76428	346.46357	327.10809	2.83934	0.0521737	2.5915409	10	1	4 days	0.62	E	Williams	1997 UK ₇
1997 UL ₇	14.0	0.15	19971108	133.57374	150.48773	106.43826	3.71148	0.0713119	2.3971849	10	1	13 days	0.86		Nakano	1997 UL ₇
1997 UM ₇	14.0	0.15	19971108	53.85823	215.95662	112.92152	3.62983	0.1306750	2.8806884	11	1	13 days	0.61		Nakano	1997 UM ₇
1997 UN ₇	15.9	0.15	19971108	21.85096	257.96322	111.28723	3.05185	0.1196222	2.5298491	9	1	7 days	0.59		Nakano	1997 UN ₇
1997 UP ₇	15.0	0.15	19971218	342.07946	104.56432	338.40294	2.49453	0.2315646	2.5704385	23	1	96 days	0.53	M-v 5	Williams	1997 UP ₇
1997 UQ ₇	16.5	0.15	19971019	6.72844	349.57254	36.00511	7.35381	0.1119743	2.2960343	22	1	12 days	0.68		Williams	1997 UQ ₇
1997 UR ₇	16.5	0.15	19971019	25.32920	315.10412	40.10054	9.82327	0.2525893	2.4077961	7	1	12 days	0.24		Williams	1997 UR ₇
1997 US ₇	16.5	0.15	19971019	314.61144	11.10383	81.74977	1.68095	0.1064332	2.2590459	8	1	10 days	0.17		Williams	1997 US ₇
1997 UT ₇	14.5	0.15	19971019	358.69225	25.03343	325.32873	3.09246	0.0215329	2.6080749	11	1	4 days	0.35	E	Williams	1997 UT ₇
1997 UV ₇	14.5	0.15	19971019	69.76840	110.58472	163.23158	6.74973	0.1853827	2.2643080	8	1	7 days	0.12		Williams	1997 UV ₇
1997 UW ₇	15.0	0.15	19971019	309.36634	242.46554	197.84312	4.98994	0.1490370	2.6084161	9	1	8 days	0.32		Williams	1997 UW ₇
1997 UX ₇	13.9	0.15	19971019	323.07636	221.35473	226.33763	7.00941	0.1959960	2.7859712	22	1	19 days	0.51		Nakano	1997 UX ₇
1997 UH ₈	15.5	0.15	19971019	55.04603	76.81621	237.15905	1.79945	0.2169609	2.8940367	12	1	24 days	0.22		Williams	1997 UH ₈
1997 UX ₈	14.2	0.15	19971108	79.29861	222.57559	63.85727	6.05906	0.1226473	3.1927050	14	1	9 days	0.25		Nakano	1997 UX ₈

1997 UY ₈	14.0	0.15	19971019	50.47024	275.91675	57.68759	4.93997	0.2073538	2.1957781	6	1	8 days	0.57	E	Williams	1997 UY ₈
1997 UB ₉	15.0	0.15	19971019	29.62589	299.45001	20.44231	14.75649	0.2916295	2.3844334	11	1	2 days	0.48		Williams	1997 UB ₉
1997 UE ₉	14.5	0.15	19971019	14.56293	62.38597	301.29583	6.61397	0.1616176	2.2374449	26	1	7 days	0.73		Williams	1997 UE ₉
1997 UF ₉	16.5	0.15	19971019	245.13893	157.40727	37.17032	24.65472	0.5907699	1.4334075	86	1	13 days	0.88		Marsden	1997 UF ₉
1997 UG ₉	16.0	0.15	19971019	353.84700	14.18800	34.31183	7.98418	0.3754434	2.6311637	25	1	10 days	0.85		Williams	1997 UG ₉
1997 UH ₉	19.0	0.15	19971019	157.21259	180.84071	42.47659	25.55780	0.4752672	0.8299548	132	1	13 days	0.99		Marsden	1997 UH ₉
1997 UJ ₉	17.0	0.15	19971019	325.39405	256.57529	204.54539	19.18582	0.2815830	2.1840542	6	1	3 days	0.14		Williams	1997 UJ ₉
1997 UK ₉	16.0	0.15	19971019	5.35802	168.59739	224.08733	24.50837	0.2202595	2.2403816	10	1	7 days	0.20		Williams	1997 UK ₉
1997 UL ₉	15.0	0.15	19971019	305.64522	83.24984	37.38718	16.13759	0.2768067	2.7414687	22	1	6 days	1.15	E	Williams	1997 UL ₉
1997 UM ₉	14.0	0.15	19971019	262.02739	82.80761	45.99638	7.48537	0.0418954	2.4332989	11	1	6 days	0.10		Williams	1997 UM ₉
1997 UN ₉	14.5	0.15	19970929	53.16181	348.54233	333.85203	1.46329	0.1378292	2.6279871	19	1	34 days	0.91		Williams	1997 UN ₉
1997 UO ₉	16.0	0.15	19970929	308.76240	152.34767	294.28761	1.10375	0.0895530	2.1784191	11	1	34 days	0.40		Williams	1997 UO ₉
1997 UP ₉	13.5	0.15	19971019	60.44742	326.77839	329.50876	4.62271	0.2473892	2.3715344	15	1	3 days	1.28	E	Williams	1997 UP ₉
1997 UQ ₉	16.0	0.15	19971019	356.89127	2.32580	31.52366	13.60053	0.2541096	2.7307775	9	1	2 days	0.23		Marsden	1997 UQ ₉
1997 UR ₉	14.0	0.15	19971019	35.57979	19.22760	332.96592	1.55184	0.1691179	2.7484862	14	1	12 days	0.62		Williams	1997 UR ₉
1997 US ₉	17.5	0.15	19971019	178.15062	357.02709	212.31802	19.83116	0.2802031	1.0519922	103	1	12 days	1.00		Marsden	1997 US ₉
1997 UT ₉	19.3	0.15	19971108	7.63582	351.60134	29.57089	7.75194	0.3875430	2.2038760	30	1	10 days	0.55		Nakano	1997 UT ₉
1997 UL ₁₀	15.0	0.15	19971019	15.87767	322.71429	43.08148	20.07707	0.3033268	2.8997317	9	1	3 days	0.15		Williams	1997 UL ₁₀
1997 UR ₁₀	15.5	0.15	19971019	347.01294	305.58434	96.98428	2.25613	0.2170673	2.4148499	13	1	4 days	0.86		Williams	1997 UR ₁₀
1997 US ₁₀	14.0	0.15	19971019	259.19388	225.32715	227.99947	10.61150	0.0259129	2.7798500	6	1	4 days	0.38	E	Williams	1997 US ₁₀
1997 UU ₁₀	14.0	0.15	19971019	237.79090	152.33368	26.51109	6.13269	0.2606350	2.4277073	6	1	4 days	0.11	E	Williams	1997 UU ₁₀
1997 UV ₁₀	12.0	0.15	19971019	208.55212	297.51687	241.67568	7.73991	0.0697606	2.7239470	15	1	3 days	0.53	E	Williams	1997 UV ₁₀
1997 UW ₁₀	14.5	0.15	19971019	4.09361	12.77104	5.77958	6.72095	0.2022590	2.4070497	15	1	3 days	0.67	E	Williams	1997 UW ₁₀
1997 UY ₁₀	14.5	0.15	19971019	2.52075	214.81372	188.00801	1.46069	0.0912949	2.9941707	17	1	7 days	0.62		Marsden	1997 UY ₁₀
1997 UZ ₁₀	22.9	0.15	19971019	357.88266	358.73062	38.84258	13.07337	0.6406898	3.0585647	32	1	7 days	1.03		Nakano	1997 UZ ₁₀
1997 UA ₁₁	25.0	0.15	19971019	6.11787	138.05108	212.88584	3.31016	0.6250745	2.4035689	14	1	7 days	0.78		Nakano	1997 UA ₁₁
1997 UD ₁₁	13.2	0.15	19971108	194.46435	154.08993	53.53756	1.74105	0.1086120	3.1487070	18	1	10 days	0.46		Nakano	1997 UD ₁₁
1997 UE ₁₁	16.5	0.15	19971019	26.47717	151.72332	200.87617	1.66684	0.2225412	2.3775180	16	1	8 days	0.67	E	Williams	1997 UE ₁₁
1997 UH ₁₁	15.0	0.15	19971019	28.41728	281.91889	51.31461	9.72036	0.2990895	2.3449026	17	1	12 days	0.30		Williams	1997 UH ₁₁
1997 UE ₁₃	16.0	0.15	19970929	222.59407	158.23689	16.61876	2.52604	0.1400650	2.4316563	11	1	30 days	0.40		Williams	1997 UE ₁₃
1997 UR ₁₄	17.0	0.15	19971019	20.79110	328.57227	36.08322	29.58550	0.1596855	3.1921608	9	1	5 days	0.15	E	Williams	1997 UR ₁₄
1997 UU ₁₄	15.6	0.15	19971019	86.85154	59.17001	225.65752	2.77235	0.2112968	2.1724808	35	1	35 days	0.65		Nakano	1997 UU ₁₄
1997 UW ₁₄	13.5	0.15	19971019	37.63389	293.32411	48.80409	7.13789	0.1029361	3.1485046	6	1	3 days	0.07		Williams	1997 UW ₁₄
1997 UX ₁₄	15.0	0.15	19971019	343.83179	4.09608	44.24080	9.34606	0.1367397	2.7215970	8	1	3 days	0.12		Williams	1997 UX ₁₄
1997 UY ₁₄	14.1	0.15	19971108	19.52374	306.98508	66.55459	2.36133	0.2040011	2.9335086	23	1	9 days	1.02		Nakano	1997 UY ₁₄
1997 UZ ₁₄	14.6	0.15	19971108	286.34992	83.69336	48.44338	4.23916	0.1254961	2.3437849	15	1	13 days	0.57		Nakano	1997 UZ ₁₄
1997 UA ₁₅	16.0	0.15	19971019	3.05755	338.50037	53.07685	2.96779	0.1847909	2.2489054	32	1	15 days	1.14		Williams	1997 UA ₁₅
1997 UB ₁₅	14.7	0.15	19971108	351.51570	359.58924	55.24693	1.47584	0.0756034	2.3593947	7	1	13 days	0.85		Nakano	1997 UB ₁₅
1997 UC ₁₅	13.0	0.15	19971108	13.12279	267.92931	121.74476	1.13303	0.1257589	3.0686052	5	1	9 days	0.39	E	Nakano	1997 UC ₁₅
1997 UF ₁₅	15.0	0.15	19971108	20.50573	337.54895	35.48775	12.29462	0.2524925	2.4587096	20	1	9 days	0.48		Nakano	1997 UF ₁₅
1997 UJ ₁₅	15.0	0.15	19971019	17.47980	125.17358	244.76403	1.56007	0.1142984	2.6875389	19	1	26 days	0.46		Williams	1997 UJ ₁₅
1997 UK ₁₅	15.0	0.15	19971019	71.69082	48.86316	254.00955	1.37451	0.1586810	2.5542818	10	1	6 days	0.69	E	Williams	1997 UK ₁₅
1997 UD ₁₆	15.5	0.15	19971019	63.78637	285.21920	19.72578	2.72251	0.2068120	2.3992823	14	1	25 days	0.82		Williams	1997 UD ₁₆
1997 UL ₂₀	16.5	0.15	19971019	336.20370	208.86178	199.30873	29.13429	0.2113010	2.0641761	17	1	8 days	0.47		Williams	1997 UL ₂₀
1997 UN ₂₀	14.5	0.15	19971019	280.81625	177.38390	329.61145	7.40191	0.2917295	3.2496155	6	1	3 days	0.20	E	Williams	1997 UN ₂₀
1997 US ₂₀	16.0	0.15	19971019	327.46419	81.15387	352.17667	4.79099	0.1929273	2.5398602	9	1	13 days	0.26		Williams	1997 US ₂₀
1997 UX ₂₀	12.5	0.15	19971019	21.93635	305.79927	68.60372	1.68472	0.1632523	3.2497077	10	1	21 days	0.19		Williams	1997 UX ₂₀
1997 UY ₂₀	13.0	0.15	19971019	50.36406	82.29438	206.24309	11.75462	0.2548004	3.1033962	12	1	5 days	0.12		Williams	1997 UY ₂₀
1997 UZ ₂₀	14.0	0.15	19971019	75.61473	334.99097	284.55765	3.59810	0.2659225	2.9706866	12	1	5 days	0.59	E	Williams	1997 UZ ₂₀
1997 UA ₂₁	14.0	0.15	19971019	63.00350	83.47087	209.90435	9.61855	0.1043213	2.5612334	12	1	5 days	0.27		Williams	1997 UA ₂₁
1997 UD ₂₁	14.0	0.15	19971019	28.27586	7.33959	345.03391	4.67026	0.1364424	3.1743999	10	1	3 days	0.23	E	Williams	1997 UD ₂₁
1997 UE ₂₁	14.3	0.15	19971108	267.50826	122.57860	10.43915	13.14408	0.1309358	3.1084306	8	1	14 days	0.31		Nakano	1997 UE ₂₁
1997 UF ₂₁	16.5	0.15	19971108	341.57915	215.81731	198.92654	3.51337	0.1760026	2.3147712	9	1	8 days	0.17		Nakano	1997 UF ₂₁

1997 UM ₂₁	15.6	0.15	19971108	219.01138	143.83008	27.23504	5.29258	0.0742706	2.2185305	11	1	9 days	0.29	Nakano	1997 UM ₂₁
1997 VG	22.2	0.15	19971108	13.10555	154.38751	219.55783	30.81169	0.3979295	1.7383922	69	1	6 days	0.63	Nakano	1997 VG
1997 VH	14.6	0.15	19971108	13.00641	4.24202	23.08887	5.89476	0.2138870	2.6103475	21	1	6 days	0.40	Nakano	1997 VH
1997 VJ	12.6	0.15	19971108	57.91120	283.02854	47.73585	23.59176	0.2250194	2.3077318	6	1	7 days	0.21	Nakano	1997 VJ
1997 VK	15.5	0.15	19971019	7.67824	175.04626	218.64756	5.36171	0.1017200	2.3512888	10	1	4 days	0.11	Marsden	1997 VK
1997 VN	15.5	0.15	19971019	17.15169	232.03827	154.73947	3.88745	0.2186127	2.7666488	11	1	8 days	0.33	Williams	1997 VN
1997 VO	14.5	0.15	19971019	194.13991	126.21859	76.21524	2.03353	0.0689620	3.2155337	9	1	2 days	0.21	E Williams	1997 VO
1997 VP	15.8	0.15	19971108	94.98938	59.62677	231.20384	6.66398	0.1401231	2.3279104	10	1	6 days	0.15	Nakano	1997 VP
1997 VU	15.4	0.15	19971108	319.93721	241.67706	210.79240	13.58651	0.0996385	2.6359120	6	1	6 days	0.20	Nakano	1997 VU
1997 VW	13.0	0.15	19971019	242.47012	286.50773	255.40784	11.20277	0.1421351	2.6813036	9	1	10 days	0.43	Williams	1997 VW
1997 VX	12.2	0.15	19971108	33.68344	338.53925	31.18321	8.64758	0.1462361	2.3315628	6	1	7 days	0.09	Nakano	1997 VX
1997 VY	14.3	0.15	19971108	24.12253	107.82328	252.33976	2.72094	0.3742726	2.4703001	9	1	8 days	0.42	Nakano	1997 VY
1997 VZ	12.1	0.15	19971108	354.23152	19.67443	45.57461	7.03494	0.1796446	3.0211283	6	1	7 days	0.41	Nakano	1997 VZ
1997 VB ₁	12.0	0.15	19971019	233.64330	190.47226	344.17292	3.91082	0.0779557	5.1023356	13	1	10 days	0.70	Williams	1997 VB ₁
1997 VH ₁	14.1	0.15	19971108	342.50403	120.28284	299.54019	13.20425	0.0913471	2.6237718	6	1	5 days	0.60	Nakano	1997 VH ₁
1997 VJ ₁	12.8	0.15	19971108	212.10531	239.51706	311.48798	14.44419	0.0826836	2.6249643	6	1	5 days	0.10	Nakano	1997 VJ ₁
1997 VL ₁	15.5	0.15	19971019	318.35522	47.46215	41.25024	6.44129	0.1497146	2.3367490	22	1	16 days	0.85	Williams	1997 VL ₁
1997 VR ₁	16.0	0.15	19971019	28.48389	306.21306	50.81259	23.57906	0.2093015	2.3107223	12	1	7 days	0.46	Williams	1997 VR ₁
1997 VV ₁	11.5	0.15	19971019	49.40029	282.30726	19.85545	4.92198	0.1978243	5.0867545	9	1	6 days	0.44	E Williams	1997 VV ₁
1997 VX ₁	16.5	0.15	19971019	19.93525	313.23662	53.56982	10.90469	0.2756385	2.6963746	8	1	2 days	0.10	E Marsden	1997 VX ₁
1997 VY ₁	13.0	0.15	19971019	42.24319	143.32083	225.16986	3.23704	0.1119906	3.1131205	8	1	2 days	0.08	E Marsden	1997 VY ₁
1997 VZ ₁	13.9	0.15	19971108	16.39631	144.82606	247.77048	6.37148	0.1269049	2.4759062	6	1	7 days	0.22	Nakano	1997 VZ ₁
1997 VC ₂	13.8	0.15	19971108	19.07470	145.52103	236.59002	7.47571	0.1911215	3.0404012	6	1	7 days	0.33	Nakano	1997 VC ₂
1997 VD ₂	14.1	0.15	19971108	23.92770	39.16605	340.29435	2.95083	0.1919747	2.5321451	6	1	7 days	0.48	Nakano	1997 VD ₂
1997 VE ₂	14.5	0.15	19971108	34.13212	340.39885	25.11416	4.60186	0.1848468	2.2674291	6	1	7 days	0.39	Nakano	1997 VE ₂
1997 VL ₂	15.1	0.15	19971108	326.14202	68.16640	9.44976	12.54578	0.2092193	2.6015821	15	1	6 days	0.50	Nakano	1997 VL ₂
1997 VX ₂	15.0	0.15	19971019	344.81388	164.86154	271.18188	10.14320	0.2686284	3.0390537	11	1	4 days	0.16	E Williams	1997 VX ₂
1997 VA ₃	14.0	0.15	19971019	151.31747	340.85568	268.63125	3.09503	0.0949307	2.2489340	11	1	10 days	0.31	Williams	1997 VA ₃
1997 VB ₃	15.0	0.15	19971108	8.65488	337.12896	62.68935	3.86411	0.2299432	2.3217812	10	1	4 days	0.50	Nakano	1997 VB ₃
1997 VC ₃	14.0	0.15	19971108	354.49411	190.03884	237.77578	3.86884	0.2536873	2.5414787	6	1	3 days	0.43	E Williams	1997 VC ₃
1997 VD ₃	13.5	0.15	19971108	19.43804	238.20166	152.89999	0.60355	0.1369879	2.7223382	6	1	3 days	0.38	E Nakano	1997 VD ₃
1997 VE ₃	12.0	0.15	19971108	114.89795	64.90181	233.92889	11.21389	0.0991599	2.9640058	6	1	3 days	0.44	E Nakano	1997 VE ₃
1997 VF ₃	14.7	0.15	19971108	124.34162	219.74978	71.54473	6.82505	0.0491248	2.1455751	7	1	3 days	0.54	E Nakano	1997 VF ₃
1997 VH ₃	13.4	0.15	19971108	272.23659	110.49186	55.42240	4.04069	0.1412835	2.5502160	6	1	3 days	0.46	E Nakano	1997 VH ₃
1997 VJ ₃	12.5	0.15	19971108	280.99757	273.49294	230.34804	4.15140	0.0584743	2.6898148	6	1	3 days	0.48	E Williams	1997 VJ ₃
1997 VK ₃	12.8	0.15	19971108	315.25093	314.63597	179.56385	2.45360	0.2700623	3.0326650	6	1	3 days	0.41	E Nakano	1997 VK ₃
1997 VL ₃	14.9	0.15	19971108	336.01619	8.82927	85.68687	3.72289	0.2462529	2.3485614	6	1	3 days	0.41	E Nakano	1997 VL ₃
1997 VM ₃	12.4	0.15	19971108	47.19357	276.92426	81.83646	6.13330	0.1279658	2.8468117	6	1	3 days	0.57	E Nakano	1997 VM ₃
1997 VN ₃	11.5	0.15	19971108	166.74888	14.80990	237.81926	19.57475	0.2095004	2.5415508	6	1	3 days	0.21	Nakano	1997 VN ₃
1997 VO ₃	15.6	0.15	19971108	14.48693	304.20125	86.22041	2.04653	0.2904014	2.4251280	6	1	3 days	0.35	Nakano	1997 VO ₃
1997 VP ₃	12.0	0.15	19971108	160.17143	21.99304	240.47548	15.72633	0.0543381	3.1878719	7	1	3 days	0.54	E Williams	1997 VP ₃
1997 VQ ₃	13.5	0.15	19971108	27.11384	139.09884	229.96437	7.32440	0.2789300	2.7789025	6	1	3 days	0.37	Williams	1997 VQ ₃
1997 VR ₃	12.7	0.15	19971108	33.52631	130.24124	234.79514	0.85965	0.2601247	2.7122917	6	1	3 days	0.16	E Nakano	1997 VR ₃
1997 VS ₃	13.4	0.15	19971108	346.65568	4.03981	71.17226	3.97430	0.1656384	2.3650808	6	1	3 days	0.34	E Nakano	1997 VS ₃
1997 VU ₃	12.9	0.15	19971108	354.30931	231.17206	193.33817	2.94015	0.1508669	2.3624512	6	1	3 days	0.24	Nakano	1997 VU ₃
1997 VV ₃	14.6	0.15	19971108	24.37748	317.41050	61.89471	13.26886	0.2168950	2.5872953	6	1	3 days	0.33	Nakano	1997 VV ₃
1997 VW ₃	12.0	0.15	19971108	251.68398	13.37269	155.67782	2.59947	0.0100755	2.8089835	6	1	3 days	0.38	E Nakano	1997 VW ₃
1997 VM ₄	18.0	0.15	19971108	340.65974	125.01803	45.93559	15.02609	0.8351614	2.8626045	90	1	5 days	0.87	Marsden	1997 VM ₄
1997 VN ₄	23.5	0.15	19971108	1.65630	350.45310	48.60385	7.62861	0.5638308	2.4670227	107	1	5 days	1.10	Marsden	1997 VN ₄
1997 VT ₄	16.0	0.15	19971019	1.24177	342.98366	37.10737	5.62764	0.1457123	2.3600729	6	1	9 days	0.45	Williams	1997 VT ₄
1997 VY ₄	15.8	0.15	19971108	356.20087	4.84489	48.17615	13.90808	0.2496057	2.4236613	17	1	16 days	0.46	Nakano	1997 VY ₄
1997 VC ₅	14.0	0.15	19971019	118.56138	234.38685	63.86065	11.20085	0.0591283	3.0443016	10	1	6 days	0.19	E Williams	1997 VC ₅
1997 VG ₆	19.5	0.15	19971108	40.09793	250.40796	51.99421	18.33915	0.5570305	1.5893476	36	1	3 days	0.87	Marsden	1997 VG ₆

1997 VJ ₆	14.5	0.15	19971108	5.71797	47.36546	6.38478	4.32371	0.1313187	2.5957717	8	1	2 days	0.06		Williams	1997 VJ ₆
1997 VK ₆	14.5	0.15	19971108	358.99604	185.53813	289.49707	26.70766	0.1613810	2.6232354	7	1	2 days	1.17	E	Williams	1997 VK ₆
2020 P-L	14.5	0.15	19971218	6.68717	60.95061	342.80720	5.12099	0.2384231	2.5630269	24	3	1960–1997	0.53	M-v 2	Williams	22821 2020 P-L
2042 P-L	15.0	0.15	19971218	258.58733	262.05098	231.35263	4.77007	0.0416769	2.3938441	17	2	1960–1997	0.75	M-v 5	Williams	30774 2042 P-L
2096 P-L	14.5	0.15	19971218	359.62659	205.56046	200.92546	2.91292	0.1185049	2.3887249	33	5	1960–1997	0.93	M-v 2	Williams	24120 2096 P-L
2175 P-L	14.5	0.15	19971218	4.60299	283.30547	352.79665	4.56121	0.0890649	2.6195187	31	3	1960–1996	0.46	M-v 3	Williams	26761 2175 P-L
2572 P-L	15.0	0.15	19971218	299.72031	113.69396	9.66314	2.68868	0.1010296	2.2374637	25	6	1960–1997	0.80	M-v 2	Williams	29668 2572 P-L
3078 P-L	14.5	0.15	19971218	308.54296	245.86896	295.29506	5.22167	0.0935575	2.3496634	21	5	1950–1997	0.56	M-v 2	Williams	28891 3078 P-L
4038 P-L	14.0	0.15	19971218	314.16586	179.17061	302.69012	1.53418	0.1632076	2.3784190	40	7	1960–1997	0.84	M-v 2	Williams	28620 4038 P-L
4040 P-L	14.5	0.15	19971218	80.48427	97.73113	215.54282	6.86438	0.2236154	2.7551445	22	4	1960–1997	0.72	M-v 1	Williams	27938 4040 P-L
4133 P-L	16.0	0.15	19971218	90.74395	326.35079	352.47774	6.57055	0.1299780	2.3781394	14	2	1960–1993	0.71	M-v 6	Williams	25435 4133 P-L
4276 P-L	15.5	0.15	19971218	195.02943	254.51694	356.08977	5.51491	0.1834315	2.2171638	32	4	1960–1993	0.86	M-v 2	Williams	24915 4276 P-L
4521 P-L	13.5	0.15	19971218	209.85435	7.80373	333.04277	1.23864	0.0781894	2.9033286	24	5	1953–1993	0.69	M-v 1	Williams	23686 4521 P-L
4619 P-L	15.5	0.15	19971218	20.46453	92.10851	4.92687	1.84359	0.0980802	2.2162590	17	2	1960–1993	0.82	M-v 6	Williams	22966 4619 P-L
4634 P-L	15.0	0.15	19971218	60.07381	306.09495	15.99409	4.79216	0.1975587	2.2416082	32	4	1956–1997	0.55	M-v 2	Williams	30775 4634 P-L
4637 P-L	16.0	0.15	19971218	30.26264	215.74117	162.81526	5.35800	0.1562691	2.2385396	13	3	1960–1997	0.49	M-v 4	Williams	23866 4637 P-L
4896 P-L	14.0	0.15	19971218	287.44115	237.96988	114.44558	2.59611	0.1819332	3.1029729	35	4	1960–1997	0.73	M-v 2	Williams	30474 4896 P-L
5564 P-L	16.0	0.15	19971218	41.40863	340.60885	53.04737	3.45960	0.1982710	2.3762351	14	2	1960–1993	0.30	M-v 4	Williams	23130 5564 P-L
6054 P-L	14.0	0.15	19971218	264.49198	182.39381	205.23275	3.86110	0.2056658	3.1031227	21	3	1955–1993	0.82	M-v 3	Williams	24915 6054 P-L
6113 P-L	14.5	0.15	19971218	90.29800	319.47966	331.22714	1.18205	0.1417783	2.5578751	17	2	1960–1997	0.56	M-v 5	Williams	30775 6113 P-L
6132 P-L	16.5	0.15	19971218	65.15448	76.73020	271.53420	1.17890	0.2365543	2.3767189	18	2	1960–1993	0.75	M-v 4	Williams	24915 6132 P-L
6180 P-L	15.5	0.15	19971218	109.96905	113.94144	210.88149	2.41830	0.1808812	2.7329306	20	2	1960–1996	0.50	M-v 4	Williams	27926 6180 P-L
6188 P-L	15.0	0.15	19971218	275.80106	282.02035	226.40814	2.19623	0.1127486	2.2327555	20	4	1960–1997	0.64	M-v 2	Williams	25652 6188 P-L
7581 P-L	15.0	0.15	19971218	56.04821	306.28988	35.38066	5.51942	0.1063810	2.2392244	26	5	1960–1997	0.67	M-v 2	Williams	28620 7581 P-L
9076 P-L	12.5	0.15	19971218	344.17903	194.22654	196.17436	13.58325	0.1871319	2.5750111	24	4	1960–1997	0.67	M-v 2	Williams	30696 9076 P-L
9578 P-L	12.5	0.15	19971218	214.67272	76.14980	3.60228	5.90636	0.1134618	3.1103107	21	3	1960–1993	0.86	M-v 5	Williams	30474 9578 P-L
1102 T-1	15.0	0.15	19971218	131.12187	49.48385	214.29587	6.29686	0.0907195	2.3206415	28	4	1971–1997	0.65	M-v 2	Williams	30797 1102 T-1
1208 T-1	15.0	0.15	19971218	16.18037	168.81855	219.16947	4.36943	0.0569443	2.3091846	25	3	1971–1997	0.73	M-v 4	Williams	30797 1208 T-1
3078 T-1	15.0	0.15	19971218	350.78521	229.24700	204.12136	4.04593	0.2418540	2.2856928	41	2	1971–1997	0.74	M-v 4	Williams	30775 3078 T-1
3138 T-1	15.0	0.15	19971218	329.33567	285.54048	177.56035	3.75437	0.1295253	2.2876417	30	5	1971–1997	0.86	M-v 2	Williams	24915 3138 T-1
3300 T-1	15.0	0.15	19971218	53.21604	344.53458	327.98712	2.33222	0.1939793	2.1572476	18	3	1971–1997	0.97	M-v 4	Williams	22701 3300 T-1
4033 T-1	15.0	0.15	19971218	355.26804	129.05237	172.81241	5.33331	0.1361329	2.3818069	23	3	1971–1997	1.03	M-v 4	Marsden	30095 4033 T-1
4370 T-1	16.5	0.15	19971218	30.60715	258.66428	103.89294	2.76741	0.0694447	2.1347114	29	3	1971–1997	0.60	M-v 4	Williams	30775 4370 T-1
4408 T-1	14.0	0.15	19971218	24.83274	310.42170	59.78580	4.59614	0.1969663	2.3159713	20	4	1971–1997	1.08	M-v 4	Williams	28892 4408 T-1
4835 T-1	13.5	0.15	19971218	53.77033	324.05940	26.76728	18.60378	0.1011239	1.8542478	38	5	1953–1997	0.62	M-v 2	Williams	27938 4835 T-1
1045 T-2	14.0	0.15	19971218	28.55150	166.57556	199.74560	7.83425	0.1418616	2.2690327	36	5	1955–1997	0.92	M-v 2	Williams	28892 1045 T-2
1176 T-2	15.5	0.15	19971218	127.75613	322.94492	305.48749	2.24412	0.1410968	2.2586502	22	4	1973–1997	0.80	M-v 2	Williams	23987 1176 T-2
1237 T-2	14.0	0.15	19971218	188.18241	131.82590	350.39715	1.44069	0.0337126	2.9288031	22	2	1973–1993	0.92	M-v 7	Williams	27939 1237 T-2
1314 T-2	14.5	0.15	19971218	83.97120	279.69619	6.16966	2.24234	0.1337660	2.5198446	44	3	1973–1997	0.83	M-v 6	Williams	30776 1314 T-2
2104 T-2	14.0	0.15	19971218	303.09603	115.41625	251.57099	1.15263	0.1156818	2.9237793	27	2	1973–1993	0.82	M-v 7	Williams	24915 2104 T-2
2120 T-2	16.5	0.15	19971218	70.08300	322.25079	12.81409	5.25717	0.1655284	2.2590124	33	3	1973–1997	1.06	M-v 4	Williams	27927 2120 T-2
2330 T-2	15.0	0.15	19971218	272.60191	112.51786	4.53260	4.51192	0.0698753	2.5244292	15	2	1973–1993	1.10	M-v 7	Williams	27939 2330 T-2
3180 T-2	13.5	0.15	19971218	29.32525	135.54934	114.76548	3.31432	0.0305612	2.9502342	22	3	1973–1997	0.94	M-v 6	Marsden	30089 3180 T-2
4136 T-2	14.0	0.15	19971218	325.62273	306.40477	32.34582	7.50257	0.2184794	2.9141327	22	3	1973–1993	0.77	M-v 5	Williams	22701 4136 T-2
4196 T-2	13.0	0.15	19971218	73.86838	232.00211	76.53879	3.20174	0.0700194	2.8375544	37	3	1973–1997	0.58	M-v 4	Williams	30797 4196 T-2
4197 T-2	15.0	0.15	19971218	0.11381	344.21149	58.47040	3.08495	0.1417880	2.2709201	26	2	1973–1997	0.69	M-v 5	Williams	30776 4197 T-2
5187 T-2	11.5	0.15	19971218	297.18103	230.76239	240.13698	8.60219	0.0308321	5.1307921	25	5	1989–1997	0.67	M-v 1	Williams	30797 5187 T-2
5493 T-2	10.5	0.15	19971218	30.22328	56.52133	323.13645	13.15809	0.0487477	5.1260518	26	7	1955–1997	0.78	M-v 1	Williams	30797 5493 T-2
2110 T-3	14.5	0.15	19971218	117.10367	252.17840	355.08475	9.33458	0.1474159	2.5350649	21	2	1977–1993	0.91	M-v 6	Williams	24115 2110 T-3
2122 T-3	16.0	0.15	19971218	194.69268	319.74975	240.14400	2.79521	0.0791629	2.2328667	23	5	1976–1997	0.63	M-v 2	Marsden	30797 2122 T-3
2192 T-3	16.5	0.15	19771004	0.34753	103.97878	270.55353	1.16811	0.2292740	2.3334977	15	1	14 days	0.70		Williams	2192 T-3
2268 T-3	13.5	0.15	19971218	265.08191	164.17657	224.93075	10.03401	0.1310467	3.0673526	23	4	1977–1997	0.95	M-v 2	Williams	30294 2268 T-3
2316 T-3	17.0	0.15	19971218	20.53118	6.34878	16.36707	7.70218	0.2037071	2.2294274	32	2	1977–1997	0.85	M-v 4	Williams	30776 2316 T-3

M.P.C. 30915

2326 T-3	15.0	0.15	19971218	34.80686	80.70294	281.13015	2.28838	0.0440533	2.5181346	32	4	1953–1997	0.92	M-v	5	Williams	30798	2326 T-3
3006 T-3	13.5	0.15	19971218	30.89679	350.01670	32.75516	6.71782	0.1145755	2.2229608	26	5	1977–1997	1.07	M-v	2	Williams	30798	3006 T-3
3152 T-3	14.0	0.15	19971218	85.79300	250.75261	50.96701	2.82951	0.1010583	2.9151334	26	3	1977–1997	0.74	M-v	5	Williams	30777	3152 T-3
3340 T-3	15.0	0.15	19971218	48.87631	68.28369	167.77153	2.66850	0.1358108	2.6176995	20	2	1977–1997	1.00	M-v	5	Marsden	30294	3340 T-3
4094 T-3	15.0	0.15	19971218	53.64035	280.93173	60.68434	4.95269	0.0733655	2.5151858	40	4	1977–1997	0.91	M-v	5	Williams	24585	4094 T-3
4165 T-3	15.5	0.15	19971218	74.90347	235.39959	59.11877	8.08475	0.1811342	2.2370009	30	2	1977–1997	0.83	M-v	5	Marsden	30777	4165 T-3
4171 T-3	14.0	0.15	19971218	308.81299	52.28812	59.00213	5.92182	0.0578584	2.2216816	42	5	1964–1997	0.93	M-v	3	Williams	28620	4171 T-3
4313 T-3	14.5	0.15	19971218	354.99014	303.60641	116.82080	2.95273	0.1257768	2.2272299	33	7	1977–1997	0.90	M-v	2	Williams	27458	4313 T-3

1997 TB₁₈ = 1997 TH₂₄ (G. V. Williams)

EPHEMERIDES

P/1997 V1 (Larsen)

Elements *MPC* 30846

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 11 08		00 13.41	+12 00.0	2.487	3.317	141.2	10.8	16.2	
1997 11 18		00 13.11	+11 06.7	2.591	3.325	131.1	12.9	16.3	
1997 11 28		00 14.65	+10 25.4	2.712	3.334	121.4	14.6	16.4	
1997 12 08		00 18.01	+09 57.6	2.848	3.343	111.9	15.9	16.5	
1997 12 18		00 23.04	+09 43.2	2.993	3.354	102.9	16.6	16.6	
1997 12 28		00 29.58	+09 41.7	3.145	3.365	94.3	16.9	16.8	
1998 01 07		00 37.44	+09 51.8	3.300	3.377	86.0	16.9	16.9	
1998 01 17		00 46.45	+10 12.1	3.454	3.389	78.0	16.5	17.0	
1998 01 27		00 56.43	+10 41.0	3.606	3.403	70.3	15.8	17.1	
1998 02 06		01 07.24	+11 16.9	3.752	3.417	62.8	14.9	17.2	
1998 02 16		01 18.75	+11 58.2	3.891	3.432	55.6	13.7	17.3	
1998 02 26		01 30.85	+12 43.6	4.021	3.447	48.6	12.4	17.4	
1998 03 08		01 43.43	+13 31.7	4.141	3.463	41.7	11.0	17.5	
1998 03 18		01 56.41	+14 21.2	4.249	3.480	34.9	9.4	17.6	

P/1997 T3

Elements *MPC* 30846

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 11 08		00 59.58	+01 57.5	3.414	4.290	148.6	6.9		19.3
1997 11 18		00 56.61	+01 52.2	3.499	4.284	137.9	8.9		19.5
1997 11 28		00 54.92	+01 55.9	3.605	4.278	127.5	10.5		19.6
1997 12 08		00 54.65	+02 08.7	3.728	4.272	117.4	11.8		19.7
1997 12 18		00 55.85	+02 30.6	3.864	4.267	107.7	12.7		19.8
1997 12 28		00 58.46	+03 00.8	4.008	4.263	98.3	13.2		19.9
1998 01 07		01 02.41	+03 38.5	4.156	4.259	89.3	13.3		20.0
1998 01 17		01 07.58	+04 22.8	4.305	4.256	80.6	13.2		20.1
1998 01 27		01 13.84	+05 12.6	4.450	4.253	72.2	12.7		20.1
1998 02 06		01 21.07	+06 06.9	4.589	4.251	64.0	12.0		20.2
1998 02 16		01 29.14	+07 04.6	4.720	4.249	56.1	11.1		20.2
1998 02 26		01 37.94	+08 04.9	4.840	4.249	48.5	10.0		20.2
1998 03 08		01 47.37	+09 06.8	4.947	4.248	41.0	8.8		20.2
1998 03 18		01 57.32	+10 09.6	5.041	4.249	33.7	7.5		20.2

$$a, e, i = 2.25, 0.47, 13$$
Elements *MPC* 30908

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		23 12.65	-23 21.2	0.769	1.387	103.5	43.9	18.3
1997 11 28		23 43.49	-20 24.2	0.868	1.439	101.5	42.2	18.6
1997 12 08		00 11.18	-17 15.4	0.978	1.494	99.1	40.6	18.9
1997 12 18		00 36.46	-14 03.7	1.097	1.551	96.3	39.1	19.2

1997 12 28	00 59.95	-10 54.6	1.225	1.610	93.0	37.6	19.5
1998 01 07	01 22.15	-07 51.9	1.360	1.670	89.4	36.1	19.8
1998 01 17	01 43.42	-04 57.9	1.503	1.731	85.6	34.5	20.0
1998 01 27	02 04.02	-02 14.1	1.650	1.792	81.5	32.9	20.2
1998 02 06	02 24.17	+00 18.6	1.803	1.853	77.2	31.3	20.5
1998 02 16	02 43.99	+02 39.5	1.957	1.913	72.7	29.5	20.7
1998 02 26	03 03.58	+04 48.3	2.114	1.972	68.1	27.8	20.8
1998 03 08	03 23.01	+06 44.8	2.270	2.031	63.5	25.9	21.0
1998 03 18	03 42.31	+08 29.1	2.425	2.089	58.7	24.0	21.1
1998 03 28	04 01.50	+10 01.0	2.577	2.146	53.9	22.1	21.3
1998 04 07	04 20.58	+11 20.8	2.724	2.201	49.0	20.1	21.4
1998 04 17	04 39.54	+12 28.6	2.865	2.256	44.1	18.0	21.5
1998 04 27	04 58.35	+13 24.7	3.000	2.309	39.2	16.0	21.6
1998 05 07	05 16.99	+14 09.5	3.126	2.360	34.2	13.9	21.6

1997 UH₉
$$a, e, i = 0.83, 0.48, 26$$
Elements *MPC* 30912

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18	01 03.81	+22 49.4	0.267	1.217	145.0	27.8	17.8	
1997 11 23	00 34.93	+23 38.6	0.294	1.210	133.9	36.1	18.2	
1997 11 28	00 12.89	+24 07.5	0.325	1.201	124.4	42.7	18.6	
1997 12 03	23 56.65	+24 27.7	0.359	1.189	116.2	48.1	19.0	
1997 12 08	23 45.01	+24 46.3	0.393	1.175	109.2	52.4	19.3	
1997 12 13	23 36.87	+25 06.6	0.427	1.158	103.0	56.0	19.5	
1997 12 18	23 31.34	+25 30.0	0.461	1.139	97.4	59.0	19.7	
1997 12 23	23 27.78	+25 56.8	0.492	1.117	92.3	61.6	19.9	
1997 12 28	23 25.69	+26 27.0	0.521	1.093	87.5	64.0	20.0	
1998 01 02	23 24.67	+27 00.1	0.547	1.066	83.1	66.3	20.2	
1998 01 07	23 24.38	+27 35.4	0.570	1.037	78.9	68.5	20.3	
1998 01 12	23 24.50	+28 11.8	0.589	1.005	74.8	70.8	20.3	
1998 01 17	23 24.77	+28 47.5	0.603	0.971	70.9	73.2	20.4	
1998 01 22	23 24.93	+29 20.7	0.613	0.934	66.9	75.9	20.4	
1998 01 27	23 24.70	+29 48.5	0.617	0.894	63.0	79.0	20.5	
1998 02 01	23 23.79	+30 07.2	0.617	0.851	59.0	82.7	20.5	
1998 02 06	23 21.83	+30 10.8	0.611	0.806	54.8	87.0	20.5	
1998 02 11	23 18.44	+29 50.7	0.600	0.759	50.2	92.3	20.6	
1998 02 16	23 13.27	+28 54.2	0.586	0.710	45.3	98.9	20.7	
1998 02 21	23 06.13	+27 04.0	0.569	0.660	39.6	107.0	20.9	

1997 US₉
$$a, e, i = 1.05, 0.28, 20$$
Elements *MPC* 30912

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		01 11.51	-06 23.7	0.424	1.329	136.7	30.7	17.6
1997 11 23		01 07.64	-08 50.9	0.451	1.322	129.7	35.1	17.8
1997 11 28		01 05.52	-10 46.2	0.481	1.314	123.4	38.8	18.1
1997 12 03		01 05.01	-12 13.8	0.512	1.305	117.7	42.0	18.3
1997 12 08		01 05.96	-13 18.0	0.543	1.294	112.5	44.7	18.4

1997 12 13	01 08.19	-14 02.8	0.574	1.283	107.9	46.9	18.6
1997 12 18	01 11.54	-14 31.5	0.605	1.270	103.6	48.8	18.8
1997 12 23	01 15.86	-14 46.8	0.635	1.257	99.6	50.5	18.9
1997 12 28	01 21.05	-14 51.0	0.663	1.242	96.0	51.9	19.0
1998 01 02	01 27.02	-14 46.0	0.690	1.226	92.6	53.2	19.1
1998 01 07	01 33.68	-14 33.2	0.714	1.210	89.4	54.4	19.2
1998 01 12	01 40.95	-14 14.1	0.736	1.192	86.5	55.4	19.2
1998 01 17	01 48.76	-13 49.7	0.756	1.173	83.7	56.5	19.3
1998 01 22	01 57.06	-13 20.7	0.772	1.154	81.1	57.5	19.3
1998 01 27	02 05.83	-12 47.7	0.786	1.133	78.7	58.5	19.4
1998 02 01	02 15.03	-12 11.4	0.796	1.112	76.4	59.5	19.4
1998 02 06	02 24.63	-11 32.2	0.803	1.089	74.3	60.6	19.4
1998 02 11	02 34.59	-10 50.4	0.806	1.067	72.2	61.8	19.4
1998 02 16	02 44.89	-10 06.3	0.805	1.043	70.3	63.1	19.4
1998 02 21	02 55.52	-09 19.8	0.801	1.019	68.5	64.5	19.3
1998 02 26	03 06.44	-08 30.9	0.792	0.995	66.8	66.2	19.3
1998 03 03	03 17.65	-07 39.4	0.780	0.971	65.2	68.0	19.3
1998 03 08	03 29.11	-06 45.0	0.763	0.946	63.7	70.1	19.3
1998 03 13	03 40.76	-05 47.1	0.743	0.922	62.2	72.4	19.2
1998 03 18	03 52.55	-04 44.7	0.718	0.898	60.7	75.1	19.2
1998 03 23	04 04.42	-03 36.4	0.690	0.875	59.2	78.1	19.1
1998 03 28	04 16.29	-02 20.2	0.658	0.853	57.7	81.6	19.1
1998 04 02	04 28.04	-00 53.6	0.623	0.832	56.1	85.5	19.1
1998 04 07	04 39.51	+00 46.8	0.584	0.814	54.4	89.9	19.1
1998 04 12	04 50.49	+02 46.1	0.544	0.797	52.4	94.9	19.1
1998 04 17	05 00.70	+05 10.6	0.502	0.783	50.1	100.5	19.1
1998 04 22	05 09.80	+08 08.6	0.459	0.771	47.3	106.8	19.2
1998 04 27	05 17.35	+11 50.3	0.417	0.763	44.0	113.7	19.4
1998 05 02	05 22.74	+16 26.8	0.378	0.758	40.0	121.3	19.7
1998 05 07	05 25.13	+22 08.0	0.343	0.757	35.7	129.0	20.2
1998 05 12	05 23.45	+28 56.8	0.314	0.760	31.3	136.2	20.8

1997 UT ₉		$a, e, i = 2.20, 0.39, 8$			Elements <i>MPC</i> 30912		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1997 11 18		01 25.69	+16 46.5	0.442	1.388	149.5	21.2
1997 11 23		01 28.18	+18 04.0	0.469	1.399	145.5	23.6
1997 11 28		01 31.74	+19 15.8	0.499	1.412	141.6	25.7
1997 12 03		01 36.34	+20 22.3	0.531	1.425	138.0	27.6
1997 12 08		01 41.92	+21 24.3	0.567	1.440	134.5	29.2
1997 12 13		01 48.37	+22 22.1	0.605	1.456	131.3	30.5
1997 12 18		01 55.60	+23 16.1	0.646	1.473	128.1	31.7
1997 12 23		02 03.52	+24 06.7	0.689	1.491	125.1	32.6
1997 12 28		02 12.06	+24 54.0	0.735	1.510	122.2	33.4
1998 01 02		02 21.16	+25 38.4	0.784	1.529	119.4	34.1
1998 01 07		02 30.74	+26 20.0	0.834	1.549	116.7	34.5
1998 01 12		02 40.73	+26 58.9	0.887	1.570	114.1	34.9
1998 01 17		02 51.09	+27 35.1	0.942	1.592	111.4	35.1
1998 01 22		03 01.74	+28 08.6	0.999	1.614	108.9	35.2
1998 01 27		03 12.67	+28 39.5	1.058	1.636	106.3	35.3
1998 02 01		03 23.84	+29 07.7	1.119	1.659	103.8	35.2

1997 UF ₉		$a, e, i = 1.43, 0.59, 25$				Elements <i>MPC</i> 30912		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		01 46.98	+16 59.9	0.982	1.922	154.6	12.7	18.6
1997 11 28		01 25.22	+16 51.4	1.005	1.869	139.6	20.0	18.9
1997 12 08		01 08.60	+16 49.4	1.049	1.811	125.8	26.2	19.1
1997 12 18		00 57.82	+17 02.3	1.106	1.748	113.4	31.1	19.3
1997 12 28		00 52.56	+17 34.1	1.169	1.681	102.4	34.8	19.4
1998 01 07		00 52.19	+18 26.2	1.230	1.610	92.7	37.6	19.5
1998 01 17		00 55.95	+19 37.8	1.284	1.534	84.0	39.6	19.5
1998 01 27		01 03.24	+21 07.5	1.326	1.452	76.3	41.2	19.5
1998 02 06		01 13.66	+22 53.8	1.354	1.366	69.4	42.5	19.5
1998 02 16		01 26.96	+24 54.9	1.364	1.275	63.3	43.8	19.4
1998 02 26		01 43.10	+27 08.7	1.353	1.179	57.9	45.4	19.2
1998 03 08		02 02.25	+29 32.4	1.321	1.078	53.3	47.6	19.1
1998 03 18		02 24.68	+32 01.3	1.263	0.974	49.4	50.8	18.8
1998 03 28		02 50.86	+34 26.5	1.179	0.869	46.1	55.9	18.6
1998 04 07		03 21.11	+36 30.7	1.067	0.767	43.4	63.7	18.3
1998 04 17		03 54.81	+37 38.9	0.926	0.677	40.8	75.8	18.1
1998 04 27		04 28.59	+36 43.6	0.761	0.611	37.3	93.7	18.2
1998 05 07		04 54.21	+31 48.1	0.590	0.587	30.9	118.0	18.9

1997 US ₂		$a, e, i = 1.67, 0.66, 3$				Elements <i>MPC</i> 30910		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		02 09.09	+09 30.7	0.365	1.333	157.4	16.5	18.8
1997 11 23		01 46.39	+07 52.5	0.334	1.280	146.6	25.1	18.8
1997 11 28		01 21.33	+06 01.7	0.310	1.226	135.2	34.6	18.8
1997 12 03		00 54.53	+04 01.8	0.291	1.170	123.2	44.8	18.9
1997 12 08		00 26.62	+01 56.8	0.276	1.114	110.9	55.7	19.0
1997 12 13		23 57.93	-00 10.3	0.266	1.057	98.4	67.2	19.1
1997 12 18		23 28.44	-02 18.4	0.259	0.999	85.7	79.3	19.3
1997 12 23		22 57.77	-04 28.3	0.255	0.940	72.7	92.3	19.7
1997 12 28		22 25.41	-06 41.3	0.254	0.882	59.4	106.3	20.2
1998 01 02		21 50.99	-08 57.8	0.258	0.824	45.6	121.5	21.1
1998 01 07		21 14.90	-11 14.5	0.268	0.768	31.5	138.0	22.7

1997 VM ₄		$a, e, i = 2.86, 0.84, 15$				Elements <i>MPC</i> 30913		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		02 10.68	+14 35.1	0.624	1.588	159.7	12.5	18.7
1997 11 23		01 51.10	+14 14.4	0.586	1.523	150.0	18.9	18.7
1997 11 28		01 30.29	+13 49.1	0.555	1.456	140.0	25.8	18.7
1997 12 03		01 08.89	+13 20.3	0.532	1.388	129.8	33.0	18.7
1997 12 08		00 47.55	+12 50.0	0.515	1.318	119.7	40.5	18.8
1997 12 13		00 26.75	+12 20.1	0.502	1.247	109.8	48.0	18.8
1997 12 18		00 06.72	+11 51.9	0.493	1.175	100.0	55.6	18.8
1997 12 23		23 47.45	+11 25.5	0.486	1.101	90.5	63.3	18.9
1997 12 28		23 28.64	+10 59.9	0.479	1.026	81.2	71.4	19.0
1998 01 02		23 09.73	+10 32.0	0.472	0.949	71.9	79.9	19.0
1998 01 07		22 49.94	+09 55.7	0.464	0.872	62.5	89.3	19.2
1998 01 12		22 28.28	+09 01.4	0.457	0.795	52.8	100.0	19.4
1998 01 17		22 03.89	+07 35.1	0.451	0.719	42.5	112.3	19.9
1998 01 22		21 36.44	+05 20.4	0.452	0.646	31.9	126.3	20.7

1997 VG ₆		$a, e, i = 1.59, 0.56, 18$				Elements <i>MPC</i> 30913		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		03 01.50	+19 10.3	0.389	1.375	172.4	5.4	18.6
1997 11 23		02 47.84	+20 49.1	0.441	1.417	164.4	10.8	19.2
1997 11 28		02 37.62	+22 03.6	0.498	1.458	157.2	15.2	19.6
1997 12 03		02 30.34	+23 01.3	0.559	1.499	150.7	18.7	20.1
1997 12 08		02 25.55	+23 47.7	0.625	1.539	144.8	21.6	20.5
1997 12 13		02 22.82	+24 26.6	0.694	1.577	139.4	24.0	20.8
1997 12 18		02 21.80	+25 00.5	0.766	1.615	134.3	25.8	21.1
1997 12 23		02 22.20	+25 31.0	0.841	1.652	129.6	27.3	21.4
1997 12 28		02 23.80	+25 59.5	0.919	1.688	125.1	28.5	21.7
1998 01 02		02 26.42	+26 26.8	0.999	1.723	120.8	29.4	22.0

1997 TT ₂₅		$a, e, i = 2.12, 0.42, 8$				Elements <i>MPC</i> 30910		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		04 08.84	+37 55.7	0.270	1.246	159.7	15.9	17.5
1997 11 23		04 10.37	+39 58.5	0.277	1.251	160.0	15.6	17.6
1997 11 28		04 11.58	+41 38.8	0.286	1.259	159.6	15.8	17.6
1997 12 03		04 12.83	+42 55.8	0.299	1.268	158.5	16.5	17.8
1997 12 08		04 14.43	+43 50.3	0.314	1.280	156.9	17.5	17.9
1997 12 13		04 16.66	+44 24.4	0.332	1.293	155.0	18.8	18.1
1997 12 18		04 19.67	+44 40.7	0.352	1.307	152.7	20.2	18.3
1997 12 23		04 23.54	+44 41.9	0.376	1.323	150.3	21.6	18.5
1997 12 28		04 28.32	+44 30.7	0.402	1.340	147.7	23.1	18.8
1998 01 02		04 34.03	+44 09.7	0.431	1.359	145.1	24.5	19.0
1998 01 07		04 40.61	+43 41.4	0.463	1.379	142.4	25.8	19.2
1998 01 12		04 47.97	+43 07.8	0.497	1.400	139.6	27.1	19.4
1998 01 17		04 56.00	+42 30.3	0.535	1.422	136.9	28.2	19.7
1998 01 22		05 04.58	+41 50.0	0.575	1.444	134.1	29.3	19.9
1998 01 27		05 13.63	+41 07.9	0.618	1.468	131.3	30.3	20.1
1998 02 01		05 23.08	+40 24.4	0.664	1.492	128.5	31.1	20.3
1998 02 06		05 32.87	+39 40.2	0.712	1.517	125.8	31.8	20.5
1998 02 11		05 42.91	+38 55.6	0.763	1.542	123.0	32.4	20.7
1998 02 16		05 53.13	+38 10.7	0.817	1.568	120.3	33.0	20.9
1998 02 21		06 03.48	+37 25.5	0.873	1.594	117.6	33.4	21.1
1998 02 26		06 13.92	+36 40.0	0.931	1.620	114.9	33.7	21.3
1998 03 03		06 24.43	+35 54.3	0.992	1.647	112.3	33.9	21.5
1998 03 08		06 34.98	+35 08.4	1.055	1.673	109.6	34.0	21.6
1998 03 13		06 45.52	+34 22.1	1.120	1.700	107.0	34.0	21.8
1998 03 18		06 56.03	+33 35.4	1.186	1.727	104.4	33.9	22.0
1998 03 23		07 06.49	+32 48.3	1.255	1.754	101.8	33.8	22.1

1997 VN ₄		$a, e, i = 2.47, 0.56, 8$				Elements <i>MPC</i> 30913		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		04 19.80	+32 41.7	0.111	1.095	163.0	15.3	19.8
1997 11 23		04 41.14	+38 09.1	0.128	1.109	159.5	18.2	20.2
1997 11 28		04 58.30	+41 49.5	0.148	1.125	157.6	19.5	20.6
1997 12 03		05 11.66	+44 11.8	0.170	1.144	156.8	19.9	20.9
1997 12 08		05 21.90	+45 38.0	0.194	1.166	156.6	19.6	21.3
1997 12 13		05 29.76	+46 24.1	0.221	1.190	156.7	19.1	21.6
1997 12 18		05 35.87	+46 40.8	0.249	1.217	156.7	18.7	21.9
1997 12 23		05 40.80	+46 35.8	0.280	1.245	156.3	18.5	22.2

1997 UR		$a, e, i = 1.46, 0.31, 2$				Elements <i>MPC</i> 30910		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		08 41.60	+02 21.8	0.063	1.005	103.0	73.4	19.6
1997 11 23		08 56.54	+00 44.9	0.074	1.008	103.8	72.1	19.9
1997 11 28		09 06.55	-00 21.6	0.085	1.013	105.9	69.4	20.1
1997 12 03		09 13.02	-01 05.5	0.095	1.021	109.0	65.9	20.3
1997 12 08		09 16.79	-01 31.0	0.105	1.030	112.8	61.8	20.4
1997 12 13		09 18.37	-01 40.7	0.115	1.042	117.2	57.2	20.5
1997 12 18		09 18.02	-01 35.7	0.124	1.055	122.1	52.2	20.5
1997 12 23		09 15.90	-01 16.3	0.133	1.070	127.5	46.8	20.5
1997 12 28		09 12.17	-00 42.6	0.143	1.087	133.4	41.2	20.6
1998 01 02		09 07.09	+00 04.9	0.153	1.104	139.5	35.3	20.6
1998 01 07		09 01.07	+01 04.6	0.165	1.123	145.9	29.4	20.6
1998 01 12		08 54.52	+02 13.9	0.177	1.143	152.3	23.6	20.6
1998 01 17		08 47.85	+03 29.7	0.192	1.164	158.4	18.1	20.7
1998 01 22		08 41.43	+04 49.0	0.209	1.186	163.8	13.4	20.7
1998 01 27		08 35.62	+06 08.4	0.228	1.208	167.6	10.1	20.8
1998 02 01		08 30.76	+07 25.1	0.250	1.231	168.2	9.4	21.1
1998 02 06		08 27.08	+08 36.5	0.274	1.254	165.7	11.2	21.4
1998 02 11		08 24.68	+09 41.0	0.302	1.277	161.6	14.1	21.7
1998 02 16		08 23.55	+10 37.8	0.333	1.300	157.0	17.3	22.1
1998 02 21		08 23.66	+11 26.6	0.366	1.324	152.3	20.3	22.4

1992 EB ₁		$a, e, i = 3.38, 0.57, 22$				Elements <i>MPC</i> 20823		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		08 41.91	+40 26.1	2.101	2.635	111.9	20.4	21.2
1997 11 28		08 46.61	+40 54.1	1.929	2.572	120.3	19.3	21.0
1997 12 08		08 47.98	+41 29.3	1.768	2.508	129.0	17.8	20.7
1997 12 18		08 45.45	+42 08.5	1.622	2.443	138.0	15.6	20.3
1997 12 28		08 38.48	+42 45.0	1.495	2.379	146.7	13.1	20.0
1998 01 07		08 27.02	+43 08.1	1.389	2.314	154.0	10.7	19.7
1998 01 17		08 11.85	+43 04.6	1.308	2.249	157.5	9.7	19.5
1998 01 27		07 54.74	+42 22.9	1.253	2.184	154.5	11.2	19.4
1998 02 06		07 38.24	+40 58.2	1.224	2.119	146.8	14.8	19.4
1998 02 16		07 24.82	+38 55.3	1.218	2.055	137.1	19.1	19.5
1998 02 26		07 16.02	+36 25.5	1.231	1.992	127.1	23.4	19.6
1998 03 08		07 12.45	+33 40.8	1.259	1.930	117.5	27.2	19.6
1998 03 18		07 13.87	+30 50.5	1.297	1.869	108.5	30.3	19.7
1998 03 28		07 19.68	+27 59.0	1.340	1.810	100.4	32.8	19.8
1998 04 07		07 29.23	+25 07.6	1.386	1.753	93.1	34.8	19.9
1998 04 17		07 41.84	+22 15.3	1.432	1.700	86.6	36.1	19.9
1998 04 27		07 56.97	+19 19.9	1.476	1.649	80.9	37.0	19.9
1998 05 07		08 14.19	+16 19.1	1.517	1.603	75.8	37.6	19.9
1998 05 17		08 33.13	+13 10.9	1.555	1.562	71.4	37.9	19.9
1998 05 27		08 53.53	+09 53.9	1.590	1.527	67.7	37.9	19.9
1998 06 06		09 15.23	+06 27.4	1.623	1.497	64.4	37.7	19.9
1998 06 16		09 38.09	+02 51.4	1.654	1.475	61.7	37.3	19.9
1998 06 26		10 02.07	-00 53.0	1.685	1.460	59.4	36.8	19.9
1998 07 06		10 27.16	-04 44.0	1.717	1.453	57.6	36.2	20.0
1998 07 16		10 53.37	-08 38.6	1.752	1.454	56.0	35.5	20.0
1998 07 26		11 20.76	-12 33.2	1.791	1.462	54.7	34.6	20.0
1998 08 05		11 49.38	-16 23.4	1.835	1.479	53.6	33.5	20.1
1998 08 15		12 19.22	-20 04.1	1.887	1.502	52.5	32.3	20.1

1998 08 30	13 06.26	-25 06.4	1.979	1.551	50.7	30.2	20.2
1998 09 09	13 38.96	-28 01.8	2.052	1.590	49.3	28.7	20.3
1998 09 19	14 12.50	-30 31.6	2.134	1.635	47.6	27.0	20.4
1998 09 29	14 46.59	-32 33.5	2.224	1.684	45.7	25.2	20.5
1998 10 09	15 20.84	-34 06.0	2.321	1.736	43.4	23.3	20.6
1998 10 19	15 54.85	-35 09.2	2.424	1.792	40.8	21.3	20.7
1998 10 29	16 28.22	-35 44.6	2.531	1.850	37.8	19.2	20.8
1998 11 08	17 00.58	-35 54.2	2.642	1.911	34.6	17.1	20.9
1998 11 18	17 31.68	-35 41.0	2.753	1.972	31.0	15.0	21.0

1997 CT₂₉ $a, e, i = 43.58, 0.03, 1$ Elements *MPC* 30878

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18	09 13.82	+16 57.9	44.702	44.884	100.0	1.2	21.7	
1997 11 28	09 13.71	+16 58.6	44.535	44.884	110.1	1.2	21.7	
1997 12 08	09 13.46	+16 59.9	44.378	44.884	120.3	1.1	21.7	
1997 12 18	09 13.07	+17 01.9	44.237	44.884	130.6	1.0	21.6	
1997 12 28	09 12.55	+17 04.3	44.116	44.884	140.9	0.8	21.6	
1998 01 07	09 11.93	+17 07.2	44.019	44.884	151.3	0.6	21.6	
1998 01 17	09 11.23	+17 10.4	43.949	44.883	161.6	0.4	21.6	
1998 01 27	09 10.48	+17 13.8	43.908	44.883	171.9	0.2	21.5	
1998 02 06	09 09.70	+17 17.3	43.898	44.883	177.5	0.1	21.5	
1998 02 16	09 08.93	+17 20.6	43.919	44.883	167.3	0.3	21.5	
1998 02 26	09 08.19	+17 23.8	43.969	44.883	157.1	0.5	21.6	
1998 03 08	09 07.52	+17 26.7	44.048	44.883	146.9	0.7	21.6	
1998 03 18	09 06.93	+17 29.1	44.152	44.883	136.8	0.9	21.6	
1998 03 28	09 06.45	+17 31.0	44.278	44.882	126.7	1.0	21.6	
1998 04 07	09 06.10	+17 32.4	44.423	44.882	116.8	1.1	21.7	
1998 04 17	09 05.88	+17 33.2	44.580	44.882	106.9	1.2	21.7	
1998 04 27	09 05.81	+17 33.3	44.746	44.882	97.1	1.3	21.7	
1998 05 07	09 05.89	+17 32.7	44.915	44.882	87.5	1.3	21.7	
1998 05 17	09 06.12	+17 31.6	45.084	44.882	77.9	1.3	21.7	
1998 05 27	09 06.48	+17 29.8	45.246	44.882	68.3	1.2	21.7	
1998 06 06	09 06.98	+17 27.5	45.398	44.882	58.9	1.1	21.7	
1998 06 16	09 07.60	+17 24.6	45.535	44.881	49.5	1.0	21.7	
1998 06 26	09 08.33	+17 21.3	45.654	44.881	40.1	0.8	21.7	
1998 07 06	09 09.15	+17 17.7	45.752	44.881	30.8	0.7	21.7	

1994 CN₂ $a, e, i = 1.57, 0.40, 1$ Elements *MPC* 27456

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18	10 51.01	+08 09.2	1.967	1.955	74.7	29.2	20.7	
1997 11 28	11 02.89	+07 03.6	1.874	1.988	81.7	29.4	20.6	
1997 12 08	11 12.82	+06 09.7	1.776	2.019	89.2	29.2	20.5	
1997 12 18	11 20.51	+05 30.2	1.673	2.047	97.4	28.5	20.4	
1997 12 28	11 25.57	+05 08.2	1.570	2.073	106.2	27.1	20.3	
1998 01 07	11 27.54	+05 06.7	1.470	2.096	116.0	24.9	20.1	
1998 01 17	11 26.00	+05 28.5	1.377	2.117	126.6	21.9	19.9	
1998 01 27	11 20.62	+06 14.9	1.297	2.135	138.3	17.9	19.6	
1998 02 06	11 11.39	+07 24.5	1.235	2.151	151.0	12.8	19.4	
1998 02 16	10 58.91	+08 51.4	1.196	2.164	164.5	7.0	19.1	
1998 02 26	10 44.40	+10 25.5	1.186	2.175	177.3	1.2	18.7	
1998 03 08	10 29.64	+11 54.4	1.205	2.184	167.3	5.8	19.1	
1998 03 18	10 16.50	+13 07.4	1.252	2.190	154.0	11.5	19.4	
1998 03 28	10 06.33	+13 58.8	1.323	2.194	141.5	16.5	19.7	
1998 04 07	09 59.85	+14 27.1	1.413	2.195	130.0	20.5	20.0	

1998 04 17	09 57.15	+14 34.3	1.518	2.194	119.5	23.5	20.2
1998 04 27	09 57.91	+14 22.9	1.631	2.190	110.0	25.6	20.4
1998 05 07	10 01.71	+13 55.7	1.749	2.184	101.3	26.9	20.6
1998 05 17	10 08.03	+13 15.0	1.868	2.176	93.4	27.6	20.8
1998 05 27	10 16.42	+12 22.5	1.985	2.165	86.0	27.8	20.9
1998 06 06	10 26.53	+11 19.6	2.099	2.151	79.1	27.6	21.0
1998 06 16	10 38.02	+10 07.5	2.207	2.136	72.6	27.0	21.1
1998 06 26	10 50.67	+08 47.1	2.308	2.117	66.4	26.1	21.1
1998 07 06	11 04.31	+07 19.1	2.400	2.097	60.6	25.0	21.2
1998 07 16	11 18.80	+05 44.2	2.482	2.073	55.0	23.7	21.2
1998 07 26	11 34.05	+04 03.3	2.554	2.048	49.6	22.2	21.2
1998 08 05	11 50.02	+02 16.8	2.616	2.020	44.4	20.6	21.1
1998 08 15	12 06.68	+00 25.5	2.665	1.989	39.4	18.8	21.1
1998 08 25	12 24.04	-01 29.9	2.704	1.956	34.5	17.0	21.0

1994 GV₉ $a, e, i = 43.50, 0.06, 1$ Elements *MPC* 30092

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18	11 57.84	+00 15.0	42.700	42.159	56.3	1.1	23.4	
1997 11 28	11 58.38	+00 11.5	42.548	42.161	66.3	1.2	23.4	
1997 12 08	11 58.78	+00 08.9	42.385	42.162	76.3	1.3	23.4	
1997 12 18	11 59.04	+00 07.2	42.214	42.163	86.4	1.3	23.4	
1997 12 28	11 59.15	+00 06.6	42.041	42.165	96.6	1.3	23.4	
1998 01 07	11 59.11	+00 06.9	41.872	42.166	106.8	1.3	23.4	
1998 01 17	11 58.92	+00 08.1	41.712	42.167	117.0	1.2	23.4	
1998 01 27	11 58.59	+00 10.3	41.565	42.169	127.3	1.1	23.4	
1998 02 06	11 58.13	+00 13.3	41.437	42.170	137.5	0.9	23.4	
1998 02 16	11 57.57	+00 16.9	41.332	42.171	147.8	0.7	23.3	
1998 02 26	11 56.93	+00 21.2	41.253	42.173	158.1	0.5	23.3	
1998 03 08	11 56.22	+00 25.8	41.202	42.174	168.3	0.3	23.3	
1998 03 18	11 55.49	+00 30.6	41.181	42.175	178.5	0.0	23.2	
1998 03 28	11 54.74	+00 35.4	41.190	42.177	171.4	0.2	23.3	
1998 04 07	11 54.03	+00 40.1	41.229	42.178	161.4	0.4	23.3	
1998 04 17	11 53.36	+00 44.5	41.296	42.179	151.4	0.7	23.3	
1998 04 27	11 52.76	+00 48.4	41.389	42.181	141.4	0.9	23.3	
1998 05 07	11 52.26	+00 51.7	41.505	42.182	131.6	1.0	23.4	
1998 05 17	11 51.88	+00 54.2	41.641	42.183	121.8	1.2	23.4	
1998 05 27	11 51.61	+00 55.9	41.792	42.185	112.2	1.3	23.4	
1998 06 06	11 51.49	+00 56.7	41.954	42.186	102.5	1.3	23.4	
1998 06 16	11 51.50	+00 56.7	42.122	42.187	93.0	1.4	23.4	
1998 06 26	11 51.66	+00 55.7	42.292	42.189	83.5	1.4	23.4	
1998 07 06	11 51.96	+00 53.7	42.459	42.190	74.0	1.3	23.4	
1998 07 16	11 52.39	+00 51.0	42.617	42.192	64.6	1.2	23.5	
1998 07 26	11 52.94	+00 47.4	42.764	42.193	55.2	1.1	23.4	
1998 08 05	11 53.61	+00 43.1	42.895	42.194	45.8	1.0	23.4	
1998 08 15	11 54.37	+00 38.2	43.006	42.196	36.4	0.8	23.4	

1995 HM₅ $a, e, i = 39.37, 0.25, 5$ Elements *MPC* 30093

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18	12 47.90	-04 41.7	33.069	32.351	42.9	1.2	23.3	
1997 11 28	12 48.86	-04 47.4	32.933	32.345	52.7	1.4	23.3	
1997 12 08	12 49.67	-04 52.1	32.780	32.339	62.6	1.6	23.3	
1997 12 18	12 50.31	-04 55.7	32.614	32.334	72.6	1.7	23.3	
1997 12 28	12 50.77	-04 58.1	32.438	32.328	82.7	1.7	23.3	
1998 01 07	12 51.04	-04 59.3	32.258	32.322	92.8	1.7	23.3	

1997 NOV. 14

M.P.C. 30919

1998 01 17	12 51.11	-04 59.3	32.080	32.316	103.0	1.7	23.3
1998 01 27	12 50.98	-04 58.0	31.909	32.310	113.2	1.6	23.3
1998 02 06	12 50.67	-04 55.6	31.750	32.304	123.5	1.5	23.3
1998 02 16	12 50.18	-04 52.1	31.608	32.298	133.7	1.3	23.2
1998 02 26	12 49.54	-04 47.6	31.487	32.292	144.0	1.0	23.2
1998 03 08	12 48.77	-04 42.3	31.390	32.287	154.2	0.8	23.2
1998 03 18	12 47.91	-04 36.5	31.321	32.281	164.4	0.5	23.1
1998 03 28	12 47.00	-04 30.4	31.281	32.275	174.6	0.2	23.1
1998 04 07	12 46.06	-04 24.1	31.272	32.269	175.3	0.1	23.1
1998 04 17	12 45.14	-04 18.0	31.292	32.263	165.2	0.5	23.1
1998 04 27	12 44.27	-04 12.2	31.341	32.257	155.2	0.7	23.2
1998 05 07	12 43.48	-04 07.0	31.417	32.252	145.3	1.0	23.2
1998 05 17	12 42.82	-04 02.6	31.517	32.246	135.5	1.3	23.2
1998 05 27	12 42.29	-03 59.0	31.638	32.240	125.7	1.5	23.2
1998 06 06	12 41.91	-03 56.5	31.776	32.234	116.0	1.6	23.3
1998 06 16	12 41.72	-03 55.1	31.926	32.228	106.4	1.7	23.3
1998 06 26	12 41.70	-03 54.8	32.085	32.223	96.9	1.8	23.3
1998 07 06	12 41.88	-03 55.8	32.247	32.217	87.4	1.8	23.3
1998 07 16	12 42.23	-03 57.9	32.408	32.211	77.9	1.8	23.3
1998 07 26	12 42.77	-04 01.2	32.563	32.205	68.5	1.7	23.3
1998 08 05	12 43.47	-04 05.5	32.707	32.199	59.2	1.6	23.3
1998 08 15	12 44.32	-04 10.8	32.838	32.194	49.8	1.4	23.3
1998 08 25	12 45.31	-04 16.9	32.950	32.188	40.5	1.2	23.3
1998 09 04	12 46.42	-04 23.7	33.042	32.182	31.1	0.9	23.3

1993 FW		$a, e, i = 43.52, 0.05, 8$				Elements <i>MPC</i> 30092		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		12 54.53	−05 00.7	42.752	42.013	41.2	0.9	23.4
1997 11 28		12 55.26	−05 04.8	42.625	42.013	51.1	1.0	23.4
1997 12 08		12 55.89	−05 08.2	42.479	42.012	61.1	1.2	23.4
1997 12 18		12 56.38	−05 10.8	42.319	42.011	71.2	1.3	23.4
1997 12 28		12 56.73	−05 12.5	42.149	42.010	81.2	1.3	23.4
1998 01 07		12 56.94	−05 13.3	41.974	42.009	91.4	1.3	23.4
1998 01 17		12 56.99	−05 13.0	41.800	42.009	101.6	1.3	23.4
1998 01 27		12 56.89	−05 11.9	41.633	42.008	111.8	1.2	23.4
1998 02 06		12 56.64	−05 09.8	41.476	42.007	122.0	1.1	23.4
1998 02 16		12 56.26	−05 06.9	41.336	42.006	132.2	1.0	23.4
1998 02 26		12 55.76	−05 03.3	41.217	42.005	142.4	0.8	23.3
1998 03 08		12 55.16	−04 59.1	41.121	42.005	152.6	0.6	23.3
1998 03 18		12 54.49	−04 54.5	41.052	42.004	162.8	0.4	23.3
1998 03 28		12 53.77	−04 49.6	41.013	42.003	172.8	0.2	23.2
1998 04 07		12 53.03	−04 44.6	41.003	42.002	176.9	0.1	23.2
1998 04 17		12 52.29	−04 39.7	41.023	42.002	167.0	0.3	23.3
1998 04 27		12 51.59	−04 35.0	41.072	42.001	157.1	0.5	23.3
1998 05 07		12 50.95	−04 30.8	41.149	42.000	147.2	0.7	23.3
1998 05 17		12 50.40	−04 27.1	41.250	41.999	137.4	0.9	23.3
1998 05 27		12 49.94	−04 24.0	41.372	41.998	127.6	1.1	23.4
1998 06 06		12 49.60	−04 21.8	41.512	41.998	118.0	1.2	23.4
1998 06 16		12 49.40	−04 20.4	41.666	41.997	108.4	1.3	23.4
1998 06 26		12 49.33	−04 19.9	41.829	41.996	98.8	1.4	23.4
1998 07 06		12 49.41	−04 20.2	41.996	41.995	89.3	1.4	23.4
1998 07 16		12 49.63	−04 21.5	42.163	41.995	79.8	1.4	23.4
1998 07 26		12 49.99	−04 23.7	42.325	41.994	70.4	1.3	23.4

1998 08 05	12 50.48	-04 26.7	42.477	41.993	60.9	1.2	23.4
1998 08 15	12 51.09	-04 30.4	42.615	41.992	51.5	1.1	23.4
1998 08 25	12 51.81	-04 34.8	42.737	41.992	42.1	0.9	23.4
1998 09 04	12 52.62	-04 39.7	42.837	41.991	32.6	0.7	23.4

1994 EV ₃		$a, e, i = 42.76, 0.05, 2$				Elements <i>MPC</i> 30092		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1997 11 18		13 26.69	−09 11.8	45.523	44.691	32.3	0.7	23.7
1997 11 28		13 27.46	−09 16.4	45.417	44.691	42.2	0.8	23.7
1997 12 08		13 28.13	−09 20.4	45.289	44.691	52.1	1.0	23.7
1997 12 18		13 28.70	−09 23.8	45.143	44.691	62.1	1.1	23.7
1997 12 28		13 29.14	−09 26.5	44.982	44.692	72.2	1.2	23.7
1998 01 07		13 29.44	−09 28.4	44.813	44.692	82.3	1.2	23.7
1998 01 17		13 29.60	−09 29.4	44.639	44.692	92.5	1.3	23.7
1998 01 27		13 29.62	−09 29.5	44.467	44.693	102.6	1.2	23.7
1998 02 06		13 29.49	−09 28.9	44.301	44.693	112.8	1.2	23.7
1998 02 16		13 29.22	−09 27.4	44.147	44.693	123.0	1.1	23.6
1998 02 26		13 28.82	−09 25.1	44.010	44.693	133.2	0.9	23.6
1998 03 08		13 28.32	−09 22.2	43.893	44.694	143.4	0.8	23.6
1998 03 18		13 27.72	−09 18.8	43.801	44.694	153.5	0.6	23.6
1998 03 28		13 27.06	−09 15.0	43.736	44.694	163.6	0.4	23.5
1998 04 07		13 26.35	−09 10.9	43.700	44.694	173.6	0.1	23.5
1998 04 17		13 25.63	−09 06.7	43.693	44.695	176.4	0.1	23.5
1998 04 27		13 24.91	−09 02.5	43.716	44.695	166.4	0.3	23.5
1998 05 07		13 24.24	−08 58.6	43.768	44.695	156.5	0.5	23.6
1998 05 17		13 23.62	−08 55.0	43.847	44.695	146.7	0.7	23.6
1998 05 27		13 23.08	−08 51.8	43.950	44.696	137.0	0.9	23.6
1998 06 06		13 22.64	−08 49.2	44.075	44.696	127.2	1.0	23.6
1998 06 16		13 22.31	−08 47.3	44.216	44.696	117.6	1.2	23.6
1998 06 26		13 22.11	−08 46.2	44.372	44.697	108.0	1.2	23.7
1998 07 06		13 22.05	−08 45.8	44.536	44.697	98.5	1.3	23.7
1998 07 16		13 22.12	−08 46.3	44.704	44.697	88.9	1.3	23.7
1998 07 26		13 22.32	−08 47.5	44.872	44.697	79.4	1.3	23.7
1998 08 05		13 22.66	−08 49.6	45.035	44.698	70.0	1.2	23.7
1998 08 15		13 23.12	−08 52.4	45.188	44.698	60.5	1.1	23.7
1998 08 25		13 23.71	−08 55.8	45.327	44.698	51.0	1.0	23.7
1998 09 04		13 24.39	−08 59.9	45.448	44.698	41.6	0.9	23.7
1998 09 14		13 25.16	−09 04.5	45.548	44.699	32.1	0.7	23.7

111P/Helin-Roman-Crockett		Elements <i>MPC</i> 25932							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 12 18		12 08.99	+03 30.6	3.688	3.741	85.5	15.2	19.3	22.5
1997 12 28		12 14.28	+03 09.6	3.548	3.752	94.3	15.2	19.2	22.5
1998 01 07		12 18.15	+02 58.6	3.410	3.763	103.5	14.7	19.2	22.4
1998 01 17		12 20.45	+02 58.3	3.278	3.774	113.1	13.9	19.1	22.3
1998 01 27		12 21.07	+03 08.9	3.156	3.785	123.1	12.6	19.1	22.1
1998 02 06		12 19.96	+03 30.1	3.049	3.797	133.6	10.8	19.0	22.0
1998 02 16		12 17.20	+04 00.6	2.961	3.808	144.4	8.7	19.0	21.9
1998 02 26		12 12.96	+04 38.2	2.896	3.819	155.5	6.2	18.9	21.7
1998 03 08		12 07.59	+05 19.9	2.859	3.831	166.4	3.5	18.9	21.5
1998 03 18		12 01.57	+06 02.0	2.851	3.842	174.3	1.5	19.0	21.4
1998 03 28		11 55.44	+06 40.7	2.873	3.854	167.8	3.1	19.0	21.5
1998 04 07		11 49.75	+07 12.5	2.924	3.866	157.1	5.8	19.1	21.7
1998 04 17		11 45.00	+07 35.0	3.002	3.878	146.3	8.3	19.2	21.9

M.P.C. 30920

1997 NOV. 14

1998 04 27	11 41.52	+07 46.7	3.104	3.889	135.8	10.4	19.3	22.1
1998 05 07	11 39.53	+07 47.3	3.225	3.901	125.8	12.1	19.4	22.2
1998 05 17	11 39.11	+07 37.0	3.361	3.913	116.1	13.4	19.5	22.4
1998 05 27	11 40.24	+07 16.6	3.508	3.925	107.0	14.3	19.6	22.5

1999 03 23	04 41.06	-07 54.9	1.984	1.871	68.8	29.8	14.6	19.6
1999 04 02	05 04.43	-06 13.4	2.142	1.962	66.0	27.7	15.0	19.9
1999 04 12	05 26.74	-04 47.4	2.304	2.052	62.9	25.8	15.5	20.1
1999 04 22	05 48.13	-03 37.1	2.469	2.141	59.5	23.8	15.9	20.2
1999 05 02	06 08.69	-02 42.1	2.634	2.229	55.8	22.0	16.3	20.4
1999 05 12	06 28.48	-02 01.8	2.798	2.316	51.9	20.1	16.7	20.6
1999 05 22	06 47.56	-01 35.2	2.959	2.401	47.9	18.2	17.1	20.7
1999 06 01	07 05.95	-01 21.5	3.116	2.485	43.8	16.4	17.4	20.8
1999 06 11	07 23.67	-01 19.6	3.267	2.568	39.7	14.6	17.7	20.9
1999 06 21	07 40.76	-01 28.5	3.410	2.649	35.5	12.9	18.0	21.0
1999 07 01	07 57.21	-01 47.3	3.544	2.729	31.5	11.2	18.3	21.1

21P/Giacobini-Zinner

Elements *MPC* 25184

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 12 18		15 49.91	−04 38.7	4.345	3.562	33.1	8.7	20.5	22.0
1997 12 28		16 01.73	−04 37.8	4.196	3.497	39.8	10.4	20.3	22.0
1998 01 07		16 13.53	−04 27.5	4.032	3.432	46.6	12.0	20.1	21.9
1998 01 17		16 25.21	−04 06.9	3.855	3.365	53.6	13.6	19.8	21.8
1998 01 27		16 36.66	−03 34.8	3.667	3.296	60.6	15.1	19.6	21.7
1998 02 06		16 47.75	−02 50.2	3.471	3.227	67.6	16.4	19.3	21.6
1998 02 16		16 58.33	−01 51.9	3.269	3.156	74.7	17.6	19.1	21.5
1998 02 26		17 08.24	−00 38.8	3.064	3.084	81.9	18.5	18.8	21.3
1998 03 08		17 17.28	+00 50.2	2.859	3.010	89.0	19.2	18.5	21.1
1998 03 18		17 25.22	+02 36.1	2.656	2.935	96.2	19.7	18.1	20.9
1998 03 28		17 31.83	+04 39.6	2.460	2.859	103.3	19.9	17.8	20.7
1998 04 07		17 36.80	+07 00.9	2.271	2.782	110.3	19.7	17.4	20.5
1998 04 17		17 39.83	+09 39.2	2.095	2.703	117.0	19.3	17.1	20.2
1998 04 27		17 40.57	+12 32.5	1.933	2.622	123.1	18.7	16.7	20.0
1998 05 07		17 38.68	+15 36.2	1.788	2.541	128.3	18.1	16.3	19.7
1998 05 17		17 33.96	+18 43.0	1.663	2.457	132.0	17.8	16.0	19.5
1998 05 27		17 26.32	+21 42.6	1.558	2.373	133.6	18.0	15.6	19.3
1998 06 06		17 16.05	+24 22.1	1.473	2.287	132.8	19.0	15.2	19.1
1998 06 16		17 03.89	+26 28.7	1.409	2.200	129.6	20.9	14.9	19.0
1998 06 26		16 50.94	+27 52.0	1.361	2.111	124.6	23.4	14.5	18.9
1998 07 06		16 38.69	+28 26.6	1.328	2.022	118.6	26.2	14.2	18.8
1998 07 16		16 28.50	+28 13.3	1.304	1.931	112.1	29.2	13.9	18.8
1998 07 26		16 21.46	+27 17.2	1.286	1.840	105.6	32.1	13.5	18.7
1998 08 05		16 18.29	+25 45.5	1.269	1.749	99.3	34.9	13.2	18.7
1998 08 15		16 19.27	+23 45.5	1.250	1.657	93.6	37.6	12.8	18.6
1998 08 25		16 24.48	+21 22.6	1.227	1.567	88.3	40.2	12.4	18.5
1998 09 04		16 33.94	+18 40.4	1.197	1.478	83.6	42.7	11.9	18.4
1998 09 14		16 47.61	+15 40.4	1.160	1.391	79.6	45.3	11.5	18.3
1998 09 24		17 05.60	+12 21.7	1.116	1.309	76.1	48.1	11.0	18.1
1998 10 04		17 28.09	+08 42.5	1.065	1.233	73.2	51.0	10.5	18.0
1998 10 14		17 55.38	+04 39.6	1.011	1.165	70.9	54.0	10.0	17.8
1998 10 24		18 27.91	+00 10.5	0.956	1.108	69.2	57.0	9.6	17.7
1998 11 03		19 06.09	−04 42.8	0.908	1.066	68.1	59.7	9.2	17.6
1998 11 13		19 50.11	−09 50.3	0.871	1.040	67.7	61.6	9.0	17.5
1998 11 23		20 39.64	−14 49.1	0.852	1.034	68.0	62.3	8.9	17.4
1998 12 03		21 33.37	−19 05.9	0.854	1.047	68.9	61.5	9.0	17.5
1998 12 13		22 28.89	−22 09.6	0.881	1.078	70.4	59.3	9.2	17.5
1998 12 23		23 23.34	−23 44.3	0.930	1.126	72.0	56.2	9.6	17.6
1999 01 02		00 14.32	−23 54.7	0.998	1.186	73.5	52.6	10.1	17.8
1999 01 12		01 00.53	−22 58.4	1.083	1.257	74.8	49.0	10.7	18.0
1999 01 22		01 41.85	−21 16.0	1.182	1.336	75.5	45.5	11.3	18.2
1999 02 01		02 18.78	−19 06.5	1.292	1.420	75.8	42.3	11.8	18.5
1999 02 11		02 52.03	−16 44.3	1.413	1.507	75.5	39.3	12.4	18.7
1999 02 21		03 22.35	−14 19.8	1.544	1.597	74.6	36.7	13.0	18.9
1999 03 03		03 50.33	−12 00.5	1.683	1.688	73.2	34.2	13.5	19.2
1999 03 13		04 16.44	−09 51.2	1.830	1.779	71.2	31.9	14.1	19.4

C/1997 L1 (Xinglong)

Elements *MPC* 30738

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 12 18		16 37.73	+03 59.1	6.551	5.737	31.7	5.2	18.2	
1997 12 28		16 45.06	+04 46.4	6.524	5.776	37.6	6.0	18.2	
1998 01 07		16 52.06	+05 41.5	6.480	5.816	44.2	6.8	18.2	
1998 01 17		16 58.61	+06 44.5	6.420	5.856	51.3	7.5	18.2	
1998 01 27		17 04.62	+07 55.5	6.348	5.897	58.7	8.2	18.2	
1998 02 06		17 09.96	+09 14.6	6.266	5.938	66.3	8.7	18.2	
1998 02 16		17 14.52	+10 41.4	6.178	5.980	73.9	9.1	18.2	
1998 02 26		17 18.20	+12 15.1	6.086	6.023	81.6	9.4	18.2	
1998 03 08		17 20.89	+13 54.8	5.996	6.066	89.3	9.4	18.2	
1998 03 18		17 22.50	+15 39.0	5.910	6.109	96.9	9.3	18.2	
1998 03 28		17 22.98	+17 25.9	5.832	6.153	104.2	9.0	18.2	
1998 04 07		17 22.28	+19 13.1	5.767	6.197	111.1	8.7	18.2	
1998 04 17		17 20.42	+20 58.1	5.717	6.242	117.4	8.2	18.2	
1998 04 27		17 17.45	+22 38.0	5.685	6.288	122.8	7.7	18.3	
1998 05 07		17 13.51	+24 09.8	5.675	6.333	127.0	7.3	18.3	
1998 05 17		17 08.79	+25 30.9	5.686	6.379	129.7	7.0	18.3	
1998 05 27		17 03.51	+26 39.3	5.720	6.426	130.7	6.9	18.4	
1998 06 06		16 57.97	+27 33.2	5.776	6.473	129.8	6.9	18.4	
1998 06 16		16 52.46	+28 12.3	5.854	6.520	127.4	7.1	18.5	
1998 06 26		16 47.29	+28 36.6	5.951	6.568	123.6	7.4	18.5	
1998 07 06		16 42.70	+28 47.3	6.066	6.616	118.8	7.7	18.6	
1998 07 16		16 38.92	+28 46.0	6.195	6.664	113.4	8.0	18.7	
1998 07 26		16 36.08	+28 34.6	6.336	6.712	107.5	8.3	18.8	
1998 08 05		16 34.27	+28 15.4	6.486	6.761	101.5	8.5	18.9	
1998 08 15		16 33.54	+27 50.4	6.641	6.810	95.3	8.5	18.9	
1998 08 25		16 33.87	+27 21.9	6.799	6.860	89.2	8.5	19.0	
1998 09 04		16 35.23	+26 51.7	6.956	6.910	83.2	8.3	19.1	
1998 09 14		16 37.54	+26 21.6	7.110	6.960	77.4	8.1	19.2	
1998 09 24		16 40.73	+25 53.1	7.259	7.010	71.8	7.8	19.3	
1998 10 04		16 44.72	+25 27.5	7.400	7.060	66.5	7.5	19.3	
1998 10 14		16 49.40	+25 06.0	7.530	7.111	61.6	7.1	19.4	
1998 10 24		16 54.68	+24 49.6	7.650	7.162	57.3	6.7	19.5	
1998 11 03		17 00.46	+24 39.1	7.756	7.213	53.7	6.4	19.5	
1998 11 13		17 06.65	+24 35.3	7.849	7.264	50.8	6.1	19.6	

37P/Forbes

Elements *MPC* 27081

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1997 12 28		10 41.23	+09 41.0	3.435	3.994	118.1	12.5	20.4	22.4
1998 01 07		10 39.53	+09 45.5	3.261	3.951	128.7	11.2	20.2	22.2
1998 01 17		10 36.01	+09 59.7	3.104	3.908	139.8	9.3	20.1	22.0

1998 01 27	10 30.72	+10 22.9	2.970	3.863	151.3	7.0	19.9	21.8
1998 02 06	10 23.86	+10 53.4	2.864	3.818	163.2	4.3	19.8	21.6
1998 02 16	10 15.85	+11 28.6	2.787	3.773	175.4	1.2	19.6	21.3
1998 02 26	10 07.23	+12 05.2	2.742	3.726	172.3	2.0	19.5	21.3
1998 03 08	09 58.71	+12 39.5	2.729	3.678	160.1	5.3	19.5	21.4
1998 03 18	09 50.97	+13 08.4	2.746	3.630	148.2	8.3	19.4	21.6
1998 03 28	09 44.59	+13 29.5	2.788	3.581	136.7	11.0	19.4	21.7
1998 04 07	09 39.98	+13 41.5	2.852	3.531	125.7	13.3	19.4	21.8
1998 04 17	09 37.37	+13 43.9	2.931	3.480	115.3	15.1	19.3	21.9
1998 04 27	09 36.82	+13 36.7	3.020	3.428	105.5	16.4	19.3	22.0
1998 05 07	09 38.27	+13 20.2	3.115	3.376	96.2	17.3	19.3	22.0
1998 05 17	09 41.57	+12 54.9	3.210	3.322	87.4	17.7	19.3	22.1
1998 05 27	09 46.54	+12 21.3	3.304	3.268	79.1	17.7	19.3	22.1
1998 06 06	09 53.02	+11 39.6	3.392	3.213	71.3	17.4	19.2	22.1
1998 06 16	10 00.81	+10 50.4	3.471	3.157	63.8	16.8	19.2	22.1
1998 06 26	10 09.75	+09 53.8	3.540	3.100	56.6	15.9	19.1	22.1
1998 07 06	10 19.71	+08 50.2	3.598	3.042	49.8	14.8	19.1	22.0
1998 07 16	10 30.56	+07 39.7	3.643	2.984	43.2	13.5	19.0	22.0
1998 07 26	10 42.21	+06 22.7	3.674	2.925	36.8	12.0	18.9	21.9
1998 08 05	10 54.59	+04 59.3	3.690	2.865	30.6	10.4	18.8	21.8

32P/Comas Solá

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 26143
1997 12 28		16 03.44	-19 43.7	5.290	4.504	33.6	6.9		21.9	
1998 01 07		16 12.20	-20 15.7	5.236	4.548	41.7	8.3		22.0	
1998 01 17		16 20.29	-20 44.3	5.164	4.592	49.9	9.4		22.0	
1998 01 27		16 27.60	-21 09.6	5.076	4.635	58.3	10.4		22.0	
1998 02 06		16 33.96	-21 32.0	4.975	4.678	67.0	11.2		22.0	
1998 02 16		16 39.25	-21 51.7	4.864	4.720	75.8	11.7		22.0	
1998 02 26		16 43.31	-22 08.9	4.747	4.762	84.9	12.0		22.0	
1998 03 08		16 46.02	-22 23.8	4.626	4.803	94.3	11.9		22.0	
1998 03 18		16 47.27	-22 36.6	4.507	4.844	104.0	11.5		21.9	
1998 03 28		16 46.97	-22 47.2	4.394	4.884	113.9	10.8		21.8	
1998 04 07		16 45.11	-22 55.5	4.291	4.924	124.2	9.7		21.8	
1998 04 17		16 41.76	-23 01.4	4.205	4.963	134.8	8.3		21.7	
1998 04 27		16 37.04	-23 04.5	4.139	5.002	145.6	6.5		21.6	
1998 05 07		16 31.22	-23 04.8	4.098	5.040	156.6	4.6		21.5	
1998 05 17		16 24.64	-23 02.3	4.085	5.078	167.7	2.4		21.4	
1998 05 27		16 17.71	-22 57.4	4.102	5.115	178.1	0.4		21.2	
1998 06 06		16 10.88	-22 50.7	4.150	5.152	169.7	2.0		21.4	
1998 06 16		16 04.57	-22 43.3	4.228	5.188	158.8	4.1		21.6	
1998 06 26		15 59.11	-22 36.2	4.334	5.224	148.0	5.9		21.7	
1998 07 06		15 54.78	-22 30.7	4.465	5.259	137.5	7.5		21.9	
1998 07 16		15 51.74	-22 27.6	4.616	5.294	127.3	8.8		22.0	
1998 07 26		15 50.05	-22 27.5	4.785	5.328	117.3	9.8		22.2	
1998 08 05		15 49.72	-22 30.8	4.965	5.362	107.7	10.4		22.3	
1998 08 15		15 50.69	-22 37.4	5.154	5.395	98.4	10.7		22.4	
1998 08 25		15 52.88	-22 47.3	5.346	5.428	89.3	10.7		22.5	

C/1997 G2 (Montani)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 30428
1997 12 28		16 42.20	-46 34.8	4.061	3.263	31.5	9.0	16.7		
1998 01 07		16 59.59	-49 01.3	3.961	3.233	37.2	10.6	16.6		
1998 01 17		17 18.44	-51 33.8	3.851	3.205	43.2	12.1	16.5		

1998 01 27	17 39.02	-54 12.2	3.735	3.180	49.2	13.6	16.4
1998 02 06	18 01.72	-56 56.2	3.616	3.158	55.1	14.8	16.3
1998 02 16	18 27.08	-59 44.7	3.497	3.139	61.0	16.0	16.2
1998 02 26	18 55.91	-62 35.5	3.381	3.122	66.5	16.9	16.1
1998 03 08	19 29.27	-65 25.0	3.272	3.109	71.8	17.7	16.0
1998 03 18	20 08.59	-68 07.1	3.172	3.098	76.7	18.2	15.9
1998 03 28	20 55.5	-70 32.9	3.084	3.091	81.1	18.6	15.8
1998 04 07	21 51.2	-72 30.7	3.010	3.086	84.9	18.8	15.8
1998 04 17	22 54.8	-73 47.3	2.952	3.085	88.0	19.0	15.7
1998 04 27	00 02.4	-74 13.9	2.910	3.087	90.5	19.0	15.7
1998 05 07	01 07.4	-73 52.0	2.883	3.091	92.2	19.0	15.7
1998 05 17	02 04.7	-72 53.3	2.872	3.099	93.3	19.0	15.7
1998 05 27	02 52.6	-71 34.2	2.873	3.110	93.9	19.0	15.7
1998 06 06	03 31.7	-70 10.1	2.885	3.124	94.0	18.9	15.7
1998 06 16	04 03.51	-68 51.7	2.907	3.141	93.8	18.8	15.8
1998 06 26	04 29.48	-67 46.8	2.934	3.161	93.4	18.7	15.8
1998 07 06	04 50.64	-66 59.6	2.965	3.183	92.9	18.6	15.9
1998 07 16	05 07.67	-66 32.5	2.999	3.209	92.5	18.5	15.9
1998 07 26	05 20.94	-66 26.1	3.033	3.236	92.3	18.3	16.0
1998 08 05	05 30.48	-66 40.0	3.067	3.267	92.2	18.1	16.1
1998 08 15	05 36.10	-67 12.2	3.100	3.300	92.3	17.9	16.1
1998 08 25	05 37.33	-67 59.9	3.133	3.335	92.6	17.6	16.2
1998 09 04	05 33.41	-68 58.4	3.165	3.372	93.1	17.4	16.3
1998 09 14	05 23.4	-70 00.9	3.197	3.412	93.7	17.1	16.4
1998 09 24	05 06.5	-70 58.6	3.231	3.454	94.3	16.8	16.4
1998 10 04	04 42.3	-71 39.2	3.269	3.497	94.8	16.6	16.5
1998 10 14	04 12.0	-71 49.8	3.311	3.543	95.1	16.3	16.6
1998 10 24	03 38.7	-71 19.0	3.361	3.590	95.2	16.0	16.7
1998 11 03	03 06.8	-70 01.7	3.419	3.639	94.8	15.8	16.8
1998 11 13	02 39.80	-68 00.7	3.487	3.689	93.9	15.5	16.9
1998 11 23	02 19.16	-65 23.8	3.566	3.741	92.5	15.3	17.0
1998 12 03	02 04.81	-62 20.9	3.657	3.794	90.4	15.1	17.1
1998 12 13	01 55.81	-59 01.5	3.759	3.849	87.8	14.8	17.2
1998 12 23	01 51.07	-55 33.1	3.872	3.904	84.6	14.5	17.4
1999 01 02	01 49.65	-52 02.3	3.996	3.961	80.9	14.2	17.5
1999 01 12	01 50.73	-48 33.6	4.127	4.019	76.8	13.8	17.6
1999 01 22	01 53.75	-45 10.6	4.265	4.078	72.4	13.3	17.8
1999 02 01	01 58.23	-41 55.9	4.407	4.137	67.8	12.7	17.9
1999 02 11	02 03.81	-38 51.2	4.550	4.198	63.1	12.1	18.0
1999 02 21	02 10.25	-35 57.6	4.693	4.259	58.4	11.4	18.2
1999 03 03	02 17.31	-33 15.9	4.831	4.321	53.8	10.7	18.3

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	<i>MPC</i>
1996 KW	1997 10 14.0	01 16.61	-08 26.2	16.0	-1.06	+ 3.3	7.5/10.6	30876
(8042)	1997 10 14.0	01 16.96	+25 46.5	17.9	-0.83	- 4.1	4.8/19.8	30862
1991 GJ ₁	1997 10 14.0	01 17.01	+01 29.5	16.5	-1.04	- 1.1	2.3/12.4	30895
4634 P-L	1997 10 14.1	01 17.03	+09 03.6	16.5	-1.08	- 2.4	0.4/14.4	30914
1997 SG ₁₆	1997 10 14.1	01 17.29	+07 29.2	16.8	-0.80	- 5.4	0.2/14.0	30880
1981 EL ₉	1997 10 14.2	01 17.46	+26 54.8	18.4	-0.91	- 0.8	5.8/19.6	26916
(6961)	1997 10 14.3	01 17.71	+11 23.8	16.9	-0.95	- 7.2	1.1/15.3	27093
1979 MG ₇	1997 10 14.3	01 17.71	+06 34.7	18.8	-0.84	- 6.1	0.6/13.8	30779
1981 EL ₂₂	1997 10 14.4	01 18.12	+12 46.8	21.4	-1.02	- 4.3	1.6/15.7	26919

1980 FF ₁₂	1997 10 14.4	01 18.42 +11 06.4 16.6	-1.07 - 5.1	1.1/15.3	30892	1991 SG	1997 10 17.2	01 28.62 -01 49.6 17.1	-0.70 - 6.2	3.5/13.5	29615
1991 GH ₃	1997 10 14.5	01 18.52 +09 42.6 16.2	-0.89 - 5.6	0.6/15.0	30895	1981 EC ₂₈	1997 10 17.2	01 28.84 +10 46.2 20.0	-1.00 - 4.3	0.5/17.7	26920
1981 EW ₃₆	1997 10 14.5	01 18.63 +17 31.9 19.6	-0.85 - 5.2	3.2/17.5	22271	1995 CE ₂	1997 10 17.3	01 28.92 +54 40.9 16.9	-1.30 - 3.2	14.1/05.1	29138
(8003)	1997 10 14.5	01 18.83 +03 18.5 15.5	-0.98 - 4.2	2.4/13.2	30853	1997 UB ₈	1997 10 17.3	01 29.05 +08 15.6 15.5	-0.45 -32.5	0.5/16.8	30886
1997 RX ₆	1997 10 14.5	01 18.86 +08 37.1 16.8	-0.82 - 4.3	0.1/14.7	30904	1993 UW ₈	1997 10 17.3	01 29.09 +00 50.8 17.9	-0.93 - 4.0	3.1/15.0	27558
(8009)	1997 10 14.6	01 18.83 +49 34.6 16.8	-0.95 -13.1	13.9/03.3	30854	(8038)	1997 10 17.3	01 29.15 -02 02.2 16.0	-1.13 - 0.3	5.2/14.7	30861
(7571)	1997 10 14.6	01 18.86 +04 54.5 17.3	-0.76 - 4.6	1.0/13.6	30777	1993 OV ₅	1997 10 17.5	01 30.01 +02 46.0 18.4	-0.98 - 5.9	2.5/15.6	27557
6113 P-L	1997 10 14.6	01 18.90 +09 57.3 17.5	-0.92 - 5.2	0.6/15.1	30914	1993 QS	1997 10 17.6	01 30.22 -08 20.5 15.9	-0.68 -11.0	8.1/10.9	30688
1996 KL ₁	1997 10 14.7	01 19.29 -18 01.5 18.7	-0.78 - 4.1	7.7/06.4	30902	1992 TX	1997 10 17.6	01 30.39 +09 52.1 15.7	-0.84 - 4.1	0.1/17.8	30896
1981 ED ₁₃	1997 10 14.7	01 19.34 +18 58.2 19.2	-0.92 - 3.6	4.0/17.9	26917	1994 CF ₁₆	1997 10 17.7	01 30.75 -03 08.1 18.1	-0.74 - 4.4	3.6/13.8	24112
(8031)	1997 10 14.8	01 19.79 +12 24.7 16.6	-1.10 - 2.4	1.6/15.9	30859	1996 LJ ₁	1997 10 18.2	01 32.25 +15 05.4 18.4	-0.79 - 9.2	1.7/20.1	30902
6224 P-L	1997 10 14.8	01 19.81 +09 41.9 18.4	-0.81 - 6.5	0.4/15.3	30775	1992 DG ₁	1997 10 18.2	01 32.41 +15 29.3 17.1	-1.02 - 4.2	2.0/19.9	24119
1979 MD ₂	1997 10 14.8	01 19.89 +06 32.8 15.7	-0.89 - 8.1	0.9/14.3	30892	1993 OH ₆	1997 10 18.2	01 32.64 -00 41.0 17.1	-0.92 - 5.7	4.6/15.2	24110
(8036)	1997 10 14.9	01 20.02 +00 30.0 15.5	-0.84 - 2.5	2.8/12.7	30861	1981 EO ₁₁	1997 10 18.2	01 32.65 +12 37.3 19.0	-0.98 - 5.7	1.0/19.2	22270
1979 MP ₄	1997 10 14.9	01 20.23 +09 53.9 19.3	-0.84 - 6.6	0.5/15.4	30753	1981 ED ₅	1997 10 18.3	01 32.63 +20 18.7 19.5	-0.97 - 7.0	3.7/21.7	26915
2326 T-3	1997 10 14.9	01 20.25 +12 34.6 17.9	-0.91 - 5.6	1.6/16.2	30915	1995 AL	1997 10 18.3	01 33.01 -02 48.0 17.2	-0.93 - 4.1	4.8/14.8	30901
(7967)	1997 10 15.0	01 20.59 +02 54.7 16.7	-0.98 - 7.0	2.5/13.4	30751	1991 PC ₁₆	1997 10 18.3	01 33.02 +09 00.5 16.7	-0.79 - 4.5	0.2/18.2	30871
3005 P-L	1997 10 15.2	01 21.28 +22 50.2 18.5	-0.81 - 5.0	4.2/20.0	22700	1981 EP ₄	1997 10 18.4	01 33.08 +11 18.7 18.8	-0.78 - 8.4	0.5/19.0	26915
1994 XJ	1997 10 15.3	01 21.58 -00 22.4 17.1	-1.01 - 3.5	3.4/12.9	29106	1981 EV ₂₇	1997 10 18.4	01 33.12 +06 03.3 17.9	-0.79 - 6.5	1.3/17.3	30893
4070 P-L	1997 10 15.3	01 21.64 +13 50.1 17.9	-0.92 - 5.1	1.9/16.9	30774	1984 QB	1997 10 18.4	01 33.14 +27 44.0 16.3	-1.03 - 4.5	6.7/24.1	30893
1993 UC ₈	1997 10 15.3	01 21.68 +00 29.7 17.9	-0.77 - 6.2	3.7/12.7	30759	1981 EH ₁₃	1997 10 18.4	01 33.25 +14 28.6 18.1	-0.94 - 7.0	2.1/19.9	30892
1988 GL	1997 10 15.3	01 21.74 -10 56.1 17.7	-1.00 - 1.9	6.3/10.1	30894	1988 NU	1997 10 18.5	01 33.51 +13 20.3 17.1	-0.85 - 7.6	1.4/19.7	30894
1993 RK ₄	1997 10 15.4	01 21.93 +11 36.6 18.0	-0.94 - 5.4	1.0/16.3	24914	(7137)	1997 10 18.5	01 33.63 +14 13.1 16.4	-0.85 - 4.9	1.5/19.9	27705
1973 SS	1997 10 15.4	01 21.95 +04 27.4 18.3	-0.50 - 2.9	0.7/14.1	30866	1989 UA	1997 10 18.5	01 33.76 +02 08.8 15.8	-1.04 - 0.3	3.1/16.7	30894
4408 T-1	1997 10 15.4	01 22.10 +01 58.7 15.4	-0.94 - 1.6	3.4/13.7	30914	1992 EU ₁₁	1997 10 18.6	01 34.14 +18 24.8 18.0	-1.05 - 4.2	3.1/21.1	28886
3232 T-2	1997 10 15.5	01 22.16 +00 31.9 18.1	-0.98 - 6.0	3.2/13.1	23988	1991 RA ₁₅	1997 10 18.7	01 34.53 +09 44.8 17.8	-0.77 - 4.4	7.1/08.0	30896
1990 SL ₂₇	1997 10 15.5	01 22.20 +04 30.1 15.6	-0.84 - 7.6	2.0/14.2	30895	2096 P-L	1997 10 19.0	01 35.54 +09 28.3 16.4	-0.88 - 7.2	0.2/18.9	30914
1993 TD ₂₆	1997 10 15.5	01 22.33 +04 47.0 18.4	-0.76 -12.6	1.5/14.1	27557	(7000)	1997 10 19.1	01 36.02 -03 57.9 14.3	-1.00 + 3.9	7.3/16.4	27291
1993 VE	1997 10 15.5	01 22.40 +00 23.8 15.4	-1.08 + 0.9	3.3/13.7	30900	1991 EN	1997 10 19.2	01 36.12 +35 18.0 17.6	-0.59 - 2.8	4.4/28.1	26420
1993 VT	1997 10 15.6	01 22.94 -08 15.1 15.7	-1.01 + 1.3	7.3/11.7	30900	1990 SM ₆	1997 10 19.4	01 36.72 +09 18.0 15.8	-1.06 - 3.5	0.3/19.2	30895
1995 CT ₁	1997 10 15.7	01 23.20 +49 26.1 17.5	-1.07 - 5.2	9.8/31.9	27731	1981 JM ₂	1997 10 19.5	01 37.10 +10 34.1 17.3	-0.95 - 6.3	0.2/19.6	30893
1994 AB ₂	1997 10 15.7	01 23.21 +09 22.7 16.3	-0.80 - 5.0	0.2/16.0	25228	1994 WL ₁	1997 10 19.5	01 37.16 +15 27.5 17.5	-1.02 - 6.4	2.0/21.1	30900
1981 EQ ₃₃	1997 10 15.8	01 23.39 +18 29.9 19.4	-1.00 - 5.8	3.8/19.0	23990	1997 TH ₁₇	1997 10 19.5	01 37.33 -03 19.9 17.4	-0.73 - 5.6	3.9/15.2	30883
1996 JW ₂	1997 10 15.9	01 23.88 +00 31.6 18.5	-0.86 - 7.5	2.9/13.3	30293	1980 RP	1997 10 19.5	01 37.34 +33 36.5 16.7	-1.04 - 1.2	7.7/26.6	30892
1989 GZ ₁	1997 10 15.9	01 24.00 +11 52.9 18.0	-0.97 - 6.5	1.2/16.9	22969	(7070)	1997 10 19.8	01 38.68 -04 24.2 15.1	-0.90 - 6.2	6.8/15.3	27440
1986 WC ₁	1997 10 16.0	01 24.27 +06 15.3 17.4	-0.78 - 3.7	0.9/15.3	20500	1981 EA ₃₉	1997 10 19.9	01 38.76 +12 48.5 19.9	-0.98 - 5.4	0.9/20.7	23778
1995 CQ	1997 10 16.1	01 24.67 +15 22.5 16.7	-1.06 - 4.4	2.6/18.0	30874	1994 BW ₄	1997 10 20.1	01 39.51 +25 24.5 16.9	-0.86 - 4.1	4.5/24.8	30900
(8007)	1997 10 16.2	01 25.19 +08 43.7 17.5	-0.85 - 5.6	0.1/16.2	30854	2316 T-3	1997 10 20.1	01 39.74 +13 58.2 18.0	-1.12 + 2.4	2.0/20.9	30914
1995 BM ₂	1997 10 16.3	01 25.33 +32 15.2 19.3	-1.07 - 9.2	7.9/24.2	25431	1994 BM ₄	1997 10 20.2	01 39.82 +19 11.9 17.0	-0.86 - 6.3	3.1/23.0	23243
1988 QA	1997 10 16.4	01 25.55 +05 11.1 15.6	-0.79 - 5.8	1.7/15.2	30869	(7992)	1997 10 20.3	01 40.10 -02 23.0 15.3	-0.85 + 1.9	5.9/17.3	30850
1988 NR	1997 10 16.4	01 25.67 +29 25.6 16.0	-0.87 - 8.7	7.8/24.1	30894	1997 QA	1997 10 20.3	01 40.49 +22 44.7 16.8	-1.03 - 4.1	5.0/24.0	30904
1992 EE	1997 10 16.4	01 25.81 +14 51.4 18.1	-1.03 - 4.0	2.0/18.1	30871	1996 HK ₁	1997 10 20.4	01 40.80 +06 58.9 17.3	-1.11 - 1.0	1.6/19.6	30902
6540 P-L	1997 10 16.6	01 26.38 +08 48.4 18.3	-0.52 - 2.0	0.0/16.6	29649	1102 T-1	1997 10 20.7	01 41.63 +11 52.1 17.8	-0.94 - 8.3	0.5/21.1	30914
1986 TR ₁₁	1997 10 16.8	01 27.12 +19 22.3 15.6	-0.91 -11.4	4.4/20.5	30868	1995 FW ₁₉	1997 10 20.7	01 41.67 +13 19.4 17.0	-0.92 - 3.1	1.0/21.5	30875
1996 EK	1997 10 16.9	01 27.53 -01 17.2 17.5	-0.98 - 7.1	3.7/13.8	28318	1990 RF ₅	1997 10 20.7	01 41.78 +12 11.2 15.4	-0.87 - 9.0	0.8/21.3	30870
1995 CL ₁	1997 10 17.0	01 28.11 -10 23.1 17.7	-0.82 - 5.5	5.9/10.7	24907	(6952)	1997 10 20.7	01 42.00 +10 50.0 17.0	-0.81 - 6.9	0.1/20.9	27091
1993 OO ₃	1997 10 17.0	01 28.16 +12 24.3 16.8	-0.87 - 5.0	1.6/18.1	30897	1993 VE ₂	1997 10 20.7	01 42.03 +18 22.3 15.9	-0.78 -12.8	3.1/24.0	28087
(8053)	1997 10 17.1	01 28.27 +11 34.8 17.5	-0.97 - 5.4	0.8/17.8	30865	1208 T-1	1997 10 20.8	01 42.23 +12 17.6 17.2	-0.92 - 8.0	0.7/21.4	30914
1995 CD	1997 10 17.1	01 28.37 +08 04.7 16.4	-0.91 - 3.8	0.4/16.8	27937	1992 WB ₉	1997 10 20.9	01 42.58 +12 38.5 17.4	-0.81 - 4.1	0.7/21.5	22407
1989 OC	1997 10 17.2	01 28.53 +23 23.6 17.8	-1.10 - 5.8	5.2/21.6	30781	1973 SN ₁	1997 10 21.0	01 42.80 +05 14.2 19.3	-0.50 - 2.7	1.0/19.3	29607
1996 HC ₂₄	1997 10 17.2	01 28.56 -00 27.3 17.0	-1.00 - 2.1	4.3/14.7	30763	1990 QW ₁₇	1997 10 21.0	01 43.12 +21 24.5 14.9	-0.92 - 6.1	5.4/24.5	30895

1997 NOV. 14

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1976 SD ₅	1997 10 21.1	01 43.41 +12 14.5 16.9	-0.73 - 8.1	0.5/21.7	30866	1996 NX	1997 10 24.2	01 55.24 +31 21.8 16.4	-0.97 - 6.9	6.5/30.6	27731
1991 RO ₂₃	1997 10 21.1	01 43.57 +20 53.2 15.3	-1.00 + 0.4	3.5/23.7	30896	1986 TQ	1997 10 24.3	01 55.72 +31 04.8 16.8	-1.02 - 0.7	6.1/29.5	21970
4094 T-3	1997 10 21.1	01 43.58 +05 37.6 17.8	-0.96 - 3.1	2.0/19.8	30915	(7084)	1997 10 24.4	01 55.98 +05 27.4 17.8	-0.85 - 6.3	1.9/22.6	27547
1997 RA ₉	1997 10 21.3	01 43.89 +05 16.5 17.0	-0.88 - 8.7	2.4/19.6	30905	4613 T-2	1997 10 24.4	01 56.07 -08 00.6 18.6	-0.47 - 4.9	3.5/17.7	29651
1993 OM ₃	1997 10 21.3	01 43.97 -00 37.8 17.7	-0.99 - 5.5	4.3/18.1	30897	(7094)	1997 10 24.5	01 56.37 +00 12.0 15.6	-0.75 - 7.8	4.6/20.8	27550
3152 T-3	1997 10 21.3	01 44.14 +08 55.8 17.8	-0.84 - 3.8	0.6/20.8	30915	(7061)	1997 10 24.6	01 56.56 -17 04.4 16.7	-0.76 - 4.0	9.7/15.8	27438
(7144)	1997 10 21.3	01 44.29 +01 23.3 16.5	-0.89 - 6.8	3.9/18.5	27706	(7012)	1997 10 24.9	01 57.61 -02 31.1 15.6	-0.90 - 5.3	6.7/20.7	27294
1988 VE ₁	1997 10 21.6	01 45.05 +06 18.5 16.3	-0.94 - 1.8	1.6/20.4	30869	1993 QN ₇	1997 10 24.9	01 57.73 +11 15.1 17.2	-0.98 - 4.2	0.3/24.7	29618
(7215)	1997 10 21.6	01 45.12 +41 57.1 16.7	-1.01 - 1.8	8.7/31.6	28058	1989 WH ₃	1997 10 25.0	01 58.04 +11 49.2 15.2	-0.88 - 3.8	0.1/25.0	25080
1996 HU	1997 10 21.6	01 45.34 +05 07.8 16.7	-0.79 - 7.9	2.7/19.8	30902	1994 XS ₄	1997 10 25.0	01 58.23 -00 29.3 17.4	-0.97 - 3.9	4.6/21.7	30901
4848 P-L	1997 10 21.7	01 45.64 +08 15.8 18.2	-0.95 - 6.2	1.0/21.0	27457	2020 P-L	1997 10 25.0	01 58.26 +20 35.8 16.3	-0.94 - 1.7	4.1/27.3	30914
(7112)	1997 10 21.8	01 46.05 -14 44.3 17.9	-0.84 - 3.1	7.6/14.3	27699	1981 EX ₂₀	1997 10 25.0	01 58.31 +03 25.5 18.6	-0.80 - 5.9	2.7/22.5	26918
1996 UX ₃	1997 10 21.9	01 46.52 +12 06.3 17.7	-0.50 - 5.7	0.2/22.4	30878	1981 EX ₁₄	1997 10 25.1	01 58.42 +10 56.4 19.4	-0.80 - 7.0	0.4/24.8	30779
1996 PM ₄	1997 10 22.0	01 46.59 +10 46.9 17.4	-0.75 - 3.9	0.1/21.9	29666	1993 OP ₁₂	1997 10 25.1	01 58.44 +07 49.4 16.8	-0.93 - 5.8	2.0/23.9	28888
(7963)	1997 10 22.0	01 46.75 +26 08.3 17.0	-0.90 - 9.6	5.6/27.4	30750	(7190)	1997 10 25.1	01 58.48 +09 49.7 17.1	-1.06 - 6.5	0.9/24.5	27902
4835 T-1	1997 10 22.0	01 46.98 +12 58.3 14.1	-1.86 +12.4	1.1/22.2	30914	6541 P-L	1997 10 25.1	01 58.60 +03 09.2 18.2	-0.49 - 3.2	1.7/22.4	29668
(8047)	1997 10 22.1	01 47.27 +05 08.0 15.9	-0.86 - 6.7	2.7/20.4	30863	(8005)	1997 10 25.1	01 58.67 +00 45.5 16.1	-0.89 - 5.4	4.3/22.0	30853
1972 TC	1997 10 22.2	01 47.43 +25 46.6 15.5	-0.81 -10.5	6.1/27.5	30892	1992 LJ	1997 10 25.2	01 58.80 +05 53.2 17.7	-0.92 - 5.4	2.1/23.5	28886
(7416)	1997 10 22.3	01 47.92 +08 47.0 16.4	-0.94 - 7.6	0.9/21.6	28830	1997 SB ₄	1997 10 25.3	01 59.27 +10 10.4 18.4	-0.88 - 5.3	0.9/24.8	30880
1981 EM ₂₂	1997 10 22.5	01 48.43 +14 15.8 19.5	-1.03 - 4.9	1.3/23.3	26919	(8026)	1997 10 25.3	01 59.42 +16 37.8 15.8	-0.89 -25.3	2.0/27.2	30858
(8039)	1997 10 22.5	01 48.65 +13 00.3 18.0	-1.01 - 4.1	0.7/23.0	30862	6128 P-L	1997 10 25.4	01 59.51 +12 32.0 18.4	-0.92 - 5.4	0.1/25.5	30775
1981 EX ₃	1997 10 22.6	01 48.93 +16 37.2 18.0	-0.83 - 7.3	1.8/24.3	22696	1994 BE	1997 10 25.4	01 59.88 +07 35.5 17.7	-0.77 - 5.9	1.4/24.1	30900
1989 CW ₂	1997 10 22.6	01 48.93 +21 34.2 16.2	-0.80 - 6.2	3.2/25.9	27911	1996 HX ₁₂	1997 10 25.5	01 59.95 +10 27.6 17.1	-0.89 - 7.6	0.6/25.0	27561
1978 SC ₅	1997 10 22.6	01 49.17 +08 30.2 16.8	-0.91 - 3.4	1.3/21.9	30867	1993 SO ₁₄	1997 10 25.5	02 00.14 +09 36.6 19.4	-0.96 - 6.0	0.9/24.8	30900
1997 TF ₉	1997 10 22.7	01 49.20 +13 49.9 18.8	-0.95 - 6.0	1.0/23.5	30882	1981 EY ₇	1997 10 25.5	02 00.17 +14 08.3 20.3	-0.96 - 7.2	0.7/26.1	26916
1996 LL	1997 10 22.7	01 49.40 +02 58.4 17.3	-0.76 -11.6	3.2/19.8	30876	1997 SY ₃₂	1997 10 25.5	02 00.26 +13 58.7 18.9	-0.56 - 2.0	0.3/26.1	30881
1994 YO	1997 10 22.8	01 49.78 +02 39.4 17.0	-0.92 - 4.0	4.3/20.5	30901	9530 P-L	1997 10 25.6	02 00.56 +01 58.4 16.6	-0.88 - 9.7	4.2/22.3	28892
2573 P-L	1997 10 22.9	01 50.10 +11 58.0 17.2	-1.00 - 2.7	0.3/23.1	30887	1985 QL ₄	1997 10 25.7	02 00.74 +02 01.4 16.8	-0.75 - 3.7	2.9/22.8	30893
1991 RE ₇	1997 10 22.9	01 50.19 +22 50.6 16.1	-0.96 - 0.8	3.4/25.9	30896	1981 EA ₅	1997 10 25.7	02 00.80 +23 07.4 17.9	-0.85 - 7.5	4.2/29.0	30892
1991 PE ₆	1997 10 22.9	01 50.28 +11 30.7 16.6	-0.82 - 3.8	0.1/23.0	30871	1994 PP ₁	1997 10 25.7	02 01.05 -14 38.0 17.4	-1.58 + 7.7	12.8/22.4	30900
(7980)	1997 10 23.0	01 50.47 +12 39.1 17.2	-0.87 - 4.2	0.5/23.4	30848	2314 T-2	1997 10 25.8	02 01.27 +07 22.9 17.8	-0.99 - 6.3	2.0/24.5	27322
1997 SJ ₂₃	1997 10 23.1	01 50.96 +13 04.1 18.6	-0.99 - 4.4	0.6/23.6	30907	1978 UG	1997 10 25.9	02 01.62 +10 41.5 15.6	-0.96 - 2.4	0.8/25.5	29652
1997 TC ₉	1997 10 23.1	01 51.05 +12 15.3 17.6	-0.77 -10.1	0.3/23.5	30882	(7959)	1997 10 26.0	02 01.79 +28 28.1 16.1	-1.00 -21.4	7.3/01.4	30749
1997 SG ₂₁	1997 10 23.1	01 51.05 +11 38.5 16.0	-0.74 - 7.7	0.1/23.2	30881	1997 RT ₃	1997 10 26.0	02 01.82 +13 31.8 19.0	-0.93 - 3.7	0.4/26.3	30904
(7106)	1997 10 23.2	01 51.41 -04 07.2 15.7	-0.77 - 6.1	6.0/18.4	27697	1983 RG ₂	1997 10 26.0	02 02.09 +03 17.8 16.0	-1.01 + 0.2	4.7/24.1	30893
1996 FB ₅	1997 10 23.2	01 51.49 -05 21.5 19.5	-0.91 -10.4	5.4/17.8	27560	1992 WL	1997 10 26.0	02 02.14 +07 57.9 16.1	-0.88 - 1.5	1.4/25.0	30896
1980 EB	1997 10 23.3	01 51.58 +13 04.4 17.9	-0.97 - 4.6	0.6/23.8	30892	4311 T-2	1997 10 26.1	02 02.27 +06 24.0 18.6	-1.00 - 5.7	2.3/24.5	21126
(7145)	1997 10 23.5	01 52.52 +02 59.8 14.7	-0.78 - 9.5	3.5/20.7	27706	1985 RG ₃	1997 10 26.2	02 02.71 +02 26.5 17.1	-0.90 - 2.9	4.6/23.6	30868
5159 T-2	1997 10 23.5	01 52.56 +24 43.7 18.4	-0.56 - 2.3	2.4/27.7	29669	(8046)	1997 10 26.3	02 03.20 -24 44.9 16.9	-0.91 - 3.9	13.4/13.7	30863
1990 WB ₂	1997 10 23.5	01 52.60 -00 49.6 17.6	-0.97 - 4.8	4.4/20.1	30895	1997 TO ₁₉	1997 10 26.3	02 03.32 +12 07.8 16.8	-0.94 - 8.7	0.2/26.3	30884
7581 P-L	1997 10 23.6	01 52.83 +10 31.8 16.8	-1.10 - 2.0	0.5/23.4	30914	1981 EA ₁₃	1997 10 26.3	02 03.37 +19 16.1 18.0	-0.96 - 8.0	2.8/28.5	26917
1997 TG ₁₉	1997 10 23.7	01 53.26 +10 29.1 16.7	-1.17 - 4.9	10.8/13.0	30883	1997 TR ₂₃	1997 10 26.4	02 03.41 +13 17.1 19.2	-0.96 - 8.0	0.3/26.6	30884
1995 FE	1997 10 23.7	01 53.39 +33 37.0 16.8	-1.57 + 4.5	8.8/27.4	30901	(7975)	1997 10 26.4	02 03.42 +22 41.7 17.0	-0.91 - 2.3	3.1/29.1	30846
1981 EO ₃₃	1997 10 23.9	01 54.14 +03 50.3 19.9	-0.77 - 8.1	2.3/21.4	26921	1990 WV ₁	1997 10 26.4	02 03.56 +03 03.6 17.9	-0.96 - 5.5	3.7/23.8	24739
(7486)	1997 10 24.0	01 54.17 +07 20.0 15.4	-0.99 - 2.2	2.2/22.9	29087	(7990)	1997 10 26.4	02 03.73 +08 15.9 15.3	-0.73 - 4.4	1.9/25.2	30850
1995 OK ₈	1997 10 24.0	01 54.33 +14 23.8 17.6	-0.51 - 3.5	0.5/24.9	30783	1997 SA ₂	1997 10 26.6	02 04.33 +13 24.5 17.3	-0.85 - 3.4	0.3/26.9	30905
1992 UP ₆	1997 10 24.1	01 54.80 +14 40.0 15.1	-0.73 -10.2	1.0/25.2	30896	1988 GD	1997 10 26.7	02 04.69 +04 25.7 17.1	-0.96 - 4.2	2.9/24.6	30894
1988 FS ₂	1997 10 24.1	01 54.93 +13 26.4 17.5	-0.99 - 4.5	0.6/24.6	30894	1990 VB ₆	1997 10 26.7	02 04.75 -01 35.7 16.7	-0.93 - 5.5	6.0/22.7	24739
1997 QN	1997 10 24.2	01 54.89 +19 04.4 16.6	-0.95 - 7.6	3.3/26.4	30904	1990 SG ₃	1997 10 26.8	02 05.07 +04 23.1 16.0	-0.97 - 5.0	3.8/24.6	30895
1990 UN ₂	1997 10 24.2	01 55.09 +06 56.5 16.9	-1.06 - 2.1	2.1/23.1	27307	1997 SC ₂	1997 10 26.8	02 05.32 +11 50.0 17.1	-0.90 - 6.8	0.4/26.6	30905
1992 EA ₇	1997 10 24.2	01 55.21 +11 41.2 16.8	-1.08 - 2.7	0.0/24.2	30896	1993 VM ₂	1997 10 26.9	02 05.35 +13 37.7 17.9	-0.97 - 4.5	0.3/27.2	30900

(7952)	1997 10 26.9	02 05.40 +25 38.6 15.3	-0.76 - 8.0	5.1/31.3	30748
(7974)	1997 10 27.0	02 05.62 +12 28.4 16.3	-1.00 - 5.3	0.1/26.9	30753
1981 ER ₂₆	1997 10 27.1	02 06.06 +19 15.4 18.6	-1.10 - 2.7	2.5/28.7	26920
9602 P-L	1997 10 27.1	02 06.25 +04 20.2 18.7	-0.50 - 3.0	1.6/24.6	22274
1996 PF ₁	1997 10 27.1	02 06.26 +17 00.6 18.7	-0.82 - 3.3	1.2/28.3	30902
(7021)	1997 10 27.2	02 06.61 -08 19.3 16.0	-0.98 - 0.3	8.1/22.4	29893
1993 TD	1997 10 27.2	02 06.83 +24 50.0 16.6	-1.17 + 2.0	5.7/29.8	30900
1990 UR ₄	1997 10 27.3	02 06.82 +04 15.9 18.5	-1.03 - 3.4	3.3/25.2	22273
1981 EX ₂₇	1997 10 27.3	02 06.92 +12 25.3 19.5	-0.98 - 5.2	0.1/27.2	30755
(7978)	1997 10 27.3	02 06.94 +12 51.0 16.3	-0.98 - 6.2	0.0/27.3	30847
1993 OL ₅	1997 10 27.3	02 07.19 +12 08.1 18.9	-1.05 - 5.4	0.3/27.2	27556
1986 QG ₁	1997 10 27.4	02 07.23 +04 37.2 17.9	-0.99 - 4.6	3.3/25.2	22077
6615 P-L	1997 10 27.4	02 07.27 +15 07.3 17.4	-1.11 - 3.6	0.9/28.0	29141
1994 WK ₁	1997 10 27.4	02 07.37 +15 43.3 16.5	-1.05 - 5.8	1.3/28.2	30900
(7139)	1997 10 27.4	02 07.37 +03 50.7 16.7	-0.75 - 6.2	2.7/24.7	27705
1997 SZ ₁	1997 10 27.4	02 07.45 +11 41.5 16.7	-0.91 - 6.5	0.5/27.1	30905
(7897)	1997 10 27.5	02 07.76 +08 42.1 18.2	-0.79 - 4.9	1.3/26.3	30644
1981 EZ ₁₀	1997 10 27.5	02 07.91 +17 02.1 17.7	-0.87 - 5.2	1.4/28.7	30892
1990 VX ₃	1997 10 27.5	02 07.96 +12 28.6 16.3	-1.06 - 4.1	0.2/27.5	29658
1989 UA ₆	1997 10 27.5	02 07.99 +10 49.6 17.8	-0.65 - 2.9	0.5/27.0	30895
1176 T-2	1997 10 27.6	02 08.12 +16 59.7 18.4	-1.07 - 5.6	1.6/29.0	30914
1985 HS ₁	1997 10 27.6	02 08.18 -06 05.1 17.5	-0.89 -10.3	6.1/21.4	30893
1981 ED ₄₇	1997 10 27.6	02 08.32 +16 21.3 19.2	-1.05 - 4.6	1.5/28.6	26923
1988 RV ₁₂	1997 10 27.7	02 08.59 +02 55.3 17.7	-0.60 - 5.7	2.3/24.6	29656
1981 EH ₄₀	1997 10 27.8	02 08.79 +15 57.0 20.8	-0.88 - 3.7	0.9/28.6	26922
1990 VF ₆	1997 10 27.8	02 08.82 -04 06.0 17.9	-0.97 - 2.2	7.7/23.6	27308
(7958)	1997 10 27.8	02 09.06 -02 29.0 15.1	-0.88 -24.9	7.2/21.6	30749
1995 DU ₃	1997 10 27.9	02 09.15 +13 04.4 18.7	-0.99 - 5.0	0.0/27.9	30901
1981 EF ₃₀	1997 10 27.9	02 09.37 +04 29.0 16.9	-0.94 - 6.8	3.4/25.5	30893
1996 LV ₃	1997 10 27.9	02 09.39 +09 00.0 17.2	-1.00 - 3.6	1.6/26.9	30876
1997 QQ ₄	1997 10 27.9	02 09.39 +13 58.8 17.9	-0.93 - 3.5	0.3/28.2	30904
1986 CP ₁	1997 10 28.0	02 09.67 +12 57.1 17.1	-0.93 - 3.5	0.0/28.0	30893
1997 UP ₇	1997 10 28.0	02 09.72 +17 17.8 17.1	-0.95 - 3.7	1.9/29.0	30911
3078 T-1	1997 10 28.0	02 09.78 +11 23.4 16.0	-0.83 - 8.7	0.9/27.5	30914
1997 TH ₁₉	1997 10 28.0	02 09.87 +17 15.9 16.1	-1.10 - 3.6	2.1/29.1	30883
1997 TM ₁₇	1997 10 28.1	02 09.86 +21 18.1 15.8	-1.03 - 7.8	3.2/30.5	30883
1997 UO ₇	1997 10 28.2	02 10.55 +07 26.0 17.6	-0.86 - 6.6	2.5/26.6	30886
1988 BX ₃	1997 10 28.3	02 10.91 +16 11.7 17.1	-0.97 - 7.4	1.1/29.2	30894
(6974)	1997 10 28.4	02 11.14 -07 49.5 14.8	-0.77 - 8.9	8.3/21.4	27096
1985 CM ₁	1997 10 28.4	02 11.20 +04 47.9 16.7	-0.99 - 5.4	3.1/26.2	27726
1991 GX ₁	1997 10 28.5	02 11.42 +25 36.4 17.4	-0.56 - 2.8	2.3/01.2	29658
1981 EF ₁₃	1997 10 28.7	02 12.19 +31 52.1 17.9	-1.07 - 1.4	7.1/02.4	21100
1996 HD ₂₁	1997 10 28.7	02 12.31 +10 02.0 17.6	-0.97 - 3.5	1.1/27.9	28088
1995 FD	1997 10 28.7	02 12.44 +15 58.2 18.8	-0.95 - 3.8	0.9/29.4	30875
1993 OX ₉	1997 10 28.7	02 12.65 +19 12.7 16.4	-1.02 - 5.1	2.7/30.4	25082
1990 QC ₅	1997 10 28.8	02 12.66 +15 49.2 16.8	-1.12 - 4.2	1.0/29.4	28614
1975 ST	1997 10 28.8	02 12.79 +04 59.2 17.9	-0.85 - 7.7	2.8/26.4	27301
1975 VV ₂	1997 10 28.8	02 12.90 +10 17.8 16.6	-1.01 + 1.3	1.1/28.2	21963
1997 UV ₂	1997 10 28.8	02 13.02 +14 54.7 17.8	-0.90 - 4.9	0.5/29.3	30885
1995 GV ₂	1997 10 29.1	02 13.84 +05 32.8 17.5	-0.85 - 4.8	2.8/26.9	25341
(7057)	1997 10 29.2	02 14.18 +04 36.9 15.0	-0.90 - 6.8	4.2/26.7	27437

1993 OY ₆	1997 10 29.2	02 14.27 +02 39.6 18.3	-1.02 - 4.6	4.1/26.5	28888
(7181)	1997 10 29.2	02 14.41 +31 39.8 16.0	-0.88 - 4.7	6.0/03.6	27900
1991 SR ₃	1997 10 29.2	02 14.47 +25 16.3 16.5	-1.11 + 2.2	3.9/31.6	25639
1984 BQ	1997 10 29.3	02 14.64 +09 21.9 16.1	-1.06 - 2.2	1.6/28.4	30868
4313 T-3	1997 10 29.4	02 15.02 +07 18.1 16.2	-0.99 - 4.7	3.0/27.8	30915
6020 P-L	1997 10 29.4	02 15.16 +12 45.8 18.4	-0.50 - 2.7	0.1/29.2	26415
1994 YV ₁	1997 10 29.5	02 15.47 +04 39.7 16.7	-1.06 - 2.3	3.7/27.5	30689
1986 TZ ₁₁	1997 10 29.5	02 15.49 +21 25.4 16.6	-0.83 - 4.8	2.7/31.8	27566
1992 HM	1997 10 29.5	02 15.60 -00 03.3 17.3	-1.23 + 2.4	4.8/27.2	25650
1996 KX ₂	1997 10 29.5	02 15.67 -00 54.8 16.6	-0.80 - 8.0	5.6/25.1	27563
1992 CN ₃	1997 10 29.6	02 15.72 +13 22.3 17.1	-1.03 - 6.9	0.1/29.5	30896
1995 JD	1997 10 29.6	02 15.82 +13 20.5 19.0	-0.84 - 5.3	0.1/29.6	30901
1996 GJ ₂	1997 10 29.8	02 16.62 +09 55.8 18.3	-0.97 - 6.3	1.4/28.8	30902
1981 EP ₇	1997 10 29.8	02 16.66 +20 05.8 18.1	-0.98 - 8.0	2.6/31.7	26916
1978 RV ₇	1997 10 29.8	02 16.88 +11 01.1 19.6	-0.84 - 5.1	0.8/29.2	21251
1981 UC ₂₆	1997 10 29.9	02 16.88 +08 24.7 17.0	-0.78 - 4.8	1.8/28.4	29132
1995 DA ₁	1997 10 29.9	02 16.99 +00 08.0 18.7	-0.89 - 3.4	4.3/26.4	30901
(7982)	1997 10 29.9	02 17.15 +10 22.7 17.8	-1.01 - 5.8	1.2/29.1	30848
2572 P-L	1997 10 30.1	02 17.66 +16 10.0 17.3	-1.10 - 4.0	1.0/30.7	30914
1996 HB ₂	1997 10 30.1	02 17.81 +16 09.4 16.8	-1.12 - 3.6	0.9/30.7	30902
1981 EB ₃₉	1997 10 30.2	02 18.03 +05 48.9 19.6	-0.94 - 7.1	2.7/28.0	30893
1993 RH ₉	1997 10 30.4	02 19.17 +16 02.2 17.9	-0.96 - 5.2	1.0/31.0	30873
1981 ET ₇	1997 10 30.5	02 19.38 +21 48.0 17.4	-1.03 - 5.4	3.4/01.6	23990
1997 UY ₇	1997 10 30.5	02 19.52 +16 09.3 17.2	-0.90 - 4.9	1.1/31.2	30886
1997 SG ₁	1997 10 30.6	02 19.73 -03 54.1 17.4	-0.82 - 6.7	6.0/25.2	30905
1989 FH	1997 10 30.6	02 19.74 +10 28.8 17.5	-1.05 - 4.5	1.3/29.8	27454
(8044)	1997 10 30.7	02 19.95 +17 43.5 17.2	-1.00 - 5.4	1.3/31.7	30863
1973 SE ₁	1997 10 30.7	02 20.08 +15 27.5 17.8	-0.54 - 2.2	0.3/31.1	29607
1990 SZ ₇	1997 10 30.7	02 20.41 +13 16.5 16.4	-1.14 - 2.1	0.3/30.6	30895
6188 P-L	1997 10 30.8	02 20.46 +14 37.9 17.5	-1.04 - 6.4	0.3/31.0	30914
1996 EK ₂	1997 10 30.8	02 20.73 +11 36.7 16.9	-1.05 - 7.0	1.1/30.2	30668
4716 P-L	1997 10 30.9	02 20.85 +17 34.2 18.3	-0.95 - 2.5	1.2/31.8	25076
1991 PT ₈	1997 10 30.9	02 21.18 -02 49.1 17.3	-0.76 - 5.8	5.7/25.9	30896
1997 QP ₃	1997 10 31.0	02 21.26 +10 54.2 18.0	-0.95 - 6.4	1.3/30.2	30904
1992 DE ₁₁	1997 10 31.2	02 22.26 +09 16.2 19.2	-0.99 - 5.2	1.8/30.0	27445
1995 CP ₃	1997 10 31.2	02 22.30 +10 53.2 19.2	-0.92 - 5.4	1.2/30.4	30901
(7174)	1997 10 31.5	02 23.18 +27 04.8 17.5	-0.74 - 2.0	2.9/04.0	27898
(7939)	1997 10 31.6	02 23.57 +17 20.9 15.7	-0.93 - 3.9	1.6/01.4	30745
(8032)	1997 10 31.6	02 23.61 +14 53.6 17.4	-1.09 - 2.1	0.2/31.8	30859
1981 EP ₁₅	1997 10 31.6	02 23.77 +23 39.2 17.3	-0.97 - 5.8	4.4/03.3	22270
1988 RV ₄	1997 10 31.8	02 24.71 +17 15.2 16.4	-0.95 - 4.8	1.1/01.7	30780
1994 CV	1997 10 31.9	02 24.91 +10 10.7 16.6	-0.83 - 6.4	1.9/30.8	30900
1979 ME ₈	1997 11 01.0	02 25.37 +11 12.9 17.7	-0.99 - 7.2	1.4/31.2	30892
1981 EN ₃₉	1997 11 01.1	02 25.54 +12 00.1 19.8	-0.85 - 5.1	0.8/31.5	26922
1978 SQ ₇	1997 11 01.3	02 26.47 +11 47.5 16.3	-0.88 - 7.4	1.2/31.6	27725
1992 PX ₂	1997 11 01.3	02 26.47 +30 30.3 17.3	-0.99 - 5.5	5.0/05.9	27729
1991 EL ₄	1997 11 01.3	02 26.58 +02 38.7 17.6	-0.83 - 7.0	3.8/29.0	30895
1978 RR	1997 11 01.4	02 26.76 +21 52.8 17.5	-0.99 - 2.8	2.4/03.2	30892
1992 SA ₂₂	1997 11 01.5	02 27.27 +15 47.4 17.1	-0.93 - 3.0	0.4/01.9	22816
1997 TA ₁₀	1997 11 01.5	02 27.29 +15 02.8 17.0	-0.83 - 2.8	0.2/01.7	30882
1979 MM ₆	1997 11 01.5	02 27.43 +16 05.9 19.2	-0.77 - 4.7	0.4/02.0	30892

(7132)	1997 11 01.5	02 27.47 +23 27.1 17.6	-1.08 - 4.5	3.0/03.8	27703	1991 RF ₂	1997 11 04.8	02 40.27 +31 01.1 16.2	-0.93 - 2.7	4.9/08.7	30655
(7131)	1997 11 01.6	02 27.51 -04 16.6 15.2	-0.90 + 1.4	6.8/28.8	27703	1996 TN ₄₉	1997 11 04.8	02 40.34 +11 56.0 18.9	-0.52 - 3.8	0.7/03.8	30902
1987 SU ₁	1997 11 01.6	02 27.51 +21 56.9 16.2	-0.97 - 9.0	3.5/03.8	30894	1993 SH ₂	1997 11 04.9	02 40.64 +20 45.0 16.2	-0.98 - 2.4	2.5/06.1	30899
1995 HA	1997 11 01.6	02 27.52 +13 08.1 19.2	-0.77 - 6.2	0.4/01.2	30901	1990 QE ₂	1997 11 04.9	02 40.76 +24 06.3 17.4	-1.17 - 4.4	3.4/07.0	30895
(7171)	1997 11 01.6	02 27.58 +19 14.5 17.4	-1.05 - 5.0	1.7/02.8	27898	1975 SK ₁	1997 11 05.0	02 40.96 +18 32.7 16.9	-1.06 - 3.9	1.1/05.7	30892
(7543)	1997 11 01.6	02 27.81 +07 29.2 17.1	-0.51 - 4.2	1.4/30.6	29587	1992 UG ₃	1997 11 05.0	02 41.15 +11 40.2 16.5	-0.85 - 4.2	1.4/04.1	30872
(7598)	1997 11 01.7	02 27.96 +03 13.2 18.2	-0.77 - 4.2	3.1/29.6	29600	1992 PG ₂	1997 11 05.1	02 41.25 +09 11.3 17.4	-0.89 - 6.7	2.3/03.4	29943
1997 UF ₂	1997 11 01.8	02 28.50 +12 32.9 16.4	-0.93 - 8.6	1.0/01.3	30884	1994 YF ₂	1997 11 05.2	02 41.92 +13 22.8 16.7	-1.10 - 3.2	0.9/04.8	30874
(7115)	1997 11 01.8	02 28.55 +21 30.4 17.2	-0.85 - 3.6	2.2/03.7	27699	(7587)	1997 11 05.4	02 42.70 +09 35.3 17.9	-1.01 - 6.2	2.3/03.9	29598
1986 QS ₃	1997 11 01.9	02 28.69 -02 12.6 17.5	-0.78 - 4.1	5.1/28.4	30894	1982 VP ₃	1997 11 05.5	02 42.80 +08 25.4 16.6	-0.92 - 0.5	2.3/04.0	30868
1996 NC	1997 11 01.9	02 28.77 +09 57.5 18.1	-0.86 - 3.6	1.6/31.7	30902	1989 WA ₂	1997 11 05.5	02 42.98 -00 42.4 15.2	-1.11 + 4.3	7.2/03.1	30895
(7135)	1997 11 02.0	02 29.18 +11 53.7 15.2	-0.78 - 9.5	1.3/01.2	27704	1981 EA ₃₁	1997 11 05.5	02 43.00 +19 20.3 20.2	-1.05 - 4.8	1.3/06.4	26920
1992 YH ₂	1997 11 02.1	02 29.43 +02 03.7 17.3	-0.82 - 1.6	4.0/30.1	30896	1995 EB ₁	1997 11 05.5	02 43.05 +09 17.0 15.6	-0.92 - 3.5	3.2/04.0	30901
4216 T-2	1997 11 02.1	02 29.62 +04 51.3 17.4	-0.63 - 4.1	2.4/30.4	29142	1996 GO ₁₈	1997 11 05.7	02 43.61 +12 32.9 16.6	-0.99 - 7.3	1.5/04.8	30902
(7203)	1997 11 02.2	02 30.07 +18 58.2 16.7	-1.02 - 4.5	1.5/03.3	27905	(7089)	1997 11 05.7	02 43.76 +07 11.6 17.3	-0.97 - 6.3	3.1/03.5	27549
(7091)	1997 11 02.3	02 30.43 +24 10.1 16.7	-1.01 -11.9	3.0/05.3	27549	1997 QW ₃	1997 11 05.9	02 44.44 +13 48.4 18.6	-0.82 - 3.4	0.9/05.4	30904
1995 DZ ₈	1997 11 02.4	02 30.63 +17 38.8 17.9	-1.04 - 3.6	1.2/03.0	30901	(7040)	1997 11 05.9	02 44.46 +08 19.7 17.6	-1.01 - 6.6	2.8/04.0	27301
1997 QV ₃	1997 11 02.5	02 31.14 +10 19.2 18.4	-0.92 - 6.5	1.6/01.3	30904	1996 JV	1997 11 05.9	02 44.83 -23 20.0 17.0	-1.03 + 0.6	13.8/28.8	30902
5187 T-2	1997 11 02.5	02 31.17 +18 34.4 18.2	-0.53 - 3.4	0.7/03.6	30914	(7256)	1997 11 06.0	02 44.85 +09 17.5 17.1	-0.97 - 3.3	2.8/04.5	28067
1981 EJ ₃₃	1997 11 02.5	02 31.26 +23 45.5 20.2	-1.07 - 4.7	3.3/04.8	26921	1983 RV ₃	1997 11 06.0	02 44.98 +09 16.7 16.9	-0.88 - 5.3	2.4/04.4	29132
1997 RH ₄	1997 11 02.5	02 31.39 +23 28.0 17.3	-0.97 + 5.2	5.3/04.0	30904	1983 WM	1997 11 06.1	02 45.22 +21 17.4 15.8	-1.00 - 7.5	2.3/07.5	30893
1990 TB ₁	1997 11 02.6	02 31.35 +24 33.7 16.8	-1.20 - 2.5	4.0/04.8	30895	1981 EX ₂₅	1997 11 06.1	02 45.48 +10 57.4 18.3	-0.98 - 5.8	2.0/04.9	30893
1993 ST ₄	1997 11 02.6	02 31.55 +14 22.2 17.2	-1.02 - 4.4	0.2/02.5	30899	4595 P-L	1997 11 06.1	02 45.64 +12 02.3 17.3	-0.93 - 5.5	1.9/05.2	30888
(7039)	1997 11 02.7	02 32.03 +08 04.2 16.6	-0.91 - 7.5	2.9/31.9	28818	1990 TO ₉	1997 11 06.2	02 45.72 +21 24.6 16.8	-1.00 - 6.0	2.6/07.6	30870
1979 FD ₃	1997 11 03.0	02 33.26 +09 55.5 17.7	-1.04 - 4.9	1.9/01.8	30892	1991 FK ₁	1997 11 06.3	02 46.13 +12 01.6 15.7	-0.95 -18.0	1.7/05.0	30895
1995 DC	1997 11 03.0	02 33.34 +19 05.8 19.4	-0.96 - 3.3	1.2/04.1	27937	1990 TR ₁	1997 11 06.3	02 46.35 +08 40.7 16.6	-0.99 - 6.9	3.1/04.5	29942
1997 QR ₃	1997 11 03.1	02 33.47 +09 53.8 18.4	-0.93 - 7.8	2.3/01.7	30878	1981 DM	1997 11 06.3	02 46.39 +22 58.4 17.8	-1.03 - 6.6	2.5/08.2	30892
1981 DO ₁	1997 11 03.1	02 33.57 +23 32.3 19.2	-1.05 - 5.7	2.9/05.3	26914	(8023)	1997 11 06.4	02 46.52 +16 44.5 16.5	-1.04 - 3.4	0.3/06.6	30857
1995 DX	1997 11 03.2	02 34.12 -03 04.5 19.5	-0.85 - 4.3	5.5/29.5	27717	1994 WY ₂	1997 11 06.5	02 46.90 +23 23.0 16.1	-1.06 - 7.1	3.5/08.4	24575
(6949)	1997 11 03.3	02 34.12 -05 52.8 16.9	-0.94 - 4.8	7.4/28.9	27090	1990 SK ₁₁	1997 11 06.5	02 46.99 +19 41.2 15.9	-1.03 - 5.8	1.7/07.4	30895
1973 SD ₁	1997 11 03.3	02 34.25 +20 43.4 16.8	-0.59 - 1.9	1.1/04.8	30892	1988 UO	1997 11 06.5	02 47.24 +20 10.7 14.9	-1.07 - 0.1	1.6/07.4	30894
1988 RN ₄	1997 11 03.4	02 34.58 +31 08.3 17.5	-1.07 - 3.3	4.8/07.5	22079	1988 BT ₃	1997 11 06.6	02 47.23 +05 38.8 16.7	-0.95 - 5.6	4.8/04.0	22079
1987 SF ₅	1997 11 03.4	02 34.91 +22 08.3 16.5	-1.04 - 4.0	3.5/05.2	30894	1997 VT	1997 11 06.6	02 47.61 +11 19.2 16.7	-0.99 - 3.6	2.2/05.6	30887
(8022)	1997 11 03.4	02 34.93 +20 22.8 16.3	-1.09 - 3.9	2.1/04.7	30857	1981 EW ₄₀	1997 11 06.7	02 47.62 +31 45.6 18.6	-1.25 - 1.4	6.8/10.1	26922
1992 EP	1997 11 03.5	02 35.11 +10 18.6 17.1	-1.03 - 3.1	1.7/02.4	20034	1994 AQ ₂	1997 11 06.8	02 48.11 +11 20.7 17.2	-0.88 - 3.4	1.7/05.7	30900
1993 ON ₉	1997 11 03.6	02 35.54 +20 48.3 15.9	-1.06 - 5.7	2.6/05.1	30897	1991 CP ₁	1997 11 06.9	02 48.77 +07 33.4 16.8	-0.99 - 3.6	3.5/05.0	30871
1978 UV ₇	1997 11 03.7	02 35.86 +12 25.7 16.7	-0.85 - 5.7	1.0/03.0	22947	1986 AW ₂	1997 11 06.9	02 48.78 -10 31.1 17.4	-0.89 - 3.8	8.4/30.8	28084
1991 RQ ₁₄	1997 11 03.8	02 36.17 +14 19.1 17.1	-0.84 - 3.2	0.3/03.6	27935	1990 FM ₁	1997 11 07.0	02 48.94 +03 36.6 16.8	-0.87 - 3.4	4.0/04.0	27728
4171 T-3	1997 11 03.8	02 36.31 +11 42.7 16.3	-1.13 - 1.8	1.6/03.1	30915	1997 TG ₁₀	1997 11 07.0	02 49.16 +13 11.7 18.2	-1.01 - 7.0	1.2/06.3	30882
1993 RE	1997 11 03.9	02 36.61 +17 19.9 15.8	-0.92 - 5.4	0.9/04.5	30897	1996 NS	1997 11 07.1	02 49.17 +01 15.1 18.5	-0.79 - 3.3	4.5/03.5	30785
1996 HA ₁₅	1997 11 03.9	02 36.85 +13 44.1 15.4	-1.10 - 0.4	0.8/03.7	30902	1989 WC ₂	1997 11 07.1	02 49.62 +09 50.5 15.7	-1.06 + 0.8	2.8/06.0	25339
1996 GD ₂₁	1997 11 04.0	02 37.04 +11 14.3 18.7	-1.04 - 6.0	1.6/03.0	30902	5493 T-2	1997 11 07.2	02 49.57 +33 27.1 17.3	-0.63 - 2.1	3.3/11.8	30914
1981 EX ₃₄	1997 11 04.0	02 37.29 +04 50.6 18.9	-0.83 - 5.1	3.5/01.3	26921	1979 ML ₇	1997 11 07.2	02 49.63 +10 38.8 19.5	-1.05 - 4.3	2.2/05.9	30779
(7993)	1997 11 04.1	02 37.34 +15 16.7 15.7	-0.89 - 3.0	0.0/04.1	30850	1988 BM ₃	1997 11 07.3	02 50.20 +18 59.8 17.2	-1.07 - 4.8	1.0/08.0	30894
1991 CW ₂	1997 11 04.3	02 38.08 +22 51.3 15.6	-1.12 - 0.7	3.1/05.8	30448	1995 KZ ₁	1997 11 07.3	02 50.27 +16 09.5 16.7	-0.75 - 6.8	0.1/07.3	30875
(8012)	1997 11 04.4	02 38.70 +13 22.0 17.3	-0.84 - 2.9	0.8/04.0	30855	4637 P-L	1997 11 07.4	02 50.55 +06 15.0 17.7	-0.93 - 5.9	5.0/04.9	30914
(7127)	1997 11 04.5	02 38.99 +12 54.5 18.8	-0.75 - 5.0	0.7/03.8	27702	1981 EB ₁₀	1997 11 07.5	02 50.75 +13 38.6 18.6	-1.00 - 6.3	1.0/06.8	30892
1988 RZ ₂	1997 11 04.5	02 39.28 +19 30.6 18.5	-0.99 - 3.3	1.3/05.5	30894	1984 SN ₄	1997 11 07.5	02 50.84 +18 57.7 17.3	-0.98 - 4.0	1.1/08.1	18109
1986 WO ₁	1997 11 04.7	02 39.91 +18 05.1 15.8	-0.95 - 2.4	1.3/05.3	30868	1992 LS	1997 11 07.5	02 51.23 +13 54.4 17.1	-0.95 - 5.7	0.9/07.0	27455
1996 TW	1997 11 04.7	02 39.99 +30 17.2 17.9	-0.64 - 0.9	2.7/08.6	30877	1990 WQ ₆	1997 11 07.6	02 51.15 +10 08.5 17.2	-0.97 - 5.9	2.8/06.1	27912
1975 UA	1997 11 04.7	02 40.05 +17 01.9 16.5	-0.96 -24.7	0.7/05.3	30892	1993 XO	1997 11 07.7	02 51.85 +26 26.5 15.0	-0.87 -11.6	4.2/10.9	27558

1992 GA ₁	1997 11 07.7	02 51.93 -00 11.6 18.6	-0.92 -10.1	5.3/02.9	28317	4232 T-1	1997 11 11.5	03 06.96 +25 01.1 17.5	-1.03 - 1.3	2.7/13.0	25085
(7030)	1997 11 07.9	02 52.60 +22 36.0 17.2	-1.03 - 8.1	2.2/09.6	27298	1996 QL	1997 11 11.5	03 07.08 +25 05.9 18.0	-1.00 - 3.9	2.5/13.2	28304
1997 US ₈	1997 11 07.9	02 52.68 +14 40.3 18.4	-0.77 - 3.6	0.5/07.5	30886	1976 DJ ₁	1997 11 11.6	03 07.28 +10 15.1 18.2	-0.63 - 2.3	1.5/09.9	30892
1981 ED ₄	1997 11 07.9	02 52.83 +23 41.8 21.8	-0.92 - 4.4	2.0/09.7	26915	1988 DD	1997 11 11.6	03 07.28 -03 40.8 17.4	-1.02 - 3.6	8.1/06.7	30894
1990 OW ₁	1997 11 08.0	02 53.25 +17 14.8 17.0	-1.17 - 3.0	0.3/08.2	28614	(7460)	1997 11 11.6	03 07.58 +12 54.0 17.9	-1.02 - 3.5	1.8/10.7	29079
1991 AV ₂	1997 11 08.1	02 53.16 +19 18.6 17.4	-1.05 - 4.4	1.1/08.7	30895	1993 BC ₅	1997 11 11.7	03 07.72 +16 48.0 16.0	-0.82 - 3.4	0.3/11.5	30897
1990 BE ₁	1997 11 08.1	02 53.39 -10 11.5 15.0	-0.77 + 0.1	13.4/01.6	30895	1990 RR ₅	1997 11 11.7	03 08.14 +16 26.7 15.5	-1.00 - 5.3	0.6/11.5	30895
1981 DJ ₂	1997 11 08.2	02 53.99 +11 31.1 17.0	-0.81 -10.5	1.9/06.8	30754	1992 BO	1997 11 11.8	03 08.35 +21 48.5 16.6	-1.16 - 2.8	1.6/12.7	30896
2407 T-3	1997 11 08.6	02 55.25 +18 24.0 18.1	-0.89 - 3.5	0.6/09.0	25540	1997 UM ₃	1997 11 11.9	03 08.62 +21 27.9 14.7	-0.98 - 2.9	1.9/12.7	30885
(8054)	1997 11 08.6	02 55.49 +15 50.5 15.6	-1.07 - 2.3	0.4/08.5	30865	1139 T-2	1997 11 11.9	03 08.88 +10 23.5 18.8	-0.86 - 4.7	2.3/10.3	27939
4139 P-L	1997 11 08.6	02 55.56 +33 15.5 18.0	-0.64 - 1.0	3.0/12.7	24409	1980 RU	1997 11 12.0	03 08.98 +43 28.2 16.1	-1.31 - 0.4	10.6/17.7	30892
1993 TG ₃₁	1997 11 08.7	02 55.67 +14 15.9 17.6	-1.02 - 3.2	0.9/08.2	30900	1997 TP ₂₅	1997 11 12.0	03 09.13 +16 37.2 15.4	-0.86 - 3.5	0.4/11.8	30884
3006 T-3	1997 11 08.7	02 55.73 +20 10.0 15.2	-1.19 + 0.2	1.7/09.3	30915	1993 TL ₁₃	1997 11 12.0	03 09.15 +18 04.6 17.5	-1.14 - 0.8	0.2/12.1	30900
1991 SL ₂	1997 11 08.7	02 55.95 +10 07.4 15.7	-0.89 0.0	2.3/07.5	30896	1978 SA ₈	1997 11 12.1	03 09.59 +16 05.3 15.7	-0.94 - 5.7	0.8/11.8	30892
1997 TB ₁₀	1997 11 08.8	02 56.15 +16 34.8 16.9	-0.82 - 4.1	0.1/08.8	30882	(6977)	1997 11 12.1	03 09.64 +11 42.5 17.3	-1.08 - 3.9	2.4/10.9	27097
(7103)	1997 11 09.0	02 57.02 +06 40.0 17.6	-0.78 - 5.2	3.0/06.5	27697	1981 GO	1997 11 12.3	03 10.28 +12 13.5 16.9	-1.02 - 4.7	2.2/11.1	29653
(7180)	1997 11 09.0	02 57.03 +31 03.2 16.7	-0.94 - 4.1	4.7/12.6	27900	1997 UP ₃	1997 11 12.3	03 10.34 +21 14.8 16.0	-1.04 - 4.9	1.4/13.1	30885
1990 EN ₁	1997 11 09.1	02 57.31 +17 40.5 17.8	-0.85 - 5.5	0.2/09.3	25213	1981 EG ₂₁	1997 11 12.3	03 10.42 +09 17.7 17.3	-0.75 - 3.6	2.6/10.4	30893
7636 P-L	1997 11 09.1	02 57.44 +15 34.8 18.6	-1.13 - 2.8	0.5/08.9	27321	1981 DT ₁	1997 11 12.4	03 10.77 +20 29.0 19.5	-0.88 - 5.2	0.8/13.1	26914
1981 DD ₃	1997 11 09.1	02 57.65 +27 34.5 18.3	-0.96 - 4.8	4.0/11.8	27565	1983 GU	1997 11 12.4	03 10.83 -04 11.8 16.4	-0.96 - 0.8	7.7/08.4	27553
1969 TQ ₁	1997 11 09.2	02 57.62 +14 59.9 16.3	-0.85 - 2.4	0.7/08.8	30892	1995 EF ₁	1997 11 12.4	03 10.84 +17 43.7 16.5	-1.09 - 2.8	0.0/12.5	30901
1992 DN ₆	1997 11 09.2	02 57.65 +10 53.8 15.3	-1.05 - 4.1	2.6/07.9	30896	1994 RD ₁₁	1997 11 12.4	03 10.98 -29 01.8 18.7	-1.05 - 3.7	21.0/28.9	24584
1992 OE	1997 11 09.3	02 58.15 +61 05.3 17.6	-1.75 - 1.0	15.0/24.1	22432	1988 XG ₂	1997 11 12.5	03 11.26 +24 55.5 16.3	-0.90 - 6.5	2.9/14.3	30894
1992 YE ₃	1997 11 09.3	02 58.27 +01 08.0 16.4	-0.80 - 1.9	4.5/05.8	30897	1981 EX ₁₇	1997 11 12.5	03 11.38 +21 31.7 19.4	-1.09 - 3.7	1.3/13.4	26918
1997 TE ₂₅	1997 11 09.4	02 58.62 +12 42.3 16.3	-0.89 - 6.0	2.0/08.4	30884	1997 SU	1997 11 12.6	03 11.34 +14 28.5 15.1	-0.93 - 7.3	1.5/11.8	30879
1996 HZ ₁	1997 11 09.5	02 59.10 +06 27.7 17.9	-1.04 - 2.0	4.3/07.5	30902	1988 SZ ₂	1997 11 12.6	03 11.35 +13 51.8 18.7	-0.66 - 2.5	0.9/11.7	30894
1996 OJ	1997 11 09.6	02 59.33 +13 50.5 19.1	-0.82 - 3.3	0.9/08.9	30902	1997 UN ₃	1997 11 12.6	03 11.60 +17 28.3 16.6	-0.88 - 6.6	0.2/12.6	30885
(7989)	1997 11 09.6	02 59.36 +14 19.2 18.4	-1.04 - 4.5	1.1/09.0	30849	1991 FX ₂	1997 11 12.6	03 11.71 +31 57.9 15.3	-1.25 + 2.4	6.2/14.9	30871
1995 GJ ₇	1997 11 09.6	02 59.51 +24 46.5 17.3	-1.02 - 1.9	2.4/11.3	27937	1997 UQ ₃	1997 11 12.7	03 11.81 +18 08.3 16.3	-1.04 - 3.1	10.5/24.0	30885
(7085)	1997 11 09.7	03 00.05 +12 48.6 16.3	-0.87 - 3.3	1.4/08.8	27893	1991 RX ₂₃	1997 11 12.8	03 12.63 +30 27.7 17.2	-0.98 - 1.7	4.1/15.5	23790
1993 SJ ₅	1997 11 09.8	03 00.17 +27 51.5 15.9	-1.15 - 2.3	4.7/12.1	25068	1997 UK ₃	1997 11 12.9	03 12.61 +17 36.7 14.9	-0.79 - 7.9	12.9/24.0	30885
1981 EA ₃₄	1997 11 09.9	03 00.41 +12 40.2 17.9	-0.84 - 7.8	1.7/08.7	30868	1981 EX ₂₃	1997 11 12.9	03 12.76 +19 22.3 18.8	-0.91 - 4.3	0.5/13.3	21967
1995 YU ₃	1997 11 09.9	03 00.70 -08 01.7 20.3	-1.35 - 1.8	13.9/04.6	26907	1996 KQ ₁	1997 11 12.9	03 12.89 +05 51.0 19.8	-0.98 - 5.6	4.2/10.3	30902
(7214)	1997 11 10.0	03 00.98 +08 10.4 19.0	-0.52 - 3.6	1.7/07.7	28058	1997 UJ ₁₁	1997 11 13.0	03 13.10 +19 09.2 15.0	-1.55 + 8.8	0.6/13.1	30887
1982 VY ₂	1997 11 10.0	03 01.21 +12 28.2 16.9	-0.86 - 3.4	1.5/09.0	30893	(7110)	1997 11 13.1	03 13.68 +06 28.2 15.3	-0.82 - 5.8	4.7/10.3	27698
1988 TR	1997 11 10.1	03 01.28 +11 13.5 15.6	-0.91 - 3.6	2.3/08.8	30894	1987 WU ₂	1997 11 13.2	03 14.23 +34 55.3 15.7	-1.00 - 5.4	7.1/18.0	30894
1995 DM ₂	1997 11 10.3	03 02.11 +10 10.3 17.0	-0.98 - 1.3	2.3/09.0	27568	1993 UB ₃	1997 11 13.4	03 14.84 +19 42.5 15.6	-0.99 - 7.4	0.7/13.9	30900
1995 JJ	1997 11 10.3	03 02.32 +08 54.8 18.1	-0.84 - 3.1	2.7/08.5	30901	1996 JZ ₁₁	1997 11 13.4	03 15.07 +13 45.1 20.1	-1.06 - 3.5	1.5/12.6	30876
1996 JT ₃	1997 11 10.3	03 02.50 +09 56.2 16.7	-0.94 - 5.7	3.3/08.7	30902	(7136)	1997 11 13.6	03 15.56 +03 15.9 15.8	-1.08 + 2.7	5.9/11.6	27704
(6859)	1997 11 10.4	03 02.44 -27 26.9 15.7	-1.08 - 5.0	21.0/26.7	26731	(7998)	1997 11 13.6	03 15.62 +10 09.8 17.5	-1.04 - 2.8	2.9/12.1	30852
1979 MN ₃	1997 11 10.4	03 02.56 +17 41.5 16.9	-1.06 - 5.5	0.2/10.5	30892	4592 P-L	1997 11 13.6	03 15.83 +09 53.0 17.6	-0.90 - 3.9	2.9/11.9	25229
1992 DQ ₁₀	1997 11 10.5	03 02.90 +21 53.9 16.6	-1.09 - 6.0	1.9/11.6	29660	1981 ED ₁₄	1997 11 13.7	03 15.89 +23 58.5 19.1	-1.09 - 3.9	2.1/14.9	27565
1981 EB ₃₈	1997 11 10.6	03 03.26 +23 24.4 19.5	-0.95 - 3.5	2.0/12.0	30780	1997 UW ₃	1997 11 13.7	03 15.92 +22 00.3 16.4	-1.04 - 2.3	1.8/14.5	30885
1981 EE ₃₀	1997 11 10.7	03 03.63 +20 01.2 18.8	-1.03 - 7.8	1.1/11.4	26920	1997 UV ₃	1997 11 13.7	03 15.96 +20 15.1 16.1	-1.01 - 2.1	1.0/14.1	30885
4038 P-L	1997 11 10.7	03 03.73 +20 04.8 16.3	-1.06 - 4.5	1.2/11.3	30914	1981 DF ₃	1997 11 13.8	03 16.62 +32 22.5 20.1	-0.97 - 3.7	3.9/17.1	26914
(7927)	1997 11 10.9	03 04.91 +14 48.3 16.3	-0.83 - 3.7	0.9/10.4	30743	1992 UZ ₂	1997 11 13.9	03 17.04 +16 32.1 16.9	-0.91 - 2.3	0.6/13.7	30896
1997 ST	1997 11 11.0	03 05.11 +15 21.8 16.0	-1.01 - 6.3	0.9/10.6	30879	1993 QZ	1997 11 14.0	03 17.26 -17 44.1 16.0	-0.89 - 5.1	15.1/04.7	27446
1978 US ₅	1997 11 11.2	03 05.95 +32 28.8 18.0	-1.22 - 0.1	5.1/14.2	27725	1979 MK ₃	1997 11 14.0	03 17.38 +08 33.1 17.0	-0.82 - 2.9	3.2/12.0	28083
1996 FF	1997 11 11.3	03 06.35 -00 41.3 16.8	-1.00 -20.0	8.5/05.0	30902	1995 HH ₃	1997 11 14.0	03 17.40 +14 26.1 20.8	-0.82 - 2.5	1.0/13.3	30875
(6954)	1997 11 11.4	03 06.83 +16 21.1 16.5	-1.15 - 3.2	0.5/11.2	27092	1985 CS ₂	1997 11 14.2	03 17.87 +24 17.9 16.9	-1.11 - 4.8	2.3/15.5	24759
1997 UU ₄	1997 11 11.4	03 06.97 +18 29.5 16.2	-1.15 + 1.2	0.5/11.7	30886	1997 UT ₃	1997 11 14.2	03 18.28 +17 56.0 17.5	-0.83 - 3.4	0.1/14.2	30911

1981 EO ₄₁	1997 11 14.4	03 18.71 +30 39.2 17.8	-1.09 - 0.8	4.7/16.7	26922	1981 EW ₁₆	1997 11 16.9	03 29.30 +18 37.4 20.5	-0.89 - 3.8	0.1/16.9	26918
(7994)	1997 11 14.4	03 18.86 +18 18.6 16.6	-0.85 - 3.2	0.0/14.4	30851	1996 HR ₁₈	1997 11 17.0	03 29.70 +18 09.1 17.5	-1.06 - 4.8	0.3/16.9	30902
1981 EU ₁₃	1997 11 14.5	03 19.14 +09 20.1 17.1	-0.95 - 9.1	4.1/12.2	30685	1977 XP ₂	1997 11 17.0	03 29.78 +14 57.8 17.7	-0.86 - 3.1	1.3/16.3	30892
1983 WG	1997 11 14.6	03 19.53 +09 28.1 15.5	-1.01 + 1.2	3.6/13.2	30893	1996 HD ₂₄	1997 11 17.0	03 29.81 +14 07.0 17.3	-1.01 - 5.6	1.8/16.1	30902
1992 FD ₁	1997 11 14.6	03 19.89 +21 38.0 17.6	-1.15 - 2.6	1.3/15.3	30872	1983 RP ₂	1997 11 17.1	03 29.93 +10 22.0 15.8	-1.00 - 3.5	4.2/15.5	30893
(7217)	1997 11 14.6	03 19.93 +33 40.9 16.1	-0.95 - 3.1	4.6/18.1	28058	1983 RY ₄	1997 11 17.2	03 30.22 +26 04.4 14.6	-0.93 - 8.0	2.9/19.0	27726
6199 P-L	1997 11 14.6	03 20.01 +16 10.7 17.3	-0.98 - 6.1	1.1/14.2	30888	1989 GC ₈	1997 11 17.2	03 30.52 +13 50.1 19.4	-1.11 - 2.5	2.1/16.4	27555
2120 T-2	1997 11 14.8	03 20.74 +25 02.2 18.7	-1.21 - 2.0	3.0/16.1	30914	(7150)	1997 11 17.3	03 30.66 +19 52.9 17.4	-1.10 - 2.0	10.7/08.0	27893
1980 UN ₁	1997 11 14.9	03 20.96 +21 36.6 16.9	-0.99 - 4.9	1.4/15.6	30867	(7120)	1997 11 17.3	03 30.67 +20 52.7 16.9	-0.92 - 3.3	0.7/17.7	27700
1982 SM ₆	1997 11 14.9	03 21.08 +28 21.5 16.3	-1.16 - 1.0	4.5/16.7	30893	1994 AY ₂	1997 11 17.3	03 30.88 +27 46.0 16.3	-1.00 - 4.5	3.3/19.2	29618
1992 LN	1997 11 14.9	03 21.11 +10 47.0 16.8	-1.06 - 1.5	2.9/13.6	30896	1981 EG ₁₀	1997 11 17.5	03 31.64 +23 48.0 18.3	-0.95 - 4.4	1.7/18.5	26916
1997 UY ₃	1997 11 15.0	03 21.16 +18 43.7 15.7	-0.94 - 5.2	0.1/15.1	30886	1995 BG ₂	1997 11 17.5	03 31.79 +12 36.2 17.1	-1.06 - 3.2	2.7/16.4	30901
(6932)	1997 11 15.0	03 21.25 +12 46.3 16.8	-1.10 - 3.1	2.2/14.0	26897	1990 SA ₂	1997 11 17.5	03 31.84 +21 27.0 15.9	-1.10 - 3.3	1.1/18.0	29658
1993 QU ₉	1997 11 15.1	03 21.77 +05 55.8 19.2	-1.01 - 3.6	4.9/12.7	27447	1996 NG	1997 11 17.6	03 31.91 +11 01.9 15.9	-0.85 - 1.5	2.7/16.2	30902
1981 DY	1997 11 15.1	03 21.83 +25 50.9 18.4	-0.94 - 4.3	2.2/16.8	26914	1981 EM ₃₀	1997 11 17.7	03 32.37 +14 12.1 16.3	-0.91 - 2.7	2.2/16.8	30893
1993 KC	1997 11 15.1	03 21.90 +15 35.1 19.6	-1.12 -11.6	1.0/14.4	22700	1993 UC ₁	1997 11 17.8	03 32.89 +28 39.7 15.2	-1.06 - 9.9	3.9/20.3	30900
4040 P-L	1997 11 15.1	03 21.91 +15 15.3 18.0	-0.92 - 5.8	1.1/14.4	30914	1995 KN	1997 11 17.8	03 33.00 +15 54.4 17.0	-1.13 - 1.6	1.4/17.3	26175
1981 EF ₂₀	1997 11 15.1	03 22.00 +07 26.6 19.1	-0.87 - 4.4	3.6/12.8	26918	1997 SV	1997 11 18.0	03 33.78 +24 42.1 16.2	-1.18 + 0.3	2.5/18.9	30879
(7968)	1997 11 15.2	03 22.23 +16 34.3 18.6	-0.82 - 3.2	0.6/14.8	30751	1990 BH ₁	1997 11 18.0	03 33.87 +16 42.0 16.5	-1.01 - 1.5	0.9/17.6	23349
3138 T-1	1997 11 15.3	03 22.81 +12 30.8 17.1	-1.01 - 5.4	2.8/14.1	30914	1995 AA ₁	1997 11 18.2	03 34.78 +08 59.2 16.7	-1.05 - 1.5	4.8/16.6	30901
1976 UY	1997 11 15.4	03 22.88 +20 23.7 14.5	-0.85 -11.0	0.8/15.9	30892	1990 TO	1997 11 18.3	03 34.79 +16 25.2 15.7	-1.15 + 0.5	1.4/17.9	27567
(7041)	1997 11 15.4	03 23.06 +10 49.7 16.2	-0.98 - 7.8	3.6/13.6	27301	1979 OQ ₅	1997 11 18.3	03 34.92 +25 42.3 17.2	-0.87 - 3.3	1.9/19.6	21965
1992 YC ₁	1997 11 15.4	03 23.13 +16 41.5 17.6	-0.83 - 2.6	0.5/15.1	30896	1986 PM	1997 11 18.5	03 35.77 +26 56.9 16.9	-1.16 - 4.8	2.8/20.0	30893
1989 GE	1997 11 15.6	03 23.89 +18 41.8 16.7	-1.16 - 1.4	0.0/15.7	30894	1977 XZ ₂	1997 11 18.6	03 36.22 +21 10.0 17.1	-0.90 - 2.9	0.6/19.0	28314
1986 QN ₁	1997 11 15.8	03 24.82 +39 12.1 16.9	-1.10 - 1.3	7.2/20.1	25079	1981 ET ₁₅	1997 11 18.6	03 36.42 +43 46.6 17.2	-1.26 - 0.4	9.0/23.1	22948
1990 TG ₅	1997 11 15.9	03 25.35 +25 50.5 15.8	-1.05 - 5.6	3.6/18.0	30870	(7114)	1997 11 18.7	03 36.57 +27 23.9 16.9	-0.90 - 3.4	2.8/20.3	27699
1984 SU ₃	1997 11 16.1	03 25.92 +20 54.0 15.8	-1.07 + 0.4	1.0/16.5	30893	(7367)	1997 11 18.9	03 37.66 +20 02.4 18.4	-0.83 - 2.6	0.2/19.1	28579
1995 CY ₁	1997 11 16.1	03 26.03 +45 57.8 19.1	-1.38 - 8.2	10.1/23.0	25432	1995 EH	1997 11 19.3	03 39.19 +27 36.1 16.6	-1.13 - 1.6	2.9/20.7	30901
1997 UV ₁₄	1997 11 16.1	03 26.08 +12 05.9 16.9	-0.84 - 5.4	2.2/14.7	30887	1995 BT ₂	1997 11 19.3	03 39.24 +17 06.4 14.6	-1.10 - 0.7	1.2/19.0	30874
1981 EK ₁₆	1997 11 16.2	03 26.10 +29 37.3 19.8	-1.17 - 3.1	4.2/18.3	26918	1992 ST ₁	1997 11 19.4	03 39.42 +30 36.7 16.9	-1.01 - 3.6	3.4/21.6	28086
1979 MK ₇	1997 11 16.2	03 26.17 +18 12.7 18.1	-0.84 - 3.9	0.2/16.1	27930	1976 UP ₁₈	1997 11 19.4	03 39.43 +08 39.3 17.6	-0.91 - 6.1	5.5/17.1	22598
1995 DU ₁	1997 11 16.4	03 27.17 -21 21.3 17.3	-1.14 + 2.3	16.2/08.0	30901	1981 EK ₂₁	1997 11 19.5	03 39.93 +30 29.4 18.7	-1.03 - 2.4	3.5/21.5	26919
1993 WQ	1997 11 16.5	03 27.54 +20 04.0 15.1	-1.01 + 0.6	0.6/16.7	30900	1994 CM	1997 11 19.5	03 39.94 +25 33.8 16.4	-1.03 0.0	2.2/20.4	30900
1992 UE ₃	1997 11 16.5	03 27.73 +15 59.8 16.4	-0.92 - 2.3	1.0/16.0	30896	1994 CP ₁₀	1997 11 19.5	03 39.98 +26 22.3 17.4	-0.91 - 2.3	2.1/20.8	30900
1993 TT ₂₆	1997 11 16.6	03 27.87 +15 11.8 18.0	-1.05 - 4.1	1.4/15.9	27567	1997 RP ₇	1997 11 19.6	03 40.41 +23 15.8 16.5	-1.06 - 5.8	1.5/20.4	30878
2503 P-L	1997 11 16.6	03 27.96 +39 33.2 16.5	-1.33 + 2.1	8.7/19.7	27724	1990 RO ₂	1997 11 19.6	03 40.53 +25 47.5 17.9	-1.19 - 4.4	2.5/20.8	28885
1988 DD ₅	1997 11 16.6	03 27.97 +29 50.1 18.1	-1.10 - 5.5	3.6/19.0	27566	1984 SH	1997 11 19.7	03 40.76 +15 19.7 16.7	-1.17 - 3.0	1.8/19.0	27119
1979 SJ	1997 11 16.7	03 28.18 +27 36.0 17.3	-1.21 - 2.4	4.0/18.3	30892	1991 VA ₁	1997 11 19.7	03 41.02 +21 30.8 17.0	-0.82 - 5.2	0.6/20.2	27935
1990 YM	1997 11 16.7	03 28.28 -16 32.6 15.9	-1.19 + 2.9	14.2/10.2	27567	1997 UZ ₈	1997 11 19.8	03 41.19 +17 23.4 16.2	-1.03 - 5.1	0.9/19.4	30886
1979 HW ₆	1997 11 16.7	03 28.36 +19 13.3 17.5	-1.11 - 4.1	0.1/16.8	24758	1991 SC ₁	1997 11 19.8	03 41.25 +23 57.2 17.1	-0.98 - 0.1	1.4/20.5	29615
4133 P-L	1997 11 16.7	03 28.39 +29 14.4 19.0	-1.18 - 2.6	4.2/18.7	30914	1992 OG ₂	1997 11 19.9	03 41.87 +10 33.8 16.2	-0.93 - 2.1	3.8/18.4	29660
1974 ST ₁	1997 11 16.8	03 28.59 +23 07.2 17.7	-1.12 - 3.3	1.8/18.0	27323	1995 OX	1997 11 20.0	03 42.11 +38 58.4 20.3	-0.93 - 4.2	4.4/24.2	28076
1996 NU ₁	1997 11 16.8	03 28.61 +34 49.3 15.7	-1.07 - 4.3	5.6/20.3	28890	1991 PT ₁₁	1997 11 20.0	03 42.14 +14 27.9 16.1	-0.83 - 3.6	2.0/19.1	20024
1980 UM ₁	1997 11 16.8	03 28.70 +24 20.3 16.5	-1.07 - 6.5	2.5/18.0	29132	1996 FE	1997 11 20.1	03 42.30 -05 56.7 17.1	-1.01 -21.0	12.5/11.2	30876
1981 EL ₁₅	1997 11 16.8	03 28.85 +21 19.0 19.8	-0.91 - 4.2	0.7/17.4	26918	1990 QT ₉	1997 11 20.3	03 43.19 +17 22.4 17.7	-1.15 - 3.3	1.0/19.9	28885
2827 P-L	1997 11 16.8	03 28.89 +22 41.3 18.3	-1.12 - 2.2	1.4/17.5	25442	1994 BL ₄	1997 11 20.3	03 43.62 +41 57.8 17.2	-1.18 - 1.9	9.8/24.4	23686
4721 P-L	1997 11 16.8	03 29.01 +21 36.7 18.1	-0.96 - 2.8	0.9/17.4	27732	(7182)	1997 11 20.4	03 43.66 +14 10.8 15.6	-0.80 - 8.1	2.0/19.1	27900
1993 TU ₃₆	1997 11 16.8	03 29.03 +06 04.7 15.7	-1.09 + 1.2	5.5/15.2	30873	1957 JP	1997 11 20.5	03 43.98 +21 16.1 15.9	-1.08 + 0.6	0.5/20.7	30892
1996 JD ₁	1997 11 16.9	03 29.01 +12 52.9 18.0	-1.07 - 4.3	2.4/15.7	30902	1966 BL	1997 11 20.5	03 44.09 +29 53.3 16.0	-1.02 - 4.1	3.7/22.5	30892
1997 RC	1997 11 16.9	03 29.15 +18 11.7 17.6	-0.92 - 2.3	0.3/16.8	30904	1978 VD ₇	1997 11 20.5	03 44.14 +18 19.1 17.8	-0.94 - 1.8	0.5/20.3	29652
1985 CR ₂	1997 11 16.9	03 29.18 +19 42.3 16.2	-1.09 - 4.1	0.3/17.1	30893	(7111)	1997 11 20.7	03 45.02 +13 26.1 16.1	-0.99 - 6.2	2.5/19.4	27698

1993 TH ₃₂	1997 11 20.7	03 45.12 +15 32.8 17.7	-1.04 - 3.2	1.5/20.0	28616
3520 P-L	1997 11 20.7	03 45.19 +21 07.0 16.3	-0.86 - 6.5	0.5/21.1	30888
1991 EA	1997 11 20.9	03 45.76 +30 01.6 16.6	-1.15 - 2.1	4.0/22.6	25226
1997 UA ₉	1997 11 20.9	03 45.93 +19 45.6 15.4	-1.10 + 1.0	0.0/20.9	30887
1980 RE ₁	1997 11 21.0	03 46.16 +08 10.4 18.0	-0.95 - 4.6	4.3/18.8	30892
1996 HD ₁₃	1997 11 21.1	03 46.47 +16 05.4 17.2	-1.09 - 4.1	1.6/20.4	29630
3175 T-2	1997 11 21.1	03 46.63 +24 36.9 18.4	-1.22 - 1.6	1.9/21.8	27322
(7102)	1997 11 21.1	03 46.92 +41 57.6 17.6	-1.04 - 4.5	5.8/26.1	27696
6580 P-L	1997 11 21.2	03 46.88 +18 41.6 16.3	-1.16 - 2.0	0.5/21.0	24120
1995 AW ₂	1997 11 21.2	03 47.14 +21 23.5 16.4	-1.11 - 5.8	0.6/21.5	30901
1991 PE ₅	1997 11 21.3	03 47.43 +20 09.6 16.2	-0.91 - 3.3	0.1/21.4	30470
1981 EH ₁₂	1997 11 21.3	03 47.77 +22 29.2 19.6	-1.07 - 4.6	0.9/21.9	26917
1993 TN ₂₉	1997 11 21.5	03 48.16 +14 46.3 18.9	-1.07 - 2.5	2.1/20.7	27730
1990 VW ₆	1997 11 21.5	03 48.27 +16 18.7 16.4	-1.15 - 1.5	1.6/21.0	24761
(8015)	1997 11 21.5	03 48.32 +20 55.3 15.7	-1.07 - 2.7	0.5/21.7	30856
(7042)	1997 11 21.5	03 48.40 +21 22.6 17.5	-1.11 - 4.1	0.5/21.8	27434
1995 BC ₁₆	1997 11 21.5	03 48.50 +31 18.1 17.0	-1.18 - 4.4	4.5/23.7	30901
1991 RV ₃	1997 11 21.6	03 48.69 +33 08.0 17.7	-0.97 - 2.2	3.9/24.0	30896
(7146)	1997 11 21.7	03 49.01 +19 27.9 16.6	-0.86 - 5.9	0.2/21.6	27707
1996 HC ₂₆	1997 11 21.7	03 49.14 +18 02.3 18.9	-1.10 - 2.3	0.7/21.4	30785
1996 NB ₄	1997 11 21.7	03 49.16 +23 57.5 17.2	-1.09 - 3.5	1.5/22.4	28618
(7020)	1997 11 21.7	03 49.32 +16 31.2 16.8	-1.05 - 3.7	1.4/21.2	27296
1992 UK ₁	1997 11 21.7	03 49.41 +25 33.7 16.8	-0.96 - 5.4	1.9/23.0	27729
1995 HR	1997 11 21.8	03 49.43 +10 05.0 17.6	-0.78 - 4.1	2.7/19.9	28889
1997 VG ₂	1997 11 21.8	03 49.84 +23 09.6 16.8	-0.97 - 4.6	1.6/22.5	30887
(7957)	1997 11 21.9	03 49.95 +32 20.0 17.0	-1.10 - 0.5	4.6/23.7	30749
1996 PJ ₅	1997 11 21.9	03 50.07 +37 47.1 17.8	-1.01 - 2.4	5.7/25.3	30877
1981 EO ₃₂	1997 11 21.9	03 50.15 +23 36.2 19.7	-0.96 - 4.0	1.2/22.6	22271
1990 OH ₁	1997 11 22.1	03 50.90 +19 47.8 17.5	-0.85 - 7.3	0.1/22.1	30781
1988 CQ ₇	1997 11 22.1	03 50.97 +20 40.6 18.1	-1.12 - 2.8	0.2/22.2	23972
4194 T-2	1997 11 22.1	03 51.02 +14 26.5 18.8	-0.90 - 2.7	1.8/21.2	30467
3509 P-L	1997 11 22.1	03 51.12 +61 19.6 17.6	-2.59 + 6.5	19.7/25.8	29668
1979 KD	1997 11 22.5	03 52.45 +08 14.7 17.2	-0.93 - 2.8	3.9/20.5	29653
1990 OH ₂	1997 11 22.5	03 52.80 +26 35.5 17.7	-0.87 - 2.2	1.7/23.7	29657
(7284)	1997 11 22.7	03 53.19 +22 18.1 16.1	-0.77 - 0.8	0.6/23.0	28285
1997 SW ₃₃	1997 11 22.7	03 53.59 +23 25.6 16.3	-0.93 - 0.9	1.1/23.3	30881
1994 AZ ₂	1997 11 22.7	03 53.67 +34 12.0 16.3	-1.09 - 5.5	5.3/25.5	23686
1993 QN ₄	1997 11 22.7	03 53.69 +07 05.6 16.3	-0.93 - 2.0	6.6/20.6	30897
1997 TO ₂₄	1997 11 22.8	03 53.67 +24 59.7 17.1	-1.10 - 0.7	1.8/23.5	30884
1992 YG ₃	1997 11 22.8	03 53.87 +17 50.5 16.0	-0.87 - 2.4	0.8/22.4	29943
1995 AG	1997 11 22.8	03 54.00 +24 15.6 16.0	-1.13 - 5.1	1.8/23.6	30874
6783 P-L	1997 11 22.9	03 54.07 +26 01.2 18.4	-1.04 - 0.8	2.3/23.8	21600
1989 TC	1997 11 23.2	03 55.32 +64 29.5 15.9	-2.81 + 6.4	21.9/28.4	27103
1993 AN	1997 11 23.2	03 55.40 +17 28.9 16.6	-0.88 - 2.0	1.0/22.8	22086
1985 PE	1997 11 23.2	03 55.73 +01 40.5 16.3	-0.80 - 2.1	6.7/20.2	27932
1979 MH ₂	1997 11 23.3	03 55.95 +16 47.0 18.3	-0.84 - 3.2	1.1/22.7	30753
1994 QL	1997 11 23.3	03 56.16 +37 51.5 17.3	-2.22 +13.8	9.0/23.4	25084
1989 GQ ₄	1997 11 23.4	03 56.32 +13 41.7 17.9	-1.09 - 4.5	2.7/22.3	23972
1979 MG ₄	1997 11 23.4	03 56.42 +18 05.7 18.4	-0.83 - 2.5	0.6/23.1	28610
1986 QS ₁	1997 11 23.5	03 57.06 +10 06.8 16.2	-1.05 - 1.5	4.8/22.1	27932
1981 EL ₃	1997 11 23.6	03 57.04 +28 52.0 19.6	-0.99 - 4.4	2.7/25.2	26915

1991 PG ₁₆	1997 11 23.6	03 57.05 +17 03.7 16.6	-0.90 - 1.7	1.3/23.1	20025
1982 QX ₁	1997 11 23.6	03 57.08 +08 16.9 17.8	-1.05 - 1.8	4.7/21.9	30685
1993 OD ₅	1997 11 23.6	03 57.46 +22 12.9 18.1	-1.17 - 3.2	0.7/24.0	27311
1981 EM ₂	1997 11 23.9	03 58.34 +19 00.4 19.2	-1.08 - 6.8	0.6/23.6	26914
1996 PY ₄	1997 11 23.9	03 58.41 -15 07.0 19.6	-0.98 - 2.2	11.0/17.3	28863
1994 YS ₁	1997 11 24.0	03 58.83 +17 23.5 16.0	-1.20 + 2.3	1.6/23.7	30901
6676 P-L	1997 11 24.0	03 58.97 +22 16.5 18.1	-0.92 - 2.5	0.6/24.3	14962
1981 EG ₇	1997 11 24.1	03 59.45 +29 19.5 19.1	-1.16 - 4.4	3.4/25.7	26916
1981 EU ₃₃	1997 11 24.3	04 00.07 +19 11.8 17.4	-1.06 - 6.1	0.6/24.1	30893
1979 ME ₄	1997 11 24.3	04 00.21 -04 11.1 16.8	-0.95 + 3.5	11.1/22.1	30778
5058 T-2	1997 11 24.4	04 00.63 +25 40.6 17.7	-0.96 - 4.3	1.6/25.4	23131
1992 FM ₁	1997 11 24.4	04 00.92 +61 33.8 17.6	-2.08 + 1.0	15.7/30.4	22700
1981 EK ₄₅	1997 11 24.5	04 00.92 +32 08.7 18.3	-1.21 - 3.3	4.8/26.4	25527
1997 SB ₁₀	1997 11 24.6	04 01.34 +19 24.1 16.0	-0.99 - 5.2	0.5/24.4	30880
(7076)	1997 11 24.6	04 01.37 +17 34.2 16.8	-0.89 - 1.9	1.0/24.2	27545
1991 PA	1997 11 24.7	04 01.76 +27 05.9 17.3	-1.00 - 3.4	2.2/25.8	30781
1981 EW ₃₈	1997 11 24.7	04 01.80 +24 38.9 18.9	-0.97 - 3.6	1.3/25.4	30893
1995 BR ₄	1997 11 24.7	04 01.82 +07 16.0 16.0	-1.06 - 2.8	6.0/22.6	30901
1981 EF ₄	1997 11 24.8	04 02.09 +21 18.7 18.5	-1.07 - 5.2	0.2/24.9	26915
6579 P-L	1997 11 24.9	04 02.58 +20 17.6 15.9	-1.10 - 1.1	0.2/24.9	30888
1989 CH	1997 11 24.9	04 02.71 -03 47.4 16.7	-0.90 - 1.3	8.3/20.8	28613
1991 RP ₁₅	1997 11 24.9	04 02.77 +21 19.7 15.8	-0.90 - 1.9	0.2/25.1	30896
1992 RO ₂	1997 11 24.9	04 02.94 +00 35.7 19.0	-0.89 - 3.7	7.0/21.5	25331
6570 P-L	1997 11 24.9	04 02.98 +16 10.9 16.4	-0.94 - 3.7	2.3/24.2	30682
1996 HD ₁	1997 11 25.0	04 03.10 +17 06.0 17.1	-1.17 - 0.6	1.4/24.6	30902
1981 ET ₄₂	1997 11 25.1	04 03.37 +23 44.2 18.2	-1.14 - 3.2	1.1/25.6	24911
(7023)	1997 11 25.1	04 03.47 +12 04.4 16.5	-1.05 - 0.8	3.2/24.0	27296
3057 T-1	1997 11 25.1	04 03.53 +19 55.2 17.7	-1.01 - 3.7	0.3/25.0	29142
1988 RX ₂	1997 11 25.2	04 03.82 +20 06.1 16.7	-0.99 - 2.7	0.3/25.1	30869
1996 FK ₁₂	1997 11 25.3	04 04.63 +48 15.7 17.8	-2.07 + 6.0	12.3/27.2	27328
1993 HQ ₁	1997 11 25.4	04 04.65 +52 12.8 18.2	-2.00 + 3.6	14.3/28.3	23539
1989 NY	1997 11 25.4	04 04.87 +02 11.3 16.3	-1.03 - 0.4	8.1/23.3	30469
1988 RJ ₁₃	1997 11 25.4	04 04.88 +31 23.5 18.3	-1.21 + 1.5	3.8/26.6	29134
1979 SP ₁₄	1997 11 25.6	04 05.47 +17 49.0 16.5	-0.85 - 1.7	1.0/25.2	30287
1981 ET ₁₂	1997 11 25.6	04 05.48 +16 00.8 20.6	-1.07 - 5.5	1.9/24.8	26917
4110 P-L	1997 11 25.6	04 05.95 +16 55.8 18.1	-1.12 - 4.1	1.7/25.1	27457
(7052)	1997 11 25.7	04 06.20 +24 23.3 15.2	-1.28 + 5.1	1.5/26.0	27436
1996 RU ₂₅	1997 11 25.9	04 07.12 +20 10.8 19.0	-0.83 - 2.3	0.2/25.9	29319
1993 VT ₂	1997 11 25.9	04 07.26 -05 18.9 15.7	-1.30 +19.4	14.1/28.9	23342
1995 BQ ₁₅	1997 11 26.0	04 07.27 +24 06.6 17.2	-1.09 - 2.1	1.1/26.5	28617
1991 AH ₁	1997 11 26.1	04 07.71 +21 43.9 17.2	-1.10 - 3.4	0.3/26.2	29134
(7113)	1997 11 26.1	04 07.83 +37 38.6 15.7	-1.04 - 4.4	5.6/29.2	27699
1995 AT ₂	1997 11 26.2	04 08.01 +23 32.8 17.2	-1.20 - 1.6	1.2/26.5	24756
1995 BH ₂	1997 11 26.2	04 08.25 +18 25.7 17.4	-1.13 - 2.5	1.0/25.9	25084
1981 ES ₁₈	1997 11 26.3	04 08.86 +19 07.2 20.5	-1.09 - 3.4	0.7/26.1	26918
1982 UR ₆	1997 11 26.4	04 09.04 +22 46.6 15.9	-1.13 - 1.0	0.8/26.7	30685
1995 GF	1997 11 26.5	04 09.69 +20 26.7 16.2	-1.08 + 0.4	0.2/26.5	30901
1981 EL ₃₈	1997 11 26.5	04 09.76 +04 43.5 18.7	-0.88 - 6.0	6.4/23.4	26922
1992 OO ₁	1997 11 26.7	04 10.38 -02 22.4 16.7	-0.95 - 0.6	8.6/23.6	29660
4294 T-2	1997 11 26.8	04 10.70 +17 12.0 15.7	-1.09 - 1.2	1.9/26.3	25229
1981 EJ ₄₃	1997 11 26.9	04 11.51 +24 55.5 18.2	-1.15 - 3.3	1.6/27.6	27909

1991 GH ₈	1997 11 26.9	04 11.53 +34 07.6	18.7 -1.14 - 0.6	4.2/28.7	25081	1981 EK ₁₃	1997 11 30.0	04 24.57 +20 08.8	17.6 -1.07 - 6.0	0.7/29.8	26917
1210 T-2	1997 11 27.0	04 11.44 +27 04.3	16.9 -1.21 - 2.6	2.4/27.8	28620	1990 QF ₅	1997 11 30.0	04 24.60 +42 29.2	17.1 -1.06 - 1.0	5.8/02.8	28316
1995 DO ₁	1997 11 27.0	04 11.72 +25 12.0	18.1 -1.13 - 1.4	1.4/27.6	30292	(7118)	1997 11 30.1	04 24.83 +05 58.7	16.0 -0.91 - 6.1	6.2/27.3	27700
1996 OS ₂	1997 11 27.1	04 11.98 +23 11.3	18.4 -1.01 - 1.8	0.8/27.4	28303	1993 SB ₁	1997 11 30.3	04 25.70 +31 53.8	16.0 -1.22 - 1.8	4.1/01.6	30452
1967 JP	1997 11 27.1	04 12.20 +26 56.7	17.9 -0.89 - 2.3	1.6/28.0	30892	1981 EX ₁₂	1997 11 30.3	04 25.98 +10 49.1	19.3 -0.89 - 4.3	3.4/28.7	26917
1995 DE	1997 11 27.1	04 12.28 -04 16.0	16.3 -0.93 - 1.1	9.3/23.9	29138	1981 EZ ₂₀	1997 11 30.3	04 26.01 +20 41.3	18.1 -0.98 - 2.6	0.4/30.3	26919
1991 RR ₁	1997 11 27.2	04 12.68 +17 34.8	15.7 -0.86 - 4.8	1.1/26.7	30871	1994 CX ₂	1997 11 30.4	04 26.09 +18 05.1	17.1 -0.91 - 1.5	1.2/30.0	27937
1981 ER ₁₅	1997 11 27.2	04 12.74 +22 39.0	19.2 -1.10 - 4.3	0.6/27.5	22429	1979 QV ₁	1997 11 30.4	04 26.17 +31 39.1	17.6 -1.24 - 3.5	4.0/01.8	30892
1990 UO ₃	1997 11 27.3	04 13.07 +16 28.6	17.0 -1.14 - 0.9	2.0/26.8	29658	1984 SN ₆	1997 11 30.4	04 26.19 +22 16.8	16.3 -1.06 - 1.1	0.2/30.5	30287
4523 P-L	1997 11 27.3	04 13.10 +20 27.5	18.0 -0.56 - 1.5	0.1/27.3	18130	1996 QN ₁	1997 11 30.4	04 26.44 +36 09.0	18.5 -1.03 - 2.0	4.5/02.5	30902
2207 P-L	1997 11 27.6	04 14.51 +31 56.0	17.0 -1.19 - 2.6	4.4/29.2	29141	1991 RP ₂	1997 11 30.4	04 26.46 +13 51.1	17.0 -0.85 - 3.9	2.4/29.3	30896
1970 OF	1997 11 27.8	04 15.26 +32 13.6	16.1 -1.14 - 4.2	4.7/29.7	23346	2055 P-L	1997 11 30.4	04 26.46 +35 43.7	18.7 -1.25 - 2.0	5.1/02.2	28319
(7183)	1997 11 28.0	04 15.94 +04 56.1	16.7 -0.83 - 1.9	5.1/25.7	27900	1996 PY ₇	1997 11 30.5	04 26.53 +17 43.7	17.6 -0.94 - 1.5	1.4/30.0	29115
1988 FW ₂	1997 11 28.1	04 16.19 +13 40.9	16.6 -1.04 - 5.1	3.2/26.9	30894	2061 P-L	1997 11 30.6	04 26.89 +29 07.6	18.2 -1.16 - 2.9	2.6/01.6	27938
1991 NZ ₆	1997 11 28.1	04 16.19 +15 24.0	16.1 -0.92 - 0.9	2.3/27.4	23790	1993 RB ₇	1997 11 30.6	04 27.39 +13 40.4	17.6 -1.07 - 3.5	3.2/29.6	30471
1981 EV ₇	1997 11 28.1	04 16.49 +22 22.2	18.6 -0.97 - 3.8	0.4/28.3	27725	1979 MT ₂	1997 11 30.7	04 27.78 +29 56.5	19.5 -0.92 - 3.4	2.3/02.0	30778
(7026)	1997 11 28.2	04 16.72 +18 06.1	17.4 -1.16 - 1.4	1.3/27.9	27297	1992 NP	1997 11 30.8	04 27.73 +36 53.4	15.7 -1.18 - 6.3	6.0/03.5	27935
1995 DL ₂	1997 11 28.2	04 16.82 +09 02.4	16.6 -1.09 + 2.2	4.6/27.3	30901	1988 BX	1997 11 30.8	04 27.83 +49 51.8	14.6 -1.69 -15.6	14.5/08.6	24117
1992 GO ₄	1997 11 28.2	04 16.97 +17 57.2	17.8 -1.12 - 3.7	1.4/27.8	27935	1994 TV ₁₅	1997 11 30.8	04 27.96 -14 16.2	15.4 -1.10 - 8.1	17.1/23.5	30783
(7164)	1997 11 28.2	04 17.02 +15 32.2	17.2 -1.05 - 2.0	2.0/27.5	27896	1990 UF ₂	1997 12 01.2	04 29.51 +13 38.1	16.9 -1.10 - 5.0	3.4/30.0	30895
1992 WN ₁	1997 11 28.3	04 17.37 +12 43.0	16.5 -0.90 - 1.1	3.4/27.3	21594	1992 SE ₁	1997 12 01.2	04 29.64 +30 07.2	17.2 -1.12 + 1.1	2.7/02.0	28317
1981 EJ ₂₃	1997 11 28.4	04 17.57 +27 56.2	16.8 -1.04 - 2.0	2.5/29.3	28314	1992 RK ₇	1997 12 01.3	04 30.02 +16 44.9	17.6 -1.00 - 1.0	1.8/30.8	21586
1976 YA ₆	1997 11 28.4	04 17.71 +18 20.2	15.9 -1.07 + 1.6	1.0/28.2	25438	1995 DZ ₂	1997 12 01.3	04 30.16 +38 55.8	19.8 -1.34 - 8.3	6.1/04.3	25433
1056 T-2	1997 11 28.5	04 18.20 +27 19.1	18.4 -1.02 - 1.9	2.2/29.4	23131	1978 VP ₁₀	1997 12 01.3	04 30.22 +20 30.3	17.4 -1.10 - 0.6	0.5/01.2	25224
1990 WQ ₃	1997 11 28.5	04 18.33 +14 07.8	17.5 -1.13 - 0.5	2.7/27.8	28885	1990 TQ ₁	1997 12 01.4	04 30.33 +12 10.8	17.0 -1.11 + 0.7	4.7/30.6	27325
1986 QH ₂	1997 11 28.6	04 18.28 +09 09.6	15.5 -1.07 - 0.5	5.5/27.2	30893	1995 BO ₁	1997 12 01.4	04 30.33 +22 38.3	15.9 -1.16 - 4.3	0.3/01.5	30901
1985 RJ ₃	1997 11 28.6	04 18.52 +18 55.0	17.3 -0.84 - 2.2	0.7/28.3	28612	1990 OH ₄	1997 12 01.4	04 30.57 +12 37.2	17.9 -0.82 - 2.3	2.6/30.3	28316
1985 PN	1997 11 28.6	04 18.55 -05 32.3	16.2 -0.80 - 1.0	9.2/24.9	30893	1993 QH ₁₀	1997 12 01.5	04 30.90 +37 31.4	16.4 -1.32 -10.1	5.9/04.7	25531
1988 CE ₂	1997 11 28.6	04 18.70 +32 09.9	16.2 -1.21 - 5.1	5.0/30.5	25327	4627 P-L	1997 12 01.5	04 30.91 +23 46.8	18.5 -1.14 - 1.3	0.9/01.7	24909
1981 EC ₁₆	1997 11 28.6	04 18.76 +23 47.0	18.7 -1.10 - 3.6	0.8/29.0	27725	1979 MK ₅	1997 12 01.6	04 31.51 +19 53.8	17.9 -1.01 - 3.0	0.7/01.4	30892
(7133)	1997 11 28.7	04 19.03 +03 04.8	16.6 -0.97 - 5.3	6.5/25.7	27704	1991 JJ	1997 12 01.7	04 31.61 +24 37.2	15.9 -1.12 + 1.9	0.9/01.9	29659
1981 EG ₄₅	1997 11 28.7	04 19.12 +25 23.9	19.5 -1.14 - 3.8	1.6/29.4	26923	3357 T-3	1997 12 01.7	04 31.97 +24 37.6	16.6 -0.97 - 1.6	1.0/02.1	29315
1981 EG ₂₄	1997 11 28.8	04 19.58 +23 48.4	19.8 -0.96 - 2.5	0.7/29.2	27930	1992 PY ₂	1997 12 01.8	04 32.54 +36 56.0	14.6 -1.14 - 7.8	6.1/04.7	29943
1981 EA ₂₉	1997 11 28.8	04 19.62 +09 23.4	17.1 -0.88 - 4.9	5.2/26.9	22697	1993 NH	1997 12 01.8	04 32.59 +19 19.7	16.9 -1.26 -14.1	1.1/01.4	22827
1997 VX ₅	1997 11 28.9	04 19.66 +04 18.0	16.8 -0.95 - 2.7	6.4/26.5	30887	1992 OC	1997 12 01.9	04 32.55 +44 00.2	20.0 -1.35 - 1.0	7.0/04.7	30782
2017 P-L	1997 11 29.0	04 19.98 +22 32.2	17.5 -1.21 - 4.0	0.5/29.2	18444	1981 EF ₄₂	1997 12 02.0	04 33.05 +23 06.5	19.3 -0.97 - 1.6	0.4/02.2	21968
1994 GC ₁	1997 11 29.0	04 20.43 +20 20.6	16.8 -0.89 - 1.5	0.3/28.9	28318	1992 UE ₂	1997 12 02.1	04 33.83 +20 02.6	16.5 -0.96 - 2.1	0.8/02.0	29616
1978 PS ₂	1997 11 29.1	04 20.76 +19 29.7	16.6 -1.08 - 3.3	0.8/28.9	22947	1992 HL ₄	1997 12 02.2	04 34.04 +31 45.7	17.4 -1.27 - 0.2	3.7/03.2	30896
1996 NA ₄	1997 11 29.1	04 20.79 +19 04.7	17.3 -0.92 - 2.4	0.8/28.8	28319	1992 XL	1997 12 02.2	04 34.15 +17 37.0	15.8 -0.97 + 1.9	1.5/01.9	25340
1986 XF ₁	1997 11 29.1	04 20.93 +24 45.7	15.8 -1.08 - 4.1	1.6/29.7	30894	1988 SU ₂	1997 12 02.4	04 35.07 +18 39.8	17.4 -1.01 - 1.4	1.2/02.1	30272
1986 QG ₂	1997 11 29.2	04 20.98 +13 34.4	18.4 -1.15 - 1.0	3.6/28.4	27119	2167 T-2	1997 12 02.5	04 35.34 +14 14.3	19.8 -1.12 - 3.2	3.0/01.6	27564
1992 SH	1997 11 29.2	04 21.01 +05 53.6	17.1 -0.90 - 3.7	5.1/26.9	21268	1995 FH	1997 12 02.5	04 35.60 +22 20.8	16.5 -1.01 - 6.8	0.1/02.7	30901
1990 RS ₂	1997 11 29.2	04 21.17 +24 26.7	15.6 -1.12 - 3.8	1.4/29.7	25080	(7128)	1997 12 02.6	04 35.54 +21 07.4	16.8 -0.90 - 2.6	0.3/02.5	27703
(7331)	1997 11 29.2	04 21.34 +45 24.1	16.2 -1.24 + 2.2	7.3/01.7	28570	1981 EO ₁₅	1997 12 02.6	04 35.55 +16 35.3	16.3 -0.94 - 4.4	2.1/01.8	25438
2185 T-2	1997 11 29.4	04 21.83 +23 01.4	17.6 -0.89 - 1.6	0.5/29.6	30888	(7055)	1997 12 02.6	04 35.55 +14 32.4	15.8 -1.36 + 7.8	3.1/03.0	27437
1994 GT	1997 11 29.5	04 22.41 +21 10.5	17.1 -0.92 - 1.3	0.1/29.5	30873	6073 P-L	1997 12 02.6	04 35.61 +28 00.2	18.4 -1.03 - 1.9	2.0/03.3	27938
1993 XR	1997 11 29.5	04 22.49 +17 28.6	17.9 -1.07 + 1.2	1.4/29.2	27730	1991 LW	1997 12 02.8	04 36.44 +15 14.5	17.4 -1.05 + 1.2	2.3/02.3	26420
(7124)	1997 11 29.6	04 22.93 +33 08.8	15.5 -0.96 - 6.3	3.5/01.8	27702	1996 JH	1997 12 02.8	04 36.51 +18 48.2	17.3 -1.12 - 3.4	1.3/02.4	28890
1990 MG	1997 11 29.6	04 23.00 +19 14.3	17.0 -1.22 - 1.1	1.0/29.4	25440	1985 RV ₄	1997 12 02.8	04 36.80 +22 28.3	17.0 -0.90 - 1.7	7.5/23.0	30780
1981 EV ₄₂	1997 11 29.8	04 23.60 +34 08.6	20.1 -1.25 - 1.6	4.6/01.4	26922	1988 CY ₂	1997 12 03.0	04 37.41 +27 39.9	18.1 -1.19 - 2.7	2.2/03.7	30894
1996 NW	1997 11 29.8	04 23.73 +22 56.6	18.6 -0.99 - 3.4	0.5/30.1	30877	(7258)	1997 12 03.0	04 37.46 +37 21.7	17.5 -1.17 - 4.8	5.8/05.2	28068

1989 GK ₁	1997 12 03.1	04 37.79 +34 36.0 18.2	-1.00 - 0.9	3.7/04.5	28315	1981 EP ₄₆	1997 12 06.7	04 53.54 +36 03.3 16.8	-1.03 - 1.0	6.8/08.1	26923
1979 MW ₁	1997 12 03.1	04 38.06 +21 17.0 16.6	-1.01 - 4.3	0.3/03.1	30778	1991 RK ₅	1997 12 06.7	04 53.79 +36 49.3 16.5	-1.07 - 0.2	4.5/08.0	28614
1990 SU ₈	1997 12 03.1	04 38.08 +11 25.7 17.6	-1.14 - 1.6	4.2/02.1	18298	1990 QJ ₁	1997 12 06.8	04 54.07 +31 02.8 15.9	-1.24 - 3.5	4.1/08.0	27933
(7231)	1997 12 03.2	04 38.21 +32 48.9 16.4	-0.99 - 0.2	3.3/04.3	28061	1977 DX ₃	1997 12 06.9	04 54.24 +21 44.5 17.0	-0.85 - 0.9	0.2/06.8	28083
1992 SJ	1997 12 03.2	04 38.63 +34 55.5 17.0	-1.18 - 1.4	4.4/04.8	24897	1985 RD ₂	1997 12 06.9	04 54.38 +40 15.6 16.8	-1.35 - 2.4	6.9/08.9	24734
(7047)	1997 12 03.3	04 38.66 -12 35.0 18.5	-0.98 - 1.2	11.4/29.6	27435	1986 QM ₁	1997 12 07.0	04 54.68 +22 19.0 18.4	-1.19 - 1.0	0.1/07.0	29655
1993 RL ₅	1997 12 03.4	04 38.99 +25 59.1 17.0	-1.14 - 3.0	1.7/03.9	30898	1981 ER ₂₇	1997 12 07.0	04 55.21 +35 42.1 17.4	-1.27 - 0.6	6.0/08.2	29653
1995 CW	1997 12 03.4	04 39.12 +11 32.4 17.2	-1.08 - 0.9	4.2/02.4	30874	1992 GX ₄	1997 12 07.1	04 55.33 +26 47.2 17.9	-1.22 - 0.3	1.7/07.4	25215
(7383)	1997 12 03.7	04 40.36 +19 24.6 16.4	-1.06 - 2.1	1.1/03.4	28821	2272 T-2	1997 12 07.3	04 56.41 +34 18.3 16.2	-1.32 - 0.2	5.1/08.0	29669
(7074)	1997 12 03.7	04 40.38 +23 32.7 15.9	-1.24 + 0.3	0.7/03.8	27545	1981 EE ₂₁	1997 12 07.3	04 56.45 +02 31.7 17.5	-0.89 - 2.5	8.4/05.5	26919
1992 RV	1997 12 03.8	04 40.77 +34 24.8 16.7	-1.15 + 0.1	4.9/05.0	30782	1981 EP ₃₂	1997 12 07.4	04 56.77 +37 35.7 20.1	-1.28 - 1.8	5.0/08.9	26921
2251 T-1	1997 12 03.8	04 40.85 +26 54.6 18.1	-1.02 - 1.1	1.7/04.3	22087	1994 CV ₁₆	1997 12 07.4	04 56.83 +20 06.5 18.0	-0.93 - 0.6	0.8/07.3	28087
1981 ET ₄₆	1997 12 04.0	04 41.61 +25 35.0 17.3	-1.02 - 2.0	1.3/04.4	26923	1981 EQ ₃₅	1997 12 07.4	04 56.90 +20 54.0 21.6	-0.98 - 1.4	0.6/07.3	26921
1985 UQ ₄	1997 12 04.0	04 41.81 +18 56.0 16.5	-0.86 - 1.1	1.1/03.7	28612	1991 RB ₁₁	1997 12 07.5	04 57.04 +20 15.2 16.5	-0.90 - 1.3	0.9/07.3	29135
1979 MK ₄	1997 12 04.0	04 41.99 +15 59.8 19.7	-1.12 - 1.3	2.4/03.5	30778	1991 GC ₁	1997 12 07.7	04 57.89 +40 52.8 17.9	-1.28 + 0.4	5.8/08.9	28886
1981 EK ₂₃	1997 12 04.2	04 42.52 +17 33.8 18.6	-1.11 - 2.4	1.8/03.7	27453	(7148)	1997 12 07.7	04 58.09 +18 03.2 15.5	-1.11 - 4.1	2.0/07.3	27707
1995 CM	1997 12 04.2	04 42.72 +28 29.5 17.8	-1.23 - 0.7	2.4/04.8	24907	1988 DZ ₄	1997 12 07.7	04 58.14 -11 10.7 17.4	-1.19 - 2.4	14.9/04.7	27119
4090 T-2	1997 12 04.2	04 42.84 +19 17.7 18.3	-1.05 - 1.0	1.0/04.0	28088	1980 VA	1997 12 07.8	04 58.45 +15 09.7 15.9	-0.95 - 1.0	4.3/07.3	30685
1979 MZ ₇	1997 12 04.4	04 43.35 +16 52.4 19.6	-1.14 - 1.8	2.3/03.9	30779	1996 NX ₄	1997 12 07.8	04 58.64 +14 33.7 16.9	-0.98 - 0.4	3.1/07.3	28319
1995 DQ ₁	1997 12 04.4	04 43.56 +15 41.0 16.5	-1.07 + 0.7	2.9/04.0	30472	1985 JN ₁	1997 12 07.9	04 58.67 +21 38.3 17.3	-1.16 + 0.6	0.4/07.9	30893
1991 CM ₃	1997 12 04.5	04 43.91 +15 12.0 15.7	-1.03 - 0.1	3.3/03.9	28885	1981 EK ₂	1997 12 07.9	04 58.76 +23 44.6 18.6	-0.98 - 3.6	0.3/08.0	26914
1979 OH ₁₀	1997 12 04.6	04 44.19 +04 29.6 19.0	-0.82 - 0.7	5.6/02.9	29296	1996 NF ₄	1997 12 08.0	04 59.31 +32 22.0 16.8	-1.02 - 3.2	3.4/09.1	27938
1979 SC	1997 12 04.6	04 44.53 +27 06.6 17.3	-1.21 - 0.7	1.8/05.1	30867	1978 XU	1997 12 08.0	04 59.40 +14 48.5 16.2	-1.05 - 4.2	3.4/07.2	27930
1981 EV ₂₅	1997 12 04.6	04 44.65 +08 18.2 17.3	-0.92 - 2.0	5.5/03.3	26919	1981 ED ₄₃	1997 12 08.2	04 59.90 +32 58.3 18.0	-1.08 - 0.8	3.2/09.0	28314
1996 JY	1997 12 04.6	04 44.70 +08 09.3 19.0	-1.02 - 2.7	4.9/03.2	27457	1991 PG ₅	1997 12 08.4	05 00.98 +21 59.8 17.7	-0.95 - 1.6	0.3/08.4	28086
1992 GM ₄	1997 12 04.7	04 45.12 +16 04.2 17.3	-1.07 - 3.9	2.6/04.1	25340	1992 SW ₁₆	1997 12 08.4	05 01.04 +21 52.2 19.5	-1.01 - 1.7	0.3/08.4	30451
(7121)	1997 12 04.8	04 45.27 +18 29.0 17.1	-0.93 - 1.5	1.3/04.5	27701	1993 TZ ₃₁	1997 12 08.4	05 01.27 +29 46.5 18.4	-1.25 + 1.4	2.7/08.8	27557
1987 YC ₁	1997 12 04.8	04 45.40 +21 46.6 18.5	-0.93 - 1.6	0.2/04.8	29095	1989 YP ₅	1997 12 08.8	05 02.55 +15 30.7 16.7	-1.03 + 0.3	2.9/08.4	21973
1987 MA ₁	1997 12 05.2	04 47.22 +04 58.8 17.7	-0.91 - 0.8	5.2/03.8	28085	3211 T-2	1997 12 08.9	05 03.44 +23 03.5 18.5	-0.88 - 0.6	0.1/09.0	15728
1981 EA ₂₂	1997 12 05.3	04 47.26 +02 58.4 18.0	-0.89 - 1.9	6.7/03.2	22598	1992 WR ₂	1997 12 08.9	05 03.47 +23 35.7 16.3	-0.97 - 0.4	0.3/09.0	28074
1982 UF ₇	1997 12 05.3	04 47.42 +14 57.6 16.1	-0.91 - 4.0	2.7/04.4	30468	1992 DK ₈	1997 12 08.9	05 03.50 +16 48.7 16.9	-1.16 - 3.6	2.7/08.4	27308
1995 DR ₁	1997 12 05.4	04 47.99 +08 53.9 16.7	-1.06 + 0.3	5.9/04.4	30874	1981 EX ₁₀	1997 12 09.0	05 03.63 +14 41.9 19.7	-0.92 - 2.3	2.4/08.3	22492
1981 EE ₁₄	1997 12 05.5	04 48.59 +15 33.2 18.7	-1.07 - 3.7	2.7/04.8	25338	6629 P-L	1997 12 09.0	05 03.88 +17 36.6 17.3	-0.57 - 0.7	1.0/08.7	28088
(7125)	1997 12 05.5	04 48.60 +18 56.6 17.0	-1.08 - 2.4	1.4/05.2	27702	1988 SF ₃	1997 12 09.2	05 04.85 +32 23.7 16.4	-1.27 + 6.2	4.0/09.3	25439
1979 KM	1997 12 05.6	04 48.56 +12 08.3 19.1	-1.10 - 1.5	3.7/04.7	27930	1981 EA ₉	1997 12 09.5	05 06.09 +35 05.0 17.5	-1.31 - 3.3	5.5/10.9	22823
1994 AT ₂	1997 12 05.6	04 48.62 +22 23.3 16.9	-0.99 - 3.5	0.0/05.6	23242	1993 DJ	1997 12 09.5	05 06.11 -17 40.1 16.8	-1.23 + 5.0	18.7/09.2	30897
1995 AM	1997 12 05.9	04 50.40 +15 32.0 17.1	-1.17 + 4.7	4.1/05.9	30901	1996 NF ₃	1997 12 09.6	05 06.09 +07 40.6 15.9	-0.94 + 0.7	5.9/08.8	28319
1978 SA ₇	1997 12 06.0	04 50.31 +35 15.8 15.9	-1.11 - 1.8	5.4/07.4	25077	1981 EE ₂₉	1997 12 09.6	05 06.09 +28 43.3 18.8	-1.18 - 3.5	2.7/10.2	22271
1981 EU ₃₀	1997 12 06.0	04 50.46 +33 51.7 18.9	-1.26 - 2.4	4.8/07.2	26920	(7668)	1997 12 09.6	05 06.17 +19 11.0 17.9	-1.09 - 1.4	1.3/09.4	29904
1994 GR ₉	1997 12 06.0	04 50.79 +23 03.9 17.0	-0.85 - 1.4	0.2/06.2	28318	4062 T-1	1997 12 09.6	05 06.28 +07 16.1 17.6	-0.81 - 1.3	4.8/08.4	29938
(7134)	1997 12 06.2	04 51.19 +14 36.0 16.7	-1.03 - 4.9	2.7/05.2	27704	1996 PR ₁	1997 12 09.6	05 06.36 +22 05.4 18.3	-0.91 - 1.1	0.2/09.6	30902
1986 PK ₆	1997 12 06.2	04 51.68 +22 59.2 16.7	-1.17 - 3.4	0.2/06.3	27727	1995 DJ ₁	1997 12 09.6	05 06.56 +25 18.2 17.2	-1.10 - 1.7	0.8/09.9	29138
1994 CF ₁	1997 12 06.3	04 51.83 +36 58.0 15.7	-1.11 - 6.6	6.2/08.6	24119	1981 EG ₄	1997 12 09.7	05 06.63 +26 22.2 18.5	-1.17 - 3.9	1.4/10.1	26915
1996 QC	1997 12 06.3	04 51.84 +20 25.5 17.3	-0.96 - 1.3	0.7/06.2	28619	1993 TU ₂₀	1997 12 09.7	05 06.83 +35 23.5 17.3	-1.35 + 2.1	5.4/10.2	25340
1986 PB	1997 12 06.3	04 52.00 -27 05.4 17.8	-1.19 + 4.0	23.0/05.3	24385	(7244)	1997 12 09.7	05 06.94 +19 08.5 16.9	-0.94 - 0.9	1.3/09.5	28064
1981 SN	1997 12 06.3	04 52.00 +16 51.1 16.6	-1.03 - 3.8	2.4/05.7	30893	1981 EW ₁₈	1997 12 09.9	05 07.68 +34 12.7 18.0	-1.28 - 1.7	4.6/10.9	26918
1992 EB ₈	1997 12 06.4	04 52.39 +20 03.2 16.0	-1.13 - 1.8	1.2/06.2	25650	3086 P-L	1997 12 09.9	05 07.83 +20 10.0 17.3	-0.90 - 3.5	0.8/09.7	28619
1981 EA ₄₇	1997 12 06.5	04 53.02 +34 02.5 18.7	-1.24 - 1.7	5.4/08.0	26923	1981 JS ₂	1997 12 10.0	05 07.98 +26 11.8 18.1	-1.15 - 1.3	1.2/10.3	29132
1992 OK	1997 12 06.6	04 53.22 +21 10.2 17.0	-1.07 - 5.5	0.6/06.5	21267	6132 P-L	1997 12 10.1	05 08.36 +23 23.8 18.8	-1.18 - 2.1	0.2/10.2	30914
1981 EG ₂₅	1997 12 06.6	04 53.31 +35 55.1 20.4	-1.05 - 1.4	3.5/07.9	28581	5008 P-L	1997 12 10.2	05 08.79 +35 30.0 18.9	-1.26 - 0.6	5.3/11.0	25076
(7075)	1997 12 06.7	04 53.39 +03 02.6 16.5	-0.93 - 1.8	7.2/05.0	29893	1996 TZ ₃₆	1997 12 10.2	05 09.08 +21 33.0 18.6	-0.58 - 0.9	0.3/10.2	28309

1992 EL ₃₅	1997 12 10.2	05 09.10 +14 04.9 18.4	-1.11 - 1.5	3.4/09.7	27935	1982 HJ	1997 12 13.8	05 24.88 +28 05.7 17.0	-1.24 + 1.4	1.8/14.0	28084
1981 EN ₂₃	1997 12 10.3	05 09.29 +25 45.6 20.5	-1.17 - 1.4	1.0/10.5	24894	1993 TS ₃₃	1997 12 13.9	05 25.27 +18 32.7 16.7	-1.08 + 1.5	2.2/13.9	27567
1981 EC ₃	1997 12 10.5	05 10.26 +18 01.1 19.9	-1.08 - 3.2	1.7/10.1	30779	1994 AY ₁	1997 12 14.0	05 25.50 +20 29.8 15.6	-1.01 - 0.6	1.2/13.9	27730
1990 VL ₄	1997 12 10.6	05 10.77 +15 10.0 17.1	-1.15 + 1.9	3.4/10.4	24739	1989 TK ₁₆	1997 12 14.2	05 26.31 +19 53.3 18.4	-1.10 - 0.9	1.2/14.1	25329
1976 SC	1997 12 10.7	05 10.93 +36 00.1 15.7	-1.20 - 2.0	5.7/11.8	27930	1990 QR ₅	1997 12 14.2	05 26.65 +20 44.0 18.0	-0.85 - 0.3	0.7/14.2	30653
1979 HN ₅	1997 12 10.7	05 11.16 +18 49.2 16.7	-0.89 + 0.4	1.2/10.5	25326	1991 TQ	1997 12 14.3	05 26.88 +25 34.5 17.9	-0.95 + 0.9	0.7/14.4	25538
1986 TC	1997 12 10.7	05 11.35 +32 55.6 17.2	-1.27 - 1.6	4.3/11.5	29655	1995 FT	1997 12 14.3	05 26.97 +18 13.8 16.9	-1.08 - 0.3	1.9/14.1	28087
1992 ST ₂₆	1997 12 11.0	05 12.48 +25 53.3 15.1	-1.02 - 3.3	1.1/11.3	28317	(7260)	1997 12 14.4	05 27.27 +25 08.0 16.9	-0.98 + 0.1	0.7/14.5	28068
1992 YL ₂	1997 12 11.0	05 12.63 +18 34.1 15.3	-0.95 + 2.6	1.5/11.0	23341	1981 EK ₄₀	1997 12 14.4	05 27.71 +15 52.3 17.8	-0.97 - 1.1	2.8/14.2	26922
1981 EN ₄₁	1997 12 11.1	05 12.83 +20 05.6 19.7	-0.99 - 0.8	1.0/11.0	26922	1992 JD ₃	1997 12 14.5	05 28.05 +29 40.0 16.9	-1.27 + 1.7	2.6/14.7	30896
1995 AJ	1997 12 11.1	05 12.91 +28 03.0 16.3	-1.27 - 4.3	2.1/11.6	28889	1993 QY ₉	1997 12 14.7	05 28.71 +16 11.5 18.7	-1.15 + 0.4	2.8/14.5	29944
7620 P-L	1997 12 11.1	05 12.92 +29 16.7 19.8	-1.23 - 0.4	2.2/11.5	27321	1317 T-2	1997 12 14.7	05 29.01 +32 39.1 19.8	-1.19 0.0	3.3/15.1	27939
1991 SC ₂	1997 12 11.2	05 13.34 +20 07.6 17.4	-0.93 - 0.4	1.0/11.1	25081	1996 OQ	1997 12 14.8	05 29.20 +24 44.7 19.1	-1.12 - 1.3	0.5/14.9	27722
4276 P-L	1997 12 11.2	05 13.51 +31 48.5 19.0	-1.29 - 1.1	3.3/11.8	30914	1990 OF ₁	1997 12 15.0	05 30.04 +03 54.2 17.3	-0.80 + 0.2	5.3/14.5	27933
1981 EV ₄₁	1997 12 11.4	05 14.23 +26 54.4 18.4	-1.04 - 1.5	1.5/11.7	22430	1992 YS ₂	1997 12 15.2	05 30.84 +23 43.3 16.1	-0.96 + 0.4	0.2/15.2	30896
1995 CM ₁	1997 12 11.6	05 15.07 +39 25.6 16.9	-1.33 - 1.4	6.4/13.0	27731	1979 MU ₂	1997 12 15.2	05 30.86 +15 20.5 20.3	-0.85 - 0.3	2.3/14.9	28293
(7108)	1997 12 11.6	05 15.23 +18 40.8 16.2	-0.92 - 1.5	1.7/11.4	27698	1979 MF	1997 12 15.2	05 31.05 +13 44.2 18.0	-1.14 - 0.5	3.6/14.9	27930
(7364)	1997 12 11.8	05 15.84 +19 14.4 18.7	-1.16 - 1.4	1.5/11.6	29587	(7412)	1997 12 15.2	05 31.14 +22 17.9 17.8	-0.85 - 0.1	0.3/15.2	28829
1978 NY	1997 12 11.8	05 16.20 +30 29.0 16.6	-1.20 - 4.0	3.3/12.6	25526	1991 RQ ₇	1997 12 15.2	05 31.21 +32 31.6 17.3	-1.02 - 2.3	2.7/15.9	28615
1986 VR ₅	1997 12 11.9	05 16.17 +24 27.3 16.2	-1.12 - 4.8	0.6/12.0	28296	1981 WO	1997 12 15.4	05 31.77 +38 10.4 16.4	-1.11 + 1.4	5.3/15.7	29654
1992 HG ₄	1997 12 11.9	05 16.19 +21 49.7 17.6	-1.11 - 1.4	0.4/11.8	24913	1989 SM ₈	1997 12 15.4	05 32.09 +25 46.9 17.2	-1.18 - 0.3	1.0/15.6	20505
1988 CV ₄	1997 12 11.9	05 16.33 -02 05.5 18.0	-0.80 - 1.3	7.3/10.4	28315	1990 UK ₁	1997 12 15.5	05 32.18 +22 03.7 16.4	-1.18 - 3.5	0.6/15.4	27454
1996 GN ₁₉	1997 12 11.9	05 16.53 +16 24.6 17.1	-1.17 - 1.9	2.6/11.6	28862	1981 ES ₃₇	1997 12 15.6	05 32.55 +19 39.7 20.1	-1.15 - 2.5	1.5/15.4	26922
1996 QD	1997 12 12.2	05 17.75 +09 55.8 18.8	-0.95 - 2.8	4.3/11.3	30877	1985 VB ₁	1997 12 15.6	05 32.63 -06 28.1 19.2	-0.85 + 3.2	8.3/16.3	27305
1981 DJ ₁	1997 12 12.2	05 17.77 +25 30.1 18.8	-1.17 - 3.8	1.0/12.5	26914	1996 JR ₁	1997 12 15.6	05 32.86 +34 39.0 17.8	-1.51 + 7.4	4.4/15.2	27457
1990 UB ₃	1997 12 12.2	05 17.84 +28 03.2 16.0	-1.13 - 0.9	2.6/12.5	30895	1988 ER ₁	1997 12 15.6	05 32.89 +32 59.3 16.9	-1.25 + 0.8	3.7/15.9	29941
1982 BE ₁	1997 12 12.3	05 18.08 +13 26.8 15.7	-0.97 + 2.0	4.6/12.1	29132	3163 T-2	1997 12 15.6	05 33.00 +24 06.0 18.8	-0.91 + 0.3	0.2/15.7	28083
1981 EX ₂₈	1997 12 12.5	05 18.94 +29 20.0 17.8	-1.20 - 3.1	2.4/13.0	27726	5065 T-2	1997 12 15.8	05 33.81 +17 22.5 18.3	-1.06 - 5.4	2.5/15.4	22701
4125 T-2	1997 12 12.5	05 19.04 +05 00.0 19.2	-0.80 - 0.8	5.5/11.5	29314	1989 TP ₁₁	1997 12 15.8	05 33.83 +17 34.8 16.7	-1.09 - 1.0	2.3/15.7	22811
1978 RM ₇	1997 12 12.5	05 19.10 +22 16.0 18.6	-1.12 - 1.5	0.3/12.5	30892	6085 P-L	1997 12 15.8	05 33.88 +20 41.1 18.2	-1.14 - 0.9	1.0/15.8	28319
(7161)	1997 12 12.6	05 19.59 +20 53.5 16.7	-1.12 - 1.8	1.0/13.0	27895	(7197)	1997 12 16.0	05 34.44 +14 50.6 15.5	-0.97 + 3.3	4.0/16.1	27904
1993 UH ₁	1997 12 12.6	05 19.62 -08 55.4 18.6	-1.03 - 3.0	11.2/10.5	30900	1993 TS ₂₀	1997 12 16.0	05 34.78 +20 03.6 18.7	-1.14 - 0.3	1.3/16.0	27715
1985 SG ₃	1997 12 12.7	05 19.90 +13 39.9 17.4	-0.85 - 2.9	2.7/12.0	28084	1993 SX ₆	1997 12 16.1	05 35.13 +32 01.2 17.0	-1.25 + 0.1	3.9/16.4	30899
(7316)	1997 12 12.8	05 20.54 +17 16.2 16.7	-0.96 + 0.7	2.3/12.7	28292	9535 P-L	1997 12 16.1	05 35.22 +13 19.9 18.2	-0.95 - 0.2	3.6/15.9	29668
1993 TN	1997 12 12.8	05 20.62 +22 17.0 16.0	-1.16 + 0.6	10.1/02.0	24914	1996 RJ ₄	1997 12 16.4	05 36.52 +20 08.8 19.2	-1.01 - 0.2	1.1/16.4	29115
1981 ES ₁₇	1997 12 12.9	05 20.58 +22 57.8 18.0	-1.01 - 1.7	8.6/02.0	26918	1993 QD ₄	1997 12 16.5	05 36.64 +28 05.0 17.5	-1.22 - 1.0	2.1/16.7	23791
(7246)	1997 12 12.9	05 20.67 +36 16.8 16.0	-1.09 + 2.9	5.0/13.1	28065	1991 VW ₈	1997 12 16.5	05 36.69 +20 30.2 18.3	-0.90 - 0.2	0.9/16.5	30470
1995 FQ	1997 12 13.0	05 21.04 +25 20.3 17.4	-1.03 - 4.9	0.7/13.2	30875	1992 FG	1997 12 16.5	05 36.75 +32 35.6 17.0	-1.28 + 0.1	3.5/16.8	25340
4213 P-L	1997 12 13.0	05 21.26 +35 00.7 19.1	-1.03 - 1.0	3.7/13.7	27938	4172 T-2	1997 12 16.5	05 36.88 +20 41.2 16.9	-1.11 + 1.0	1.1/16.5	27939
1981 EE ₄₅	1997 12 13.0	05 21.30 +38 18.5 17.6	-1.17 + 0.3	5.2/13.7	26923	1981 ED ₈	1997 12 16.5	05 36.90 +28 31.1 17.9	-1.20 - 2.4	2.3/16.8	26916
(7058)	1997 12 13.1	05 21.59 +18 12.6 15.5	-1.10 - 3.6	2.4/12.8	27438	1994 AO ₂	1997 12 16.6	05 37.37 +37 09.4 16.2	-1.18 - 5.7	6.1/18.0	29944
1982 UE ₆	1997 12 13.1	05 21.65 +26 49.5 15.7	-1.10 - 0.1	1.8/13.3	27726	3266 T-1	1997 12 16.8	05 37.90 +24 32.7 18.3	-0.91 - 0.4	0.4/16.9	22432
4556 P-L	1997 12 13.1	05 21.72 +26 07.2 17.4	-0.98 - 0.1	1.0/13.3	19875	3177 T-2	1997 12 16.8	05 37.93 +23 35.7 17.8	-1.20 + 0.1	0.1/16.8	27732
1981 EK ₃₈	1997 12 13.3	05 22.53 +26 41.3 19.6	-1.18 - 2.4	1.5/13.6	26922	1996 PO ₈	1997 12 16.8	05 38.03 +09 07.1 18.7	-1.02 + 1.0	5.2/16.7	30279
1981 JE ₂	1997 12 13.3	05 22.62 +24 42.4 17.4	-1.16 - 0.1	0.6/13.4	28882	1996 NS ₃	1997 12 16.8	05 38.10 +20 12.5 18.5	-1.05 0.0	1.1/16.8	30877
1995 BF ₁	1997 12 13.3	05 22.71 +27 12.2 16.6	-1.25 - 2.7	1.7/13.6	30664	1993 BD ₁₃	1997 12 16.8	05 38.14 +27 32.9 17.3	-0.93 - 1.6	1.3/17.0	26564
(7625)	1997 12 13.5	05 23.57 +07 42.2 18.0	-0.93 - 1.6	5.1/12.8	29606	1996 HJ ₂₃	1997 12 16.9	05 38.33 +18 35.6 16.8	-1.18 + 0.7	2.1/16.9	28088
1987 OT	1997 12 13.5	05 23.63 +10 46.0 18.2	-0.92 - 0.7	3.7/13.0	30894	1989 EJ ₁	1997 12 16.9	05 38.34 +16 21.9 17.5	-1.18 - 0.4	2.9/16.7	28613
1986 VY	1997 12 13.5	05 23.68 +31 18.5 15.5	-1.12 - 2.1	4.2/14.1	30894	1980 LY	1997 12 17.1	05 39.38 +21 16.2 17.5	-1.22 + 1.1	0.8/17.1	25647
(7014)	1997 12 13.6	05 23.79 +18 11.0 17.1	-1.16 - 1.3	2.0/13.4	27294	1996 PE	1997 12 17.1	05 39.51 +20 47.2 18.2	-1.00 + 0.9	0.9/17.1	30902
1986 RQ	1997 12 13.6	05 23.97 +11 08.1 16.7	-1.10 - 3.1	4.8/12.9	27932	1993 TM ₆	1997 12 17.2	05 40.01 +28 57.8 18.5	-1.23 - 0.7	2.3/17.4	25216

7075 P-L	1997 12 17.2	05 40.09 +11 10.5 18.0	-0.88 - 1.5	3.9/16.9	20516	4008 T-3	1997 12 21.0	05 56.76 +22 02.0 15.7	-1.23 + 2.7	0.6/21.1	29949
(7059)	1997 12 17.3	05 40.34 +25 15.6 17.7	-1.26 + 0.9	0.8/17.4	27438	4030 P-L	1997 12 21.0	05 56.85 +25 09.4 17.0	-1.03 - 1.0	0.6/21.1	29141
1996 PM ₃	1997 12 17.3	05 40.46 +02 59.8 17.6	-0.95 + 2.2	8.5/17.3	27924	1981 EH ₁₀	1997 12 21.0	05 56.97 +31 33.6 18.2	-1.26 - 2.3	3.5/21.3	26916
1996 OE	1997 12 17.4	05 40.70 +25 25.4 19.5	-1.14 + 0.4	0.8/17.5	27938	1990 WT ₆	1997 12 21.2	05 57.40 +14 07.6 17.4	-1.06 + 0.6	4.6/21.3	27934
1996 VS	1997 12 17.4	05 40.80 +10 44.8 18.0	-0.80 - 1.0	3.6/17.0	29116	1995 ED ₈	1997 12 21.2	05 57.47 +59 20.6 17.4	-1.98 - 0.2	13.2/20.6	30901
1978 VK ₈	1997 12 17.8	05 42.29 +23 22.3 16.8	-1.00 + 0.6	9.6/07.0	29652	1991 RX ₄	1997 12 21.2	05 57.64 +12 04.8 18.1	-0.88 - 1.0	3.7/21.1	20508
1981 EM ₄₅	1997 12 17.8	05 42.73 +38 14.0 19.5	-1.17 - 2.0	5.1/18.6	23245	(7322)	1997 12 21.2	05 57.67 +46 09.6 17.1	-1.15 0.0	6.7/21.5	28567
(7351)	1997 12 17.8	05 42.74 +24 01.0 16.9	-1.09 + 2.0	9.0/28.0	28576	1996 SR ₇	1997 12 21.2	05 57.68 +24 17.8 17.7	-1.01 - 0.7	0.3/21.3	28619
1996 OB ₁	1997 12 17.9	05 43.00 +19 42.6 21.2	-1.10 0.0	1.3/18.0	27723	1996 OB	1997 12 21.3	05 58.08 +20 54.0 18.7	-1.15 - 1.3	1.1/21.3	30785
1981 EL ₁₀	1997 12 18.0	05 43.40 +27 34.5 19.0	-1.03 - 1.6	1.4/18.2	28611	6809 P-L	1997 12 21.3	05 58.22 +23 44.3 19.9	-1.21 + 0.4	0.1/21.4	28319
1995 EO	1997 12 18.1	05 43.92 +20 23.0 17.6	-1.13 - 2.3	1.4/18.0	29664	1981 ET ₃₀	1997 12 21.4	05 58.56 +12 36.2 18.9	-1.09 + 0.2	4.6/21.4	26920
1995 BU ₄	1997 12 18.2	05 44.19 +39 11.5 17.6	-1.38 + 1.0	8.0/18.5	27449	1996 TR ₁₄	1997 12 21.5	05 58.90 +31 51.6 18.4	-0.93 + 0.5	2.2/21.5	29631
6097 P-L	1997 12 18.3	05 44.55 +23 44.0 18.7	-1.16 - 0.9	0.1/18.3	27732	(7178)	1997 12 21.5	05 59.01 +26 29.9 16.2	-1.26 - 0.5	1.3/21.6	27899
(7206)	1997 12 18.3	05 44.74 +14 20.5 16.9	-0.90 + 2.2	2.9/18.4	27906	1979 MG ₆	1997 12 21.6	05 59.24 +20 58.5 18.6	-1.17 - 2.2	1.0/21.6	30753
4204 P-L	1997 12 18.4	05 45.38 +10 38.0 18.8	-0.87 - 1.7	4.2/18.1	28607	1990 BB ₂	1997 12 21.6	05 59.32 +34 30.2 16.0	-1.20 - 4.3	4.5/22.1	25649
4086 T-3	1997 12 18.5	05 45.50 +20 41.3 19.3	-1.22 + 1.1	1.1/18.5	27458	1978 SP ₅	1997 12 21.8	05 59.99 +17 11.6 16.5	-0.97 - 0.1	2.3/21.8	29939
1981 ET ₄₁	1997 12 18.6	05 45.84 +09 02.4 17.8	-1.07 + 0.4	6.2/18.5	30868	1992 SW ₁₇	1997 12 21.8	06 00.07 +27 53.7 15.3	-1.12 - 5.7	1.7/22.1	28086
1991 PN ₁₀	1997 12 18.6	05 46.25 -16 23.1 17.5	-1.17 + 1.8	17.5/19.0	27935	1981 DA ₁	1997 12 21.8	06 00.19 +13 29.0 18.7	-0.96 - 2.7	3.3/21.5	30271
4023 T-1	1997 12 18.7	05 46.30 +09 13.6 16.6	-0.98 + 0.1	7.5/18.5	21952	1993 SL ₃	1997 12 21.8	06 00.27 +58 54.6 17.2	-1.98 + 1.4	12.3/21.8	30899
1995 CY	1997 12 18.8	05 47.06 +24 05.7 16.1	-1.20 + 2.8	0.3/18.9	29664	1992 UX ₄	1997 12 21.8	06 00.42 +07 27.5 14.7	-0.94 - 9.3	7.6/20.4	27729
1993 TJ ₁₅	1997 12 18.9	05 47.47 +32 54.6 19.0	-1.29 + 0.5	3.5/19.1	25642	6109 P-L	1997 12 22.0	06 00.91 +28 15.0 18.7	-1.11 - 0.4	1.7/22.0	27926
1985 FE ₃	1997 12 19.0	05 48.06 +22 20.2 16.6	-1.21 + 2.6	0.4/19.1	25225	1987 SU	1997 12 22.0	06 01.11 +30 29.3 16.2	-1.31 - 0.6	3.3/22.1	29941
1951 SY	1997 12 19.1	05 48.43 -12 01.5 18.7	-0.98 + 3.5	14.9/23.0	28610	1978 VU ₅	1997 12 22.0	06 01.24 +20 01.0 18.4	-1.09 - 0.2	1.4/22.1	27708
1989 TN	1997 12 19.2	05 48.57 +22 17.2 17.9	-1.13 + 1.0	0.4/19.2	24582	1996 TX ₁₆	1997 12 22.0	06 01.37 +13 24.7 18.0	-0.89 - 1.4	3.2/22.0	28598
1996 TO ₃	1997 12 19.3	05 49.14 +30 47.2 18.3	-1.01 - 2.4	2.4/19.6	30785	3151 T-2	1997 12 22.1	06 01.34 +29 29.1 16.8	-1.23 + 1.4	2.9/22.0	24909
1996 MU	1997 12 19.4	05 49.37 +19 04.1 20.1	-1.38 + 9.7	1.7/19.8	30785	1992 UN ₄	1997 12 22.1	06 01.34 +27 08.1 15.0	-1.07 + 4.7	1.5/21.9	25441
1981 EF ₉	1997 12 19.4	05 49.77 +25 23.4 17.6	-1.19 - 2.2	0.8/19.5	26916	4234 T-2	1997 12 22.1	06 01.54 +29 44.7 18.1	-0.91 + 0.5	1.7/22.1	30696
1985 CX ₁	1997 12 19.4	05 49.84 +20 04.3 17.5	-1.17 - 1.3	1.5/19.4	27932	1995 DX ₈	1997 12 22.2	06 02.00 +20 34.8 17.7	-1.13 + 1.1	1.3/22.3	25341
1993 QJ ₄	1997 12 19.5	05 50.17 +16 55.8 16.7	-1.13 + 0.2	3.0/19.5	27916	1990 SN ₃	1997 12 22.4	06 02.71 +30 34.4 17.1	-1.32 + 1.0	2.8/22.3	27325
1995 EZ ₈	1997 12 19.6	05 50.66 +19 28.2 18.0	-1.10 - 0.1	1.5/19.6	29138	1990 QG ₃	1997 12 22.4	06 03.21 +26 07.7 18.4	-1.32 + 0.4	1.3/23.0	24895
(7238)	1997 12 19.7	05 50.70 +20 35.1 16.7	-1.14 - 1.7	1.1/19.6	28063	1995 GT	1997 12 22.4	06 03.22 +59 48.7 18.1	-2.00 + 2.6	12.8/20.3	28318
(7156)	1997 12 19.7	05 50.79 +38 39.8 16.1	-1.20 - 3.5	6.4/20.4	27894	1989 VQ ₁	1997 12 22.5	06 03.23 +13 12.0 17.5	-1.05 + 2.0	4.2/22.7	21572
1987 QM	1997 12 19.8	05 51.28 +47 39.4 17.1	-1.39 - 3.3	8.4/21.5	21971	1993 QS ₁	1997 12 22.5	06 03.59 +25 44.4 18.8	-1.25 - 0.3	0.9/22.6	28616
1989 SH ₃	1997 12 19.9	05 51.98 +22 50.8 17.6	-1.14 + 0.9	0.3/20.0	24582	1990 RF	1997 12 22.6	06 03.74 +00 00.2 16.3	-0.79 + 0.6	7.1/23.0	25649
1994 GD ₁	1997 12 20.0	05 52.52 +28 57.9 17.3	-1.03 + 2.5	1.7/20.0	23791	1988 RW ₁₂	1997 12 22.6	06 03.76 +24 16.5 18.8	-1.08 - 0.8	0.3/22.6	27727
1992 EA	1997 12 20.2	05 52.89 +25 08.2 17.3	-1.23 - 0.4	0.7/20.2	28615	1992 RU ₁	1997 12 22.6	06 03.90 +16 43.3 18.0	-1.05 - 0.1	2.5/22.7	28299
1985 RM ₆	1997 12 20.2	05 53.07 +23 14.1 16.9	-0.92 - 0.2	0.1/20.2	22683	1981 EH ₃₈	1997 12 22.6	06 04.01 +17 44.8 19.6	-1.10 - 0.6	2.1/22.7	26922
1981 ER ₃₀	1997 12 20.2	05 53.11 +20 41.3 18.5	-1.00 - 0.7	1.1/20.2	26920	1979 MB ₅	1997 12 22.7	06 04.00 +18 28.5 18.8	-1.03 - 0.2	1.7/23.0	30778
1991 PN ₇	1997 12 20.3	05 53.36 +25 54.5 16.6	-1.01 + 0.7	0.9/20.3	28614	1955 RV	1997 12 22.7	06 04.25 +18 50.6 16.1	-1.07 + 0.4	2.2/23.0	28881
1991 PT ₁₆	1997 12 20.3	05 53.79 +20 14.8 17.1	-0.93 + 0.2	1.0/20.4	30655	1981 EU ₃₇	1997 12 22.8	06 04.62 +22 16.6 19.4	-1.02 - 1.9	0.5/22.8	22430
(7233)	1997 12 20.4	05 53.79 +40 39.5 16.1	-1.22 + 1.2	5.7/20.3	28062	1988 VS ₃	1997 12 22.9	06 05.22 +16 24.2 16.4	-1.04 - 3.3	2.7/23.0	27727
1977 EL ₅	1997 12 20.4	05 54.15 -05 36.4 18.4	-0.78 0.0	7.8/20.4	21964	1996 PD ₃	1997 12 22.9	06 05.32 +24 14.6 17.2	-1.06 + 1.7	0.3/23.0	30877
1931 TC ₂	1997 12 20.4	05 54.29 +36 06.5 16.6	-1.21 - 1.0	4.5/20.8	22696	1974 QF ₁	1997 12 23.0	06 05.45 +36 43.3 16.4	-1.34 - 2.2	5.2/23.4	30647
1989 SE ₈	1997 12 20.6	05 54.72 +33 22.1 16.3	-1.22 - 1.4	4.2/20.8	28085	1994 AT ₁	1997 12 23.0	06 05.67 +37 18.6 15.4	-1.26 + 5.3	5.8/22.3	30760
3052 P-L	1997 12 20.6	05 55.02 +35 23.8 17.9	-1.05 - 1.7	3.8/21.0	28607	2212 T-2	1997 12 23.0	06 05.70 +26 08.9 18.6	-1.02 + 0.5	1.0/23.0	28608
1990 RW ₄	1997 12 20.7	05 55.23 +26 40.4 16.5	-0.89 - 0.8	0.9/20.8	28072	1994 GQ	1997 12 23.1	06 06.04 +39 36.6 16.3	-1.16 + 3.3	5.7/22.4	25532
1982 KK ₁	1997 12 20.7	05 55.53 +22 18.8 16.9	-1.18 + 2.0	0.4/20.8	30893	1991 LA ₁	1997 12 23.1	06 06.27 +08 36.7 17.6	-0.99 + 3.3	5.1/23.8	27728
1985 SW ₄	1997 12 20.9	05 56.17 +32 26.2 17.8	-0.96 + 0.5	2.5/20.9	22698	1993 XP	1997 12 23.2	06 06.31 +22 02.6 15.6	-1.11 - 6.6	0.6/23.1	22963
1993 EM	1997 12 20.9	05 56.30 +20 30.3 16.7	-1.45 -13.2	1.4/20.6	30782	1978 OP	1997 12 23.2	06 06.64 +16 35.5 18.2	-0.99 + 4.0	2.2/23.6	23245
3222 T-1	1997 12 20.9	05 56.37 +21 45.7 17.8	-1.27 - 0.6	0.7/21.0	28892	1994 AQ	1997 12 23.4	06 07.41 +09 44.3 15.5	-1.03 + 6.3	5.7/24.6	29137
1993 VU ₅	1997 12 21.0	05 56.60 +32 48.4 16.7	-1.26 + 0.4	3.7/21.0	27730	1977 EX	1997 12 23.6	06 08.19 +34 12.4 16.0	-1.19 - 3.7	4.1/23.9	28083