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EDITORIAL NOTICE.

Conrad Bardwell retired on 1989 Dec. 31, after more than 31 years of service to the Minor Planet Center--some 20 years at the Cincinnati Observatory, followed by more than 11 years at the Smithsonian Astrophysical Observatory in Cambridge. During the early 1960s he became the first person to attempt to automate searches for identifications of minor planets, and his success soon began to quicken the pace at which new minor planets were numbered following the World War II slump and the difficult period of post-war reconstruction. The principal effort of that reconstruction had involved recovery and automated orbit improvements for many numbered minor planets, and following Paul Herget's earlier lead Bardwell used his automated procedures to attend to several of the remaining, more troublesome cases. The successful transfer of the Minor Planet Center to Cambridge in 1978 was largely due to Bardwell's careful records, his expertise in computer programming and his experience in working with observations and orbits. The principal change made on the move to Cambridge was the decision to issue these Circulars according to a monthly schedule, rather than only two or three times per year. It was initially estimated that there would be perhaps 20 pages each month. Mainly because of a sudden increase in observational activity, this volume quickly proved to be a severe underestimate, and by 1989 it was difficult to keep the number of pages below 150 in any month. Further improvements in the automated identification and orbit-improvement techniques by Bardwell and others have also meant that some five times as many minor planets were given new permanent numbers during his years in Cambridge as during his years in Cincinnati. With interest and activity in the area of minor planets still continuing to increase, the Minor Planet Center can ill afford to lose him. It is therefore of some consolation to know that he will be continuing to work on minor planets on at least an occasional basis and that he will still be available for his wise advice and counsel.

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ERRATA.

MPC	Line	
15443	-12	For Kresak read Kresak
15536	6	For Shen-Guo read Shen Guo
15545	-24	Add Id. B. G. Marsden (d, MPC 7055)
15568	10 to 20	The identifications 1989 UO1 = 1975 JA = 1988 HK are invalid, and the 1989 UO1 orbit should be eliminated.

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N	Obs.
1950 NK	1950 07	15.15000	17 31 27.82	-31 14 14.4	MPC 474		A	760
1950 NS1	1950 07	14.26872	21 13 04.31	-15 01 39.8	MPC 2412	15.8	3	760
1950 NS1	1950 07	14.31385	21 13 02.26	-15 01 49.7	MPC 2412		3	760
1950 UJ	1950 10	20.27891	02 39 46.98	-00 19 29.6	MPC 5298		5	760
1950 UJ	1950 10	20.30452	02 39 46.32	-00 19 37.0	MPC 5298		5	760
1950 UL	1950 10	20.27891	02 49 19.36	-06 48 34.2	MPC 5405		1	760
1950 UL	1950 10	20.30452	02 49 19.25	-06 49 38.7	MPC 5405		1	760
1951 CN	1951 02	10.17433	09 24 19.21	+09 57 49.8	MPC 5888		1	760
1952 RD	1952 09	13.13376	21 26 08.10	-14 11 28.5	MPC 5888		6	760
1952 RE	1952 09	13.21014	21 25 58.39	-13 30 45.9	MPC 6266		7	760
1953 EF1	1953 03	14.10350	09 36 24.66	+09 42 17.8	MPC 6456		8	760
1953 JC	1953 05	09.22435	15 08 24.27	-15 57 46.5	MPC 5484		9	760
1953 JC	1953 05	09.26116	15 08 21.69	-15 57 51.8	MPC 5484		9	760
1953 JF	1953 05	09.22435	14 54 20.84	-11 38 19.7	MPC 5708		1	760
1953 JF	1953 05	09.26116	14 54 18.53	-11 38 20.1	MPC 5708			760
1955 XF	1955 12	06.10481	03 46 14.49	+21 31 47.3	MPC 5834			760
1955 XF	1955 12	06.14440	03 46 12.70	+21 31 28.6	MPC 5834			760
1986 WO5 *	1986 11	27.80000	00 53 57.73	+14 37 04.6	MPC11573		B	010
1986 WO5	1986 11	27.84167	00 53 59.07	+14 36 32.6	MPC11573		B	010
1989 UR	1989 10	31.09583	01 03 26.22	+26 18 49.8	MPC15444		1	010
592	1953 03	14.10350	09 38 12.33	+09 52 57.4	MPC 3620			760
1466	1950 10	20.27891	02 41 34.32	-02 33 55.3	MPC 5405		1	760
1466	1950 10	20.30452	02 41 33.07	-02 34 08.5	MPC 5405		1	760
2699	1950 10	20.27891	02 41 13.19	-00 19 53.5	MPC 5298		1	760
2699	1950 10	20.30452	02 41 11.38	-00 19 51.8	MPC 5298		1	760

Note 1: time originally slightly in error. 2: 1950 NS1 = (851). 3 = 1 + 2. 4: 1950 UJ = (4060). 5 = 1 + 4. 6: 1952 RD = (3989). 7: 1952 RE = (3975). 8: 1953 EF1 = (3992). 9: 1953 JC = (4104). A: 1950 NK = (1817). B: The times for these two positions have been interchanged.

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 15439.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1978 TR9 *	1978 10	07.90949	00 04 46.49	-17 17 13.0	1978 SW	17.0	095
1982 LD *	1982 06	12.88824	17 08 54.17	+00 14 05.5	1982 KQ3	16.5	095
1986 QZ5 *	1986 08	31.89587	22 24 31.07	-06 02 52.4	1984 DE		095
1989 SP5 *	1989 09	28.26111	01 38 20.85	+06 26 05.6	1989 SS3		809
1989 SP5	1989 09	28.27431	01 38 20.33	+06 26 01.4	1989 SS3		809
1989 SP5	1989 09	28.28750	01 38 19.74	+06 25 56.0	1989 SS3		809
1989 SU5 *	1989 09	28.12014	01 31 21.63	+01 19 56.8	1989 SP2		809
1989 SU5	1989 09	28.13333	01 31 21.10	+01 19 51.0	1989 SP2		809
1989 SU5	1989 09	28.14653	01 31 20.47	+01 19 45.7	1989 SP2		809
1989 TU2 *	1989 10	03.01076	01 33 43.61	+04 14 11.7	1989 TM	18.2	071
1989 TU2	1989 10	03.07743	01 33 40.90	+04 13 31.7	1989 TM		071

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

006 Fabra Observatory. 0.38-m f/11 Mailhat astrograph. Observer J. M. Codina. Measured by N. Torras and J. Nunez.
017 Hoher List. Observers E. W. Elst and P. Van den Eijnde.
045 Vienna. 0.33-m f/10 astrograph. Observer P. Jackson.
095 Sternberg Astronomical Institute Crimean Station. 0.50-m f/4 Maksutov. Observers A. Martis, Yu. Kulagin and K. Chekmareva.
323 Perth. Observers P. V. Birch, P. Jekabsons and G. Lowe.
400 Kitami. Observer K. Endate. Measured by K. Watanabe.
402 Dynic Astronomical Observatory. 0.25-m f/3.4 Schmidt. Observer A. Sugie.
404 Yamamoto. 0.20-m reflector. Observer S. Otomo. Measured by M. Koisikawa.
413 Siding Spring. Uppsala Southern Schmidt. Observer R. H. McNaught.
415 Kambah, near Canberra. Observer D. Herald.
494 Stakenbridge. Observer B. Manning. Communicated by G. M. Hurst.
503 Cambridge. Observer J. D. Shanklin.
568 Mauna Kea. Observers D. Jewitt, J. Luu, K. J. Meech and S. Ridgway.
587 Sormano. 0.21-m f/5 astrograph. Observers P. Sicoli, M. Cavagna, C. Gualdoni and E. Colzani.
589 Santa Lucia Stroncone. 0.5-m f/7.5 Ritchey-Chretien. Observers A. Vagnozzi, G. C. Morando and R. Castellani. Long. and Parallax 12.64, -315, -287 (see MPC 11200).
675 Palomar. 1.5-m reflector and 0.46-m Schmidt. Observers J. Alu, J. Gibson, E. Helin and B. Roman.
688 Lowell Observatory, Anderson Mesa Station. 0.33-m photographic telescope. Observer B. A. Skiff. Communicated by E. Bowell.
695 Kitt Peak. Observer K. J. Meech.
801 Oak Ridge. 1.5-m reflector. Observers R. E. McCrosky and C.-Y. Shao.
807 Cerro Tololo. Observer K. J. Meech.
808 El Leoncito. Observer J. Sanguin.
875 Yorii Observatory. Observers M. Arai and H. Mori.
877 Okutama. Observer S. Hayakawa.
892 YGCO Hoshikawa and Nagano stations. Observer S. Hayakawa.
896 Yatsugatake South Base Observatory. Observers Y. Kushida and R. Kushida. Measured by O. Muramatsu.
897 YGCO Chiyoda Station. Observer T. Kojima. 0.25-m f/3.4 Wright-Schmidt camera.
978 Conder Brow. Observer D. Buczynski. Communicated by G. M. Hurst.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Schwassmann-Wachmann 1					
/1974 II	1989	08 01.47594	00 02 00.10	+08 07 31.3			568
/1974 II	1989	10 25.87951	23 30 55.00	+05 56 49.6			589
/1974 II	1989	10 25.92743	23 30 54.23	+05 56 42.0			589
/1974 II	1989	10 26.76007	23 30 40.88	+05 54 49.0			589
/1974 II	1989	10 26.86562	23 30 39.22	+05 54 35.1			589
/1974 II	1989	10 27.85868	23 30 23.63	+05 52 25.9			589
/1974 II	1989	10 28.07424	23 30 20.78	+05 51 58.4			801
/1974 II	1989	10 30.85660	23 29 41.34	+05 46 08.9			589
/1974 II	1989	12 02.04704	23 28 06.70	+05 08 49.6			801
/1974 II	1989	12 21.39462	23 32 31.46	+05 18 42.4	14.5T	1	897
/1974 II	1989	12 21.44155	23 32 32.42	+05 18 51.4		1	897

Periodic Comet Gunn

/1982 X	1989	03	12.33094	15	19	42.23	-10	03	03.0	808
/1982 X	1989	03	12.37042	15	19	42.85	-10	03	05.5	808
/1982 X	1989	07	04.98578	14	34	36.76	-13	29	14.0	808
/1982 X	1989	07	05.01348	14	34	37.16	-13	29	24.0	808

Periodic Comet Smirnova-Chernykh

/1984 V	1989	08	03.55210	02	38	23.47	+09	59	38.6	568
/1984 V	1989	08	03.56462	02	38	23.79	+09	59	39.7	568

Periodic Comet Arend-Rigaux

/1984 XXI	1989	08	01.38699	19	20	39.65	-18	42	57.9	568
/1984 XXI	1989	08	01.38889	19	20	39.62	-18	42	58.5	568
/1984 XXI	1989	08	01.39056	19	20	39.56	-18	42	59.1	568
/1984 XXI	1989	08	01.39220	19	20	39.39	-18	42	58.7	568
/1984 XXI	1989	08	01.39384	19	20	39.38	-18	42	59.1	568
/1984 XXI	1989	08	01.39551	19	20	39.31	-18	42	59.7	568
/1984 XXI	1989	08	01.39583	19	20	39.29	-18	43	00.2	568
/1984 XXI	1989	08	01.39715	19	20	39.22	-18	42	59.4	568
/1984 XXI	1989	08	01.39883	19	20	39.19	-18	42	59.8	568
/1984 XXI	1989	08	01.40051	19	20	39.11	-18	43	00.0	568
/1984 XXI	1989	08	01.40220	19	20	39.08	-18	43	01.1	568

Comet Shoemaker (1985 XII)

/1985 XII	1988	12	11.33178	03	12	19.39	+11	53	40.0	568
/1985 XII	1988	12	11.34279	03	12	19.19	+11	53	39.7	568
/1985 XII	1989	01	08.05821	03	02	52.19	+12	01	18.6	807
/1985 XII	1989	01	08.11351	03	02	51.35	+12	01	19.8	807
/1985 XII	1989	08	01.59473	03	29	42.99	+17	33	09.0	568
/1985 XII	1989	08	01.60740	03	29	42.97	+17	33	09.4	568
/1985 XII	1989	08	03.59285	03	29	46.45	+17	34	54.0	568
/1985 XII	1989	08	03.60104	03	29	46.48	+17	34	55.1	568

Periodic Comet Machholz

/1986 VIII	1989	08	01.35891	18	38	03.69	-41	31	33.2	568

Comet Shoemaker (1986 XIV)

/1986 XIV	1989	08	01.27459	12	41	10.99	+44	33	38.9	568
/1986 XIV	1989	08	01.27990	12	41	10.97	+44	33	39.1	568

Comet Shoemaker (1987 IV)

/1987 IV	1988	12	09.53382	10	12	12.92	+03	48	32.1	568
/1987 IV	1988	12	09.54244	10	12	12.82	+03	48	29.6	568
/1987 IV	1988	12	11.51631	10	11	43.75	+03	40	25.1	568
/1987 IV	1988	12	11.54078	10	11	43.43	+03	40	19.0	568
/1987 IV	1989	04	05.18427	09	12	20.92	+00	39	39.6	807

Comet Torres (1987 V)

/1987 V	1988	12	09.61336	12	44	12.20	+39	27	50.2	568
/1987 V	1988	12	09.62130	12	44	12.29	+39	27	55.2	568
/1987 V	1988	12	10.55057	12	44	24.62	+39	36	30.3	568
/1987 V	1988	12	10.55693	12	44	24.68	+39	36	33.8	568
/1987 V	1988	12	10.57383	12	44	24.96	+39	36	43.3	568
/1987 V	1989	06	02.28611	10	55	57.22	+56	06	08.3	568
/1987 V	1989	06	02.31964	10	55	56.99	+56	06	01.6	568

Comet Wilson (1987 VII)

/1987 VII	1989	04	06.00389	06	16	10.24	+29	47	07.1	807
/1987 VII	1989	04	06.01640	06	16	10.46	+29	47	08.5	807

/1987 VII 1989 04 10.13563 06 16 26.85 +29 46 51.8 695
/1987 VII 1989 04 10.13977 06 16 26.91 +29 46 53.0 695
/1987 VII 1989 04 11.17230 06 16 32.27 +29 46 51.6 695
/1987 VII 1989 04 11.18297 06 16 32.30 +29 46 51.1 695
/1987 VII 1989 04 11.19123 06 16 32.51 +29 46 52.7 695

Periodic Comet Encke

/1987 XIII 1989 08 01.50859 23 48 37.69 +02 23 40.1 568
/1987 XIII 1989 08 01.51847 23 48 37.36 +02 23 39.0 568
/1987 XIII 1989 08 01.52836 23 48 37.06 +02 23 38.1 568

Periodic Comet Klemola

/1987 XIV 1988 12 10.39337 06 32 19.98 +09 32 34.4 568
/1987 XIV 1988 12 10.40250 06 32 19.58 +09 32 34.0 568

Comet Bradfield (1987 XXIX)

/1987 XXIX 1988 01 21.79159 01 21 14.48 +25 20 05.3 491
/1987 XXIX 1988 01 21.85738 01 21 31.67 +25 19 46.5 491

Periodic Comet Borrelly

/1987 XXXII1988 02 16.04849 03 47 51.73 +47 52 16.9 491

Periodic Comet Helin-Roman-Alu 1

/1987 XXXVI1989 10 29.18343 01 44 56.43 +01 12 51.6 801
/1987 XXXVI1989 10 29.22082 01 44 55.09 +01 12 46.3 801
/1987 XXXVI1989 11 29.19514 01 30 33.71 +00 54 46.2 17.5T 675
/1987 XXXVI1989 12 01.15521 01 30 00.76 +00 56 31.4 675

Periodic Comet d’Arrest

/1987k 1989 08 02.60257 05 07 23.81 +06 35 44.6 568
/1987k 1989 08 02.60861 05 07 24.39 +06 35 44.0 568
/1987k 1989 08 02.61398 05 07 24.82 +06 35 42.8 568
/1987k 1989 08 02.61893 05 07 25.25 +06 35 42.6 568
/1987k 1989 08 03.60832 05 08 53.12 +06 34 08.5 568
/1987k 1989 08 03.61825 05 08 53.98 +06 34 07.4 568

Periodic Comet Gehrels 2

/1989n 1989 10 27.88889 02 28 05.09 +14 18 57.6 16.8T 017
/1989n 1989 10 27.93472 02 28 03.35 +14 18 40.1 017
/1989n 1989 12 21.47222 02 14 47.98 +10 13 18.4 16.5T 897
/1989n 1989 12 21.51319 02 14 49.20 +10 13 17.9 897

Periodic Comet Brorsen-Metcalf

/1989o 1989 07 28.02986 02 30 50.03 +31 47 43.1 095
/1989o 1989 07 29.01563 02 39 46.20 +32 48 47.9 095
/1989o 1989 07 30.05132 02 49 37.73 +33 52 03.8 095
/1989o 1989 07 31.99201 03 09 24.47 +35 45 58.5 095
/1989o 1989 08 01.04653 03 09 59.07 +35 49 04.6 095
/1989o 1989 08 06.03993 04 08 41.00 +39 50 36.4 095
/1989o 1989 08 06.98375 04 20 50.25 +40 24 06.8 095
/1989o 1989 08 08.03333 04 34 37.89 +40 55 46.0 095
/1989o 1989 08 09.04271 04 48 06.62 +41 20 12.4 095
/1989o 1989 08 11.05190 05 15 16.60 +41 50 37.8 095
/1989o 1989 08 12.01920 05 28 21.38 +41 56 14.0 587
/1989o 1989 08 12.02656 05 28 27.33 +41 56 18.5 587

Comet Okazaki-Levy-Rudenko (1989r)

/1989r 1989 10 09.82292 14 30 54.09 +29 56 48.2 006
/1989r 1989 10 16.76389 14 22 29.81 +29 05 10.2 006

/1989r	1989	10	16.77986	14	22	28.53	+29	05	01.1		006
/1989r	1989	10	24.75556	14	10	40.72	+27	29	07.3		006
/1989r	1989	10	24.76701	14	10	39.57	+27	28	52.7		006
/1989r	1989	10	25.73733	14	09	01.75	+27	12	40.0		587
/1989r	1989	10	25.75139	14	09	00.36	+27	12	27.3		006
/1989r	1989	10	25.76250	14	08	59.25	+27	12	12.3		006
/1989r	1989	10	27.74410	14	05	30.48	+26	34	33.6		587
/1989r	1989	10	30.74792	13	59	50.44	+25	23	52.2		006
/1989r	1989	10	31.74514	13	57	51.55	+24	55	59.5		006
/1989r	1989	10	31.75208	13	57	50.71	+24	55	47.2		006
/1989r	1989	11	22.74433	13	06	43.32	-05	25	59.7		413
/1989r	1989	11	22.84991	13	06	27.97	-05	43	46.8		896
/1989r	1989	11	22.85075	13	06	27.99	-05	43	54.4		896
/1989r	1989	11	24.83412	13	01	49.28	-11	30	50.7		896
/1989r	1989	11	24.84939	13	01	47.11	-11	33	40.1		896
/1989r	1989	11	25.81884	12	59	31.43	-14	35	20.8		896
/1989r	1989	11	25.84523	12	59	27.71	-14	40	24.9		896
/1989r	1989	11	26.21997	12	58	35.00	-15	52	42.8		045
/1989r	1989	11	26.74618	12	57	21.92	-17	35	27.2		413
/1989r	1989	11	26.82266	12	57	10.9	-17	50	53	2	896
/1989r	1989	11	29.21250	12	51	34.19	-26	00	03.0		045
/1989r	1989	12	01.74679	12	45	27.56	-34	56	59.6		413
/1989r	1989	12	02.73934	12	42	58.24	-38	27	07.9		415
/1989r	1989	12	02.74120	12	42	57.74	-38	27	29.4		415
/1989r	1989	12	06.70280	12	31	58.28	-51	47	47.8		413
/1989r	1989	12	15.51187	11	47	46.88	-74	28	21.4		415
/1989r	1989	12	15.53358	11	47	35.99	-74	30	56.2		415
/1989r	1989	12	17.51374	11	26	02.22	-78	08	52.8		415
/1989r	1989	12	24.51296	07	10	58.40	-85	33	46.5		413

Periodic Comet Wild 2

/1989t	1989	08	02.55688	03	34	48.04	+16	03	15.5		568
/1989t	1989	08	02.56608	03	34	48.36	+16	03	16.8		568
/1989t	1989	08	02.57713	03	34	48.82	+16	03	17.4		568
/1989t	1989	08	02.59082	03	34	49.38	+16	03	19.2		568
/1989t	1989	08	03.56947	03	35	29.14	+16	04	56.3		568
/1989t	1989	08	03.58495	03	35	29.72	+16	04	58.2		568

Comet Helin-Roman-Alu (1989v)

/1989v	1989	10	28.09523	21	59	01.47	+17	13	14.1		801
/1989v	1989	10	31.78404	21	40	40.74	+20	31	27.8		503
/1989v	1989	11	22.79433	20	16	28.48	+35	08	27.1		503
/1989v	1989	11	23.76296	20	13	37.87	+35	37	25.7		503
/1989v	1989	11	27.75409	20	02	25.39	+37	31	01.0		503
/1989v	1989	12	01.11441	19	53	32.27	+39	00	31.1		675
/1989v	1989	12	01.14271	19	53	27.89	+39	01	14.1		675

Periodic Comet Helin-Roman-Alu 2

/1989y	1989	11	29.25469	02	58	30.88	+08	38	12.6	17.0T	675
/1989y	1989	12	02.22153	02	58	03.88	+08	25	54.0		675

Comet Aarseth-Brewington (1989a1)

/1989a1	1989	11	26.72509	16	19	14.00	+21	00	52.1		503
/1989a1	1989	12	08.85770	16	22	18.6	+08	46	59		896
/1989a1	1989	12	09.83784	16	22	40.22	+07	31	16.0		877
/1989a1	1989	12	09.84462	16	22	40.38	+07	30	42.1		877
/1989a1	1989	12	09.85837	16	22	40.5	+07	29	41		896
/1989a1	1989	12	09.85848	16	22	40.5	+07	29	36		896

Comet Austin (1989c1)

/1989c1	1989	12	06.72153	00	51	58.85	-62	11	21.5	11	T 323
/1989c1	1989	12	06.78403	00	51	53.42	-62	10	13.9		323
/1989c1	1989	12	07.42061	00	50	48.29	-61	58	33.7	14.0N	474
/1989c1	1989	12	07.42536	00	50	47.81	-61	58	28.2		474
/1989c1	1989	12	07.44619	00	50	45.54	-61	58	05.3		474
/1989c1	1989	12	07.59306	00	50	31.09	-61	55	21.7		323
/1989c1	1989	12	07.67083	00	50	23.23	-61	53	55.1		323
/1989c1	1989	12	08.42763	00	49	08.42	-61	39	38.7		474
/1989c1	1989	12	08.70486	00	48	43.63	-61	34	25.6		323
/1989c1	1989	12	09.55486	00	47	25.45	-61	18	07.8		323
/1989c1	1989	12	11.44201	00	44	41.70	-60	40	51.1		474
/1989c1	1989	12	11.44444	00	44	41.52	-60	40	48.1		474
/1989c1	1989	12	14.48310	00	40	49.39	-59	37	59.0		415
/1989c1	1989	12	16.56771	00	38	31.06	-58	52	59.3		323
/1989c1	1989	12	17.48467	00	37	35.39	-58	32	38.9		415
/1989c1	1989	12	18.61840	00	36	31.10	-58	07	12.7		323
/1989c1	1989	12	24.50660	00	32	11.77	-55	48	27.8		413

Periodic Comet Schwassmann-Wachmann 3

/1989d1	1989	12	05.59105	12	14	31.2	+10	29	26	19.9N	3 568
/1989d1	1989	12	05.59435	12	14	31.6	+10	29	25		3 568
/1989d1	1989	12	05.59961	12	14	32.1	+10	29	23		3 568
/1989d1	1989	12	05.60260	12	14	32.4	+10	29	21		3 568
/1989d1	1989	12	05.60690	12	14	32.9	+10	29	19		3 568
/1989d1	1989	12	09.47793	12	21	10.45	+10	01	49.8	21	N 4 675
/1989d1	1989	12	09.48416	12	21	11.14	+10	01	47.0		4 675
/1989d1	1989	12	09.48969	12	21	11.72	+10	01	44.5		4 675
/1989d1	1989	12	09.49632	12	21	12.35	+10	01	41.9		4 675
/1989d1	1989	12	12.48311	12	26	21.88	+09	40	44.5	21	N 675
/1989d1	1989	12	12.48794	12	26	22.39	+09	40	42.6		675
/1989d1	1989	12	12.49325	12	26	22.88	+09	40	39.3		675
/1989d1	1989	12	12.49867	12	26	23.47	+09	40	37.4		675

Comet Skorichenko-George (1989e1)

/1989e1	1989	12	20.07257	19	56	04.93	+25	42	55.3		688
/1989e1	1989	12	20.08542	19	56	06.30	+25	42	59.4	11.5T	688
/1989e1	1989	12	20.39410	19	56	40.43	+25	45	09.1	11.0T	892
/1989e1	1989	12	21.06597	19	57	55.46	+25	49	48.9	11.5T	688
/1989e1	1989	12	21.09375	19	57	58.49	+25	50	00.1		688
/1989e1	1989	12	21.37326	19	58	29.92	+25	52	00.4		892
/1989e1	1989	12	21.38368	19	58	31.08	+25	52	04.8		892
/1989e1	1989	12	21.40035	19	58	32.81	+25	52	12.5	10.5T	875
/1989e1	1989	12	21.42662	19	58	36.1	+25	52	22		897
/1989e1	1989	12	23.37882	20	02	18.18	+26	06	38.5	11	T 402
/1989e1	1989	12	23.39236	20	02	19.76	+26	06	45.4	9.5T	404
/1989e1	1989	12	23.42329	20	02	23.37	+26	06	59.9		404
/1989e1	1989	12	24.08333	20	03	39.86	+26	11	54.0	11.0T	688
/1989e1	1989	12	24.09306	20	03	41.08	+26	11	59.4		688
/1989e1	1989	12	24.40799	20	04	17.81	+26	14	27.7	12	T 400
/1989e1	1989	12	24.41389	20	04	18.35	+26	14	29.6		400
/1989e1	1989	12	24.41979	20	04	19.22	+26	14	34.2		400
/1989e1	1989	12	25.76219	20	06	57.77	+26	25	05.0		494
/1989e1	1989	12	27.76374	20	10	59.34	+26	41	28.7		978
/1989e1	1989	12	27.80679	20	11	04.63	+26	41	51.2		978

Note 1: asymmetric coma. 2: poor image. 3: centrally condensed core; tail in p.a. 298 . 4: slight coma; 0′.1-0′.2 tail in p.a. 285 .

OBSERVATIONS OF MINOR PLANETS.

The observations are listed separately for each observatory code. Alphabetic note codes shown with some of the observations are defined according to the scheme below. Numerical codes are defined in the headings for the individual observatories.

A earlier approximate position inferior
a sense of motion ambiguous
B black or dark plate
b bad seeing
C correction to earlier position
c crowded star field
D declination uncertain
d diffuse image
E at or near edge of plate
F faint image
G poor guiding
g no guiding
I involved with star
i inkdot measured
M measurement difficult
N near edge of plate, measurement uncertain
O image out of focus
o plate measured in one direction only
P position uncertain
p poor image
R right ascension uncertain
r poor distribution of reference stars
S poor sky
s streaked image
T time uncertain
t trailed image
U uncertain image
u unconfirmed image
V very faint image
W weak image
w weak solution

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
010 Caussols							
C. Pollas, CERGA Caussols, F-06460 Saint Vallier de Thiey, France							
Observers A. Maury, C. Pollas, Q. Wang							
Measurer C. Pollas							
0.9-m Schmidt telescope							
1989 UR		1989 11 27.80486	23 35 03.75	-03 56 01.9		17.5	010
1989 UR		1989 11 27.83958	23 34 58.38	-03 58 27.8			010
1989 UR		1989 11 27.85347	23 34 56.32	-03 59 25.9			010
1989 UR		1989 11 28.83403	23 32 43.50	-05 07 19.8		17.5	010
1989 UR		1989 11 28.86875	23 32 38.61	-05 09 35.0			010
1989 UH2		1989 12 02.80764	01 18 46.34	+04 49 41.7		15	010
1989 UH2		1989 12 02.84236	01 18 45.50	+04 50 14.5			010
1989 UH2		1989 12 02.85949	01 18 44.94	+04 50 34.5			010
1989 UH2		1989 12 03.86878	01 18 21.64	+05 07 16.5		16	010
1989 UH2		1989 12 03.90351	01 18 20.86	+05 07 48.5			010
1989 UH2		1989 12 03.91392	01 18 20.53	+05 07 57.7			010
1989 XG	*	1989 12 02.80764	01 17 03.55	+05 44 37.3		16	010
1989 XG		1989 12 02.84236	01 17 03.32	+05 44 32.9			010

1989 XG 1989 12 02.85949 01 17 03.06 +05 44 28.6 010
1989 XG 1989 12 03.88615 01 16 53.86 +05 41 52.5 010

017 Hoher List
E. W. Elst, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels, Belgium
Observers E. W. Elst, P. Van den Eijnde
Measurer E. W. Elst
1989 UL1 1989 10 27.98958 02 55 22.43 +15 44 54.2 017
1989 UL1 1989 10 28.05069 02 55 18.81 +15 44 55.2 16.5 017
1989 UP1 1989 10 28.07847 03 03 03.47 +07 24 38.0 017
1989 UP1 1989 10 28.13542 03 03 00.27 +07 24 36.5 16.5 017
1989 UQ1 1989 10 28.07847 03 04 47.32 +07 37 43.7 017
1989 UQ1 1989 10 28.13542 03 04 44.11 +07 37 24.6 16.0 017

033 Tautenburg
S. Marx, Karl Schwarzschild Observatorium, DDR-6901 Tautenburg, Democratic Republic of Germany
Observer F. Borngen
1.3-m Schmidt telescope
SAOC
1976 SM2 1989 09 07.04028 03 09 05.48 +17 26 04.8 17.9 033
1976 SM2 1989 09 07.09028 03 09 07.69 +17 26 11.1 033
1982 UJ3 1989 10 23.92234 03 09 37.11 +15 52 40.0 033
1982 UJ3 1989 10 23.97234 03 09 34.41 +15 52 24.7 033
1982 UJ3 1989 10 25.92500 03 07 52.08 +15 41 49.9 17.2 033
1982 UJ3 1989 10 25.97639 03 07 49.23 +15 41 33.6 033
1982 UJ3 1989 10 27.93194 03 06 01.94 +15 30 38.2 033
1988 PK2 1989 10 26.06979 04 27 10.59 +21 21 09.8 033
1988 PK2 1989 10 26.12292 04 27 08.94 +21 21 05.7 18.3 033
1988 PK2 1989 10 28.03958 04 26 08.96 +21 18 56.4 033
1989 UG6 * 1989 10 26.06979 04 20 18.76 +20 28 51.0 033
1989 UG6 1989 10 26.12292 04 20 17.21 +20 28 34.1 18.3 033
1989 UG6 1989 10 28.03958 04 19 20.08 +20 18 23.9 I 033
1989 UH6 * 1989 10 26.06979 04 22 23.83 +20 23 50.0 033
1989 UH6 1989 10 26.12292 04 22 21.60 +20 23 57.1 18.6 033
1989 UH6 1989 10 28.03958 04 20 56.93 +20 28 20.9 033
1989 UJ6 * 1989 10 26.06979 04 23 07.70 +21 42 14.2 033
1989 UJ6 1989 10 26.12292 04 23 06.22 +21 42 12.2 18.2 033
1989 UJ6 1989 10 28.03958 04 22 10.54 +21 40 59.7 033
1989 UK6 * 1989 10 26.06979 04 23 47.29 +20 17 55.0 033
1989 UK6 1989 10 26.12292 04 23 45.39 +20 17 53.6 19.7 033
1989 UK6 1989 10 28.03958 04 22 33.73 +20 17 21.5 033
1989 UL6 * 1989 10 26.06979 04 26 34.12 +21 41 49.7 033
1989 UL6 1989 10 26.12292 04 26 32.66 +21 41 56.0 18.4 033
1989 UL6 1989 10 28.03958 04 25 38.58 +21 45 39.5 033
1989 UM6 * 1989 10 26.06979 04 27 45.33 +21 58 16.6 033
1989 UM6 1989 10 26.12292 04 27 43.42 +21 58 20.4 19.0 033
1989 UM6 1989 10 28.03958 04 26 31.07 +22 00 05.4 033
1989 UN6 * 1989 10 26.06979 04 27 54.42 +21 19 16.7 033
1989 UN6 1989 10 26.12292 04 27 52.54 +21 19 00.4 18.5 033
1989 UN6 1989 10 28.03958 04 26 20.01 +21 13 19.9 033
1989 UO6 * 1989 10 26.06979 04 28 27.99 +21 21 17.0 033
1989 UO6 1989 10 26.12292 04 28 26.20 +21 21 05.6 18.8 033
1989 UO6 1989 10 28.03958 04 27 18.14 +21 15 06.3 033
1989 UP6 * 1989 10 26.06979 04 30 16.60 +22 05 33.5 033
1989 UP6 1989 10 26.12292 04 30 14.89 +22 05 38.1 18.5 033
1989 UP6 1989 10 28.03958 04 29 11.81 +22 08 28.0 033
1989 UQ6 * 1989 10 26.06979 04 30 57.58 +20 58 49.5 033

1989	UQ6		1989	10	26.12292	04 30 56.10	+20 58 49.2	19.3	033
1989	UQ6		1989	10	28.03958	04 29 59.54	+20 57 37.8		033
1989	UR6	*	1989	10	26.06979	04 31 41.25	+22 07 00.8		033
1989	UR6		1989	10	26.12292	04 31 39.52	+22 07 15.3	17.5	033
1989	UR6		1989	10	28.03958	04 30 34.42	+22 15 52.3		033
1989	US6	*	1989	10	26.06979	04 33 24.69	+19 57 32.5		033
1989	US6		1989	10	26.12292	04 33 23.34	+19 57 26.3	18.2	033
1989	US6		1989	10	28.03958	04 32 32.28	+19 53 58.3		033
1989	UT6	*	1989	10	26.06979	04 33 39.40	+21 42 32.2		033
1989	UT6		1989	10	26.12292	04 33 37.41	+21 42 31.6	18.7	033
1989	UT6		1989	10	28.03958	04 32 24.04	+21 42 03.3		033
1989	WD		1989	10	26.06979	04 31 00.40	+20 14 27.5		033
1989	WD		1989	10	26.12292	04 30 58.57	+20 14 31.4	18.1	033
1989	WD		1989	10	28.03958	04 29 49.91	+20 17 07.1		033
1989	WZ		1989	10	26.06979	04 25 43.11	+20 15 16.6		033
1989	WZ		1989	10	26.12292	04 25 41.68	+20 14 55.7	17.6	033
1989	WZ		1989	10	28.03958	04 24 48.21	+20 02 34.8		033

046 Klet
A. Mrkos, Dept. of Astronomy and Astrophysics, Charles University,
Svedska 8, C-15000 Prague 5, Czechoslovakia
Observers A. Mrkos, Z. Vavrova
0.6-m Maksutov reflector

1989	TC1		1989	10	25.83976	01 08 43.43	+08 00 06.4	16.7	046
1989	TC1		1989	10	25.85422	01 08 42.70	+08 00 01.5		046
1989	TC1		1989	10	26.84282	01 07 54.91	+07 54 45.4		046
1989	TC1		1989	10	26.85694	01 07 54.17	+07 54 41.7		046
1989	TC1		1989	10	27.84375	01 07 07.39	+07 49 30.5		046
1989	TC1		1989	10	27.85781	01 07 06.88	+07 49 26.9		046
1989	TC1		1989	11	02.85694	01 02 47.09	+07 20 22.4		046
1989	TC1		1989	11	02.87118	01 02 46.60	+07 20 17.9		046
1989	UU6		1989	11	02.92986	02 07 58.68	+08 15 56.5		046
1989	UU6		1989	11	02.94410	02 07 58.00	+08 15 52.2		046

071 Bulgarian National Observatory
E. W. Elst, Royal Observatory, B-1180 Brussels, Belgium
Observers E. W. Elst, V. Ivanova, V. Shkodrov
Measurer E. W. Elst

1989	TX2		1989	10	03.01076	01 26 06.86	+03 30 59.3	18.0	071
1989	TX2		1989	10	03.07743	01 26 03.89	+03 30 11.0		071

095 Crimean Astrophysical Observatory
G. R. Kastel', Institute for Theoretical Astronomy,
Naberezhnaya Kutuzova 10, Leningrad 191187, U.S.S.R.
Observers L. G. Karachkina, L. V. Zhuravleva

1988	JP		1989	11	24.88513	03 59 02.16	+01 09 27.8	15.0V	095
1988	JP		1989	11	30.85124	03 50 31.62	+02 33 26.3	15.0V	095
1989	VP		1989	11	04.81697	01 24 45.65	+21 02 44.8	14.5V	095
1989	VP		1989	11	20.78192	01 18 03.11	+14 47 24.0	14.5V	095
1989	VP		1989	11	20.80274	01 18 03.06	+14 46 45.8	14.5V	095
1989	VP		1989	11	24.74626	01 17 27.52	+13 23 36.5		095
1989	VP		1989	11	30.78592	01 17 24.84	+11 26 44.5		095

293 Burlington remote site
T. Handley, 13 Linden Avenue, Burlington, NJ 08016, U.S.A.
0.20-m f/4.0 astrograph
SAOC

1952	QX		1989	10	08.20208	23 31 19.31	-14 03 14.4		293

364 JCPM Kagoshima Station
M. Takeishi, Odori 4, Hamatonbetsu Esashigun, Hokkaido 098-57, Japan
Observer M. Mukai
Measurer M. Takeishi
0.25-m f/4.2 Wright Schmidt telescope

1985 QM4		1989 11 19.45833	01	32	35.00	+08	28	34.5	16.5	364
1985 QM4		1989 11 19.47569	01	32	34.22	+08	28	34.5		364
1989 UR3		1989 11 17.50694	01	56	32.90	+07	16	12.6		364
1989 UR3		1989 11 17.52431	01	56	32.32	+07	16	08.4		364
1989 UR3		1989 11 19.53542	01	55	28.60	+07	10	53.2		364
1989 UR3		1989 11 19.55278	01	55	28.17	+07	10	49.5		364
1989 UU6	*	1989 10 21.62361	02	17	14.1	+09	45	44	16.5	364
1989 UU6		1989 10 21.64097	02	17	13.3	+09	45	32		364
1989 UU6		1989 10 23.57500	02	15	46.65	+09	31	12.4		364
1989 UU6		1989 10 23.59236	02	15	45.76	+09	31	05.7		364
1989 UV6	*	1989 10 21.62361	02	17	27.75	+10	37	58.4	15.5	364
1989 UV6		1989 10 21.64097	02	17	26.86	+10	37	49.0		364
1989 UV6		1989 10 23.57500	02	15	52.62	+10	16	55.2		364
1989 UV6		1989 10 23.59236	02	15	51.78	+10	16	44.2		364
1989 UW6	*	1989 10 30.59028	02	19	48.63	+24	07	06.4		364
1989 UW6		1989 10 30.60764	02	19	47.32	+24	06	58.3		364
1989 UW6		1989 11 17.46875	01	59	21.19	+23	32	47.6		364
1989 UW6		1989 11 17.48611	01	59	20.14	+23	32	46.6		364
1989 VT1	*	1989 11 04.63472	03	53	03.00	+16	05	00.4	17	364
1989 VT1		1989 11 04.65201	03	53	02.16	+16	04	56.2		364
1989 VT1		1989 11 20.55278	03	39	26.71	+15	23	45.3		364
1989 VT1		1989 11 20.57014	03	39	25.65	+15	23	42.9		364
1989 VT1		1989 11 25.63194	03	34	57.92	+15	11	30.5		364
1989 VT1		1989 11 25.64931	03	34	56.84	+15	11	26.1		364
1989 WJ3	*	1989 11 26.53819	04	07	58.46	+18	11	43.5		364
1989 WJ3		1989 11 26.55556	04	07	57.32	+18	11	41.7		364
1989 WJ3		1989 12 01.54028	04	02	17.32	+18	18	20.1	16	364
1989 WJ3		1989 12 01.55764	04	02	16.06	+18	18	19.2		364
1989 WK3	*	1989 11 26.54306	03	14	56.36	+24	52	49.0	16	364
1989 WK3		1989 11 26.56042	03	14	55.21	+24	52	49.7		364
1989 WK3		1989 12 01.50000	03	10	28.34	+25	04	40.8		364
1989 WK3		1989 12 01.51736	03	10	27.26	+25	04	41.5		364
1989 WL3	*	1989 11 26.54306	03	15	06.60	+24	03	55.5	16.5	364
1989 WL3		1989 11 26.56042	03	15	05.61	+24	03	47.2		364
1989 WL3		1989 12 01.50000	03	10	45.98	+23	27	21.1		364
1989 WL3		1989 12 01.51736	03	10	45.01	+23	27	12.3		364

372 Geisei
T. Seki, Kamimachi 2-9-35, Kochi, Japan
0.60-m reflector

1989 UY		1989 10 23.71424	03	13	03.95	+26	41	57.7	17	372
1989 UY		1989 10 24.75792	03	12	21.08	+26	36	02.4	17	372
1989 UZ		1989 11 09.76146	02	58	59.06	+25	09	11.1	18.5	372
1989 UZ		1989 11 09.77292	02	58	57.81	+25	09	06.7		372
1989 UT2		1989 11 17.47292	01	39	07.70	+12	45	26.9	18	372
1989 UT2		1989 11 17.48472	01	39	07.62	+12	45	21.2		372
1989 UT2		1989 11 20.54965	01	37	32.26	+12	21	13.8	18	372
1989 UT2		1989 11 20.56076	01	37	31.98	+12	21	09.0		372
1989 UX6	*	1989 10 26.61875	01	49	49.05	+10	12	43.8	18.5	372
1989 UX6		1989 10 26.63125	01	49	48.63	+10	12	37.3		372
1989 UX6		1989 10 30.49618	01	46	32.03	+09	59	20.5	17.5	372
1989 UX6		1989 10 30.50972	01	46	31.48	+09	59	19.7		372
1989 UY6	*	1989 10 26.61875	01	50	00.43	+10	05	39.5	18.5	372
1989 UY6		1989 10 26.63125	01	49	59.98	+10	05	35.9		372

1989	UY6		1989	10	30.49618	01	46	53.06	+09	53	47.9	17.5	372
1989	UY6		1989	10	30.50972	01	46	51.94	+09	53	49.5		372
1989	VV1		1989	10	28.74132	02	46	39.46	+12	10	05.2	17	372
1989	VV1		1989	10	28.75417	02	46	38.80	+12	10	06.0		372
1989	VV1	*	1989	11	02.67743	02	41	08.61	+12	10	20.4	17.5	372
1989	VV1		1989	11	02.68924	02	41	07.82	+12	10	21.5		372
1989	WG3	*	1989	11	17.47292	01	37	47.15	+12	25	25.7	18.5	372
1989	WG3		1989	11	17.48472	01	37	46.60	+12	25	25.5		372
1989	WG3		1989	11	20.54965	01	35	43.75	+12	25	51.8	19	372
1989	WG3		1989	11	20.56076	01	35	42.79	+12	25	52.6		372

374 Minami-Oda
T. Nomura, 1-8, Yamate 1 Chome, Tarumi-Ku, Kobe 655, Japan
Observer T. Nomura
Measurer K. Kawanishi
0.25-m f/3.4 Schmidt camera

1980	TL13		1989	11	02.64863	01	39	07.24	+18	16	11.6	16.0	374
1989	SL		1989	11	02.62988	01	36	24.54	+16	41	48.1	16.0	374
4018	P-L		1989	11	02.66565	02	58	31.39	+25	09	53.7	16.0	374

376 Uenohara
N. Kawasato, 3-51, Hana-Koganei, Kodaira, Tokyo 187, Japan
Observer N. Kawasato
0.2-m f/4 hyperboloid astrocamera

1989	WD1	*	1989	11	22.58403	04	33	08.62	+10	30	04.8	15.5	N 376
1989	WD1		1989	11	22.61285	04	33	06.97	+10	30	03.0		N 376
1989	WD1		1989	11	25.51285	04	30	34.12	+10	30	19.2		376
1989	WD1		1989	11	25.55243	04	30	32.06	+10	30	20.8		376
1989	WD1		1989	11	29.54063	04	26	59.29	+10	31	40.8		376
1989	WD1		1989	11	29.56840	04	26	57.98	+10	31	43.9		376
1989	WD1		1989	12	04.58090	04	22	30.95	+10	35	22.0		376
1989	WD1		1989	12	04.61701	04	22	29.11	+10	35	24.4		376
1989	WE1	*	1989	11	22.60035	04	31	10.83	+14	00	26.5	15.5	N 376
1989	WE1		1989	11	22.62679	04	31	09.19	+14	00	31.0		N 376
1989	WE1		1989	11	25.49965	04	28	31.39	+14	03	36.1		376
1989	WE1		1989	11	25.53924	04	28	29.23	+14	03	40.0		376
1989	WE1		1989	11	29.52674	04	24	45.79	+14	08	36.8		376
1989	WE1		1989	11	29.55382	04	24	44.19	+14	08	40.1		376
1989	WE1		1989	12	04.56701	04	20	03.63	+14	16	14.6		376
1989	WE1		1989	12	04.63142	04	19	59.98	+14	16	21.5		376
1989	XB	*	1989	12	02.49896	04	19	18.83	+07	23	24.6	16	N 376
1989	XB		1989	12	02.52604	04	19	17.42	+07	23	23.8		N 376
1989	XB		1989	12	04.55243	04	17	25.86	+07	25	58.0		376
1989	XB		1989	12	04.60313	04	17	23.02	+07	26	02.0		376
1989	XB		1989	12	07.65521	04	14	39.66	+07	32	03.0		376
1989	XB		1989	12	07.67674	04	14	38.36	+07	32	07.4		376
1989	XB		1989	12	20.49549	04	05	13.40	+08	21	22.5		376
1989	XB		1989	12	20.52257	04	05	12.39	+08	21	30.3		376

385 Nihondaira Observatory, Oohira Station
M. Kizawa, 1458-10, Minami Numagami, Shizuoka 420, Japan
Observers W. Kakei, M. Kizawa, T. Urata
Measurer M. Kizawa

1982	UJ3		1989	11	04.56632	02	58	31.56	+14	45	56.5		385
1982	UJ3		1989	11	04.59965	02	58	29.37	+14	45	45.8		385
1989	VV		1989	11	22.55069	02	44	27.33	+14	05	33.0	16.5	385
1989	VV		1989	11	22.57326	02	44	26.76	+14	05	29.6		385
1989	VV		1989	12	04.49861	02	36	17.79	+13	43	38.2	17	F 385
1989	VV		1989	12	04.52917	02	36	16.80	+13	43	34.9		F 385

1989	WQ	*	1989	11	19.59201	02	39	30.69	+18	59	50.5	17		385
1989	WQ		1989	11	22.50313	02	37	01.26	+18	46	31.2			385
1989	WU	*	1989	11	20.59826	05	02	09.00	+26	40	09.1	16.5		385
1989	WU		1989	11	20.63715	05	02	06.72	+26	39	59.7			385
1989	WU		1989	11	25.69931	04	57	22.97	+26	16	50.2			385
1989	WU		1989	11	25.72674	04	57	21.42	+26	16	41.0			385
1989	WU		1989	11	29.57014	04	53	24.07	+25	56	42.9	15.5		385
1989	WU		1989	11	29.59832	04	53	22.24	+25	56	34.4			385
1989	WU		1989	12	02.58785	04	50	09.71	+25	39	45.2	16		385
1989	WU		1989	12	02.61111	04	50	08.08	+25	39	37.2			385
1989	WU		1989	12	04.55833	04	48	00.89	+25	28	08.1	16		385
1989	WU		1989	12	04.58958	04	47	58.74	+25	27	58.7			385
1989	WU		1989	12	08.64757	04	43	33.34	+25	02	57.7	16		385
1989	WU		1989	12	08.71493	04	43	28.77	+25	02	34.3			385
1989	WO1	*	1989	11	20.58866	05	03	13.46	+25	16	05.3	16.5		385
1989	WO1		1989	11	20.62743	05	03	11.44	+25	16	04.5	16.5		385
1989	WO1		1989	11	25.69931	04	58	58.64	+25	29	15.4			385
1989	WO1		1989	11	25.72674	04	58	56.86	+25	29	25.9	16		385
1989	WO1		1989	11	27.59977	04	57	18.46	+25	33	57.0	16		385
1989	WO1		1989	11	27.62396	04	57	17.07	+25	34	00.9	15.5		385
1989	WO1		1989	11	27.63519	04	57	16.19	+25	34	03.6			385
1989	WO1		1989	11	29.57014	04	55	32.89	+25	38	34.6			385
1989	WO1		1989	11	29.57014	04	55	32.89	+25	38	34.6	16		385
1989	WO1		1989	11	29.59832	04	55	31.43	+25	38	38.2			385
1989	WO1		1989	11	29.59832	04	55	31.43	+25	38	38.2			385
1989	WO1		1989	12	02.58785	04	52	48.43	+25	45	11.8	16		385
1989	WO1		1989	12	02.61111	04	52	47.00	+25	45	15.3			385
1989	WO1		1989	12	04.55833	04	50	59.73	+25	49	14.3	16		385
1989	WO1		1989	12	04.58958	04	50	57.90	+25	49	18.4			385
1989	WO1		1989	12	06.64375	04	49	03.64	+25	53	19.2	16.5	F	385
1989	WA2		1989	12	08.65903	04	46	15.25	+23	52	40.8	15.5	N	385
1989	WA2		1989	12	08.68681	04	46	13.23	+23	52	52.9		N	385
1989	XC	*	1989	12	02.65451	05	31	54.46	+22	53	13.2	16.5		385
1989	XC		1989	12	02.67396	05	31	53.54	+22	53	13.3			385
1989	XC		1989	12	04.57425	05	30	07.31	+22	54	16.8	16.5		385
1989	XC		1989	12	04.60486	05	30	05.60	+22	54	17.5			385
1989	XC		1989	12	09.71840	05	25	09.33	+22	56	44.7	16.5		385
1989	XC		1989	12	09.74688	05	25	07.71	+22	56	46.3			385
1989	XN	*	1989	12	04.57425	05	31	50.57	+22	36	34.2	16.5		385
1989	XN		1989	12	04.60486	05	31	48.74	+22	36	08.6			385
1989	XN		1989	12	09.71059	05	26	52.51	+21	26	50.8	17	F	385

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M. Koishikawa, Sendai Municipal Observatory, 1-1 Sakuragaoka-koen, Sendai 980, Japan
Observer M. Koishikawa
Measurer S. Kasahara
0.20-m reflector

1989	WH1	*	1989	11	24.65590	04	08	40.55	+22	57	15.1	15		391
1989	WH1		1989	11	24.66736	04	08	39.84	+22	57	12.4			391
1989	WH1		1989	11	25.67882	04	07	33.40	+22	52	12.1	15		391
1989	WH1		1989	11	25.70313	04	07	31.64	+22	52	04.7			391
1989	WH1		1989	11	26.65417	04	06	29.50	+22	47	23.6	15		391
1989	WH1		1989	11	26.67500	04	06	28.14	+22	47	17.0			391
1989	WH1		1989	11	27.65451	04	05	23.89	+22	42	22.7			391
1989	WH1		1989	11	28.64028	04	04	20.00	+22	37	24.4			391
1989	WH1		1989	12	02.60556	04	00	06.78	+22	17	07.6			391
1989	WH1		1989	12	02.62639	04	00	05.43	+22	17	01.2			391
1989	WH1		1989	12	03.62326	03	59	03.58	+22	11	51.7			391

1989	WH1		1989	12	03.65104	03	59	01.82	+22	11	44.2	391
1989	WH1		1989	12	04.66493	03	57	59.87	+22	06	27.1	391
1989	WH1		1989	12	04.68924	03	57	58.33	+22	06	19.9	391
1989	WH1		1989	12	05.60833	03	57	03.13	+22	01	35.8	391
1989	WH1		1989	12	05.62917	03	57	01.99	+22	01	28.8	391
1989	WH1		1989	12	18.57465	03	46	18.24	+20	59	08.8	15.5 391
1989	WH1		1989	12	18.59896	03	46	17.39	+20	59	04.7	391
1989	WH1		1989	12	19.54931	03	45	42.13	+20	54	58.9	391
1989	WH1		1989	12	19.57014	03	45	41.17	+20	54	53.0	391
1989	WH1		1989	12	23.51400	03	43	35.30	+20	39	15.9	391
1989	WH1		1989	12	23.53472	03	43	34.64	+20	39	10.8	391
1989	WK1		1989	12	05.65104	04	40	12.48	+20	26	41.9	14.5 391
1989	WK1		1989	12	05.66493	04	40	11.32	+20	26	44.2	391
1989	WK1		1989	12	06.72187	04	38	57.76	+20	28	01.4	391
1989	WK1		1989	12	06.73576	04	38	56.86	+20	28	02.2	391
1989	WM1	*	1989	11	25.67882	04	05	44.16	+23	17	21.4	16 391
1989	WM1		1989	11	25.70313	04	05	42.79	+23	17	13.9	391
1989	WM1		1989	11	26.65417	04	04	52.27	+23	12	18.0	16 391
1989	WM1		1989	11	26.67500	04	04	51.02	+23	12	10.3	391
1989	WM1		1989	11	27.65451	04	03	59.29	+23	06	59.6	391
1989	WM1		1989	12	04.66493	03	57	56.21	+22	29	13.8	391
1989	WM1		1989	12	04.68924	03	57	54.96	+22	29	06.3	391
1989	WM1		1989	12	05.60833	03	57	09.30	+22	24	04.7	391
1989	WM1		1989	12	05.62917	03	57	08.08	+22	24	01.0	391
1989	XD		1989	12	23.58854	05	02	34.71	+26	56	08.4	14.5 391
1989	XD		1989	12	23.60590	05	02	33.75	+26	56	00.2	14.5 391
1989	XD		1989	12	25.50799	05	00	46.72	+26	40	09.9	391
1989	XD		1989	12	25.54826	05	00	44.20	+26	39	50.6	391

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H. Kaneda, 2-15-2H, Kawazoe 8 Jo 2 Chome, Minami-Ku, Sapporo 005, Japan
Observer S. Ueda, M. Matsuyama
Measurer H. Kaneda, K. Watanabe
0.16-m f/3.8 Wright-Schmidt camera
AGK3, SAOC

1949	QL		1989	11	19.36042	01	56	55.40	+24	48	44.1	16 399
1949	QL		1989	11	19.37708	01	56	54.73	+24	48	40.6	399
1949	QL		1989	11	19.39167	01	56	54.12	+24	48	35.4	399
1949	QL		1989	12	03.50862	01	51	29.08	+23	37	13.2	16.5 399
1949	QL		1989	12	03.53142	01	51	28.84	+23	37	07.1	399
1973	EK		1989	11	29.55208	03	49	34.02	+18	13	17.5	16.5 399
1973	EK		1989	11	29.56667	03	49	33.16	+18	13	12.1	399
1973	EK		1989	11	29.58299	03	49	32.36	+18	13	10.3	399
1976	SM2		1989	11	19.41424	02	39	38.07	+13	58	49.5	16.5 399
1976	SM2		1989	11	19.43333	02	39	36.93	+13	58	41.9	399
1976	SM2		1989	11	19.45035	02	39	36.17	+13	58	39.4	399
1978	PR4		1989	11	21.47465	04	08	07.34	+24	48	06.7	16 399
1978	PR4		1989	11	21.49097	04	08	06.13	+24	48	06.5	399
1978	PR4		1989	11	21.50556	04	08	04.99	+24	48	06.0	399
1978	PR4		1989	11	22.51285	04	06	52.60	+24	47	03.9	16 399
1978	PR4		1989	11	22.52917	04	06	51.35	+24	47	04.0	399
1978	PR4		1989	11	22.54375	04	06	50.25	+24	47	02.4	399
1978	VE15		1989	11	20.45069	02	23	27.41	+11	17	21.9	16 399
1978	VE15		1989	11	20.46667	02	23	26.68	+11	17	22.0	399
1978	VE15		1989	11	20.48125	02	23	25.92	+11	17	23.8	399
1978	VE15		1989	11	25.52431	02	20	13.05	+11	18	30.5	16 399
1978	VE15		1989	11	25.53889	02	20	12.58	+11	18	30.3	399
1978	VE15		1989	11	25.55521	02	20	12.01	+11	18	31.7	399
1978	VE15		1989	12	03.55359	02	16	47.65	+11	28	41.2	16.5 399

1978	VE15		1989	12	03.57569	02	16	47.00	+11	28	42.4	399
1978	VE15		1989	12	03.59340	02	16	46.57	+11	28	44.2	399
1979	TZ1		1989	10	26.63472	02	31	43.12	+16	36	31.6	16.5 399
1979	TZ1		1989	10	29.54097	02	29	14.94	+16	25	32.6	16 399
1979	TZ1		1989	10	29.55660	02	29	13.98	+16	25	28.4	399
1979	TZ1		1989	10	29.57326	02	29	13.00	+16	25	24.0	399
1979	VN		1989	11	25.57847	04	07	19.44	+15	45	17.2	16.5 399
1979	VN		1989	11	25.59340	04	07	18.34	+15	45	12.0	399
1979	VN		1989	11	25.61007	04	07	17.41	+15	45	09.0	399
1979	VN		1989	12	01.71262	04	01	28.86	+15	17	34.7	16.5 399
1979	VN		1989	12	01.72708	04	01	28.12	+15	17	30.6	399
1979	VN		1989	12	01.74352	04	01	27.25	+15	17	26.7	399
1981	SN		1989	10	26.67363	02	56	21.22	+16	01	40.5	16.5 399
1981	SN		1989	10	26.68889	02	56	20.35	+16	01	32.1	399
1981	SN		1989	10	26.70521	02	56	19.62	+16	01	26.8	399
1981	SN		1989	10	29.59861	02	53	52.48	+15	40	21.7	16.5 399
1981	SN		1989	10	29.61389	02	53	51.58	+15	40	14.7	399
1987	CH		1987	03	04.57870	10	55	00.81	+09	55	59.8	16 399
1987	CH		1987	03	04.59375	10	55	00.04	+09	56	06.3	399
1987	US4		1987	11	17.65069	02	04	26.29	+17	27	05.0	16.5 399
1987	US4		1987	11	17.66551	02	04	25.63	+17	27	02.0	399
1987	US4		1987	11	22.57546	02	01	30.75	+17	11	31.1	16.5 399
1987	US4		1987	11	22.59144	02	01	30.18	+17	11	28.3	399
1987	US4		1987	11	28.63970	01	59	01.65	+16	55	49.4	16.5 399
1987	US4		1987	11	28.65486	01	59	01.33	+16	55	46.5	399
1987	WN5	*	1987	11	17.50278	02	19	37.90	+24	22	51.5	16.5 399
1987	WN5		1987	11	17.51794	02	19	37.35	+24	22	45.3	399
1987	WN5		1987	11	22.61852	02	16	09.84	+23	46	38.6	16.5 399
1987	WN5		1987	11	22.63426	02	16	09.42	+23	46	34.9	399
1988	PK2		1989	11	19.48750	04	09	48.70	+20	40	52.7	16.5 399
1988	PK2		1989	11	19.50243	04	09	47.87	+20	40	49.1	399
1988	PK2		1989	11	21.52361	04	08	03.03	+20	36	29.5	16.5 399
1988	PK2		1989	11	21.53825	04	08	02.23	+20	36	25.2	399
1988	PK2		1989	12	01.60220	03	59	16.52	+20	13	29.8	16.5 399
1988	PK2		1989	12	01.61701	03	59	15.50	+20	13	26.8	399
1988	PK2		1989	12	01.63264	03	59	14.72	+20	13	25.3	399
1989	TU1		1989	12	01.45486	01	55	27.83	+18	23	23.8	16 399
1989	TU1		1989	12	01.47708	01	55	27.69	+18	23	14.5	399
1989	TU1		1989	12	01.49236	01	55	27.60	+18	23	07.6	399
1989	TU1		1989	12	01.50770	01	55	27.61	+18	23	00.2	399
1989	UY		1989	12	06.60347	02	41	22.41	+21	01	05.0	16 399
1989	UY		1989	12	06.62014	02	41	21.96	+21	00	57.0	399
1989	UY		1989	12	06.64306	02	41	21.31	+21	00	49.2	399
1989	UY		1989	12	06.66013	02	41	20.84	+21	00	38.5	399
1989	UG1		1989	11	20.40006	02	06	00.82	+17	17	56.4	16 399
1989	UG1		1989	11	20.41528	02	05	59.95	+17	17	56.5	399
1989	UG1		1989	11	20.42986	02	05	59.12	+17	17	54.3	399
1989	UG1		1989	11	25.46771	02	01	27.58	+17	17	12.5	16 399
1989	UG1		1989	11	25.48403	02	01	26.76	+17	17	13.3	399
1989	UG1		1989	11	25.49931	02	01	25.88	+17	17	12.0	399
1989	UG1		1989	12	01.45486	01	56	52.86	+17	17	50.2	16.5 399
1989	UG1		1989	12	01.47708	01	56	51.86	+17	17	50.6	399
1989	UG1		1989	12	01.49236	01	56	51.22	+17	17	51.0	399
1989	UG1		1989	12	01.50770	01	56	50.56	+17	17	50.9	399
1989	UH1		1989	11	20.45069	02	26	48.20	+12	08	41.6	16 399
1989	UH1		1989	11	20.46667	02	26	47.62	+12	08	34.4	399
1989	UH1		1989	11	20.48125	02	26	46.85	+12	08	27.9	399
1989	UH1		1989	11	25.52431	02	23	41.64	+11	32	43.2	16.5 399
1989	UH1		1989	11	25.53889	02	23	41.22	+11	32	37.8	399

1989	UH1	1989	11	25.55521	02	23	40.46	+11	32	32.8	399
1989	UH1	1989	12	03.55359	02	20	13.66	+10	46	44.3	16.5 399
1989	UH1	1989	12	03.57569	02	20	13.10	+10	46	38.1	399
1989	UK1	1989	11	20.45069	02	35	30.92	+10	16	39.4	16.5 399
1989	UK1	1989	11	20.46667	02	35	30.26	+10	16	27.4	399
1989	UK1	1989	11	20.48125	02	35	29.67	+10	16	18.7	399
1989	UK1	1989	11	25.52431	02	32	42.80	+09	15	59.4	16.5 399
1989	UK1	1989	11	25.53889	02	32	42.25	+09	15	52.4	399
1989	UK1	1989	11	25.55521	02	32	41.83	+09	15	40.5	399
1989	UL1	1989	11	19.41424	02	31	39.30	+15	49	25.4	16.5 399
1989	UL1	1989	11	19.43333	02	31	38.22	+15	49	26.5	399
1989	UL1	1989	11	19.45035	02	31	37.23	+15	49	26.1	399
1989	UL1	1989	12	01.52847	02	21	40.92	+15	55	21.5	16.5 399
1989	UL1	1989	12	01.55417	02	21	39.82	+15	55	23.0	399
1989	UL1	1989	12	01.57662	02	21	38.91	+15	55	24.5	399
1989	UM1	1989	11	19.41424	02	34	41.70	+14	26	59.3	16.5 399
1989	UM1	1989	11	19.43333	02	34	40.81	+14	26	55.6	399
1989	UM1	1989	11	19.45035	02	34	39.85	+14	26	54.8	399
1989	UO1	1989	11	25.52431	02	34	24.78	+10	03	34.8	16.5 399
1989	UO1	1989	11	25.53889	02	34	24.13	+10	03	32.4	399
1989	UO1	1989	11	25.55521	02	34	23.43	+10	03	30.3	399
1989	UW2	1989	11	25.52431	02	33	59.43	+09	11	08.9	16.5 399
1989	UW2	1989	11	25.53889	02	33	58.95	+09	11	07.0	399
1989	UW2	1989	11	25.55521	02	33	58.38	+09	11	01.8	399
1989	UB3	1989	11	07.64722	03	09	37.83	+14	54	18.0	16 399
1989	UB3	1989	11	07.66181	03	09	36.75	+14	54	20.5	399
1989	VC	1989	11	19.37708	01	52	04.97	+24	07	14.8	16 399
1989	VC	1989	11	19.39167	01	52	03.95	+24	07	11.0	399
1989	VC	1989	12	03.48553	01	43	07.83	+23	08	01.7	16.5 399
1989	VC	1989	12	03.50862	01	43	06.98	+23	07	57.3	399
1989	VC	1989	12	03.53142	01	43	06.37	+23	07	50.6	399
1989	VF	1989	11	19.52431	02	53	48.07	+20	51	21.7	16.5 399
1989	VF	1989	11	19.53924	02	53	47.26	+20	51	20.8	399
1989	VF	1989	11	20.50220	02	52	54.43	+20	50	31.2	16.5 399
1989	VF	1989	11	20.51840	02	52	53.48	+20	50	31.6	399
1989	VF	1989	11	20.53513	02	52	52.52	+20	50	29.3	399
1989	VJ	1989	11	19.52431	02	50	37.19	+20	38	06.7	16.5 399
1989	VJ	1989	11	19.53924	02	50	36.39	+20	38	00.0	399
1989	VJ	1989	11	20.50220	02	49	44.86	+20	31	10.2	16 399
1989	VJ	1989	11	20.51840	02	49	43.91	+20	31	03.0	399
1989	VJ	1989	11	20.53513	02	49	43.17	+20	30	55.6	399
1989	VJ	1989	12	06.62014	02	38	17.40	+18	42	36.5	16.5 399
1989	VJ	1989	12	06.64306	02	38	16.55	+18	42	28.4	399
1989	VM	1989	11	25.52431	02	32	50.36	+09	51	46.0	16.5 399
1989	VM	1989	11	25.53889	02	32	49.69	+09	51	42.7	399
1989	VM	1989	11	25.55521	02	32	49.18	+09	51	37.9	399
1989	WB	1989	11	29.55208	03	50	37.85	+20	10	19.2	15.5 399
1989	WB	1989	11	29.56667	03	50	36.97	+20	10	19.7	399
1989	WB	1989	11	29.58299	03	50	35.99	+20	10	23.0	399
1989	WB	1989	12	01.60220	03	48	37.95	+20	13	56.0	16 399
1989	WB	1989	12	01.61701	03	48	37.07	+20	13	57.3	399
1989	WB	1989	12	01.63264	03	48	36.23	+20	14	00.1	399
1989	WB	1989	12	06.68275	03	43	52.58	+20	22	51.0	16 399
1989	WB	1989	12	06.69757	03	43	51.81	+20	22	52.5	399
1989	WC	1989	12	06.68275	03	45	32.35	+21	31	34.0	16.5 399
1989	WC	1989	12	06.69757	03	45	31.40	+21	31	29.4	399
1989	WC	1989	12	18.43229	03	37	08.86	+20	50	39.2	16.5 399
1989	WC	1989	12	18.44763	03	37	08.39	+20	50	36.2	399
1989	WC	1989	12	18.46458	03	37	07.83	+20	50	33.9	399

1989	WD		1989	12	01.60220	03	55	14.60	+20	39	40.7	16.5	399
1989	WD		1989	12	01.61701	03	55	13.34	+20	39	44.2		399
1989	WD		1989	12	01.63264	03	55	12.46	+20	39	43.7		399
1989	WD		1989	12	06.68275	03	49	36.24	+20	40	02.7	16.5	399
1989	WD		1989	12	06.69757	03	49	35.22	+20	40	03.6		399
1989	WD		1989	12	18.43229	03	38	22.33	+20	41	57.4	16.5	399
1989	WD		1989	12	18.44763	03	38	21.65	+20	41	59.0		399
1989	WD		1989	12	18.46458	03	38	20.76	+20	42	00.9		399
1989	WK		1989	12	01.60220	04	02	18.58	+19	14	44.9	16.5	399
1989	WK		1989	12	01.61701	04	02	17.71	+19	14	40.9		399
1989	WK		1989	12	01.63264	04	02	16.70	+19	14	36.2		399
1989	WO	*	1989	11	19.52431	02	52	23.39	+20	19	50.4	16.5	399
1989	WO		1989	11	19.53924	02	52	22.41	+20	19	43.5		399
1989	WO		1989	11	20.50220	02	51	32.26	+20	15	04.8	16.5	399
1989	WO		1989	11	20.51840	02	51	31.49	+20	15	00.8		399
1989	WO		1989	11	20.53513	02	51	30.48	+20	14	55.7		399
1989	WP	*	1989	11	19.52431	02	53	06.55	+21	36	26.6	16.5	399
1989	WP		1989	11	19.53924	02	53	05.48	+21	36	23.2		399
1989	WP		1989	11	20.50220	02	52	04.46	+21	34	23.0	16.5	399
1989	WP		1989	11	20.51840	02	52	03.36	+21	34	20.0		399
1989	WP		1989	11	20.53513	02	52	02.34	+21	34	19.0		399
1989	WR		1989	10	26.63472	02	29	49.99	+17	39	08.5	16.5	399
1989	WR		1989	10	26.65174	02	29	48.82	+17	39	09.3		399
1989	WR	*	1989	11	20.40006	02	04	03.15	+17	31	13.2	16	399
1989	WR		1989	11	20.41528	02	04	02.37	+17	31	13.2		399
1989	WR		1989	11	20.42986	02	04	01.73	+17	31	11.6		399
1989	WR		1989	11	25.46771	02	00	35.70	+17	29	50.0	17	399
1989	WR		1989	11	25.48403	02	00	35.41	+17	29	50.2		399
1989	WR		1989	11	25.49931	02	00	34.66	+17	29	51.1		399
1989	WR		1989	12	01.45486	01	57	43.49	+17	30	44.6	16.5	399
1989	WR		1989	12	01.47708	01	57	42.85	+17	30	46.7		399
1989	WR		1989	12	01.49236	01	57	42.50	+17	30	46.8		399
1989	WR		1989	12	01.50770	01	57	42.19	+17	30	46.9		399
1989	WS	*	1989	11	20.40006	02	16	37.08	+16	45	27.8	16	399
1989	WS		1989	11	20.41528	02	16	36.35	+16	45	20.5		399
1989	WS		1989	11	20.42986	02	16	35.84	+16	45	12.3		399
1989	WS		1989	11	25.46771	02	14	06.53	+15	57	42.3	16	399
1989	WS		1989	11	25.48403	02	14	06.19	+15	57	31.4		399
1989	WS		1989	11	25.49931	02	14	05.72	+15	57	26.6		399
1989	WS		1989	12	01.52847	02	12	04.93	+15	06	28.1	16	399
1989	WS		1989	12	01.55417	02	12	04.41	+15	06	14.3		399
1989	WS		1989	12	01.57662	02	12	04.01	+15	06	05.5		399
1989	WT	*	1989	11	20.45069	02	25	40.21	+11	37	37.2	16	399
1989	WT		1989	11	20.46667	02	25	39.37	+11	37	36.4		399
1989	WT		1989	11	20.48125	02	25	38.47	+11	37	32.8		399
1989	WT		1989	11	25.52431	02	21	17.18	+11	30	13.6	17	399
1989	WT		1989	11	25.53889	02	21	16.21	+11	30	11.4		399
1989	WT		1989	11	25.55521	02	21	15.51	+11	30	10.4		399
1989	WT		1989	12	03.55359	02	15	43.91	+11	25	24.8	17	399
1989	WT		1989	12	03.57569	02	15	43.25	+11	25	23.4		399
1989	WT		1989	12	03.59340	02	15	42.70	+11	25	21.0		399
1989	WX		1989	11	29.55208	04	01	04.59	+17	50	28.9	15.5	399
1989	WX		1989	11	29.56667	04	01	03.79	+17	50	31.6		399
1989	WX		1989	12	01.60220	03	59	11.33	+17	51	30.1	15.5	399
1989	WX		1989	12	01.61701	03	59	10.27	+17	51	31.6		399
1989	WX		1989	12	01.63264	03	59	09.48	+17	51	31.5		399
1989	WY		1989	11	25.57847	03	58	44.86	+16	23	26.6	15.5	399
1989	WY		1989	11	25.59340	03	58	43.79	+16	23	27.8		399
1989	WY		1989	11	25.61007	03	58	42.69	+16	23	26.4		399

1989	WZ		1989	11	25.57847	04	01	01.19	+16	17	52.4	15.5	399
1989	WZ		1989	11	25.59340	04	01	00.27	+16	17	44.5		399
1989	WZ		1989	11	25.61007	04	00	59.14	+16	17	35.6		399
1989	WZ		1989	12	01.71262	03	54	50.22	+15	26	52.5	15.5	399
1989	WZ		1989	12	01.72708	03	54	49.30	+15	26	45.1		399
1989	WZ		1989	12	01.74352	03	54	48.15	+15	26	36.9		399
1989	WE1		1989	12	01.65417	04	22	46.15	+14	11	39.8	16	399
1989	WE1		1989	12	01.66875	04	22	45.08	+14	11	40.0		399
1989	WE1		1989	12	01.68576	04	22	44.26	+14	11	39.2		399
1989	WH1		1989	11	21.47465	04	12	08.15	+23	12	15.1	15.5	399
1989	WH1		1989	11	21.49097	04	12	07.32	+23	12	10.3		399
1989	WH1		1989	11	21.50556	04	12	06.31	+23	12	07.2		399
1989	WH1		1989	11	22.51285	04	11	00.94	+23	07	25.3	16	399
1989	WH1		1989	11	22.52917	04	10	59.86	+23	07	19.2		399
1989	WH1		1989	11	22.54375	04	10	58.82	+23	07	12.5		399
1989	WH1		1989	12	06.68275	03	55	59.95	+21	56	04.2	16	399
1989	WH1		1989	12	06.69757	03	55	58.96	+21	55	57.4		399
1989	WJ1	*	1989	11	25.57847	04	08	38.06	+16	08	34.4	16.5	399
1989	WJ1		1989	11	25.59340	04	08	37.13	+16	08	28.7		399
1989	WJ1		1989	11	25.61007	04	08	35.91	+16	08	22.5		399
1989	WJ1		1989	11	29.62778	04	04	42.45	+15	44	07.7	16	399
1989	WJ1		1989	11	29.64236	04	04	41.55	+15	44	01.4		399
1989	WJ1		1989	12	01.71262	04	02	43.70	+15	32	04.8	16.5	399
1989	WJ1		1989	12	01.72708	04	02	42.73	+15	31	58.7		399
1989	WJ1		1989	12	01.74352	04	02	41.83	+15	31	54.9		399
1989	WL1	*	1989	11	25.63611	04	20	34.37	+17	13	11.3	15.5	399
1989	WL1		1989	11	25.65069	04	20	33.40	+17	13	01.5		399
1989	WL1		1989	11	25.67292	04	20	32.21	+17	12	49.4		399
1989	WL1		1989	11	29.70949	04	16	43.76	+16	33	37.3	15.5	399
1989	WL1		1989	11	29.72500	04	16	42.87	+16	33	29.5		399
1989	WL1		1989	12	01.65417	04	14	54.80	+16	15	04.6	15	399
1989	WL1		1989	12	01.66875	04	14	53.90	+16	14	56.1		399
1989	WL1		1989	12	01.68576	04	14	52.85	+16	14	46.1		399
1989	WL1		1989	12	06.71713	04	10	19.87	+15	28	27.2	15.5	399
1989	WL1		1989	12	06.73194	04	10	19.11	+15	28	20.3		399
1989	WL1		1989	12	06.74907	04	10	18.07	+15	28	10.5		399
1989	WP1	*	1989	11	25.57847	04	00	13.97	+15	03	46.9	16	399
1989	WP1		1989	11	25.59340	04	00	12.92	+15	03	43.8		399
1989	WP1		1989	11	25.61007	04	00	11.85	+15	03	41.4		399
1989	WP1		1989	12	01.71262	03	53	51.70	+14	49	22.7	16.5	399
1989	WP1		1989	12	01.72708	03	53	50.73	+14	49	20.2		399
1989	WP1		1989	12	01.74352	03	53	49.66	+14	49	17.8		399
1989	WQ1	*	1989	11	25.57847	04	10	04.31	+16	22	12.3	15.5	399
1989	WQ1		1989	11	25.59340	04	10	02.31	+16	22	30.9		399
1989	WQ1		1989	11	25.61007	04	10	00.40	+16	22	55.8		399
1989	WQ1		1989	12	01.60220	03	58	36.80	+18	35	34.8	16	399
1989	WQ1		1989	12	01.61701	03	58	34.87	+18	35	56.8		399
1989	WQ1		1989	12	01.63264	03	58	33.24	+18	36	15.3		399
1989	WQ1		1989	12	06.68275	03	49	01.52	+20	28	49.3	16	399
1989	WQ1		1989	12	06.69757	03	48	59.51	+20	29	12.3		399
1989	WQ1		1989	12	17.44618	03	31	23.03	+24	18	13.5	16.5	399
1989	WQ1		1989	12	17.47396	03	31	20.71	+24	18	46.2		399
1989	WQ1		1989	12	18.54063	03	29	53.99	+24	40	12.6	16	399
1989	WS1	*	1989	11	25.63611	04	24	06.92	+14	55	38.2	16.5	399
1989	WS1		1989	11	25.65069	04	24	06.04	+14	55	31.6		399
1989	WS1		1989	11	25.67292	04	24	05.11	+14	55	25.2		399
1989	WS1		1989	12	01.65417	04	18	59.35	+14	23	15.0	16.5	399
1989	WS1		1989	12	01.66875	04	18	58.54	+14	23	10.7		399
1989	WS1		1989	12	01.68576	04	18	57.87	+14	23	07.0		399

1989	WT1	*	1989	11	25.63611	04	30	01.91	+17 06 32.6	16.5	399
1989	WT1		1989	11	25.65069	04	30	00.90	+17 06 31.6		399
1989	WT1		1989	11	25.67292	04	29	59.81	+17 06 29.0		399
1989	WT1		1989	12	01.65417	04	24	42.08	+17 00 18.0	16	399
1989	WT1		1989	12	01.66875	04	24	41.21	+17 00 18.1		399
1989	WT1		1989	12	01.68576	04	24	40.41	+17 00 16.7		399
1989	WU1	*	1989	11	25.63611	04	30	12.04	+16 09 03.2	17	399
1989	WU1		1989	11	25.65069	04	30	10.91	+16 08 55.2		399
1989	WU1		1989	11	25.67292	04	30	09.69	+16 08 48.0		399
1989	WU1		1989	12	01.65417	04	23	57.59	+15 29 33.6	16.5	399
1989	WU1		1989	12	01.66875	04	23	56.76	+15 29 27.9		399
1989	WU1		1989	12	01.68576	04	23	55.46	+15 29 21.7		399
1989	WM2	*	1989	11	25.63611	04	34	41.07	+16 09 18.4	16.5	399
1989	WM2		1989	11	25.65069	04	34	39.92	+16 09 24.3		399
1989	WM2		1989	11	25.67292	04	34	38.37	+16 09 33.4		399
1989	WM2		1989	11	29.69167	04	30	00.25	+16 32 51.2	16.5	399
1989	WM2		1989	11	29.70949	04	29	58.98	+16 32 58.2		399
1989	WM2		1989	11	29.72500	04	29	57.82	+16 33 02.3		399
1989	WR2	*	1989	11	20.45069	02	29	30.17	+11 31 24.5	15.5	399
1989	WR2		1989	11	20.46667	02	29	29.09	+11 31 29.3		399
1989	WR2		1989	11	20.48125	02	29	28.17	+11 31 32.6		399
1989	WR2		1989	11	25.52431	02	24	37.26	+11 56 11.5	16	399
1989	WR2		1989	11	25.53889	02	24	36.58	+11 56 13.6		399
1989	WR2		1989	11	25.55521	02	24	35.44	+11 56 16.7		399
1989	WR2		1989	12	03.55359	02	18	16.85	+12 40 20.8	16.5	399
1989	WR2		1989	12	03.57569	02	18	15.87	+12 40 29.8		399
1989	WR2		1989	12	03.59340	02	18	15.15	+12 40 33.1		399
1989	WS2	*	1989	11	30.53993	04	03	45.52	+10 33 05.7	16.0	399
1989	WS2		1989	11	30.56120	04	03	44.19	+10 33 08.8		399
1989	WS2		1989	11	30.57868	04	03	42.86	+10 33 10.9		399
1989	WS2		1989	12	03.49809	04	00	38.23	+10 40 26.5	16.0	399
1989	WS2		1989	12	03.51875	04	00	37.05	+10 40 30.7		399
1989	WU2	*	1989	11	21.57396	04	19	03.40	+19 41 56.7	16.5	399
1989	WU2		1989	11	21.58924	04	19	02.58	+19 41 55.4		399
1989	WU2		1989	11	21.60625	04	19	01.68	+19 41 53.9		399
1989	WU2		1989	11	22.60208	04	18	09.00	+19 40 55.1	16.5	399
1989	WU2		1989	11	22.61736	04	18	07.88	+19 40 54.7		399
1989	WU2		1989	11	22.63194	04	18	07.11	+19 40 55.8		399
1989	YA	*	1989	12	17.39271	03	28	59.48	+25 00 04.7	16.5	399
1989	YA		1989	12	17.40868	03	28	58.93	+25 00 03.7		399
1989	YA		1989	12	17.47396	03	28	56.18	+25 00 03.3		399
1989	YA		1989	12	18.54063	03	28	14.46	+24 59 49.3	16	399
2534	P-L		1989	11	21.57396	04	17	31.58	+21 24 09.4	16.5	399
2534	P-L		1989	11	21.58924	04	17	30.56	+21 24 05.7		399
2534	P-L		1989	11	21.60625	04	17	29.64	+21 24 04.1		399
2534	P-L		1989	11	22.60208	04	16	37.19	+21 22 08.0	16.5	399
2534	P-L		1989	11	22.61736	04	16	36.28	+21 22 06.0		399
2534	P-L		1989	11	22.63194	04	16	35.46	+21 22 04.6		399

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Observers K. Endate, T. Fujii, A. Takahashi, M. Yanai
Measurer K. Watanabe
0.16-m f/3.3 reflector, 0.20-m f/4.8 reflector and 0.20-m f/4.0 reflector
AGK3, SAOC

1978	QC		1989	11	29.52847	04	50	23.84	+20 06 16.7	16.0	400
1978	QC		1989	11	29.55000	04	50	22.53	+20 06 15.4		400
1978	QC		1989	11	29.56458	04	50	21.65	+20 06 12.8		400

1978	QC		1989	12	01.49514	04	48	37.97	+20	02	18.2	16.5	400
1978	QC		1989	12	01.51667	04	48	36.75	+20	02	16.3		400
1978	QC		1989	12	01.53125	04	48	35.87	+20	02	15.0		400
1989	US1		1989	11	29.46319	02	01	08.00	+20	27	16.3	16.0	400
1989	US1		1989	11	29.48403	02	01	07.28	+20	27	20.1		400
1989	VR		1989	11	26.56319	03	00	37.31	+14	40	13.3	17	400
1989	VR		1989	11	26.58194	03	00	36.22	+14	40	12.5		400
1989	VS1	*	1989	11	02.62049	03	08	56.77	+10	50	15.9	16.5	400
1989	VS1		1989	11	02.63854	03	08	56.03	+10	50	11.8		400
1989	VS1		1989	11	17.42188	02	55	56.60	+10	08	40.1	16.5	400
1989	VS1		1989	11	17.43785	02	55	55.56	+10	08	46.1		400
1989	VS1		1989	12	01.49167	02	45	33.57	+09	54	03.3	16.0	400
1989	VS1		1989	12	01.50556	02	45	33.11	+09	54	04.4		400
1989	VS1		1989	12	01.52292	02	45	32.41	+09	54	04.5		400
1989	WF		1989	11	26.56319	02	57	17.19	+15	50	23.6	16.5	400
1989	WF		1989	11	26.58194	02	57	16.15	+15	50	22.7		400
1989	WV1	*	1989	11	29.51840	04	37	29.30	+23	17	36.1	16.0	400
1989	WV1		1989	11	29.53438	04	37	28.18	+23	17	36.3		400
1989	WV1		1989	12	01.53715	04	35	05.36	+23	19	38.0	16.0	400
1989	WV1		1989	12	01.55382	04	35	04.09	+23	19	36.0		400
1989	WV1		1989	12	06.57361	04	29	08.54	+23	23	38.1	16.0	400
1989	WV1		1989	12	06.58958	04	29	07.40	+23	23	38.3		400
1989	WW1	*	1989	11	29.51840	04	45	29.11	+24	03	52.1	16.5	400
1989	WW1		1989	11	29.53438	04	45	28.36	+24	03	54.2		400
1989	WW1		1989	12	01.53715	04	44	07.26	+24	10	08.8	16.5	400
1989	WW1		1989	12	01.55382	04	44	06.55	+24	10	11.9		400
1989	WX1	*	1989	11	29.52847	04	48	38.21	+20	44	21.4	16.5	400
1989	WX1		1989	11	29.55000	04	48	36.90	+20	44	13.7		400
1989	WX1		1989	11	29.56458	04	48	35.70	+20	44	11.5		400
1989	WX1		1989	12	01.49514	04	46	35.77	+20	33	22.3	16.5	400
1989	WX1		1989	12	01.51667	04	46	34.52	+20	33	12.1		400
1989	WX1		1989	12	01.53125	04	46	33.54	+20	33	08.1		400
1989	WY1	*	1989	11	29.52847	04	51	07.36	+20	38	11.1	16.5	400
1989	WY1		1989	11	29.55000	04	51	05.81	+20	38	19.6		400
1989	WY1		1989	11	29.56458	04	51	04.65	+20	38	24.8		400
1989	WY1		1989	12	01.49514	04	48	55.60	+20	49	10.9	16.5	400
1989	WY1		1989	12	01.51667	04	48	54.21	+20	49	16.6		400
1989	WY1		1989	12	01.53125	04	48	53.10	+20	49	22.4		400
1989	WZ1	*	1989	11	29.54826	04	50	43.27	+23	59	38.7	16.5	400
1989	WZ1		1989	11	29.56563	04	50	42.06	+23	59	40.5		400
1989	WZ1		1989	12	01.57049	04	48	33.11	+24	01	39.0	16.0	400
1989	WZ1		1989	12	01.58646	04	48	32.23	+24	01	36.1		400
1989	WZ1		1989	12	05.47049	04	44	19.46	+24	04	37.2	16.0	400
1989	WZ1		1989	12	05.48646	04	44	18.44	+24	04	39.2		400
1989	WZ1		1989	12	18.47986	04	31	10.08	+24	09	07.9	16.0	400
1989	WZ1		1989	12	18.49688	04	31	09.03	+24	09	10.7		400
1989	WA2	*	1989	11	29.54826	04	57	20.10	+22	49	01.0	15.5	400
1989	WA2		1989	11	29.56563	04	57	18.88	+22	49	07.6		400
1989	WA2		1989	12	01.57049	04	54	54.43	+23	03	31.5	15.5	400
1989	WA2		1989	12	01.58646	04	54	53.29	+23	03	40.1		400
1989	WA2		1989	12	05.47049	04	50	09.79	+23	30	55.6	16.0	400
1989	WA2		1989	12	05.48646	04	50	08.52	+23	31	04.1		400
1989	WA2		1989	12	06.55139	04	48	50.20	+23	38	22.9	15.5	400
1989	WA2		1989	12	06.56181	04	48	49.38	+23	38	26.9		400
1989	WA2		1989	12	18.47986	04	34	46.06	+24	54	53.9	16.0	400
1989	WA2		1989	12	18.49688	04	34	45.06	+24	54	58.9		400
1989	WA2		1989	12	24.44549	04	28	37.58	+25	28	59.4	16.0	400
1989	WA2		1989	12	24.46285	04	28	36.59	+25	29	06.7		400
1989	WC2	*	1989	11	29.63924	05	11	32.48	+25	43	28.1	16.0	400

1989	WC2		1989	11	29.65590	05	11	31.61	+25	43	34.1		400
1989	WC2		1989	12	01.66146	05	09	25.07	+25	54	17.4	16.0	400
1989	WC2		1989	12	01.67743	05	09	23.91	+25	54	21.9		400
1989	WC2		1989	12	05.49965	05	05	14.11	+26	13	58.3	16.0	400
1989	WC2		1989	12	05.51563	05	05	13.06	+26	14	03.8		400
1989	WY2	*	1989	11	29.58264	04	54	02.07	+15	53	41.2	16.5	400
1989	WY2		1989	11	29.60417	04	54	00.81	+15	53	44.3		400
1989	WY2		1989	11	29.61875	04	54	00.04	+15	53	49.2		400
1989	WY2		1989	12	03.45625	04	50	26.14	+15	59	38.0	16.5	400
1989	WY2		1989	12	03.47708	04	50	25.11	+15	59	42.2		400
1989	WY2		1989	12	03.48889	04	50	24.31	+15	59	39.7		400
1989	WH3	*	1989	11	29.54826	04	55	47.18	+23	53	45.3	16.5	400
1989	WH3		1989	11	29.56563	04	55	46.08	+23	53	45.2		400
1989	WH3		1989	12	01.57049	04	53	39.35	+23	51	50.5	16.5	400
1989	WH3		1989	12	01.58646	04	53	38.68	+23	51	45.4		400
1989	WH3		1989	12	06.55139	04	48	21.85	+23	46	13.1	16.5	400
1989	WH3		1989	12	06.56181	04	48	21.30	+23	46	12.8		400
1989	XH	*	1989	12	01.58403	05	03	33.77	+21	09	13.7	16.0	400
1989	XH		1989	12	01.60556	05	03	32.70	+21	09	07.6		400
1989	XH		1989	12	01.62014	05	03	31.86	+21	09	03.0		400
1989	XH		1989	12	03.52014	05	01	43.88	+20	58	43.5	16.0	400
1989	XH		1989	12	03.54097	05	01	42.60	+20	58	35.6		400
1989	XH		1989	12	03.55417	05	01	41.82	+20	58	33.3		400
1989	XO	*	1989	12	05.56528	05	16	54.52	+28	44	19.9	16.0	400
1989	XO		1989	12	05.58958	05	16	52.49	+28	44	14.2		400
1989	XO		1989	12	18.51597	05	02	06.97	+27	45	55.9	16.0	400
1989	XO		1989	12	18.53264	05	02	05.80	+27	45	50.7		400
1989	YB	*	1989	12	18.47986	04	27	14.61	+25	52	00.9	16.0	400
1989	YB		1989	12	18.49688	04	27	13.80	+25	51	53.9		400
1989	YB		1989	12	24.44549	04	23	13.17	+25	08	54.9	16.0	400
1989	YB		1989	12	24.46285	04	23	12.56	+25	08	49.6		400

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A. Sugie, Dynic Astronomical Observatoty, Taga 270, Taga-Cho, Inukami-Gun, Shiga-Ken, 522-03, Japan
0.60-m f/5.0 reflector
SAOC

1989	UW1		1989	11	21.58681	03	01	51.45	+11	14	32.2	13.5	402
1989	UW1		1989	11	21.60359	03	01	50.35	+11	14	35.0	13.5	402
1989	UW1		1989	11	26.56806	02	57	13.10	+11	32	03.8	13.5	402
1989	UW1		1989	11	26.58750	02	57	12.16	+11	32	08.3	13.5	402
1989	UY1		1989	11	21.58681	03	15	24.35	+10	23	57.7	16.5	402
1989	UY1		1989	11	21.60359	03	15	23.20	+10	23	47.5	16.5	402
1989	UL3		1989	11	21.66042	03	11	09.73	+02	32	33.8	15.0	402
1989	UL3		1989	11	21.67847	03	11	08.69	+02	32	41.5	15.0	402
1989	UL3		1989	11	26.60347	03	06	14.69	+03	06	19.9	14.5	402
1989	UL3		1989	11	26.62500	03	06	13.53	+03	06	31.1	14.5	402
1989	WR1		1989	11	25.78194	04	54	22.77	+14	29	46.1	16.0	402
1989	WR1		1989	11	25.80278	04	54	21.54	+14	29	41.1	16.0	402
1989	WR1		1989	11	26.65764	04	53	37.82	+14	25	16.1	16.0	402
1989	WV2	*	1989	11	28.62917	05	00	39.56	+07	10	54.9	16.0	402
1989	WV2		1989	11	28.64792	05	00	38.56	+07	10	52.8	16.0	402
1989	WV2		1989	12	03.64722	04	56	28.35	+07	04	31.0	16.0	402
1989	WV2		1989	12	03.66736	04	56	27.15	+07	04	28.5	16.0	402
1989	WW2	*	1989	11	28.65903	05	14	14.85	+10	35	39.9	16.5	402
1989	WW2		1989	11	28.68785	05	14	13.14	+10	35	41.6	16.5	402
1989	WW2		1989	12	03.68056	05	08	46.59	+10	41	17.0	16.5	402
1989	WW2		1989	12	03.70069	05	08	45.19	+10	41	17.6	16.5	402
1989	WX2	*	1989	11	28.65903	05	15	32.97	+11	29	08.3	16.0	402

1989	WX2		1989	11	28.68785	05	15	31.37	+11	29	15.5	16.0	402
1989	WX2		1989	12	03.68056	05	10	26.77	+11	52	20.3	16.0	402
1989	WX2		1989	12	03.70069	05	10	25.25	+11	52	26.7	16.0	402

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T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan
Observers Y. Mizuno, T. Furuta
Measurer T. Furuta

1978	QC		1989	12	05.58646	04	44	56.3	+19	54	00	16.5	403
1978	QC		1989	12	05.59722	04	44	55.7	+19	53	59		403
1982	HL		1989	11	25.63889	04	51	39.13	+24	09	01.1	16.5	403
1982	HL		1989	11	25.64896	04	51	38.59	+24	09	01.7		403
1982	HL		1989	11	26.57222	04	50	44.64	+24	09	31.8		403
1982	HL		1989	11	26.58507	04	50	43.89	+24	09	31.8		403
1989	TS1		1989	10	07.58090	00	06	28.3	+02	26	51	16.5	403
1989	TS1		1989	10	07.59514	00	06	27.7	+02	26	48		403
1989	UA		1989	10	26.65139	02	44	14.11	+13	34	35.4		403
1989	UA		1989	10	26.66667	02	44	13.08	+13	34	35.8		403
1989	UE		1989	10	26.61736	02	26	53.55	+10	29	30.6		403
1989	UE		1989	10	26.63264	02	26	52.54	+10	29	28.2		403
1989	UE		1989	11	02.51146	02	20	33.54	+10	18	26.5		403
1989	UE		1989	11	02.52222	02	20	32.98	+10	18	24.8		403
1989	UE		1989	11	20.58715	02	06	29.5	+10	11	06		403
1989	UE		1989	11	20.59792	02	06	28.9	+10	11	10		403
1989	UN		1989	11	04.57882	01	57	17.95	+15	12	12.0		403
1989	UN		1989	11	04.58958	01	57	17.10	+15	12	08.5		403
1989	UO		1989	11	02.51146	02	19	33.24	+09	48	17.9		403
1989	UT		1989	11	20.55104	01	40	38.05	+13	30	59.9		403
1989	UT		1989	11	20.56910	01	40	37.22	+13	31	00.5		403
1989	UP1		1989	11	04.60313	02	55	39.31	+07	25	57.9		403
1989	UP1		1989	11	04.61389	02	55	38.58	+07	25	57.3		403
1989	UP1		1989	11	10.59097	02	49	33.5	+07	32	06		403
1989	UP1		1989	11	10.59861	02	49	32.73	+07	32	04.6		403
1989	UR1		1989	11	10.61042	03	01	46.2	+13	26	52		403
1989	UR1		1989	11	10.61875	03	01	45.76	+13	26	54.0		403
1989	WG		1989	12	01.56215	03	58	32.00	+16	27	34.9	16.5	403
1989	WG		1989	12	01.57326	03	58	31.16	+16	27	35.7		403
1989	WG		1989	12	05.57257	03	54	29.29	+16	34	59.4		403
1989	WX	*	1989	11	20.64097	04	09	23.0	+17	46	47	15.5	403
1989	WX		1989	11	20.66563	04	09	21.7	+17	46	49		403
1989	WX		1989	11	21.57535	04	08	31.31	+17	47	03.0		403
1989	WX		1989	11	21.58542	04	08	30.63	+17	47	04.4		403
1989	WX		1989	11	25.55000	04	04	48.46	+17	48	46.1		403
1989	WX		1989	11	25.56007	04	04	47.90	+17	48	44.1		403
1989	WX		1989	12	01.56215	03	59	13.53	+17	51	29.5		403
1989	WX		1989	12	01.57326	03	59	12.89	+17	51	30.2		403
1989	WX		1989	12	05.57257	03	55	37.1	+17	53	40		403
1989	WY	*	1989	11	21.57536	04	03	03.56	+16	24	56.5	16.0	403
1989	WY		1989	11	21.58542	04	03	03.08	+16	24	54.9		403
1989	WY		1989	11	25.55000	03	58	46.69	+16	23	29.3		403
1989	WY		1989	11	25.56007	03	58	46.11	+16	23	28.8		403
1989	WY		1989	12	01.56215	03	52	27.13	+16	22	40.9		403
1989	WY		1989	12	01.57326	03	52	26.35	+16	22	42.6		403
1989	WY		1989	12	05.57257	03	48	29.7	+16	23	25		403
1989	WZ	*	1989	11	21.57536	04	05	04.86	+16	51	50.3	15.5	403
1989	WZ		1989	11	21.58542	04	05	04.33	+16	51	45.7		403
1989	WZ		1989	11	25.55000	04	01	03.02	+16	18	07.8		403
1989	WZ		1989	11	25.56007	04	01	02.35	+16	18	03.4		403
1989	WZ		1989	12	01.56215	03	54	59.36	+15	28	05.6		403

1989	WZ		1989	12	01.57326	03	54	58.59	+15	28	01.9		403
1989	WZ		1989	12	05.55938	03	51	07.9	+14	56	18		403
1989	WZ		1989	12	05.57257	03	51	07.0	+14	56	12		403
1989	WA1	*	1989	11	21.57536	04	09	54.13	+18	37	06.3	16.5	403
1989	WA1		1989	11	21.58542	04	09	53.53	+18	37	09.4		403
1989	WA1		1989	11	25.55000	04	05	03.6	+18	46	46		403
1989	WA1		1989	11	25.56007	04	05	03.0	+18	46	49		403
1989	WK1	*	1989	11	25.61736	04	51	43.25	+20	13	26.7	16.0	403
1989	WK1		1989	11	25.62743	04	51	42.60	+20	13	28.5		403
1989	WK1		1989	11	26.54375	04	50	41.22	+20	14	44.2		403
1989	WK1		1989	11	26.55660	04	50	40.37	+20	14	46.3		403
1989	WK1		1989	12	03.57222	04	42	37.28	+20	24	01.0		403
1989	WK1		1989	12	03.58299	04	42	36.61	+20	24	02.0		403
1989	WK1		1989	12	05.58646	04	40	17.02	+20	26	35.6		403
1989	WK1		1989	12	05.59722	04	40	16.16	+20	26	37.3		403
1989	WR1	*	1989	11	25.59653	04	54	32.49	+14	30	48.6	16.5	403
1989	WR1		1989	11	25.60660	04	54	31.93	+14	30	44.7		403
1989	WR1		1989	12	01.58715	04	49	15.00	+13	59	50.2		403
1989	WR1		1989	12	01.59792	04	49	14.36	+13	59	48.2		403
1989	WZ1		1989	11	25.63889	04	54	46.3	+23	55	12	16.5	403
1989	WZ1		1989	11	25.64896	04	54	45.7	+23	55	12		403
1989	WB2		1989	12	03.59688	05	30	18.66	+28	49	03.2		403
1989	WB2		1989	12	03.60764	05	30	18.02	+28	49	01.3		403
1989	WB2		1989	12	18.48264	05	15	32.5	+27	51	55		403
1989	WB2		1989	12	18.49271	05	15	31.7	+27	51	53		403
1989	XD	*	1989	12	03.59688	05	23	43.4	+29	27	25	15.5	403
1989	XD		1989	12	03.60764	05	23	42.5	+29	27	22		403
1989	XD		1989	12	05.61007	05	21	35.70	+29	14	11.4		403
1989	XD		1989	12	05.62083	05	21	34.94	+29	14	06.4		403
1989	XD		1989	12	08.55278	05	18	25.5	+28	53	52		403
1989	XD		1989	12	08.56250	05	18	24.8	+28	53	48		403
1989	XD		1989	12	18.48264	05	07	43.25	+27	37	59.6		403
1989	XD		1989	12	18.49271	05	07	42.73	+27	37	54.2		403
1989	XE	*	1989	12	03.59688	05	27	06.26	+28	15	42.7	16.0	403
1989	XE		1989	12	03.60764	05	27	05.40	+28	15	42.2		403
1989	XE		1989	12	05.61007	05	24	58.35	+28	14	50.9		403
1989	XE		1989	12	05.62083	05	24	57.50	+28	14	50.7		403
1989	XE		1989	12	08.55278	05	21	44.89	+28	12	40.5		403
1989	XE		1989	12	08.56250	05	21	44.50	+28	12	40.3		403
1989	XE		1989	12	18.48264	05	10	32.08	+27	58	01.9		403
1989	XE		1989	12	18.49271	05	10	31.28	+27	58	03.8		403
1989	XF	*	1989	12	03.61944	05	28	02.74	+14	21	50.1	16.0	403
1989	XF		1989	12	03.63021	05	28	02.10	+14	21	53.0		403
1989	XF		1989	12	05.63333	05	25	57.20	+14	26	52.2		403
1989	XF		1989	12	05.64410	05	25	56.38	+14	26	52.8		403
1989	XJ	*	1989	12	03.59688	05	27	28.05	+27	39	33.4	15.5	403
1989	XJ		1989	12	03.60764	05	27	27.34	+27	39	29.9		403
1989	XJ		1989	12	05.61007	05	25	23.94	+27	28	36.4		403
1989	XJ		1989	12	05.62083	05	25	23.20	+27	28	34.2		403
1989	XJ		1989	12	08.55278	05	22	15.68	+27	11	34.9		403
1989	XJ		1989	12	08.56250	05	22	15.13	+27	11	32.9		403
1989	XJ		1989	12	18.48264	05	11	20.3	+26	06	18		403
1989	XJ		1989	12	18.49271	05	11	19.7	+26	06	13		403

413 Siding Spring
R. H. McNaught, Siding Spring Observatory, Coonabarabran, N.S.W. 2357, Australia
Observer R. H. McNaught
Uppsala Southern Schmidt

1989 WG2 1989 11 19.47707 01 28 03.56 -28 07 29.3 413
1989 WG2 1989 11 19.50336 01 28 02.81 -28 07 27.4 413
1989 WG2 * 1989 11 21.49339 01 27 15.67 -28 03 25.1 17.5V 413
1989 WG2 1989 11 22.48128 01 26 55.14 -28 00 42.6 V 413
1989 WG2 1989 11 22.52295 01 26 54.20 -28 00 33.8 V 413
1989 WH2 1989 11 19.50336 01 29 14.29 -30 27 03.6 413
1989 WH2 * 1989 11 21.49339 01 29 06.85 -30 11 19.2 18 V F 413
1989 WJ2 1989 11 19.50336 01 33 23.64 -29 00 37.6 413
1989 WJ2 * 1989 11 21.49339 01 32 35.30 -28 52 05.4 17.5V 413
1989 WJ2 1989 11 22.48128 01 32 12.64 -28 47 39.6 413
1989 WJ2 1989 11 22.52295 01 32 11.26 -28 47 24.7 413
1989 WK2 * 1989 11 24.63164 05 23 58.06 -23 12 05.8 16 V 413
1989 WK2 1989 11 24.69414 05 23 55.62 -23 12 15.0 413
1989 WK2 1989 11 25.67046 05 23 19.66 -23 14 30.2 413
1989 WK2 1989 11 25.72949 05 23 17.41 -23 14 37.0 413
1989 WL2 * 1989 11 24.63164 05 25 25.18 -22 42 05.2 16.5V 413
1989 WL2 1989 11 24.69414 05 25 21.30 -22 42 07.2 413
1989 WL2 1989 11 25.67046 05 24 23.31 -22 42 16.6 413
1989 WL2 1989 11 25.72949 05 24 19.67 -22 42 16.4 413

494 Stakenbridge
B. Manning, Moonrakers, Stakenbridge, Churchill, Kidderminster, Worcs. DY10 3LS, England
1989 UR1 1989 11 22.87211 02 51 30.09 +12 41 27.4 15.5V 494
1989 UR1 1989 11 22.89446 02 51 29.01 +12 41 22.0 494
1989 UR1 1989 11 23.93765 02 50 40.52 +12 38 00.0 494
1989 UA3 1989 11 25.86156 02 52 46.94 +12 56 04.1 494
1989 UA3 1989 11 25.88642 02 52 45.98 +12 55 59.0 494
1989 UA3 1989 11 29.87234 02 50 00.26 +12 41 30.3 494
1989 VX * 1989 11 04.96159 03 06 53.68 +14 28 26.6 494
1989 VX 1989 11 04.98209 03 06 52.58 +14 28 22.6 494
1989 VX 1989 11 22.87211 02 52 11.67 +13 42 38.4 494
1989 VX 1989 11 22.89446 02 52 10.63 +13 42 35.4 494
1989 VX 1989 11 23.93765 02 51 23.95 +13 40 24.3 494
1989 VX 1989 11 25.86156 02 50 00.55 +13 36 38.3 494
1989 WN1 * 1989 11 22.87211 02 50 42.70 +12 57 51.5 494
1989 WN1 1989 11 22.89446 02 50 41.57 +12 57 51.9 494
1989 WN1 1989 11 23.93765 02 49 49.28 +12 58 13.3 494
1989 WN1 1989 11 25.86156 02 48 15.59 +12 59 01.8 494
1989 WN1 1989 11 29.84956 02 45 12.59 +13 01 29.9 494

567 Osservatorio Chaonis
J. M. Baur, Via Zara 20, I-33083 Chions, Italy
Observers J. M. Baur, G. Carniel
Measurer J. M. Baur
0.6-m f/3 Wright-Schmidt reflector
AGK3
1989 XA * 1989 12 01.93542 04 06 24.74 +22 22 22.4 17.5 567
1989 XA 1989 12 01.95347 04 06 23.68 +22 22 20.3 567
1989 XA 1989 12 02.90903 04 05 30.61 +22 20 40.0 567
1989 XA 1989 12 02.92570 04 05 29.67 +22 20 38.2 567
1989 XA 1989 12 02.94236 04 05 28.71 +22 20 36.4 567
1989 XA 1989 12 03.91875 04 04 34.83 +22 18 55.1 17.5 567
1989 XA 1989 12 03.93681 04 04 33.80 +22 18 53.0 567
1989 XA 1989 12 23.95625 03 48 50.33 +21 44 30.6 567
1989 XA 1989 12 23.97153 03 48 49.71 +21 44 29.7 567
1989 XA 1989 12 23.98958 03 48 48.99 +21 44 28.6 567
1989 XA 1989 12 25.92014 03 47 41.79 +21 41 44.2 567
1989 XA 1989 12 25.93264 03 47 41.36 +21 41 43.4 567

1989 XA		1989 12 25.94514	03 47 40.87	+21 41 42.6					567
1989 XA		1989 12 27.82847	03 46 40.48	+21 39 13.1			18		567
1989 XA		1989 12 27.84931	03 46 39.82	+21 39 11.1					567
1989 YC	*	1989 12 25.98403	07 06 36.12	+22 24 00.7			17		567
1989 YC		1989 12 25.99514	07 06 35.49	+22 24 05.7					567
1989 YC		1989 12 27.93125	07 04 21.21	+22 40 18.3					567
1989 YC		1989 12 27.94792	07 04 19.98	+22 40 26.7					567

589 Santa Lucia Stroncone
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Observers A. Vagnozzi, G. C. Morando, R. Castellani
0.5-m f/7.5 Ritchey-Chretien
SAOC

1989 TG		1989 10 25.87951	23 31 44.11	+05 57 19.9					589
1989 TG		1989 10 25.92743	23 31 42.77	+05 57 12.5					589
1989 TG		1989 10 26.76007	23 31 24.11	+05 55 34.9					589
1989 TG		1989 10 30.85660	23 30 06.31	+05 48 22.7					589

657 Victoria, Climenhaga Observatory
J. B. Tatum, Dept. of Physics, University of Victoria, P.O. Box 1700, Victoria, BC V8W 2Y2, Canada
Observers J. B. Tatum, D. D. Balam

1981 EE37		1989 09 06.36743	01 04 45.63	+03 36 01.9					657
1981 EE37		1989 09 06.40910	01 04 44.36	+03 36 02.1					657
1989 QE		1989 08 29.32715	23 09 03.79	-02 15 00.9					657
1989 QE		1989 08 29.36396	23 09 01.93	-02 15 01.5					657
1989 QE		1989 08 30.26396	23 08 16.12	-02 15 15.8					657
1989 QE		1989 08 30.34521	23 08 11.70	-02 15 19.7					657

675 Palomar
J. Gibson, OAO Corporation and Jet Propulsion Laboratory, MS 238-332, Pasadena, CA 91109, U.S.A. (1)
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Measurers J. Alu (2), E. Dyer (3), J. Gibson (1), B. Roman (2), C. S. Shoemaker (3), D. Tracy (2), C. J. van Houten (4), I. van Houten-Groeneveld (4), A. Wisse (4)
1.5-m reflector + CCD (C), 1.2-m (L) and 0.46-m (S) Schmidt telescopes

1985 RE2		1989 11 30.46788	06 39 26.46	+26 48 22.9			16.7	2	675
1985 RE2		1989 11 30.49028	06 39 25.30	+26 48 25.3				2	675
1985 RE2		1989 12 01.51007	06 38 29.10	+26 49 44.8				2	675
1985 RE2		1989 12 01.53056	06 38 27.95	+26 49 45.1				2	675
1988 EL		1989 11 30.40625	04 21 20.86	+59 03 13.7			16.5	2	675
1988 EL		1989 11 30.43212	04 21 17.35	+59 03 15.8				2	675
1988 EL		1989 12 03.31719	04 14 39.45	+59 04 33.0				2	675
1988 EL		1989 12 03.34288	04 14 35.87	+59 04 31.7				2	675
1988 FJ		1989 08 30.43750	00 48 15.71	+00 04 45.5			17.4	3	675
1988 FJ		1989 09 01.44063	00 46 25.27	+00 12 43.5				3	675
1988 FJ		1989 09 28.30277	00 10 42.19	+01 39 45.4			17	3	675
1988 FJ		1989 09 28.33576	00 10 38.89	+01 39 49.9				3	675
1988 JO		1989 11 22.39774	05 17 21.40	+05 22 34.3			16.7	3	675
1988 JO		1989 11 25.38107	05 13 57.17	+05 39 56.4				3	675
1988 JP		1989 11 22.39045	04 02 43.26	+00 35 44.3			16.0	3	675

1988	JP		1989	11	25.35138	03	58	21.35	+01	15	43.6	3 675
1988	JP		1989	11	28.30523	03	54	05.58	+01	56	59.5	3 675
1988	ME		1989	11	30.41944	05	07	37.93	+16	10	54.9	17.0 2 675
1988	ME		1989	12	03.36111	05	04	32.04	+16	00	56.0	2 675
1988	ME		1989	12	03.38420	05	04	30.62	+16	00	51.6	2 675
1988	PT1		1989	10	30.50000	05	07	55.77	+06	00	07.4	17.3 3 675
1988	PT1		1989	11	05.50277	05	05	26.70	+04	59	44.7	17.5 3 675
1988	SM		1988	10	19.26615	22	40	48.01	+02	58	16.1	1 675
1988	SM		1988	10	19.26978	22	40	48.34	+02	58	22.8	1 675
1988	SM		1988	10	19.27392	22	40	48.72	+02	58	30.5	1 675
1988	SM		1988	10	20.26642	22	42	25.70	+03	28	57.4	1 675
1988	SM		1988	10	20.26977	22	42	26.00	+03	29	03.3	1 675
1988	SM		1988	10	20.27374	22	42	26.35	+03	29	10.5	1 675
1989	FB		1989	11	09.54212	11	24	02.80	+27	33	08.6	1 675
1989	FB		1989	11	09.54505	11	24	03.25	+27	33	09.4	1 675
1989	FB		1989	11	09.54747	11	24	03.60	+27	33	10.2	1 675
1989	FB		1989	11	10.53338	11	26	33.82	+27	37	54.6	1 675
1989	FB		1989	11	10.53723	11	26	34.38	+27	37	56.0	1 675
1989	FB		1989	11	10.54209	11	26	35.10	+27	37	57.3	1 675
1989	ST5	*	1989	09	30.34895	01	05	55.50	+00	29	57.2	17.6 3 675
1989	ST5		1989	09	30.38298	01	05	54.32	+00	29	45.7	3 675
1989	ST5		1989	11	01.38489	00	48	17.51	-01	54	50.1	18 3 675
1989	ST5		1989	11	02.26336	00	47	54.35	-01	57	34.8	3 675
1989	ST5		1989	11	05.17326	00	46	40.80	-02	06	10.1	3 675
1989	TS		1989	11	29.20903	01	54	53.54	+08	48	09.5	17.0 2 675
1989	TS		1989	12	01.19809	01	53	01.74	+09	16	54.6	2 675
1989	TT		1989	11	29.28385	02	58	50.83	-12	33	37.1	16.8 2 675
1989	TT		1989	12	02.19931	02	57	45.62	-12	31	44.4	2 675
1989	UP		1989	10	30.46649	05	07	09.19	+03	29	47.2	3 675
1989	UP		1989	10	30.50000	05	07	45.52	+03	32	30.6	3 675
1989	UQ		1989	11	01.38489	01	04	39.78	+00	23	05.6	16.5 3 675
1989	UQ		1989	11	02.30034	01	00	27.29	-00	07	22.4	3 675
1989	UQ		1989	11	05.20317	00	47	36.67	-01	39	00.6	17 3 675
1989	UG2		1989	11	29.23559	01	31	22.90	+11	57	23.1	16.0 2 675
1989	UG2		1989	12	01.14010	01	30	00.56	+12	40	32.4	2 675
1989	UG2		1989	12	01.16319	01	29	59.46	+12	41	08.4	2 675
1989	UH2		1989	11	29.15660	01	20	35.21	+03	49	05.4	16.7 2 675
1989	UH2		1989	12	01.15521	01	19	30.97	+04	22	16.1	2 675
1989	UK2		1989	11	22.31649	02	25	37.16	+18	31	48.4	16 3 675
1989	UK2		1989	11	22.34965	02	25	35.92	+18	31	08.3	3 675
1989	UK2		1989	11	30.23490	02	22	10.89	+16	01	55.5	16.0 2 675
1989	UK2		1989	12	02.13490	02	21	41.64	+15	29	10.8	2 675
1989	UK2		1989	12	02.15660	02	21	41.29	+15	28	48.7	2 675
1989	UN2		1989	11	29.24184	01	49	41.53	-11	54	36.8	17.8 2 675
1989	UN2		1989	12	01.20373	01	49	15.01	-11	58	57.6	2 675
1989	UW3		1989	11	29.26667	03	03	45.43	+16	43	38.8	16.2 2 675
1989	UW3		1989	11	29.28958	03	03	44.40	+16	43	27.3	2 675
1989	UW3		1989	12	02.21615	03	01	47.25	+16	15	51.0	2 675
1989	UW3		1989	12	02.23802	03	01	46.42	+16	15	39.1	2 675
1989	UY3		1989	11	29.24878	02	47	03.34	+18	59	25.0	17.0 2 675
1989	UY3		1989	11	29.27222	02	47	02.04	+18	58	47.3	2 675
1989	UY3		1989	12	02.18351	02	44	49.29	+17	43	40.6	2 675
1989	VA		1989	11	06.43680	03	25	16.10	+18	46	21.8	3 675
1989	VA		1989	11	22.26250	01	27	26.53	-12	00	17.1	16.1 3 675
1989	VA		1989	11	25.26267	01	14	26.23	-15	16	09.2	16.4 3 675
1989	VB		1989	11	22.31649	02	27	21.34	+20	06	20.1	17.6 3 675
1989	VB		1989	11	25.28055	02	38	20.71	+21	10	26.5	17.8 3 675
1989	VP		1989	11	29.16337	01	17	19.44	+11	56	51.4	15.5 2 675
1989	VP		1989	12	01.13976	01	17	26.66	+11	20	23.9	2 675

1989	VP		1989	12	01.16319	01	17	26.80	+11	19	54.4	2 675
1989	WM	*	1989	11	28.47829	07	36	33.78	+25	18	38.7	17.5 3 675
1989	WM		1989	11	28.52500	07	36	39.51	+25	18	41.7	3 675
1989	WN	*	1989	11	22.39046	03	52	58.60	-01	14	19.6	16.5 3 675
1989	WN		1989	11	25.35138	03	48	30.83	-00	09	47.5	3 675
1989	WQ1		1989	11	29.30139	04	03	01.52	+17	44	20.1	15.5 2 675
1989	WQ1		1989	12	02.27483	03	57	20.01	+18	50	40.0	2 675
1989	WF2		1989	11	06.47881	05	16	56.04	+08	32	11.8	17.5 3 675
1989	WF2		1989	11	06.50885	05	16	55.52	+08	31	35.0	3 675
1989	WF2	*	1989	11	22.39774	05	08	46.11	+02	50	19.8	17.2 3 675
1989	WF2		1989	11	25.38107	05	06	23.19	+01	46	20.0	3 675
1989	WO2	*	1989	11	30.30451	04	11	19.20	+08	43	38.0	16.0 2 675
1989	WO2		1989	11	30.33351	04	11	16.01	+08	44	05.2	2 675
1989	WO2		1989	12	02.29965	04	07	47.98	+09	15	08.6	2 675
1989	WO2		1989	12	02.32344	04	07	45.22	+09	15	29.7	2 675
1989	WQ2	*	1989	11	30.29913	04	05	50.98	+21	13	19.8	16.0 2 675
1989	WQ2		1989	11	30.32778	04	05	49.40	+21	13	01.6	2 675
1989	WQ2		1989	12	02.31788	04	04	03.21	+20	51	37.9	2 675
1989	WT2	*	1989	11	30.45052	05	34	18.18	+41	58	09.3	15.5 2 675
1989	WT2		1989	12	01.40920	05	33	15.96	+42	08	06.2	2 675
1989	WT2		1989	12	01.43142	05	33	14.38	+42	08	19.1	2 675
1989	WE3	*	1989	11	30.30451	04	09	36.81	+06	52	29.1	16.5 2 675
1989	WE3		1989	11	30.33351	04	09	35.01	+06	51	53.7	2 675
1989	WE3		1989	12	02.29965	04	07	42.12	+06	13	19.8	2 675
1989	WF3	*	1989	11	29.44184	05	09	10.83	+25	02	57.1	16.5 2 675
1989	WF3		1989	12	01.40365	05	07	12.87	+24	52	45.7	2 675
1989	WF3		1989	12	01.42604	05	07	11.48	+24	52	37.6	2 675
6555	P-L	*	1960	09	24.35002	23	51	57.93	-04	55	48.9	17.3 4 675
6555	P-L		1960	09	26.28543	23	50	28.18	-05	06	19.7	4 675
6555	P-L		1960	09	27.34237	23	49	39.47	-05	11	57.3	4 675
6555	P-L		1960	09	28.33822	23	48	54.02	-05	17	10.6	4 675
6555	P-L		1960	10	17.22501	23	36	35.89	-06	35	23.2	4 675
6555	P-L		1960	10	22.16324	23	34	20.85	-06	47	37.0	4 675
6555	P-L		1960	10	24.23753	23	33	33.19	-06	51	34.7	4 675
6555	P-L		1960	10	26.27157	23	32	51.92	-06	54	48.0	4 675
2114	T-2		1973	09	19.19948	00	36	42.42	+03	45	27.7	4 675
2114	T-2		1973	09	19.25006	00	36	39.86	+03	45	08.9	4 675
2114	T-2		1973	09	20.26458	00	35	49.58	+03	38	14.0	4 675
2114	T-2		1973	09	24.36181	00	32	19.77	+03	09	35.3	4 675
2114	T-2		1973	09	24.42847	00	32	16.13	+03	09	06.5	4 675
2114	T-2		1973	09	25.25642	00	31	32.88	+03	03	08.4	4 675
2114	T-2		1973	09	25.32031	00	31	29.42	+03	02	42.3	4 675
2114	T-2		1973	09	29.26632	00	27	58.03	+02	33	57.7	4 675
2114	T-2	*	1973	09	29.33073	00	27	54.44	+02	33	29.6	18.4 4 675
2114	T-2		1973	09	30.22257	00	27	06.33	+02	26	54.9	4 675
2114	T-2		1973	09	30.28785	00	27	02.61	+02	26	26.7	4 675
2114	T-2		1973	10	04.30208	00	23	24.74	+01	56	54.7	4 675
2114	T-2		1973	10	04.36476	00	23	21.28	+01	56	26.7	4 675
2114	T-2		1973	10	05.32917	00	22	29.17	+01	49	20.7	4 675
2114	T-2		1973	10	05.35382	00	22	27.58	+01	49	13.4	4 675
2114	T-2		1973	10	05.39132	00	22	25.72	+01	48	53.8	4 675
2114	T-2		1973	10	05.41597	00	22	24.13	+01	48	46.6	4 675
3102	T-2		1973	09	19.18611	00	14	15.32	-00	57	36.1	4 675
3102	T-2		1973	09	19.21250	00	14	13.72	-00	57	37.4	4 675
3102	T-2		1973	09	19.23785	00	14	12.32	-00	57	40.8	4 675
3102	T-2		1973	09	19.26354	00	14	10.81	-00	57	42.0	4 675
3102	T-2		1973	09	20.22847	00	13	15.51	-00	59	27.8	4 675
3102	T-2		1973	09	20.27795	00	13	12.69	-00	59	32.4	4 675
3102	T-2		1973	09	24.34688	00	09	15.99	-01	06	52.6	4 675

3102	T-2		1973	09	24.37431	00	09	14.27	-01	06	52.4	4 675
3102	T-2		1973	09	24.41597	00	09	11.92	-01	06	59.9	4 675
3102	T-2		1973	09	24.44167	00	09	10.24	-01	06	59.0	4 675
3102	T-2		1973	09	25.24375	00	08	23.38	-01	08	27.2	4 675
3102	T-2		1973	09	25.26875	00	08	22.03	-01	08	28.3	4 675
3102	T-2		1973	09	25.30729	00	08	19.76	-01	08	33.9	4 675
3102	T-2		1973	09	25.33299	00	08	18.14	-01	08	35.7	4 675
3102	T-2		1973	09	29.27986	00	04	26.51	-01	15	23.0	4 675
3102	T-2		1973	09	29.34375	00	04	22.61	-01	15	28.2	4 675
3102	T-2		1973	09	30.23524	00	03	30.67	-01	16	57.0	4 675
3102	T-2	*	1973	09	30.30174	00	03	26.77	-01	17	04.3	17.5 4 675
3102	T-2		1973	10	04.28958	23	59	36.53	-01	23	12.6	4 675
3102	T-2		1973	10	04.31493	23	59	35.10	-01	23	14.1	4 675
3102	T-2		1973	10	04.35208	23	59	32.90	-01	23	18.6	4 675
3102	T-2		1973	10	04.37674	23	59	31.56	-01	23	20.1	4 675
3102	T-2		1973	10	05.31684	23	58	38.27	-01	24	38.3	4 675
3102	T-2		1973	10	05.34167	23	58	36.83	-01	24	40.1	4 675
3102	T-2		1973	10	05.37917	23	58	34.64	-01	24	43.7	4 675
3102	T-2		1973	10	05.40347	23	58	33.29	-01	24	45.3	4 675
3211	T-2		1973	09	19.21250	00	20	24.02	-01	35	13.4	4 675
3211	T-2		1973	09	19.26354	00	20	21.78	-01	35	26.8	4 675
3211	T-2		1973	09	20.27795	00	19	39.39	-01	40	01.1	4 675
3211	T-2		1973	09	24.37431	00	16	45.65	-01	58	19.4	4 675
3211	T-2		1973	09	24.44167	00	16	42.65	-01	58	34.9	4 675
3211	T-2		1973	09	25.26875	00	16	07.56	-02	02	16.4	4 675
3211	T-2		1973	09	25.33299	00	16	04.79	-02	02	32.6	4 675
3211	T-2		1973	09	29.27986	00	13	16.01	-02	19	46.6	4 675
3211	T-2		1973	09	29.34375	00	13	13.19	-02	20	04.1	4 675
3211	T-2		1973	09	30.23524	00	12	35.43	-02	23	52.3	4 675
3211	T-2	*	1973	09	30.30174	00	12	32.52	-02	24	09.7	19.2 4 675
3211	T-2		1973	10	04.31493	00	09	43.73	-02	40	51.7	4 675
3211	T-2		1973	10	04.37674	00	09	40.91	-02	41	07.9	4 675
3211	T-2		1973	10	05.34167	00	09	00.97	-02	45	00.0	4 675
3211	T-2		1973	10	05.40347	00	08	58.41	-02	45	13.4	4 675
3288	T-2		1973	09	19.22500	00	27	08.81	+00	03	32.3	4 675
3288	T-2		1973	09	19.27865	00	27	06.52	+00	03	16.4	4 675
3288	T-2		1973	09	20.30278	00	26	23.00	-00	01	18.9	4 675
3288	T-2		1973	09	24.38750	00	23	26.51	-00	19	47.4	4 675
3288	T-2		1973	09	24.45434	00	23	23.60	-00	20	06.1	4 675
3288	T-2		1973	09	25.28125	00	22	47.74	-00	23	48.9	4 675
3288	T-2		1973	09	25.34601	00	22	44.83	-00	24	06.0	4 675
3288	T-2		1973	09	29.27986	00	19	52.81	-00	41	41.4	4 675
3288	T-2		1973	09	29.34375	00	19	49.90	-00	41	59.6	4 675
3288	T-2		1973	09	30.23524	00	19	11.05	-00	45	57.7	4 675
3288	T-2		1973	09	30.24826	00	19	10.40	-00	46	00.7	4 675
3288	T-2	*	1973	09	30.30174	00	19	07.87	-00	46	14.6	19.3 4 675
3288	T-2		1973	09	30.31476	00	19	07.49	-00	46	20.0	4 675
3288	T-2		1973	10	04.28958	00	16	15.05	-01	03	31.9	4 675
3288	T-2		1973	10	04.31493	00	16	14.05	-01	03	38.8	4 675
3288	T-2		1973	10	04.32708	00	16	13.41	-01	03	42.5	4 675
3288	T-2		1973	10	04.35208	00	16	12.41	-01	03	48.6	4 675
3288	T-2		1973	10	04.37674	00	16	11.28	-01	03	53.7	4 675
3288	T-2		1973	10	04.38889	00	16	10.72	-01	03	59.2	4 675
3288	T-2		1973	10	05.31684	00	15	31.14	-01	07	53.3	4 675
3288	T-2		1973	10	05.34167	00	15	30.15	-01	07	58.2	4 675
3288	T-2		1973	10	05.35382	00	15	29.49	-01	08	02.4	4 675
3288	T-2		1973	10	05.37917	00	15	28.63	-01	08	08.7	4 675
3288	T-2		1973	10	05.40347	00	15	27.42	-01	08	12.9	4 675
3288	T-2		1973	10	05.41597	00	15	26.80	-01	08	17.1	4 675

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4216 T-2   1973 09 19.22500  00 39 56.37  +00 21 09.7                  4 675
4216 T-2   1973 09 19.27865  00 39 54.57  +00 20 49.7                  4 675
4216 T-2   1973 09 20.30278  00 39 20.32  +00 14 35.6                  4 675
4216 T-2   1973 09 24.38750  00 37 00.13  -00 10 25.8                  4 675
4216 T-2   1973 09 24.45434  00 36 57.76  -00 10 51.3                  4 675
4216 T-2   1973 09 25.28125  00 36 29.00  -00 15 55.0                  4 675
4216 T-2   1973 09 25.34601  00 36 26.67  -00 16 18.5                  4 675
4216 T-2 * 1973 09 29.29219  00 34 06.88  -00 40 29.5           18.0   4 675
4216 T-2   1973 09 29.35694  00 34 04.59  -00 40 52.3                  4 675
4216 T-2   1973 09 30.24826  00 33 32.84  -00 46 13.6                  4 675
4216 T-2   1973 09 30.31476  00 33 30.46  -00 46 37.1                  4 675
4216 T-2   1973 10 04.32708  00 31 07.29  -01 10 36.2                  4 675
4216 T-2   1973 10 04.38889  00 31 05.00  -01 10 57.6                  4 675
4216 T-2   1973 10 05.35382  00 30 30.82  -01 16 36.4                  4 675
4216 T-2   1973 10 05.41597  00 30 28.63  -01 16 57.8                  4 675
4314 T-2 * 1973 09 29.29219  00 41 27.42  -02 59 25.4           17.6   4 675
4314 T-2   1973 09 29.35694  00 41 23.78  -02 59 48.2                  4 675
4314 T-2   1973 09 30.24826  00 40 36.95  -03 04 60.0                  4 675
4314 T-2   1973 09 30.31476  00 40 33.27  -03 05 24.7                  4 675
4314 T-2   1973 10 04.32708  00 36 58.85  -03 28 15.4                  4 675
4314 T-2   1973 10 04.38889  00 36 55.35  -03 28 34.9                  4 675
4314 T-2   1973 10 05.35382  00 36 03.58  -03 33 49.2                  4 675
4314 T-2   1973 10 05.41597  00 36 00.08  -03 34 09.3                  4 675

688 Lowell Observatory, Anderson Mesa Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
   Flagstaff, AZ 86001, U.S.A.
Observer B. A. Skiff
Measurer B. A. Skiff
0.33-m photographic telescope
1984 UT    1984 11 18.23472  02 35 47.37  +17 20 43.9           16.5    688
1984 UT    1984 11 18.28750  02 35 45.08  +17 19 55.9                   688

691 Kitt Peak, Steward Observatory
T. Gehrels, Space Sciences Building, University of Arizona,
   Tucson, AZ 85721, U.S.A.
Observers T. Gehrels, D. Rabinowitz, J. V. Scotti
0.91-m SPACEWATCH telescope
SAOC 1984
1989 UP    1989 12 01.46021  11 17 18.40  +16 58 57.8                  691
1989 UP    1989 12 01.48670  11 17 22.63  +16 58 55.1                  691
1989 UP    1989 12 01.50080  11 17 24.97  +16 58 53.1                  691
1989 UP    1989 12 05.46653  11 28 25.09  +16 46 55.9           19.5V   691
1989 UP    1989 12 05.49035  11 28 28.33  +16 46 52.7                  691
1989 UP    1989 12 05.51208  11 28 31.09  +16 46 49.9                  691
1989 WM    1989 12 01.30073  07 42 39.93  +25 23 06.3                  691
1989 WM    1989 12 05.37606  07 51 18.34  +25 29 55.1                  691
1989 WM    1989 12 05.40117  07 51 21.35  +25 29 58.0           16.4V   691
1989 WM    1989 12 05.40979  07 51 22.36  +25 29 58.9                  691
1989 WM    1989 12 05.51889  07 51 35.35  +25 30 09.4                  691

693  University of Arizona, Catalina Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
   Flagstaff, AZ 86001, U.S.A.
Observer S. Larson
Measurers S. Larson, S. J. Bus
1.5-m reflector + CCD
1989 WM    1989 12 01.42940  07 42 55.73  +25 23 21.7                  693
1989 WM    1989 12 01.46666  07 43 00.25  +25 23 24.8                  693
```

760 Goethe Link
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observers C. F. Capen, Hong Sik Yun
Measurer B. A. Skiff
0.25-m refractor
PDS scanning microdensitometer
AGK3 and Perth 70 secondary nets, global solutions

1950 NR	1950 07 14.26872	21 21 00.87	-13 31 47.0			16.7		760
1950 NR	1950 07 14.31385	21 20 59.41	-13 31 03.4					760
1950 NS	1950 07 14.26872	21 31 39.95	-10 29 50.6			16.7		760
1950 NS	1950 07 14.31385	21 31 38.82	-10 29 58.3					760
1950 NT	1950 07 15.15000	17 26 45.60	-28 55 17.8					760
1950 NT	1950 07 15.19236	17 26 44.32	-28 55 25.6					760
1950 NT1	1950 07 14.26872	21 18 45.41	-14 31 09.1			16.7		760
1950 NT1	1950 07 14.31385	21 18 43.91	-14 31 19.9					760
1950 TQ3	1950 10 13.35216	02 44 24.52	+02 25 13.7					760
1950 TR3	1950 10 13.35216	02 45 02.02	-00 08 10.8					760
1952 RC	1952 09 13.13376	21 26 35.69	-12 59 04.5					760
1952 RC	1952 09 13.21014	21 26 35.80	-12 58 20.9					760
1962 WT	1962 11 26.09371	02 39 47.97	+15 41 37.5					760
1962 WT	1962 11 26.13746	02 39 45.69	+15 41 34.2					760
1962 WU	1962 11 26.09371	02 35 09.08	+18 51 42.9					760
1962 WU	1962 11 26.13746	02 35 06.80	+18 51 32.8					760
1964 FJ	1964 03 18.22569	10 19 32.19	+13 16 06.1					760
1964 FJ	1964 03 18.27153	10 19 30.29	+13 16 24.9					760

801 Oak Ridge
R. E. McCrosky, Harvard-Smithsonian Center for Astrophysics,
60 Garden Street, Cambridge, MA 02138, U.S.A.
Observers R. E. McCrosky, C.-Y. Shao
1.5-m reflector + CCD
AC

1936 PB	1989 10 29.28193	03 44 46.00	+30 06 14.6					801
1941 WA	1989 10 28.32683	05 37 44.75	+21 19 26.4					801
1941 WA	1989 10 28.39401	05 37 44.96	+21 19 29.8					801
1941 WA	1989 11 29.18450	05 24 11.59	+21 54 45.1					801
1941 WA	1989 11 29.20278	05 24 10.64	+21 54 46.2					801
1952 QX	1989 10 27.12359	23 26 11.76	-13 36 09.1					801
1964 TG2	1989 09 29.24229	23 42 08.49	+00 26 47.4					801
1964 VE	1989 09 28.18269	23 14 12.32	+25 55 32.6					801
1964 VE	1989 10 30.00758	23 13 49.53	+11 16 30.3					801
1964 VE	1989 10 30.03646	23 13 50.47	+11 15 44.1					801
1977 QU2	1989 11 25.11003	01 30 00.96	+06 39 50.3					801
1977 QU2	1989 11 25.14627	01 30 00.28	+06 39 43.3					801
1978 TU7	1989 10 29.22527	02 45 39.24	+01 48 20.0					801
1978 TU7	1989 10 29.25243	02 45 37.53	+01 48 21.8					801
1978 TV8	1989 10 30.17092	01 08 40.92	+06 49 54.0					801
1978 TV8	1989 10 30.19631	01 08 39.78	+06 49 48.4					801
1979 TZ1	1987 04 30.25203	14 33 51.05	-16 51 31.2					801
1981 QP	1989 12 01.22987	04 56 55.51	+21 02 49.7					801
1982 HS1	1988 08 16.10112	20 41 58.65	-21 02 12.9					801
1982 KB1	1988 12 13.18955	04 39 39.88	+31 15 17.0					801
1982 SX2	1989 10 28.21283	02 00 25.41	+17 53 28.2					801
1982 SX2	1989 10 28.25469	02 00 22.48	+17 53 23.7					801
1982 UP6	1989 10 28.21876	02 02 51.21	+17 19 59.2					801
1982 UP6	1989 10 28.25913	02 02 48.85	+17 19 24.5					801
1983 AN	1989 10 28.20406	02 09 31.82	+01 30 41.7					801
1983 AN	1989 10 28.25079	02 09 28.92	+01 30 34.6					801

1983	RO3	1989	09	28.26840	01	13	50.90	+05	44	23.0	801
1983	RO3	1989	09	28.29152	01	13	49.86	+05	44	18.0	801
1985	QH4	1989	10	28.22614	02	10	51.57	+19	26	13.5	801
1985	QH4	1989	10	28.26302	02	10	49.26	+19	26	06.4	801
1985	QM4	1989	09	29.26656	02	13	00.47	+10	06	34.2	801
1985	QM4	1989	09	29.29954	02	12	59.46	+10	06	30.9	801
1985	RL1	1989	10	28.24708	02	14	13.96	+12	49	04.0	801
1987	BJ	1988	07	14.27814	20	13	19.55	-15	21	10.0	801
1987	BJ	1989	11	29.16074	04	18	20.00	+11	48	19.7	801
1987	DQ	1988	08	10.27797	21	42	20.06	-14	25	42.1	801
1987	DQ	1989	12	01.26492	05	20	45.63	+14	32	30.1	801
1987	DQ	1989	12	01.31113	05	20	42.67	+14	32	27.5	801
1988	FJ	1989	09	30.24833	00	07	43.60	+01	45	16.8	801
1988	FJ	1989	10	30.09934	23	32	07.30	+03	26	45.9	801
1988	FJ	1989	10	30.14868	23	32	05.20	+03	26	59.0	801
1988	PT1	1989	10	28.33076	05	08	37.23	+06	22	03.4	801
1988	PT1	1989	10	28.36349	05	08	36.61	+06	21	43.3	801
1988	RU	1989	11	27.08821	01	42	06.97	+11	25	14.9	801
1988	RU	1989	11	27.13601	01	42	06.02	+11	25	07.4	801
1989	OB	1989	09	29.14710	22	09	46.91	+30	16	12.6	801
1989	OB	1989	09	29.18300	22	09	51.51	+30	16	52.2	801
1989	OB	1989	11	25.11954	01	00	50.09	+28	15	36.7	801
1989	OB	1989	12	02.08475	01	19	01.15	+27	05	23.4	801
1989	OB	1989	12	02.09696	01	19	02.88	+27	05	15.6	801
1989	PA	1989	10	28.98906	20	10	48.83	+04	19	37.2	801
1989	WM	1989	12	01.11663	07	42	16.35	+25	22	44.6	801
1989	WM	1989	12	01.15528	07	42	21.34	+25	22	49.1	801
1989	WM	1989	12	01.37467	07	42	48.42	+25	23	13.5	801
1989	WM	1989	12	01.38051	07	42	49.13	+25	23	14.0	801
1989	WM	1989	12	02.26205	07	44	42.86	+25	24	40.5	801
1989	WM	1989	12	02.27330	07	44	44.21	+25	24	41.5	801
2533	P-L	1982	05	26.20568	14	51	48.20	-13	25	29.2	801

807 Cerro Tololo
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observer S. J. Bus
0.60-m Schmidt

1938	HE	1989	10	06.29722	02	23	32.94	+03	23	55.5	807
1938	HE	1989	10	30.24306	02	00	46.82	+01	13	17.1	807
1938	HE	1989	11	01.22153	01	58	52.55	+01	05	54.9	807
1966	PM	1989	10	04.29583	01	58	33.17	+10	33	16.6	807
1966	PM	1989	10	30.19097	01	39	03.11	+08	56	31.0	807
1966	PM	1989	11	01.17292	01	37	33.26	+08	49	09.9	807
1973	ST	1989	10	04.19028	01	24	57.72	+08	42	08.0	807
1973	ST	1989	10	05.19167	01	24	22.64	+08	38	40.6	807
1973	ST	1989	10	30.13889	01	09	31.58	+07	09	43.8	807
1973	ST	1989	11	01.12222	01	08	26.83	+07	03	11.6	807
1973	SZ3	1989	10	30.13889	01	15	28.19	+07	39	22.9	807
1973	SZ3	1989	11	01.12222	01	13	45.72	+07	33	36.0	807
1975	YE	1989	10	02.19722	01	27	49.57	+04	32	37.8	807
1975	YE	1989	10	06.24514	01	25	15.11	+03	47	18.0	807
1975	YE	1989	10	28.10556	01	10	11.07	-00	12	15.1	807
1977	QU2	1989	10	30.19097	01	45	27.49	+09	05	32.7	807
1977	QU2	1989	11	01.17292	01	43	49.64	+08	51	01.2	807
1978	TV8	1989	10	04.19028	01	28	27.78	+08	33	08.2	807
1978	TV8	1989	10	05.19167	01	27	44.25	+08	29	23.0	807
1978	TV8	1989	10	30.13889	01	08	42.40	+06	50	05.7	807
1978	TV8	1989	11	01.12222	01	07	20.80	+06	43	05.2	807

1981	EJ17	1989	10	28.10556	01	07	21.57	+03	59	47.0	807
1981	EP18	1989	10	30.19097	01	40	41.06	+05	27	52.0	807
1981	EP18	1989	11	01.17292	01	39	20.22	+05	17	31.7	807
1981	ET23	1989	10	04.19028	01	28	32.68	+12	07	36.5	807
1981	ET23	1989	10	05.19167	01	27	33.66	+12	08	56.8	807
1981	EB31	1989	10	29.26736	02	31	18.86	+07	12	42.2	807
1981	EB31	1989	11	01.30556	02	28	57.75	+06	57	41.3	807
1981	EL34	1989	10	04.19028	01	16	29.78	+09	21	18.0	807
1981	EL34	1989	10	05.19167	01	15	45.52	+09	16	36.5	807
1981	EG39	1989	10	04.19028	01	17	22.69	+12	11	42.6	807
1981	EG39	1989	10	05.19167	01	16	34.94	+12	09	03.8	807
1981	EP40	1989	11	01.26319	01	58	10.37	+06	41	55.6	807
1981	EP40	1989	11	02.05556	01	57	30.38	+06	35	04.4	807
1982	HS1	1989	10	29.26736	02	18	35.50	+07	44	15.2	807
1982	HS1	1989	11	01.30556	02	16	12.35	+07	33	09.0	807
1982	SQ2	1989	10	04.19028	01	28	00.51	+08	34	25.1	807
1982	SQ2	1989	10	05.19167	01	27	11.02	+08	25	02.9	807
1983	AN	1989	10	30.24306	02	07	30.01	+01	25	58.1	807
1983	AN	1989	11	01.22153	02	05	32.33	+01	21	54.4	807
1983	RO3	1989	10	02.19722	01	11	04.17	+05	28	35.5	807
1984	EN1	1989	10	04.29583	01	54	38.62	+09	14	15.6	807
1985	PG2	1989	10	02.19722	01	24	42.77	+02	52	06.4	807
1985	PG2	1989	10	06.24514	01	21	15.97	+02	37	15.0	807
1985	PG2	1989	10	28.10556	01	01	55.46	+01	36	14.9	807
1985	QM4	1989	10	30.19097	01	47	23.37	+08	53	43.7	807
1985	QM4	1989	11	01.17292	01	45	34.50	+08	49	09.3	807
1985	TM1	1989	10	04.29583	01	53	14.15	+11	21	52.9	807
1985	VN	1989	10	30.13889	01	10	21.62	+08	48	24.3	807
1985	VN	1989	11	01.12222	01	09	23.20	+08	22	28.9	807
1988	JU	1989	10	03.23958	02	06	51.28	+03	55	39.8	807
1988	JU	1989	10	06.29722	02	04	34.28	+03	11	59.8	807
1988	RY10	1989	10	02.19722	01	19	28.41	+05	22	42.6	807
1988	RY10	1989	10	06.24514	01	17	28.73	+05	10	09.6	807
1988	RY10	1989	10	28.10556	01	06	37.12	+04	05	11.3	807
1988	RH11	1989	10	04.19028	01	21	46.52	+07	54	46.5	807
1988	RH11	1989	10	30.13889	01	09	10.15	+06	32	56.1	807
1988	RH11	1989	11	01.12222	01	08	17.56	+06	27	14.5	807
1988	RM11	1989	10	02.19722	01	17	27.09	+04	22	40.0	807
1988	RM11	1989	10	06.24514	01	15	29.15	+04	09	16.7	807
1988	RM11	1989	10	28.10556	01	04	48.92	+03	01	02.9	807
1988	RH12	1989	10	03.35486	02	41	44.21	+06	46	13.2	807
1988	RH12	1989	10	29.26736	02	29	59.04	+05	09	45.3	807
1988	RH12	1989	11	01.30556	02	28	24.90	+04	59	17.0	807
1988	RP12	1989	10	04.29583	01	51	17.39	+07	12	27.8	807
1988	RP12	1989	10	30.19097	01	39	06.91	+05	54	17.2	807
1988	RP12	1989	11	01.17292	01	38	11.74	+05	48	46.9	807
1988	RS12	1989	10	04.19028	01	25	11.03	+11	47	49.0	807
1988	RS12	1989	10	05.19167	01	24	42.15	+11	44	44.3	807
1988	RS12	1989	10	30.13889	01	12	28.11	+10	21	34.2	807
1988	RS12	1989	11	01.12222	01	11	34.37	+10	15	00.1	807
1988	RT12	1989	10	04.29583	02	03	26.21	+10	54	03.3	807
1988	RT12	1989	10	30.19097	01	50	37.81	+09	19	45.2	807
1988	RT12	1989	11	01.17292	01	49	38.39	+09	12	37.5	807
1988	RV12	1989	10	03.23958	02	14	50.71	+05	06	39.9	807
1988	RV12	1989	10	06.29722	02	13	23.74	+04	48	31.2	807
1988	RV12	1989	10	30.24306	01	59	55.69	+02	27	28.0	807
1988	RV12	1989	11	01.22153	01	58	45.94	+02	16	48.7	807
1988	RH13	1989	10	03.23958	02	04	39.21	+05	43	49.8	807
1988	RH13	1989	10	30.19097	01	49	30.29	+05	11	16.4	807

1988	RH13		1989	11	01.17292	01	48	22.18	+05	09	32.3	807
1988	RL13		1989	10	03.23958	02	07	27.15	+01	34	48.7	807
1988	RL13		1989	10	06.29722	02	05	58.93	+01	29	11.4	807
1988	RL13		1989	11	01.22153	01	52	07.82	+00	51	34.8	807
1988	SW1		1989	10	02.19722	01	15	47.10	+02	04	51.5	807
1988	SW1		1989	10	06.24514	01	13	40.36	+01	58	04.9	807
1988	SW1		1989	10	28.10556	01	02	18.14	+01	27	30.1	807
1988	SK2		1989	10	04.29583	01	51	45.03	+09	55	51.4	807
1988	SK2		1989	10	30.19097	01	39	38.48	+08	44	24.7	807
1988	SK2		1989	11	01.17292	01	38	43.58	+08	39	05.6	807
1989	SD1		1989	10	02.19722	01	15	06.06	+02	11	40.5	17.0 807
1989	SD1		1989	10	06.24514	01	11	58.16	+01	51	39.2	807
1989	SD1		1989	10	28.10556	00	55	12.70	+00	18	32.8	807
1989	SV1		1989	10	02.19722	01	21	58.33	+04	11	03.0	16.5 807
1989	SV1		1989	10	06.24514	01	19	10.46	+03	50	52.3	807
1989	SV1		1989	10	28.10556	01	03	36.82	+02	11	57.3	807
1989	SB2		1989	10	02.19722	01	22	22.91	+03	06	52.8	807
1989	SB2		1989	10	06.24514	01	18	24.16	+03	06	52.7	807
1989	SB2		1989	10	28.10556	00	56	28.04	+03	26	33.4	807
1989	TN		1989	10	28.10556	01	12	23.24	+01	01	54.0	807
1989	TB1		1989	10	04.19028	01	26	53.19	+09	41	51.8	807
1989	TB1		1989	10	05.19167	01	25	55.66	+09	38	33.4	807
1989	TC1		1989	10	04.19028	01	27	57.44	+10	01	56.2	807
1989	TC1		1989	10	05.19167	01	27	05.33	+09	56	39.0	807
1989	TC1		1989	10	30.13889	01	05	22.84	+07	38	05.1	16.2 807
1989	TC1		1989	11	01.12222	01	03	57.61	+07	28	29.6	807
1989	TP1		1989	10	30.13889	01	21	01.44	+08	00	25.2	15.8 807
1989	TP1		1989	11	01.12222	01	19	42.02	+07	51	58.8	807
1989	TK2	*	1989	10	03.23958	02	07	16.79	+04	41	40.7	17.5 807
1989	TK2		1989	10	06.29722	02	05	18.25	+04	19	27.8	807
1989	TL2	*	1989	10	03.23958	02	08	49.23	+03	26	45.9	17.0 807
1989	TL2		1989	10	06.29722	02	07	00.74	+02	58	24.7	807
1989	TM2	*	1989	10	03.23958	02	11	01.67	+02	23	13.7	16.2 807
1989	TM2		1989	10	06.29722	02	08	46.70	+02	17	56.2	807
1989	TN2	*	1989	10	03.23958	02	11	02.09	+04	45	28.6	18.0 807
1989	TN2		1989	10	06.29722	02	10	41.79	+04	04	08.6	807
1989	TN2		1989	10	30.24306	02	01	24.73	-01	10	26.4	807
1989	TO2	*	1989	10	03.23958	02	15	33.98	+02	31	20.6	18.2 807
1989	TO2		1989	10	06.29722	02	14	22.08	+02	20	47.5	807
1989	TO2		1989	10	30.24306	02	03	41.87	+01	03	50.2	807
1989	TO2		1989	11	01.22153	02	02	47.27	+00	58	23.9	807
1989	TP2	*	1989	10	03.23958	02	17	51.04	+05	31	49.3	18.0 807
1989	TP2		1989	10	06.29722	02	16	17.73	+05	15	59.6	807
1989	TP2		1989	10	30.24306	02	01	55.15	+03	16	08.4	807
1989	TP2		1989	11	01.22153	02	00	41.83	+03	07	29.1	807
1989	TQ2	*	1989	10	03.23958	02	19	06.01	+03	01	54.2	17.2 807
1989	TQ2		1989	10	06.29722	02	16	45.88	+03	03	49.1	807
1989	TQ2		1989	11	01.22153	01	52	26.83	+03	37	24.8	807
1989	TR2	*	1989	10	03.23958	02	19	31.59	+03	38	50.7	16.8 807
1989	TR2		1989	10	06.29722	02	17	16.52	+03	36	27.2	807
1989	TR2		1989	11	01.22153	01	53	27.67	+03	30	44.3	807
1989	TS2	*	1989	10	03.23958	02	19	52.46	+01	23	06.3	19.2 807
1989	TS2		1989	10	06.29722	02	18	39.60	+01	11	45.5	807
1989	TS2		1989	10	30.24306	02	07	36.45	-00	09	29.4	807
1989	TT2	*	1989	10	03.23958	02	23	22.52	+04	09	46.0	17.0 807
1989	TT2		1989	10	06.29722	02	21	38.39	+03	54	29.5	807
1989	TT2		1989	10	30.24306	02	04	16.98	+02	04	44.7	807
1989	TT2		1989	11	01.22153	02	02	46.34	+01	57	51.2	807
1989	TX2		1989	10	02.19722	01	26	40.93	+03	40	14.4	16.8 807

1989	TX2		1989	10	06.24514	01	23	47.45	+02	54	22.2		807
1989	TT5	*	1989	10	02.19722	01	13	35.53	+04	08	26.5	16.5	807
1989	TT5		1989	10	06.24514	01	09	31.53	+03	55	02.3		807
1989	TU5	*	1989	10	02.19722	01	14	17.48	+05	19	56.8	18.5	807
1989	TU5		1989	10	06.24514	01	12	22.98	+05	08	02.9		807
1989	TU5		1989	10	28.10556	01	02	07.34	+04	06	24.0		807
1989	TV5	*	1989	10	02.19722	01	14	25.36	+02	26	03.2	17.0	807
1989	TV5		1989	10	06.24514	01	12	15.44	+01	42	34.8		807
1989	TW5	*	1989	10	02.19722	01	18	36.71	+05	19	23.3	16.2	807
1989	TW5		1989	10	06.24514	01	14	18.54	+05	13	40.5		807
1989	US		1989	10	30.19097	01	49	03.08	+09	27	43.0	15.2	807
1989	US		1989	11	01.17292	01	47	04.03	+09	25	20.9		807
1989	UA1		1989	10	04.19028	01	26	29.47	+11	51	38.2		807
1989	UA1		1989	10	05.19167	01	25	31.27	+11	51	56.5	15.8	807
1989	UG3		1989	10	03.35486	02	40	00.48	+07	51	28.0		807
1989	UG3		1989	10	29.26736	02	20	41.74	+06	31	22.2	15.8	807
1989	UG3		1989	11	01.30556	02	17	54.20	+06	23	33.5		807
1989	UZ4		1989	10	03.35486	02	36	21.96	+06	57	55.0		807
1989	UZ4	*	1989	10	29.26736	02	18	22.64	+04	04	27.5	16.0	807
1989	UZ4		1989	11	01.30556	02	15	45.34	+03	46	18.5		807
1989	UA5	*	1989	10	29.26736	02	25	07.08	+06	53	36.9	16.5	807
1989	UA5		1989	11	01.30556	02	22	46.80	+06	23	03.6		807
1989	UB5	*	1989	10	29.26736	02	25	22.38	+05	20	52.5	16.2	807
1989	UB5		1989	11	01.30556	02	23	02.20	+04	44	16.7		807
1989	UC5		1989	10	04.19028	01	23	31.60	+11	10	34.4		807
1989	UC5		1989	10	05.19167	01	23	02.95	+11	06	25.6		807
1989	UC5	*	1989	10	30.13889	01	10	57.29	+09	17	30.5	20.5	807
1989	UC5		1989	11	01.12222	01	10	05.08	+09	09	05.2		807
1989	UD5	*	1989	10	30.13889	01	13	14.69	+08	42	22.3	17.2	807
1989	UD5		1989	11	01.12222	01	11	45.39	+08	34	44.6		807
1989	UE5		1989	10	04.19028	01	26	46.89	+08	42	01.1		807
1989	UE5		1989	10	05.19167	01	26	20.17	+08	37	49.0		807
1989	UE5	*	1989	10	30.13889	01	14	59.65	+06	51	02.0	20.2	807
1989	UE5		1989	11	01.12222	01	14	09.29	+06	43	00.0		807
1989	UF5	*	1989	10	30.13889	01	16	25.41	+07	59	32.9	16.2	807
1989	UF5		1989	11	01.12222	01	15	08.37	+07	43	26.0		807
1989	UG5	*	1989	10	30.13889	01	17	16.89	+09	34	36.0	17.2	807
1989	UG5		1989	11	01.12222	01	15	56.66	+09	25	28.6		807
1989	UH5	*	1989	10	30.13889	01	17	49.58	+08	01	49.5	17.2	807
1989	UH5		1989	11	01.12222	01	16	40.83	+07	47	55.9		807
1989	UJ5	*	1989	10	30.13889	01	20	08.77	+10	06	11.6	17.0	807
1989	UJ5		1989	11	01.12222	01	18	27.51	+10	01	38.6		807
1989	UK5	*	1989	10	30.13889	01	20	10.89	+09	57	46.3	15.5	807
1989	UK5		1989	11	01.12222	01	18	16.28	+09	58	06.1		807
1989	UL5	*	1989	10	30.13889	01	21	10.93	+10	28	59.0	16.8	807
1989	UL5		1989	11	01.12222	01	19	36.93	+10	24	52.1		807
1989	UM5	*	1989	10	30.13889	01	21	13.89	+08	09	02.4	18.8	807
1989	UM5		1989	11	01.12222	01	20	18.57	+08	03	57.6		807
1989	UN5	*	1989	10	30.13889	01	22	14.30	+06	56	31.8	16.5	807
1989	UN5		1989	11	01.12222	01	21	03.42	+06	38	42.4		807
1989	UO5		1989	10	04.29583	01	52	01.66	+09	41	18.9		807
1989	UO5	*	1989	10	30.19097	01	37	49.63	+09	09	15.5	20.0	807
1989	UO5		1989	11	01.17292	01	36	45.22	+09	06	55.1		807
1989	UP5		1989	10	04.29583	01	51	12.58	+08	51	08.3		807
1989	UP5	*	1989	10	30.19097	01	38	46.91	+07	41	41.9	20.2	807
1989	UP5		1989	11	01.17292	01	37	50.54	+07	36	39.4		807
1989	UQ5		1989	10	04.29583	01	51	57.31	+07	54	23.4		807
1989	UQ5	*	1989	10	30.19097	01	39	25.70	+06	30	52.2	19.8	807
1989	UQ5		1989	11	01.17292	01	38	29.02	+06	24	55.6		807

1989	UR5		1989	10	04.29583	02	07	19.47	+07	43	50.1		807
1989	UR5	*	1989	10	30.19097	01	43	24.80	+06	55	27.1	15.8	807
1989	UR5		1989	11	01.17292	01	41	33.93	+06	52	33.9		807
1989	US5	*	1989	10	30.19097	01	43	36.91	+05	33	07.4	18.0	807
1989	US5		1989	11	01.17292	01	39	32.57	+06	11	54.3		807
1989	UT5	*	1989	10	30.19097	01	44	07.09	+06	10	43.3	16.0	807
1989	UT5		1989	11	01.17292	01	42	41.54	+05	48	34.5		807
1989	UU5		1989	10	04.29583	02	04	02.48	+10	03	03.9		807
1989	UU5	*	1989	10	30.19097	01	46	54.17	+06	29	24.4	18.2	807
1989	UU5		1989	11	01.17292	01	45	34.06	+06	13	35.8		807
1989	UV5	*	1989	10	30.19097	01	47	00.48	+06	29	28.9	18.5	807
1989	UV5		1989	11	01.17292	01	44	51.33	+06	14	02.1		807
1989	UW5	*	1989	10	30.19097	01	47	43.29	+06	47	57.3	17.0	807
1989	UW5		1989	11	01.17292	01	45	58.08	+06	45	58.3		807
1989	UX5		1989	10	04.29583	02	00	56.00	+08	01	59.3		807
1989	UX5	*	1989	10	30.19097	01	47	47.54	+06	55	52.1	18.2	807
1989	UX5		1989	11	01.17292	01	46	46.52	+06	51	11.1		807
1989	UX5		1989	11	01.26319	01	46	43.70	+06	50	58.7		807
1989	UY5	*	1989	10	30.19097	01	48	40.30	+07	42	02.0	18.8	807
1989	UY5		1989	11	01.17292	01	47	10.26	+07	34	44.7		807
1989	UY5		1989	11	01.26319	01	47	06.19	+07	34	26.1		807
1989	UZ5	*	1989	10	30.19097	01	49	33.42	+09	36	22.5	16.8	807
1989	UZ5		1989	11	01.17292	01	47	56.59	+09	33	25.0		807
1989	UA6		1989	10	04.29583	02	06	03.58	+10	14	13.1		807
1989	UA6	*	1989	10	30.19097	01	49	55.37	+08	58	03.5	17.5	807
1989	UA6		1989	11	01.17292	01	48	40.76	+08	52	24.0		807
1989	UB6		1989	10	04.29583	02	02	45.55	+07	25	12.8		807
1989	UB6	*	1989	10	30.19097	01	49	55.60	+06	21	49.1	19.5	807
1989	UB6		1989	11	01.17292	01	48	55.78	+06	17	23.7		807
1989	UC6		1989	10	06.29722	02	22	36.39	+03	55	11.7		807
1989	UC6	*	1989	10	30.19097	01	51	06.04	+05	40	25.4	17.5	807
1989	UC6		1989	11	01.17292	01	48	31.36	+05	50	08.8		807
1989	UC6		1989	11	01.26319	01	48	24.24	+05	50	35.6		807
1989	UD6	*	1989	10	30.19097	01	51	20.42	+07	22	37.7	19.2	807
1989	UD6		1989	11	01.17292	01	49	56.96	+07	19	32.9		807
1989	UE6	*	1989	10	30.19097	01	53	24.02	+06	43	27.6	17.5	807
1989	UE6		1989	11	01.17292	01	51	47.52	+06	35	05.2		807
1989	UE6		1989	11	01.26319	01	51	43.05	+06	34	42.7		807
1989	UE6		1989	11	02.05556	01	51	05.31	+06	31	27.4		807
1989	UF6	*	1989	10	30.19097	01	54	23.24	+06	50	26.1	17.5	807
1989	UF6		1989	11	01.17292	01	52	47.26	+06	42	02.4		807
1989	UF6		1989	11	01.26319	01	52	42.80	+06	41	40.0		807
1989	UF6		1989	11	02.05556	01	52	05.20	+06	38	23.7		807
2533	P-L		1989	11	01.26319	02	00	01.36	+08	44	19.0		807
4035	T-3		1989	10	02.19722	01	20	41.03	+02	59	00.2		807
4035	T-3		1989	10	06.24514	01	18	34.86	+02	52	43.1		807
4035	T-3		1989	10	28.10556	01	07	07.77	+02	23	33.8		807
4317	T-3		1989	10	03.35486	02	31	56.04	+06	42	06.6		807
4317	T-3		1989	10	29.26736	02	19	55.72	+05	05	45.5		807
4317	T-3		1989	11	01.30556	02	18	22.68	+04	55	20.5		807
4369	T-3		1989	10	03.23958	02	21	22.12	+05	50	54.1		807
4369	T-3		1989	10	06.29722	02	20	07.82	+05	39	38.4		807
4369	T-3		1989	11	01.22153	02	07	37.89	+04	06	34.2		807

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1929	PB		1983	07	14.20613	19	20	44.55	-15	48	54.2	808
1929	PB		1983	07	14.24630	19	20	42.13	-15	49	02.2	808
1929	PB		1983	07	16.19097	19	18	53.08	-15	56	33.4	808
1929	PB		1983	07	16.23114	19	18	50.76	-15	56	43.0	808
1955	SG1		1983	07	16.19097	19	12	54.14	-15	27	04.4	808
1955	SG1		1983	07	16.23114	19	12	51.74	-15	27	06.6	808
1964	VT1		1982	11	07.13078	01	20	29.32	+06	48	36.4	E 808
1964	VT1		1982	11	07.17095	01	20	27.60	+06	48	30.8	E 808
1964	VT1		1982	11	09.14818	01	19	06.38	+06	44	02.2	808
1964	VT1		1982	11	09.18765	01	19	04.66	+06	43	57.7	808
1980	FJ1		1988	10	07.06504	22	56	54.16	-06	11	23.5	808
1980	FJ1		1988	10	07.09274	22	56	53.10	-06	11	18.8	808
1981	XO2	*	1981	12	03.05428	02	14	14.95	-02	02	31.7	808
1981	XO2		1981	12	03.10345	02	14	14.83	-02	02	30.6	808
1981	XP2	*	1981	12	03.05428	02	22	11.17	-01	55	49.1	808
1981	XP2		1981	12	03.10345	02	22	11.19	-01	55	43.2	808
1982	BW		1988	04	11.17634	12	10	00.30	+14	39	33.8	808
1982	BW		1988	04	11.21097	12	09	58.75	+14	39	34.2	808
1982	KG4	*	1982	05	27.12426	16	00	10.13	-18	30	25.6	808
1982	QX3	*	1982	08	16.03676	19	22	30.70	-19	52	49.2	p 808
1982	QY3	*	1982	08	16.03676	19	23	55.07	-20	38	50.3	p 808
1982	QZ3	*	1982	08	18.09778	19	48	01.32	-11	21	51.1	808
1982	QZ3		1982	08	18.13726	19	47	59.89	-11	21	53.0	E 808
1982	RW		1982	09	10.15618	22	27	47.98	-08	18	57.9	808
1982	RW		1982	09	10.19011	22	27	46.21	-08	19	02.9	808
1982	RL3	*	1982	09	10.15618	22	18	33.88	-09	54	03.7	808
1982	RL3		1982	09	10.19011	22	18	32.32	-09	54	16.1	p 808
1982	VC13	*	1982	11	06.12243	01	03	24.71	+14	28	56.6	808
1982	VC13		1982	11	06.15429	01	03	23.65	+14	28	49.9	808
1982	VC13		1982	11	09.05330	01	01	56.80	+14	18	07.9	G 808
1982	VC13		1982	11	09.09762	01	01	55.75	+14	18	01.4	G 808
1982	VD13	*	1982	11	09.14818	01	13	20.40	+07	39	19.3	808
1982	VD13		1982	11	09.18765	01	13	18.92	+07	39	08.9	808
1983	CO3		1989	03	12.24230	12	45	02.04	-27	44	15.2	808
1983	CO3		1989	03	12.28177	12	45	00.11	-27	44	15.7	808
1983	EJ4	*	1983	03	10.25514	13	59	50.18	-04	22	07.0	808
1983	EJ4		1983	03	10.29392	13	59	50.07	-04	22	06.2	808
1983	FW	*	1983	03	20.22333	13	51	55.14	-03	21	37.7	808
1983	FW		1983	03	20.27458	13	51	53.00	-03	21	29.6	808
1983	HC		1983	03	10.25514	14	01	55.19	-03	42	54.0	808
1983	HC		1983	03	10.29392	14	01	54.71	-03	42	47.4	808
1983	HC		1983	03	13.27465	14	01	21.06	-03	34	19.1	808
1983	HC		1983	03	13.31343	14	01	20.40	-03	34	11.5	808
1983	HC		1983	03	18.19832	13	59	46.52	-03	17	54.9	808
1983	HC		1983	03	18.24126	13	59	45.43	-03	17	46.0	808
1983	HC		1983	03	20.22333	13	58	53.60	-03	10	23.1	808
1983	HC		1983	03	20.27458	13	58	52.03	-03	10	11.3	808
1983	HC		1983	05	07.09920	13	15	40.39	-00	24	56.7	808
1983	HC		1983	05	07.14144	13	15	38.12	-00	24	56.9	808
1983	HC		1983	06	06.03598	13	04	54.07	-01	59	39.2	808
1983	HC		1983	06	06.07823	13	04	53.85	-01	59	56.9	808
1983	JL1	*	1983	05	07.09920	13	13	01.78	+01	43	28.5	808
1983	JL1		1983	05	07.14144	13	12	59.69	+01	43	27.7	808
1983	NA1	*	1983	07	14.20613	19	10	40.55	-16	43	22.9	808
1983	NA1		1983	07	14.24630	19	10	38.23	-16	43	13.0	808
1983	NB1	*	1983	07	14.20613	19	13	06.54	-16	38	07.0	808
1983	NB1		1983	07	14.24630	19	13	04.11	-16	38	09.4	808
1983	NC1	*	1983	07	14.20613	19	17	41.93	-15	40	13.0	808
1983	NC1		1983	07	14.24630	19	17	39.55	-15	40	08.4	808

1983	ND1	*	1983	07	14.20613	19	20	05.97	-15	29	03.3	808
1983	ND1		1983	07	14.24630	19	20	03.70	-15	29	17.3	808
1983	ND1		1983	07	16.19097	19	18	18.57	-15	41	12.4	808
1983	ND1		1983	07	16.23114	19	18	16.33	-15	41	25.3	808
1983	OK	*	1983	07	16.19097	19	08	53.48	-16	35	12.6	808
1983	OK		1983	07	16.23114	19	08	51.20	-16	35	02.7	808
1983	OL	*	1983	07	16.19097	19	11	16.69	-16	39	08.3	808
1983	OL		1983	07	16.23114	19	11	14.46	-16	39	08.6	808
1983	OM	*	1983	07	16.19097	19	11	55.58	-15	13	49.3	808
1983	OM		1983	07	16.23114	19	11	53.41	-15	14	06.6	808
1983	OO	*	1983	07	16.19097	19	15	31.41	-16	43	56.7	808
1983	OO		1983	07	16.23114	19	15	28.98	-16	44	09.5	808
1983	OP	*	1983	07	16.19097	19	15	44.44	-15	36	58.2	808
1983	OP		1983	07	16.23114	19	15	42.12	-15	36	52.0	808
1983	OQ	*	1983	07	16.19097	19	19	27.87	-14	52	45.1	808
1983	OQ		1983	07	16.23114	19	19	25.70	-14	52	47.7	808
1983	PN2	*	1983	08	04.15121	19	10	27.80	-17	33	08.3	c 808
1983	PN2		1983	08	04.19623	19	10	25.72	-17	33	02.1	c 808
1983	PO2	*	1983	08	04.15121	19	12	35.36	-17	34	19.2	c 808
1983	PO2		1983	08	04.19623	19	12	33.35	-17	34	34.6	c 808
1983	PP2	*	1983	08	04.15121	19	26	29.85	-15	08	10.0	c 808
1983	PP2		1983	08	04.19623	19	26	28.03	-15	08	15.8	c 808
1983	RS5		1983	09	03.23794	22	44	08.71	-17	36	48.7	808
1983	RS5		1983	09	03.27707	22	44	06.89	-17	37	01.9	808
1983	RS5		1983	09	09.17065	22	38	44.91	-18	16	10.1	808
1983	RS5		1983	09	09.20459	22	38	43.00	-18	16	22.8	808
1983	RJ9	*	1983	09	03.23794	22	29	54.40	-17	28	33.8	p 808
1983	RJ9		1983	09	03.27707	22	29	52.96	-17	28	46.8	p 808
1983	RK9	*	1983	09	03.23794	22	33	32.17	-17	49	02.2	p 808
1983	RK9		1983	09	03.27707	22	33	30.49	-17	49	16.3	p 808
1983	RL9	*	1983	09	03.23794	22	39	43.53	-16	19	17.1	808
1983	RL9		1983	09	03.27707	22	39	41.70	-16	19	22.2	808
1983	RM9	*	1983	09	03.23794	22	42	39.62	-16	08	50.8	808
1983	RM9		1983	09	03.27707	22	42	38.77	-16	09	13.0	808
1983	RN9	*	1983	09	09.17065	22	26	51.73	-19	10	02.7	808
1983	RN9		1983	09	09.20459	22	26	49.91	-19	10	07.9	808
1983	RO9	*	1983	09	09.17065	22	28	46.40	-18	33	58.7	808
1983	RO9		1983	09	09.20459	22	28	44.71	-18	34	12.3	808
1983	RP9	*	1983	09	09.17065	22	30	42.07	-18	21	05.2	808
1983	RP9		1983	09	09.20459	22	30	37.48	-18	21	10.6	808
1983	XB2	*	1983	12	07.17713	04	47	16.97	+01	39	35.5	808
1983	XB2		1983	12	07.21211	04	47	15.17	+01	39	33.7	808
1985	OV	*	1985	07	18.12212	17	58	27.58	-39	29	28.5	808
1985	OV		1985	07	18.14498	17	58	26.22	-39	29	32.9	808
1985	PM		1989	05	31.15406	16	14	40.75	-31	07	36.1	808
1985	PM		1989	05	31.18176	16	14	38.95	-31	07	32.3	808
1985	PM		1989	06	02.14375	16	12	39.42	-31	02	25.2	808
1985	PM		1989	06	02.17284	16	12	37.54	-31	02	20.3	808
1986	RH12		1989	05	09.14211	13	55	49.93	-08	05	11.3	808
1986	RH12		1989	05	09.16288	13	55	48.98	-08	05	01.6	808
1986	WM3		1989	03	12.16127	11	36	03.81	-03	27	02.6	808
1986	WM3		1989	03	12.20282	11	36	01.11	-03	27	12.5	808
1986	YA		1989	03	07.19847	12	31	13.21	-25	58	43.5	808
1986	YA		1989	03	07.28988	12	31	09.67	-25	58	38.6	808
1986	YA		1989	04	14.12588	12	04	04.62	-23	14	43.3	808
1986	YA		1989	04	14.14735	12	04	03.59	-23	14	34.7	808
1987	GO1	*	1987	04	02.18429	13	54	48.84	-31	54	30.5	808
1987	GO1		1987	04	02.22099	13	54	47.13	-31	54	14.7	808
1988	EX2	*	1988	03	13.07512	09	58	42.20	+08	19	56.5	808

1988	EX2		1988	03	13.11667	09	58	40.17	+08	20	08.3	808
1988	FS2		1988	04	10.07935	11	47	20.94	+01	22	56.3	808
1988	FS2		1988	04	10.12021	11	47	19.06	+01	23	02.9	808
1988	FS2		1988	04	12.09743	11	45	57.47	+01	28	16.7	808
1988	FS2		1988	04	12.13899	11	45	55.71	+01	28	24.1	808
1988	FQ3	*	1988	03	20.17409	10	52	00.79	-02	56	11.9	808
1988	FQ3		1988	03	20.20525	10	51	59.42	-02	55	54.4	808
1988	FR3	*	1988	03	20.17409	11	00	04.41	-04	36	45.2	808
1988	FR3		1988	03	20.20525	11	00	02.85	-04	36	35.0	808
1988	GW2	*	1988	04	09.01040	10	46	56.38	-03	04	06.7	808
1988	GW2		1988	04	09.04503	10	46	55.50	-03	03	57.8	808
1988	GX2	*	1988	04	10.07935	11	54	54.71	+00	26	09.7	808
1988	GX2		1988	04	10.12021	11	54	52.48	+00	26	10.7	808
1988	GX2		1988	04	12.09743	11	53	09.95	+00	27	58.3	808
1988	GX2		1988	04	12.13899	11	53	07.81	+00	28	00.6	808
1988	GY2	*	1988	04	12.19508	13	11	51.90	+00	12	10.1	808
1988	GY2		1988	04	12.23525	13	11	49.50	+00	12	23.4	808
1988	GZ2	*	1988	04	12.19508	13	21	07.85	+00	01	18.0	808
1988	GZ2		1988	04	12.23525	13	21	05.65	+00	01	33.7	808
1988	HU	*	1988	04	16.18693	13	52	41.46	-14	04	16.8	808
1988	HU		1988	04	16.21463	13	52	41.18	-14	04	14.8	808
1988	HV	*	1988	04	22.21314	14	52	20.00	+00	50	32.6	808
1988	HV		1988	04	22.23807	14	52	19.99	+00	50	30.5	808
1988	HW	*	1988	04	22.21314	14	57	54.81	+01	49	15.8	808
1988	HW		1988	04	22.23807	14	57	54.92	+01	49	16.8	808
1988	HX	*	1988	04	22.28066	15	43	14.56	+02	33	54.2	808
1988	HX		1988	04	22.29867	15	43	14.54	+02	33	56.6	808
1988	HY	*	1988	04	23.18340	14	03	45.78	-08	48	03.1	808
1988	HY		1988	04	23.21457	14	03	44.26	-08	47	56.8	808
1988	HZ	*	1988	04	23.18340	14	06	24.91	-07	25	29.7	808
1988	HZ		1988	04	23.21457	14	06	22.97	-07	25	22.4	808
1988	HA1	*	1988	04	23.18340	14	09	03.92	-06	35	49.2	808
1988	HA1		1988	04	23.21457	14	09	02.80	-06	35	36.0	808
1988	HB1	*	1988	04	23.18340	14	14	46.14	-08	07	26.8	808
1988	HB1		1988	04	23.21457	14	14	44.73	-08	07	13.7	808
1988	JT2	*	1988	05	12.13568	13	38	19.20	-34	37	05.2	808
1988	JT2		1988	05	12.15992	13	38	17.82	-34	36	55.1	808
1988	JU2	*	1988	05	12.13568	13	47	46.60	-34	18	36.5	808
1988	JU2		1988	05	12.15992	13	47	45.21	-34	18	31.3	808
1988	OU	*	1988	07	21.10903	17	16	04.86	-32	14	36.6	808
1988	OV	*	1988	07	21.10903	17	16	34.65	-32	18	05.0	808
1988	OW	*	1988	07	21.10903	17	17	22.72	-32	10	32.0	808
1988	VY2		1988	11	10.23260	03	24	57.39	+14	23	09.4	808
1988	VY2		1988	11	10.26169	03	24	55.75	+14	23	09.7	808
1988	VY2		1988	11	14.20021	03	21	21.14	+14	24	08.7	808
1988	VY2		1988	11	14.22930	03	21	19.39	+14	24	08.7	808
1988	VB11	*	1988	11	08.24845	03	51	12.63	+21	18	20.2	808
1988	VB11		1988	11	08.26507	03	51	10.21	+21	18	09.4	808
1988	XP		1988	12	08.19008	05	23	54.98	+09	23	22.2	808
1988	XP		1988	12	08.23856	05	23	51.86	+09	23	28.4	808
1988	XS5	*	1988	12	07.16996	05	36	24.87	+15	54	10.0	808
1988	XS5		1988	12	07.20043	05	36	23.07	+15	54	07.5	808
1988	XT5	*	1988	12	08.19008	05	10	23.48	+03	34	11.8	808
1988	XT5		1988	12	08.23856	05	10	20.72	+03	34	19.6	808
1988	XU5	*	1988	12	08.19008	05	12	17.66	+04	00	31.7	808
1988	XU5		1988	12	08.23856	05	12	14.76	+04	00	32.8	808
1988	XV5	*	1988	12	08.19008	05	16	45.00	+04	55	02.7	808
1988	XV5		1988	12	08.23856	05	16	42.14	+04	54	54.8	808
1988	XW5	*	1988	12	08.19008	05	17	43.71	+05	10	16.4	808

1988	XW5		1988	12	08.23856	05	17	40.66	+05	10	12.4	808
1988	XX5	*	1988	12	08.19008	05	17	45.13	+09	34	34.7	808
1988	XX5		1988	12	08.23856	05	17	42.19	+09	34	24.9	808
1988	XY5	*	1988	12	08.19008	05	18	51.96	+04	04	31.8	808
1988	XY5		1988	12	08.23856	05	18	49.35	+04	04	37.0	808
1988	XZ5	*	1988	12	08.19008	05	23	16.52	+03	48	17.8	808
1988	XZ5		1988	12	08.23856	05	23	13.50	+03	48	09.7	808
1988	XA6	*	1988	12	08.19008	05	26	55.88	+07	45	06.6	808
1988	XA6		1988	12	08.23856	05	26	53.32	+07	45	04.3	808
1989	EJ11	*	1989	03	07.35291	17	03	54.71	-23	53	56.6	808
1989	EJ11		1989	03	07.37126	17	03	55.50	-23	53	53.1	808
1989	EJ11		1989	04	10.33902	17	18	34.57	-24	28	37.1	808
1989	EK11	*	1989	03	12.16127	11	22	11.19	-02	31	24.9	808
1989	EK11		1989	03	12.20282	11	22	08.34	-02	31	05.6	808
1989	EL11	*	1989	03	12.16127	11	25	13.56	-01	06	21.2	808
1989	EL11		1989	03	12.20282	11	25	11.05	-01	06	12.8	808
1989	EM11	*	1989	03	12.16127	11	27	01.53	-02	42	57.1	808
1989	EM11		1989	03	12.20282	11	26	59.32	-02	42	46.3	808
1989	EN11	*	1989	03	12.24230	12	40	39.62	-28	09	18.9	808
1989	EN11		1989	03	12.28177	12	40	37.72	-28	09	18.7	808
1989	GP8	*	1989	04	14.12588	12	09	34.36	-22	50	27.7	808
1989	GP8		1989	04	14.14735	12	09	33.30	-22	50	19.5	808
2155	T-2		1983	07	14.20613	19	16	41.22	-14	34	52.8	808
2155	T-2		1983	07	14.24630	19	16	38.53	-14	35	01.5	808
2155	T-2		1983	07	16.19097	19	14	47.15	-14	40	55.3	808
2155	T-2		1983	07	16.23114	19	14	44.77	-14	41	01.4	808

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1975	YE		1989	10	07.26181	01	24	34.36	+03	35	45.5	16.8	809
1975	YE		1989	10	07.27500	01	24	33.86	+03	35	37.5		809
1975	YE		1989	10	07.28819	01	24	33.23	+03	35	28.3		809
1975	YE		1989	10	08.29167	01	23	52.69	+03	24	03.6	17.0	809
1975	YE		1989	10	08.30486	01	23	52.13	+03	23	54.7		809
1975	YE		1989	10	08.31806	01	23	51.57	+03	23	45.8		809
1978	VP10		1989	10	07.21944	01	10	07.68	+00	43	10.9	18.3	809
1978	VP10		1989	10	07.23264	01	10	06.85	+00	43	07.3		809
1978	VP10		1989	10	07.24583	01	10	06.11	+00	43	03.0		809
1978	VP10		1989	10	08.24931	01	09	10.20	+00	38	13.8	18.6	809
1978	VP10		1989	10	08.26250	01	09	09.52	+00	38	09.4		809
1978	VP10		1989	10	08.27569	01	09	08.70	+00	38	05.8		809
1985	PG2		1989	10	07.21944	01	20	24.27	+02	33	42.4	17.6	809
1985	PG2		1989	10	07.23264	01	20	23.59	+02	33	39.6		809
1985	PG2		1989	10	07.24583	01	20	22.79	+02	33	36.9		809
1985	PG2		1989	10	08.24931	01	19	29.02	+02	30	00.7	17.6	809
1985	PG2		1989	10	08.26250	01	19	28.19	+02	29	58.1		809
1985	PG2		1989	10	08.27569	01	19	27.46	+02	29	55.4		809
1989	SD1		1989	10	07.21944	01	11	12.18	+01	46	53.3	18.2	809
1989	SD1		1989	10	07.23264	01	11	11.52	+01	46	48.9		809
1989	SD1		1989	10	07.24583	01	11	10.84	+01	46	44.8		809
1989	SD1		1989	10	08.24931	01	10	23.27	+01	41	49.7	18.5	809
1989	SD1		1989	10	08.26250	01	10	22.63	+01	41	46.2		809
1989	SD1		1989	10	08.27569	01	10	21.98	+01	41	42.6		809
1989	SF1		1989	10	07.21944	01	11	35.95	-00	37	04.4	18.0	809
1989	SF1		1989	10	07.23264	01	11	35.25	-00	37	10.1		809

1989	SF1	1989	10	07.24583	01	11	34.50	-00	37	16.8	809
1989	SF1	1989	10	08.24931	01	10	45.44	-00	45	09.6	18.4 809
1989	SF1	1989	10	08.26250	01	10	44.78	-00	45	16.5	809
1989	SF1	1989	10	08.27569	01	10	44.09	-00	45	22.4	809
1989	SG1	1989	10	07.21944	01	12	03.57	+01	00	14.3	18.7 809
1989	SG1	1989	10	07.23264	01	12	02.97	+01	00	09.1	809
1989	SG1	1989	10	07.24583	01	12	02.28	+01	00	02.7	809
1989	SG1	1989	10	08.24931	01	11	12.90	+00	52	11.6	19.0 809
1989	SG1	1989	10	08.26250	01	11	12.19	+00	52	05.4	809
1989	SG1	1989	10	08.27569	01	11	11.51	+00	51	58.4	809
1989	SJ1	1989	10	07.21944	01	13	40.37	+01	08	00.3	18.6 809
1989	SJ1	1989	10	07.23264	01	13	39.60	+01	07	57.2	809
1989	SJ1	1989	10	07.24583	01	13	38.88	+01	07	53.9	809
1989	SJ1	1989	10	08.24931	01	12	45.48	+01	04	07.0	18.7 809
1989	SJ1	1989	10	08.26250	01	12	44.84	+01	04	04.2	809
1989	SJ1	1989	10	08.27569	01	12	44.00	+01	04	01.0	809
1989	SK1	1989	10	07.21944	01	13	35.24	+01	45	20.7	18.5 809
1989	SK1	1989	10	07.23264	01	13	34.51	+01	45	18.0	809
1989	SK1	1989	10	07.24583	01	13	33.75	+01	45	15.8	809
1989	SK1	1989	10	08.24931	01	12	39.78	+01	42	11.4	18.5 809
1989	SK1	1989	10	08.26250	01	12	39.05	+01	42	09.2	809
1989	SK1	1989	10	08.27569	01	12	38.31	+01	42	07.0	809
1989	SL1	1989	10	07.21944	01	13	04.27	-00	51	15.6	17.8 809
1989	SL1	1989	10	07.23264	01	13	03.51	-00	51	20.7	809
1989	SL1	1989	10	07.24583	01	13	02.69	-00	51	26.5	809
1989	SL1	1989	10	08.24931	01	12	04.65	-00	58	18.6	17.8 809
1989	SL1	1989	10	08.26250	01	12	03.89	-00	58	23.3	809
1989	SL1	1989	10	08.27569	01	12	03.09	-00	58	28.4	809
1989	SM1	1989	10	07.21944	01	15	36.62	+02	19	40.1	18.5 809
1989	SM1	1989	10	07.23264	01	15	35.92	+02	19	35.1	809
1989	SM1	1989	10	07.24583	01	15	35.27	+02	19	30.9	809
1989	SM1	1989	10	08.24931	01	14	49.64	+02	13	45.1	18.6 809
1989	SM1	1989	10	08.26250	01	14	48.98	+02	13	40.6	809
1989	SM1	1989	10	08.27569	01	14	48.36	+02	13	36.8	809
1989	SO1	1989	10	07.21944	01	15	46.62	+00	11	25.2	19.3 809
1989	SO1	1989	10	07.23264	01	15	45.89	+00	11	20.4	809
1989	SO1	1989	10	07.24583	01	15	45.09	+00	11	17.0	809
1989	SO1	1989	10	08.24931	01	14	52.64	+00	06	26.9	18.9 809
1989	SO1	1989	10	08.26250	01	14	51.97	+00	06	22.9	809
1989	SO1	1989	10	08.27569	01	14	51.19	+00	06	19.8	809
1989	SP1	1989	10	07.21944	01	16	13.17	+00	21	37.1	19.0 809
1989	SP1	1989	10	07.23264	01	16	12.52	+00	21	33.8	809
1989	SP1	1989	10	07.24583	01	16	11.79	+00	21	29.4	809
1989	SP1	1989	10	08.24931	01	15	20.67	+00	15	18.0	18.8 809
1989	SP1	1989	10	08.26250	01	15	19.99	+00	15	14.3	809
1989	SP1	1989	10	08.27569	01	15	19.23	+00	15	07.6	809
1989	SQ1	1989	10	07.21944	01	14	51.25	-00	44	30.0	19.2 809
1989	SQ1	1989	10	07.23264	01	14	50.36	-00	44	31.2	809
1989	SQ1	1989	10	07.24583	01	14	49.45	-00	44	32.7	809
1989	SQ1	1989	10	08.24931	01	13	48.77	-00	45	46.3	18.8 809
1989	SQ1	1989	10	08.26250	01	13	47.89	-00	45	47.4	809
1989	SQ1	1989	10	08.27569	01	13	47.03	-00	45	47.9	809
1989	SR1	1989	10	07.21944	01	14	57.78	-00	12	43.4	18.6 809
1989	SR1	1989	10	07.23264	01	14	56.89	-00	12	48.2	809
1989	SR1	1989	10	07.24583	01	14	56.05	-00	12	51.3	809
1989	SR1	1989	10	08.24931	01	13	55.78	-00	17	49.0	18.2 809
1989	SR1	1989	10	08.26250	01	13	54.94	-00	17	52.9	809
1989	SR1	1989	10	08.27569	01	13	54.10	-00	17	56.4	809
1989	SS1	1989	10	07.21944	01	15	36.39	+02	28	52.9	18.5 809

1989	SS1	1989	10	07.23264	01	15	35.58	+02	28	50.2	809
1989	SS1	1989	10	07.24583	01	15	34.78	+02	28	47.2	809
1989	SS1	1989	10	08.24931	01	14	37.69	+02	25	09.8	18.7 809
1989	SS1	1989	10	08.26250	01	14	36.86	+02	25	07.5	809
1989	SS1	1989	10	08.27569	01	14	36.09	+02	25	03.4	809
1989	ST1	1989	10	07.21944	01	16	19.99	+02	46	22.8	18.6 809
1989	ST1	1989	10	07.23264	01	16	19.19	+02	46	18.2	809
1989	ST1	1989	10	07.24583	01	16	18.41	+02	46	15.1	809
1989	ST1	1989	10	08.24931	01	15	23.11	+02	41	18.1	18.5 809
1989	ST1	1989	10	08.26250	01	15	22.37	+02	41	15.1	809
1989	ST1	1989	10	08.27569	01	15	21.65	+02	41	11.5	809
1989	SU1	1989	10	07.21944	01	15	01.43	+01	09	11.0	17.7 809
1989	SU1	1989	10	07.23264	01	15	00.62	+01	09	06.9	809
1989	SU1	1989	10	07.24583	01	14	59.76	+01	09	02.5	809
1989	SU1	1989	10	08.24931	01	13	58.31	+01	03	12.2	18.3 809
1989	SU1	1989	10	08.26250	01	13	57.50	+01	03	08.3	809
1989	SU1	1989	10	08.27569	01	13	56.66	+01	03	03.4	809
1989	SW1	1989	10	07.21944	01	19	06.45	+00	34	08.6	18.8 809
1989	SW1	1989	10	07.23264	01	19	05.94	+00	34	01.4	809
1989	SW1	1989	10	07.24583	01	19	05.33	+00	33	55.4	809
1989	SW1	1989	10	08.24931	01	18	24.28	+00	26	07.8	18.6 809
1989	SW1	1989	10	08.26250	01	18	23.61	+00	26	01.5	809
1989	SW1	1989	10	08.27569	01	18	23.14	+00	25	55.4	809
1989	SX1	1989	10	07.21944	01	17	16.56	-00	23	48.1	18.5 809
1989	SX1	1989	10	07.23264	01	17	15.76	-00	23	49.1	809
1989	SX1	1989	10	07.24583	01	17	15.01	-00	23	48.1	809
1989	SX1	1989	10	08.24931	01	16	19.44	-00	23	15.3	18.7 809
1989	SX1	1989	10	08.26250	01	16	18.65	-00	23	15.4	809
1989	SX1	1989	10	08.27569	01	16	17.82	-00	23	13.8	809
1989	SA2	1989	10	07.21944	01	17	24.28	+00	05	58.3	19.0 809
1989	SA2	1989	10	07.23264	01	17	23.44	+00	05	55.4	809
1989	SA2	1989	10	07.24583	01	17	22.73	+00	05	53.6	809
1989	SA2	1989	10	08.24931	01	16	28.26	+00	03	11.9	19.0 809
1989	SA2	1989	10	08.26250	01	16	27.48	+00	03	10.1	809
1989	SA2	1989	10	08.27569	01	16	26.66	+00	03	07.4	809
1989	SC2	1989	10	07.21944	01	15	20.02	+02	12	47.9	18.5 809
1989	SC2	1989	10	07.23264	01	15	19.06	+02	12	51.3	809
1989	SC2	1989	10	07.24583	01	15	18.05	+02	12	54.9	809
1989	SC2	1989	10	08.24931	01	14	05.29	+02	17	40.3	18.5 809
1989	SC2	1989	10	08.26250	01	14	04.41	+02	17	44.0	809
1989	SC2	1989	10	08.27569	01	14	03.43	+02	17	47.7	809
1989	SE2	1989	10	07.21944	01	19	48.72	+01	03	10.3	18.2 809
1989	SE2	1989	10	07.23264	01	19	48.03	+01	03	07.4	809
1989	SE2	1989	10	07.24583	01	19	47.32	+01	03	04.0	809
1989	SE2	1989	10	08.24931	01	18	57.60	+00	58	45.6	18.5 809
1989	SE2	1989	10	08.26250	01	18	56.85	+00	58	42.8	809
1989	SE2	1989	10	08.27569	01	18	56.19	+00	58	39.2	809
1989	SF2	1989	10	07.21944	01	19	52.36	+01	26	42.0	18.8 809
1989	SF2	1989	10	07.23264	01	19	51.63	+01	26	38.3	809
1989	SF2	1989	10	07.24583	01	19	50.86	+01	26	35.7	809
1989	SF2	1989	10	08.24931	01	18	56.06	+01	23	08.2	18.7 809
1989	SF2	1989	10	08.26250	01	18	55.33	+01	23	04.7	809
1989	SF2	1989	10	08.27569	01	18	54.63	+01	23	02.6	809
1989	SH2	1989	10	07.21944	01	21	51.41	+01	27	11.0	18.3 809
1989	SH2	1989	10	07.23264	01	21	50.76	+01	27	03.9	809
1989	SH2	1989	10	07.24583	01	21	50.10	+01	26	56.3	809
1989	SH2	1989	10	08.24931	01	21	01.53	+01	17	41.2	18.6 809
1989	SH2	1989	10	08.26250	01	21	00.88	+01	17	34.1	809
1989	SH2	1989	10	08.27569	01	21	00.17	+01	17	26.1	809

1989	SJ2	1989	10	07.21944	01	21	59.18	-01	27	21.3	18.6	809
1989	SJ2	1989	10	07.23264	01	21	58.61	-01	27	29.3		809
1989	SJ2	1989	10	07.24583	01	21	57.96	-01	27	37.1		809
1989	SK2	1989	10	07.21944	01	18	56.84	+00	51	11.5	18.7	809
1989	SK2	1989	10	07.23264	01	18	55.94	+00	51	16.9		809
1989	SK2	1989	10	07.24583	01	18	54.99	+00	51	22.7		809
1989	SK2	1989	10	08.24931	01	17	46.89	+00	58	34.8	18.5	809
1989	SK2	1989	10	08.26250	01	17	45.95	+00	58	40.4		809
1989	SK2	1989	10	08.27569	01	17	45.00	+00	58	46.8		809
1989	SL2	1989	10	07.21944	01	22	23.25	-00	34	04.3	18.3	809
1989	SL2	1989	10	07.23264	01	22	22.51	-00	34	09.6		809
1989	SL2	1989	10	07.24583	01	22	21.68	-00	34	13.8		809
1989	SL2	1989	10	08.24931	01	21	29.56	-00	39	51.5	18.4	809
1989	SL2	1989	10	08.26250	01	21	28.82	-00	39	55.3		809
1989	SL2	1989	10	08.27569	01	21	28.10	-00	39	59.3		809
1989	SM2	1989	10	07.21944	01	22	36.48	-00	39	59.0	19.3	809
1989	SM2	1989	10	07.23264	01	22	35.79	-00	39	59.4		809
1989	SM2	1989	10	07.24583	01	22	35.11	-00	40	02.0		809
1989	SM2	1989	10	08.24931	01	21	45.51	-00	42	37.3	19.0	809
1989	SM2	1989	10	08.26250	01	21	44.78	-00	42	39.4		809
1989	SM2	1989	10	08.27569	01	21	44.12	-00	42	42.1		809
1989	SN2	1989	10	07.21944	01	25	42.63	-00	54	20.5	18.8	809
1989	SN2	1989	10	07.23264	01	25	42.02	-00	54	29.3		809
1989	SN2	1989	10	07.24583	01	25	41.53	-00	54	37.5		809
1989	SO2	1989	10	07.26181	01	22	33.01	+03	20	35.8	18.6	809
1989	SO2	1989	10	07.27500	01	22	32.20	+03	20	31.8		809
1989	SO2	1989	10	07.28819	01	22	31.48	+03	20	27.4		809
1989	SO2	1989	10	08.29167	01	21	33.24	+03	15	22.7	18.5	809
1989	SO2	1989	10	08.30486	01	21	32.48	+03	15	18.6		809
1989	SO2	1989	10	08.31806	01	21	31.68	+03	15	15.4		809
1989	SP2	1989	10	07.21944	01	24	40.99	+00	38	56.1	18.7	809
1989	SP2	1989	10	07.23264	01	24	40.30	+00	38	50.5		809
1989	SP2	1989	10	07.24583	01	24	39.52	+00	38	45.7		809
1989	SP2	1989	10	08.24931	01	23	51.85	+00	32	59.8	18.6	809
1989	SP2	1989	10	08.26250	01	23	51.17	+00	32	55.3		809
1989	SP2	1989	10	08.27569	01	23	50.54	+00	32	50.7		809
1989	SQ2	1989	10	07.21944	01	25	00.64	+02	14	23.5	18.5	809
1989	SQ2	1989	10	07.23264	01	24	59.92	+02	14	19.6		809
1989	SQ2	1989	10	07.24583	01	24	59.18	+02	14	15.7		809
1989	SQ2	1989	10	07.26181	01	24	58.37	+02	14	12.8	18.6	809
1989	SQ2	1989	10	07.27500	01	24	57.61	+02	14	08.6		809
1989	SQ2	1989	10	07.28819	01	24	56.89	+02	14	04.8		809
1989	SQ2	1989	10	08.24931	01	24	10.37	+02	09	36.8	18.5	809
1989	SQ2	1989	10	08.26250	01	24	09.69	+02	09	33.5		809
1989	SQ2	1989	10	08.27569	01	24	08.99	+02	09	29.8		809
1989	SQ2	1989	10	08.29167	01	24	08.16	+02	09	23.5	18.2	809
1989	SQ2	1989	10	08.30486	01	24	07.48	+02	09	19.7		809
1989	SQ2	1989	10	08.31806	01	24	06.71	+02	09	16.5		809
1989	SR2	1989	10	07.26181	01	25	18.57	+03	26	56.2	18.2	809
1989	SR2	1989	10	07.27500	01	25	17.94	+03	26	52.8		809
1989	SR2	1989	10	07.28819	01	25	17.27	+03	26	49.4		809
1989	SR2	1989	10	08.29167	01	24	30.10	+03	22	00.1	18.6	809
1989	SR2	1989	10	08.30486	01	24	29.39	+03	21	56.4		809
1989	SR2	1989	10	08.31806	01	24	28.68	+03	21	52.2		809
1989	SS2	1989	10	07.21944	01	24	08.94	-00	15	46.1	18.9	809
1989	SS2	1989	10	07.23264	01	24	08.13	-00	15	52.8		809
1989	SS2	1989	10	07.24583	01	24	07.28	-00	15	59.0		809
1989	ST2	1989	10	07.21944	01	23	03.92	+00	20	18.8	17.7	809
1989	ST2	1989	10	07.23264	01	23	03.03	+00	20	23.3		809

1989	ST2	1989	10	07.24583	01	23	02.03	+00	20	26.5	809
1989	ST2	1989	10	08.24931	01	21	52.47	+00	26	17.1	18.3 809
1989	ST2	1989	10	08.26250	01	21	51.53	+00	26	21.7	809
1989	ST2	1989	10	08.27569	01	21	50.58	+00	26	26.2	809
1989	SU2	1989	10	07.21944	01	26	17.74	+01	57	39.6	18.6 809
1989	SU2	1989	10	07.23264	01	26	17.01	+01	57	36.0	809
1989	SU2	1989	10	07.24583	01	26	16.20	+01	57	32.4	809
1989	SU2	1989	10	07.26181	01	26	15.32	+01	57	29.5	18.7 809
1989	SU2	1989	10	07.27500	01	26	14.56	+01	57	26.3	809
1989	SU2	1989	10	07.28819	01	26	13.75	+01	57	22.7	809
1989	SU2	1989	10	08.24931	01	25	21.89	+01	53	13.6	19.5 809
1989	SU2	1989	10	08.26250	01	25	21.07	+01	53	10.0	809
1989	SU2	1989	10	08.27569	01	25	20.31	+01	53	07.1	809
1989	SU2	1989	10	08.29167	01	25	19.27	+01	53	01.3	18.8 809
1989	SU2	1989	10	08.30486	01	25	18.53	+01	52	58.7	809
1989	SU2	1989	10	08.31806	01	25	17.75	+01	52	55.8	809
1989	SV2	1989	10	07.21944	01	26	58.73	+02	08	43.5	18.7 809
1989	SV2	1989	10	07.23264	01	26	58.00	+02	08	40.6	809
1989	SV2	1989	10	07.24583	01	26	57.35	+02	08	39.3	809
1989	SV2	1989	10	07.26181	01	26	56.57	+02	08	39.4	18.6 809
1989	SV2	1989	10	07.27500	01	26	55.90	+02	08	37.3	809
1989	SV2	1989	10	07.28819	01	26	55.13	+02	08	35.4	809
1989	SV2	1989	10	08.24931	01	26	08.66	+02	06	07.3	18.7 809
1989	SV2	1989	10	08.26250	01	26	08.01	+02	06	04.2	809
1989	SV2	1989	10	08.27569	01	26	07.36	+02	06	03.3	809
1989	SV2	1989	10	08.29167	01	26	06.43	+02	06	00.7	18.7 809
1989	SV2	1989	10	08.30486	01	26	05.74	+02	05	59.5	809
1989	SV2	1989	10	08.31806	01	26	04.92	+02	05	57.3	809
1989	SW2	1989	10	07.21944	01	27	29.44	+01	10	10.5	19.2 809
1989	SW2	1989	10	07.23264	01	27	28.81	+01	10	06.6	809
1989	SW2	1989	10	07.24583	01	27	28.15	+01	10	03.8	809
1989	SW2	1989	10	07.26181	01	27	27.36	+01	10	00.6	18.7 809
1989	SW2	1989	10	07.27500	01	27	26.69	+01	09	57.2	809
1989	SW2	1989	10	07.28819	01	27	26.06	+01	09	54.2	809
1989	SW2	1989	10	08.24931	01	26	40.92	+01	05	39.7	18.6 809
1989	SW2	1989	10	08.26250	01	26	40.25	+01	05	36.6	809
1989	SW2	1989	10	08.27569	01	26	39.64	+01	05	33.1	809
1989	SW2	1989	10	08.29167	01	26	38.92	+01	05	30.1	18.5 809
1989	SW2	1989	10	08.30486	01	26	38.21	+01	05	26.4	809
1989	SW2	1989	10	08.31806	01	26	37.52	+01	05	23.0	809
1989	SX2	1989	10	07.21944	01	28	32.52	-01	30	14.3	18.8 809
1989	SX2	1989	10	07.23264	01	28	31.89	-01	30	17.6	809
1989	SX2	1989	10	07.24583	01	28	31.27	-01	30	20.5	809
1989	SY2	1989	10	07.21944	01	28	55.21	+00	46	16.1	18.7 809
1989	SY2	1989	10	07.23264	01	28	54.63	+00	46	12.5	809
1989	SY2	1989	10	07.24583	01	28	54.02	+00	46	08.9	809
1989	SY2	1989	10	07.26181	01	28	53.34	+00	46	08.1	18.5 809
1989	SY2	1989	10	07.27500	01	28	52.75	+00	46	04.7	809
1989	SY2	1989	10	07.28819	01	28	52.12	+00	46	00.4	809
1989	SY2	1989	10	08.24931	01	28	11.49	+00	41	09.4	18.6 809
1989	SY2	1989	10	08.26250	01	28	10.87	+00	41	05.0	809
1989	SY2	1989	10	08.27569	01	28	10.24	+00	41	01.7	809
1989	SY2	1989	10	08.29167	01	28	09.65	+00	41	01.4	18.5 809
1989	SY2	1989	10	08.30486	01	28	09.01	+00	40	57.2	809
1989	SY2	1989	10	08.31806	01	28	08.40	+00	40	53.3	809
1989	SZ2	1989	10	07.26181	01	30	14.34	+02	27	01.9	17.7 809
1989	SZ2	1989	10	07.27500	01	30	13.80	+02	26	53.8	809
1989	SZ2	1989	10	07.28819	01	30	13.17	+02	26	43.8	809
1989	SZ2	1989	10	08.29167	01	29	32.90	+02	14	53.2	18.5 809

1989	SZ2	1989	10	08.30486	01	29	32.29	+02	14	43.7	809
1989	SZ2	1989	10	08.31806	01	29	31.74	+02	14	34.7	809
1989	SA3	1989	10	07.26181	01	29	55.99	+00	42	14.8	17.8 809
1989	SA3	1989	10	07.27500	01	29	55.27	+00	42	12.2	809
1989	SA3	1989	10	07.28819	01	29	54.60	+00	42	10.0	809
1989	SA3	1989	10	08.24931	01	29	10.23	+00	39	08.7	18.4 809
1989	SA3	1989	10	08.26250	01	29	09.54	+00	39	05.7	809
1989	SA3	1989	10	08.27569	01	29	08.94	+00	39	03.8	809
1989	SA3	1989	10	08.29167	01	29	08.24	+00	39	04.8	18.3 809
1989	SA3	1989	10	08.30486	01	29	07.54	+00	39	02.7	809
1989	SA3	1989	10	08.31806	01	29	06.88	+00	39	00.1	809
1989	SC3	1989	10	07.21944	01	27	43.82	+00	39	35.6	18.7 809
1989	SC3	1989	10	07.23264	01	27	43.00	+00	39	33.9	809
1989	SC3	1989	10	07.24583	01	27	42.24	+00	39	33.0	809
1989	SC3	1989	10	08.24931	01	26	36.76	+00	37	57.9	18.5 809
1989	SC3	1989	10	08.26250	01	26	35.91	+00	37	56.1	809
1989	SC3	1989	10	08.27569	01	26	35.02	+00	37	55.9	809
1989	SC3	1989	10	08.29167	01	26	34.04	+00	37	58.1	18.3 809
1989	SC3	1989	10	08.30486	01	26	33.09	+00	37	56.5	809
1989	SC3	1989	10	08.31806	01	26	32.16	+00	37	55.8	809
1989	SD3	1989	10	07.26181	01	25	14.71	+04	21	55.0	17.7 809
1989	SD3	1989	10	07.27500	01	25	13.90	+04	21	53.8	809
1989	SD3	1989	10	07.28819	01	25	13.04	+04	21	52.3	809
1989	SD3	1989	10	08.29167	01	24	14.13	+04	19	59.5	17.7 809
1989	SD3	1989	10	08.30486	01	24	13.30	+04	19	57.7	809
1989	SD3	1989	10	08.31806	01	24	12.48	+04	19	56.1	809
1989	SE3	1989	10	07.26181	01	27	32.96	+03	58	55.7	18.3 809
1989	SE3	1989	10	07.27500	01	27	32.14	+03	58	55.4	809
1989	SE3	1989	10	07.28819	01	27	31.24	+03	58	53.4	809
1989	SE3	1989	10	08.29167	01	26	30.16	+03	56	58.4	18.5 809
1989	SE3	1989	10	08.30486	01	26	29.32	+03	56	57.7	809
1989	SE3	1989	10	08.31806	01	26	28.47	+03	56	56.4	809
1989	SF3	1989	10	07.26181	01	30	40.71	+03	47	46.6	18.0 809
1989	SF3	1989	10	07.27500	01	30	39.99	+03	47	46.3	809
1989	SF3	1989	10	07.28819	01	30	39.27	+03	47	45.4	809
1989	SF3	1989	10	08.29167	01	29	50.53	+03	46	33.2	18.3 809
1989	SF3	1989	10	08.30486	01	29	49.86	+03	46	32.8	809
1989	SF3	1989	10	08.31806	01	29	49.08	+03	46	31.4	809
1989	SG3	1989	10	07.26181	01	25	40.78	+05	01	19.2	18.5 809
1989	SG3	1989	10	07.27500	01	25	40.05	+05	01	17.1	809
1989	SG3	1989	10	07.28819	01	25	39.33	+05	01	13.7	809
1989	SG3	1989	10	08.29167	01	24	47.72	+04	58	02.5	18.7 809
1989	SG3	1989	10	08.30486	01	24	46.96	+04	57	59.2	809
1989	SG3	1989	10	08.31806	01	24	46.27	+04	57	56.1	809
1989	SH3	1989	10	07.26181	01	28	00.03	+04	59	35.8	17.9 809
1989	SH3	1989	10	07.27500	01	27	59.31	+04	59	32.3	809
1989	SH3	1989	10	07.28819	01	27	58.64	+04	59	28.5	809
1989	SH3	1989	10	08.29167	01	27	11.28	+04	54	51.9	17.8 809
1989	SH3	1989	10	08.30486	01	27	10.59	+04	54	48.5	809
1989	SH3	1989	10	08.31806	01	27	09.89	+04	54	44.6	809
1989	SJ3	1989	10	07.26181	01	29	10.59	+05	11	06.4	18.0 809
1989	SJ3	1989	10	07.27500	01	29	10.00	+05	11	03.5	809
1989	SJ3	1989	10	07.28819	01	29	09.42	+05	10	59.3	809
1989	SJ3	1989	10	08.29167	01	28	25.56	+05	06	25.9	18.4 809
1989	SJ3	1989	10	08.30486	01	28	24.95	+05	06	23.0	809
1989	SJ3	1989	10	08.31806	01	28	24.30	+05	06	18.0	809
1989	SK3	1989	10	07.26181	01	28	59.02	+04	50	56.3	17.7 809
1989	SK3	1989	10	07.27500	01	28	58.39	+04	50	49.7	809
1989	SK3	1989	10	07.28819	01	28	57.72	+04	50	43.2	809

1989	SK3	1989	10	08.29167	01	28	12.29	+04	43	07.0	18.0	809
1989	SK3	1989	10	08.30486	01	28	11.65	+04	43	00.8		809
1989	SK3	1989	10	08.31806	01	28	11.03	+04	42	54.6		809
1989	SL3	1989	10	07.26181	01	33	32.96	+04	28	32.8	18.0	809
1989	SL3	1989	10	07.27500	01	33	32.56	+04	28	26.3		809
1989	SL3	1989	10	07.28819	01	33	32.10	+04	28	20.4		809
1989	SL3	1989	10	08.29167	01	33	04.22	+04	20	04.6	18.3	809
1989	SL3	1989	10	08.30486	01	33	03.82	+04	19	56.9		809
1989	SL3	1989	10	08.31806	01	33	03.38	+04	19	52.0		809
1989	SM3	1989	10	07.26181	01	27	34.66	+02	48	33.0	18.7	809
1989	SM3	1989	10	07.27500	01	27	33.85	+02	48	32.0		809
1989	SM3	1989	10	07.28819	01	27	33.04	+02	48	29.9		809
1989	SM3	1989	10	08.24931	01	26	38.90	+02	46	06.0	18.9	809
1989	SM3	1989	10	08.26250	01	26	38.16	+02	46	03.9		809
1989	SM3	1989	10	08.27569	01	26	37.46	+02	46	01.4		809
1989	SM3	1989	10	08.29167	01	26	36.48	+02	46	02.8	18.7	809
1989	SM3	1989	10	08.30486	01	26	35.69	+02	46	00.3		809
1989	SM3	1989	10	08.31806	01	26	34.91	+02	45	58.6		809
1989	SN3	1989	10	07.26181	01	30	26.34	+05	22	56.7	18.5	809
1989	SN3	1989	10	07.27500	01	30	25.70	+05	22	51.5		809
1989	SN3	1989	10	07.28819	01	30	25.03	+05	22	46.6		809
1989	SN3	1989	10	08.29167	01	29	42.89	+05	16	12.6	18.7	809
1989	SN3	1989	10	08.30486	01	29	42.30	+05	16	07.3		809
1989	SN3	1989	10	08.31806	01	29	41.69	+05	16	02.3		809
1989	SO3	1989	10	07.26181	01	30	50.48	+03	33	46.4	17.9	809
1989	SO3	1989	10	07.27500	01	30	49.85	+03	33	38.9		809
1989	SO3	1989	10	07.28819	01	30	49.27	+03	33	31.4		809
1989	SO3	1989	10	08.29167	01	30	06.01	+03	23	52.4	18.5	809
1989	SO3	1989	10	08.30486	01	30	05.41	+03	23	44.9		809
1989	SO3	1989	10	08.31806	01	30	04.81	+03	23	37.7		809
1989	SP3	1989	10	07.26181	01	30	34.24	+04	18	26.5	18.7	809
1989	SP3	1989	10	07.27500	01	30	33.52	+04	18	14.3		809
1989	SP3	1989	10	07.28819	01	30	32.89	+04	18	01.9		809
1989	SP3	1989	10	08.29167	01	29	42.54	+04	02	04.1	18.5	809
1989	SP3	1989	10	08.30486	01	29	41.91	+04	01	50.6		809
1989	SP3	1989	10	08.31806	01	29	41.18	+04	01	38.5		809
1989	SQ3	1989	10	07.26181	01	31	33.27	+04	22	46.9	18.7	809
1989	SQ3	1989	10	07.27500	01	31	32.77	+04	22	44.2		809
1989	SQ3	1989	10	07.28819	01	31	32.05	+04	22	40.2		809
1989	SQ3	1989	10	08.29167	01	30	45.94	+04	17	53.9	18.7	809
1989	SQ3	1989	10	08.30486	01	30	45.18	+04	17	49.8		809
1989	SQ3	1989	10	08.31806	01	30	44.47	+04	17	45.6		809
1989	SR3	1989	10	07.26181	01	32	54.70	+04	17	20.3	18.6	809
1989	SR3	1989	10	07.27500	01	32	54.11	+04	17	18.3		809
1989	SR3	1989	10	07.28819	01	32	53.57	+04	17	13.9		809
1989	SR3	1989	10	08.29167	01	32	12.52	+04	13	00.2	18.8	809
1989	SR3	1989	10	08.30486	01	32	11.93	+04	12	56.8		809
1989	SR3	1989	10	08.31806	01	32	11.38	+04	12	54.2		809
1989	ST3	1989	10	07.26181	01	32	03.10	+04	42	53.6	18.6	809
1989	ST3	1989	10	07.27500	01	32	02.52	+04	42	50.7		809
1989	ST3	1989	10	07.28819	01	32	01.84	+04	42	45.7		809
1989	ST3	1989	10	08.29167	01	31	12.77	+04	36	48.9	19.2	809
1989	ST3	1989	10	08.30486	01	31	12.06	+04	36	44.7		809
1989	ST3	1989	10	08.31806	01	31	11.44	+04	36	39.5		809
1989	SU3	1989	10	07.26181	01	33	14.13	+05	36	26.7	17.7	809
1989	SU3	1989	10	07.27500	01	33	13.54	+05	36	20.8		809
1989	SU3	1989	10	07.28819	01	33	12.96	+05	36	15.7		809
1989	SU3	1989	10	08.29167	01	32	31.48	+05	29	20.2	18.5	809
1989	SU3	1989	10	08.30486	01	32	30.87	+05	29	14.4		809

1989	SU3	1989	10	08.31806	01	32	30.29	+05	29	09.6	809
1989	SV3	1989	10	07.26181	01	33	39.17	+03	45	57.5	18.0 809
1989	SV3	1989	10	07.27500	01	33	38.58	+03	45	51.6	809
1989	SV3	1989	10	07.28819	01	33	37.90	+03	45	45.7	809
1989	SV3	1989	10	08.29167	01	32	54.05	+03	37	27.0	18.5 809
1989	SV3	1989	10	08.30486	01	32	53.36	+03	37	20.1	809
1989	SV3	1989	10	08.31806	01	32	52.69	+03	37	14.5	809
1989	SX3	1989	10	07.26181	01	31	49.32	+05	56	25.2	18.4 809
1989	SX3	1989	10	07.27500	01	31	48.59	+05	56	22.5	809
1989	SX3	1989	10	07.28819	01	31	47.87	+05	56	19.5	809
1989	SY3	1989	10	07.26181	01	31	18.70	+02	52	23.2	18.4 809
1989	SY3	1989	10	07.27500	01	31	17.94	+02	52	18.7	809
1989	SY3	1989	10	07.28819	01	31	17.08	+02	52	14.0	809
1989	SY3	1989	10	08.29167	01	30	20.15	+02	46	33.7	18.8 809
1989	SY3	1989	10	08.30486	01	30	19.37	+02	46	29.5	809
1989	SY3	1989	10	08.31806	01	30	18.65	+02	46	25.0	809
1989	SZ3	1989	10	07.26181	01	32	34.32	+02	20	17.4	18.4 809
1989	SZ3	1989	10	07.27500	01	32	33.60	+02	20	13.2	809
1989	SZ3	1989	10	07.28819	01	32	32.88	+02	20	09.3	809
1989	SZ3	1989	10	08.29167	01	31	42.68	+02	14	40.3	18.6 809
1989	SZ3	1989	10	08.30486	01	31	41.99	+02	14	35.2	809
1989	SZ3	1989	10	08.31806	01	31	41.26	+02	14	32.2	809
1989	SB4	1989	10	07.26181	01	32	36.02	+01	59	51.9	18.7 809
1989	SB4	1989	10	07.27500	01	32	35.30	+01	59	46.9	809
1989	SB4	1989	10	07.28819	01	32	34.54	+01	59	41.4	809
1989	SB4	1989	10	08.29167	01	31	40.87	+01	52	59.9	18.6 809
1989	SB4	1989	10	08.30486	01	31	40.03	+01	52	54.2	809
1989	SB4	1989	10	08.31806	01	31	39.28	+01	52	49.4	809
1989	SC4	1989	10	07.26181	01	34	47.84	+04	24	02.5	18.4 809
1989	SC4	1989	10	07.27500	01	34	47.34	+04	23	56.3	809
1989	SC4	1989	10	07.28819	01	34	46.80	+04	23	48.0	809
1989	SC4	1989	10	08.29167	01	34	07.93	+04	14	16.2	18.6 809
1989	SC4	1989	10	08.30486	01	34	07.39	+04	14	08.8	809
1989	SC4	1989	10	08.31806	01	34	06.84	+04	14	02.2	809
1989	SE4	1989	10	07.26181	01	35	55.80	+03	57	07.6	19.0 809
1989	SE4	1989	10	07.27500	01	35	55.25	+03	57	00.2	809
1989	SE4	1989	10	07.28819	01	35	54.62	+03	56	52.8	809
1989	SE4	1989	10	08.29167	01	35	12.27	+03	47	29.8	18.8 809
1989	SE4	1989	10	08.30486	01	35	11.73	+03	47	23.1	809
1989	SE4	1989	10	08.31806	01	35	11.04	+03	47	16.0	809
1989	SF4	1989	10	07.26181	01	33	52.68	+05	33	26.3	18.8 809
1989	SF4	1989	10	07.27500	01	33	52.00	+05	33	24.5	809
1989	SF4	1989	10	07.28819	01	33	51.28	+05	33	23.4	809
1989	SF4	1989	10	08.29167	01	32	59.96	+05	31	32.4	18.8 809
1989	SF4	1989	10	08.30486	01	32	59.27	+05	31	31.5	809
1989	SF4	1989	10	08.31806	01	32	58.59	+05	31	29.4	809
1989	SH4	1989	10	07.26181	01	34	48.86	+05	26	45.9	18.0 809
1989	SH4	1989	10	07.27500	01	34	48.05	+05	26	44.0	809
1989	SH4	1989	10	07.28819	01	34	47.23	+05	26	41.8	809
1989	SH4	1989	10	08.29167	01	33	48.36	+05	23	17.0	18.5 809
1989	SH4	1989	10	08.30486	01	33	47.62	+05	23	14.6	809
1989	SH4	1989	10	08.31806	01	33	46.79	+05	23	12.6	809
1989	SK4	1989	10	07.26181	01	38	31.39	+05	03	46.3	18.3 809
1989	SK4	1989	10	07.27500	01	38	30.76	+05	03	39.4	809
1989	SK4	1989	10	07.28819	01	38	30.13	+05	03	33.2	809
1989	SK4	1989	10	08.29167	01	37	44.99	+04	55	00.3	17.8 809
1989	SK4	1989	10	08.30486	01	37	44.35	+04	54	53.4	809
1989	SK4	1989	10	08.31806	01	37	43.66	+04	54	46.4	809
1989	SL4	1989	10	07.26181	01	38	40.36	+02	54	49.2	17.9 809

1989	SL4		1989	10	07.27500	01	38	39.64	+02	54	45.8		809
1989	SL4		1989	10	07.28819	01	38	38.92	+02	54	42.0		809
1989	SL4		1989	10	08.29167	01	37	52.20	+02	49	46.3	18.6	809
1989	SL4		1989	10	08.30486	01	37	51.44	+02	49	42.0		809
1989	SL4		1989	10	08.31806	01	37	50.79	+02	49	38.4		809
1989	SN4		1989	10	07.26181	01	38	06.74	+05	24	56.5	18.6	809
1989	SN4		1989	10	07.27500	01	38	06.11	+05	24	50.7		809
1989	SN4		1989	10	07.28819	01	38	05.43	+05	24	45.7		809
1989	SN4		1989	10	08.29167	01	37	16.45	+05	18	43.4	19.2	809
1989	SN4		1989	10	08.30486	01	37	15.67	+05	18	39.1		809
1989	SN4		1989	10	08.31806	01	37	14.91	+05	18	33.0		809
1989	SQ4		1989	10	07.26181	01	38	13.15	+04	18	07.1	18.7	809
1989	SQ4		1989	10	07.27500	01	38	12.43	+04	18	03.9		809
1989	SQ4		1989	10	07.28819	01	38	11.66	+04	17	59.3		809
1989	SQ4		1989	10	08.29167	01	37	16.51	+04	12	13.8	18.8	809
1989	SQ4		1989	10	08.30486	01	37	15.67	+04	12	07.7		809
1989	SQ4		1989	10	08.31806	01	37	14.83	+04	12	04.0		809
1989	ST4		1989	10	07.26181	01	40	05.23	+05	35	60.0	18.6	809
1989	ST4		1989	10	07.27500	01	40	04.51	+05	35	57.2		809
1989	ST4		1989	10	07.28819	01	40	03.79	+05	35	55.9		809
1989	ST4		1989	10	08.29167	01	39	11.85	+05	32	42.8	18.7	809
1989	ST4		1989	10	08.30486	01	39	11.09	+05	32	40.0		809
1989	ST4		1989	10	08.31806	01	39	10.33	+05	32	37.9		809
1989	SU4		1989	10	07.26181	01	41	11.49	+03	08	06.9	18.7	809
1989	SU4		1989	10	07.27500	01	41	10.86	+03	08	01.3		809
1989	SU4		1989	10	07.28819	01	41	10.09	+03	07	57.3		809
1989	SU4		1989	10	08.29167	01	40	20.71	+03	01	31.6	18.5	809
1989	SU4		1989	10	08.30486	01	40	19.94	+03	01	26.5		809
1989	SU4		1989	10	08.31806	01	40	19.19	+03	01	21.4		809
1989	SY4		1989	10	07.26181	01	42	48.96	+03	51	31.4	18.7	809
1989	SY4		1989	10	07.27500	01	42	48.24	+03	51	30.5		809
1989	SY4		1989	10	07.28819	01	42	47.61	+03	51	29.9		809
1989	SY4		1989	10	08.29167	01	41	59.19	+03	49	48.9	18.7	809
1989	SY4		1989	10	08.30486	01	41	58.52	+03	49	48.4		809
1989	SY4		1989	10	08.31806	01	41	57.72	+03	49	47.6		809
1989	SB5		1989	10	07.26181	01	42	16.93	+04	46	23.9	19.0	809
1989	SB5		1989	10	07.27500	01	42	16.11	+04	46	20.0		809
1989	SB5		1989	10	07.28819	01	42	15.44	+04	46	18.5		809
1989	SB5		1989	10	08.29167	01	41	21.38	+04	42	39.5	19.0	809
1989	SB5		1989	10	08.30486	01	41	20.59	+04	42	36.7		809
1989	SB5		1989	10	08.31806	01	41	19.79	+04	42	34.1		809
1989	SQ5	*	1989	09	26.25486	01	49	04.18	+06	51	40.8	19.7	809
1989	SQ5		1989	09	26.26806	01	49	03.78	+06	51	33.8		809
1989	SQ5		1989	09	26.28125	01	49	03.38	+06	51	26.1		809
1989	SQ5		1989	09	28.26111	01	48	08.46	+06	33	29.9		809
1989	SQ5		1989	09	28.27431	01	48	08.05	+06	33	23.0		809
1989	SQ5		1989	09	28.28750	01	48	07.63	+06	33	15.1		809
1989	SQ5		1989	10	07.26181	01	42	40.59	+05	06	27.1	18.6	809
1989	SQ5		1989	10	07.27500	01	42	39.92	+05	06	18.9		809
1989	SQ5		1989	10	07.28819	01	42	39.38	+05	06	11.3		809
1989	SR5	*	1989	09	28.12014	01	30	45.14	+04	07	58.3		809
1989	SR5		1989	09	28.13333	01	30	44.50	+04	07	54.9		809
1989	SR5		1989	09	28.14653	01	30	43.94	+04	07	51.3		809
1989	SR5		1989	10	07.26181	01	24	04.00	+03	24	11.7	19.0	809
1989	SR5		1989	10	07.27500	01	24	03.28	+03	24	07.7		809
1989	SR5		1989	10	07.28819	01	24	02.61	+03	24	03.5		809
1989	SS5	*	1989	09	28.26111	01	37	44.15	+04	50	25.3	19.5	809
1989	SS5		1989	09	28.27431	01	37	43.57	+04	50	20.8		809
1989	SS5		1989	09	28.28750	01	37	43.03	+04	50	15.3		809

1989	SS5		1989	10	08.29167	01	30	05.85	+03	45	25.9	19.0	809
1989	SS5		1989	10	08.30486	01	30	05.06	+03	45	19.4		809
1989	SS5		1989	10	08.31806	01	30	04.33	+03	45	14.3		809
1989	SV5	*	1989	09	26.21042	01	26	41.61	-00	05	56.2	20.0	809
1989	SV5		1989	09	26.22361	01	26	41.00	-00	05	59.8		809
1989	SV5		1989	09	26.23681	01	26	40.36	-00	06	02.7		809
1989	SV5		1989	10	07.21944	01	17	20.71	-00	57	59.5	19.8	809
1989	SV5		1989	10	07.23264	01	17	20.01	-00	58	04.9		809
1989	SV5		1989	10	07.24583	01	17	19.18	-00	58	06.5		809
1989	SV5		1989	10	08.24931	01	16	24.09	-01	02	42.3	19.2	809
1989	SV5		1989	10	08.24931	01	16	24.09	-01	02	42.3	19.2	809
1989	SV5		1989	10	08.26250	01	16	23.33	-01	02	45.6		809
1989	SV5		1989	10	08.26250	01	16	23.33	-01	02	45.6		809
1989	SV5		1989	10	08.27569	01	16	22.59	-01	02	49.1		809
1989	SV5		1989	10	08.27569	01	16	22.59	-01	02	49.1		809
1989	TK		1989	10	07.26181	01	25	04.81	+04	53	01.8	17.6	809
1989	TK		1989	10	07.27500	01	25	04.09	+04	52	58.5		809
1989	TK		1989	10	07.28819	01	25	03.33	+04	52	54.6		809
1989	TK		1989	10	08.29167	01	24	10.76	+04	48	01.6	18.4	809
1989	TK		1989	10	08.30486	01	24	10.05	+04	47	57.1		809
1989	TK		1989	10	08.31806	01	24	09.37	+04	47	53.6		809
1989	TN		1989	10	07.26181	01	31	13.30	+02	29	46.6	17.8	809
1989	TN		1989	10	07.27500	01	31	12.49	+02	29	42.8		809
1989	TN		1989	10	07.28819	01	31	11.68	+02	29	38.4		809
1989	TN		1989	10	08.29167	01	30	16.24	+02	24	24.7	18.0	809
1989	TN		1989	10	08.30486	01	30	15.46	+02	24	21.0		809
1989	TN		1989	10	08.31806	01	30	14.60	+02	24	17.7		809
1989	TV2	*	1989	10	07.21944	01	27	21.64	+00	24	55.9	17.0	809
1989	TV2		1989	10	07.23264	01	27	20.25	+00	25	07.6		809
1989	TV2		1989	10	07.24583	01	27	18.81	+00	25	18.7		809
1989	TV2		1989	10	08.24931	01	25	36.08	+00	39	27.6	17.5	809
1989	TV2		1989	10	08.26250	01	25	34.67	+00	39	38.9		809
1989	TV2		1989	10	08.27569	01	25	33.28	+00	39	51.0		809
1989	TV2		1989	10	08.29167	01	25	31.66	+00	40	10.0	18.0	809
1989	TV2		1989	10	08.30486	01	25	30.30	+00	40	20.1		809
1989	TV2		1989	10	08.31806	01	25	28.83	+00	40	31.9		809
1989	TW2	*	1989	10	07.26181	01	22	35.15	+04	05	46.1	20.0	809
1989	TW2		1989	10	07.27500	01	22	34.20	+04	05	44.7		809
1989	TW2		1989	10	07.28819	01	22	33.21	+04	05	43.8		809
1989	TW2		1989	10	08.29167	01	21	30.53	+04	04	41.4	18.8	809
1989	TW2		1989	10	08.30486	01	21	29.66	+04	04	40.2		809
1989	TW2		1989	10	08.31806	01	21	28.74	+04	04	38.8		809
1989	TX2		1989	10	07.21944	01	23	04.19	+02	43	14.3	18.0	809
1989	TX2		1989	10	07.23264	01	23	03.62	+02	43	05.7		809
1989	TX2		1989	10	07.24583	01	23	02.95	+02	42	57.0		809
1989	TX2	*	1989	10	07.26181	01	23	02.31	+02	42	47.0	17.6	809
1989	TX2		1989	10	07.27500	01	23	01.73	+02	42	38.0		809
1989	TX2		1989	10	07.28819	01	23	01.10	+02	42	29.8		809
1989	TX2		1989	10	08.24931	01	22	18.17	+02	31	32.4	18.6	809
1989	TX2		1989	10	08.26250	01	22	17.59	+02	31	23.8		809
1989	TX2		1989	10	08.27569	01	22	16.96	+02	31	14.7		809
1989	TX2		1989	10	08.29167	01	22	16.22	+02	31	04.2	18.3	809
1989	TX2		1989	10	08.30486	01	22	15.63	+02	30	54.9		809
1989	TX2		1989	10	08.31806	01	22	14.95	+02	30	46.4		809
1989	TY2		1989	09	28.12014	01	31	37.88	+02	56	44.7		809
1989	TY2		1989	09	28.13333	01	31	37.16	+02	56	41.3		809
1989	TY2		1989	09	28.14653	01	31	36.52	+02	56	38.2		809
1989	TY2		1989	10	07.21944	01	23	53.88	+02	15	56.3	18.8	809
1989	TY2		1989	10	07.23264	01	23	53.12	+02	15	53.6		809

1989	TY2		1989	10	07.24583	01	23	52.41	+02	15	50.5	809
1989	TY2	*	1989	10	07.26181	01	23	51.53	+02	15	47.4	18.5 809
1989	TY2		1989	10	07.27500	01	23	50.81	+02	15	43.4	809
1989	TY2		1989	10	07.28819	01	23	50.05	+02	15	40.0	809
1989	TY2		1989	10	08.24931	01	22	58.19	+02	11	26.1	18.7 809
1989	TY2		1989	10	08.26250	01	22	57.39	+02	11	22.9	809
1989	TY2		1989	10	08.27569	01	22	56.55	+02	11	18.6	809
1989	TY2		1989	10	08.29167	01	22	55.87	+02	11	13.7	18.7 809
1989	TY2		1989	10	08.30486	01	22	55.07	+02	11	10.8	809
1989	TY2		1989	10	08.31806	01	22	54.30	+02	11	07.1	809
1989	TZ2	*	1989	10	07.26181	01	24	20.63	+04	18	04.7	18.5 809
1989	TZ2		1989	10	07.27500	01	24	20.00	+04	17	59.8	809
1989	TZ2		1989	10	07.28819	01	24	19.28	+04	17	56.6	809
1989	TZ2		1989	10	08.29167	01	23	32.56	+04	12	43.1	18.4 809
1989	TZ2		1989	10	08.30486	01	23	31.89	+04	12	38.6	809
1989	TZ2		1989	10	08.31806	01	23	31.24	+04	12	34.1	809
1989	TA3		1989	10	07.21944	01	24	26.27	+01	58	58.1	19.0 809
1989	TA3		1989	10	07.23264	01	24	25.70	+01	58	54.3	809
1989	TA3		1989	10	07.24583	01	24	25.11	+01	58	50.3	809
1989	TA3	*	1989	10	07.26181	01	24	24.46	+01	58	44.8	18.7 809
1989	TA3		1989	10	07.27500	01	24	23.83	+01	58	41.5	809
1989	TA3		1989	10	07.28819	01	24	23.20	+01	58	37.6	809
1989	TA3		1989	10	08.24931	01	23	42.60	+01	53	31.9	19.5 809
1989	TA3		1989	10	08.26250	01	23	42.01	+01	53	29.2	809
1989	TA3		1989	10	08.27569	01	23	41.36	+01	53	23.8	809
1989	TA3		1989	10	08.29167	01	23	40.69	+01	53	19.4	19.5 809
1989	TA3		1989	10	08.30486	01	23	40.07	+01	53	15.1	809
1989	TA3		1989	10	08.31806	01	23	39.52	+01	53	10.2	809
1989	TB3	*	1989	10	07.26181	01	24	32.56	+03	38	32.8	19.0 809
1989	TB3		1989	10	07.27500	01	24	31.93	+03	38	22.6	809
1989	TB3		1989	10	07.28819	01	24	31.26	+03	38	13.8	809
1989	TB3		1989	10	08.29167	01	23	48.79	+03	27	22.6	18.8 809
1989	TB3		1989	10	08.30486	01	23	48.16	+03	27	15.1	809
1989	TB3		1989	10	08.31806	01	23	47.55	+03	27	07.1	809
1989	TC3		1989	10	07.21944	01	24	44.23	+02	36	16.1	18.8 809
1989	TC3		1989	10	07.23264	01	24	43.67	+02	36	11.0	809
1989	TC3		1989	10	07.24583	01	24	43.00	+02	36	05.4	809
1989	TC3	*	1989	10	07.26181	01	24	42.40	+02	35	59.9	18.5 809
1989	TC3		1989	10	07.27500	01	24	41.73	+02	35	53.7	809
1989	TC3		1989	10	07.28819	01	24	41.15	+02	35	47.6	809
1989	TC3		1989	10	08.24931	01	23	59.85	+02	29	09.9	18.8 809
1989	TC3		1989	10	08.26250	01	23	59.22	+02	29	04.2	809
1989	TC3		1989	10	08.27569	01	23	58.64	+02	28	59.3	809
1989	TC3		1989	10	08.29167	01	23	57.86	+02	28	52.3	18.7 809
1989	TC3		1989	10	08.30486	01	23	57.27	+02	28	45.8	809
1989	TC3		1989	10	08.31806	01	23	56.72	+02	28	40.3	809
1989	TD3	*	1989	10	07.26181	01	25	14.78	+03	47	42.3	19.7 809
1989	TD3		1989	10	07.27500	01	25	14.06	+03	47	38.6	809
1989	TD3		1989	10	07.28819	01	25	13.48	+03	47	35.1	809
1989	TD3		1989	10	08.29167	01	24	26.25	+03	42	46.0	19.0 809
1989	TD3		1989	10	08.30486	01	24	25.53	+03	42	42.1	809
1989	TD3		1989	10	08.31806	01	24	24.90	+03	42	38.4	809
1989	TE3	*	1989	10	07.26181	01	25	17.18	+04	00	13.1	18.6 809
1989	TE3		1989	10	07.27500	01	25	16.64	+04	00	09.9	809
1989	TE3		1989	10	07.28819	01	25	16.05	+04	00	05.0	809
1989	TE3		1989	10	08.29167	01	24	32.23	+03	54	29.2	18.8 809
1989	TE3		1989	10	08.30486	01	24	31.70	+03	54	24.8	809
1989	TE3		1989	10	08.31806	01	24	31.10	+03	54	20.5	809
1989	TF3	*	1989	10	07.26181	01	25	21.71	+04	04	27.0	18.3 809

1989	TF3		1989	10	07.27500	01	25	20.95	+04	04	23.7		809
1989	TF3		1989	10	07.28819	01	25	19.96	+04	04	20.8		809
1989	TF3		1989	10	08.29167	01	24	19.09	+04	00	39.6	18.6	809
1989	TF3		1989	10	08.30486	01	24	18.32	+04	00	37.0		809
1989	TF3		1989	10	08.31806	01	24	17.41	+04	00	34.1		809
1989	TG3		1989	10	07.21944	01	25	38.67	+01	33	12.6	19.2	809
1989	TG3		1989	10	07.23264	01	25	37.81	+01	33	02.6		809
1989	TG3		1989	10	07.24583	01	25	37.06	+01	32	54.8		809
1989	TG3	*	1989	10	07.26181	01	25	36.16	+01	32	48.8	20.5	809
1989	TG3		1989	10	07.27500	01	25	35.35	+01	32	42.0		809
1989	TG3		1989	10	07.28819	01	25	34.72	+01	32	35.6		809
1989	TG3		1989	10	08.24931	01	24	41.42	+01	24	16.2	19.6	809
1989	TG3		1989	10	08.26250	01	24	40.69	+01	24	10.4		809
1989	TG3		1989	10	08.27569	01	24	39.94	+01	24	02.9		809
1989	TG3		1989	10	08.29167	01	24	39.14	+01	23	56.0	19.7	809
1989	TG3		1989	10	08.30486	01	24	38.26	+01	23	49.7		809
1989	TG3		1989	10	08.31806	01	24	37.45	+01	23	42.8		809
1989	TH3		1989	10	07.21944	01	26	11.50	+02	06	39.4	19.5	809
1989	TH3		1989	10	07.23264	01	26	10.67	+02	06	33.6		809
1989	TH3		1989	10	07.24583	01	26	09.90	+02	06	29.0		809
1989	TH3	*	1989	10	07.26181	01	26	09.13	+02	06	25.9	20.0	809
1989	TH3		1989	10	07.27500	01	26	08.28	+02	06	20.6		809
1989	TH3		1989	10	07.28819	01	26	07.47	+02	06	15.8		809
1989	TH3		1989	10	08.24931	01	25	15.63	+02	00	05.4	19.7	809
1989	TH3		1989	10	08.26250	01	25	14.74	+01	59	59.6		809
1989	TH3		1989	10	08.27569	01	25	14.14	+01	59	54.7		809
1989	TH3		1989	10	08.29167	01	25	13.18	+01	59	49.5	19.2	809
1989	TH3		1989	10	08.30486	01	25	12.38	+01	59	45.0		809
1989	TH3		1989	10	08.31806	01	25	11.58	+01	59	39.4		809
1989	TJ3	*	1989	10	07.26181	01	26	22.40	+03	33	16.6	18.3	809
1989	TJ3		1989	10	07.27500	01	26	21.64	+03	33	12.2		809
1989	TJ3		1989	10	07.28819	01	26	21.10	+03	33	08.8		809
1989	TJ3		1989	10	08.29167	01	25	37.24	+03	28	31.1	18.5	809
1989	TJ3		1989	10	08.30486	01	25	36.62	+03	28	28.3		809
1989	TJ3		1989	10	08.31806	01	25	36.04	+03	28	24.0		809
1989	TK3	*	1989	10	07.26181	01	26	28.46	+05	28	55.6	19.0	809
1989	TK3		1989	10	07.27500	01	26	27.74	+05	28	49.0		809
1989	TK3		1989	10	07.28819	01	26	27.15	+05	28	44.1		809
1989	TK3		1989	10	08.29167	01	25	42.46	+05	22	13.0	19.5	809
1989	TK3		1989	10	08.30486	01	25	41.87	+05	22	06.9		809
1989	TK3		1989	10	08.31806	01	25	41.17	+05	22	01.8		809
1989	TL3	*	1989	10	07.26181	01	26	54.81	+04	24	35.7	18.8	809
1989	TL3		1989	10	07.27500	01	26	54.14	+04	24	30.4		809
1989	TL3		1989	10	07.28819	01	26	53.51	+04	24	24.7		809
1989	TL3		1989	10	08.29167	01	26	05.48	+04	16	25.2	18.7	809
1989	TL3		1989	10	08.30486	01	26	04.83	+04	16	19.3		809
1989	TL3		1989	10	08.31806	01	26	04.16	+04	16	12.6		809
1989	TM3	*	1989	10	07.26181	01	27	10.83	+02	05	36.9	19.0	809
1989	TM3		1989	10	07.27500	01	27	10.11	+02	05	35.1		809
1989	TM3		1989	10	07.28819	01	27	09.30	+02	05	33.8		809
1989	TM3		1989	10	08.29167	01	26	15.39	+01	58	39.7	20.5	809
1989	TM3		1989	10	08.30486	01	26	14.55	+01	58	32.3		809
1989	TM3		1989	10	08.31806	01	26	13.53	+01	58	25.3		809
1989	TN3	*	1989	10	07.26181	01	27	24.77	+04	20	17.3	18.5	809
1989	TN3		1989	10	07.27500	01	27	24.18	+04	20	04.8		809
1989	TN3		1989	10	07.28819	01	27	23.64	+04	19	53.8		809
1989	TN3		1989	10	08.29167	01	26	46.33	+04	04	59.9	18.7	809
1989	TN3		1989	10	08.30486	01	26	45.85	+04	04	49.2		809
1989	TN3		1989	10	08.31806	01	26	45.35	+04	04	37.5		809

1989	TO3	*	1989	10	07.26181	01	27	48.34	+04	17	46.7	18.8	809
1989	TO3		1989	10	07.27500	01	27	47.75	+04	17	43.4		809
1989	TO3		1989	10	07.28819	01	27	47.08	+04	17	38.9		809
1989	TO3		1989	10	08.29167	01	27	02.00	+04	12	25.9	18.6	809
1989	TO3		1989	10	08.30486	01	27	01.44	+04	12	22.3		809
1989	TO3		1989	10	08.31806	01	27	00.81	+04	12	19.0		809
1989	TP3	*	1989	10	07.26181	01	27	54.92	+02	41	16.4	20.0	809
1989	TP3		1989	10	07.27500	01	27	54.38	+02	41	10.0		809
1989	TP3		1989	10	07.28819	01	27	53.75	+02	41	05.0		809
1989	TP3		1989	10	08.29167	01	27	11.39	+02	33	23.9	20.2	809
1989	TP3		1989	10	08.30486	01	27	10.63	+02	33	15.8		809
1989	TP3		1989	10	08.31806	01	27	09.90	+02	33	09.1		809
1989	TQ3		1989	10	07.21944	01	28	02.71	+00	59	44.4	18.9	809
1989	TQ3		1989	10	07.23264	01	28	01.79	+00	59	44.6		809
1989	TQ3		1989	10	07.24583	01	28	00.97	+00	59	44.9		809
1989	TQ3	*	1989	10	07.26181	01	27	59.98	+00	59	47.5	19.6	809
1989	TQ3		1989	10	07.27500	01	27	59.12	+00	59	47.6		809
1989	TQ3		1989	10	07.28819	01	27	58.13	+00	59	47.4		809
1989	TQ3		1989	10	08.24931	01	26	58.94	+00	59	56.1	18.8	809
1989	TQ3		1989	10	08.26250	01	26	58.10	+00	59	56.4		809
1989	TQ3		1989	10	08.27569	01	26	57.16	+00	59	57.0		809
1989	TQ3		1989	10	08.29167	01	26	56.21	+00	59	57.4	18.7	809
1989	TQ3		1989	10	08.30486	01	26	55.42	+00	59	57.2		809
1989	TQ3		1989	10	08.31806	01	26	54.55	+00	59	57.8		809
1989	TR3	*	1989	10	07.26181	01	28	08.91	+01	49	38.9	19.5	809
1989	TR3		1989	10	07.27500	01	28	08.28	+01	49	33.9		809
1989	TR3		1989	10	07.28819	01	28	07.70	+01	49	28.9		809
1989	TR3		1989	10	08.29167	01	27	26.92	+01	42	58.2	20.0	809
1989	TR3		1989	10	08.30486	01	27	26.31	+01	42	51.7		809
1989	TR3		1989	10	08.31806	01	27	25.69	+01	42	46.7		809
1989	TS3	*	1989	10	07.26181	01	28	41.66	+04	58	23.7	19.2	809
1989	TS3		1989	10	07.27500	01	28	41.03	+04	58	16.0		809
1989	TS3		1989	10	07.28819	01	28	40.49	+04	58	09.9		809
1989	TS3		1989	10	08.29167	01	27	58.96	+04	49	26.9	19.1	809
1989	TS3		1989	10	08.30486	01	27	58.41	+04	49	19.9		809
1989	TS3		1989	10	08.31806	01	27	57.83	+04	49	13.9		809
1989	TT3	*	1989	10	07.26181	01	29	27.42	+04	14	27.5	19.2	809
1989	TT3		1989	10	07.27500	01	29	26.66	+04	14	24.0		809
1989	TT3		1989	10	07.28819	01	29	25.94	+04	14	19.8		809
1989	TT3		1989	10	08.29167	01	28	37.66	+04	09	49.7	19.4	809
1989	TT3		1989	10	08.30486	01	28	36.98	+04	09	46.0		809
1989	TT3		1989	10	08.31806	01	28	36.28	+04	09	42.7		809
1989	TU3		1989	09	28.26111	01	36	29.53	+06	31	41.8	18.7	809
1989	TU3		1989	09	28.27431	01	36	28.97	+06	31	37.8		809
1989	TU3		1989	09	28.28750	01	36	28.46	+06	31	32.6		809
1989	TU3	*	1989	10	07.26181	01	29	59.36	+05	34	12.2	18.7	809
1989	TU3		1989	10	07.27500	01	29	58.73	+05	34	07.6		809
1989	TU3		1989	10	07.28819	01	29	58.01	+05	34	01.9		809
1989	TU3		1989	10	08.29167	01	29	11.35	+05	27	24.8	18.6	809
1989	TU3		1989	10	08.30486	01	29	10.73	+05	27	19.7		809
1989	TU3		1989	10	08.31806	01	29	10.01	+05	27	14.8		809
1989	TV3	*	1989	10	07.26181	01	29	59.64	+00	46	32.0	17.8	809
1989	TV3		1989	10	07.27500	01	29	58.65	+00	46	33.3		809
1989	TV3		1989	10	07.28819	01	29	57.71	+00	46	35.5		809
1989	TV3		1989	10	08.24931	01	28	51.03	+00	48	38.3	18.2	809
1989	TV3		1989	10	08.26250	01	28	50.09	+00	48	40.2		809
1989	TV3		1989	10	08.27569	01	28	49.06	+00	48	42.2		809
1989	TV3		1989	10	08.29167	01	28	47.97	+00	48	46.6	18.4	809
1989	TV3		1989	10	08.30486	01	28	46.99	+00	48	48.4		809

1989	TV3		1989	10	08.31806	01	28	46.01	+00	48	50.0	809
1989	TW3		1989	09	26.25486	01	39	25.73	+02	49	29.2	20.0 809
1989	TW3		1989	09	26.26806	01	39	25.06	+02	49	23.6	809
1989	TW3		1989	09	26.28125	01	39	24.51	+02	49	19.2	809
1989	TW3	*	1989	10	07.26181	01	30	05.90	+01	30	23.4	18.8 809
1989	TW3		1989	10	07.27500	01	30	05.00	+01	30	17.3	809
1989	TW3		1989	10	07.28819	01	30	04.23	+01	30	11.8	809
1989	TW3		1989	10	08.24931	01	29	10.95	+01	23	28.0	19.0 809
1989	TW3		1989	10	08.26250	01	29	10.22	+01	23	23.0	809
1989	TW3		1989	10	08.27569	01	29	09.33	+01	23	16.4	809
1989	TW3		1989	10	08.29167	01	29	07.74	+01	23	06.2	19.0 809
1989	TW3		1989	10	08.30486	01	29	07.20	+01	23	01.7	809
1989	TW3		1989	10	08.31806	01	29	06.79	+01	22	58.3	809
1989	TX3	*	1989	10	07.26181	01	30	16.84	+05	53	35.3	18.8 809
1989	TX3		1989	10	07.27500	01	30	16.21	+05	53	28.9	809
1989	TX3		1989	10	07.28819	01	30	15.49	+05	53	24.4	809
1989	TX3		1989	10	08.29167	01	29	23.37	+05	46	26.9	20.0 809
1989	TX3		1989	10	08.30486	01	29	22.63	+05	46	21.8	809
1989	TX3		1989	10	08.31806	01	29	21.96	+05	46	15.3	809
1989	TY3	*	1989	10	07.26181	01	30	54.91	+01	14	28.8	18.8 809
1989	TY3		1989	10	07.27500	01	30	54.32	+01	14	21.9	809
1989	TY3		1989	10	07.28819	01	30	53.83	+01	14	15.6	809
1989	TY3		1989	10	08.24931	01	30	14.04	+01	05	55.5	18.7 809
1989	TY3		1989	10	08.26250	01	30	13.45	+01	05	49.2	809
1989	TY3		1989	10	08.27569	01	30	12.91	+01	05	40.2	809
1989	TY3		1989	10	08.29167	01	30	12.47	+01	05	35.9	19.8 809
1989	TY3		1989	10	08.30486	01	30	11.86	+01	05	27.8	809
1989	TY3		1989	10	08.31806	01	30	11.23	+01	05	20.1	809
1989	TZ3	*	1989	10	07.26181	01	31	08.21	+05	43	51.2	19.0 809
1989	TZ3		1989	10	07.27500	01	31	07.49	+05	43	48.2	809
1989	TZ3		1989	10	07.28819	01	31	06.72	+05	43	45.4	809
1989	TZ3		1989	10	08.29167	01	30	12.88	+05	39	22.0	19.8 809
1989	TZ3		1989	10	08.30486	01	30	12.16	+05	39	18.5	809
1989	TZ3		1989	10	08.31806	01	30	11.38	+05	39	13.8	809
1989	TA4		1989	09	28.26111	01	38	18.42	+04	46	35.0	19.7 809
1989	TA4		1989	09	28.27431	01	38	17.77	+04	46	32.7	809
1989	TA4		1989	09	28.28750	01	38	17.24	+04	46	30.4	809
1989	TA4	*	1989	10	07.26181	01	31	18.16	+04	15	49.0	18.9 809
1989	TA4		1989	10	07.27500	01	31	17.40	+04	15	46.5	809
1989	TA4		1989	10	07.28819	01	31	16.72	+04	15	43.3	809
1989	TA4		1989	10	08.29167	01	30	26.15	+04	12	12.6	19.0 809
1989	TA4		1989	10	08.30486	01	30	25.52	+04	12	10.5	809
1989	TA4		1989	10	08.31806	01	30	24.67	+04	12	06.6	809
1989	TB4	*	1989	10	07.26181	01	31	32.03	+02	30	47.3	18.2 809
1989	TB4		1989	10	07.27500	01	31	31.27	+02	30	47.5	809
1989	TB4		1989	10	07.28819	01	31	30.36	+02	30	46.9	809
1989	TB4		1989	10	08.29167	01	30	28.38	+02	30	16.5	18.5 809
1989	TB4		1989	10	08.30486	01	30	27.58	+02	30	15.4	809
1989	TB4		1989	10	08.31806	01	30	26.67	+02	30	15.8	809
1989	TC4		1989	09	26.25486	01	39	33.18	+06	36	07.5	18.7 809
1989	TC4		1989	09	26.26806	01	39	32.72	+06	36	04.7	809
1989	TC4		1989	09	26.28125	01	39	32.23	+06	36	00.1	809
1989	TC4	*	1989	10	07.26181	01	32	00.89	+05	37	28.1	18.5 809
1989	TC4		1989	10	07.27500	01	32	00.26	+05	37	22.4	809
1989	TC4		1989	10	07.28819	01	31	59.58	+05	37	17.8	809
1989	TC4		1989	10	08.29167	01	31	12.90	+05	31	41.1	18.6 809
1989	TC4		1989	10	08.30486	01	31	12.26	+05	31	36.4	809
1989	TC4		1989	10	08.31806	01	31	11.62	+05	31	32.2	809
1989	TD4	*	1989	10	07.26181	01	32	07.93	+01	40	46.8	18.7 809

1989	TD4		1989	10	07.27500	01	32	07.21	+01	40	44.0	809
1989	TD4		1989	10	07.28819	01	32	06.45	+01	40	41.4	809
1989	TD4		1989	10	08.29167	01	31	16.23	+01	37	02.4	18.9 809
1989	TD4		1989	10	08.30486	01	31	15.51	+01	36	59.1	809
1989	TD4		1989	10	08.31806	01	31	14.75	+01	36	56.8	809
1989	TE4	*	1989	10	07.26181	01	32	22.41	+03	46	48.6	20.5 809
1989	TE4		1989	10	07.27500	01	32	21.87	+03	46	42.1	809
1989	TE4		1989	10	07.28819	01	32	21.33	+03	46	38.3	809
1989	TE4		1989	10	08.29167	01	31	39.39	+03	40	04.2	20.0 809
1989	TE4		1989	10	08.30486	01	31	38.75	+03	40	00.3	809
1989	TE4		1989	10	08.31806	01	31	38.17	+03	39	58.4	809
1989	TF4	*	1989	10	07.26181	01	32	29.93	+03	41	23.4	19.0 809
1989	TF4		1989	10	07.27500	01	32	29.12	+03	41	16.5	809
1989	TF4		1989	10	07.28819	01	32	28.35	+03	41	10.7	809
1989	TF4		1989	10	08.29167	01	31	32.37	+03	33	19.9	19.5 809
1989	TF4		1989	10	08.30486	01	31	31.53	+03	33	14.0	809
1989	TF4		1989	10	08.31806	01	31	30.73	+03	33	07.5	809
1989	TG4	*	1989	10	07.26181	01	33	12.59	+01	06	31.1	20.0 809
1989	TG4		1989	10	07.27500	01	33	11.78	+01	06	30.2	809
1989	TG4		1989	10	07.28819	01	33	10.93	+01	06	30.0	809
1989	TG4		1989	10	08.29167	01	32	19.24	+01	06	03.5	19.5 809
1989	TG4		1989	10	08.30486	01	32	18.55	+01	06	03.3	809
1989	TG4		1989	10	08.31806	01	32	17.80	+01	06	04.4	809
1989	TH4	*	1989	10	07.26181	01	33	17.58	+04	27	19.0	18.8 809
1989	TH4		1989	10	07.27500	01	33	16.90	+04	27	12.4	809
1989	TH4		1989	10	07.28819	01	33	16.27	+04	27	06.7	809
1989	TH4		1989	10	08.29167	01	32	29.99	+04	20	18.5	19.2 809
1989	TH4		1989	10	08.30486	01	32	29.36	+04	20	14.2	809
1989	TH4		1989	10	08.31806	01	32	28.63	+04	20	07.3	809
1989	TJ4	*	1989	10	07.26181	01	33	32.57	+03	11	37.4	19.5 809
1989	TJ4		1989	10	07.27500	01	33	31.94	+03	11	33.0	809
1989	TJ4		1989	10	07.28819	01	33	31.31	+03	11	27.3	809
1989	TJ4		1989	10	08.29167	01	32	45.50	+03	04	47.0	20.0 809
1989	TJ4		1989	10	08.30486	01	32	44.73	+03	04	40.6	809
1989	TJ4		1989	10	08.31806	01	32	44.02	+03	04	33.5	809
1989	TK4	*	1989	10	07.26181	01	33	36.18	+04	41	19.5	19.5 809
1989	TK4		1989	10	07.27500	01	33	35.64	+04	41	18.2	809
1989	TK4		1989	10	07.28819	01	33	35.05	+04	41	16.3	809
1989	TK4		1989	10	08.29167	01	32	46.25	+04	38	34.7	19.5 809
1989	TK4		1989	10	08.30486	01	32	45.58	+04	38	33.1	809
1989	TK4		1989	10	08.31806	01	32	44.82	+04	38	30.2	809
1989	TL4	*	1989	10	07.26181	01	33	39.87	+04	59	18.7	19.0 809
1989	TL4		1989	10	07.27500	01	33	39.33	+04	59	15.5	809
1989	TL4		1989	10	07.28819	01	33	38.65	+04	59	11.9	809
1989	TL4		1989	10	08.29167	01	32	53.98	+04	54	30.3	18.9 809
1989	TL4		1989	10	08.30486	01	32	53.24	+04	54	26.4	809
1989	TL4		1989	10	08.31806	01	32	52.67	+04	54	22.6	809
1989	TM4	*	1989	10	07.26181	01	33	55.76	+04	18	18.9	18.5 809
1989	TM4		1989	10	07.27500	01	33	55.13	+04	18	12.4	809
1989	TM4		1989	10	07.28819	01	33	54.45	+04	18	05.8	809
1989	TM4		1989	10	08.29167	01	33	08.73	+04	09	44.5	18.7 809
1989	TM4		1989	10	08.30486	01	33	08.07	+04	09	39.2	809
1989	TM4		1989	10	08.31806	01	33	07.42	+04	09	32.4	809
1989	TN4	*	1989	10	07.26181	01	33	59.10	+03	37	18.3	18.8 809
1989	TN4		1989	10	07.27500	01	33	58.28	+03	37	12.9	809
1989	TN4		1989	10	07.28819	01	33	57.56	+03	37	08.1	809
1989	TN4		1989	10	08.29167	01	33	01.21	+03	31	16.5	18.8 809
1989	TN4		1989	10	08.30486	01	33	00.42	+03	31	11.6	809
1989	TN4		1989	10	08.31806	01	32	59.62	+03	31	06.1	809

1989	TO4	*	1989	10	07.26181	01	34	10.05	+04	07	45.2	19.0	809
1989	TO4		1989	10	07.27500	01	34	09.37	+04	07	38.7		809
1989	TO4		1989	10	07.28819	01	34	08.70	+04	07	32.0		809
1989	TO4		1989	10	08.29167	01	33	19.69	+03	59	40.6	19.0	809
1989	TO4		1989	10	08.30486	01	33	19.03	+03	59	34.8		809
1989	TO4		1989	10	08.31806	01	33	18.27	+03	59	28.1		809
1989	TP4	*	1989	10	07.26181	01	34	27.97	+03	01	27.3	19.5	809
1989	TP4		1989	10	07.27500	01	34	27.20	+03	01	24.5		809
1989	TP4		1989	10	07.28819	01	34	26.43	+03	01	21.5		809
1989	TP4		1989	10	08.29167	01	33	30.48	+02	57	38.4	19.7	809
1989	TP4		1989	10	08.30486	01	33	29.74	+02	57	35.9		809
1989	TP4		1989	10	08.31806	01	33	28.93	+02	57	31.5		809
1989	TQ4		1989	09	28.26111	01	41	41.75	+02	43	11.2		809
1989	TQ4		1989	09	28.27431	01	41	41.08	+02	43	10.2		809
1989	TQ4		1989	09	28.28750	01	41	40.45	+02	43	07.3		809
1989	TQ4	*	1989	10	07.26181	01	34	59.16	+02	23	39.1	19.0	809
1989	TQ4		1989	10	07.27500	01	34	58.44	+02	23	38.0		809
1989	TQ4		1989	10	07.28819	01	34	57.63	+02	23	36.8		809
1989	TQ4		1989	10	08.29167	01	34	07.26	+02	21	36.2	18.9	809
1989	TQ4		1989	10	08.30486	01	34	06.54	+02	21	35.1		809
1989	TQ4		1989	10	08.31806	01	34	05.79	+02	21	33.7		809
1989	TR4	*	1989	10	07.26181	01	35	12.61	+01	52	06.1	19.0	809
1989	TR4		1989	10	07.27500	01	35	11.98	+01	52	05.4		809
1989	TR4		1989	10	07.28819	01	35	11.17	+01	52	03.5		809
1989	TR4		1989	10	08.29167	01	34	17.55	+01	49	16.2	19.0	809
1989	TR4		1989	10	08.30486	01	34	16.74	+01	49	13.8		809
1989	TR4		1989	10	08.31806	01	34	16.09	+01	49	12.6		809
1989	TS4	*	1989	10	07.26181	01	35	20.24	+01	02	01.8	18.6	809
1989	TS4		1989	10	07.27500	01	35	19.52	+01	02	01.1		809
1989	TS4		1989	10	07.28819	01	35	18.75	+01	02	00.5		809
1989	TS4		1989	10	08.29167	01	34	29.49	+01	01	16.2	18.6	809
1989	TS4		1989	10	08.30486	01	34	28.73	+01	01	15.4		809
1989	TS4		1989	10	08.31806	01	34	27.99	+01	01	15.7		809
1989	TT4	*	1989	10	07.26181	01	35	21.15	+05	39	00.5	17.7	809
1989	TT4		1989	10	07.27500	01	35	20.52	+05	38	55.8		809
1989	TT4		1989	10	07.28819	01	35	19.93	+05	38	52.8		809
1989	TT4		1989	10	08.29167	01	34	32.35	+05	33	45.6	19.6	809
1989	TT4		1989	10	08.30486	01	34	31.62	+05	33	41.3		809
1989	TT4		1989	10	08.31806	01	34	31.05	+05	33	37.7		809
1989	TU4		1989	09	26.25486	01	43	52.91	+02	55	18.2	20.5	809
1989	TU4		1989	09	26.26806	01	43	52.28	+02	55	14.5		809
1989	TU4		1989	09	26.28125	01	43	51.73	+02	55	10.1		809
1989	TU4	*	1989	10	07.26181	01	35	21.64	+01	57	39.5	19.3	809
1989	TU4		1989	10	07.27500	01	35	20.83	+01	57	35.4		809
1989	TU4		1989	10	07.28819	01	35	20.15	+01	57	31.1		809
1989	TU4		1989	10	08.29167	01	34	29.56	+01	52	22.7	19.6	809
1989	TU4		1989	10	08.30486	01	34	28.84	+01	52	18.3		809
1989	TU4		1989	10	08.31806	01	34	28.12	+01	52	12.4		809
1989	TV4	*	1989	10	07.26181	01	35	24.29	+04	59	13.2	18.9	809
1989	TV4		1989	10	07.27500	01	35	23.57	+04	59	05.9		809
1989	TV4		1989	10	07.28819	01	35	22.62	+04	58	57.2		809
1989	TV4		1989	10	08.29167	01	34	29.98	+04	50	21.5	19.0	809
1989	TV4		1989	10	08.30486	01	34	29.29	+04	50	15.4		809
1989	TV4		1989	10	08.31806	01	34	28.50	+04	50	08.7		809
1989	TW4	*	1989	10	07.26181	01	35	41.71	+01	24	49.4	19.0	809
1989	TW4		1989	10	07.27500	01	35	40.95	+01	24	48.5		809
1989	TW4		1989	10	07.28819	01	35	40.05	+01	24	48.0		809
1989	TW4		1989	10	08.29167	01	34	41.85	+01	23	06.6	18.8	809
1989	TW4		1989	10	08.30486	01	34	41.01	+01	23	05.1		809

1989	TW4		1989	10	08.31806	01	34	40.26	+01	23	04.3	809
1989	TX4	*	1989	10	07.26181	01	35	42.35	+05	10	20.6	18.9 809
1989	TX4		1989	10	07.27500	01	35	41.36	+05	10	17.5	809
1989	TX4		1989	10	07.28819	01	35	40.50	+05	10	16.2	809
1989	TX4		1989	10	08.29167	01	34	33.56	+05	06	47.2	19.3 809
1989	TX4		1989	10	08.30486	01	34	32.79	+05	06	43.3	809
1989	TX4		1989	10	08.31806	01	34	31.92	+05	06	41.0	809
1989	TY4	*	1989	10	07.26181	01	36	00.03	+03	21	24.8	18.7 809
1989	TY4		1989	10	07.27500	01	35	59.22	+03	21	17.5	809
1989	TY4		1989	10	07.28819	01	35	58.50	+03	21	11.9	809
1989	TY4		1989	10	08.29167	01	35	02.13	+03	12	31.9	19.0 809
1989	TY4		1989	10	08.30486	01	35	01.35	+03	12	25.4	809
1989	TY4		1989	10	08.31806	01	35	00.48	+03	12	19.5	809
1989	TZ4	*	1989	10	07.26181	01	36	02.17	+05	35	40.6	19.2 809
1989	TZ4		1989	10	07.27500	01	36	01.50	+05	35	36.0	809
1989	TZ4		1989	10	07.28819	01	36	00.82	+05	35	29.6	809
1989	TZ4		1989	10	08.29167	01	35	11.68	+05	29	17.3	19.6 809
1989	TZ4		1989	10	08.30486	01	35	11.00	+05	29	12.7	809
1989	TZ4		1989	10	08.31806	01	35	10.12	+05	29	06.5	809
1989	TA5		1989	09	28.26111	01	43	37.92	+04	00	24.9	809
1989	TA5		1989	09	28.27431	01	43	37.36	+04	00	22.5	809
1989	TA5		1989	09	28.28750	01	43	36.78	+04	00	17.8	809
1989	TA5	*	1989	10	07.26181	01	36	40.46	+03	16	37.8	19.5 809
1989	TA5		1989	10	07.27500	01	36	39.74	+03	16	34.6	809
1989	TA5		1989	10	07.28819	01	36	38.89	+03	16	30.1	809
1989	TA5		1989	10	08.29167	01	35	46.91	+03	11	33.6	19.3 809
1989	TA5		1989	10	08.30486	01	35	46.06	+03	11	29.4	809
1989	TA5		1989	10	08.31806	01	35	45.30	+03	11	24.1	809
1989	TB5	*	1989	10	07.26181	01	37	30.19	+03	42	45.0	18.7 809
1989	TB5		1989	10	07.27500	01	37	29.51	+03	42	40.1	809
1989	TB5		1989	10	07.28819	01	37	28.83	+03	42	33.9	809
1989	TB5		1989	10	08.29167	01	36	42.15	+03	35	30.4	18.8 809
1989	TB5		1989	10	08.30486	01	36	41.45	+03	35	24.2	809
1989	TB5		1989	10	08.31806	01	36	40.84	+03	35	19.0	809
1989	TC5	*	1989	10	07.26181	01	37	58.06	+01	51	30.7	19.0 809
1989	TC5		1989	10	07.27500	01	37	57.12	+01	51	28.7	809
1989	TC5		1989	10	07.28819	01	37	56.13	+01	51	28.4	809
1989	TC5		1989	10	08.29167	01	36	55.35	+01	49	56.0	19.6 809
1989	TC5		1989	10	08.30486	01	36	54.41	+01	49	55.1	809
1989	TC5		1989	10	08.31806	01	36	53.50	+01	49	55.3	809
1989	TD5	*	1989	10	07.26181	01	38	04.32	+04	11	13.5	18.8 809
1989	TD5		1989	10	07.27500	01	38	03.37	+04	11	11.8	809
1989	TD5		1989	10	07.28819	01	38	02.34	+04	11	10.4	809
1989	TD5		1989	10	08.29167	01	36	55.72	+04	09	31.2	19.1 809
1989	TD5		1989	10	08.30486	01	36	54.72	+04	09	30.3	809
1989	TD5		1989	10	08.31806	01	36	53.66	+04	09	28.7	809
1989	TE5	*	1989	10	07.26181	01	38	16.40	+04	15	59.2	19.5 809
1989	TE5		1989	10	07.27500	01	38	15.59	+04	15	55.9	809
1989	TE5		1989	10	07.28819	01	38	14.86	+04	15	49.4	809
1989	TE5		1989	10	08.29167	01	37	22.22	+04	09	04.9	19.3 809
1989	TE5		1989	10	08.30486	01	37	21.43	+04	08	58.2	809
1989	TE5		1989	10	08.31806	01	37	20.56	+04	08	52.8	809
1989	TF5	*	1989	10	07.26181	01	38	29.11	+04	42	19.4	19.5 809
1989	TF5		1989	10	07.27500	01	38	28.57	+04	42	13.8	809
1989	TF5		1989	10	07.28819	01	38	27.94	+04	42	07.5	809
1989	TF5		1989	10	08.29167	01	37	38.75	+04	37	36.2	19.6 809
1989	TF5		1989	10	08.30486	01	37	37.96	+04	37	32.0	809
1989	TF5		1989	10	08.31806	01	37	37.33	+04	37	27.2	809
1989	TG5	*	1989	10	07.26181	01	38	41.43	+01	30	16.2	18.4 809

1989	TG5		1989	10	07.27500	01	38	40.62	+01	30	15.4		809
1989	TG5		1989	10	07.28819	01	38	39.86	+01	30	14.2		809
1989	TG5		1989	10	08.29167	01	37	43.07	+01	28	10.9	18.5	809
1989	TG5		1989	10	08.30486	01	37	42.20	+01	28	09.3		809
1989	TG5		1989	10	08.31806	01	37	41.37	+01	28	08.3		809
1989	TH5	*	1989	10	07.26181	01	39	01.62	+01	40	32.2	18.5	809
1989	TH5		1989	10	07.27500	01	39	01.22	+01	40	13.0		809
1989	TH5		1989	10	07.28819	01	39	00.72	+01	39	53.7		809
1989	TH5		1989	10	08.29167	01	38	27.06	+01	14	46.5	18.5	809
1989	TH5		1989	10	08.30486	01	38	26.55	+01	14	27.7		809
1989	TH5		1989	10	08.31806	01	38	25.95	+01	14	06.0		809
1989	TJ5	*	1989	10	07.26181	01	39	03.65	+01	01	56.0	18.5	809
1989	TJ5		1989	10	07.27500	01	39	02.88	+01	01	53.7		809
1989	TJ5		1989	10	07.28819	01	39	02.16	+01	01	52.4		809
1989	TJ5		1989	10	08.29167	01	38	12.02	+00	58	50.2	18.7	809
1989	TJ5		1989	10	08.30486	01	38	11.24	+00	58	48.3		809
1989	TJ5		1989	10	08.31806	01	38	10.48	+00	58	46.4		809
1989	TK5	*	1989	10	07.26181	01	39	08.23	+01	07	33.0	18.2	809
1989	TK5		1989	10	07.27500	01	39	07.38	+01	07	28.9		809
1989	TK5		1989	10	07.28819	01	39	06.57	+01	07	26.5		809
1989	TK5		1989	10	08.29167	01	38	08.59	+01	02	39.4	18.4	809
1989	TK5		1989	10	08.30486	01	38	07.73	+01	02	37.1		809
1989	TK5		1989	10	08.31806	01	38	06.90	+01	02	33.8		809
1989	TL5	*	1989	10	07.26181	01	39	10.31	+02	15	36.3	19.7	809
1989	TL5		1989	10	07.27500	01	39	09.77	+02	15	27.4		809
1989	TL5		1989	10	07.28819	01	39	09.09	+02	15	16.9		809
1989	TL5		1989	10	08.29167	01	38	29.30	+02	02	39.9	19.0	809
1989	TL5		1989	10	08.30486	01	38	28.64	+02	02	28.2		809
1989	TL5		1989	10	08.31806	01	38	28.06	+02	02	18.6		809
1989	TM5	*	1989	10	07.26181	01	39	13.24	+03	34	34.4	18.6	809
1989	TM5		1989	10	07.27500	01	39	12.43	+03	34	30.1		809
1989	TM5		1989	10	07.28819	01	39	11.66	+03	34	26.6		809
1989	TM5		1989	10	08.29167	01	38	17.16	+03	29	43.4	18.9	809
1989	TM5		1989	10	08.30486	01	38	16.38	+03	29	40.4		809
1989	TM5		1989	10	08.31806	01	38	15.59	+03	29	36.6		809
1989	TN5	*	1989	10	07.26181	01	39	15.42	+01	08	45.8	17.9	809
1989	TN5		1989	10	07.27500	01	39	14.61	+01	08	42.3		809
1989	TN5		1989	10	07.28819	01	39	13.72	+01	08	38.6		809
1989	TN5		1989	10	08.29167	01	38	12.86	+01	03	06.8	18.4	809
1989	TN5		1989	10	08.30486	01	38	11.97	+01	03	03.7		809
1989	TN5		1989	10	08.31806	01	38	11.18	+01	02	59.5		809
1989	TO5		1989	09	28.26111	01	46	28.72	+02	51	42.6		809
1989	TO5		1989	09	28.27431	01	46	28.08	+02	51	39.5		809
1989	TO5		1989	09	28.28750	01	46	27.44	+02	51	35.6		809
1989	TO5	*	1989	10	07.26181	01	39	21.87	+02	15	45.5	18.6	809
1989	TO5		1989	10	07.27500	01	39	21.10	+02	15	42.6		809
1989	TO5		1989	10	07.28819	01	39	20.29	+02	15	40.3		809
1989	TO5		1989	10	08.29167	01	38	27.23	+02	11	46.8	18.8	809
1989	TO5		1989	10	08.30486	01	38	26.41	+02	11	44.2		809
1989	TO5		1989	10	08.31806	01	38	25.62	+02	11	41.0		809
1989	TP5	*	1989	10	07.26181	01	39	38.89	+04	18	01.4	20.0	809
1989	TP5		1989	10	07.27500	01	39	37.99	+04	18	00.4		809
1989	TP5		1989	10	07.28819	01	39	37.22	+04	17	59.3		809
1989	TP5		1989	10	08.29167	01	38	41.27	+04	17	20.0	19.6	809
1989	TP5		1989	10	08.30486	01	38	40.46	+04	17	19.2		809
1989	TP5		1989	10	08.31806	01	38	39.68	+04	17	19.6		809
1989	TQ5	*	1989	10	07.26181	01	39	47.82	+01	05	12.1	19.2	809
1989	TQ5		1989	10	07.27500	01	39	46.96	+01	05	04.8		809
1989	TQ5		1989	10	07.28819	01	39	46.24	+01	04	59.2		809

1989	TQ5		1989	10	08.29167	01	38	53.87	+00	56	59.0	19.8	809
1989	TQ5		1989	10	08.30486	01	38	53.04	+00	56	52.7		809
1989	TQ5		1989	10	08.31806	01	38	52.15	+00	56	45.4		809
1989	TR5		1989	09	28.26111	01	50	13.98	+02	47	30.9		809
1989	TR5		1989	09	28.27431	01	50	13.32	+02	47	32.9		809
1989	TR5		1989	09	28.28750	01	50	12.60	+02	47	34.0		809
1989	TR5	*	1989	10	07.26181	01	42	00.04	+03	07	42.4	18.6	809
1989	TR5		1989	10	07.27500	01	41	59.23	+03	07	44.2		809
1989	TR5		1989	10	07.28819	01	41	58.42	+03	07	46.0		809
1989	TR5		1989	10	08.29167	01	40	58.56	+03	10	08.5	18.6	809
1989	TR5		1989	10	08.30486	01	40	57.80	+03	10	09.9		809
1989	TR5		1989	10	08.31806	01	40	56.96	+03	10	12.0		809
1989	TS5	*	1989	10	07.26181	01	42	26.04	+01	45	54.0	18.9	809
1989	TS5		1989	10	07.27500	01	42	25.24	+01	45	49.1		809
1989	TS5		1989	10	07.28819	01	42	24.52	+01	45	45.2		809
1989	TS5		1989	10	08.29167	01	41	30.74	+01	40	24.0	18.7	809
1989	TS5		1989	10	08.30486	01	41	30.00	+01	40	20.4		809
1989	TS5		1989	10	08.31806	01	41	29.27	+01	40	16.9		809
1989	TV5		1989	10	07.21944	01	11	43.04	+01	32	15.2	17.8	809
1989	TV5		1989	10	07.23264	01	11	42.58	+01	32	06.8		809
1989	TV5		1989	10	07.24583	01	11	42.07	+01	31	58.9		809
1989	TV5		1989	10	08.24931	01	11	08.34	+01	21	24.7	18.3	809
1989	TV5		1989	10	08.26250	01	11	07.83	+01	21	16.7		809
1989	TV5		1989	10	08.27569	01	11	07.37	+01	21	08.0		809
1989	TX5	*	1989	10	07.21944	01	11	05.79	+00	55	53.4	17.7	809
1989	TX5		1989	10	07.23264	01	11	05.16	+00	55	47.8		809
1989	TX5		1989	10	07.24583	01	11	04.44	+00	55	42.3		809
1989	TX5		1989	10	08.24931	01	10	15.60	+00	48	31.3	18.3	809
1989	TX5		1989	10	08.26250	01	10	14.94	+00	48	25.5		809
1989	TX5		1989	10	08.27569	01	10	14.21	+00	48	19.2		809
1989	TY5	*	1989	10	07.21944	01	11	26.55	+01	04	55.7	18.6	809
1989	TY5		1989	10	07.23264	01	11	25.99	+01	04	47.6		809
1989	TY5		1989	10	07.24583	01	11	25.35	+01	04	39.5		809
1989	TY5		1989	10	08.24931	01	10	45.32	+00	54	44.3	18.5	809
1989	TY5		1989	10	08.26250	01	10	44.74	+00	54	37.2		809
1989	TY5		1989	10	08.27569	01	10	44.18	+00	54	29.1		809
1989	TZ5	*	1989	10	07.21944	01	11	33.20	+01	03	08.6	19.6	809
1989	TZ5		1989	10	07.23264	01	11	32.37	+01	03	07.1		809
1989	TZ5		1989	10	07.24583	01	11	31.64	+01	03	05.1		809
1989	TZ5		1989	10	08.24931	01	10	32.02	+01	00	43.9	18.8	809
1989	TZ5		1989	10	08.26250	01	10	31.26	+01	00	42.4		809
1989	TZ5		1989	10	08.27569	01	10	30.47	+01	00	40.8		809
1989	TA6		1989	09	26.21042	01	20	31.48	+03	08	27.6	19.0	809
1989	TA6		1989	09	26.22361	01	20	30.93	+03	08	23.9		809
1989	TA6		1989	09	26.23681	01	20	30.30	+03	08	19.0		809
1989	TA6	*	1989	10	07.21944	01	12	14.32	+02	10	58.9	18.5	809
1989	TA6		1989	10	07.23264	01	12	13.71	+02	10	56.2		809
1989	TA6		1989	10	07.24583	01	12	12.96	+02	10	51.5		809
1989	TA6		1989	10	08.24931	01	11	25.23	+02	05	37.3	19.3	809
1989	TA6		1989	10	08.26250	01	11	24.64	+02	05	33.9		809
1989	TA6		1989	10	08.27569	01	11	24.01	+02	05	29.2		809
1989	TB6	*	1989	10	07.21944	01	13	13.05	+00	48	21.0	19.3	809
1989	TB6		1989	10	07.23264	01	13	12.41	+00	48	14.4		809
1989	TB6		1989	10	07.24583	01	13	11.73	+00	48	08.0		809
1989	TB6		1989	10	08.24931	01	12	24.49	+00	40	27.4	19.2	809
1989	TB6		1989	10	08.26250	01	12	23.84	+00	40	21.2		809
1989	TB6		1989	10	08.27569	01	12	23.24	+00	40	15.2		809
1989	TC6	*	1989	10	07.21944	01	13	22.68	+00	52	01.5	19.5	809
1989	TC6		1989	10	07.23264	01	13	21.93	+00	51	57.4		809

1989	TC6		1989	10	07.24583	01	13	21.15	+00	51	51.6			809
1989	TC6		1989	10	08.24931	01	12	31.50	+00	46	53.1		19.2	809
1989	TC6		1989	10	08.26250	01	12	30.82	+00	46	49.3			809
1989	TC6		1989	10	08.27569	01	12	30.03	+00	46	44.9			809
1989	TD6	*	1989	10	07.21944	01	13	45.28	+02	47	07.7		19.2	809
1989	TD6		1989	10	07.23264	01	13	44.51	+02	47	05.0			809
1989	TD6		1989	10	07.24583	01	13	43.86	+02	47	00.6			809
1989	TD6		1989	10	08.24931	01	12	54.79	+02	42	19.0		19.3	809
1989	TD6		1989	10	08.26250	01	12	54.17	+02	42	15.5			809
1989	TD6		1989	10	08.27569	01	12	53.55	+02	42	11.0			809
1989	TE6	*	1989	10	07.21944	01	14	14.87	+01	20	26.5		19.6	809
1989	TE6		1989	10	07.23264	01	14	14.14	+01	20	19.9			809
1989	TE6		1989	10	07.24583	01	14	13.42	+01	20	14.8			809
1989	TE6		1989	10	08.24931	01	13	23.12	+01	13	29.6		19.2	809
1989	TE6		1989	10	08.26250	01	13	22.38	+01	13	24.4			809
1989	TE6		1989	10	08.27569	01	13	21.62	+01	13	18.2			809
1989	TF6	*	1989	10	07.21944	01	14	26.75	+00	44	27.1		19.4	809
1989	TF6		1989	10	07.23264	01	14	26.27	+00	44	25.5			809
1989	TF6		1989	10	07.24583	01	14	25.75	+00	44	24.4			809
1989	TF6		1989	10	08.24931	01	13	51.07	+00	43	28.5		19.0	809
1989	TF6		1989	10	08.26250	01	13	50.57	+00	43	27.2			809
1989	TF6		1989	10	08.27569	01	13	49.97	+00	43	26.7			809
1989	TG6	*	1989	10	07.21944	01	15	24.79	+00	53	49.5		18.9	809
1989	TG6		1989	10	07.23264	01	15	24.39	+00	53	44.1			809
1989	TG6		1989	10	07.24583	01	15	24.07	+00	53	39.9			809
1989	TG6		1989	10	08.24931	01	14	55.96	+00	46	52.7		18.8	809
1989	TG6		1989	10	08.26250	01	14	55.52	+00	46	46.1			809
1989	TG6		1989	10	08.27569	01	14	55.13	+00	46	40.9			809
1989	TH6	*	1989	10	07.21944	01	15	44.70	+01	01	59.8		19.1	809
1989	TH6		1989	10	07.23264	01	15	43.85	+01	01	58.0			809
1989	TH6		1989	10	07.24583	01	15	43.03	+01	01	55.9			809
1989	TH6		1989	10	08.24931	01	14	42.44	+00	59	57.0		19.4	809
1989	TH6		1989	10	08.26250	01	14	41.60	+00	59	55.0			809
1989	TH6		1989	10	08.27569	01	14	40.86	+00	59	54.3			809
1989	TJ6	*	1989	10	07.21944	01	15	58.79	+02	42	44.3		19.6	809
1989	TJ6		1989	10	07.23264	01	15	57.98	+02	42	41.1			809
1989	TJ6		1989	10	07.24583	01	15	57.18	+02	42	39.1			809
1989	TJ6		1989	10	08.24931	01	15	03.59	+02	39	14.2		19.0	809
1989	TJ6		1989	10	08.26250	01	15	02.90	+02	39	11.5			809
1989	TJ6		1989	10	08.27569	01	15	02.19	+02	39	09.2			809
1989	TK6	*	1989	10	07.21944	01	16	13.57	+02	00	27.8		19.8	809
1989	TK6		1989	10	07.23264	01	16	12.80	+02	00	23.8			809
1989	TK6		1989	10	07.24583	01	16	12.13	+02	00	21.7			809
1989	TK6		1989	10	08.24931	01	15	20.14	+01	56	26.7		20.0	809
1989	TK6		1989	10	08.26250	01	15	19.40	+01	56	24.1			809
1989	TK6		1989	10	08.27569	01	15	18.69	+01	56	20.1			809
1989	TL6	*	1989	10	07.21944	01	18	48.67	+00	32	08.1		19.4	809
1989	TL6		1989	10	07.23264	01	18	47.96	+00	32	03.3			809
1989	TL6		1989	10	07.24583	01	18	47.19	+00	31	58.8			809
1989	TL6		1989	10	08.24931	01	17	28.24	+00	25	25.4		18.8	809
1989	TL6		1989	10	08.26250	01	17	27.60	+00	25	25.0			809
1989	TL6		1989	10	08.27569	01	17	26.71	+00	25	22.7			809
1989	TM6	*	1989	10	07.21944	01	19	01.69	+00	36	42.6		19.0	809
1989	TM6		1989	10	07.23264	01	19	01.10	+00	36	37.3			809
1989	TM6		1989	10	07.24583	01	19	00.40	+00	36	33.7			809
1989	TM6		1989	10	08.24931	01	18	10.17	+00	31	03.7		18.7	809
1989	TM6		1989	10	08.26250	01	18	09.50	+00	31	00.5			809
1989	TM6		1989	10	08.27569	01	18	08.81	+00	30	55.4			809
1989	TN6		1989	09	28.12014	01	27	53.91	+01	52	52.9			809

1989	TN6		1989	09	28.13333	01	27	53.32	+01	52	48.0		809
1989	TN6		1989	09	28.14653	01	27	52.60	+01	52	43.4		809
1989	TN6	*	1989	10	07.21944	01	19	51.39	+00	38	36.2	18.8	809
1989	TN6		1989	10	07.23264	01	19	50.68	+00	38	29.5		809
1989	TN6		1989	10	07.24583	01	19	49.86	+00	38	24.2		809
1989	TN6		1989	10	08.24931	01	18	54.16	+00	30	25.1	18.8	809
1989	TN6		1989	10	08.26250	01	18	53.21	+00	30	17.9		809
1989	TN6		1989	10	08.27569	01	18	52.57	+00	30	12.0		809
1989	TO6	*	1989	10	07.21944	01	20	24.40	+00	38	46.3	20.0	809
1989	TO6		1989	10	07.23264	01	20	23.83	+00	38	42.8		809
1989	TO6		1989	10	07.24583	01	20	23.27	+00	38	39.5		809
1989	TO6		1989	10	08.24931	01	19	50.28	+00	32	06.7	20.5	809
1989	TO6		1989	10	08.26250	01	19	49.70	+00	32	03.4		809
1989	TO6		1989	10	08.27569	01	19	49.05	+00	32	02.0		809
1989	TP6	*	1989	10	07.21944	01	20	34.29	+01	04	24.7	19.6	809
1989	TP6		1989	10	07.23264	01	20	33.51	+01	04	21.6		809
1989	TP6		1989	10	07.24583	01	20	32.78	+01	04	16.5		809
1989	TP6		1989	10	08.24931	01	19	42.96	+00	59	35.9	18.8	809
1989	TP6		1989	10	08.26250	01	19	42.26	+00	59	31.1		809
1989	TP6		1989	10	08.27569	01	19	41.56	+00	59	28.3		809
1989	TQ6	*	1989	10	07.21944	01	20	52.29	+00	43	39.0	19.0	809
1989	TQ6		1989	10	07.23264	01	20	51.66	+00	43	32.9		809
1989	TQ6		1989	10	07.24583	01	20	51.09	+00	43	28.0		809
1989	TQ6		1989	10	08.24931	01	20	16.74	+00	34	58.0	20.0	809
1989	TQ6		1989	10	08.26250	01	20	15.91	+00	34	55.8		809
1989	TQ6		1989	10	08.27569	01	20	15.07	+00	34	54.5		809
1989	TR6	*	1989	10	07.21944	01	20	55.56	+01	36	60.0	19.4	809
1989	TR6		1989	10	07.23264	01	20	54.89	+01	36	55.1		809
1989	TR6		1989	10	07.24583	01	20	54.29	+01	36	50.8		809
1989	TR6		1989	10	08.24931	01	20	06.54	+01	31	25.7	19.8	809
1989	TR6		1989	10	08.26250	01	20	05.85	+01	31	21.2		809
1989	TR6		1989	10	08.27569	01	20	05.22	+01	31	18.7		809
1989	TS6	*	1989	10	07.21944	01	21	16.78	+01	14	38.9	19.0	809
1989	TS6		1989	10	07.23264	01	21	15.92	+01	14	40.5		809
1989	TS6		1989	10	07.24583	01	21	14.97	+01	14	40.0		809
1989	TS6		1989	10	08.24931	01	20	10.26	+01	14	43.9	19.6	809
1989	TS6		1989	10	08.26250	01	20	09.36	+01	14	44.4		809
1989	TS6		1989	10	08.27569	01	20	08.56	+01	14	43.9		809
1989	TT6	*	1989	10	07.21944	01	21	54.13	+01	53	18.5	19.2	809
1989	TT6		1989	10	07.23264	01	21	53.53	+01	53	15.0		809
1989	TT6		1989	10	07.24583	01	21	52.77	+01	53	11.2		809
1989	TT6		1989	10	08.24931	01	21	07.35	+01	48	54.8	19.1	809
1989	TT6		1989	10	08.26250	01	21	06.67	+01	48	51.3		809
1989	TT6		1989	10	08.27569	01	21	06.06	+01	48	48.0		809
1989	TT6		1989	10	08.29167	01	21	05.59	+01	48	44.8	19.0	809
1989	TT6		1989	10	08.30486	01	21	04.94	+01	48	41.1		809
1989	TT6		1989	10	08.31806	01	21	04.21	+01	48	37.7		809
1989	TU6	*	1989	10	07.21944	01	22	06.94	+01	15	52.5	18.9	809
1989	TU6		1989	10	07.23264	01	22	06.12	+01	15	46.0		809
1989	TU6		1989	10	07.24583	01	22	05.44	+01	15	41.8		809
1989	TU6		1989	10	08.24931	01	21	11.88	+01	08	57.9	19.0	809
1989	TU6		1989	10	08.26250	01	21	11.14	+01	08	51.9		809
1989	TU6		1989	10	08.27569	01	21	10.42	+01	08	46.9		809
1989	TV6	*	1989	10	07.21944	01	22	42.36	+02	01	26.4	18.9	809
1989	TV6		1989	10	07.23264	01	22	41.64	+02	01	21.8		809
1989	TV6		1989	10	07.24583	01	22	40.86	+02	01	19.0		809
1989	TV6		1989	10	08.24931	01	21	24.80	+01	54	03.9	19.4	809
1989	TV6		1989	10	08.26250	01	21	24.21	+01	53	56.2		809
1989	TV6		1989	10	08.27569	01	21	23.58	+01	53	48.7		809

1989	TW6	*	1989	10	07.21944	01	24	22.89	+00	36	50.9	19.4	809
1989	TW6		1989	10	07.23264	01	24	22.28	+00	36	44.2		809
1989	TW6		1989	10	07.24583	01	24	21.53	+00	36	38.7		809
1989	TW6		1989	10	08.24931	01	23	33.17	+00	28	34.2	19.2	809
1989	TW6		1989	10	08.26250	01	23	32.49	+00	28	27.7		809
1989	TW6		1989	10	08.27569	01	23	31.84	+00	28	22.3		809
1989	TX6	*	1989	10	07.21944	01	24	35.51	+00	31	14.9	18.7	809
1989	TX6		1989	10	07.23264	01	24	34.82	+00	31	11.4		809
1989	TX6		1989	10	07.24583	01	24	34.14	+00	31	08.0		809
1989	TX6		1989	10	08.24931	01	23	45.05	+00	25	59.5	18.7	809
1989	TX6		1989	10	08.26250	01	23	44.40	+00	25	56.1		809
1989	TX6		1989	10	08.27569	01	23	43.70	+00	25	52.6		809
1989	TY6	*	1989	10	07.21944	01	26	55.97	+00	20	57.3	18.9	809
1989	TY6		1989	10	07.23264	01	26	55.14	+00	20	56.2		809
1989	TY6		1989	10	07.24583	01	26	54.25	+00	20	55.8		809
1989	TY6		1989	10	08.24931	01	25	53.74	+00	20	28.3	18.7	809
1989	TY6		1989	10	08.26250	01	25	52.81	+00	20	28.4		809
1989	TY6		1989	10	08.27569	01	25	51.93	+00	20	28.5		809
1989	TZ6		1989	09	28.12014	01	37	36.56	-00	18	46.7		809
1989	TZ6		1989	09	28.13333	01	37	35.75	-00	18	46.0		809
1989	TZ6		1989	09	28.14653	01	37	34.97	-00	18	45.6		809
1989	TZ6	*	1989	10	07.21944	01	28	06.12	-00	03	20.2	18.8	809
1989	TZ6		1989	10	07.23264	01	28	05.25	-00	03	19.7		809
1989	TZ6		1989	10	07.24583	01	28	04.28	-00	03	18.6		809
1989	TZ6		1989	10	08.24931	01	26	57.71	-00	01	17.8	18.5	809
1989	TZ6		1989	10	08.26250	01	26	56.79	-00	01	16.4		809
1989	TZ6		1989	10	08.27569	01	26	55.85	-00	01	14.1		809
1989	TA7	*	1989	10	07.21944	01	10	13.34	-01	12	30.9	19.0	809
1989	TA7		1989	10	07.23264	01	10	12.60	-01	12	32.5		809
1989	TA7		1989	10	07.24583	01	10	11.91	-01	12	33.5		809
1989	TA7		1989	10	08.24931	01	09	21.36	-01	14	52.8	19.3	809
1989	TA7		1989	10	08.24931	01	09	21.36	-01	14	52.8	19.3	809
1989	TA7		1989	10	08.26250	01	09	20.67	-01	14	54.7		809
1989	TA7		1989	10	08.26250	01	09	20.67	-01	14	54.7		809
1989	TA7		1989	10	08.27569	01	09	19.88	-01	14	57.9		809
1989	TA7		1989	10	08.27569	01	09	19.88	-01	14	57.9		809
1989	TB7	*	1989	10	07.21944	01	10	18.81	+00	22	55.6	19.6	809
1989	TB7		1989	10	07.23264	01	10	18.12	+00	22	51.3		809
1989	TB7		1989	10	07.24583	01	10	17.38	+00	22	48.0		809
1989	TB7		1989	10	08.24931	01	09	26.20	+00	18	39.5	19.3	809
1989	TB7		1989	10	08.26250	01	09	25.49	+00	18	37.4		809
1989	TB7		1989	10	08.27569	01	09	24.78	+00	18	33.9		809
1989	TC7	*	1989	10	07.21944	01	10	25.67	-00	08	26.9	18.8	809
1989	TC7		1989	10	07.23264	01	10	24.91	-00	08	28.6		809
1989	TC7		1989	10	07.24583	01	10	24.16	-00	08	30.1		809
1989	TC7		1989	10	08.24931	01	09	30.30	-00	10	31.5	19.0	809
1989	TC7		1989	10	08.26250	01	09	29.56	-00	10	32.5		809
1989	TC7		1989	10	08.27569	01	09	28.83	-00	10	34.8		809
1989	TD7	*	1989	10	07.21944	01	10	29.46	-01	00	23.4	19.1	809
1989	TD7		1989	10	07.23264	01	10	28.69	-01	00	28.5		809
1989	TD7		1989	10	07.24583	01	10	27.88	-01	00	33.8		809
1989	TD7		1989	10	08.24931	01	09	33.32	-01	06	40.5	18.8	809
1989	TD7		1989	10	08.24931	01	09	33.32	-01	06	40.5	18.8	809
1989	TD7		1989	10	08.26250	01	09	32.48	-01	06	46.9		809
1989	TD7		1989	10	08.26250	01	09	32.48	-01	06	46.9		809
1989	TD7		1989	10	08.27569	01	09	31.76	-01	06	51.4		809
1989	TD7		1989	10	08.27569	01	09	31.76	-01	06	51.4		809
1989	TE7	*	1989	10	07.21944	01	13	05.57	+00	16	23.3	19.5	809
1989	TE7		1989	10	07.23264	01	13	04.99	+00	16	14.6		809

1989	TE7		1989	10	07.24583	01	13	04.27	+00	16	03.5	809
1989	TE7		1989	10	08.24931	01	12	20.83	+00	05	26.6	18.8 809
1989	TE7		1989	10	08.26250	01	12	20.09	+00	05	15.6	809
1989	TE7		1989	10	08.27569	01	12	19.48	+00	05	07.7	809
1989	TF7	*	1989	10	07.21944	01	13	11.24	-00	51	33.3	18.9 809
1989	TF7		1989	10	07.23264	01	13	10.40	-00	51	33.0	809
1989	TF7		1989	10	07.24583	01	13	09.53	-00	51	33.5	809
1989	TF7		1989	10	08.24931	01	12	07.06	-00	51	30.2	18.6 809
1989	TF7		1989	10	08.26250	01	12	06.20	-00	51	30.3	809
1989	TF7		1989	10	08.27569	01	12	05.32	-00	51	30.4	809
1989	TG7	*	1989	10	07.21944	01	13	52.51	-02	08	47.7	18.3 809
1989	TG7		1989	10	07.23264	01	13	51.70	-02	08	49.5	809
1989	TG7		1989	10	07.24583	01	13	50.93	-02	08	52.7	809
1989	TG7		1989	10	08.24931	01	12	58.11	-02	11	46.0	18.3 809
1989	TG7		1989	10	08.24931	01	12	58.11	-02	11	46.0	18.3 809
1989	TG7		1989	10	08.26250	01	12	57.30	-02	11	48.0	809
1989	TG7		1989	10	08.26250	01	12	57.30	-02	11	48.0	809
1989	TG7		1989	10	08.27569	01	12	56.58	-02	11	50.7	809
1989	TG7		1989	10	08.27569	01	12	56.58	-02	11	50.7	809
1989	TH7	*	1989	10	07.21944	01	15	24.53	-01	44	47.8	19.0 809
1989	TH7		1989	10	07.23264	01	15	23.75	-01	44	50.0	809
1989	TH7		1989	10	07.24583	01	15	22.98	-01	44	50.7	809
1989	TH7		1989	10	08.24931	01	14	27.18	-01	47	08.9	18.9 809
1989	TH7		1989	10	08.24931	01	14	27.18	-01	47	08.9	18.9 809
1989	TH7		1989	10	08.26250	01	14	26.41	-01	47	11.2	809
1989	TH7		1989	10	08.26250	01	14	26.41	-01	47	11.2	809
1989	TH7		1989	10	08.27569	01	14	25.60	-01	47	13.4	809
1989	TH7		1989	10	08.27569	01	14	25.60	-01	47	13.4	809
1989	TJ7	*	1989	10	07.21944	01	15	57.05	-01	40	53.7	18.9 809
1989	TJ7		1989	10	07.23264	01	15	56.38	-01	40	57.0	809
1989	TJ7		1989	10	07.24583	01	15	55.68	-01	41	00.9	809
1989	TJ7		1989	10	08.24931	01	15	06.08	-01	45	54.2	19.0 809
1989	TJ7		1989	10	08.24931	01	15	06.08	-01	45	54.2	19.0 809
1989	TJ7		1989	10	08.26250	01	15	05.40	-01	45	56.8	809
1989	TJ7		1989	10	08.26250	01	15	05.40	-01	45	56.8	809
1989	TJ7		1989	10	08.27569	01	15	04.73	-01	46	01.1	809
1989	TJ7		1989	10	08.27569	01	15	04.73	-01	46	01.1	809
1989	TK7	*	1989	10	07.21944	01	16	14.93	-02	08	17.8	19.5 809
1989	TK7		1989	10	07.23264	01	16	14.26	-02	08	23.4	809
1989	TK7		1989	10	07.24583	01	16	13.67	-02	08	28.8	809
1989	TK7		1989	10	08.24931	01	15	31.05	-02	15	25.4	20.0 809
1989	TK7		1989	10	08.24931	01	15	31.05	-02	15	25.4	20.0 809
1989	TK7		1989	10	08.26250	01	15	30.45	-02	15	32.3	809
1989	TK7		1989	10	08.26250	01	15	30.45	-02	15	32.3	809
1989	TK7		1989	10	08.27569	01	15	29.65	-02	15	39.9	809
1989	TK7		1989	10	08.27569	01	15	29.65	-02	15	39.9	809
1989	TL7	*	1989	10	07.21944	01	16	30.33	-00	52	48.8	19.6 809
1989	TL7		1989	10	07.23264	01	16	29.65	-00	52	55.1	809
1989	TL7		1989	10	07.24583	01	16	28.96	-00	53	01.4	809
1989	TL7		1989	10	08.24931	01	15	37.78	-01	00	54.4	18.9 809
1989	TL7		1989	10	08.24931	01	15	37.78	-01	00	54.4	18.9 809
1989	TL7		1989	10	08.26250	01	15	37.11	-01	01	00.5	809
1989	TL7		1989	10	08.26250	01	15	37.11	-01	01	00.5	809
1989	TL7		1989	10	08.27569	01	15	36.37	-01	01	08.1	809
1989	TL7		1989	10	08.27569	01	15	36.37	-01	01	08.1	809
1989	TM7	*	1989	10	07.21944	01	16	47.42	-01	37	33.0	19.0 809
1989	TM7		1989	10	07.23264	01	16	46.85	-01	37	37.4	809
1989	TM7		1989	10	07.24583	01	16	46.27	-01	37	40.2	809
1989	TM7		1989	10	08.24931	01	16	01.91	-01	42	16.1	19.5 809

1989	TM7		1989	10	08.24931	01	16	01.91	-01	42	16.1	19.5	809
1989	TM7		1989	10	08.26250	01	16	01.26	-01	42	19.9		809
1989	TM7		1989	10	08.26250	01	16	01.26	-01	42	19.9		809
1989	TM7		1989	10	08.27569	01	16	00.66	-01	42	23.5		809
1989	TM7		1989	10	08.27569	01	16	00.66	-01	42	23.5		809
1989	TN7	*	1989	10	07.21944	01	17	31.32	-01	41	20.7	18.8	809
1989	TN7		1989	10	07.23264	01	17	30.53	-01	41	26.4		809
1989	TN7		1989	10	07.24583	01	17	29.72	-01	41	31.0		809
1989	TN7		1989	10	08.24931	01	16	32.88	-01	48	29.1	19.0	809
1989	TN7		1989	10	08.24931	01	16	32.88	-01	48	29.1	19.0	809
1989	TN7		1989	10	08.26250	01	16	32.12	-01	48	34.1		809
1989	TN7		1989	10	08.26250	01	16	32.12	-01	48	34.1		809
1989	TN7		1989	10	08.27569	01	16	31.31	-01	48	39.6		809
1989	TN7		1989	10	08.27569	01	16	31.31	-01	48	39.6		809
1989	TO7	*	1989	10	07.21944	01	19	00.24	-01	09	31.5	19.0	809
1989	TO7		1989	10	07.23264	01	18	59.58	-01	09	32.4		809
1989	TO7		1989	10	07.24583	01	18	58.83	-01	09	34.4		809
1989	TO7		1989	10	08.24931	01	18	07.14	-01	11	07.0	18.8	809
1989	TO7		1989	10	08.24931	01	18	07.14	-01	11	07.0	18.8	809
1989	TO7		1989	10	08.26250	01	18	06.44	-01	11	08.7		809
1989	TO7		1989	10	08.26250	01	18	06.44	-01	11	08.7		809
1989	TO7		1989	10	08.27569	01	18	05.74	-01	11	09.1		809
1989	TO7		1989	10	08.27569	01	18	05.74	-01	11	09.1		809
1989	TP7	*	1989	10	07.21944	01	19	37.37	-00	00	20.5	19.2	809
1989	TP7		1989	10	07.23264	01	19	36.54	-00	00	26.7		809
1989	TP7		1989	10	07.24583	01	19	35.69	-00	00	34.0		809
1989	TP7		1989	10	08.24931	01	18	39.29	-00	08	07.6	18.9	809
1989	TP7		1989	10	08.26250	01	18	38.49	-00	08	13.3		809
1989	TP7		1989	10	08.27569	01	18	37.77	-00	08	18.9		809
1989	TQ7	*	1989	10	07.21944	01	20	18.17	-00	27	01.8	19.4	809
1989	TQ7		1989	10	07.23264	01	20	17.42	-00	27	05.6		809
1989	TQ7		1989	10	07.24583	01	20	16.57	-00	27	11.2		809
1989	TQ7		1989	10	08.24931	01	19	24.25	-00	31	49.6	19.0	809
1989	TQ7		1989	10	08.26250	01	19	23.56	-00	31	52.7		809
1989	TQ7		1989	10	08.27569	01	19	22.73	-00	31	57.1		809
1989	TR7	*	1989	10	07.21944	01	21	40.01	-00	45	18.4	19.1	809
1989	TR7		1989	10	07.23264	01	21	39.28	-00	45	19.8		809
1989	TR7		1989	10	07.24583	01	21	38.64	-00	45	21.5		809
1989	TR7		1989	10	08.24931	01	20	48.33	-00	47	29.1	19.6	809
1989	TR7		1989	10	08.26250	01	20	47.71	-00	47	30.6		809
1989	TR7		1989	10	08.27569	01	20	46.98	-00	47	32.9		809
1989	TS7	*	1989	10	07.21944	01	23	10.98	-00	00	22.5	19.6	809
1989	TS7		1989	10	07.23264	01	23	10.19	-00	00	24.8		809
1989	TS7		1989	10	07.24583	01	23	09.46	-00	00	28.9		809
1989	TS7		1989	10	08.24931	01	22	15.80	-00	05	51.2	19.0	809
1989	TS7		1989	10	08.26250	01	22	15.04	-00	05	56.2		809
1989	TS7		1989	10	08.27569	01	22	14.28	-00	06	00.3		809
1989	UP1		1989	11	03.25556	02	57	01.19	+07	25	27.5	16.0	809
1989	UP1		1989	11	03.26875	02	57	00.32	+07	25	27.8		809
1989	UP1		1989	11	03.28194	02	56	59.42	+07	25	28.0		809
1989	UQ1		1989	11	03.25556	02	59	02.42	+07	02	08.7	15.0	809
1989	UQ1		1989	11	03.26875	02	59	01.60	+07	02	04.7		809
1989	UQ1		1989	11	03.28194	02	59	00.74	+07	02	00.6		809
1989	UP3		1989	11	03.25556	03	02	35.94	+07	35	32.0	17.0	809
1989	UP3		1989	11	03.26875	03	02	35.25	+07	35	23.1		809
1989	UP3		1989	11	03.28194	03	02	34.57	+07	35	15.3		809
1989	UQ3		1989	11	03.25556	03	04	17.54	+07	59	26.4	17.7	809
1989	UQ3		1989	11	03.26875	03	04	16.95	+07	59	13.9		809
1989	UQ3		1989	11	03.28194	03	04	16.40	+07	59	01.5		809

1989	VY	*	1989	11	03.25556	02	50	59.94	+04	35	10.1	18.3	809
1989	VY		1989	11	03.26875	02	50	59.08	+04	35	02.2		809
1989	VY		1989	11	03.28194	02	50	58.27	+04	34	55.8		809
1989	VY		1989	11	06.24931	02	48	13.28	+04	10	51.0	18.6	809
1989	VY		1989	11	06.26250	02	48	12.51	+04	10	44.6		809
1989	VY		1989	11	06.27569	02	48	11.70	+04	10	38.6		809
1989	VZ	*	1989	11	03.25556	02	51	51.60	+05	07	21.5	19.0	809
1989	VZ		1989	11	03.26875	02	51	50.70	+05	07	19.9		809
1989	VZ		1989	11	03.28194	02	51	49.88	+05	07	19.4		809
1989	VZ		1989	11	06.24931	02	48	49.90	+05	03	29.5	19.5	809
1989	VZ		1989	11	06.26250	02	48	49.09	+05	03	28.0		809
1989	VZ		1989	11	06.27569	02	48	48.14	+05	03	26.7		809
1989	VA1	*	1989	11	03.25556	02	52	14.78	+05	24	25.8	18.6	809
1989	VA1		1989	11	03.26875	02	52	13.92	+05	24	25.1		809
1989	VA1		1989	11	03.28194	02	52	13.02	+05	24	23.8		809
1989	VA1		1989	11	06.24931	02	49	18.09	+05	21	28.2	18.7	809
1989	VA1		1989	11	06.26250	02	49	17.28	+05	21	27.4		809
1989	VA1		1989	11	06.27569	02	49	16.46	+05	21	27.1		809
1989	VB1	*	1989	11	03.25556	02	52	59.71	+05	21	20.6	20.0	809
1989	VB1		1989	11	03.26875	02	52	58.72	+05	21	14.6		809
1989	VB1		1989	11	03.28194	02	52	57.77	+05	21	10.9		809
1989	VB1		1989	11	06.24931	02	50	12.37	+05	06	26.9	19.6	809
1989	VB1		1989	11	06.26250	02	50	11.69	+05	06	24.2		809
1989	VB1		1989	11	06.27569	02	50	11.11	+05	06	20.5		809
1989	VC1	*	1989	11	03.25556	02	54	02.22	+05	10	03.5	18.7	809
1989	VC1		1989	11	03.26875	02	54	01.27	+05	10	03.6		809
1989	VC1		1989	11	03.28194	02	54	00.37	+05	10	03.3		809
1989	VC1		1989	11	06.24931	02	50	55.91	+05	10	16.8	19.5	809
1989	VC1		1989	11	06.26250	02	50	55.10	+05	10	16.7		809
1989	VC1		1989	11	06.27569	02	50	54.24	+05	10	16.4		809
1989	VD1	*	1989	11	03.25556	02	54	19.45	+04	31	57.5	18.5	809
1989	VD1		1989	11	03.26875	02	54	18.59	+04	31	56.1		809
1989	VD1		1989	11	03.28194	02	54	17.65	+04	31	52.8		809
1989	VD1		1989	11	06.24931	02	51	15.28	+04	24	21.9	18.5	809
1989	VD1		1989	11	06.26250	02	51	14.43	+04	24	20.3		809
1989	VD1		1989	11	06.27569	02	51	13.52	+04	24	18.1		809
1989	VE1	*	1989	11	03.25556	02	54	52.09	+05	17	59.0	19.0	809
1989	VE1		1989	11	03.26875	02	54	51.36	+05	17	50.5		809
1989	VE1		1989	11	03.28194	02	54	50.87	+05	17	44.2		809
1989	VE1		1989	11	06.24931	02	52	38.33	+04	50	51.9	19.2	809
1989	VE1		1989	11	06.26250	02	52	37.65	+04	50	44.9		809
1989	VE1		1989	11	06.27569	02	52	36.97	+04	50	37.8		809
1989	VF1	*	1989	11	03.25556	02	55	05.81	+05	18	36.6	18.7	809
1989	VF1		1989	11	03.26875	02	55	04.82	+05	18	39.0		809
1989	VF1		1989	11	03.28194	02	55	03.91	+05	18	39.9		809
1989	VF1		1989	11	06.24931	02	51	53.58	+05	24	05.8	19.6	809
1989	VF1		1989	11	06.26250	02	51	52.64	+05	24	07.2		809
1989	VF1		1989	11	06.27569	02	51	51.82	+05	24	09.2		809
1989	VG1	*	1989	11	03.25556	02	56	17.89	+05	31	33.1	18.0	809
1989	VG1		1989	11	03.26875	02	56	17.21	+05	31	09.2		809
1989	VG1		1989	11	03.28194	02	56	16.58	+05	30	46.6		809
1989	VG1		1989	11	06.24931	02	54	03.89	+04	05	19.1	17.8	809
1989	VG1		1989	11	06.26250	02	54	03.26	+04	04	56.4		809
1989	VG1		1989	11	06.27569	02	54	02.63	+04	04	33.9		809
1989	VH1	*	1989	11	03.25556	02	56	50.05	+05	34	43.0	18.5	809
1989	VH1		1989	11	03.26875	02	56	49.37	+05	34	40.1		809
1989	VH1		1989	11	03.28194	02	56	48.65	+05	34	38.1		809
1989	VH1		1989	11	06.24931	02	54	30.34	+05	23	43.6	19.1	809
1989	VH1		1989	11	06.26250	02	54	29.80	+05	23	41.8		809

1989	VH1		1989	11	06.27569	02	54	29.03	+05	23	37.7	809
1989	VJ1	*	1989	11	03.25556	02	57	08.12	+05	14	32.3	18.6 809
1989	VJ1		1989	11	03.26875	02	57	07.39	+05	14	25.0	809
1989	VJ1		1989	11	03.28194	02	57	06.49	+05	14	17.9	809
1989	VJ1		1989	11	06.24931	02	54	29.62	+04	49	48.9	18.8 809
1989	VJ1		1989	11	06.26250	02	54	28.80	+04	49	40.6	809
1989	VJ1		1989	11	06.27569	02	54	28.13	+04	49	34.5	809
1989	VK1	*	1989	11	03.25556	02	58	29.24	+05	13	51.7	18.0 809
1989	VK1		1989	11	03.26875	02	58	28.47	+05	13	55.0	809
1989	VK1		1989	11	03.28194	02	58	27.79	+05	13	57.5	809
1989	VK1		1989	11	06.24931	02	56	22.26	+05	23	53.3	18.5 809
1989	VK1		1989	11	06.26250	02	56	21.58	+05	23	56.6	809
1989	VK1		1989	11	06.27569	02	56	21.04	+05	23	58.4	809
1989	VL1	*	1989	11	03.25556	02	58	38.58	+04	30	59.0	20.0 809
1989	VL1		1989	11	03.26875	02	58	37.59	+04	30	56.6	809
1989	VL1		1989	11	03.28194	02	58	36.60	+04	30	54.7	809
1989	VL1		1989	11	06.24931	02	55	29.31	+04	26	20.9	20.0 809
1989	VL1		1989	11	06.26250	02	55	28.41	+04	26	21.4	809
1989	VL1		1989	11	06.27569	02	55	27.51	+04	26	21.0	809
1989	VM1	*	1989	11	03.25556	03	01	21.17	+04	21	44.6	19.5 809
1989	VM1		1989	11	03.26875	03	01	20.27	+04	21	39.0	809
1989	VM1		1989	11	03.28194	03	01	19.55	+04	21	35.7	809
1989	VM1		1989	11	06.24931	02	58	30.58	+04	07	30.1	18.6 809
1989	VM1		1989	11	06.26250	02	58	29.72	+04	07	25.4	809
1989	VM1		1989	11	06.27569	02	58	28.91	+04	07	22.0	809
1989	VN1	*	1989	11	03.25556	03	02	59.35	+05	38	56.7	17.5 809
1989	VN1		1989	11	03.26875	03	02	58.44	+05	38	55.1	809
1989	VN1		1989	11	03.28194	03	02	57.54	+05	38	53.3	809
1989	VN1		1989	11	06.24931	03	00	00.86	+05	33	40.0	17.7 809
1989	VN1		1989	11	06.26250	02	59	60.00	+05	33	38.3	809
1989	VN1		1989	11	06.27569	02	59	59.19	+05	33	37.9	809
1989	VO1	*	1989	11	03.25556	03	03	52.91	+05	34	04.7	19.0 809
1989	VO1		1989	11	03.26875	03	03	52.01	+05	34	05.1	809
1989	VO1		1989	11	03.28194	03	03	51.29	+05	34	05.3	809
1989	VO1		1989	11	06.24931	03	01	10.97	+05	33	18.8	19.5 809
1989	VO1		1989	11	06.26250	03	01	10.20	+05	33	18.2	809
1989	VO1		1989	11	06.27569	03	01	09.44	+05	33	17.7	809
1989	VP1	*	1989	11	03.25556	03	05	04.88	+04	58	09.7	18.0 809
1989	VP1		1989	11	03.26875	03	05	04.12	+04	58	02.6	809
1989	VP1		1989	11	03.28194	03	05	03.48	+04	57	54.1	809
1989	VP1		1989	11	06.24931	03	02	33.73	+04	28	51.8	18.5 809
1989	VP1		1989	11	06.26250	03	02	33.10	+04	28	44.7	809
1989	VP1		1989	11	06.27569	03	02	32.37	+04	28	37.5	809
1989	VQ1	*	1989	11	03.25556	03	05	16.41	+05	14	29.8	19.2 809
1989	VQ1		1989	11	03.26875	03	05	15.55	+05	14	27.2	809
1989	VQ1		1989	11	03.28194	03	05	14.65	+05	14	21.5	809
1989	VQ1		1989	11	06.24931	03	02	27.21	+04	59	14.7	18.3 809
1989	VQ1		1989	11	06.26250	03	02	26.44	+04	59	11.0	809
1989	VQ1		1989	11	06.27569	03	02	25.58	+04	59	06.8	809
1989	VR1	*	1989	11	03.25556	03	05	23.51	+05	43	45.6	18.0 809
1989	VR1		1989	11	03.26875	03	05	22.60	+05	43	42.0	809
1989	VR1		1989	11	03.28194	03	05	21.79	+05	43	36.4	809
1989	VR1		1989	11	06.24931	03	02	29.21	+05	24	50.7	17.6 809
1989	VR1		1989	11	06.26250	03	02	28.35	+05	24	45.8	809
1989	VR1		1989	11	06.27569	03	02	27.54	+05	24	40.9	809
4271	T-3		1989	10	07.26181	01	39	33.61	+02	09	30.9	17.9 809
4271	T-3		1989	10	07.27500	01	39	33.11	+02	09	29.8	809
4271	T-3		1989	10	07.28819	01	39	32.66	+02	09	27.7	809
4271	T-3		1989	10	08.29167	01	39	01.48	+02	07	03.4	18.0 809

4271 T-3 1989 10 08.30486 01 39 01.04 +02 07 02.4 809
4271 T-3 1989 10 08.31806 01 39 00.48 +02 07 00.7 809

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T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan
Observers M. Iwamoto
Measurer T. Furuta
0.25-m Wright-Schmidt
1989 WE1 1989 11 25.55307 04 28 28.45 +14 03 39.7 16.0 872
1989 WE1 1989 11 25.56400 04 28 27.62 +14 03 37.4 872

875 Yorii
M. Arai, 2695, Tomita, Saitama, 369-12 Japan
Observers M. Arai, H. Mori
Measurer H. Mori
0.30-m f/3.8 reflector
1989 VJ 1989 11 20.57396 02 49 41.00 +20 30 39.7 16.5 875
1989 VJ 1989 11 20.59097 02 49 40.04 +20 30 33.8 875
1989 VJ 1989 11 30.49120 02 41 52.41 +19 21 31.6 15.5 875
1989 VJ 1989 11 30.51111 02 41 51.59 +19 21 23.9 875
1989 VK 1989 11 20.54797 02 56 35.34 +20 41 23.1 17.5 875
1989 VK 1989 11 20.56458 02 56 34.66 +20 41 16.8 875
1989 VK 1989 11 24.56042 02 54 07.25 +20 16 55.2 17.5 875
1989 WU 1989 11 24.57743 04 58 29.07 +26 22 14.9 17.5 875
1989 WU 1989 11 24.59549 04 58 28.11 +26 22 10.0 875
1989 WU 1989 11 25.61331 04 57 28.08 +26 17 13.4 17.5 875
1989 WU 1989 11 25.63194 04 57 26.97 +26 17 09.2 875
1989 WD2 * 1989 11 30.53275 04 38 32.24 +14 49 27.6 17 875
1989 WD2 1989 11 30.55347 04 38 30.58 +14 49 26.2 875
1989 WD2 1989 12 01.60567 04 37 17.13 +14 47 19.3 16.5 875
1989 WD2 1989 12 01.63403 04 37 15.10 +14 47 15.7 875
1989 WE2 * 1989 11 30.53275 04 42 24.25 +14 42 42.1 16.5 875
1989 WE2 1989 11 30.55347 04 42 23.18 +14 42 42.8 875
1989 WE2 1989 12 01.60567 04 41 21.89 +14 41 27.5 16.5 875
1989 WE2 1989 12 01.63403 04 41 20.02 +14 41 24.1 875

877 Okutama
S. Hayakawa, 1-31-33, Nagano, Gyoda-Shi, Saitama-Ken, 361 Japan
Observers T. Hioki, S. Hayakawa
Measurer S. Hayakawa
0.30-m f/3.8 hyperboloid astrocamera
1989 WL 1989 11 24.72118 03 46 50.23 +15 39 23.1 877
1989 WL 1989 11 25.58715 03 45 55.59 +15 40 05.3 16.0 877
1989 WL 1989 11 25.66644 03 45 50.51 +15 40 11.1 16.0 877
1989 WL 1989 11 26.56979 03 44 53.27 +15 41 07.6 16.0 877
1989 WL 1989 11 26.59201 03 44 51.88 +15 41 06.9 877
1989 WL 1989 12 01.60174 03 39 42.43 +15 47 01.6 877
1989 WL 1989 12 01.62708 03 39 40.63 +15 47 04.7 877
1989 WV 1989 11 29.64340 04 17 18.19 +12 42 28.7 16.5 877
1989 WV 1989 11 29.66215 04 17 16.95 +12 42 31.5 877
1989 WV 1989 12 01.68565 04 15 13.21 +12 47 28.4 17.0 877
1989 WV 1989 12 01.78993 04 15 06.81 +12 47 42.8 877
1989 WX 1989 11 24.76684 04 05 32.38 +17 48 24.1 16.5 877
1989 WX 1989 11 24.78785 04 05 30.97 +17 48 25.3 877
1989 WX 1989 11 27.77743 04 02 43.36 +17 49 42.6 17 877
1989 WX 1989 11 27.80729 04 02 41.58 +17 49 43.9 877
1989 WB1 * 1989 11 21.67604 03 48 21.62 +17 17 17.5 16.5 877
1989 WB1 1989 11 21.69549 03 48 20.48 +17 17 11.8 16.5 877
1989 WB1 1989 11 25.67928 03 44 20.27 +16 58 43.4 16.5 877

1989	WB1		1989 11 25.69792	03	44	19.05	+16	58	36.0	16.5	877
1989	WB1		1989 11 26.56979	03	43	27.80	+16	54	37.5		877
1989	WB1		1989 11 26.59201	03	43	26.41	+16	54	32.8		877
1989	WB1		1989 12 01.60174	03	38	40.45	+16	32	54.8	17.0	877
1989	WB1		1989 12 01.62708	03	38	38.80	+16	32	48.3		877
1989	WC1	*	1989 11 21.67604	03	51	09.62	+19	08	52.5	17.5	877
1989	WC1		1989 11 21.69549	03	51	08.22	+19	08	44.8	17.5	877
1989	WC1		1989 11 25.71146	03	46	43.21	+18	47	19.0	17.5	877
1989	WC1		1989 11 25.73438	03	46	42.19	+18	47	14.9	17.5	877

881 Toyota
T. Urata, 6-1, Muramatsubara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers K. Suzuki, T. Urata
Measurers M. Kizawa, T. Urata

1987	BJ		1989 11 20.60104	04	27	24.95	+12	16	41.0	16	881
1987	BJ		1989 11 20.62465	04	27	23.46	+12	16	35.7		881
1987	BJ		1989 11 21.53889	04	26	28.03	+12	13	16.1		881
1987	BJ		1989 11 21.56493	04	26	26.37	+12	13	08.9		881
1987	BJ		1989 11 25.52882	04	22	17.03	+11	59	28.6	16.5	881
1987	BJ		1989 11 25.55243	04	22	15.23	+11	59	23.3		881
1987	BJ		1989 11 27.55868	04	20	04.84	+11	53	02.4	15.5	881
1987	BJ		1989 11 27.56979	04	20	04.15	+11	53	01.4		881
1987	BJ		1989 12 18.56701	03	58	48.46	+11	22	12.3	16	881
1987	BJ		1989 12 18.59132	03	58	47.60	+11	22	13.2		881
1989	WV	*	1989 11 20.60104	04	26	24.90	+12	23	48.6	16	881
1989	WV		1989 11 20.62465	04	26	23.44	+12	23	51.5		881
1989	WV		1989 11 21.53889	04	25	29.41	+12	25	30.7		881
1989	WV		1989 11 21.56493	04	25	27.87	+12	25	33.2		881
1989	WV		1989 11 25.52882	04	21	29.42	+12	33	22.8	16	881
1989	WV		1989 11 25.55243	04	21	27.94	+12	33	25.9		881
1989	WV		1989 11 27.55868	04	19	25.34	+12	37	45.3		881
1989	WV		1989 11 27.56979	04	19	24.35	+12	37	48.7		881
1989	WV		1989 12 18.55382	03	59	23.09	+13	38	52.5	16.5	881
1989	WV		1989 12 18.57951	03	59	21.88	+13	38	54.7		881
1989	WW	*	1989 11 20.60104	04	27	00.31	+13	20	49.9	15.5	881
1989	WW		1989 11 20.62465	04	26	58.63	+13	20	56.6		881
1989	WW		1989 11 21.53889	04	25	56.88	+13	23	56.6		881
1989	WW		1989 11 21.56493	04	25	54.95	+13	24	00.9		881
1989	WW		1989 11 24.52604	04	22	31.20	+13	34	23.9		881
1989	WW		1989 11 24.54965	04	22	29.75	+13	34	32.2		881
1989	WW		1989 11 27.53160	04	19	03.94	+13	45	43.5	15.5	881
1989	WW		1989 11 27.54410	04	19	02.75	+13	45	46.1		881
1989	WW		1989 11 29.57083	04	16	44.81	+13	53	50.3		881
1989	WW		1989 11 29.58472	04	16	43.87	+13	53	52.8		881
1989	WL1		1989 11 29.54028	04	16	53.55	+16	35	14.3		881
1989	WL1		1989 11 29.55417	04	16	52.50	+16	35	08.7		881
1989	WL1		1989 12 06.52674	04	10	30.21	+15	30	12.6	16	881
1989	WL1		1989 12 06.55382	04	10	28.82	+15	29	57.8		881

883 Shizuoka
M. Kizawa, 1458-10, Minami Numagami, Shizuoka 420, Japan
Observer M. Kizawa

1982	UJ3		1989 11 17.51971	02	45	27.47	+13	29	57.2		883
1982	UJ3		1989 11 17.54256	02	45	25.70	+13	29	52.5		883

886 Susono
T. Furuta, 17-2 Mitsuike, Kagiya, Tokai 477, Japan
Observers M. Akiyama, T. Furuta
Measurer T. Furuta

1989	WB2	*	1989 11 29.56528	05	33	49.9	+28 59 35	15.5	886
1989	WB2		1989 11 29.57604	05	33	49.2	+28 59 35		886
1989	WB2		1989 12 04.54097	05	29	26.4	+28 46 16		886
1989	WB2		1989 12 04.55833	05	29	25.3	+28 46 14		886
1989	WB2		1989 12 06.59583	05	27	28.93	+28 39 50.0		886
1989	WB2		1989 12 06.61076	05	27	28.01	+28 39 48.2		886
1989	WB2		1989 12 20.55382	05	13	29.4	+27 42 01		886

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T. Urata, 6-1, Muramatsubara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observer T. Niijima
Measurers M. Kizawa, T. Urata
0.30-m f/5.8 reflector

1987	DQ		1989 11 30.62269	05	21	25.42	+14 33 04.1	17	887
1987	DQ		1989 11 30.63056	05	21	25.13	+14 33 02.6		887
1987	DQ		1989 12 20.57778	04	59	39.38	+14 30 20.9	16.5	887
1987	DQ		1989 12 20.58750	04	59	38.79	+14 30 21.7		887
1987	GD		1989 12 20.61042	06	32	28.99	+20 04 31.4	17	887
1987	GD		1989 12 20.62998	06	32	28.04	+20 04 29.7		887
1987	GD		1989 12 20.63796	06	32	27.39	+20 04 30.9		887

888 Gekko
Y. Oshima, Gekko Observatory, Kan-nami, Shizuoka 419-01, Japan
Observer Y. Oshima
0.5-m f/4 reflector

1931	VS		1989 11 25.52986	02	42	51.06	+23 56 11.6	16.5	888
1931	VS		1989 11 25.53750	02	42	50.62	+23 56 12.3		888
1931	VS		1989 11 25.56250	02	42	48.97	+23 56 17.6		888
1931	VS		1989 11 25.57014	02	42	48.51	+23 56 18.8		888
1931	VS		1989 11 26.54444	02	41	48.28	+23 59 23.5		888
1931	VS		1989 11 26.57708	02	41	46.18	+23 59 29.7		888
1931	VS		1989 11 29.51806	02	38	53.75	+24 08 22.8	16.5	888
1931	VS		1989 11 29.55069	02	38	51.88	+24 08 28.1		888
1931	VS		1989 12 01.54271	02	37	03.75	+24 14 12.8	16.5	888
1931	VS		1989 12 01.58021	02	37	01.63	+24 14 19.2		888
1931	VS		1989 12 02.47917	02	36	15.66	+24 16 50.1	16.5	888
1931	VS		1989 12 02.51181	02	36	13.90	+24 16 55.8		888
1935	TG		1989 12 01.64792	05	23	34.37	+20 59 21.3	16.5	888
1935	TG		1989 12 01.67014	05	23	32.90	+20 59 19.2		888
1935	TG		1989 12 02.62986	05	22	25.15	+20 58 04.3		888
1935	TG		1989 12 02.65208	05	22	23.51	+20 58 01.4		888
1941	WA		1989 12 01.64792	05	22	02.56	+21 57 21.9	16.0	888
1941	WA		1989 12 01.67014	05	22	01.39	+21 57 24.0		888
1941	WA		1989 12 02.62986	05	21	09.87	+21 58 22.5		888
1941	WA		1989 12 02.65208	05	21	08.68	+21 58 27.3		888
1968	HP		1989 11 29.65208	04	58	53.79	+14 01 55.3	17.5	888
1968	HP		1989 11 29.69375	04	58	51.12	+14 01 51.4		888
1978	RX5		1989 11 25.67708	06	26	01.61	+30 35 59.9	18.0	888
1978	RX5		1989 11 25.70903	06	26	00.03	+30 36 07.6		888
1979	VN		1989 11 25.59931	04	07	18.06	+15 45 12.3	17.0	888
1979	VN		1989 11 25.63264	04	07	16.12	+15 45 03.5		888
1979	VN		1989 11 29.53403	04	03	31.44	+15 27 08.5	17.5	888
1979	VN		1989 11 29.56736	04	03	29.63	+15 26 59.7		888
1979	VN		1989 12 02.55556	04	00	42.82	+15 14 01.2	17.0	888
1979	VN		1989 12 02.58889	04	00	40.92	+15 13 53.0		888
1981	EB19		1989 11 29.67222	04	39	21.82	+19 19 35.8	19.0	888
1981	EB19		1989 11 29.71389	04	39	18.79	+19 19 29.7		888
1982	HL		1989 11 29.60625	04	47	43.13	+24 10 54.3	17.0	888
1982	HL		1989 11 29.63889	04	47	41.10	+24 10 54.9		888

1984	UW		1989	11	29.66042	05	15	34.24	+29	18	17.4	17.5	888
1984	UW		1989	11	29.70208	05	15	31.60	+29	18	09.9		888
1985	RG		1989	11	26.56042	03	03	57.50	+18	46	54.6	17.0	888
1985	RG		1989	11	26.59375	03	03	55.73	+18	46	48.1		888
1985	RG		1989	12	02.48750	02	59	35.78	+18	29	58.1	17.0	888
1985	RG		1989	12	02.52014	02	59	34.38	+18	29	52.4		888
1987	EA		1989	11	25.66111	06	28	40.92	+27	08	23.2	17.5	888
1987	EA		1989	11	25.69375	06	28	39.72	+27	08	28.1		888
1989	TJ1		1989	11	29.45694	00	22	55.05	+04	50	19.7	17.5	888
1989	TJ1		1989	11	29.49028	00	22	55.42	+04	50	20.1		888
1989	TS1		1989	11	26.46597	23	50	05.60	+02	15	30.7	17.0	888
1989	TS1		1989	11	26.50000	23	50	05.51	+02	15	33.7		888
1989	TU1		1989	11	26.47431	01	56	02.01	+19	03	04.5	16.0	888
1989	TU1		1989	11	26.50833	01	56	01.51	+19	02	48.7		888
1989	UG		1989	11	25.52153	02	36	16.89	+25	35	12.2	17.0	888
1989	UG		1989	11	25.55417	02	36	15.00	+25	35	04.4		888
1989	UG		1989	12	03.53611	02	30	20.62	+25	04	29.8	17.0	888
1989	UG		1989	12	03.57014	02	30	19.27	+25	04	22.2		888
1989	UF1		1989	11	26.48264	01	17	07.04	+10	43	20.4	17.0	888
1989	UF1		1989	11	26.51667	01	17	07.16	+10	43	17.8		888
1989	UF1		1989	12	03.51944	01	18	36.20	+10	37	34.0	17.5	888
1989	UF1		1989	12	03.55347	01	18	36.79	+10	37	33.6		888
1989	US1		1989	11	24.49167	02	04	27.85	+20	11	54.8	17.0	888
1989	US1		1989	11	24.52431	02	04	26.26	+20	12	01.0		888
1989	US1		1989	11	26.49097	02	03	01.22	+20	18	08.5	16.5	888
1989	US1		1989	11	26.52500	02	02	59.80	+20	18	14.7		888
1989	US1		1989	11	26.53611	02	02	59.22	+20	18	14.1		888
1989	US1		1989	11	26.56875	02	02	57.79	+20	18	20.5		888
1989	US1		1989	11	29.50972	02	01	06.34	+20	27	27.4	16.5	888
1989	US1		1989	11	29.54236	02	01	05.12	+20	27	32.9		888
1989	US1		1989	12	01.53264	02	00	00.23	+20	33	42.8	17.0	888
1989	US1		1989	12	01.57014	01	59	59.03	+20	33	50.0		888
1989	UZ1		1989	11	26.55278	03	02	20.72	+17	17	23.9	17.5	888
1989	UZ1		1989	11	26.58542	03	02	19.58	+17	16	59.4		888
1989	UZ1		1989	12	02.49514	02	59	36.41	+16	08	07.4	17.5	888
1989	UZ1		1989	12	02.52778	02	59	35.59	+16	07	46.5		888
1989	VP		1989	12	03.51944	01	17	44.14	+10	38	20.5	16.0	888
1989	VP		1989	12	03.55347	01	17	44.37	+10	37	45.8		888
1989	VP		1989	12	04.48125	01	17	53.94	+10	22	00.4	16.0	888
1989	VP		1989	12	04.51528	01	17	54.20	+10	21	25.8		888
1989	VW		1989	11	25.58264	03	45	07.22	+21	46	52.4	17.0	888
1989	VW		1989	11	25.61597	03	45	05.57	+21	46	50.7		888
1989	VW		1989	12	02.50347	03	39	56.76	+21	39	53.3	17.0	888
1989	VW		1989	12	02.53611	03	39	55.32	+21	39	51.2		888
1989	VW		1989	12	03.54444	03	39	11.57	+21	38	49.9	17.0	888
1989	VW		1989	12	03.57847	03	39	09.97	+21	38	48.0		888
1989	VU1	*	1989	11	04.55069	00	21	01.59	+02	20	26.4	18.0	888
1989	VU1		1989	11	04.58403	00	21	01.21	+02	20	21.6		888
1989	VU1		1989	11	19.48472	00	22	51.68	+02	05	09.6	17.5	888
1989	VU1		1989	11	19.51736	00	22	52.25	+02	05	10.2		888
1989	WG		1989	11	25.59097	04	04	56.04	+16	18	12.0	17.0	888
1989	WG		1989	11	25.62431	04	04	53.72	+16	18	14.6		888
1989	WG		1989	11	29.52639	04	00	40.74	+16	24	10.9	17.0	888
1989	WG		1989	11	29.55903	04	00	38.69	+16	24	14.1		888
1989	WG		1989	12	02.54792	03	57	30.75	+16	29	19.6	16.5	888
1989	WG		1989	12	02.58056	03	57	28.70	+16	29	23.3		888
1989	WH		1989	11	25.59931	04	07	18.70	+15	51	39.9	17.0	888
1989	WH		1989	11	25.63264	04	07	16.92	+15	51	26.7		888
1989	WH		1989	11	29.53403	04	03	49.05	+15	25	27.3	17.5	888

1989	WH		1989	11	29.56736	04	03	47.33	+15	25	15.0		888
1989	WH		1989	12	02.55556	04	01	11.29	+15	06	04.0	17.5	888
1989	WH		1989	12	02.58889	04	01	09.48	+15	05	50.9		888
1989	WH		1989	12	03.59028	04	00	18.47	+14	59	38.6	17.5	888
1989	WH		1989	12	03.62361	04	00	16.66	+14	59	25.5		888
1989	WJ		1989	11	25.60764	04	29	13.33	+21	39	15.6	18.0	888
1989	WJ		1989	11	25.64097	04	29	10.76	+21	39	26.9		888
1989	WJ		1989	11	29.58194	04	24	31.72	+22	03	40.5	17.5	888
1989	WJ		1989	11	29.61458	04	24	29.40	+22	03	52.3		888
1989	WJ1		1989	12	02.55556	04	01	56.69	+15	27	17.2	17	888
1989	WJ1		1989	12	02.58889	04	01	54.77	+15	27	06.8		888
1989	WJ1		1989	12	03.59028	04	00	59.56	+15	21	37.7	17.0	888
1989	WJ1		1989	12	03.62361	04	00	57.61	+15	21	26.3		888
1989	WK1		1989	12	01.57639	04	44	56.51	+20	21	30.4	16.0	888
1989	WK1		1989	12	01.59792	04	44	54.89	+20	21	31.8		888
1989	WK1		1989	12	02.55833	04	43	48.27	+20	22	45.6		888
1989	WK1		1989	12	02.58264	04	43	46.43	+20	22	48.3		888
1989	WO1		1989	11	29.61667	04	55	30.49	+25	38	41.8	16.5	888
1989	WO1		1989	11	29.63403	04	55	29.30	+25	38	44.7		888
1989	WO1		1989	11	30.62431	04	54	36.07	+25	40	56.3		888
1989	WO1		1989	11	30.64375	04	54	34.91	+25	40	58.4		888
1989	WZ2	*	1989	11	21.53819	02	07	12.97	+20	30	01.5	17	888
1989	WZ2		1989	11	21.57083	02	07	11.41	+20	30	01.1		888
1989	WZ2		1989	11	24.49931	02	05	02.84	+20	28	18.7	17.0	888
1989	WZ2		1989	11	24.53194	02	05	01.53	+20	28	17.1		888
1989	WZ2		1989	11	26.49097	02	03	41.56	+20	27	10.2		888
1989	WZ2		1989	11	26.52500	02	03	40.18	+20	27	08.8		888
1989	WZ2		1989	11	26.53611	02	03	39.67	+20	27	07.1		888
1989	WZ2		1989	11	26.56875	02	03	38.25	+20	27	06.1		888
1989	WZ2		1989	11	29.50972	02	01	48.65	+20	25	37.8	17.0	888
1989	WZ2		1989	11	29.54236	02	01	47.40	+20	25	36.2		888
1989	WZ2		1989	12	01.53264	02	00	40.21	+20	24	44.5	17.0	888
1989	WZ2		1989	12	01.57014	02	00	38.95	+20	24	43.4		888
1989	WZ2		1989	12	03.52778	01	59	38.87	+20	24	03.4	17.5	888
1989	WZ2		1989	12	03.56181	01	59	37.77	+20	24	02.6		888
1989	WA3	*	1989	11	21.54583	02	46	35.40	+23	49	52.3	17.5	888
1989	WA3		1989	11	21.57917	02	46	33.25	+23	49	57.6		888
1989	WA3		1989	11	26.54444	02	41	40.13	+24	03	52.5	17.5	888
1989	WA3		1989	11	26.57708	02	41	38.17	+24	03	57.8		888
1989	WA3		1989	12	01.54271	02	37	15.56	+24	16	28.2	17.5	888
1989	WA3		1989	12	01.58021	02	37	13.67	+24	16	33.8		888
1989	WA3		1989	12	02.47917	02	36	30.17	+24	18	42.2	18.0	888
1989	WA3		1989	12	02.51181	02	36	28.48	+24	18	47.4		888
1989	WB3	*	1989	11	25.60764	04	28	52.73	+21	34	48.8	17.5	888
1989	WB3		1989	11	25.64097	04	28	50.85	+21	34	50.6		888
1989	WB3		1989	12	02.57222	04	22	08.20	+21	42	00.3	17.5	888
1989	WB3		1989	12	02.60556	04	22	06.20	+21	42	01.9		888
1989	WB3		1989	12	04.50625	04	20	16.32	+21	43	48.8	18.0	888
1989	WB3		1989	12	04.54028	04	20	14.30	+21	43	51.7		888
1989	WC3	*	1989	11	27.62917	04	27	52.69	+21	09	08.1	17.5	888
1989	WC3		1989	11	27.67292	04	27	49.62	+21	08	55.4		888
1989	WC3		1989	11	29.59028	04	25	39.96	+21	00	17.5	17.0	888
1989	WC3		1989	11	29.62292	04	25	37.76	+21	00	08.6		888
1989	WC3		1989	12	01.55347	04	23	27.20	+20	51	21.4	17.0	888
1989	WC3		1989	12	01.59028	04	23	24.59	+20	51	11.2		888
1989	WD3	*	1989	11	27.62917	04	29	17.70	+20	58	17.4	18.0	888
1989	WD3		1989	11	27.67292	04	29	15.11	+20	58	04.7		888
1989	WD3		1989	11	29.59792	04	27	25.14	+20	49	01.9	17.5	888
1989	WD3		1989	11	29.63056	04	27	23.19	+20	48	52.5		888

1989	WD3		1989	12	01.56111	04	25	32.11	+20	39	46.2	17.5	888
1989	WD3		1989	12	01.59097	04	25	30.01	+20	39	36.4		888
1989	WD3		1989	12	03.61528	04	23	34.18	+20	29	56.5	17.5	888
1989	WD3		1989	12	03.64792	04	23	32.23	+20	29	47.0		888
1989	WM3	*	1989	11	29.58472	03	57	07.81	+27	36	19.9	16.5	888
1989	WM3		1989	11	29.60764	03	57	06.09	+27	36	21.9		888
1989	WM3		1989	11	30.55764	03	55	57.88	+27	41	19.2		888
1989	WM3		1989	11	30.57986	03	55	56.08	+27	41	28.5		888
1989	WM3		1989	12	23.55972	03	33	57.61	+29	09	38.7	17.0	888
1989	WM3		1989	12	23.59306	03	33	56.36	+29	09	44.2	17.0	888
1989	XK	*	1989	12	01.54271	02	36	27.35	+24	18	18.2	17.0	888
1989	XK		1989	12	01.58021	02	36	25.71	+24	18	10.7		888
1989	XK		1989	12	02.47917	02	35	51.31	+24	15	03.7	17.5	888
1989	XK		1989	12	02.51181	02	35	49.96	+24	14	56.8		888
1989	XK		1989	12	04.48958	02	34	40.24	+24	08	08.8	17.5	888
1989	XK		1989	12	04.52361	02	34	39.05	+24	08	01.9		888
1989	XL	*	1989	12	02.50347	03	39	13.51	+21	49	37.7	18.0	888
1989	XL		1989	12	02.53611	03	39	11.34	+21	49	37.0		888
1989	XL		1989	12	03.54444	03	38	06.08	+21	49	27.8	18.0	888
1989	XL		1989	12	03.57847	03	38	03.76	+21	49	28.0		888
1989	XL		1989	12	04.49792	03	37	06.12	+21	49	16.4	18.0	888
1989	XL		1989	12	04.53194	03	37	03.89	+21	49	16.0		888
1989	XM	*	1989	12	02.56389	04	21	55.67	+22	18	24.7	17.5	888
1989	XM		1989	12	02.59722	04	21	53.72	+22	18	22.0		888
1989	XM		1989	12	03.59861	04	20	57.50	+22	17	02.2	17.5	888
1989	XM		1989	12	03.63194	04	20	55.54	+22	16	59.3		888
1989	XP	*	1989	12	01.60625	05	04	56.01	+19	40	22.4	16.5	888
1989	XP		1989	12	01.63056	05	04	54.17	+19	40	25.0		888
1989	XP		1989	12	02.59236	05	03	51.54	+19	42	21.9		888
1989	XP		1989	12	02.61667	05	03	50.25	+19	42	26.7		888
4153	P-L		1989	11	27.65104	05	19	59.03	+37	18	22.7	17.5	888
4153	P-L		1989	11	27.69549	05	19	55.83	+37	18	28.5		888
6040	P-L		1989	11	04.56736	01	25	04.99	+11	47	00.9	17	888
6040	P-L		1989	11	04.60069	01	25	03.56	+11	46	50.7		888
6543	P-L		1989	11	27.62917	04	28	22.06	+20	59	38.8	18.0	888
6543	P-L		1989	11	27.67292	04	28	19.74	+20	59	34.9		888
6543	P-L		1989	11	29.59792	04	26	37.63	+20	56	49.9	17.5	888
6543	P-L		1989	11	29.63056	04	26	35.69	+20	56	46.7		888
6543	P-L		1989	12	01.56111	04	24	53.26	+20	53	59.8	17.5	888
6543	P-L		1989	12	01.59097	04	24	51.22	+20	53	56.9		888
3279	T-3		1989	11	29.68472	06	38	25.64	+38	11	51.5	18.0	888
3279	T-3		1989	11	29.72639	06	38	24.01	+38	12	06.0		888

894 Kiyosato
S. Miyasaka, 3-8-501, 4 Chome, Nagayama, Tama, Tokyo 206, Japan
Observer S. Miyasaka
Measurer K. Miyasaka
0.25-m reflector

1981	YA1		1989	11	26.60694	04	49	42.62	+32	29	42.2		894
1981	YA1		1989	11	26.63194	04	49	40.92	+32	29	31.8	D	894
1981	YA1		1989	12	02.59359	04	43	19.32	+31	57	17.3		894
1981	YA1		1989	12	02.60127	04	43	18.86	+31	57	14.4		894
1981	YA1		1989	12	02.62421	04	43	17.21	+31	57	07.2		894
1981	YA1		1989	12	20.61736	04	25	48.02	+29	48	50.4		894
1981	YA1		1989	12	20.63611	04	25	47.14	+29	48	41.2		894

896 Yatsugatake South Base Observatory
O. Muramatsu, 119-1, 2-8 Sakurazutsumi, Musashino, Tokyo 180, Japan
Observers M. Inoue, R. Kushida, Y. Kushida, O. Muramatsu, C. Murotani

Measurer O. Muramatsu
0.20-m f/4.0, 0.20-m f.4.8 and 0.16-m f/4.8 reflectors

1989 WF1	*	1989 11 23.73160	04 27 46.1	+23 49 24		16.8	N	896
1989 WF1		1989 11 28.75799	04 22 04.04	+24 21 54.2				896
1989 WF1		1989 11 29.60451	04 21 05.99	+24 27 13.3				896
1989 WF1		1989 11 29.63646	04 21 03.61	+24 27 24.3			D	896
1989 WG1	*	1989 11 23.74792	04 35 04.58	+26 23 03.8		16.0	D	896
1989 WG1		1989 11 23.77951	04 35 02.41	+26 23 07.6				896
1989 WG1		1989 11 28.76979	04 29 29.00	+26 37 46.0				896
1989 WG1		1989 11 28.79722	04 29 26.68	+26 37 53.9				896
1989 WG1		1989 12 19.52500	04 07 20.19	+27 10 39.5				896
1989 WN2	*	1989 11 30.61111	05 00 04.87	+22 34 05.2		16.5	t	896
1989 WN2		1989 12 01.63958	04 59 04.11	+22 25 50.8				896
1989 WN2		1989 12 04.71181	04 55 59.88	+22 00 46.3		16.3		896
1989 WN2		1989 12 04.73958	04 55 58.21	+22 00 30.9			t	896
1989 WN2		1989 12 19.54097	04 41 51.21	+20 00 44.3				896
1989 WN2		1989 12 19.57222	04 41 49.59	+20 00 29.2				896

897 YGCO Chiyoda Station
T. Kojima, 45 Shimonakamori, Chiyoda-cyo, Ora-Gun, Gunma-ken, 370-07 Japan
Observer T. Kojima
0.25-m f/3.4 Wright-Schmidt camera

1989 UU1		1989 11 21.47373	02 35 13.47	+25 07 35.7		16			897
1989 UU1		1989 11 21.51227	02 35 11.25	+25 07 15.5					897

* * * * *

ORBITAL ELEMENTS.

Orbital elements have been computed by the following contributors:

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The name of the orbit computer is shown on the line giving T for a comet and Epoch for a displayed minor-planet orbit; for many of the minor planets (O-C) residuals are shown in full (in R.A. and Decl.); observations

are identified by date and observatory code, X referring to an approximate and Y to a semiaccurate position. For displayed minor planets "Id." shows those involved in establishing the identifications (generally with the principal contributors first), "k" indicating key identifications and "d" (only) double (or multiple) designations; no identifier is shown if only the orbit computer is involved and the results were not previously published. J-P indicates that only the perturbations by the outer planets were considered, and a and n are then related by a gravitational constant augmented by the masses of the inner planets. For the one-opposition orbits, equinox 1950.0 is used, and the columns headed Arc and O show the time span in days covered by the observations and the number of observations utilized in the computation (0 = 10 or more). In the note column N, D means that there are double (or multiple) designations, E means that the value of the eccentricity was assumed, F means both; the double designations are listed at the end; the codes for the orbit computers (column C) are as listed above.

Comet Shoemaker (1987 IV)
Epoch 1987 Mar. 26.0 ET = JDE 2446880.5

T 1987 Mar. 20.11371 ET				Marsden
q 5.0308618		(1950.0)	P	Q
z -0.0004747	Peri.	124.22323	-0.37898842	-0.72632788
+/-0.0000125	Node	324.46063	+0.07639542	+0.59297784
e 1.0023884	Incl.	80.58026	+0.92224266	-0.34759903

From 50 observations 1988 Jan. 23-1989 Apr. 5, mean residual 0".9.

Comet Torres (1987 V)
Epoch 1987 Mar. 26.0 ET = JDE 2446880.5

T 1987 Apr. 10.27775 ET				Marsden
q 3.6246015		(1950.0)	P	Q
z -0.0002794	Peri.	329.09227	-0.76464106	-0.61347309
+/-0.0000061	Node	193.79059	-0.27486776	+0.03337292
e 1.0010126	Incl.	124.08612	-0.58289944	+0.78901015

From 45 observations 1987 Mar. 28-1989 June 2, mean residual 1".1.

Periodic Comet Helin-Roman-Crockett (1988 XIII)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

T 1988 Sept. 13.65456 ET				Marsden
q 3.4706395		(1950.0)	P	Q
n 0.12126865	Peri.	10.19224	-0.20027040	-0.97695692
a 4.0423790	Node	91.38876	+0.89357268	-0.21302872
e 0.1414364	Incl.	4.23372	+0.40177061	-0.01318889
P 8.13				

From 62 observations 1989 Jan. 3-May 8, mean residual 1".2.

Comet Aarseth-Brewington (1989a1)

T 1989 Dec. 27.89037 ET				Marsden
q 0.3007055		(1950.0)	P	Q
	Peri.	205.26061	-0.87755489	+0.40610836
	Node	345.22637	+0.37059543	+0.23717356
e 1.0	Incl.	88.37984	-0.30423089	-0.88251046

From 26 observations 1989 Nov. 19-Dec. 9.

Comet Austin (1989c1)

T 1990 Apr. 9.84713 ET				Marsden
q 0.3496273		(1950.0)	P	Q
	Peri.	61.50426	-0.31898647	-0.45981497
	Node	75.40865	+0.22902050	-0.88590842
e 1.0	Incl.	58.91085	+0.91967236	+0.06112660

From 15 observations 1989 Dec. 6-24.

Comet Skorichenko-George (1989e1)
T 1990 Apr. 11.94219 ET Marsden
q 1.5711423 (1950.0) P Q
Peri. 137.76670 +0.21860480 -0.48083647
Node 279.28449 +0.49098649 +0.80619486
e 1.0 Incl. 59.36081 +0.84329366 -0.34474068
From 18 observations 1989 Dec. 20-27.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1983 RS5	12.5	830903	66.55	128.27	112.79	7.21	0.2611	2.4475	6	4		G
1986 TL	12.1	861017	24.81	36.66	301.74	9.08	0.2229	3.1390	28	4		E
1987 BB	14.6	870125	348.91	355.08	147.04	0.32	0.1852	2.2606	10	8		E
1987 CH	13.5	870214	15.41	350.93	146.74	5.43	0.0764	2.2037	36	0		N
1988 FS2		880320	337.07	202.89	7.62	2.51	0.1387	2.4062	28	0		G
1988 RB1	14.7	880916	48.50	15.65	275.82	6.19	0.1390	2.2931	11	5		E
1989 BA	13.2	890223	6.74	140.19	342.24	23.90	0.2806	2.3806	58	0		E
1989 SL	13.5	891021	12.60	130.55	241.99	6.60	0.1330	2.2483	33	0		N
1989 SD1	14.0	891001	284.63	352.65	101.02	3.50	0.0336	2.9010	32	0		N
1989 SF1	14.0	891001	73.94	123.79	160.42	8.14	0.1381	2.6159	12	0		M
1989 SG1	14.5	891001	257.41	324.51	164.52	7.39	0.1112	2.5659	12	0		N
1989 SJ1	16.0	891001	21.31	264.82	74.49	3.68	0.2243	2.5377	12	0		N
1989 SK1	15.5	891001	24.62	279.55	56.18	4.71	0.2130	2.6828	12	0		N
1989 SL1	14.0	891001	218.09	37.91	121.30	4.73	0.0566	2.2199	12	0		M
1989 SM1	14.5	891001	352.57	249.38	135.50	3.59	0.1518	2.9082	12	0		N
1989 SO1	15.0	891001	263.07	49.88	79.42	5.18	0.1622	2.6481	12	0		M
1989 SP1	14.0	891001	201.55	45.88	131.87	5.13	0.1146	2.5568	12	0		N
1989 SQ1	15.0	891001	299.45	49.10	38.74	12.02	0.1288	2.6136	12	0		M
1989 SR1	15.0	891001	70.98	212.81	79.97	4.60	0.0874	2.2604	12	0		M
1989 SS1	15.5	891001	35.76	256.64	59.76	3.92	0.2491	2.5490	12	0		N
1989 ST1	15.0	891001	309.72	3.93	74.39	3.20	0.1392	2.4262	12	0		N
1989 SV1	12.5	891001	344.04	274.65	125.78	2.69	0.2137	3.1883	32	8		M
1989 SX1	17.0	891001	358.34	327.11	47.96	6.49	0.2463	2.3722	12	0		M
1989 SA2	16.0	891001	20.94	288.35	56.73	6.52	0.1580	2.6992	12	0		M
1989 SB2	14.2	891021	354.97	354.06	35.24	6.27	0.1811	2.1812	32	9		E
1989 SC2	16.5	891001	7.71	333.88	27.12	12.32	0.1987	2.3215	12	0		N
1989 SE2	14.0	891001	94.56	196.04	77.01	5.15	0.0704	2.8358	12	0		N
1989 SF2	14.0	891001	200.91	133.67	46.24	8.78	0.1473	2.6022	12	0		N
1989 SH2	15.5	891001	344.87	228.13	165.22	6.84	0.1013	2.3834	12	0		N
1989 SJ2	14.5	891001	67.24	119.48	171.66	13.27	0.1514	2.5780	11	9		N
1989 SK2	16.5	891001	349.52	4.14	28.66	14.18	0.2986	2.6279	12	0		N
1989 SL2	16.0	891001	357.94	270.82	105.54	4.12	0.1608	2.2801	12	0		M
1989 SM2	14.5	891001	57.92	253.69	52.59	9.89	0.1075	3.1270	12	0		M
1989 SN2	14.5	891001	337.93	236.26	174.93	14.56	0.2271	3.1681	11	9		N
1989 SO2	16.5	891001	21.61	260.38	85.21	2.52	0.1384	2.1518	12	0		G
1989 SP2	14.0	891001	50.94	192.34	127.25	5.14	0.0595	2.7914	12	9		N
1989 SQ2	16.5	891001	7.11	262.52	99.61	2.78	0.2264	2.3012	12	0		N
1989 SR2	13.0	891001	305.44	336.69	99.06	3.36	0.0437	2.8931	12	0		G
1989 SS2	15.5	891001	84.93	131.82	145.08	5.97	0.1147	2.2115	11	9		N
1989 ST2	16.5	891001	3.78	333.72	32.78	11.86	0.2373	2.3442	12	0		N
1989 SU2	16.5	891001	19.15	259.78	85.43	3.34	0.2013	2.2983	12	0		N
1989 SV2	13.5	891001	106.18	221.36	44.76	9.95	0.0441	3.0938	12	0		N
1989 SW2	13.0	891001	146.89	138.54	84.11	5.68	0.1441	2.8901	12	0		N
1989 SX2	13.5	891001	287.58	11.34	102.78	6.90	0.2171	3.2307	11	9		N
1989 SY2	13.0	891001	75.99	158.30	126.15	5.79	0.1494	3.2843	12	0		N
1989 SZ2	14.5	891001	2.29	193.45	179.19	10.71	0.1786	2.5781	12	0		G
1989 SA3	13.5	891001	337.59	342.27	62.06	7.69	0.1026	3.1912	12	0		N
1989 SC3	15.0	891001	61.44	268.56	42.66	10.42	0.0251	2.3094	12	0		N
1989 SD3	15.5	891001	344.69	355.24	40.47	5.28	0.1532	2.2783	12	0		G

1989	SE3	15.5	891001	341.71	356.28	42.49	5.44	0.1336	2.1811	12	0	G
1989	SF3	16.0	891001	10.94	299.41	53.39	4.10	0.3125	2.5906	12	0	G
1989	SG3	14.0	891001	281.56	84.65	38.79	7.10	0.2396	2.8938	12	0	G
1989	SH3	15.5	891001	0.90	276.88	96.73	1.93	0.2234	2.4691	12	0	G
1989	SJ3	14.0	891001	324.69	327.84	103.51	2.45	0.2199	3.1972	12	0	G
1989	SK3	13.5	891001	285.88	299.11	179.89	8.08	0.2326	2.8390	12	0	G
1989	SL3	16.5	891001	352.75	221.33	168.64	4.39	0.3330	2.6088	12	0	G
1989	SM3	15.0	891001	44.44	258.40	46.91	7.26	0.2627	2.8255	12	0	N
1989	SN3	14.0	891001	8.19	193.12	173.84	5.51	0.1402	3.0713	12	0	G
1989	SO3	15.5	891001	343.77	227.97	171.28	6.13	0.1831	2.3882	12	0 D	G
1989	SP3	15.0	891001	287.30	298.62	192.11	23.14	0.3483	2.4246	12	0	G
1989	SQ3	14.5	891001	302.34	346.22	102.03	3.14	0.1198	2.9495	12	0	G
1989	SR3	13.0	891001	288.14	353.40	102.91	3.59	0.0475	3.3988	12	0	G
1989	ST3	15.0	891001	326.01	281.83	135.74	3.02	0.0879	2.6019	12	0	G
1989	SU3	12.5	891001	217.01	342.36	185.47	10.20	0.0805	3.0349	12	0	G
1989	SV3	15.5	891001	332.93	257.94	159.44	4.36	0.2162	2.3644	12	0	G
1989	SX3	15.0	891001	32.20	272.23	58.30	3.14	0.1934	2.7749	11	9	G
1989	SY3	15.5	891001	50.60	199.64	106.04	3.37	0.1939	2.3814	12	0	G
1989	SB4	15.5	891001	292.64	341.96	120.66	4.05	0.1671	2.3216	12	0	G
1989	SC4	13.0	891001	227.18	328.06	191.92	22.78	0.0876	3.1699	12	0	G
1989	SE4	16.5	891001	346.71	226.37	169.27	5.62	0.1877	2.3563	12	0	G
1989	SF4	13.5	891001	252.46	114.37	31.82	13.85	0.1939	2.9854	12	0	G
1989	SH4	15.0	891001	44.01	273.78	48.45	4.62	0.1221	2.3652	12	0	G
1989	SK4	15.5	891001	344.60	230.56	167.42	4.50	0.1623	2.2827	12	0	G
1989	SL4	15.5	891001	351.21	288.07	101.52	3.43	0.2009	2.4535	12	0	G
1989	SN4	13.5	891001	215.38	17.11	160.07	4.63	0.2335	2.5668	12	0	G
1989	SQ4	15.0	891001	253.85	40.80	100.37	3.37	0.1616	2.3326	12	0	G
1989	ST4	14.0	891001	202.50	135.75	44.92	7.29	0.0848	2.6797	12	0	G
1989	SU4	16.0	891001	16.81	223.16	129.02	3.61	0.1784	2.3331	12	0	G
1989	SY4	17.0	891001	10.76	291.96	63.82	3.86	0.2776	2.3760	12	0	G
1989	SB5	15.5	891001	340.62	340.95	58.39	5.24	0.0316	2.4926	12	0	G
1989	SQ5	16.5	891001	8.51	190.03	173.71	5.52	0.1860	2.2218	11	9	G
1989	SV5	15.0	891001	274.14	57.79	69.26	6.65	0.2377	2.6102	12	0	M
1989	TK	16.0	891001	19.86	244.59	97.06	1.70	0.2374	2.2635	6	8	G
1989	TN	15.0	891001	39.03	221.78	98.37	3.52	0.1909	2.4138	32	0	M
1989	TT	13.5	891021	1.46	221.53	172.81	16.95	0.2802	2.5959	62	3	M
1989	TU1	13.0	891110	349.88	160.46	260.02	6.68	0.2872	2.6672	53	0	N
1989	TN2	17.0	891021	354.56	224.00	174.70	8.08	0.2952	2.3058	27	3	E
1989	TO2	10.7	891021	132.15	94.60	155.27	10.87	0.1060	5.3136	29	4	E
1989	TQ2	13.2	891021	333.84	17.55	46.07	18.09	0.1553	3.1357	29	3	E
1989	TR2	12.9	891021	319.25	28.20	51.61	13.73	0.1265	2.8950	29	3	E
1989	TS2	12.1	891021	75.99	159.75	149.02	11.29	0.0521	5.2858	27	3	E
1989	TT2	13.1	891021	23.75	232.04	125.16	6.29	0.1599	3.1269	29	4	E
1989	TX2	14.5	891001	313.95	242.61	184.15	14.30	0.0511	2.5843	6	0	N
1989	TY2	15.0	891001	40.07	248.62	75.99	4.09	0.1288	2.5575	10	0	N
1989	TU3	14.0	891001	264.56	308.69	173.08	5.16	0.0720	2.7270	10	9	G
1989	TW3	16.0	891001	46.13	178.24	133.32	4.25	0.1839	2.2980	12	0	N
1989	TA4	15.0	891001	324.29	4.86	55.65	5.05	0.0996	2.7783	10	9	G
1989	TC4	15.5	891001	1.54	237.03	137.56	2.33	0.1763	2.6657	12	0 D	G
1989	TQ4	17.5	891001	13.89	279.97	68.93	3.78	0.2800	2.3272	10	9	G
1989	TU4	15.5	891001	50.21	197.85	106.96	4.51	0.2167	2.7934	12	9	G
1989	TA5	16.5	891001	340.41	311.99	90.22	3.42	0.1377	2.3347	10	9	G
1989	TO5	16.5	891001	18.66	263.66	82.83	3.91	0.2144	2.3143	10	9	G
1989	TR5	14.5	891001	339.72	15.30	32.48	19.72	0.1871	3.1136	10	9	G
1989	TU5	11.4	891021	121.16	142.24	107.20	1.92	0.0865	5.1999	26	3	E
1989	TV5	16.0	891001	6.08	186.52	173.90	7.16	0.3090	2.6686	6	8	N
1989	TA6	14.5	891001	216.25	45.34	117.87	3.46	0.0707	2.8346	12	9	N
1989	TN6	15.5	891001	78.77	128.71	151.45	5.77	0.1377	2.2984	10	9	N
1989	TX6	16.5	891001	6.20	258.71	105.45	3.74	0.2104	2.4171	10	9 D	N

1989	TZ6	15.0	891001	25.32	303.45	35.38	15.21	0.1743	2.6468	10	9		N
1989	UA	12.5	891021	295.84	76.85	44.35	13.68	0.1771	2.6499	6	6		N
1989	UE	14.0	891021	0.14	324.40	67.82	3.22	0.2265	2.3544	31	0		N
1989	UF	14.0	891021	341.83	202.62	206.17	6.22	0.1650	2.2665	13	0	D	N
1989	UG	13.5	891110	48.23	331.16	1.94	6.72	0.2560	2.3078	41	0		N
1989	UN	14.0	891110	14.60	8.36	12.29	3.41	0.1254	2.1520	12	9		N
1989	UO	14.5	891021	351.85	332.05	73.02	3.17	0.2052	2.3445	10	7		N
1989	UT	13.5	891021	356.75	2.67	32.57	7.13	0.1941	2.2399	29	0		N
1989	UZ	13.0	891110	177.82	329.81	260.18	10.53	0.1364	2.9643	14	0		N
1989	UA1	14.0	891001	7.71	0.07	3.83	5.23	0.1858	2.2019	26	7		M
1989	UF1	14.0	891110	1.57	123.59	269.19	1.79	0.2174	2.4129	39	0		N
1989	UH1	13.0	891130	23.47	162.38	217.07	6.93	0.1415	2.4083	38	0		N
1989	UK1	13.5	891130	344.23	224.03	217.42	11.64	0.2758	2.5534	30	0		N
1989	UL1	12.0	891110	55.92	293.04	44.15	10.29	0.1118	2.5612	36	0		N
1989	UM1	14.0	891021	22.76	307.62	55.46	2.93	0.1942	2.2373	24	0		N
1989	UO1	13.5	891110	45.01	145.10	193.74	4.13	0.2175	2.1936	28	0		N
1989	UP1	13.5	891110	12.10	304.90	81.32	6.71	0.2003	2.3258	50	0		N
1989	US1	13.5	891130	24.21	339.87	31.39	13.82	0.2326	2.6349	33	0		N
1989	UY1	13.0	891110	28.54	157.92	206.81	9.64	0.2333	2.8564	23	4		N
1989	UZ1	15.0	891130	31.78	121.84	237.02	9.04	0.3197	2.2777	34	0		N
1989	UG2	13.5	891110	6.92	340.43	45.36	26.80	0.2724	2.3320	35	7		B
1989	UH2	13.0	891110	48.83	290.31	48.60	22.55	0.0749	1.9175	38	0		B
1989	UW2	11.0	891130	221.85	341.16	205.65	11.21	0.0172	3.1364	27	0		N
1989	UA3	14.5	891110	17.65	192.50	190.36	2.49	0.1660	2.2523	29	9		M
1989	UB3	14.5	891110	3.12	338.31	64.16	3.87	0.2352	2.2818	7	8	E	N
1989	UP3	13.5	891021	348.00	216.57	199.15	12.59	0.1464	2.6187	8	6		G
1989	UQ3	15.0	891021	12.50	168.96	203.64	11.94	0.3026	2.4448	8	6		G
1989	UW3	13.0	891110	39.83	118.71	234.51	12.40	0.1936	2.5831	36	7		M
1989	UC5	14.1	891021	4.95	164.37	211.25	9.33	0.1440	5.3000	28	4	E	E
1989	UE5	13.1	891021	248.87	300.47	199.72	14.70	0.0657	5.2119	28	4		E
1989	UO5	13.2	891021	40.94	311.06	30.72	15.74	0.0550	5.3000	28	3	E	E
1989	UP5	13.1	891021	161.59	125.62	97.90	2.09	0.0524	5.1859	28	3		E
1989	UQ5	12.8	891021	113.45	93.89	171.13	4.88	0.0829	5.0384	28	3		E
1989	UU5	13.1	891021	302.01	254.64	199.24	15.03	0.0704	3.1771	28	3		E
1989	UX5	11.5	891021	320.95	352.66	76.50	4.27	0.0240	5.0632	28	4		E
1989	UA6	11.7	891021	98.75	214.85	57.66	3.67	0.1683	3.9445	28	3		E
1989	UB6	12.6	891021	212.30	101.99	75.49	5.21	0.0211	5.1162	28	3		E
1989	UC6	14.1	891021	68.11	254.99	37.21	28.42	0.2411	2.6363	26	4		E
1989	UF6	13.1	891110	116.19	131.46	128.90	3.16	0.1797	2.8375	3	4		E
1989	UU6	11.5	891021	86.01	96.71	200.15	11.37	0.0876	2.9956	12	6		N
1989	VF	12.0	891130	348.85	32.15	34.35	9.32	0.0901	3.0152	18	0		N
1989	VJ	12.5	891130	342.93	178.01	257.02	5.17	0.1020	2.4583	34	0		N
1989	VP	11.5	891110	355.82	176.23	222.73	35.88	0.1633	2.7649	30	0		M
1989	VW	11.0	891130	335.17	46.34	47.78	6.39	0.1476	4.0029	29	0		N
1989	VS1	12.5	891110	355.03	296.93	117.29	3.63	0.2041	2.6258	29	7		N
1989	WC	13.0	891130	348.72	159.25	280.23	1.60	0.1678	2.6205	29	0		N
1989	WD	12.5	891130	240.00	127.31	62.85	7.65	0.0672	2.3509	53	0		N
1989	WG	14.0	891130	30.19	293.94	85.38	5.73	0.2014	2.3711	15	0		N
1989	WH	13.5	891130	3.28	196.25	223.64	8.78	0.1429	2.7657	13	0		N
1989	WJ	14.5	891130	353.32	9.79	66.60	15.56	0.1315	2.6174	9	8		N
1989	WS	12.5	891130	10.06	158.05	237.11	8.73	0.1905	2.5603	11	9		N
1989	WT	13.0	891130	285.24	62.29	66.76	4.41	0.0465	2.2812	13	9		N
1989	WU	13.5	891130	348.72	176.87	269.53	5.06	0.1540	2.2445	18	0		N
1989	WW	13.5	891130	33.18	267.78	96.75	6.40	0.3166	2.2938	9	8		N
1989	WB1	14.0	891130	14.09	197.95	205.27	2.46	0.1350	2.3231	10	8		N
1989	WD1	10.5	891130	82.83	219.72	107.26	11.48	0.1431	3.0573	12	8		N
1989	WE1	11.5	891130	28.97	298.94	92.79	10.76	0.0932	3.0028	12	0		N
1989	WF1	14.0	891130	3.00	3.13	59.56	10.82	0.2196	2.5261	6	4		N
1989	WG1	13.5	891130	344.90	45.06	45.47	6.16	0.1831	2.3589	26	5		N

1989 WL1	12.0	891130	10.95	177.45	234.07	12.44	0.1465	2.5840	11	0		N
1989 WM1	12.0	891130	347.28	186.07	256.28	6.64	0.1628	3.0525	10	9		N
1989 WO1	11.5	891130	22.85	335.61	61.15	9.93	0.2224	3.5240	16	0		N
1989 WR1	11.5	891130	309.94	301.70	216.07	9.17	0.3298	3.0634	6	7		N
1989 WZ1	13.5	891130	12.55	354.67	57.06	3.15	0.1941	2.3550	23	0		N
1989 WA2	12.0	891130	33.77	315.81	71.48	16.37	0.1457	2.5694	25	0		N
1989 WF2	14.5	891110	324.25	261.39	221.18	21.64	0.2559	2.3521	19	4		B
1989 WG2	14.0	891110	320.21	314.54	151.12	23.14	0.3458	2.4260	3	5		M
1989 WJ2	10.0	891110	314.60	338.91	101.76	30.57	0.1866	5.2011	3	4	E	M
1989 WN2	14.0	891130	356.25	186.01	251.15	7.10	0.1921	2.3098	19	6		N
1989 WR2	13.0	891130	337.07	34.17	54.43	13.42	0.2480	2.6962	13	9		N
1989 WZ2	12.0	891130	40.80	330.01	24.54	14.14	0.1308	3.1547	12	0		N
1989 WA3	13.5	891130	17.98	348.25	37.64	19.07	0.2163	3.2227	11	8		N
1989 WB3	16.5	891130	356.15	6.57	67.36	2.36	0.2386	2.1651	9	6		N
1989 WC3	13.0	891130	177.52	6.58	243.02	5.13	0.1321	2.2592	4	6	E	N
1989 WD3	14.5	891130	339.97	216.41	240.79	4.21	0.1866	2.6668	6	7	E	N
1989 WH3	13.0	891130	37.95	342.59	39.36	1.35	0.1461	2.5777	7	6		N
1989 XA	12.5	891130	214.91	166.59	45.88	2.90	0.0329	2.9073	26	0		M
1989 XB	13.5	891130	355.82	297.63	135.09	7.04	0.2238	2.3792	18	8		N
1989 XL	15.0	891130	358.64	14.26	50.16	4.89	0.1018	2.2059	2	6	E	N

1989 SO3 = 1989 TU2 (D. W. E. Green)
1989 TC4 = 1989 SP5 (D. W. E. Green)
1989 TX6 = 1989 SU5 (S. Nakano)
1989 UF = 1989 UT4 (S. Nakano)

(4296)* 1935 SA2 = 1972 TE5 = 1979 WB3

Discovered 1935 Sept. 28 by H. van Gent at Johannesburg.

Id. T. Kobayashi (MPC 14182)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 102.13729		(1950.0)	P	Q
n 0.29224554	Peri.	26.43316	+0.77660057	-0.62955533
a 2.2489033	Node	12.66751	+0.55735179	+0.66919749
e 0.1659967	Incl.	6.14833	+0.29368440	+0.39475917
P 3.37	H 12.2		G 0.25	

Residuals in seconds of arc

350928 078	0.4+	1.3+	351027 078	0.1+	0.0	891102 894	0.6+	1.3-
351001 078	2.2+	0.5-	721006 095	0.4-	0.3+	891102 894	0.7+	1.3-
351016 078	0.7-	0.2-	791116 095	0.2-	0.7+	891102 894	0.9-	0.8+
351018 078	2.3-	0.1+	891004 807	0.6+	0.2+			

(4297)* 1938 HE = 1942 LL = 1971 SH = 1988 GN

Discovered 1938 Apr. 19 by W. Dieckvoss at Bergedorf.

Id. T. Kobayashi (MPC 11856), S. Nakano (MPC 13155)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 170.44351		(1950.0)	P	Q
n 0.27583740	Peri.	180.57851	+0.52848773	+0.84444932
a 2.3372255	Node	121.32786	-0.77843906	+0.52302377
e 0.1915465	Incl.	5.85999	-0.33872312	+0.11554858
P 3.57	H 11.9		G 0.25	

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

380419 029	0.2+	0.5+	380421 029	0.0	1.4+	380426 029	(7.7+	4.5-)
380419 029	0.9+	0.4-	380423 029	0.0	2.6+	380427 029	(7.4+	5.1+)
380420 029	1.1+	1.0+	380423 029	(10.6-	5.8-)	380427 029	(8.6+	1.9+)
380420 029	0.3+	0.7+	380424 029	(0.5+	3.8+)	420613 078	(0.04-	0.00-)X

420613 078(0.00- 0.03-)X 880410 046 1.5- 1.5+ 891006 807 0.5+ 0.2-
710925 808 0.5- 1.0+ 880411 046 (6.2- 0.2+) 891023 894 1.7- 1.7+
710925 808 1.6- 0.0 880411 046 2.2- 0.9- 891023 894 0.9+ 0.6-
710925 808 0.2- 0.2+ 880414 046 1.8+ 0.9- 891023 894 0.6+ 2.4+
710926 805 0.3+ 1.8+ 880414 046 0.9+ 1.4- 891030 807 0.3- 0.0
710926 805 0.2+ 0.8- 880714 801 1.9+ 3.2+ 891101 807 0.2- 0.8+
880410 046 0.2- 1.1+ 891003 807 0.0 0.0

(4298)* 1941 WA = 1973 YB3 = 1980 DN3 = 1985 BF
Discovered 1941 Nov. 17 by I. Polit at Barcelona.
Id. C. M. Bardwell (MPC 9464)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	81.77739	(1950.0)	P	Q
n	0.18555271	Peri. 312.58104	+0.76183201	-0.64521738
a	3.0443262	Node 87.68502	+0.60987961	+0.68451655
e	0.2956545	Incl. 3.29916	+0.21830907	+0.33931051
P	5.31	H 12.4	G 0.25	

Residuals in seconds of arc
411112 062 1.4- 1.5+ 411210 006 0.3+ 0.6- Y 850320 801 1.6- 1.2+
411114 062 2.3- 1.8+ 411214 006 (0.4- 3.8-)Y 891026 801 0.8+ 0.3+
411115 062 0.3- 1.4+ 411222 006 (5.9- 3.3+)Y 891028 801 0.4+ 0.2+
411117 062 0.9+ 0.5+ 731225 095 0.4- 0.4+ 891028 801 0.4- 0.5-
411117 006 (3.6+ 12.8+)Y 800220 095 1.2- 0.2+ 891129 801 0.1- 0.7+
411120 006(23.3- 4.3+)Y 841228 095 0.8- 0.6+ 891129 801 0.3+ 0.5+
411124 020 1.3+ 2.7- 850116 046 2.1+ 0.1+ 891201 888 0.6- 1.8-
411124 020 2.3+ 1.7- 850116 046 2.0+ 0.1+ 891201 888 0.4+ 1.0-
411125 006 (4.7- 5.1+)Y 850118 046 0.9+ 0.1- 891202 888 0.7- 3.1-
411208 020(21.7+ 1.6-) 850118 046 1.1- 0.0 891202 888 0.2+ 0.3+

(4299)* 1952 QX = 1952 SC = 1952 TJ = 1974 DE1 = 1986 WE7
Discovered 1952 Aug. 28 at the Goethe Link Observatory.
Id. O. Kippes (d, MPC 936, 1331), L. D Schmadel (MPC 11629), C. M. Bardwell (ibid.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	104.96866	(1950.0)	P	Q
n	0.29323179	Peri. 272.29362	+0.95596434	-0.28059394
a	2.2438579	Node 104.01116	+0.29194002	+0.87916264
e	0.1717099	Incl. 5.08631	+0.03005338	+0.38514945
P	3.36	H 13.3	G 0.25	

Residuals in seconds of arc
520828 760 1.3+ 0.1+ 520925 760 0.9- 0.5- 861128 010 0.5+ 1.8+
520828 760 0.4+ 0.1+ 520925 760 1.3- 0.7+ 861128 010 0.5- 0.3-
520916 760 1.1- 0.5+ 521009 839 2.1+ 0.8- 861128 010 0.9- 2.2+
520916 760 0.2- 0.3- 521009 839 1.1+ 0.7- 870226 801 0.1- 0.4+
520920 760 1.1+ 0.4+ 740216 095 0.8- 3.8- 891008 293 0.3+ 1.4-
520920 760 2.1- 1.5- 861128 010 0.5+ 1.8- 891027 801 0.2+ 0.1-

(4300)* 1955 SG1 = 1955 UP = 1955 VG1 = 1969 QW = 1985 AG = 1986 HH = 1986 LR1 = 1987 SP6
Discovered 1955 Sept. 18 at the Goethe Link Observatory.
Id. S. Nakano (MPC 13050)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	322.77323	(1950.0)	P	Q
n	0.27660971	Peri. 147.08936	+0.99602840	+0.08338941
a	2.3328730	Node 208.17704	-0.08903460	+0.93489665
e	0.0974841	Incl. 3.78891	+0.00052155	+0.34498471
P	3.56	H 13.2	G 0.25	

Residuals in seconds of arc

550918	760	0.5+	1.1+		850111	567	0.3-	2.0+		870921	046	0.8-	0.4-
550918	760	0.7+	1.9+		850111	567	1.8-	2.2-		870922	046	0.0	0.5-
551020	760	(0.8+	3.2+)		860429	675	0.7+	1.1+		870923	095	1.2+	0.4+
551020	760	0.4+	1.7+		860429	675	0.4+	2.3+		870927	399	1.4+	0.6+
551110	760	0.9-	0.4+		860604	675	(58.3+	3.3-)		870927	399	1.8+	0.5+
551110	760	0.9-	0.9+		860604	675	(58.8+	1.6-)		870927	399	0.3-	0.2+
690821	095	1.2-	3.9-		860606	675	2.4+	0.7+		871023	095	0.8-	0.3+
830716	808	1.4-	0.6-		860606	675	(3.5+	1.4+)					
830716	808	0.3+	1.3+		870917	095	1.0-	0.3+					

(4301)* 1966 PM = 1975 EE2 = 1978 TL2 = 1979 YZ7 = 1986 ER

Discovered 1966 Aug. 7 at Bloemfontein.

Id. S. Nakano (MPC 11145)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	317.50427	(1950.0)	P	Q
n	0.18046209	Peri. 99.80824	-0.87971835	-0.47445100
a	3.1013116	Node 51.87514	+0.41903656	-0.80486537
e	0.1286427	Incl. 2.29444	+0.22473093	-0.35649401
P	5.46	H 12.3	G 0.25	

Residuals in seconds of arc

660807	074	1.1-	1.7+		660812	074	0.6+	0.1+		860305	688	0.7-	0.7+
660808	074	0.9+	0.6-		750308	095	0.5+	0.5-		891004	807	0.7+	0.4+
660808	074	1.5-	0.0		781003	095	0.7-	1.2-		891030	807	0.1+	0.2+
660809	074	0.8-	0.6-		781007	095	0.1-	0.0		891101	807	0.4+	0.3-
660810	074	0.2-	0.4+		791223	095	0.0	1.3+					
660812	074	1.9+	0.1+		860305	688	0.1+	0.4-					

(4302)* 1968 HP = 1960 DA = 1976 KK

Discovered 1968 Apr. 22 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Id. S. Nakano (MPC 11345)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	267.47932	(1950.0)	P	Q
n	0.25582083	Peri. 99.88208	-0.31116694	+0.94920119
a	2.4576052	Node 151.84996	-0.90616596	-0.28148971
e	0.1324400	Incl. 5.69561	-0.28642343	-0.14064368
P	3.85	H 12.7	G 0.25	

Residuals in seconds of arc

600222	760	1.1-	0.7-		760525	095	1.2+	1.9+		891120	888	0.7+	0.2-
680422	095	0.3-	0.7+		760530	095	2.8-	0.1-		891120	888	0.6-	0.1+
680426	095	(10.1+	1.0+)		830214	381	0.4+	1.4+		891129	888	0.3+	0.0
680430	095	2.2+	2.6-		880916	801	1.3+	0.1-		891129	888	1.2-	0.6+

(4303)* 1973 SZ3 = 1978 EM2 = 1986 XA1

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

Id. L. D. Schmadel (k, MPC 11517), C. M. Bardwell (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	100.04584	(1950.0)	P	Q
n	0.30776393	Peri. 14.90316	+0.68296714	-0.73010703
a	2.1726557	Node 32.03040	+0.66575461	+0.60959597
e	0.1320572	Incl. 2.41541	+0.30054399	+0.30876607
P	3.20	H 14.2	G 0.25	

Residuals in seconds of arc

730925	095	0.4+	1.3+	861129	046	(4.5+ 0.6-)	861203	046 0.6- 1.1-
731031	033	0.1-	0.3-	861130	046	0.6- 0.5+	861203	046(12.4+ 0.5-)
731101	033	0.7-	0.6-	861130	046	1.3+ 0.5+	861204	010(11.2- 6.2-)
731102	033	0.7+	0.2-	861201	046	1.1- 0.7-	861205	010 (7.8- 6.8-)
731103	033	0.0	0.5-	861201	046	1.2+ 0.8-	891030	807 0.0 0.2+
780305	095	0.1+	0.2+	861202	688	1.3- 0.8+	891101	807 0.3- 0.2+
861129	046	(5.5+	0.2-)	861202	688	1.1+ 1.1+		

(4304)* 1973 SW4 = 1973 UJ4 = 1969 TY2

Discovered 1973 Sept. 27 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. B. G. Marsden (d, MPC 9064), K. Hurukawa (MPC 9162)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	169.58243		(1950.0)	P	Q
n	0.25678475	Peri.	61.49506	+0.96982431	-0.24060035
a	2.4514511	Node	312.39729	+0.20084685	+0.88004971
e	0.1510156	Incl.	3.05824	+0.13820767	+0.40941909
P	3.84	H	13.4	G 0.25	

Residuals in seconds of arc

691009	095	0.2+	0.2-	731029	095	0.9- 0.2+	880808	095 0.1+ 0.3+
691011	095	1.1+	2.4-	851220	801	0.2- 2.9-	880808	095 0.5- 0.5+
730927	095	0.0	2.5+	860110	801	0.4- 2.3+		
730928	095	(4.7+	3.0+)	860204	801	0.5+ 0.4+		

(4305)* 1976 EC = 1977 KR1 = 1986 CV

Discovered 1976 Mar. 7 at the Harvard College Observatory’s Agassiz Station.

Id. E. Bowell (MPC 10940), S. Nakano (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	344.67279		(1950.0)	P	Q
n	0.19803893	Peri.	324.92282	-0.81508821	-0.57933685
a	2.9149806	Node	179.67311	+0.53842224	-0.75763808
e	0.0722870	Incl.	1.79812	+0.21385207	-0.30058835
P	4.98	H	12.2	G 0.25	

Residuals in seconds of arc

760307	801	1.4+	2.1+	770518	675	3.3- 0.0	870630	675 3.2+ 0.4+
760308	801	2.5+	1.1+	770519	675	2.7- 0.5-	891102	400 0.4+ 0.3-
760309	801	1.6+	1.1+	860215	046	3.7- 1.9-	891102	400 1.2- 0.5+
760330	801	0.9+	0.4+	860215	046	2.1- 3.4-		
760501	801	0.9+	1.6+	870628	675	3.2+ 0.2+		

(4306)* 1976 SZ5 = 1976 UD10 = 1937 UF = 1970 QS

Discovered 1976 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. H. Oishi (d, JAM 1665), K. Hurukawa (MPC 9069), S. Nakano (MPC 13051)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	233.05315		(1950.0)	P	Q
n	0.17812363	Peri.	177.67748	+0.86942503	+0.49385553
a	3.1283957	Node	152.71335	-0.45377770	+0.80970479
e	0.1679801	Incl.	1.79769	-0.19541216	+0.31699349
P	5.53	H	12.6	G 0.25	

Residuals in seconds of arc

371028	024	0.1+	0.7+	761022	381	0.3- 0.3+	881215	888 0.8- 1.1-
700828	095	0.3-	0.2+	761022	381	0.3- 0.0	881215	888 0.7+ 1.4-
700830	095	0.5+	0.9-	761024	381	0.4- 0.2-	890102	888 0.1+ 0.9+
760924	095	0.2+	1.6-	870918	095	0.4+ 1.4+	890102	888 0.0 1.0+

(4307)* 1976 UK2 = 1978 EO6 = 1986 GY2 = 1987 SY11 = 1988 YL

Discovered 1976 Oct. 26 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Id. S. Nakano (MPC 15240)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	319.12538	(1950.0)	P	Q	
n	0.26305304	Peri.	309.13054	+0.88902164	+0.45642003
a	2.4123510	Node	23.77982	-0.38731127	+0.79199651
e	0.0786446	Incl.	5.17209	-0.24419359	+0.40549017
P	3.75	H	13.3	G	0.25

Residuals in seconds of arc

761024	381	0.7+	0.7+	860404	095	0.4-	0.6-	870926	809	0.3-	0.3+
761024	381	0.4-	0.1+	870827	095	1.4+	0.8+	881217	888	0.2+	0.5+
761026	095	1.5+	1.2-	870902	095	0.4+	0.2-	881217	888	0.1-	0.2-
761118	381	0.9-	0.2-	870920	095	1.8+	0.9-	890129	888	(4.7+	4.2+)
761118	381	0.7-	0.1-	870926	809	1.6-	0.2-	890129	888	(5.3+	4.6+)
780306	095	0.2-	0.8-	870926	809	1.2-	0.2-				

(4308)* 1978 PL4 = 1983 XL1 = 1987 SE1

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

Id. E. Bowell (k, MPC 12443), B. G. Marsden (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	241.99037	(1950.0)	P	Q	
n	0.22452715	Peri.	91.84315	+0.79731369	-0.58267916
a	2.6809588	Node	303.83018	+0.45041347	+0.74800703
e	0.1982692	Incl.	10.92273	+0.40176932	+0.31775853
P	4.39	H	12.4	G	0.25

Residuals in seconds of arc

780809	095	0.6-	0.7-	831204	561	0.3+	0.7+	870929	688	1.4+	0.1+
780823	414	0.1-	0.1+	831204	561	0.2+	0.9+	870929	688	0.6-	0.1+
780823	414	1.1-	1.2+	870919	688	2.1+	0.0	871025	095	1.7-	2.4-
780824	414	0.2+	0.2-	870919	688	0.7+	0.1-	890308	399	0.9-	0.5+
780824	414	0.5-	1.3+	870922	095	0.8-	0.7-	890308	399	0.0	1.0-
780826	414	0.5+	0.4-	870925	095	1.4-	0.2+	890308	399	0.6+	0.3+
780826	414	0.5+	0.2+	870926	095	1.4+	0.7+				

(4309)* 1978 QC = 1978 SE8 = 1973 SK4 = 1973 UW

Discovered 1978 Aug. 30 at the Harvard College Observatory’s Agassiz Station.

Id. S. Nakano (MPC 9754)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	81.92451	(1950.0)	P	Q	
n	0.18919924	Peri.	208.68525	+0.76840353	-0.63994422
a	3.0050829	Node	191.10706	+0.59219594	+0.71412395
e	0.2682557	Incl.	1.55716	+0.24261075	+0.28372237
P	5.21	H	13.1	G	0.25

Residuals in seconds of arc

730926	095	(2.5+	3.2-)	780902	809	0.5-	1.1-	891129	400	0.3+	1.2+	
731026	095	1.7+	1.6-	780903	095	2.7-	1.0+	891129	400	1.3-	2.4+	
770612	675	1.4+	0.3-	780906	809	0.8+	0.4-	891129	400	2.3-	1.5+	
770613	675	0.3-	0.7+	780910	809	0.3-	1.8+	891201	400	(0.2-	4.1+)	
780808	095	(3.8-	1.4+)	780910	809	0.8+	0.7-	891201	400	(0.5-	4.7+)	
780830	801	(0.6-	4.0+)	780910	809	0.7+	0.5+	891201	400	(1.4-	5.1+)	
780902	809	0.1+	0.4-	780910	809	1.2+	0.7-	891205	403	2.0+	1.5-	Y
780902	809	0.5-	0.5-	780928	095	2.0-	0.9+	891205	403	2.1+	1.2-	Y
780902	809	0.4+	0.1+	841228	095	1.5-	0.6-					

(4310)* 1978 RJ7 = 1969 VM2 = 1972 TQ7 = 1988 VU5

Discovered 1978 Sept. 2 by C.-I. Lagerkvist at the European Southern Observatory.

Id. F. N. Bowman (MPC 14186), T. Kobayashi (ibid.), S. Nakano (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	107.62221	(1950.0)	P	Q
n	0.31021941	Peri. 351.14925	-0.98206631	-0.18852343
a	2.1611757	Node 177.98029	+0.17650937	-0.92339243
e	0.0547592	Incl. 3.51816	+0.06625859	-0.33437305
P	3.18	H 13.5	G 0.25	

Residuals in seconds of arc

691115	095	0.2+	1.1-	780910	809	0.2-	2.1+	881105	046	2.3+	1.4-
721006	095	0.2+	0.9-	780910	809	0.1-	1.7-	881106	888	1.6-	0.3+
780902	809	0.2-	0.5-	780910	809	0.1-	0.6+	881106	888	0.7-	1.1+
780902	809	0.9-	0.2-	780910	809	1.0+	0.8-	881107	888	1.8-	3.0+
780902	809	0.8+	0.8+	881104	046	2.2+	1.1-	881107	888	0.8-	3.1+
780902	809	0.3-	0.1-	881104	046	(5.3+	2.6-)				
780906	809	0.1-	0.1+	881105	046	0.0	3.2-				

(4311)* 1978 SY6 = 1982 UK2

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

Id. D. W. E. Green (MPC 8797)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	79.61134	(1950.0)	P	Q
n	0.25827509	Peri. 124.40812	+0.97210037	+0.22544053
a	2.4420115	Node 222.66623	-0.23405011	+0.91393763
e	0.1452341	Incl. 5.48560	-0.01553744	+0.33748270
P	3.82	H 13.7	G 0.25	

Residuals in seconds of arc

770425	675	1.6-	2.3-	821017	046	1.4-	2.7-	821114	095	0.5-	0.5-
780926	095	1.0+	0.6-	821017	046	(3.3-	1.5-)	850622	801	2.1+	1.5-
781002	095	0.1+	0.7+	821020	095	1.4+	1.6-	890710	801	0.0	0.1-
781008	095	1.3-	0.2+	821025	095	1.0+	1.7+	890801	801	1.5-	0.6+
781101	095	(3.8+	1.6-)	821109	095	0.4+	0.6-				

(4312)* 1978 WW11 = 1930 VK = 1982 YF5 = 1987 DF5 = 1989 WY

Discovered 1978 Nov. 29 by S. J. Bus and C. T. Kowal at Palomar.

Id. K. Ichikawa, S. Nakano

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	125.29676	(1950.0)	P	Q
n	0.26767183	Peri. 286.48968	+0.95192920	-0.29644361
a	2.3845198	Node 90.80521	+0.30214427	+0.86725434
e	0.1528025	Incl. 4.42516	+0.05039488	+0.39998887
P	3.68	H 13.4	G 0.25	

Residuals in seconds of arc

301101	754	0.1+	0.1-	781204	323	1.1+	0.2-	891125	403	0.7-	0.8+
781127	323	0.3+	2.5-	781206	323	0.0	0.0	891125	403	0.7+	0.5+
781128	323	0.3+	1.0-	821224	095	0.2+	1.6-	891125	399	1.4+	0.5-
781129	675	1.9-	0.1-	870223	010	0.1+	1.0+	891125	399	0.4+	0.9+
781129	323	(3.6+	1.2-)	870223	010	0.5+	0.1-	891125	399	0.6+	0.2-
781130	675	2.2-	0.7-	870223	010	0.4-	0.5+	891201	403	0.5-	0.1-
781203	323	0.6+	1.4+	891121	403	(3.7-	1.9+)	891201	403	1.6-	1.6+
781203	323	1.7+	0.5+	891121	403	0.9-	0.5+	891205	403	(3.3-	2.2+)Y

(4313)* 1979 HK1 = 1933 WL = 1976 UK14 = 1978 ER3 = 1983 HE = 1989 UR5

Discovered 1979 Apr. 21 by H. Debehogne at the European Southern Observatory.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M 279.48772	(1950.0)	P	Q
n 0.22782580	Peri. 151.29502	-0.96066026	+0.25433590
a 2.6550178	Node 43.90902	-0.27547899	-0.82163845
e 0.0120852	Incl. 9.25671	-0.03525882	-0.51012107
P 4.33	H 12.3	G 0.25	

Residuals in seconds of arc

331120 024	0.1+	0.2+	790422 809	1.7-	1.1+	790429 809	0.5+	0.8+
761022 381	0.8-	0.4+	790422 809	2.0-	0.4+	790430 809	0.8+	1.0+
761022 381	0.1-	0.1+	790425 809	0.2-	0.6-	790430 809	1.3+	0.1-
761024 381	0.2-	0.0	790425 809	0.1-	0.4-	790430 809	0.0	0.4+
761024 381	0.5+	0.5+	790425 809	0.8+	0.1-	830418 688	1.4+	0.4-
780306 095	1.0-	0.6+	790426 809	1.1-	0.8-	830418 688	0.6+	0.4-
790421 809	1.0-	1.0+	790426 809	0.8+	0.3-	891004 807	0.9+	0.2-
790421 809	1.0-	2.1+	790426 809	0.4-	0.2-	891030 807	0.3-	0.1+
790421 809	0.2-	0.9+	790429 809	0.8+	0.2-	891101 807	0.3-	0.0
790422 809	1.4-	1.3+	790429 809	0.0	0.4+			

(4314)* 1979 ML3 = 1978 EF8

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

Id. T. Urata (MPC 6305)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 295.62143	(1950.0)	P	Q
n 0.23605370	Peri. 22.15877	-0.38523220	+0.92196378
a 2.5929582	Node 225.20914	-0.85480973	-0.37273429
e 0.0965002	Incl. 3.20972	-0.34770170	-0.10512816
P 4.18	H 13.3	G 0.25	

Residuals in seconds of arc

780305 095	0.3+	0.4+	790724 675	0.9+	1.4+	820126 801	(6.8-	3.2-)
790623 413	0.1+	0.1+	790724 413	1.1-	0.0	820423 801	0.1-	0.2+
790624 413	0.5-	0.2-	790725 675	(3.3+	1.0+)	870502 801	0.5+	0.5-
790625 413	0.1-	0.2-	790727 675	0.3+	0.4+	870531 801	0.4-	0.1-
790629 413	1.1-	0.1-	790823 675	1.3+	0.9-			

(4315)* 1979 SL11 = 1979 TA2 = 1979 UW1 = 1979 WP5 = 1978 BD = 1983 HG

Discovered 1979 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. H. Oishi (JAM 1790, MPC 9417)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 114.73477	(1950.0)	P	Q
n 0.19180659	Peri. 264.27896	+0.37419160	+0.91681390
a 2.9777875	Node 28.96142	-0.69520409	+0.37681728
e 0.2915867	Incl. 16.73164	-0.61373603	+0.13214011
P 5.14	H 12.4	G 0.25	

Residuals in seconds of arc

780118 809	0.5+	0.3-	791117 095	(1.0-	4.8-)	891023 888	0.2-	0.5-
780119 809	0.9+	1.1-	830418 688	0.8-	0.9-	891023 888	1.2-	0.1+
780120 809	1.9-	0.8+	830418 688	0.2-	1.0-	891029 888	0.9+	0.3+
790924 095	0.5-	1.3-	880414 801	0.1+	0.8+	891029 888	0.7+	0.3+
791014 095	0.2-	1.3-	891009 888	0.5-	0.4-	891104 888	1.6+	0.8+
791019 010	1.1+	0.2+	891009 888	0.9-	0.0	891104 888	0.6+	0.2-
791023 010	0.6+	0.7+	891009 888	0.6-	0.2-			

(4316)* 1979 TZ1 = 1979 UV1 = 1979 WT7 = 1972 HO1 = 1977 HK

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

Id. W. Landgraf (d, MPC 10941), H. Oishi (d, JAM 1790), E. Bowell (MPC 10941), S. Nakano (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	320.27887	(1950.0)	P	Q
n	0.19948716	Peri. 174.61621	-0.90459690	-0.42620378
a	2.9008554	Node 340.15182	+0.39025575	-0.82106438
e	0.0223688	Incl. 1.24909	+0.17147854	-0.37974152
P	4.94	H 12.4	G 0.25	

Residuals in seconds of arc

720419	805	0.6-	0.3+	791019	010	0.9+	0.2-	891029	399	(3.6+	1.0+)
720419	805	0.5+	0.1-	791023	010	0.7+	1.3+	891029	399	1.7+	0.4+
770424	675	0.5-	0.1-	791122	095	0.9-	0.8+	891029	399	0.3+	0.2-
770425	675	0.3+	1.0-	870430	801	0.3+	0.8+				
791014	095	0.6-	2.0-	891026	399	2.1-	0.2-				

(4317)* 1980 DA1 = 1972 EA = 1988 EF1

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

Id. L. D. Schmadel (MPC 13051), S. Nakano (ibid.), T. Kobayashi (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	148.28893	(1950.0)	P	Q
n	0.12334486	Peri. 97.32676	-0.70515573	-0.70118175
a	3.9968882	Node 38.24383	+0.56464061	-0.64517737
e	0.1595936	Incl. 9.79935	+0.42887804	-0.30346387
P	7.99	H 10.3	G 0.25	

Residuals in seconds of arc

720313	095	4.2+	4.5+	800223	046	0.3-	1.3-	880407	399	1.5+	1.9+
800215	046	1.4-	1.8-	800315	095	0.6+	0.7-	880408	399	0.5+	1.5+
800215	046	2.5-	0.5-	880313	399	0.5+	0.2-	880411	399	2.8+	0.5+
800219	046	2.1-	1.4-	880313	399	1.0-	1.2+	880411	399	2.2+	1.0+
800220	046	0.6-	1.5-	880313	399	0.7-	0.5+	880415	054	0.0	0.4+
800221	046	1.4-	0.8-	880316	399	0.4-	0.2+	890604	474	1.3-	0.8-
800221	046	0.6-	1.3-	880316	399	0.4-	0.1+	890604	474	0.0	1.0-
800222	046	0.6-	1.0-	880316	399	0.9-	0.6+	890608	474	0.8+	0.0
800222	046	0.9-	0.8-	880407	399	(3.6+	1.2+)	890608	474	0.1+	0.4-
800223	046	1.2-	1.0-	880407	399	2.6+	0.8+				

(4318)* 1980 DE1 = 1977 TB3 = 1986 GJ

Discovered 1980 Feb. 21 by Z. Vavrova at Klet.

Id. B. G. Marsden (MPC 10613)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	333.02363	(1950.0)	P	Q
n	0.17053682	Peri. 103.05275	-0.71238288	-0.69595186
a	3.2205048	Node 32.98001	+0.56220284	-0.64298915
e	0.1100716	Incl. 9.55323	+0.42004595	-0.31971232
P	5.78	H 11.7	G 0.25	

Residuals in seconds of arc

771007	095	1.7+	2.5-	860305	688	0.8+	1.6-	891022	046	0.1+	0.5-
800221	046	0.5+	0.3- Y	860403	054	1.1-	0.7+	891023	046	0.7+	0.0
800221	046	(3.4-	1.3-)Y	860403	413	1.6-	0.3-	891023	046	0.7+	0.2+
800222	046	0.5+	0.1+	860403	413	0.4+	1.0-	891024	046	1.0-	1.3-
800222	046	1.8+	0.7-	860405	054	0.7+	1.3+	891024	046	0.4-	0.3+
800223	046	1.5-	0.4+	860409	688	1.1-	0.5-	891028	046	(3.6-	0.5-)
800223	046	0.2-	0.4-	860409	688	(3.4+	3.1-)	891028	046	0.5+	1.2+
800315	095	1.5-	0.6+	860410	054	(0.5+	9.0+)	891030	400	1.6-	0.2+
860305	688	0.6+	1.2-	891022	046	0.7-	0.5-	891030	400	1.8+	0.0

(4319)* 1981 ER14

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

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	150.46392	(1950.0)	P	Q
n	0.27508236	Peri. 339.38463	+0.56314747	+0.82131417
a	2.3415003	Node 324.71265	-0.73431065	+0.44677584
e	0.2212456	Incl. 9.07828	-0.37901556	+0.35473143
P	3.58	H 13.8	G 0.25	

Residuals in seconds of arc

770213	675	0.2+	0.7-	810308	413	1.4+	0.1+	810409	413	0.2+	0.2-
770214	675	0.9-	0.8-	810312	413	1.1-	0.3+	810502	413	0.6+	1.4-
810209	413	0.9-	0.0	810312	413	1.1+	0.4-	810503	413	0.6+	0.9-
810212	413	1.1+	0.6+	810312	413	1.2-	0.1+	880218	413	0.1-	0.1+
810301	413	0.4+	0.2+	810312	413	1.4+	0.0	880218	413	0.3+	0.6+
810306	413	0.3-	0.2-	810407	413	(2.1-	0.3+)	880511	413	0.9+	0.6+
810306	413	(2.6+	1.3-)	810407	413	(2.3+	0.7-)	880511	413	(3.7-	0.2+)
810308	413	1.9-	0.8+	810408	413	0.8-	0.6+	890827	801	1.4+	1.0-
810308	413	0.9+	0.2+	810408	413	1.1+	0.2-	890925	801	1.3-	0.9+
810308	413	1.1-	0.0	810409	413	1.6-	0.2+				

(4320)* 1981 EJ17 = 1976 UE13

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

Id. S. J. Bus (MPC 10617)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	42.79463	(1950.0)	P	Q
n	0.30269780	Peri. 277.23889	-0.30410615	-0.95241671
a	2.1968304	Node 190.53458	+0.91232635	-0.28496439
e	0.1136149	Incl. 6.45028	+0.27418986	-0.10815595
P	3.26	H 15.3	G 0.25	

Residuals in seconds of arc

761022	381	0.3+	0.5-	810307	413	0.2-	0.2+	810408	413	1.0-	1.2+
761022	381	0.2-	0.2-	810307	413	0.4+	0.2-	810411	413	0.4-	0.2+
761024	381	0.2-	0.6+	810311	413	1.6-	0.7+	810411	413	0.8+	0.9-
761024	381	(19.8-	42.9+)	810311	413	0.0	1.1-	810426	413	(0.2+	2.8-)
810212	413	0.7+	0.7+	810315	413	1.6-	0.3+	810502	413	0.3+	0.9-
810213	413	0.1+	0.3-	810315	413	0.5+	0.3-	861205	801	1.8+	0.1-
810301	413	(2.1-	1.5+)	810407	413	0.0	0.1-	861229	801	2.0-	0.0
810301	413	0.9+	0.0	810407	413	1.3+	0.1-	891028	807	0.1+	0.3-

(4321)* 1981 EH26 = 1978 RC4 = 1978 SP3

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

Id. W. Landgraf (MPC 8288), L. D. Schmadel (unpublished)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	68.15014	(1950.0)	P	Q
n	0.18246194	Peri. 245.64416	+0.93741843	-0.34692047
a	3.0786089	Node 134.63910	+0.33274387	+0.86720316
e	0.2776735	Incl. 2.40681	+0.10260706	+0.35721824
P	5.40	H 13.1	G 0.25	

Residuals in seconds of arc

780903	095	0.2-	0.4+	810311	413	0.0	0.6-	810501	413	2.9+	0.2-
780927	095	0.9+	2.2-	810315	413	2.5-	0.9+	841127	801	0.2-	0.9+
810209	413	0.0	1.5-	810315	413	1.4-	0.5+	841218	801	0.1+	1.0+
810212	413	2.0-	1.9-	810405	413	(6.4-	3.3+)	850221	801	0.2-	0.9-
810213	413	0.4-	1.3-	810406	413	0.9+	0.3-	891004	046	0.2-	1.4-
810302	413	1.1-	0.9-	810407	413	0.1-	0.2-	891004	046	0.5+	1.5-
810302	413	0.5+	1.5-	810410	413	0.7-	0.4+	891005	046	0.6+	0.7-
810306	413	1.3+	0.8-	810426	413	(3.5+	1.9-)	891005	046	0.8+	0.4-

(4322)* 1981 EE37 = 1965 UC1

Discovered 1981 Mar. 11 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. K. Hurukawa (MPC 9752)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	136.16597	(1950.0)	P	Q
n	0.28679651	Peri. 318.99105	+0.92765738	+0.37253582
a	2.2772995	Node 19.18433	-0.31876148	+0.82602299
e	0.1820385	Incl. 4.51393	-0.19453251	+0.42296937
P	3.44	H 14.2	G 0.25	

Residuals in seconds of arc

651016	330	1.4-	3.2+	810329	413	1.8-	0.8-	890903	801	3.0-	0.8+
651020	330	0.6-	0.6-	810329	413	0.6+	0.3-	890906	657	1.4+	1.1-
651024	330	(6.0+	1.3-)	810407	413	1.3-	0.8-	890906	657	1.0+	1.2-
780509	675	0.2-	1.1+	810407	413	0.8-	0.6-	890908	888	0.8-	0.4-
780510	675	1.0-	1.9+	810408	413	2.2-	0.6+	890908	888	0.8-	0.6-
791122	675	1.2+	0.9-	810408	413	2.9+	0.7-	891023	888	0.2+	0.9-
791124	675	0.6-	0.3-	810411	413	2.3+	1.3-	891023	888	0.5-	0.9-
791125	675	0.3-	0.4+	810426	413	1.5+	0.3-	891029	888	0.1-	0.4-
810209	413	0.2-	0.9-	810502	413	0.0	0.6-	891029	888	0.2+	1.1+
810213	413	0.7+	0.9-	810503	413	0.0	0.2+	891101	888	3.0+	1.7-
810311	413	1.9-	0.7-	820814	095	3.1+	2.0-	891101	888	(4.0+	2.4-)
810316	413	0.9-	1.1-	820816	095	2.1+	2.5-				
810316	413	0.9-	1.0-	820913	095	0.8-	2.1+				

(4323)* 1981 QN = 1978 WW14

Discovered 1981 Aug. 27 by P. Wild at Zimmerwald.

Id. L. D. Schmadel (MPC 10528)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	245.53247	(1950.0)	P	Q
n	0.29289739	Peri. 101.88107	+0.99685065	-0.02359035
a	2.2455654	Node 259.50513	-0.00730091	+0.92337385
e	0.2034625	Incl. 4.41614	+0.07896499	+0.38317650
P	3.37	H 13.7	G 0.25	

Residuals in seconds of arc

781128	330	0.1+	1.5+	810929	026	0.4-	0.0	881111	894	0.6+	1.6+
810827	026	0.5+	0.6+	810930	026	0.6+	0.3+	881112	293	0.4+	1.3-
810828	026	1.4-	1.1+	811101	026	1.5-	0.1+	881112	801	0.9-	0.7-
810829	026	0.4-	0.2-	860112	688	1.6-	0.3+	881112	894	0.4-	0.6+
810830	026	(2.1-	0.7+)	860112	688	1.3+	0.0	881112	894	1.3-	1.1-
810905	095	1.0+	0.3+	860117	688	(3.3-	0.0)	881201	054	0.0	0.4+
810906	026	0.4-	1.3-	860117	688	0.2+	0.1-	881207	801	1.5+	0.1+
810921	026	1.4+	0.2+	881110	894	(1.8+	2.3+)				
810923	095	0.1-	0.5-	881111	801	0.6+	1.1-				

(4324)* 1981 YA1 = A924 YC = 1932 UD = 1932 WE = 1948 SD = 1948 TK2 = 1964 PE = 1966 DC = 1972 NF = 1973 YR3 = 1985 XX

Discovered 1981 Dec. 24 by L. G. Taff at the Lincoln Laboratory ETS, New Mexico.

Id. T. Kobayashi (MPC 13691), B. G. Marsden (d, MPC 8482)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	102.02078	(1950.0)	P	Q
n	0.24282754	Peri. 108.87368	+0.74484190	-0.65537496
a	2.5445096	Node 292.28380	+0.54979079	+0.70920309
e	0.2013969	Incl. 7.78104	+0.37807490	+0.25983580
P	4.06	H 11.3	G 0.25	

Residuals in seconds of arc

241222	024	0.3-	2.3-		720715	095	0.6+	2.5-		851214	010 (4.1- 2.4+)
321031	094	(46.5+	5.0+)X		720718	095	(1.2+	3.7-)		851214	010 0.3- 3.1-
321031	094	(13.8+	7.8+)X		731225	095	0.4+	1.7+		891126	894 0.4- 1.9+
321130	012	(0.05+	0.05-)X		811224	704	1.0+	2.1+		891126	894 1.1- 1.3-
480925	012	5.2-	0.5-		811225	704	(0.0	3.1-)		891202	894 0.4+ 1.1-
481008	062	2.2+	1.5+		811227	704	(4.7-	0.6+)		891202	894 1.2+ 1.3-
481008	062	(0.03+	0.02+)X		811229	704	1.9+	1.9-		891202	894 0.0 0.2-
481008	062	2.4+	2.2+		811230	704	0.7+	1.2+		891220	894 0.5- 0.8+
640812	760	(20.5-	79.9-)X		811231	704	1.0-	1.2+		891220	894 0.1+ 0.5+
660218	760	(51.3-	20.6+)X		820101	704	0.5+	0.6-			

(4325)* 1982 HL = 1975 TP5 = 1975 VM7

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

Id. T. Urata (NOC 1360), L. D. Schmadel (MPC 7363)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	348.13332	(1950.0)	P	Q
n	0.21597148	Peri. 107.68936	-0.97212814	-0.21776752
a	2.7513032	Node 59.81073	+0.15825245	-0.88283214
e	0.0953869	Incl. 5.76718	+0.17298277	-0.41615468
P	4.56	H 12.6	G 0.25	

Residuals in seconds of arc

751014	095	1.5+	3.1-		841029	688	1.0+	2.1-		891120	888 0.8+ 0.4+
751106	095	1.0+	4.2-		841029	688	2.1+	2.3-		891125	403 1.5- 0.5-
820418	688	1.2-	1.6-		841031	688	1.0+	0.1-		891125	403 0.6- 0.3-
820418	688	0.9-	1.9-		841031	688	0.6+	1.2-		891126	403 0.6- 0.3-
820426	688	0.3-	1.8-		841127	801	0.6-	0.2+		891126	403 0.2- 0.8-
820426	688	2.5-	1.7-		860209	801	0.9+	1.1+		891129	888 0.4- 0.4+
820516	095	0.8+	0.5-		891101	888	0.6+	0.3+		891129	888 0.2- 0.3+
820520	688	0.1-	3.1-		891101	888	0.1+	0.7+			
820520	688	1.9-	1.5-		891120	888	0.9+	0.0			

(4326)* 1982 HS1 = 1987 EA1

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

Id. E. Bowell (MPC 11842)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	185.64340	(1950.0)	P	Q
n	0.18367196	Peri. 148.36209	-0.19406111	+0.97851662
a	3.0650730	Node 110.36874	-0.91478344	-0.15488182
e	0.2124789	Incl. 4.25828	-0.35427608	-0.13607662
P	5.37	H 12.6	G 0.25	

Residuals in seconds of arc

820418	688	0.1-	2.2-		820526	688	0.4+	0.1-		880816	801 0.1- 1.0+
820418	688	1.3-	2.6-		870304	688	0.7+	1.9+		891029	807 0.2- 2.0-
820428	688	0.5-	0.7+		870304	688	0.2-	0.1+		891101	807 1.2+ 0.7-
820428	688	0.2-	1.1+		870426	801	0.1+	0.5-			
820526	688	0.6+	0.2-		870502	801	0.0	0.0			

(4327)* 1982 KB1 = 1951 WA2 = 1983 WM1 = 1983 XF1
Discovered 1982 May 24 by C. S. Shoemaker at Palomar.
Id. S. Nakano (MPC 11424; unpublished)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Nakano
M 226.33167	(1950.0)	P	Q
n 0.21385243	Peri. 276.48709	+0.84857438	+0.47340794
a 2.7694483	Node 55.51099	-0.29577650	+0.79468818
e 0.2267945	Incl. 16.65511	-0.43867732	+0.37994159
P 4.61	H 12.5	G 0.25	

Residuals in seconds of arc

511129	711	1.4+	2.4-	Y	820518	675	0.2-	0.2+	831208	330	0.7+	4.7+
820516	675	0.7-	0.4-		820524	675	2.3+	0.3+	870425	675	0.4+	0.7-
820516	675	0.7-	0.2+		820524	675	1.1+	2.3+	870425	675	0.8+	0.2+
820517	675	1.1-	0.2+		831126	330	2.8-	2.5-	881213	801	0.8-	2.7+

(4328)* 1982 SQ2 = 1982 UG = 1961 TL = 1975 SZ = 1978 NZ3
Discovered 1982 Sept. 18 by H. Debehogne at the European Southern Observatory.
Id. F. N. Bowman (d, MPC 7656), E. Bowell (k, MPC 13311), C. M. Bardwell (MPC 13311)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bowell
M 150.57284	(1950.0)	P	Q
n 0.28164348	Peri. 129.63735	+0.80296558	+0.59555169
a 2.3049928	Node 193.86438	-0.57268996	+0.75987036
e 0.1728735	Incl. 5.69010	-0.16514381	+0.26060548
P 3.50	H 13.9	G 0.25	

Residuals in seconds of arc

611007	760	1.0+	1.9-		820918	809	(0.6-	2.8+)	891008	403	(1.1-	2.1-)
611007	760	(1.9+ | 4.7-)		820918	809	0.4-	1.0+	891008	403	0.9-	0.6-
750930	675	0.2+	0.5+		821017	688	(0.8- | 4.5-)	891009	403	0.3+	0.9+
751001	675	0.5+	0.8+		821017	688	(1.2+ | 3.9-)	891009	403	1.4+	0.0
751015	675	0.4-	0.8-		821024	688	(4.4+ | 0.7-)	891026	046	0.7-	0.2+
751016	675	1.1-	0.0		821024	688	0.0	1.1-	891026	046	0.5+	1.0+
780710	095	0.0	0.1-		891004	807	0.1-	0.1+	891027	046	0.8-	0.6-
820918	809	(1.0-	5.2+)		891005	807	0.4+	0.4+	891027	046	(0.3-	3.6+)

(4329)* 1982 SX2 = 1970 AU = 1972 TT6 = 1984 ES
Discovered 1982 Sept. 22 by L. G. Taff at the Lincoln Laboratory ETS, New Mexico.
Id. S. Nakano (MPC 13686)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Nakano
M 104.06411	(1950.0)	P	Q
n 0.29051965	Peri. 32.58631	+0.77142797	-0.63619619
a 2.2578013	Node 6.96213	+0.55970719	+0.66916743
e 0.1038166	Incl. 5.86251	+0.30269910	+0.38401739
P 3.39	H 13.7	G 0.25	

Residuals in seconds of arc

700104	095	0.0	0.7+		840306	688	0.7-	0.0	891021	364	0.3+	1.3-
721006	095	2.1-	4.5+		840309	688	0.9-	1.6+	891023	403	0.4+	0.9-
820916	095	0.4-	1.5+		840309	688	1.4+	0.1-	891023	403	0.9+	1.5-
820919	095	0.4-	0.4-		891008	877	0.5-	1.2+	891023	364	1.4+	2.2-
820922	704	(8.7-	0.6+)		891008	877	(1.4-	3.3+)	891023	364	0.4+	2.0-
820923	704	(6.0-	7.4-)		891021	400	(1.8-	3.4-)	891028	801	1.0-	1.0+
820924	704	(3.0+	6.3-)		891021	400	(1.7-	3.8-)	891028	801	1.3-	1.3+
820924	704	(7.3-	4.7+)		891021	400	(1.8-	4.3-)				
840306	688	1.2+	0.1+		891021	364	1.5+	0.1+				

(4330)* 1982 UJ3 = 1972 TN8 = 1987 BH3

Discovered 1982 Oct. 19 by F. Borngen at Tautenburg.

Id. D. W. E. Green (MPC 13594)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Schmadel

M	102.81548	(1950.0)	P	Q
n	0.29354265	Peri. 209.96697	+0.65589475	-0.75469929
a	2.2422735	Node 199.05892	+0.70145239	+0.61681104
e	0.0381462	Incl. 2.66812	+0.27886668	+0.22354670
P	3.36	H 13.0	G 0.25	

Residuals in seconds of arc

721013	095	0.3+	1.0-	870130	010	1.7-	1.2+	891030	400	1.5-	0.6+
820916	095	2.6-	0.8+	890907	033	0.2-	0.6+	891030	400	1.6+	3.8+
820918	095	1.9-	0.8-	890907	033	0.3-	0.2+	891102	400	4.7+	1.5+
820920	095	1.9+	2.2+	891023	033	0.2+	1.4-	891102	400	(7.4+	3.9+)
820926	095	1.8+	1.1+	891023	033	0.5-	0.9-	891104	385	0.5-	1.0-
821019	033	0.0	0.6-	891025	033	0.1+	1.3-	891104	385	1.5-	0.3+
821019	033	0.1+	0.5-	891025	033	0.2+	0.8-	891117	883	1.6-	1.6-
870130	010	1.3+	0.2+	891027	033	0.8-	1.2-	891117	883	(7.4-	1.3+)
870130	010	0.6+	0.2+								

(4331)* 1983 HC = 1940 LO = 1950 NT = 1970 LG = 1986 ES1 = 1987 SR29 = 1987 UF9

Discovered 1983 Apr. 18 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Id. D. W. E. Green, N. S. Chernykh (d)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Green

M	39.46524	(1950.0)	P	Q
n	0.29644886	Peri. 213.06751	+0.25318825	+0.96276738
a	2.2275948	Node 71.75187	-0.86448292	+0.26911679
e	0.2075196	Incl. 5.72485	-0.43424071	+0.02559529
P	3.32	H 13.7	G 0.25	

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

400611	078(0.05-	0.00+)X		830313	808	0.7-	0.6+	830507	808	1.2-	0.9-
400613	078(0.05-	0.02+)X		830318	808	1.1-	0.3+	830606	808	(3.0+	1.7+)
500715	760	0.2+	0.2+	830318	808	0.4-	0.1-	830606	808	(4.5-	0.0)
500715	760	0.7-	0.5+	830320	808	0.2-	1.0+	860306	688	0.3+	1.5+
700611	095	1.7+	1.3+	830320	808	0.1-	1.1+	860306	688	2.7+	0.1+
830310	808	1.3+	0.4+	830418	688	0.3-	0.7-	870924	095	2.5-	0.3-
830310	808	0.3+	0.9+	830418	688	1.4+	0.9-	871022	095	0.6+	2.5+
830313	808	0.6-	0.1+	830507	808	0.6-	0.1-				

(4332)* 1983 RC = 1933 SH1 = 1989 ET4

Discovered 1983 Sept. 5 by C. S. Shoemaker at Palomar.

Id. S. Nakano (MPC 14615; unpublished)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	257.59521	(1950.0)	P	Q
n	0.23729838	Peri. 198.18134	+0.99342447	-0.08063820
a	2.5838832	Node 165.69349	+0.08739769	+0.99267936
e	0.3168235	Incl. 19.20174	-0.07395582	+0.08991754
P	4.15	H 12.0	G 0.25	

Residuals in seconds of arc

330916	024	0.0	2.2+	830912	688	0.4-	0.4+	890302	809	0.3-	1.0+
830905	675	0.3+	0.0	830912	688	0.9+	2.8-	890302	809	0.8-	1.2+
830906	675	0.8+	0.6+	831009	675	1.9-	1.0+	890302	809	0.8-	1.0+
830908	675	0.5+	0.6+	831009	675	1.2-	1.8+	890303	809	1.7+	0.0
830909	675	0.4+	1.1+	870828	095	0.2-	3.6+	890303	809	0.4+	0.3+
830911	688	0.5+	1.7-	870831	095	2.6-	1.6+	890303	809	0.3+	0.3+
830911	688	0.1+	1.5-	870924	095	3.0+	4.5-				

(4333)* 1983 RO2 = 1973 SK3

Discovered 1983 Sept. 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. W. Landgraf (MPC 8382), K. Hurukawa (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	64.57149	(1950.0)	P	Q
n	0.29479378	Peri. 177.86886	+0.77543851	+0.62990943
a	2.2359247	Node 142.97059	-0.58035911	+0.73828118
e	0.1489584	Incl. 4.16077	-0.24875373	+0.24115349
P	3.34	H 14.0	G 0.25	

Residuals in seconds of arc

730923	095	(2.1+	3.3-)	830904	688	0.3+	0.1+	830913	095	(0.5+	2.4-)
730925	095	(0.2+	4.7+)	830904	688	0.3-	0.0	860604	801	0.4-	0.1-
730928	095	0.6+	1.9-	830906	688	0.8+	0.1-	860704	801	0.7+	0.4+
830813	688	0.3-	1.8-	830906	688	0.2+	0.0	890428	400	(1.0+	2.2-)
830813	688	0.6+	0.7-	830910	688	0.1-	0.5-	890428	400	0.0	0.8-
830816	095	1.6-	1.6+	830910	688	0.2-	0.1-	890428	400	0.4-	0.2-
830902	688	0.5-	0.4+	830912	688	0.8+	1.0+				
830902	688	0.3-	0.9+	830912	688	0.3+	0.2+				

(4334)* 1983 RO3 = 1980 DQ2 = 1984 YU3

Discovered 1983 Sept. 2 by H. Debehogne at the European Southern Observatory.

Id. C. M. Bardwell (MPC 10038)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	44.04542	(1950.0)	P	Q
n	0.17630060	Peri. 351.47585	+0.60199328	-0.79810725
a	3.1499249	Node 61.50755	+0.73424703	+0.54093554
e	0.1895411	Incl. 1.63511	+0.31382381	+0.26535555
P	5.59	H 12.8	G 0.25	

Residuals in seconds of arc

781028	675	0.1+	0.2+	830904	809	0.2-	0.2+	830909	809	0.4+	0.5+
781029	675	0.2-	0.9+	830906	809	2.2-	0.1+	830909	809	0.6+	0.5+
800220	095	0.4-	2.3-	830906	809	0.9-	0.1+	830912	809	0.8+	0.6-
830902	809	0.5-	0.3-	830906	809	0.4-	0.3-	830912	809	1.2+	0.9-
830902	809	0.6+	0.4-	830907	809	0.5+	0.2-	830912	809	1.3+	1.2-
830902	809	1.7+	0.3-	830907	809	0.5+	0.2-	841227	095	0.2+	0.8-
830903	809	0.7-	1.3-	830907	809	0.3+	0.2-	841229	095	0.8-	0.4-
830903	809	0.9-	0.6-	830908	809	2.2-	0.2-	890928	801	0.0	0.2+
830903	809	1.8+	0.3+	830908	809	0.3-	0.1-	890928	801	0.8-	0.7+
830904	809	0.2-	0.1+	830908	809	0.2+	0.9+	891002	807	0.9+	0.1-
830904	809	0.4-	0.0	830909	809	0.0	0.7+				

(4335)* 1983 VC7 = 1927 SG = 1973 SB5 = 1978 ES1 = 1988 BZ2

Discovered 1983 Nov. 1 at Cavriana.

Id. D. W. E. Green (MPC 12954)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	69.13462	(1950.0)	P	Q
n	0.29956290	Peri. 324.18301	+0.99915938	-0.02464466
a	2.2121303	Node 37.27038	+0.03649089	+0.89882147
e	0.2191452	Incl. 3.10099	-0.01868020	+0.43762153
P	3.29	H 13.6	G 0.25	

Residuals in seconds of arc

270925	094	(0.9-	4.5+)X	880119	033	1.1+	0.3-	890606	571	(2.0+	0.7+)
730927	095	0.0	0.9+	880120	033	0.1+	0.8+	890606	571	(2.7-	0.9+)
780305	095	1.3-	0.2+	880120	033	0.2+	0.8+	890608	552	0.0	1.8-
831028	330	1.5-	1.0-	880121	033	0.4+	0.9-	890608	571	0.4+	0.3-
831101	330	0.2+	0.2-	890526	552	1.1+	0.4-	890608	552	1.3-	0.9+
831101	571	1.1+	0.8+	890526	552	0.4+	0.7-	890608	571	0.0	0.6+
831101	571	0.9-	0.6-	890603	552	0.8-	0.7+				
831105	330	1.1+	0.5+	890603	552	0.2-	1.2+				

(4336)* 1984 QE1 = 1970 TE = 1977 RR4 = 1977 TD4

Discovered 1984 Aug. 31 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Id. C. M. Bardwell (MPC 9590)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	237.39450	(1950.0)	P	Q	
n	0.27698817	Peri.	32.12585	+0.93938515	-0.34160150
a	2.3307476	Node	347.74310	+0.27792287	+0.80885878
e	0.2262385	Incl.	7.95836	+0.20078449	+0.47859784
P	3.56	H	13.8	G 0.25	

Residuals in seconds of arc

701009	095	(2.2-	15.0-)	840921	809	0.4-	1.4-	840927	809	0.9+	0.1+
770909	095	1.1-	2.8+	840922	809	0.1-	0.7-	840928	809	1.1+	0.1+
771006	095	0.4-	0.3-	840922	809	0.1-	0.5-	840928	809	1.2+	0.2+
820120	095	0.2+	0.1-	840922	809	0.5+	0.5-	840928	809	1.1+	0.7+
840831	688	(0.8+	3.4-)	840923	809	0.3-	0.6-	840929	809	0.9-	0.2+
840831	688	1.9+	1.7-	840923	809	0.8-	0.5-	840929	809	1.0-	0.4+
840831	688	1.0+	1.9-	840923	809	0.3-	0.4-	840929	809	0.6-	0.0
840917	809	1.6+	0.6+	840924	809	0.4-	0.2-	840929	809	0.5-	1.0+
840917	809	1.8+	0.7+	840924	809	0.4-	0.4-	840929	809	0.5-	0.7+
840917	809	2.1+	0.7+	840924	809	0.7-	0.4-	840930	809	0.5-	0.6+
840918	809	0.2-	0.1+	840926	809	0.1-	0.2+	841001	809	1.3-	0.3+
840918	809	0.3-	0.1+	840926	809	0.0	0.1+	841001	809	1.3-	0.6+
840918	809	0.0	0.4+	840926	809	0.0	0.5+	841001	809	1.5-	0.5+
840921	809	0.4-	0.9-	840927	809	0.3+	0.1-	881205	801	0.3+	0.8-
840921	809	0.5-	1.0-	840927	809	0.6+	0.0	881210	801	0.7-	1.1-

(4337)* 1985 GB = 1933 HE = 1979 FR3 = 1979 HG2

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

Id. C. M. Bardwell (MPC 10039), K. Hurukawa (ibid.), L. D. Schmadel (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	343.39185	(1950.0)	P	Q	
n	0.16824192	Peri.	161.11372	-0.92503858	+0.37897855
a	3.2497247	Node	41.18692	-0.35340735	-0.83341092
e	0.0982428	Incl.	2.26759	-0.13930853	-0.40224557
P	5.86	H	11.7	G 0.25	

Residuals in seconds of arc

330424	024	0.4-	1.3-	850423	688	0.2+	0.2-	870924	809	0.2-	0.4-
330519	024	(4.9+	5.4-)	850423	688	(2.8+	1.4-)	870924	809	0.3-	0.3-
790331	095	0.8-	1.4-	850515	688	1.4-	0.1-	870924	809	0.2-	0.3-
790424	095	0.5-	0.8-	850515	688	1.6-	0.3-	881203	400	1.2+	0.0
790424	095	1.0-	0.4+	870923	809	0.6+	0.6-	881203	400	1.0+	0.6-
850414	688	1.4+	0.0	870923	809	0.7+	0.7-	881203	400	1.3-	1.5-
850414	688	2.0+	0.1-	870923	809	0.6+	0.7-				

(4338)* 1985 PB1 = 1981 GW = 1982 VQ

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

Id. L. D. Schmadel (MPC 10292), K. Hurukawa (ibid.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 235.25968 (1950.0) P Q
n 0.29170065 Peri. 82.01224 +0.17057011 +0.98484919
a 2.2517030 Node 197.90058 -0.93934200 +0.15294064
e 0.1782724 Incl. 5.83939 -0.29756082 +0.08173880
P 3.38 H 13.9 G 0.25
Residuals in seconds of arc

780705	675	0.9-	1.1-	821114	046	(2.4-	3.7-)	850912	688	1.0+	2.1+
780706	675	0.0	1.7-	821114	046	1.7-	3.0-	880512	688	(5.7+	1.9-)
810407	688	2.0-	0.5+	850814	688	1.6+	0.2-	880512	688	1.3-	0.7-
810407	688	2.5+	0.6-	850814	688	1.6+	1.5+	880610	801	1.4+	0.6-
810409	688	1.0+	1.7-	850820	688	0.8-	0.1-	880611	293	2.2-	1.2+
810409	688	0.3+	0.8-	850820	688	0.0	0.3-	880611	293	(1.8+	3.2-)
821111	046	0.1-	2.9-	850912	688	0.5-	0.1-				

(4339)* 1985 UK = 1946 UE = 1980 BC5 = 1988 QA1
Discovered 1985 Oct. 20 by A. Mrkos at Klet.
Id. S. Nakano (MPC 14196)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 208.35071 (1950.0) P Q
n 0.30328323 Peri. 72.34714 +0.97617226 -0.21451642
a 2.1940025 Node 300.02902 +0.18199298 +0.89145810
e 0.1781977 Incl. 2.16570 +0.11817896 +0.39910544
P 3.25 H 13.7 G 0.25
Residuals in seconds of arc

461019	062	0.6-	0.6+	880815	046	0.0	2.8-	880909	809	0.5-	0.2+
461019	062	0.1+	0.8+	880831	809	1.1-	1.7-	880909	809	0.5-	0.2+
461022	062	(5.2-	0.9+)	880901	809	0.7-	1.5-	880910	809	1.3-	0.8+
800122	095	0.0	1.1-	880901	809	0.3-	1.5-	880911	809	0.8-	0.8+
851020	046	1.6-	0.9-	880903	809	1.6+	0.5-	880911	809	0.6-	0.5+
851020	046	0.6-	0.1-	880903	809	1.0+	0.5-	880913	809	0.2+	1.2+
851021	046	2.0+	1.2-	880903	809	0.8+	0.4-	880914	809	0.2+	1.2+
851021	046	0.2+	0.3-	880904	809	1.0-	0.5-	880914	809	0.2+	1.2+
851024	046	0.9+	1.1-	880905	809	0.9-	0.7-	880916	809	0.9+	1.8+
880808	095	(3.7+	0.8-)	880905	809	1.1-	0.6-	880916	809	1.0+	1.5+
880808	095	1.7+	1.9-	880906	809	1.2-	0.2+	880916	809	1.1+	1.4+
880809	095	2.4-	0.1-	880907	809	0.8-	0.5+	880918	809	1.8+	2.4+
880809	095	0.4+	1.7-	880907	809	0.8-	0.3+	880919	809	1.8+	2.4+
880815	046	1.2+	2.2-	880909	809	0.5-	0.1-	880919	809	1.9+	2.5+

(4340)* 1986 JZ = 1986 LN = 1982 KF4
Discovered 1986 May 4 by C. Shoemaker at Palomar.
Id. F. N. Bowman (d, MPC 11035), B. G. Marsden (ibid.), K. Hurukawa (ibid., MPC 14351), C. M. Bardwell (MPC 14351), S. Nakano (ibid.), H. Oishi (ibid.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 69.94895 (1950.0) P Q
n 0.26623512 Peri. 175.90046 -0.22726465 +0.87866850
a 2.3930906 Node 80.56854 -0.90510082 -0.03147834
e 0.2325939 Incl. 25.19026 -0.35936511 -0.47639352
P 3.70 H 13.6 G 0.25
Residuals in seconds of arc

791116	413	0.3+	0.8+	860510	675	0.7-	1.0+	890111	675	0.4+	1.1-
791116	413	0.1-	1.8-	860606	675	(10.4-	0.7-)	890111	675	1.0-	0.3-
820521	675	0.2+	0.1+	860606	675	(8.2-	0.4+)	890202	675	0.4+	0.2-
860504	675	0.3+	0.1+	860608	675	(17.3+	1.0+)	890202	675	(0.3+	3.0-)
860508	675	0.1+	0.4-	860610	688	(2.9+	1.3+)				
860509	675	0.1+	0.3+	860610	688	0.3-	1.6-				

(4341)* 1987 KF
Discovered 1987 May 29 by C. S. Shoemaker at Palomar.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bardwell
M 168.94606	(1950.0)	P	Q
n 0.39625058	Peri. 15.44127	-0.53971806	-0.81870115
a 1.8357890	Node 107.59320	+0.74891786	-0.57329640
e 0.6789383	Incl. 11.86829	+0.38448206	-0.03255258
P 2.49	H 15.7	G 0.25	

Residuals in seconds of arc

870529	675	0.7-	0.2+	870623	691	0.8+	0.2+	870722	691	0.0	0.6-
870530	675	0.4-	0.6-	870623	691	0.8+	0.4+	870818	691	1.3-	0.4-
870531	675	0.7-	0.6-	870623	691	0.8+	0.7+	870818	691	2.0-	0.9+
870531	675	2.1-	1.3-	870624	801	0.7+	2.0-	870818	691	0.9-	0.4-
870601	675	0.3+	1.7+	870624	688	1.4+	0.6+	880708	675	0.4-	0.3+
870608	568	0.4+	1.5+	870624	688	1.4+	0.4+	880708	675	0.1+	0.3+
870608	568	1.2+	0.0	870624	707	(4.9+	0.6-)	880708	675	0.3+	0.8+
870617	691	0.2-	1.5-	870721	691	0.8+	1.5+	880708	675	0.3-	0.2+
870617	691	0.1-	1.8-	870721	691	0.5+	0.9+	880822	675	0.2+	0.9-
870617	691	0.1+	0.9-	870721	691	0.2+	0.8+	880822	675	0.3-	0.8-
870622	675	0.8-	1.0+	870722	691	0.9+	1.2-	880822	675	0.3+	0.6-
870623	675	0.3-	1.2+	870722	691	0.1+	0.0				

(4342)* 1987 QO9 = 1950 NT1 = 1954 JM = 1962 EG = 1978 RA1 = 1979 YL7
Discovered 1987 Aug. 21 by E. W. Elst at the European Southern Observatory.
Id. S. Nakano (MPC 15427)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bowell
M 267.99670	(1950.0)	P	Q
n 0.21447893	Peri. 182.11473	+0.70913995	+0.70080292
a 2.7640526	Node 133.06260	-0.64528920	+0.68934499
e 0.0927146	Incl. 6.08384	-0.28411684	+0.18351772
P 4.60	H 12.3	G 0.25	

Residuals in seconds of arc

500714	760	0.4+	2.4-	620309	033	0.4-	0.7+	870821	809	0.5-	2.3+
500714	760	1.1+	0.3+	620309	033	0.0	0.7+	870826	095	1.2+	0.6-
540510	760	2.2-	2.0+	780901	095	0.5-	0.1+	870922	095	0.5+	2.4-
540510	760	2.8+	0.3+	780907	095	2.2-	2.4+	870925	095	(6.0+	1.2-)
620308	033	1.1-	1.0+	791223	095	2.9+	0.3-				
620309	033	0.8-	0.2+	870821	809	1.5-	1.6+				

(4343)* 1988 AC = 1979 DS = 1984 JQ1
Discovered 1988 Jan. 10 by S. Ueda and H. Kaneda at Kushiro.
Id. S. Nakano (MPC 12796), T. Kobayashi (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bowell
M 196.87062	(1950.0)	P	Q
n 0.21169586	Peri. 279.53412	-0.76918705	-0.63405754
a 2.7882250	Node 221.17488	+0.62338056	-0.71716301
e 0.1695095	Incl. 6.93681	+0.14052748	-0.28922009
P 4.66	H 11.9	G 0.25	

Residuals in seconds of arc

790228	330	0.1+	0.4+	871220	010	0.8-	0.5+	880115	399	0.2+	0.3+
840502	095	1.0-	0.5-	880110	399	1.2+	0.1+	880115	399	1.0-	0.4+
840505	095	0.9+	0.0	880110	399	0.5-	0.5-	880115	399	(2.2-	2.6+)Y
860907	095	0.3+	0.1+	880110	399	0.2-	0.0	880117	399	1.0-	0.9-
860911	095	0.3+	0.6-	880110	399	0.1-	0.1-	880117	399	0.8-	0.4-
861005	095	0.4-	0.1+	880111	399	0.5+	0.3+	880117	399	1.2+	1.4-
871220	010	(1.7-	1.1-)	880111	399	1.1+	0.2+				
871220	010	0.1+	0.3+	880111	399	0.1-	0.8+				

(4344)* 1988 CR1 = 1978 JJ1 = 1986 WM8

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

Id. S. Nakano (MPC 13053)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	103.67753	(1950.0)	P	Q
n	0.17981273	Peri. 97.15059	-0.85388787	+0.51905876
a	3.1087736	Node 114.12520	-0.49246155	-0.78208529
e	0.1218331	Incl. 2.39415	-0.16839574	-0.34484866
P	5.48	H 12.5	G 0.25	

Residuals in seconds of arc

780506	095	0.2-	0.5-	880217	809	0.1-	0.5-	890330	809	0.6+ 0.7+
861130	381	0.0	0.5+	880217	809	0.5-	0.5-	890330	809	0.8+ 0.2-
861130	381	0.1-	1.1+	880221	809	1.1+	1.0-	890401	809	0.6- 0.2-
861201	381	0.3-	1.5+	880221	809	0.4+	1.3-	890401	809	0.5- 0.2-
861201	381	1.2-	2.0+	880221	809	0.6-	0.1-	890401	809	0.1+ 0.2+
880211	809	0.7+	0.1+	880223	809	0.1-	1.0+	890402	809	0.1- 0.0
880215	809	0.4+	1.2-	880223	809	0.6-	1.0+	890402	809	0.5+ 0.1+
880216	809	0.1+	0.1-	880223	809	1.1-	0.6+	890403	809	0.6- 1.5+
880216	809	0.3+	0.0	890330	809	0.2+	0.2+	890403	809	1.9- 2.4+
880216	809	1.0-	0.2-	890330	809	0.9+	0.1+			
880217	809	0.7+	0.0	890330	809	2.2+	0.2+			

(4345)* 1988 CM2 = 1979 HD3 = 1981 UR19 = 1986 TJ5

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

Id. S. Nakano (MPC 13160), T. Kobayashi (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	198.08658	(1950.0)	P	Q
n	0.19916138	Peri. 348.46423	-0.56785664	-0.82240071
a	2.9040179	Node 136.12465	+0.75908213	-0.53945850
e	0.0360677	Incl. 2.85997	+0.31832869	-0.18066983
P	4.95	H 12.4	G 0.25	

Residuals in seconds of arc

790425	095	0.5+	0.2+	880215	809	1.1+	2.0+	880221	809	0.4- 1.2-
790430	095	1.1-	0.2+	880215	809	(0.7+	3.0+)	880223	809	1.9+ 1.4-
811026	095	0.7+	2.4+	880215	809	1.0+	0.8-	880223	809	0.1+ 1.2-
861001	010	(6.9-	5.2-)	880216	809	0.4-	0.7+	880223	809	0.7- 1.1-
861001	010	(8.1+	3.5-)	880216	809	0.6-	1.6+	890330	809	(5.1+ 0.4+)
861003	095	0.4-	3.2-	880216	809	(1.1-	2.7+)	890330	809	(5.5+ 0.9-)
880119	071	1.9-	0.4-	880216	809	1.0+	1.1-	890330	809	(4.7+ 2.3-)
880119	071	0.5-	0.1-	880216	809	0.1+	1.5-	890330	809	0.7- 0.1-
880119	071	1.3-	0.5-	880216	809	0.4-	0.7-	890330	809	0.4+ 0.4-
880211	809	0.0	1.4-	880217	809	0.6+	0.1+	890401	809	1.1- 0.4-
880213	809	0.2+	0.9+	880217	809	0.7+	0.9+	890401	809	0.1- 0.1+
880213	809	0.8-	1.7+	880217	809	0.7+	1.2+	890401	809	0.2+ 0.7-
880213	809	1.1-	1.9+	880217	809	1.0+	0.7-	890402	809	0.1+ 0.1+
880214	809	1.1-	0.9+	880217	809	0.3+	0.5-	890402	809	1.5+ 0.1-
880214	809	0.2-	0.9+	880217	809	0.8-	0.3-	890403	809	0.5+ 0.5-
880214	809	0.1+	1.1+	880221	809	1.1+	1.3-	890403	809	0.3- 0.8+
880215	809	0.6+	1.6+	880221	809	0.2+	1.5-			

(4346)* 1988 DS4 = 1975 VW7 = 1985 TG

Discovered 1988 Feb. 23 by A. J. Noymer at Siding Spring.

Id. B. G. Marsden (MPC 13458)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	51.56789	(1950.0)	P	Q
n	0.18817284	Peri. 69.30790	+0.39338030	+0.91088781
a	3.0160006	Node 224.50987	-0.89572977	+0.34917472
e	0.0923271	Incl. 10.24142	-0.20717169	+0.21991003
P	5.24	H 12.3	G 0.25	

Residuals in seconds of arc

751106	095	0.2-	0.9-	880223	413	0.0	0.6+	880420	413	1.0-	1.3-
830506	413	(2.6+	5.3+)	880225	413	0.0	0.2+	880420	413	0.1-	1.1-
830506	413	0.3+	1.0-	880225	413	0.8+	0.3+	890626	413	1.4-	0.4-
851015	688	0.6+	0.5+	880310	413	0.3-	0.0	890802	413	1.4+	0.7-
851015	688	0.0	1.9-	880310	413	0.0	0.1+				

(4347)* 1988 PK2 = 1978 TP9 = 1983 VH = 1984 YL = 1986 EG1

Discovered 1988 Aug. 13 by F. Borngen at Tautenburg.

Id. T. Kobayashi (MPC 14199)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Schmadel

M	284.94825	(1950.0)	P	Q
n	0.18437180	Peri. 118.62589	-0.89874418	+0.43836417
a	3.0573116	Node 87.37513	-0.40561535	-0.82271154
e	0.0629537	Incl. 0.56125	-0.16653854	-0.36191514
P	5.35	H 12.0	G 0.25	

Residuals in seconds of arc

781005	095	0.2+	0.4+	880908	033	0.5-	0.6+	891026	033	0.2-	0.8+
831105	801	0.0	0.5+	880908	033	1.6-	1.0+	891026	033	0.2-	0.2+
841223	046	0.2-	2.4+	880914	511	2.2+	3.6-	891028	033	0.1-	0.2+
841223	046	0.6-	2.3-	880914	511	3.6+	1.7-	891119	399	1.8+	0.1-
860305	688	0.2-	0.8-	880915	511	1.1+	1.4-	891119	399	1.2+	1.8-
860305	688	0.1-	0.3-	880915	511	0.7-	0.9-	891121	399	1.8-	1.4+
880813	033	1.0-	0.1-	880915	511	0.9+	2.3+	891121	399	2.1-	1.0-
880814	033	1.7-	0.1-	890908	033	0.8+	1.2+	891201	399	2.6+	0.4-
880814	033	1.8-	0.1-	890909	033	0.2-	1.1+	891201	399	0.8-	1.3-
880907	033	0.4-	1.6+	890909	033	0.2+	1.0+	891201	399	0.2-	0.6-

(4348)* 1988 RU = 1988 PK4 = 1977 SP1 = 1977 TV4 = 1983 GJ

Discovered 1988 Sept. 11 by C. S. Shoemaker at Palomar.

Id. C. M. Bardwell (MPC 15417)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	42.04605	(1950.0)	P	Q
n	0.08213590	Peri. 158.38507	+0.94943464	-0.30135622
a	5.2414008	Node 219.49670	+0.26391802	+0.91800177
e	0.0994050	Incl. 7.96019	+0.17006218	+0.25779290
P	12.00	H 9.1	G 0.25	

Residuals in seconds of arc

770919	095	0.3-	0.2-	880810	688	1.8+	0.7+	881106	675	1.1-	0.2+
770922	095	1.7+	0.1-	880810	688	2.3+	1.0+	881108	675	1.7-	0.3-
771007	095	1.3-	0.5-	880911	675	0.3+	1.1-	891008	877	0.8+	0.9-
830404	675	2.6-	1.7+	880916	675	0.1+	1.0-	891008	877	1.8-	2.8+
830404	675	2.9+	0.4-	880917	095	0.5-	1.9+	891127	801	0.7+	0.1-
830407	675	1.7-	1.7+	881008	675	1.4-	0.6+	891127	801	0.4-	0.6+
830407	675	2.5+	0.5+	881010	675	0.4-	0.1-				

(4349)* 1989 LX = 1931 AE = 1951 YV1 = 1959 SS = 1968 WD = 1982 BJ4
= 1984 MJ = 1986 AZ2

Discovered 1989 June 5 by W. Landgraf at the European Southern Observatory.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 112.26710 (1950.0) P Q
n 0.23234858 Peri. 279.98435 +0.96681758 -0.17448024
a 2.6204510 Node 90.24132 +0.23592344 +0.89000358
e 0.2398419 Incl. 10.75466 -0.09799949 +0.42124846
P 4.24 H 11.5 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

310111	690	(0.03-	0.00+)X	840624	071	(12.1-	3.2-)	890610	809	2.4-	0.0
310112	690	(33.7-	3.8+)X	840624	071	0.7-	0.6-	890614	809	2.1+	0.4+
511227	711	0.6+	0.5- Y	840625	071	1.4+	2.7+	890614	809	0.9+	0.7+
590930	024	1.2+	0.7+	851215	675	(23.7+	1.1+)	890614	809	2.7-	0.3-
681130	095	5.4-	2.5+	851218	675	0.6-	0.1-	890614	809	0.2-	0.3+
820126	381	1.5+	1.1-	860106	675	(17.1+	0.1-)	890615	809	0.3-	2.1-
820126	381	1.4+	0.9-	860107	675	(17.4+	1.1-)	890615	809	1.4+	0.4-
820128	381	(6.0+	2.4-)	860108	675	(22.1+	0.4+)	890615	809	0.2+	1.1-
820128	381	2.0+	1.3-	890605	809	2.2+	0.1-	890615	809	0.3+	0.9-
840624	071	(8.5-	1.6-)	890605	809	0.5-	0.0				
840624	071	2.2-	1.9-	890610	809	2.2+	0.9+				

(4350)* 1989 UG1 = 1951 YC1 = 1972 TS4 = 1972 VO = 1978 EX6 = 1980 TR1 = 1987 KJ

Discovered 1989 Oct. 26 by S. Ueda and H. Kaneda at Kushiro.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 7.17359 (1950.0) P Q
n 0.23128625 Peri. 107.39096 -0.74873621 -0.65071850
a 2.6284689 Node 32.35350 +0.48230766 -0.66553904
e 0.1926889 Incl. 13.65472 +0.45472344 -0.36554510
P 4.26 H 12.4 G 0.25
Residuals in seconds of arc

511223	711	1.1-	6.4+ Y	891026	399	1.3-	0.6+	891125	399	0.9+	0.5-
721005	095	0.5-	0.6-	891026	399	0.1+	0.2+	891125	399	1.4+	0.3+
721108	095	0.7-	1.3-	891029	399	0.4+	1.3+	891125	399	0.2+	0.9-
780306	095	1.7-	2.1-	891029	399	1.1+	0.0	891201	399	1.8+	0.9-
801005	809	0.1-	1.1+	891029	399	0.3+	1.6+	891201	399	1.1+	0.9-
801005	809	1.1-	1.1+	891120	399	1.2-	0.8-	891201	399	1.2+	0.8-
870522	675	(16.9+	1.1-)	891120	399	0.9-	0.6-	891201	399	1.1+	1.2-
870523	675	(20.2+	0.5+)	891120	399	0.6-	2.7-				

(4351)* 1989 UR1 = 1955 UR = 1974 RU = 1977 FG1 = 1977 GV = 1981 AY1 = 1987 HT1

Discovered 1989 Oct. 28 by Y. Mizuno and T. Furuta at Kani.

Id. B. G. Marsden; 1955 SL2 = 1955 UR (NAZ 12, 23) invalid

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Marsden
M 76.03256 (1950.0) P Q
n 0.20426083 Peri. 245.11815 +0.71780262 -0.69608168
a 2.8554813 Node 158.98456 +0.65304746 +0.66555827
e 0.0695630 Incl. 2.42212 +0.24142993 +0.26926287
P 4.83 H 12.7 G 0.25
Residuals in seconds of arc

551020	760	0.6-	0.4+	870428	046	0.8+	2.2+	891104	877	(4.3-	0.7+)
551020	760	0.3+	1.0+	870428	046	0.6+	0.1+	891104	877	(4.6-	1.2+)
740911	095	0.1+	0.6-	870429	046	1.5+	0.2+	891110	403	(1.2-	4.3-)Y
770325	095	1.1+	1.0+	870429	046	0.9-	0.8+	891110	403	1.0-	0.3-
770410	381	0.6-	0.5-	891028	403	1.8+	2.9-	891122	494	0.2+	1.9+
770410	381	2.1-	1.2-	891028	403	0.8-	1.1-	891122	494	0.1+	0.9+
810108	381	0.9+	0.4+	891029	403	0.6+	0.1-	891123	494	0.5-	2.3+
810108	381	0.4-	0.7-	891029	403	1.2-	0.7+				

(4352)* 1989 UW1 = 1934 XD = 1948 XJ = 1952 UK = 1978 JF2 = 1986 CJ

Discovered 1989 Oct. 29 by A. Sugie at the Dynic Astronomical Observatory.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	71.24156	(1950.0)	P	Q
n	0.21487076	Peri. 348.63554	+0.54186398	-0.82127300
a	2.7606913	Node 68.32085	+0.78535919	+0.41909719
e	0.1975831	Incl. 11.08020	+0.29932319	+0.38712815
P	4.59	H 11.2	G 0.25	

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

341207	012	(0.03-	0.01-)X	860207	046	0.3-	1.8-	891110	402	0.2+	1.6-
481210	012	3.5-	4.0+	860207	046	1.5+	2.3-	891110	402	0.7-	1.3-
521022	760	1.5+	1.6+	860214	046	3.3+	0.1+	891121	402	2.0+	0.5+
521022	760	1.5+	1.3+	860214	046	(6.4+	1.0-)	891121	402	0.7+	0.0
521025	760	(23.4-	9.1+)	891029	402	1.4+	1.3-	891126	402	3.5-	0.0
780506	095	2.3-	2.3+	891030	402	(4.7-	1.8-)	891126	402	1.4-	0.1+

(4353)* 1989 WK1 = 1931 TF3 = 1934 LP = 1941 KE = 1956 SE = 1966 JA = 1978 VZ15 = 1981 NO1 = 1984 KE1 = 1987 AY

Discovered 1989 Nov. 25 by Y. Mizuno and T. Furuta at the Kani Observatory.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	243.18105	(1950.0)	P	Q
n	0.27418696	Peri. 196.43356	+0.08530834	+0.98449373
a	2.3465953	Node 78.65635	-0.89559435	+0.14318317
e	0.1077615	Incl. 8.99413	-0.43661568	-0.10134430
P	3.59	H 12.2	G 0.25	

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

311010	690	(96.9+	28.2-)X	840525	095	1.4-	0.8+	891202	888	1.5+	1.7+
311012	690	(84.4-	31.7-)X	870108	010	1.9+	1.2-	891203	403	2.1-	1.9-
340615	078	(0.03+	0.01+)X	870108	010	1.1+	0.9-	891203	403	0.6-	1.8-
410521	078	(99.5-	37.9-)X	870108	010	0.3+	1.5-	891205	403	0.8-	0.9-
560929	760	(35.1-	52.6+)X	891125	403	0.1-	1.9-	891205	403	2.1-	0.1-
660512	095	0.0	1.3+	891125	403	0.4+	1.0-	891205	391	0.6+	0.8+
781101	095	0.2+	0.5-	891126	403	1.8-	0.5-	891205	391	1.8-	2.1+
810703	688	1.9-	0.9+	891126	403	1.2-	0.5+	891206	391	2.3-	0.0
810703	688	1.3-	1.3+	891201	888	2.9+	2.2+	891206	391	1.2-	0.1-
810805	688	2.3+	1.2-	891201	888	1.7+	1.9+				
810805	688	2.1+	1.0-	891202	888	2.9+	1.0+				

(4354)* 2142 P-L = 1971 BL2 = 1979 YO6 = 1983 RF

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

Id. T. Kobayashi (MPC 12582)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	114.76214	(1950.0)	P	Q
n	0.21111388	Peri. 241.90717	+0.26441670	-0.96398001
a	2.7933468	Node 192.85822	+0.92392629	+0.26175029
e	0.2115875	Incl. 7.42185	+0.27648510	+0.04721569
P	4.67	H 13.4	G 0.25	

Residuals in seconds of arc

600924	675	0.6-	0.6-	601026	675	1.2-	1.0-	880917	511	2.5-	1.1-
600926	675	0.2-	0.5+	710127	805	0.4+	0.1+	880917	511	0.2+	0.9-
600928	675	1.2+	0.8+	791223	095	1.0-	0.3+	880917	511	2.1+	1.5-
600928	675	1.1+	0.1+	830904	801	1.0-	0.6+	880918	511	0.4-	0.5+
600929	675	1.0+	1.5-	880915	511	2.7-	0.7+	880918	511	3.6+	1.2+
601022	675	0.8-	0.7+	880915	511	1.4-	0.8+	880918	511	1.4+	0.3-
601025	675	0.1-	0.1+	880915	511	0.9+	1.2+				

(4355)* 3524 P-L = 1983 EE

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

Id. K. Hurukawa (MPC 9299)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	238.34191	(1950.0)	P	Q
n	0.23877547	Peri. 253.02606	-0.51848068	+0.85285319
a	2.5732160	Node 345.25416	-0.66261072	-0.44640356
e	0.0417476	Incl. 14.05174	-0.54048572	-0.27086029
P	4.13	H 12.9	G 0.25	

Residuals in seconds of arc

601017	675	0.4+	0.2-	830308	046	0.4-	2.1-	880611	474	0.5-	0.2+
601022	675	0.4+	0.2-	830308	046	(2.2+	3.1+)	880812	474	0.6+	0.6-
601022	675	1.3+	0.4-	830310	046	(6.9-	3.0-)	880812	474	0.0	0.4+
601022	675	0.1+	0.0	830310	046	(4.6-	2.7-)	891009	888	1.3-	0.2+
601024	675	1.6-	0.5-	830312	046	(4.9-	3.5-)	891009	888	0.2-	0.5-
601024	675	1.0-	0.5-	830312	046	(3.2-	1.6-)	891023	888	0.0	0.2+
601025	675	0.1-	0.7-	830313	046	1.1-	0.6-	891023	888	1.0-	0.2+
601025	675	0.3+	0.6+	830313	046	0.3+	2.1+	891029	888	0.0	0.2-
601026	675	0.2+	0.5+	870128	801	(3.9+	1.1+)	891029	888	0.2+	0.5+
601026	675	0.4+	0.4-	870224	801	0.1+	0.7+	891104	888	0.0	0.9-
811125	095	2.6+	2.3+	880611	474	0.6+	0.5+	891104	888	0.1+	0.5-

(4356)* 9522 P-L = 1974 RB1 = 1987 FB

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

Id. T. Kobayashi (MPC 11857), E. Bowell (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	225.32883	(1950.0)	P	Q
n	0.20985770	Peri. 263.00897	-0.08721205	+0.99617947
a	2.8044827	Node 2.00462	-0.85514174	-0.07252998
e	0.1922801	Incl. 7.44264	-0.51100554	-0.04864025
P	4.70	H 12.9	G 0.25	

Residuals in seconds of arc

601017	675	0.7-	0.8+	870327	688	0.9+	2.0-	880919	809	0.8+	0.8-
601022	675	1.6-	0.4+	870331	887	0.5+	0.1+	880920	809	1.6-	0.2+
601024	675	0.3+	0.4-	870331	887	2.4-	0.1+	880920	809	1.6-	0.1-
601026	675	0.1+	0.2-	870404	887	1.0+	0.1-	880920	809	1.7-	0.1-
740911	095	2.3+	0.5+	880915	095	1.0-	1.6+	881104	807	1.0+	0.1-
870326	887	1.9-	2.6+	880915	095	1.3+	0.5+	881106	807	1.6+	0.5+
870326	887	0.7+	1.7+	880919	809	1.0+	0.9-				
870327	688	1.9+	2.3-	880919	809	1.1+	0.8-				

(4357)* 2069 T-2 = 1968 UG2 = 1978 QP3 = 1983 RF5

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

Id. T. Kobayashi (MPC 15256)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	220.03687	(1950.0)	P	Q
n	0.18912162	Peri. 41.94307	-0.45705970	+0.88700816
a	3.0059051	Node 201.11897	-0.85678368	-0.45890142
e	0.0631600	Incl. 10.50204	-0.23878474	-0.05124462
P	5.21	H 11.6	G 0.25	

Residuals in seconds of arc

681023	095	1.6-	5.4+	731005	675	0.5-	1.4-	891023	403	1.2+	1.3+
730925	675	0.6-	0.4-	731005	675	0.4-	0.9-	891026	403	0.2+	1.1-
730925	675	0.7-	0.5-	780827	808	0.8-	0.7+	891026	403	0.1-	0.3-
730929	675	1.1+	0.3+	780827	808	2.5-	1.7+	891102	403	2.0+	0.5+
730929	675	1.7+	0.1-	830901	095	2.6+	0.6+	891102	403	0.1-	1.4+
730930	675	0.1+	1.9-	830911	095	2.0-	1.3+	891102	046	1.4-	2.2-
730930	675	1.2+	2.4-	891020	403	0.2-	1.8+	891102	046	0.6-	3.3-
731004	675	1.1+	1.3-	891020	403	0.2-	2.4+				
731004	675	1.3+	1.2-	891023	403	0.9-	0.3+				

1973 RF = 1973 UQ = 1988 GX2
Id. B. G. Marsden (d, MPC 9064), C. M. Bardwell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Bardwell	
M 42.93004		(1950.0)		P	Q
n 0.23732499	Peri.	0.16273		+0.99519170	-0.09444680
a 2.5836951	Node	5.46417		+0.08954879	+0.77003814
e 0.1391027	Incl.	15.81256		+0.03967979	+0.63096835
P 4.15	H	13.5	G	0.25	

Residuals in seconds of arc

730906	095	1.8+	1.0-	730929	675	0.5+	0.1-	731026	095	(1.9-	10.5+)
730919	675	0.6-	0.3+	730929	675	0.0	0.8+	731029	095	0.1-	2.1+
730919	675	0.6-	1.3-	730930	675	0.1+	0.2+	880410	808	1.3-	1.5-
730920	675	(3.3-	0.1-)	730930	675	0.4+	0.2+	880410	808	1.4-	2.8-
730924	675	2.5-	1.3+	731004	675	0.9+	1.4-	880412	808	1.3-	0.8-
730924	675	1.9-	1.3+	731004	675	1.4+	1.7-	880412	808	0.7-	0.5-
730925	675	0.3-	0.7-	731005	675	2.9+	1.8-				
730925	675	0.5+	0.9-	731005	675	1.6+	1.5-				

1973 SK1 = 1989 ST5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Bardwell	
M 131.43245		(1950.0)		P	Q
n 0.12460697	Peri.	113.01238		+0.13084005	+0.99044209
a 3.9698616	Node	164.31709		-0.95840780	+0.13762729
e 0.1276159	Incl.	9.29283		-0.25364420	-0.00912131
P 7.91	H	11.5	G	0.25	

Residuals in seconds of arc

730919	675	0.3-	0.7+	730929	675	0.1-	1.2-	731005	675	0.4-	0.5+
730919	675	0.3+	1.2-	730929	675	0.4+	1.3+	890930	675	0.1+	0.1+
730920	675	0.3-	0.9+	730930	675	0.4-	0.1-	890930	675	0.3+	0.5-
730924	675	0.2+	0.9-	730930	675	1.2+	0.7+	891101	675	0.2-	0.4-
730924	675	0.7-	1.5+	731004	675	1.5+	0.3-	891102	675	1.0+	1.2+
730925	675	0.6-	1.2-	731004	675	1.0-	0.6-	891105	675	1.2-	0.4-
730925	675	0.2-	0.8+	731005	675	0.4+	1.0-				

1973 UB5 = 1962 WG2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 13.36774		(1950.0)		P	Q
n 0.17164810	Peri.	41.64194		+0.98786844	+0.15526719
a 3.2065897	Node	309.42554		-0.14342472	+0.90521556
e 0.1622359	Incl.	0.21036		-0.05954238	+0.39557159
P 5.74	H	11.1	G	0.25	

Residuals in seconds of arc

621130	760	0.3-	0.6+	621203	760	1.3+	1.2-	731028	033	0.2+	0.2+
621130	760	0.2+	1.1+	731027	033	0.3+	0.1-	731031	033	0.1-	0.3+
621203	760	1.2-	0.5-	731027	033	0.8-	0.8-	731101	033	0.6-	0.1+

1975 TX2 = 1979 WY7 = 1987 UU8
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	242.39598	(1950.0)	P	Q
n	0.25154176	Peri. 40.20010	-0.04450848	-0.99327303
a	2.4853982	Node 52.61833	+0.87850894	-0.08986301
e	0.1001303	Incl. 7.73156	+0.47564801	+0.07302960
P	3.92	H 13.2	G 0.25	

Residuals in seconds of arc

751003 095	1.1+	0.3-	751105 095	0.1+	1.3+	791122 095	0.2+	0.5-
751013 095	0.7-	0.0	751106 095	0.6-	0.6-	871023 095	0.0	0.1+

1975 XF = 1989 TL2
Id. S. J. Bus
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	126.41590	(1950.0)	P	Q
n	0.27927555	Peri. 199.97148	+0.99746003	+0.05579965
a	2.3180036	Node 156.69574	-0.03993542	+0.95275812
e	0.1998475	Incl. 6.42507	-0.05898010	+0.29856049
P	3.53	H 15.0	G 0.25	

Residuals in seconds of arc

751201 805	0.9-	0.1+	751205 805	0.2+	0.2-	891006 807	0.5-	0.2-
751204 805	0.7+	0.1+	891003 807	0.5+	0.2+			

1976 UP2 = 1976 WX = 1986 VK6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	89.47037	(1950.0)	P	Q
n	0.29622945	Peri. 349.11181	+0.96561629	-0.25713877
a	2.2286946	Node 25.88643	+0.24461167	+0.84881107
e	0.2019618	Incl. 5.02922	+0.08803580	+0.46195175
P	3.33	H 15.4	G 0.25	

Residuals in seconds of arc

761024 381	0.7+	1.6-	761118 381	(0.2+	17.6+)	861106 688	1.9+	0.1+
761024 381	0.3-	1.8-	861004 095	0.8-	3.8+	861106 688	0.2-	0.7+
761026 095	1.0+	2.7-	861007 095	2.4+	1.2-	861107 046	(8.4-	0.8-)
761118 381	0.1+	3.3+	861012 095	3.4-	1.9+	861107 046	1.1-	1.4-

1977 DS4 = 1989 UX6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	165.59418	(1950.0)	P	Q
n	0.20190919	Peri. 247.39210	+0.31005080	+0.94977903
a	2.8776104	Node 40.74651	-0.84670075	+0.29608454
e	0.1067953	Incl. 3.71470	-0.43239606	+0.10126075
P	4.88	H 13.2	G 0.25	

Residuals in seconds of arc

770218 381	0.7+	0.8+	770312 381	0.1+	0.5+	891030 372	0.6-	0.1-
770218 381	0.9+	1.1-	770312 381	0.2-	0.4-	891030 372	1.6+	1.9+
770219 381	0.5-	0.6+	891026 372	1.0-	1.8-			
770219 381	1.1-	0.4-	891026 372	(2.6+	5.7-)			

1977 RJ3 = 1977 TE3 = 1943 SF = 1983 AL6 = 1983 CJ1
Id. B. G. Marsden (d, MPC 9153), T. Kobayashi, C. M. Bardwell, H. Oishi, W. Landgraf, L. D. Schmadel
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	359.92035	(1950.0)	P	Q
n	0.23149596	Peri. 60.55305	+0.72070483	-0.69074237
a	2.6268813	Node 342.90474	+0.54626396	+0.61809473
e	0.2892057	Incl. 11.54202	+0.42682576	+0.37527841
P	4.26	H 13.0	G 0.25	

Residuals in seconds of arc

430923 020	0.5-	3.1-	770918 095	0.9-	1.3+	830211 688	0.1+	0.7-
430923 020	3.8+	1.6-	771009 095	1.6-	3.1+	830211 688	0.4+	1.2-
770912 095	1.2-	0.9+	830115 095	0.1-	2.6+			

1978 RN = 1969 RK1 = 1987 SP21 = 1987 UH1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 232.20341	(1950.0)	P	Q	
n 0.22180701	Peri. 227.68447	+0.74971085	-0.66162659	
a 2.7028330	Node 173.69634	+0.63765585	+0.71676464	
e 0.1650625	Incl. 7.09445	+0.17699903	+0.22022420	
P 4.44	H 13.7	G 0.25		

Residuals in seconds of arc

690913 095 (6.7-	4.5-)		780912 095	0.9-	0.3+	870918 095	0.8-	1.5-
780901 095	0.5+	1.5+	780928 095	1.7+	0.8-	871028 675	1.7+	1.1+
780905 095	0.6-	0.5-	781004 095	0.6-	2.2+	871028 675	0.9-	0.1-
780907 095	0.3+	0.9-	781009 095	1.2-	1.5-			

1978 RD10 = 1981 EC36

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 108.12301	(1950.0)	P	Q	
n 0.19599012	Peri. 223.60951	+0.85178269	-0.52384052	
a 2.9352602	Node 167.97400	+0.49006482	+0.79158558	
e 0.1109321	Incl. 2.08292	+0.18520993	+0.31461624	
P 5.03	H 13.3	G 0.25		

Residuals in seconds of arc

780902 809	0.0	0.3-	810213 413	0.3+	0.9-	810311 413	1.1+	0.2-
780902 809	0.3+	0.0	810303 413	0.9-	0.7-	810315 413	2.2+	0.8-
780902 809	0.1+	0.5-	810306 413	1.0-	1.3+	810316 413	0.8-	1.4-
780902 809	0.9-	0.5-	810307 413	0.4-	0.0	810316 413	0.9-	1.0-
780906 809	0.6-	0.4-	810307 413	0.2+	0.1+	810405 413	2.4-	1.1+
780910 809	0.7+	1.0+	810311 413	2.7-	1.3+	810405 413	2.1+	1.2-
780910 809	0.7+	0.1-	810311 413	1.5+	0.3-	810426 413	1.7+	0.0
810209 413	1.5+	0.4-	810311 413	1.0-	0.5+	810502 413	0.5-	2.0+

1978 SB3 = 1974 QH2 = 1982 VC13 = 1986 VS5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell

M 36.65011	(1950.0)	P	Q	
n 0.25382593	Peri. 38.56904	+0.98975698	-0.13780184	
a 2.4704700	Node 329.28992	+0.10601076	+0.88444726	
e 0.2107570	Incl. 4.18923	+0.09561825	+0.44582923	
P 3.88	H 13.5	G 0.25		

Residuals in seconds of arc

740826 095	0.3+	2.4-	781008 095	1.2+	1.7+	821109 808	0.7+	0.8+
780926 095	1.6-	0.5+	821106 808	0.9-	0.1-	861105 688	1.1+	0.4-
781002 095	0.5+	0.6+	821106 808	0.2+	0.5+	861105 688	1.0+	1.3-
781005 095	0.9+	0.9+	821109 808	3.5-	2.0-			

1978 SN7 = 1989 WS1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M 60.63237	(1950.0)	P	Q	
n 0.18736380	Peri. 210.31978	+0.34172971	-0.93332285	
a 3.0246825	Node 219.99026	+0.89296645	+0.35899531	
e 0.0924990	Incl. 9.86755	+0.29297052	-0.00555218	
P 5.26	H 12.0	G 0.25		

Residuals in seconds of arc

780926	095	2.3- 0.5+	891125	399	0.4- 2.3+	891201	399	0.9- 2.0-
781002	095	0.2- 1.4-	891125	399	2.1- 0.6+	891201	399	2.3+ 0.3-
781008	095	0.9- 1.5-	891125	399	1.3+ 1.6+			
781101	095	3.5+ 2.6+	891201	399	0.2- 2.3-			

1978 SS7 = 1989 XK

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 79.39055		(1950.0)		P	Q
n 0.27244078	Peri.	85.23426		+0.23389185	-0.97218032
a 2.3566161	Node	351.20863		+0.85595432	+0.21206587
e 0.2023411	Incl.	4.74790		+0.46112558	+0.09946607
P 3.62	H	14.0	G	0.25	

Residuals in seconds of arc

780926	095	1.5- 0.7-	891201	888	0.6+ 0.5-	891204	888	0.1- 0.1-
781002	095	1.1+ 1.5+	891201	888	0.2+ 0.0	891204	888	0.6+ 0.1-
781008	095	0.0 0.4-	891202	888	0.6- 0.6+			
781101	095	0.5+ 0.7-	891202	888	0.8- 0.3+			

1978 VV6

Id. S. J. Bus (1977 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
M 278.42427		(1950.0)		P	Q
n 0.29279900	Peri.	274.93530		+0.78738523	+0.61540755
a 2.2460685	Node	47.08870		-0.54427426	+0.72143787
e 0.2058778	Incl.	2.81962		-0.28946509	+0.31749165
P 3.37	H	16.0	G	0.25	

Residuals in seconds of arc

770424	675	1.0- 1.1+	781106	675	0.3- 0.1+	810925	095	1.3+ 1.2-
770424	675	0.2+ 0.6+	781107	675	0.2- 0.3+	811103	801	1.6- 1.0+
770425	675	1.1+ 0.5-	781108	675	0.2- 0.2+	811125	801	0.4- 1.4+
770425	675	0.1- 0.9-	781129	675	0.2- 0.4-			
781105	675	0.8+ 0.3-	781130	675	0.3+ 0.6-			

1978 VG10 = 1977 RO1 = 1989 UU4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 103.33284		(1950.0)		P	Q
n 0.17257283	Peri.	199.72226		+0.94942614	+0.31387915
a 3.1951244	Node	141.98136		-0.28621332	+0.87607728
e 0.1605210	Incl.	0.77772		-0.12911988	+0.36601706
P 5.71	H	12.2	G	0.25	

Residuals in seconds of arc

770908	095	0.2+ 0.8-	781129	675	0.6+ 0.4-	891026	046	0.4+ 2.7+
781105	675	0.7- 0.4-	781130	675	1.0- 0.5-	891027	046	0.6- 0.9+
781106	675	1.8+ 0.0	891025	046	0.7- 1.2-	891027	046	0.5+ 0.1+
781107	675	1.1- 0.8+	891025	046	1.0+ 0.8-			
781108	675	0.4+ 0.9-	891026	046	(5.1+ 0.8+)			

1979 MH6 = 1988 FA1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kaneda	
M 236.65575		(1950.0)		P	Q
n 0.19001546	Peri.	6.31979		-0.58765941	-0.79108840
a 2.9964711	Node	119.80218		+0.73347198	-0.60946108
e 0.0457063	Incl.	11.28510		+0.34157762	-0.05231000
P 5.19	H	14.8	G	0.25	

Residuals in seconds of arc

790624	413	0.3- 1.2-	790724	675	0.1- 0.2-	880318	033	0.5- 0.3+
790625	413	1.3- 0.7-	790725	675	0.4- 0.1+	880318	033	0.4+ 0.6-
790629	413	2.1+ 2.1+	880317	033	0.2- 0.8+	880319	033	0.3+ 0.5-

1979 SD9 = 1951 WD2 = 1987 CE
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 326.06366		(1950.0)	P	Q
n 0.17190763	Peri.	348.58036	+0.85005740	-0.52575379
a 3.2033614	Node	43.18621	+0.48674648	+0.76142607
e 0.2517735	Incl.	2.62897	+0.20119715	+0.37922723
P 5.73	H 12.9	G 0.25		

Residuals in seconds of arc

511129 711	0.4-	1.4+	Y 791016 095	1.9+	0.7-	870202 033	0.9-	0.7-
790922 095	0.5-	0.3+	791116 095	0.1-	0.9-			
790928 095	0.9-	0.3+	870202 033	0.3+	0.8-			

1980 FV1 = 1977 RP8
Id. E. Bowell (MPC 10952)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 129.83581		(1950.0)	P	Q
n 0.18726969	Peri.	49.10002	+0.75629402	-0.65379062
a 3.0256897	Node	351.62911	+0.53957609	+0.64409716
e 0.1157233	Incl.	9.49878	+0.36996892	+0.39711041
P 5.26	H 11.8	G 0.25		

Residuals in seconds of arc

770908 675	0.2-	0.3+	800316 809	0.1+	0.4+	800317 809	0.1-	0.1-
770909 675	0.0	0.0	800316 809	0.0	0.1-	800323 809	0.2+	0.2+
800221 095	0.1+	0.1-	800317 809	0.2+	0.3-	880915 095	1.0-	2.0-
800316 809	0.2-	0.4+	800317 809	0.3-	0.3+	880915 095	0.9+	2.1+
800316 809	0.2+	0.2+	800317 809	0.2+	0.5-			

1980 FH5 = 1986 QE3
Id. C. M. Bardwell (MPC 12126)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 278.64766		(1950.0)	P	Q
n 0.23610713	Peri.	83.58569	+0.21075460	-0.97723893
a 2.5925669	Node	354.07971	+0.77806535	+0.18269566
e 0.1565156	Incl.	13.58030	+0.59177429	+0.10782563
P 4.17	H 12.8	G 0.25		

Residuals in seconds of arc

800316 809	0.6-	0.4+	860831 809	1.0-	0.2+	860907 809	1.2+	0.7-
800316 809	0.2-	0.0	860831 809	0.9-	0.1+	860907 809	1.0+	0.6-
800316 809	0.4+	0.5-	860831 809	0.8-	0.2+	860907 809	1.0+	0.7-
800316 809	0.8-	0.7-	860901 809	2.0-	0.0	860909 809	0.7+	0.2+
800317 809	0.3-	0.1+	860901 809	1.8-	0.2-	860909 809	0.7+	0.1+
800317 809	0.6+	0.0	860901 809	1.7-	0.3-	860909 809	0.7+	0.0
800317 809	0.1+	0.5+	860902 809	0.3-	0.5-	860911 809	1.6+	0.7+
800317 809	0.1-	0.4-	860902 809	0.0	0.6-	860911 809	1.4+	0.6+
800323 809	0.4+	0.1+	860902 809	0.1+	0.7-	860911 809	1.4+	0.5+
860829 809	(3.3-	0.5+)	860904 809	0.2-	0.3+	880123 801	0.2-	0.2+
860829 809	(3.2-	0.4+)	860904 809	0.3-	0.3+	880217 801	0.1+	0.4-
860829 809	(2.9-	0.4+)	860904 809	0.1-	0.3+			

1980 TG4 = 1980 TH15 = 1975 LK1
Id. B. B. Marsden (d, MPC 9203), D. W. E. Green (MPC 14345)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 151.25360		(1950.0)	P	Q
n 0.23197116	Peri.	332.87702	+0.97003642	+0.23757516
a 2.6232925	Node	13.67011	-0.16487000	+0.79744874
e 0.1710127	Incl.	12.42921	-0.17845791	+0.55464723
P 4.25	H 13.2	G 0.25		

Residuals in seconds of arc

750601	413	0.2+	0.6-	801007	675	1.6-	0.4-	801015	095	2.7+	0.1-
750601	413	0.9+	0.2-	801008	675	0.5-	1.3+	840827	675	(4.6+	0.0)
750603	413	0.9-	0.3+	801009	675	0.3-	0.3-	840827	675	0.1+	0.2-
750603	413	0.1-	0.6+	801010	675	0.3-	0.4-				

1981 DB1 = 1972 TR7 = 1983 VG
Id. K. Hurukawa (JAM 1901), L. D. Schmadel, H. Kaneda

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kaneda
M 129.33058		(1950.0)	P	Q
n 0.17829275	Peri.	126.45578	+0.90511030	+0.40711496
a 3.1264171	Node	210.08674	-0.42408148	+0.88511377
e 0.2487620	Incl.	14.15674	+0.03049985	+0.22545739
P 5.53	H	12.5	G 0.25	

Residuals in seconds of arc

721006	095	0.1-	1.4+	810306	413	1.3+	0.5-	810408	413	2.4+	1.1+
810209	413	(3.8-	0.6-)	810308	413	0.4-	0.5-	810501	413	0.8+	1.3+
810212	413	1.3-	1.6-	810308	413	0.3+	1.3-	810503	413	1.0-	0.8+
810228	413	2.2-	0.7+	810312	413	0.5-	0.1+	831101	801	0.1+	0.6-
810306	413	0.4-	1.5+	810312	413	1.0+	0.9-				

1981 EP18
Id. S. J. Bus (1989 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell
M 231.40205		(1950.0)	P	Q
n 0.17770729	Peri.	34.58610	-0.76862255	+0.63955978
a 3.1332801	Node	185.23470	-0.61525158	-0.74486431
e 0.1320911	Incl.	8.51894	-0.17517097	-0.19010644
P 5.55	H	14.0	G 0.25	

Residuals in seconds of arc

810209	413	1.0-	0.8-	810311	413	0.7-	0.7+	810408	413	1.7+	1.1-
810213	413	1.3+	0.2-	810311	413	1.5+	1.1-	810430	413	1.2-	0.2+
810302	413	0.6-	0.6+	810316	413	1.9-	1.1+	810502	413	(0.7-	3.7+)
810302	413	0.4-	0.7-	810316	413	1.0+	0.9-	810502	413	0.1-	0.1+
810303	413	0.0	0.8+	810329	413	1.5-	0.9+	891030	807	0.8+	1.1+
810303	413	0.8+	0.4-	810329	413	0.1-	0.2-	891101	807	0.9-	0.8-
810307	413	0.2-	0.5+	810407	413	0.1+	0.8+				
810307	413	1.1+	0.7-	810408	413	0.0	0.4+				

1981 ET23
Id. S. J. Bus (1989 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell
M 126.29720		(1950.0)	P	Q
n 0.29399834	Peri.	356.49772	+0.99914602	-0.03982702
a 2.2399559	Node	5.81908	+0.04005390	+0.86821113
e 0.1979125	Incl.	6.22981	+0.01014522	+0.49459402
P 3.35	H	15.3	G 0.25	

Residuals in seconds of arc

810209	413	0.6+	0.7-	810311	413	(6.0-	1.9+)	810411	413	1.9-	1.3+
810213	413	2.2-	0.2-	810316	413	2.2+	0.8-	810430	413	0.2-	0.8-
810303	413	2.6+	0.6-	810408	413	1.1-	1.1+	810503	413	0.1-	0.2+
810307	413	1.2+	0.0	810408	413	1.5+	0.9-	891004	807	0.2-	0.2-
810311	413	1.2-	0.6+	810411	413	1.7-	0.8+	891005	807	0.1+	0.3+

1981 EY30 = 1972 TH8 = 1982 SX6 = 1989 WD2
Id. S. Nakano, T. Kobayashi
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	176.05926	(1950.0)	P	Q
n	0.29356692	Peri. 171.05905	+0.85693489	+0.51474030
a	2.2421543	Node 157.89891	-0.47712656	+0.81169446
e	0.2059230	Incl. 4.04685	-0.19496883	+0.27603354
P	3.36	H 14.0	G 0.25	

Residuals in seconds of arc

721006	095	1.4+	4.5-	810306	413	1.4-	0.1+	820916	095	0.1-	0.4+
810209	413	0.2+	0.2-	810306	413	0.8+	0.2-	891130	875	0.5+	1.4-
810212	413	0.3-	0.1+	810311	413	1.3-	0.4-	891130	875	1.9-	0.3-
810213	413	0.6+	2.0-	810311	413	0.4+	1.3-	891201	875	0.4+	2.3+
810302	413	2.1-	1.0+	810426	413	(5.9+	2.2-)	891201	875	0.6+	2.1+
810302	413	0.7+	1.1-	810502	413	1.4+	0.3+				

1981 EB31
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	309.19452	(1950.0)	P	Q
n	0.18696964	Peri. 1.82955	-0.97451684	-0.22249758
a	3.0289259	Node 165.22091	+0.20434950	-0.93297375
e	0.1035117	Incl. 6.41277	+0.09251063	-0.28293958
P	5.27	H 14.6	G 0.25	

Residuals in seconds of arc

810209	413	0.6+	0.5+	810306	413	0.9-	0.3+	810315	413	0.6+	0.1-
810212	413	0.1+	0.4+	810306	413	1.2+	0.5-	810426	413	1.6+	1.2-
810213	413	0.4-	0.0	810311	413	0.4-	0.1-	810501	413	0.4-	0.4+
810302	413	0.8-	0.4+	810311	413	0.8-	0.3+	891029	807	0.4-	0.2+
810302	413	0.5+	1.4-	810315	413	0.7-	0.9+	891101	807	0.5+	0.4-

1981 EW31 = 1989 SW1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	67.46090	(1950.0)	P	Q
n	0.17905241	Peri. 211.82761	+0.93340519	-0.35730822
a	3.1175742	Node 168.95861	+0.35460028	+0.90447338
e	0.1081215	Incl. 9.90630	+0.05489443	+0.23293505
P	5.50	H 14.0	G 0.25	

Residuals in seconds of arc

810212	413	1.2+	0.0	810501	413	0.3-	0.6+	891007	809	1.3+	0.3+
810213	413	0.2+	0.9+	890926	809	0.4-	0.8-	891007	809	2.1+	0.7-
810302	413	1.7-	0.2+	890926	809	0.6-	0.6-	891007	809	1.3+	0.5-
810306	413	0.2-	2.4-	890926	809	0.2-	0.6-	891008	809	1.1+	1.1+
810306	413	1.1+	0.2+	890928	809	1.0-	0.0	891008	809	0.5-	1.0+
810311	413	0.8-	0.3+	890928	809	1.4-	0.1-	891008	809	0.9+	1.0+
810315	413	0.5+	0.3+	890928	809	2.6-	0.2-				

1981 EL34 = 1972 TM3
Id. S. J. Bus (1989 obs.), S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	99.45915	(1950.0)	P	Q
n	0.17442101	Peri. 97.41456	+0.91215837	+0.40948570
a	3.1725138	Node 238.41428	-0.38343047	+0.83801348
e	0.1614265	Incl. 1.14263	-0.14473487	+0.36063122
P	5.65	H 13.5	G 0.25	

Residuals in seconds of arc

721005	095	0.2+	0.5-	810311	413	0.9+	0.1-	810430	413	0.8+	0.1+
810209	413	2.6-	1.3+	810311	413	0.2+	0.6-	810502	413	0.7+	0.4+
810302	413	0.9+	1.3-	810329	413	0.1+	0.2+	891004	807	0.7-	0.1-
810302	413	2.7+	1.1-	810329	413	0.5+	0.2-	891005	807	0.3+	1.1+
810303	413	1.8-	0.5+	810411	413	1.7-	1.8+				
810303	413	1.9-	0.1-	810411	413	1.4+	0.2-				

1981 EP40
Id. S. J. Bus (1989 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
M 154.58089		(1950.0)		P	Q
n 0.28438803	Peri.	129.83812		+0.78798521	+0.61513496
a 2.2901390	Node	192.27576		-0.59583041	+0.75113412
e 0.2154178	Incl.	7.08790		-0.15513035	+0.23959656
P 3.47	H	15.2	G	0.25	

Residuals in seconds of arc

810212	413	1.7-	0.4-	810311	413	(7.8-	4.0+)	810502	413	1.1-	0.4-
810213	413	0.2-	0.0	810311	413	(3.9+	1.6-)	891101	807	0.3-	0.1-
810302	413	2.0+	2.5-	810315	413	1.7-	1.2+	891102	807	0.3+	0.1+
810306	413	2.4+	0.4+	810315	413	1.2-	1.8+				
810307	413	0.6+	0.1+	810426	413	0.8+	0.7-				

1981 EA42 = 1989 VY

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 117.91666		(1950.0)		P	Q
n 0.30039455	Peri.	218.46780		+0.85170366	-0.52378004
a 2.2080499	Node	173.06246		+0.50753695	+0.81693517
e 0.1075079	Incl.	7.60203		+0.13041130	+0.24139467
P 3.28	H	16.0	G	0.25	

Residuals in seconds of arc

810212	413	1.2-	0.6+	810311	413	1.8-	2.0+	891103	809	0.5-	0.9+
810212	413	0.0	1.3+	810311	413	1.6-	0.9-	891106	809	0.2-	1.2-
810213	413	0.1-	0.4+	810426	413	2.2+	3.5-	891106	809	0.1-	1.4-
810302	413	1.9+	0.9-	810501	413	0.8+	1.3+	891106	809	0.7-	1.2-
810306	413	1.2-	0.4-	891103	809	1.5+	1.9+				
810306	413	1.1+	0.1-	891103	809	0.1+	0.6+				

1981 EE43 = 1930 UG1 = 1974 SK3
Id. W. Landgraf, H. Kaneda

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kaneda	
M 70.06327		(1950.0)		P	Q
n 0.20176818	Peri.	67.81967		+0.27927494	-0.95999263
a 2.8789510	Node	6.07398		+0.79411190	+0.21891906
e 0.2339448	Incl.	11.16316		+0.53980719	+0.17460985
P 4.88	H	11.8	G	0.25	

Residuals in seconds of arc

301017	690	1.6-	0.9-	810306	413	2.3+	0.4+	810406	413	0.4-	0.8+
301019	690	2.2+	0.1+	810311	413	0.4-	1.1-	810406	413	1.7+	0.3+
740922	095	1.2-	2.0+	810311	413	0.1+	0.2+	810407	413	0.1-	0.9+
810302	413	1.0-	1.1-	810315	413	1.1+	0.3+	810407	413	1.4+	0.7+
810302	413	0.5+	0.6-	810405	413	0.8-	0.2+	810410	413	1.4-	0.2+
810306	413	2.2-	0.1-	810405	413	(4.4+	0.6-)				

1981 JX1 = 1986 WP = 1988 GS2
Id. B. G. Marsden (MPC 11618), S. Nakano

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Nakano
M 207.31721	(1950.0)	P	Q
n 0.27354109	Peri. 210.79680	-0.44375122	+0.89532431
a 2.3502875	Node 32.90435	-0.80706551	-0.38061561
e 0.0176475	Incl. 4.05990	-0.38952551	-0.23135719
P 3.60	H 14.0	G 0.25	

Residuals in seconds of arc

810411 675	1.0-	0.2-	821015 413	1.1+	0.2+	861126 046	1.9-	0.5-
810411 675	0.6-	0.3-	861031 675	(7.4-	0.8+)	861126 046	0.5+	2.2-
810505 675	1.9+	0.7-	861031 675	(5.9-	0.1+)	861128 046	(5.4+	1.9+)
810506 675	(1.6-	4.0-)	861105 675	(12.8-	0.4+)	861128 046	0.0	0.1-
810510 675	1.5-	1.2-	861105 675	(12.1-	0.7+)	880415 054	0.2-	0.2-
810511 675	0.5-	1.9-	861125 046	0.2+	0.5-			
821015 413	0.3-	2.1-	861125 046	2.3+	0.1+			

1981 JE3 = 1972 GB2
Id. H. Oishi (MPC 12122)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bowell
M 55.50994	(1950.0)	P	Q
n 0.22533822	Peri. 31.44110	-0.60207204	+0.79838994
a 2.6745218	Node 201.54468	-0.73756571	-0.56049559
e 0.1458685	Incl. 1.41959	-0.30578765	-0.22004138
P 4.37	H 14.3	G 0.25	

Residuals in seconds of arc

720409 805	0.0	0.1+	810411 675	0.4-	1.7-	890104 413	0.0	0.7+
720409 805	0.7+	1.4-	810505 675	0.1+	0.4+	890104 413	0.2+	0.8+
720410 805	0.2-	1.5+	810506 675	0.8-	0.6+	890110 413	0.5+	0.2-
720410 805	0.5-	0.1-	810506 675	0.3+	0.7-	890110 413	0.6-	1.1-
810411 675	0.3+	0.0	810511 675	0.5+	1.3+			

1981 UA = 1988 TH
Id. F. N. Bowman (MPC 14016)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bowell
M 198.41730	(1950.0)	P	Q
n 0.27747220	Peri. 21.02640	+0.79930573	-0.58608167
a 2.3280362	Node 16.98739	+0.46578037	+0.46468197
e 0.3295875	Incl. 27.02130	+0.37968277	+0.66376121
P 3.55	H 15.5	G 0.25	

Residuals in seconds of arc

811021 675	0.6-	2.4-	811102 801	0.0	0.4-	811105 675	0.7-	0.5+
811023 675	0.3+	1.3+	811104 675	1.0+	0.6-	881008 675	0.1+	0.3+
811025 675	0.0	2.0+	811105 675	0.0	0.4-	881010 675	0.0	0.3-

1981 WM4 = 1986 XC
Id. S. Nakano (MPC 11732)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bowell
M 338.83375	(1950.0)	P	Q
n 0.20638406	Peri. 119.26396	+0.96413588	-0.19713884
a 2.8358632	Node 252.58307	+0.12789572	+0.93176977
e 0.2133304	Incl. 10.73353	+0.23256115	+0.30486288
P 4.78	H 12.0	G 0.25	

Residuals in seconds of arc

811124	095	(1.6- 6.1+)	861205	552	0.5- 1.0-	870103	552	0.5+ 0.7-
811127	330	0.8- 0.0	861222	552	(5.0- 0.4-)	880128	413	0.8- 0.0
811201	330	0.5+ 2.1+	861222	552	(5.2- 1.0+)	880128	413	0.5+ 0.4+
861204	552	0.2- 0.2-	861228	552	0.1+ 0.1+	880223	413	1.1- 0.2+
861204	552	0.2+ 0.6-	861228	552	0.2+ 0.9+	880223	413	1.6+ 0.3+
861205	552	0.5- 0.4-	870103	552	(3.5- 0.5+)	880711	413	0.4+ 0.3+

1982 UF2 = 1989 UG6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano
M 129.33882		(1950.0)	P	Q
n 0.28465378	Peri.	156.13072	+0.93334527	-0.35272219
a 2.2887180	Node	224.70096	+0.31217748	+0.88929379
e 0.1343720	Incl.	5.44412	+0.17723380	+0.29110756
P 3.46	H	14.5	G 0.25	

Residuals in seconds of arc

821014	095	2.8- 3.4+	821021	046	0.4- 2.5-	821114	095	0.7- 0.7-
821016	046	0.5- 0.9-	821022	046	3.6+ 1.2-	891026	033	0.3- 0.1+
821017	046	0.8+ 0.7+	821022	046	3.5+ 0.6-	891026	033	0.2+ 0.1-
821020	095	1.9- 1.1+	821025	095	1.1- 3.0+	891028	033	0.1+ 0.1+
821021	046	0.0 3.4-	821109	095	0.5- 1.0+			

1982 XV = 1964 FJ = 1984 HK

Id. S. Nakano (MPC 12000)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell
M 349.92435		(1950.0)	P	Q
n 0.29994086	Peri.	88.89140	-0.80890365	+0.58691821
a 2.2102715	Node	127.04618	-0.55520459	-0.74313333
e 0.0580367	Incl.	2.48947	-0.19344959	-0.32137184
P 3.29	H	13.5	G 0.25	

Residuals in seconds of arc

640318	760	0.0 0.1+	880901	809	1.9- 1.1-	880909	809	0.5+ 0.0
640318	760	(3.4+ 5.8+)	880901	809	1.6- 0.8-	880909	809	0.7+ 0.1+
821213	381	0.5- 1.1+	880903	809	0.8- 0.4-	880912	809	0.1+ 0.8+
821213	381	0.4+ 0.2+	880903	809	0.5- 0.2-	880912	809	0.3+ 0.7+
821214	381	1.1+ 0.7-	880903	809	0.3- 0.1+	880912	809	0.0 0.7+
821214	381	1.2- 0.1-	880906	809	0.9+ 0.2-	880915	809	0.5+ 0.1+
840419	046	0.5+ 2.2-	880906	809	1.3+ 0.1-	880915	809	0.5+ 0.0
840419	046	0.1+ 0.0	880906	809	1.1+ 0.0	880915	809	0.5+ 0.2+
840425	046	0.8+ 1.0+	880907	809	0.2+ 0.2+	880916	809	0.0 0.9+
840425	046	1.1- 1.9+	880907	809	0.3+ 0.2+	880916	809	0.2- 0.8+
880810	801	0.6+ 0.6-	880907	809	0.5+ 0.2+	880916	809	0.1- 0.8+
880901	809	2.4- 1.6-	880909	809	0.1+ 0.1-			

1983 BH = 1989 XJ

Id. T. Furuta

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Ichikawa
M 64.64253		(1950.0)	P	Q
n 0.27539096	Peri.	203.27371	-0.47679336	-0.87090730
a 2.3397554	Node	275.38681	+0.82408365	-0.39572144
e 0.2044934	Incl.	6.87156	+0.30586636	-0.29141896
P 3.58	H	13.3	G 0.25	

Residuals in seconds of arc

830122	688	0.4+ 0.4+	830316	688	0.1+ 0.2+	891208	403	1.1- 0.8-	
830122	688	0.1- 0.3+	891203	403	1.2- 0.1-	891208	403	0.4+ 0.6+	
830215	688	0.1- 0.6-	891203	403	1.5- 0.3-	891218	403	0.3+ 1.3+	Y
830215	688	0.3- 0.8-	891205	403	0.9+ 1.3-	891218	403	1.4+ 0.4+	Y
830316	688	0.2- 0.5+	891205	403	0.5+ 0.1+				

1983 CO3 = 1972 AJ
Id. T. Kobayashi (MPC 11242)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 141.73516		(1950.0)	P	Q
n 0.18108370	Peri.	223.77403	-0.81046056	-0.53517866
a 3.0942102	Node	282.41361	+0.58178659	-0.68789325
e 0.1600235	Incl.	14.11674	+0.06839619	-0.49029244
P 5.44	H 13.0	G 0.25		

Residuals in seconds of arc

720114 029	0.2-	0.8-	830218 809	1.2-	0.7-	890312 808	(4.4-	0.9+)
720115 029	1.3-	0.4-	830218 809	1.0-	0.4-	890401 474	1.4+	0.2+
720116 029	1.5+	0.6-	830218 809	0.8-	0.5-	890401 474	1.3+	0.3-
720117 029	0.1-	1.8+	830220 809	0.2-	0.1+	890403 474	1.0-	0.8+
830212 809	1.1+	0.4+	830220 809	0.3-	0.0	890403 474	0.6-	0.0
830212 809	1.1+	0.4+	830220 809	0.1-	0.1-			
830212 809	1.4+	0.6+	890312 808	1.0-	0.7-			

1983 DC = 1976 JD1 = 1985 SX5 = 1989 XE
Id. S. Nakano, K. Ichikawa, T. Furuta
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Ichikawa

M 61.12268		(1950.0)	P	Q
n 0.26836184	Peri.	139.04468	-0.45551190	-0.89005720
a 2.3804354	Node	338.03587	+0.80402438	-0.40287212
e 0.1613944	Incl.	2.68544	+0.38216975	-0.21328909
P 3.67	H 13.6	G 0.25		

Residuals in seconds of arc

760502 095	0.6-	1.1-	830304 046	0.2+	2.2+	891203 403	1.7-	0.8-
830215 688	0.4+	0.2-	830308 046	0.3-	0.8-	891205 403	1.2+	0.4+
830215 688	1.5+	1.2+	830308 046	0.7+	0.6-	891205 403	0.4-	0.5+
830216 046	(6.7-	3.2-)	830309 046	3.9-	0.3-	891208 403	1.1-	1.1-
830216 046	(6.6-	0.8+)	830309 046	(1.9-	5.5+)	891208 403	2.7+	0.9-
830219 046	0.4-	0.6+	830316 095	3.9+	0.9+	891218 403	0.1+	1.3-
830219 046	2.7-	0.2+	850921 095	0.5-	1.4+	891218 403	1.2-	1.7+
830304 046	1.8+	1.6-	891203 403	0.3+	0.5-			

1984 DE = 1971 BL
Id. S. Nakano (MPC 11346)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 255.50032		(1950.0)	P	Q
n 0.22688653	Peri.	123.24736	+0.18602601	-0.97895546
a 2.6623403	Node	315.78450	+0.85664550	+0.20342063
e 0.0981872	Incl.	6.91070	+0.48119934	+0.01631716
P 4.34	H 12.4	G 0.25		

Residuals in seconds of arc

710122 095	0.6+	0.1-	840225 046	(3.7-	2.0+)	880110 046	1.5+	0.5-
710128 095	0.4-	0.4+	840225 046	(3.8-	0.5+)	880110 046	1.0+	0.0
840221 046	0.0	0.6+	840226 095	0.2+	0.9-	880112 046	0.3+	0.2-
840221 046	1.5+	0.7+	840305 095	(5.0+	0.1+)	880112 046	(3.9+	1.1+)
840222 046	0.0	0.0	880109 046	0.8-	0.3-			
840222 046	1.8-	0.6-	880109 046	2.0-	1.0+			

1984 EY = 1982 VK8 = 1989 TT5
Id. S. J. Bus (k), B. G. Marsden
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden

M 250.16618		(1950.0)	P	Q
n 0.27075937	Peri.	196.00867	-0.67849719	+0.73184204
a 2.3663624	Node	31.34897	-0.65982052	-0.56905951
e 0.0740564	Incl.	7.02526	-0.32292173	-0.37493801
P 3.64	H 13.5	G 0.25		

Residuals in seconds of arc

821109	095	0.1+	0.2-	840403	688	1.1+	0.0	840408	688	2.0-	0.5+
840226	095	0.3+	1.2+	840403	688	2.3-	0.1-	891002	807	0.2-	0.3+
840309	688	0.3+	0.8-	840403	095	3.1+	1.0+	891006	807	0.1+	0.1-
840309	688	0.1+	0.9-	840405	095	1.2-	2.2-				
840329	095	1.9+	0.7+	840408	688	1.5-	0.7+				

1984 HR1 = 1985 RM4
Id. B. G. Marsden (MPC 10763)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	158.66718		(1950.0)	P	Q
n	0.23536422	Peri.	234.65702	-0.06200223	+0.99686845
a	2.5980196	Node	31.89520	-0.88288042	-0.03184471
e	0.1491369	Incl.	5.33006	-0.46548671	-0.07238231
P	4.19	H	13.1	G 0.25	

Residuals in seconds of arc

840428	809	0.2+	0.6-	850911	809	0.7+	0.6+	850918	809	0.7+	0.6-
840428	809	0.8+	0.6-	850914	809	(0.1-	1.7+)	850919	809	(0.7-	1.5-)
840429	809	0.3-	0.2-	850914	809	(0.0	1.8+)	850919	809	(0.7-	1.6-)
840429	809	0.3-	0.2-	850914	809	(0.1+	1.7+)	850919	809	(0.6-	1.4-)
840502	809	0.6-	0.4+	850915	809	(1.8+	0.7+)	850920	809	0.2-	0.1-
840502	809	(1.1-	0.6+)	850915	809	(1.8+	0.6+)	850920	809	0.7-	0.1+
840502	095	(0.1-	1.2+)	850915	809	(1.9+	0.5+)	850921	809	0.2-	0.0
840505	809	0.1-	0.5+	850916	809	0.8-	0.0	850921	809	0.3-	0.1-
840505	809	0.1+	0.5+	850916	809	0.6-	0.2-	850921	809	0.2-	0.2-
840505	095	(1.3-	0.3+)	850916	809	0.3-	0.2-	880413	054	0.2+	0.3+
850911	809	0.5+	0.8+	850918	809	0.4+	0.4-	880414	054	0.2-	0.2-
850911	809	0.5+	0.6+	850918	809	0.6+	0.6-				

1984 SO5 = 1980 TL14 = 1989 WE2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	107.08509		(1950.0)	P	Q
n	0.22406637	Peri.	248.89361	+0.86203151	-0.50429577
a	2.6846331	Node	141.34145	+0.48998032	+0.80344532
e	0.1237820	Incl.	4.67072	+0.12969565	+0.31648285
P	4.40	H	13.1	G 0.25	

Residuals in seconds of arc

801013	095	0.5+	1.1-	840923	809	0.5+	0.2-	840928	809	0.3-	0.6-
840918	809	0.9-	0.7-	840923	809	0.4+	0.0	840928	809	0.2-	0.6-
840918	809	0.1-	0.7-	840923	809	0.2+	0.3+	840929	809	0.7-	1.0+
840918	809	0.2+	0.7-	840924	809	0.6+	0.1-	840929	809	0.7-	0.8+
840921	809	1.1-	0.5+	840924	809	0.6+	0.0	840929	809	0.4-	0.6+
840921	809	0.5-	0.4+	840924	809	0.6+	0.0	841001	809	0.2-	0.8-
840921	809	0.0	0.3+	840926	809	0.3+	0.8+	841001	809	0.0	0.1-
840922	809	0.0	0.4+	840926	809	0.6+	0.6+	891130	875	0.8-	1.4-
840922	809	0.1+	0.0	840926	809	0.7+	0.4+	891130	875	1.7+	0.7+
840922	809	0.2+	0.0	840927	809	0.9+	0.6+	891201	875	0.9+	1.5+
840922	809	1.1+	0.4-	840927	809	0.7+	0.6+	891201	875	1.4-	0.1+
840922	809	1.1+	0.0	840927	809	0.1+	0.7+				
840922	809	1.0+	0.2-	840928	809	0.1-	0.6-				

1985 PL = 1977 UQ2
Id. K. Hurukawa (MPC 10152), W. Landgraf (ibid.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	80.51217		(1950.0)	P	Q
n	0.23869066	Peri.	31.20849	+0.97964253	+0.14117697
a	2.5738255	Node	319.88249	-0.19677338	+0.81608855
e	0.2226001	Incl.	12.79687	+0.03975877	+0.56041819
P	4.13	H	13.5	G 0.25	

Residuals in seconds of arc

771018	033	0.3+	0.3-	850814	688	0.4+	0.7+	850913	801	1.7-	1.3-
771018	033	0.3-	0.4-	850820	688	1.8-	0.4+	850914	688	0.3+	0.8+
771018	033	0.0	0.3-	850820	688	0.1+	0.3-	850914	688	1.3+	0.9+
771019	033	0.0	0.2+	850822	688	0.3+	0.4+	870129	801	0.7+	0.4+
771019	033	0.0	0.2+	850822	688	2.1+	0.3-	870225	801	0.2-	0.6+
771020	033	0.1+	0.2+	850912	801	0.7-	1.9-				
850814	688	1.2-	0.2-	850912	801	0.3+	1.6+				

1985 RE4 = 1973 FK1
Id. S. Nakano (MPC 12200)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	8.82508	(1950.0)	P	Q	
n	0.18849003	Peri.	188.08680	+0.83153830	+0.54023000
a	3.0126161	Node	138.35477	-0.49810481	+0.82816218
e	0.0951270	Incl.	11.21227	-0.24583665	+0.14932831
P	5.23	H	11.6	G 0.25	

Residuals in seconds of arc

730327	095	1.2+	1.4+	850911	809	0.4+	1.2+	850920	809	0.1-	0.5-
730402	095	0.3-	1.7+	850911	095	1.1-	0.9+	850920	809	0.1-	0.5-
850813	095	1.7-	1.3+	850914	809	0.3-	0.2-	850920	809	0.1-	0.5-
850815	095	(1.3-	4.1-)	850914	809	0.3-	0.5-	850920	095	(2.9-	0.0)
850817	095	(1.6-	5.8-)	850914	809	0.2-	0.5-	850922	809	0.8+	0.0
850819	095	0.3-	1.6-	850916	809	0.5-	0.0	850922	809	0.9+	0.1-
850824	095	0.1+	1.2+	850916	809	0.2-	0.1-	890409	801	0.7+	1.6+
850910	809	1.0+	0.3+	850916	809	0.2-	0.2-	890505	801	0.9-	0.1+
850910	809	1.2+	0.1+	850918	809	0.8-	0.4-	890507	046	1.1-	0.5-
850910	809	1.5+	0.1+	850918	809	0.8-	0.5-	890507	046	0.7+	1.6-
850911	809	0.2+	1.3+	850918	809	0.5-	0.7-	890508	046	0.2-	0.6-
850911	809	0.6+	1.2+	850919	095	(3.5-	1.4-)	890508	046	0.3+	1.0-

1985 TZ1 = 1975 VN3 = 1980 TD7 = 1988 CU4
Id. T. A. Vinogradova (MPC 14195)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	41.65605	(1950.0)	P	Q	
n	0.19296021	Peri.	74.15800	+0.65344199	+0.74928872
a	2.9659071	Node	237.14948	-0.73424478	+0.59280604
e	0.2032330	Incl.	7.35946	-0.18411454	+0.29520739
P	5.11	H	12.1	G 0.25	

Residuals in seconds of arc

751102	095	0.3-	1.3+	851018	095	1.4+	2.4-	880221	809	0.7+	0.1-
801014	330	(0.6+	5.9-)	880213	809	0.4+	0.0	880221	809	0.6+	0.1+
850919	095	0.3-	0.4+	880215	809	1.0+	0.8-	880221	809	0.3+	0.1+
850921	095	0.4+	1.3+	880216	809	1.0-	0.3+	880223	809	0.2-	0.4-
851015	688	0.2-	0.9-	880216	809	0.0	0.4+	880223	809	0.2-	0.0
851015	688	0.7-	0.3+	880216	809	1.3-	0.1-	880223	809	0.3-	0.2+

1985 UH3 = 1989 WP1
Id. S. Nakano, H. Kaneda, T. Kobayashi
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	147.98312	(1950.0)	P	Q	
n	0.25906413	Peri.	191.43130	+0.92914036	+0.36856445
a	2.4370505	Node	146.89408	-0.33483099	+0.87240630
e	0.2225148	Incl.	3.07500	-0.15680054	+0.32104125
P	3.80	H	13.6	G 0.25	

Residuals in seconds of arc

850921 095	0.9+	1.0-	851112 095	0.8+	0.4+	891201 399	2.0+	0.4-
851017 049	(1.0+	4.9+)	891125 399	0.4-	1.2+	891201 399	0.8+	1.0-
851017 049	0.6-	2.2+	891125 399	1.3-	0.4+	891201 399	0.2-	1.2-
851018 095	0.9-	1.5-	891125 399	0.8-	0.6+			

1986 JT = 1987 ST5
Id. C. M. Bardwell (MPC 12439)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 293.70211		(1950.0)	P		Q
n 0.19968769	Peri.	66.82417	+0.08155268		+0.99477004
a 2.8989130	Node	208.06698	-0.95551923		+0.06049021
e 0.2681888	Incl.	7.51017	-0.28342927		+0.08230131
P 4.94	H	12.9	G	0.25	

Residuals in seconds of arc

820921 095	1.3+	1.6+	860504 688	0.7-	0.3-	870929 054	0.1+	0.9-
820928 095	1.6-	0.3-	860513 688	1.6-	0.7+	870930 054	0.1+	1.1-
860502 046	2.3+	1.1-	860513 688	(3.5-	0.8-)	870930 054	0.0	0.0
860502 046	(1.1+	3.1-)	860608 688	0.1-	1.6+	871002 054	0.3+	0.1+
860504 688	0.1-	0.6-	860608 688	0.0	0.7-			

1987 SB1 = 1952 RF = 1977 EN4 = 1982 KQ3
Id. T. Kobayashi, S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 289.99127		(1950.0)	P		Q
n 0.22678517	Peri.	149.84494	+0.76300641		+0.64499569
a 2.6631335	Node	169.65887	-0.63018622		+0.75688439
e 0.1715081	Incl.	13.67796	-0.14382818		+0.10538782
P 4.35	H	13.0	G	0.25	

Residuals in seconds of arc

520915 024	0.1-	1.1+	870919 071	(1.6-	3.6-)	870924 071	(3.9-	4.4-)
770315 381	0.5-	0.4-	870919 071	(0.1+	5.2-)	870925 071	(8.2-	0.5-)
770315 381	0.0	2.0-	870919 071	0.8-	2.5-	870927 095	1.6+	0.1+
820523 095	0.7+	0.5-	870920 071	1.0-	1.8-	870929 688	0.0	1.0+
820526 095	0.6-	0.1+	870921 071	0.2-	1.1-	870929 688	0.0	0.6-
870904 095	2.1+	0.8+	870921 071	0.9-	1.2+	871016 688	(5.0+	4.5+)
870919 688	0.5+	2.0+	870922 071	0.9-	0.9-	871016 688	(3.2+	4.1+)
870919 688	0.3+	1.4-	870924 095	(1.1+	4.9+)			

1987 US4 = 1976 SU5 = 1976 UK1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 307.20464		(1950.0)	P		Q
n 0.26973418	Peri.	33.14325	+0.92831431		-0.37168166
a 2.3723498	Node	348.66490	+0.33006312		+0.83529308
e 0.2092457	Incl.	2.69317	+0.17114580		+0.40513975
P 3.65	H	14.3	G	0.25	

Residuals in seconds of arc

760924 095	2.1+	1.5-	871117 399	2.4+	1.4+	871128 399	1.7-	1.5-
761026 095	1.6-	0.6+	871117 399	1.9+	1.5+	871128 399	2.0-	2.2-
871022 095	2.6-	1.6+	871122 399	2.1+	0.0			
871027 095	1.9-	0.4-	871122 399	1.6+	0.1+			

1988 CN2 = 1975 VE4
Id. S. Nakano (MPC 13053)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 183.71078 (1950.0) P Q
n 0.17623820 Peri. 299.00541 -0.40532821 -0.91417025
a 3.1506683 Node 174.90573 +0.84384943 -0.37471108
e 0.1273287 Incl. 0.86316 +0.35160657 -0.15454563
P 5.59 H 12.7 G 0.25
Residuals in seconds of arc

751102 095	0.8-	0.9-	880215 809	0.5-	1.6+	880221 809	0.9+	1.5-
751107 095	1.2+	0.3-	880215 809	0.1-	1.3-	880221 809	0.3-	1.3-
861003 095	0.9-	1.6+	880216 809	0.2-	0.7+	880221 809	1.2-	1.1-
861008 095	0.1-	1.0+	880216 809	0.4-	0.7+	880223 809	(1.5+	2.0-)
880119 071	(3.2-	1.5-)	880216 809	0.1+	1.3+	880223 809	0.0	1.8-
880211 809	(0.2+	2.5-)	880216 809	1.1+	0.7-	880223 809	0.8-	1.4-
880213 809	0.1+	1.6+	880216 809	0.3+	0.7-	890406 809	1.0-	0.6+
880213 809	0.6-	1.9+	880216 809	1.0-	0.1-	890406 809	0.1+	0.6+
880213 809	(0.6-	2.7+)	880217 809	0.5+	1.1+	890406 809	1.6+	0.1+
880214 809	0.0	0.4+	880217 809	0.8+	0.3-	890407 809	1.2-	0.2+
880214 809	0.5-	0.7+	880217 809	0.3+	0.5+	890407 809	0.2+	0.4+
880214 809	0.7-	0.8+	880217 809	1.3+	0.8-	890407 809	0.9+	0.2-
880215 809	0.4-	1.2+	880217 809	0.8+	1.3-			
880215 809	0.8+	1.8+	880217 809	0.1-	1.5-			

1988 EL
Id. E. Helin (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell
M 30.30057 (1950.0) P Q
n 0.39990968 Peri. 191.62601 -0.99775997 +0.03810567
a 1.8245775 Node 350.05333 +0.00810823 -0.74695548
e 0.0467546 Incl. 18.56065 -0.06640259 -0.66378119
P 2.46 H 14.5 G 0.25
Residuals in seconds of arc

880314 675	0.8+	0.4-	880409 675	0.1+	0.1+	891203 675	0.1+	1.2+
880315 675	0.6+	1.2-	880409 675	0.0	0.4-	891203 675	1.0+	1.0+
880317 675	0.6-	0.0	891130 675	1.2-	0.3+			
880317 675	0.2+	0.5+	891130 675	0.2+	0.7+			

1988 JP = 1985 XO1
Id. C. S. Shoemaker (1989 obs.), C. M. Bardwell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
M 122.90807 (1950.0) P Q
n 0.23060706 Peri. 256.50070 +0.78658422 +0.38601209
a 2.6336325 Node 78.94609 -0.16919903 +0.88537980
e 0.3590457 Incl. 29.41060 -0.59384927 +0.25903141
P 4.27 H 12.5 G 0.25
Residuals in seconds of arc

851214 010	(16.6-	1.8-)	880608 675	0.2+	0.7-	891124 095	(3.4-	8.8+)
851214 010	0.3-	0.7+	880610 675	0.6+	1.7-	891125 675	0.6+	0.1-
880512 675	1.0-	1.8+	880611 675	0.1-	1.7-	891128 675	0.4+	0.1+
880514 675	0.4-	1.0+	891122 675	0.1-	0.2-	891130 095	0.2+	1.1-

1988 RF5 = 1979 QW8 = 1989 VC
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 320.85964 (1950.0) P Q
n 0.21008334 Peri. 184.33342 -0.99058126 -0.13184200
a 2.8024743 Node 347.90113 +0.13032695 -0.82503158
e 0.1828559 Incl. 10.15800 +0.04199588 -0.54949120
P 4.69 H 11.3 G 0.25

Residuals in seconds of arc

790820	095	0.6-	0.9+	880910	809	1.2+	0.4-	891102	399	(3.3-	1.0-)
880902	809	1.7-	1.1-	880910	809	1.1+	0.5-	891103	399	0.0	1.6-
880902	809	1.5-	0.3+	880911	809	0.2+	0.3+	891103	399	1.2+	0.3-
880902	809	1.6-	1.8+	880911	809	0.1+	0.2+	891103	399	1.9+	0.1-
880905	809	0.9+	1.3-	880911	809	0.1+	0.1+	891119	399	(3.6+	1.0+)
880905	809	1.0+	1.4-	880914	809	1.2-	1.2+	891119	399	0.8-	0.8+
880905	809	1.1+	1.4-	880914	809	1.2-	1.1+	891203	399	1.1+	0.3-
880907	809	1.1+	0.2-	880914	809	1.3-	0.9+	891203	399	1.2-	0.8+
880907	809	0.9+	0.1+	891102	399	1.0+	0.6+	891203	399	0.3-	0.5-
880910	809	1.2+	0.3-	891102	399	2.8-	0.2+				

1988 RY10
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	59.28300	(1950.0)	P	Q	
n	0.08307837	Peri.	235.74307	+0.97447862	+0.22155517
a	5.2016851	Node	111.43335	-0.19107252	+0.90310320
e	0.0825908	Incl.	2.22389	-0.11782490	+0.36785583
P	11.86	H	12.0	G 0.25	

Residuals in seconds of arc

880914	807	0.4-	0.3-	881007	807	0.2-	0.3-	891002	807	0.2-	0.2-
880915	807	0.3+	0.3-	881008	807	0.4+	0.1+	891006	807	0.1+	0.0
880916	807	0.7+	0.1+	881008	807	0.2-	0.2-	891028	807	0.2+	0.1+
881004	807	0.7-	0.3+	881103	807	0.4-	0.2+				
881005	807	0.4+	0.3+	881105	807	0.2+	0.1+				

1988 RH11
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	87.91743	(1950.0)	P	Q	
n	0.08191993	Peri.	129.63958	+0.68645115	+0.72717271
a	5.2506088	Node	183.71244	-0.67694060	+0.63794179
e	0.1066189	Incl.	1.91125	-0.26558659	+0.25347608
P	12.03	H	13.3	G 0.25	

Residuals in seconds of arc

880914	807	0.1-	0.3+	881007	807	0.2-	0.3-	891004	807	0.4-	0.1-
880915	807	0.3+	0.0	881104	807	0.4-	0.1-	891030	807	0.4+	0.2+
881006	807	0.1+	0.1+	881106	807	0.2+	0.0	891101	807	0.1-	0.1-

1988 RM11
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	35.64348	(1950.0)	P	Q	
n	0.08479615	Peri.	235.21292	+0.96334381	-0.26562982
a	5.1311961	Node	140.15413	+0.26127568	+0.89724748
e	0.0380369	Incl.	3.35919	+0.06085829	+0.35268648
P	11.62	H	12.3	G 0.25	

Residuals in seconds of arc

880914	807	0.3-	0.1-	881007	807	0.6-	0.2-	891002	807	0.2-	0.2-
880915	807	0.6+	0.1-	881104	807	0.2+	0.2-	891006	807	0.1+	0.0
881006	807	0.4+	0.4+	881106	807	0.3-	0.3+	891028	807	0.1+	0.2+

1988 RX11 = 1970 GK1 = 1975 ET
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	275.49981	(1950.0)	P	Q
n	0.18132530	Peri. 140.85695	-0.92164990	+0.38799792
a	3.0914611	Node 61.97356	-0.35721722	-0.84403121
e	0.1183019	Incl. 0.28346	-0.15151672	-0.37022822
P	5.44	H 12.3	G 0.25	

Residuals in seconds of arc

700411 805	0.2-	0.2-	880914 807	0.3+	0.2-	881104 807	0.1-	0.8-
700411 805	0.1+	0.9-	880915 807	0.2+	0.6-	881106 807	0.3+	0.6-
700411 805	0.4-	0.6-	881006 807	0.2+	0.5-			
750306 095	0.4-	1.5-	881007 807	0.3-	1.0-			

1988 RH12
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	54.89502	(1950.0)	P	Q
n	0.08209698	Peri. 197.94637	+0.99450401	-0.09846530
a	5.2430573	Node 167.54257	+0.10419890	+0.96399748
e	0.1274761	Incl. 9.49536	-0.01021560	+0.24700900
P	12.01	H 13.0	G 0.25	

Residuals in seconds of arc

880914 807	0.1-	0.1-	881005 807	0.4+	0.4+	881108 807	0.2-	0.4+
880915 807	0.3-	0.1-	881008 807	0.3-	0.0	891003 807	0.5+	0.2-
880916 807	0.1+	0.5-	881103 807	0.5+	0.4-	891029 807	0.6-	0.5+
881004 807	0.0	0.8+	881106 807	0.1-	0.6-	891101 807	0.2+	0.2-

1988 RP12
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	202.80283	(1950.0)	P	Q
n	0.08238451	Peri. 57.62785	-0.82334806	+0.56674830
a	5.2308508	Node 156.85352	-0.54289737	-0.77115094
e	0.0333714	Incl. 4.36323	-0.16540984	-0.29003894
P	11.96	H 12.8	G 0.25	

Residuals in seconds of arc

880914 807	0.1-	0.1-	881005 807	0.3+	0.2+	891004 807	0.6+	0.4-
880915 807	0.1-	0.3-	881008 807	0.8-	0.6-	891030 807	0.8-	0.4+
880916 807	1.0+	0.6-	881103 807	0.5+	0.3+	891101 807	0.2+	0.2-
881004 807	0.9-	0.8+	881106 807	0.1+	0.4+			

1988 RS12
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell

M	19.16281	(1950.0)	P	Q
n	0.08167215	Peri. 159.11843	+0.80451889	-0.59156653
a	5.2612338	Node 237.26046	+0.53558322	+0.76110174
e	0.0653161	Incl. 3.60576	+0.25670990	+0.26603231
P	12.07	H 13.5	G 0.25	

Residuals in seconds of arc

880914 807	0.2+	0.3-	881103 807	0.0	0.1+	891030 807	0.5-	0.1-
880915 807	0.1-	0.2-	881105 807	0.3+	0.9+	891101 807	0.0	0.1-
881005 807	0.1+	0.1-	891004 807	0.1+	0.3+			
881007 807	0.3-	0.1-	891005 807	0.5+	0.4-			

1988 RT12
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 74.78861	(1950.0)	P	Q	
n 0.08222098	Peri. 134.67199	+0.87910019	+0.47548691	
a 5.2377844	Node 197.02284	-0.46300438	+0.83540987	
e 0.1585804	Incl. 6.49036	-0.11318038	+0.27568561	
P 11.99	H 12.9	G 0.25		

Residuals in seconds of arc

880914 807	0.4+	0.0	881007 807	0.3+	0.2-	891004 807	0.1-	0.1+
880915 807	0.7-	0.4+	881103 807	0.0	0.0	891030 807	0.0	0.4+
881005 807	0.2+	0.0	881105 807	0.1-	0.3-	891101 807	0.1+	0.4-

1988 RV12
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 320.14705	(1950.0)	P	Q	
n 0.12349704	Peri. 310.05294	-0.71436352	-0.69920953	
a 3.9936041	Node 185.78932	+0.69632604	-0.70628385	
e 0.1640418	Incl. 16.18763	+0.06938886	-0.11076621	
P 7.98	H 12.6	G 0.25		

Residuals in seconds of arc

880914 807	0.3-	0.7+	881103 807	0.1-	0.5+	891030 807	0.1+	0.0
880915 807	0.1+	0.0	881105 807	0.3-	0.2+	891101 807	0.1-	0.1+
881005 807	0.1+	1.0-	891003 807	0.3+	0.1+			
881007 807	0.5+	0.4-	891006 807	0.3-	0.3-			

1988 RH13
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 42.97039	(1950.0)	P	Q	
n 0.08508233	Peri. 330.24908	+0.95049079	-0.24154976	
a 5.1196837	Node 45.14274	+0.31041181	+0.76747264	
e 0.0691319	Incl. 16.00941	-0.01455245	+0.59383454	
P 11.58	H 12.2	G 0.25		

Residuals in seconds of arc

880914 807	0.3+	0.0	881104 807	0.2+	0.2-	891003 807	0.0	0.5+
880915 807	0.5+	0.5+	881105 807	0.3+	0.4-	891030 807	0.2+	0.2-
880919 807	0.1-	0.3+	881106 807	0.8+	0.6+	891101 807	0.2-	0.2-
881006 807	1.5-	0.2-	881107 807	0.2-	0.2-			
881008 807	0.3-	0.3-	881108 807	0.1+	0.4-			

1988 RL13
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 92.80153	(1950.0)	P	Q	
n 0.08188542	Peri. 257.75781	+0.69284830	+0.68238111	
a 5.2520838	Node 58.67116	-0.50856937	+0.69155881	
e 0.0815782	Incl. 15.83344	-0.51119314	+0.23685952	
P 12.04	H 12.5	G 0.25		

Residuals in seconds of arc

880914 807	0.2+	0.5+	881007 807	0.3-	0.7-	891006 807	0.2-	0.6-
880915 807	0.4+	0.2-	881105 807	0.0	0.6-	891101 807	0.1-	0.5+
880919 807	0.1-	0.6+	881107 807	0.6+	0.6+			
881006 807	0.8-	0.3-	891003 807	0.2+	0.1+			

1988 SM
Epoch 1988 Oct. 6.0 ET = JDE 2447440.5

M 25.53504		(1950.0)	P	Q
n 0.45965047	Peri.	312.83998	+0.68555137	+0.72802275
a 1.6628417	Node	0.44717	-0.60032705	+0.56645244
e 0.3432504	Incl.	10.92700	-0.41185767	+0.38615347
P 2.14	H 18.0		G 0.25	

From 13 observations 1988 Sept. 29-Oct. 20.

1988 SW1
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 152.78531		(1950.0)	P	Q
n 0.08347048	Peri.	215.63938	-0.40137017	+0.90323492
a 5.1853822	Node	31.51622	-0.75845406	-0.23480229
e 0.0980662	Incl.	16.89107	-0.51346804	-0.35921380
P 11.81	H 12.2		G 0.25	

Residuals in seconds of arc

880916 807 0.9- 0.1+	881007 807 1.0+ 0.2+	891002 807 0.3+ 0.5-
880918 807 0.8- 0.7-	881008 807 0.8+ 0.9-	891006 807 0.1+ 0.3-
881005 807 0.7+ 0.4+	881104 807 0.8- 0.5+	891028 807 0.4- 0.6+
881006 807 1.0+ 0.4-	881106 807 1.1- 1.2+	

1988 SK2
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 173.16552		(1950.0)	P	Q
n 0.08192270	Peri.	81.28080	-0.50987097	+0.86018568
a 5.2504907	Node	158.05408	-0.79995383	-0.46956827
e 0.0931254	Incl.	1.62410	-0.31639448	-0.19896292
P 12.03	H 12.4		G 0.25	

Residuals in seconds of arc

880916 807 0.2+ 0.5+	881008 807 0.2+ 1.5-	881107 807 0.1+ 0.1+
880918 807 0.7+ 0.3-	881104 807 0.6+ 0.8+	891004 807 1.0+ 0.2+
881004 807 1.4- 0.4-	881105 807 0.3- 0.6+	891030 807 0.8- 0.1-
881005 807 0.6- 0.5-	881106 807 0.5+ 1.0+	891101 807 0.1- 0.2-

1989 CZ = 1981 YF
Id. B. G. Marsden (MPC 14478)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 260.63493		(1950.0)	P	Q
n 0.29006642	Peri.	14.19293	+0.83793345	-0.54545366
a 2.2601525	Node	18.89837	+0.49492674	+0.74502242
e 0.1669179	Incl.	3.30105	+0.23003272	+0.38395559
P 3.40	H 13.9		G 0.25	

Residuals in seconds of arc

811220 688 (4.6- 0.1-)	870628 675 (2.3+ 3.0-)	890211 675 1.8- 1.2+
811230 688 0.2- 0.8-	870630 675 0.0 1.2-	890301 675 1.2+ 0.3-
811230 688 0.3+ 0.6-	870630 675 (2.4- 0.4+)	890305 675 1.3+ 1.6-
870628 675 0.1+ 0.5-	890206 675 0.3- 0.3+	

1989 CX2 = 1981 RX = 1987 WN5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 214.95121		(1950.0)	P	Q
n 0.18419371	Peri.	113.06946	+0.89006013	-0.43057781
a 3.0592820	Node	272.71554	+0.34378600	+0.84964064
e 0.1206495	Incl.	8.61651	+0.29933952	+0.30448898
P 5.35	H 13.1		G 0.25	

Residuals in seconds of arc

810902	033	0.3-	0.1-		890204	809	1.0-	0.5+		890302	809	1.3+	0.2-
810902	033	0.5+	0.1-		890204	809	1.4-	0.1-		890302	809	0.8+	0.4+
871117	399	0.7-	0.8-		890204	809	0.4-	0.1+		890302	809	0.6+	0.3+
871117	399	1.1+	0.6-		890207	809	0.1-	0.4-		890303	809	0.7+	0.1-
871122	399	1.5-	0.8-		890207	809	0.1+	0.6+		890303	809	0.4+	1.2-
871122	399	1.2+	2.2+		890207	809	1.1-	1.2+		890303	809	0.2+	1.0-

1989 FB
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	23.87446		(1950.0)	P	Q
n	0.92627011	Peri.	333.54853	+0.99327405	+0.06270782
a	1.0422637	Node	23.47663	+0.00705189	+0.80632741
e	0.2503829	Incl.	14.14248	-0.11557223	+0.58813591
P	1.06	H	17.0	G 0.25	

Residuals in seconds of arc

890331	675	2.3+	1.1+		890411	372	(3.8-	1.7-)		890728	474	(1.5+	4.9-)
890401	675	0.9-	2.0+		890411	372	(4.1+	1.5+)		890728	474	(0.8+	4.2-)
890403	675	1.0-	1.5-		890417	568	0.7+	0.9+		890729	474	0.6-	3.2-
890404	675	0.6-	1.7-		890429	675	0.9+	0.5-		890729	474	0.9-	2.2-
890405	675	(4.5-	2.3+)		890429	675	(3.6+	1.3-)		891109	675	0.3+	0.3-
890406	675	1.7-	1.2-		890501	675	1.3+	1.8+		891109	675	0.5+	0.5-
890408	675	2.0-	2.1-		890501	675	0.4-	1.0+		891109	675	0.4+	0.5-
890408	675	1.7-	2.2-		890505	801	1.3+	1.7+		891110	675	0.1+	0.2-
890409	801	(3.2+	0.6+)		890508	801	1.4+	1.7+		891110	675	0.0	0.0
890410	801	0.9+	0.4+		890605	568	(1.1-	4.9+)		891110	675	0.1+	0.2-

1989 OB
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	89.40022		(1950.0)	P	Q
n	0.22146078	Peri.	71.27892	+0.99138251	-0.01573015
a	2.7056493	Node	289.45664	-0.04296376	+0.89880992
e	0.5553929	Incl.	7.92794	+0.12375316	+0.43805626
P	4.45	H	16.5	G 0.25	

From 58 observations 1989 July 7-Dec. 2, mean residual 0".9.

1989 SU1 = 1975 GH = 1985 JO1 = 1986 WN8
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	230.41660		(1950.0)	P	Q
n	0.30241650	Peri.	160.25469	-0.28459123	+0.95652867
a	2.1981969	Node	93.16979	-0.88785639	-0.23792242
e	0.1092740	Incl.	3.65919	-0.36155063	-0.16865889
P	3.26	H	13.5	G 0.25	

Residuals in seconds of arc

750415	805	1.7+	2.5+		861201	381	0.6-	0.0		891007	809	0.3+	0.2-
750418	805	0.3+	2.8+		890926	809	0.2-	0.1-		891007	809	0.7+	0.4+
850511	675	0.2-	1.3+		890926	809	0.9-	0.0		891007	809	0.3+	0.6+
850514	675	0.6+	0.4-		890926	809	0.9-	0.2+		891008	809	0.3-	1.8+
861130	381	1.4+	0.6+		890928	809	0.2-	0.4-		891008	809	0.1+	2.5+
861130	381	0.4-	0.0		890928	809	0.9-	0.4-		891008	809	0.1+	2.2+
861201	381	0.3+	0.4+		890928	809	1.3-	1.3-					

1989 UP
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	133.23526	(1950.0)	P	Q
n	0.38756848	Peri. 17.21730	+0.34197979	-0.93817410
a	1.8631039	Node 52.81780	+0.85399642	+0.28645511
e	0.4727029	Incl. 3.86173	+0.39209685	+0.19435235
P	2.54	H 20.0	G 0.25	

From 44 observations 1989 Oct. 27-Dec. 5, mean residual 0".9.

1989 UQ
Epoch 1989 Oct. 21.0 ET = JDE 2447820.5 Bardwell

M	203.92301	(1950.0)	P	Q
n	1.12529971	Peri. 14.88815	-0.97459301	+0.22398190
a	0.9154274	Node 178.05438	-0.20771170	-0.90251747
e	0.2656020	Incl. 1.28303	-0.08381123	-0.36782377
P	0.88	H 19.5	G 0.25	

From 12 observations 1989 Oct. 26-Nov. 5.

1989 UR
Epoch 1989 Nov. 10.0 ET = JDE 2447840.5 Marsden

M	277.68969	(1950.0)	P	Q
n	0.87773255	Peri. 289.28150	-0.94507300	-0.29285722
a	1.0803420	Node 233.94919	+0.32384659	-0.89911437
e	0.3564097	Incl. 10.34322	-0.04427647	-0.32531214
P	1.12	H 18.0	G 0.25	

From 13 observations 1989 Oct. 26-Nov. 28.

1989 UU1 = 1931 DV = 1977 AR = 1979 SS10
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	61.25238	(1950.0)	P	Q
n	0.29813772	Peri. 181.87501	-0.20178858	-0.97270646
a	2.2191744	Node 279.77935	+0.90007103	-0.13804518
e	0.0957143	Incl. 6.67556	+0.38620398	-0.18650917
P	3.31	H 13.9	G 0.25	

Residuals in seconds of arc

310217	690	(44.6+	5.4-)X	891029	897	0.4+	0.7+	891102	897	0.5+	1.0+
310219	690	(17.3+	34.4+)X	891029	897	0.2+	1.0+	891102	897	0.5-	1.0+
770113	095	0.2-	1.0+	891029	400	1.2+	1.3-	891121	897	1.7-	0.1+
770120	095	0.3+	0.4-	891029	400	0.3+	2.6-	891121	897	1.2-	0.3-
790929	095	0.6-	2.0+	891029	400	1.3+	1.9-				

1989 UK2 = 1986 SX = 1986 WO5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	148.33253	(1950.0)	P	Q
n	0.33679618	Peri. 132.89870	+0.96069811	-0.14006090
a	2.0459324	Node 236.54042	+0.08234525	+0.96830783
e	0.1371949	Incl. 16.69520	+0.26510072	+0.20679191
P	2.93	H 13.5	G 0.25	

Residuals in seconds of arc

860930	675	0.2-	1.6-	891027	675	0.6+	1.1+	891130	675	0.4+	0.4+
860930	675	0.3-	0.9+	891029	675	1.0+	0.6+	891202	675	1.1-	0.2-
861127	010	0.7+	0.9+	891029	675	0.2+	0.6+	891202	675	1.0-	0.5-
861127	010	(0.5+	6.5+)	891122	675	0.3-	0.7-				
891027	675	0.3+	0.1-	891122	675	0.3-	0.6-				

1989 UN2 = 1988 DE5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Marsden	
M 238.10307		(1950.0)		P	Q
n 0.35899473	Peri.	94.34779		+0.18739025	+0.98122220
a 1.9607017	Node	186.97246		-0.98214123	+0.18636252
e 0.0679349	Incl.	22.11156		-0.01683772	+0.04971922
P 2.75	H	14.5	G	0.25	

Residuals in seconds of arc

880223	413	0.2-	0.4-	891027	675	1.4-	0.9-	891129 675 4.1+ 0.4+
880223	413	0.4-	0.6-	891027	675	1.4-	0.2-	891201 675 1.3- 0.9+
880312	413	0.0	0.8+	891029	675	0.1-	0.2+	
880312	413	0.7+	0.1-	891029	675	0.7+	0.3-	

1989 UT2 = 1984 LH = 1988 JE2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 180.65896		(1950.0)		P	Q
n 0.23835400	Peri.	57.69486		+0.19159771	+0.97042937
a 2.5762537	Node	224.12478		-0.95638641	+0.15099282
e 0.1697594	Incl.	12.17426		-0.22048887	+0.18832951
P 4.14	H	13.0	G	0.25	

Residuals in seconds of arc

840601	688	0.1+	1.6-	880512	046	0.2-	0.2-	891117 372 2.3- 1.1+
840601	688	0.6-	0.3+	891029	877	(8.2-	14.1-)	891117 372 2.5+ 1.1+
840602	688	0.4+	0.6+	891029	877	(6.4-	10.7-)	891120 372 0.5- 0.8-
840602	688	0.2+	0.2+	891102	400	0.9-	0.1-	891120 372 0.3+ 0.5-
880512	046	0.3+	1.2+	891102	400	0.7+	0.1-	

1989 UL3 = 1976 YF1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 63.70730		(1950.0)		P	Q
n 0.22580842	Peri.	351.77271		+0.23989537	-0.93780862
a 2.6708130	Node	84.07505		+0.90439446	+0.12193802
e 0.2360160	Incl.	14.61226		+0.35287515	+0.32503247
P 4.36	H	12.0	G	0.25	

Residuals in seconds of arc

761216	095	2.4-	1.1+	891102	402	0.4+	0.4-	891126 402 1.6- 1.0-
761218	095	2.4+	1.0-	891121	402	0.1-	0.3-	891126 402 0.4+ 0.7+
891030	402	0.7-	0.3+	891121	402	1.6+	0.6+	

1989 UR3 = 1963 SH = 1979 GC

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 119.07522		(1950.0)		P	Q
n 0.22858932	Peri.	172.51685		+0.93239596	+0.36120904
a 2.6491078	Node	166.28736		-0.33434820	+0.87549653
e 0.2528154	Incl.	3.11379		-0.13729186	+0.32098887
P 4.31	H	13.5	G	0.25	

Residuals in seconds of arc

630919	760	0.2+	0.5-	891023	364	1.6-	0.7-	891026 046 1.2+ 0.6+
790401	809	0.5-	0.3-	891025	046	0.0	0.9-	891117 364 0.4- 0.7+
790402	809	0.0	1.2-	891025	046	2.6+	0.7-	891117 364 0.2+ 0.6-
891021	364	0.4-	0.1+	891025	046	2.3+	0.1-	891119 364 1.9- 1.1+
891021	364	1.5-	0.2+	891025	046	(4.5+	1.0+)	891119 364 0.1+ 0.1-
891023	364	1.3-	0.0	891026	046	0.7+	0.1-	

1989 UY3
Epoch 1989 Nov. 10.0 ET = JDE 2447840.5 Green
M 330.67549 (1950.0) P Q
n 0.21765978 Peri. 245.05884 -0.51478488 -0.79425841
a 2.7370576 Node 239.79412 +0.85731502 -0.47571604
e 0.4764555 Incl. 21.92703 +0.00273503 -0.37795213
P 4.53 H 13.5 G 0.25
From 6 observations 1989 Oct. 27-Dec. 2.

1989 UZ4 = 1969 VX2 = 1981 UZ19 = 1985 UE4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 66.84005 (1950.0) P Q
n 0.24508228 Peri. 277.03776 +0.36837930 -0.92848401
a 2.5288844 Node 151.20555 +0.88684425 +0.33577133
e 0.1647013 Incl. 5.60620 +0.27893364 +0.15866648
P 4.02 H 13.5 G 0.25
Residuals in seconds of arc
691115 095 0.2+ 0.4+ 851108 095(19.1+ 8.4+) 891029 807 0.1+ 1.1+
811027 095 2.3+ 0.5+ 851111 095 3.4- 1.8- 891101 807 0.5+ 0.7+
851021 095 2.1- 1.8- 891003 807 2.7+ 0.9+

1989 VA
Epoch 1989 Nov. 10.0 ET = JDE 2447840.5 Bardwell
M 176.64663 (1950.0) P Q
n 1.58653348 Peri. 2.81168 -0.67631871 +0.65010484
a 0.7280646 Node 224.97669 -0.68499625 -0.72797598
e 0.5986867 Incl. 29.34117 -0.27087478 +0.21774912
P 0.62 H 17.0 G 0.25
From 8 observations 1989 Nov. 2-25.

1989 VB
Epoch 1989 Nov. 10.0 ET = JDE 2447840.5 Bardwell
M 12.68528 (1950.0) P Q
n 0.38702869 Peri. 329.49036 +0.99038662 -0.13638374
a 1.8648358 Node 38.36972 +0.13323517 +0.89562900
e 0.4609380 Incl. 2.13312 +0.03718518 +0.42337711
P 2.55 H 20.0 G 0.25
From 14 observations 1989 Nov. 1-25.

1989 VK = 1938 UX = 1955 UM1 = 1972 VH
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 88.59167 (1950.0) P Q
n 0.23218811 Peri. 131.45990 +0.78459373 -0.61766060
a 2.6216582 Node 266.75594 +0.55150115 +0.73499609
e 0.3096400 Incl. 3.09622 +0.28330047 +0.27977871
P 4.24 H 14.9 G 0.25
Residuals in seconds of arc
381024 024(76.7- 44.5-)X 891102 875 0.1- 0.8- 891120 875 0.2- 1.1+
551025 760 0.9- 0.6+ 891102 875 0.6+ 0.7+ 891120 875 0.3+ 0.9+
551025 760 0.8+ 0.4- 891104 875 0.3- 0.7- 891124 875 0.4- 1.4-
721108 095(64.5+ 14.8+) 891104 875 1.1- 0.2-

1989 VR = 1969 TF6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 166.80756 (1950.0) P Q
n 0.19963938 Peri. 127.36515 +0.63813406 +0.76992396
a 2.8993864 Node 182.28916 -0.71712349 +0.59369837
e 0.0410751 Incl. 2.03718 -0.28021211 +0.23396439
P 4.94 H 12.5 G 0.25

Residuals in seconds of arc

691015	095	1.2-	0.2-	891102	400	1.3+	0.8-	891126	400	1.7-	1.0-
691017	095	1.0+	0.7+	891117	400	2.7+	2.2+	891126	400	4.6-	2.0+
891102	400	1.2+	2.6-	891117	400	0.9+	0.4-				

1989 VV = 1981 RU1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	114.42591	(1950.0)		P	Q
n	0.25707839	Peri.	292.24391	+0.95388238	-0.29873134
a	2.4495889	Node	85.14741	+0.28513886	+0.87103059
e	0.1397577	Incl.	1.69436	+0.09383092	+0.38995551
P	3.83	H	13.5	G 0.25	

Residuals in seconds of arc

810905	809	0.7-	0.5-	810906	809	0.2+	0.2+	891122	385	2.1-	2.6+
810905	809	0.1+	0.2-	891104	385	0.8+	0.9-	891122	385	(6.8+	2.6+)
810905	809	0.5+	0.1+	891104	385	0.6+	2.6-	891204	385	0.2+	0.5-
810906	809	0.1-	0.5+	891119	385	1.1+	0.8+	891204	385	0.6+	1.9-
810906	809	0.0	0.1+	891119	385	1.3-	2.4+				

1989 VX = 1978 UE4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden

M	75.54669	(1950.0)		P	Q
n	0.17949980	Peri.	300.77133	+0.84750077	-0.52888090
a	3.1123918	Node	91.19358	+0.50107092	+0.76917038
e	0.1572148	Incl.	2.58129	+0.17512959	+0.35869475
P	5.49	H	13.0	G 0.25	

Residuals in seconds of arc

781028	675	0.1+	0.6+	891104	494	1.0+	1.0-	891123	494	0.4-	0.7-
781029	675	0.5-	0.8+	891122	494	1.7-	0.4-	891125	494	1.5+	1.7+
891104	494	1.7+	0.4-	891122	494	1.7-	0.6-				

1989 VT1 = 1979 YS3 = 1982 KF2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	89.94500	(1950.0)		P	Q
n	0.19753192	Peri.	274.85778	+0.81999372	-0.57062977
a	2.9199722	Node	119.94317	+0.54342042	+0.75165998
e	0.0216390	Incl.	2.95241	+0.17973467	+0.33073998
P	4.99	H	12.5	G 0.25	

Residuals in seconds of arc

791218	095	0.0	0.0	820518	675	0.2+	0.8+	891120	364	0.2-	1.4-
820516	675	0.4-	0.5-	891104	364	0.0	1.2+	891125	364	0.5+	2.1+
820516	675	0.3-	0.0	891104	364	0.0	0.4-	891125	364	1.6-	0.2+
820517	675	0.5+	0.3-	891120	364	1.3+	1.6-				

1989 WB = 1976 GK6 = 1978 PJ = 1978 SW

Id. H. Kaneda, S. Nakano (d)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	71.48358	(1950.0)		P	Q
n	0.18931334	Peri.	351.22787	+0.59282053	-0.78470865
a	3.0038753	Node	62.21118	+0.75070967	+0.45704932
e	0.1166235	Incl.	11.81225	+0.29154554	+0.41873410
P	5.21	H	11.5	G 0.25	

Residuals in seconds of arc

760402	095	0.5+	0.8+	891121	399	0.1-	0.5+	891201	399	0.7-	0.1-
780809	805	0.7-	0.1+	891121	399	0.6+	0.2-	891201	399	0.7-	0.4-
780811	805	1.1-	1.8-	891121	399	0.5-	0.6-	891201	399	0.6+	0.8+
780927	095	1.2+	2.2+	891129	399	0.1-	0.5+	891206	399	0.5-	0.5+
891119	399	2.1+	0.2-	891129	399	0.0	0.6-	891206	399	0.2+	0.5+
891119	399	1.2-	1.4-	891129	399	0.1+	1.0+				

1989 WF = 1970 GH2 = 1974 FF1 = 1987 HV1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 25.86955 (1950.0) P Q
n 0.23369149 Peri. 59.46280 -0.49023884 -0.86827605
a 2.6104076 Node 60.08223 +0.76661252 -0.47099443
e 0.1175379 Incl. 5.02455 +0.41469400 -0.15575924
P 4.22 H 12.5 G 0.25
Residuals in seconds of arc

700413	805	0.0	0.8+	870428	046	0.7+	0.2-	891117	400	0.5-	1.6+
700413	805	0.8+	0.9+	870429	046	0.7-	2.2+	891117	400	0.8+	1.5+
700413	805	0.2+	0.5+	870429	046	1.5-	0.8-	891117	400	2.3-	1.3+
740321	095	0.4-	1.2-	891102	400	0.1-	1.6-	891126	400	1.2+	2.1-
870428	046	1.9+	0.2-	891102	400	1.2-	2.9+	891126	400	1.4+	1.5-

1989 WK = 1948 RE = 1962 XF1 = 1979 YF5 = 1985 OG
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 205.09037 (1950.0) P Q
n 0.29172009 Peri. 77.51746 +0.53738487 +0.84278669
a 2.2516030 Node 225.03187 -0.78947424 +0.49003144
e 0.1563593 Incl. 2.46789 -0.29656014 +0.22266518
P 3.38 H 13.1 G 0.25
Residuals in seconds of arc

480907	690	0.1-	1.2-	850718	046	0.7-	0.5-	891122	399	1.6-	1.1-
480908	690	0.8+	0.1+	850719	033	0.9-	0.3+	891122	399	0.5-	1.8-
480909	690	0.4-	0.4+	850721	033	0.0	0.6+	891201	399	1.6-	0.5+
621203	760(59.2+	26.1-)X		891121	399	0.1-	2.5+	891201	399	0.4+	0.2+
791218	095	0.0	2.1+	891121	399	0.9+	0.3-	891201	399	1.2+	0.7-
850718	046	1.3+	0.9+	891121	399	1.2+	0.2-				

1989 WL = 1938 BD = 1974 VF2 = 1979 BT
Id. T. Kobayashi
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 73.44389 (1950.0) P Q
n 0.26364524 Peri. 3.68803 +0.08843530 -0.99099805
a 2.4087372 Node 81.25733 +0.91122007 +0.03973310
e 0.1744677 Incl. 5.83653 +0.40231477 +0.12784419
P 3.74 H 13.5 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

380126	062	0.8-	0.5-	891121	877	0.7-	0.8-	891125	877	2.6+	2.0-
380127	062	0.7+	0.9-	891121	877	0.8-	0.6+	891126	877	1.2-	1.4+
380127	062	0.5+	2.2+	891124	877(0.03-		0.01+)	891126	877	0.1-	0.7-
741115	095	0.3-	0.1-	891124	877	1.7-	2.5+	891201	877	2.6+	0.9+
790124	095	0.3-	1.0-	891125	877	0.1-	3.5-	891201	877	0.4-	2.0+

1989 WM
Epoch 1989 Nov. 30.0 ET = JDE 2447860.5 Marsden
M 350.52155 (1950.0) P Q
n 0.19635377 Peri. 70.87733 -0.49828758 -0.86631649
a 2.9316349 Node 49.05929 +0.77715345 -0.46403777
e 0.5472846 Incl. 2.63416 +0.38437222 -0.18483694
P 5.02 H 16.0 G 0.25
From 13 observations 1989 Nov. 28-Dec. 5.

1989 WR = 1972 XN
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 138.44777 (1950.0) P Q
n 0.28799285 Peri. 327.74268 +0.99101811 +0.12368327
a 2.2709884 Node 25.30080 -0.08270548 +0.86566735
e 0.1808718 Incl. 6.83322 -0.10508529 +0.48510049
P 3.42 H 14.0 G 0.25
Residuals in seconds of arc

721202 095	2.4-	0.1-	891120 399	1.6-	0.1-	891201 399	1.6+	0.9-
721206 095	2.1+	1.3+	891120 399	0.7-	1.4-	891201 399	0.2+	0.6+
891026 399	0.3-	0.7+	891125 399	(3.5-	1.3-)	891201 399	0.5+	0.3+
891026 399	0.4+	1.1+	891125 399	1.2+	1.0-	891201 399	1.5+	0.0
891120 399	0.9-	0.3-	891125 399	1.2-	0.1-			

1989 WV = 1972 AG = 1980 WK2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 226.42608 (1950.0) P Q
n 0.21661793 Peri. 184.23069 -0.01620421 +0.95993685
a 2.7458322 Node 85.01029 -0.90887703 +0.10247389
e 0.0546680 Incl. 16.30866 -0.41674930 -0.26080711
P 4.55 H 11.5 G 0.25
Residuals in seconds of arc

720105 095	1.2-	2.0+	891121 881	0.9-	0.8+	891129 877	(4.0+	4.1-)
801130 095	0.9+	2.9-	891125 881	1.2+	0.0	891201 877	1.1+	1.6-
801210 095	1.3+	0.7-	891125 881	1.0+	0.1+	891201 877	1.9+	2.4-
891120 881	0.4-	2.0+	891127 881	2.3-	0.9-	891218 881	0.9-	1.8+
891120 881	0.8-	2.4+	891127 881	(6.6-	1.0+)	891218 881	0.4+	1.6-
891121 881	1.5-	1.3+	891129 877	(4.9+	4.3-)			

1989 WX = 1931 VB1 = 1978 TG4 = 1984 YR1
Id. K. Ichikawa, S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 159.08239 (1950.0) P Q
n 0.18738337 Peri. 244.63210 +0.72524249 +0.66480097
a 3.0244719 Node 73.14306 -0.54504506 +0.71328105
e 0.0899014 Incl. 10.78364 -0.42065331 +0.22196807
P 5.26 H 11.0 G 0.25
Residuals in seconds of arc

311104 690	2.9+	0.5-	891121 403	1.7+	1.5-	891129 399	0.1-	1.9-	
311106 690	1.3-	2.6-	891121 403	0.3+	0.4-	891129 399	0.3+	0.3+	
781004 095	1.0-	1.6+	891124 877	3.1+	0.5+	891201 403	0.6-	0.4-	
841217 095	1.0+	0.7-	891124 877	0.0	1.3+	891201 403	0.8-	0.0	
841223 095	1.1-	0.4-	891125 403	0.3-	2.1+	891201 399	0.6+	0.5-	
841227 095	0.1+	0.4+	891125 403	0.1-	0.2-	891201 399	2.7-	0.6+	
891120 403	(1.5-	5.5+)Y	891127 877	0.9+	0.7+	891201 399	1.5-	0.1+	
891120 403	(0.1+	6.9+)Y	891127 877	0.5-	1.4+	891205 403	0.9-	0.1+	Y

1989 WZ = 1974 TB = 1974 WC = 1980 KF2
Id. D. W. E. Green, K. Ichikawa
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Green
M 32.74357 (1950.0) P Q
n 0.26703854 Peri. 266.89496 -0.69928484 -0.70266889
a 2.3882930 Node 228.41278 +0.70555969 -0.64892834
e 0.1303614 Incl. 10.11569 +0.11483136 -0.29180206
P 3.69 H 12.5 G 0.25

Residuals in seconds of arc

741011 805	1.1-	2.5-	891121 403	1.4-	0.2-	891201 403	0.5+	1.0-
741116 095	0.9+	3.9+	891121 403	0.1+	0.3+	891201 403	0.8-	0.7+
800518 808	0.7-	2.1-	891125 403	0.4-	0.7+	891201 399	2.1+	0.6+
800518 808	0.8+	1.0-	891125 403	0.9-	1.4+	891201 399	1.5+	0.4+
891026 033	0.4-	0.0	891125 399	0.0	0.5+	891201 399	0.8-	0.3+
891026 033	0.2+	0.6-	891125 399	0.4+	0.2+	891205 403	1.3+	1.0-
891028 033	0.4-	0.0	891125 399	0.7-	0.3-	891205 403	0.5-	0.9-

1989 WH1 = 1980 BN3 = 1982 UF = 1987 DU5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 115.03818		(1950.0)		P	Q
n 0.29053895	Peri.	141.62690		+0.70842076	-0.70401276
a 2.2577058	Node	263.20286		+0.63442894	+0.66626834
e 0.1083733	Incl.	2.88979		+0.30925709	+0.24587097
P 3.39	H	13.0	G	0.25	

Residuals in seconds of arc

800122 095	0.2+	0.6-	870223 809	0.9+	0.5+	891202 391	(0.4+	3.7+)
821017 688	(2.2+	4.1-)	891121 399	(3.4-	1.3-)	891203 391	0.1+	2.6+
821017 688	0.7+	3.0-	891121 399	0.2+	1.8-	891203 391	(0.5+	3.9+)
821024 688	0.9+	0.8-	891121 399	0.3-	1.0-	891204 391	0.3+	0.5+
821024 688	0.6+	2.0-	891122 399	0.2-	1.0-	891204 391	0.1+	1.0+
870219 809	2.1-	1.3+	891122 399	0.1+	2.6-	891205 391	(3.6-	0.0)
870219 809	1.9-	1.0+	891122 399	(0.6-	5.3-)	891205 391	1.4-	0.4-
870219 809	1.9-	1.2+	891124 391	(0.5+	3.4+)	891206 399	0.3-	0.2+
870220 809	0.3-	1.7-	891124 391	(1.5+	4.1+)	891206 399	1.7-	1.9-
870220 809	0.3-	1.7-	891125 391	0.4+	0.9+	891218 391	0.3+	1.0+
870220 809	0.2-	1.7-	891125 391	1.1-	0.9+	891218 391	(2.3+	3.3+)
870222 809	1.0+	1.8-	891126 391	0.2-	2.2+	891219 391	1.3+	0.1-
870222 809	0.7+	1.7-	891126 391	0.6+	1.9+	891219 391	0.8-	0.7-
870222 809	0.8+	1.7-	891127 391	(2.9-	1.6+)	891223 391	0.7+	1.6+
870223 809	0.9+	0.8+	891128 391	0.8+	1.9+	891223 391	0.2+	1.2+
870223 809	0.9+	0.5+	891202 391	(0.2+	3.6+)			

1989 WJ1 = 1981 RO = 1985 VT1

Id. H. Kaneda

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Nakano	
M 110.42056		(1950.0)		P	Q
n 0.25729308	Peri.	176.05033		+0.83107757	-0.55251820
a 2.4482211	Node	217.71662		+0.50735110	+0.79996702
e 0.1474165	Incl.	5.95908		+0.22782652	+0.23404359
P 3.83	H	13.5	G	0.25	

Residuals in seconds of arc

810907 046	0.9+	0.9-	891125 399	1.5+	1.1+	891201 399	1.1-	1.1-
810907 046	1.3+	0.8-	891125 399	1.3+	1.0+	891201 399	0.4-	0.8+
810907 046	0.3+	1.6+	891125 399	1.7-	1.0+	891202 888	(2.2-	4.3-)
810907 046	2.5-	0.0	891129 399	0.3+	0.1-	891202 888	(1.9-	3.6-)
851107 688	1.5+	1.1+	891129 399	0.1-	1.2-	891203 888	0.1-	0.5-
851107 688	1.4-	1.2-	891201 399	0.9+	0.0	891203 888	0.6-	0.9-

1989 WN1 = 1978 QG3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Marsden	
M 115.48455		(1950.0)		P	Q
n 0.18958529	Peri.	286.76009		+0.96618128	+0.20546505
a 3.0010080	Node	61.61787		-0.11074904	+0.87631987
e 0.1187506	Incl.	10.20098		-0.23286988	+0.43571503
P 5.20	H	12.5	G	0.25	

Residuals in seconds of arc

780823	414	0.5+ 0.4+	780826	414	0.1- 0.7-	891123	494	0.1+ 0.6+
780823	414	0.0 0.8+	780826	414	1.2+ 0.4-	891125	494	1.5+ 0.6+
780824	414	1.1- 0.3-	891122	494	0.6- 0.3-	891129	494	0.7- 0.5-
780824	414	0.6- 0.2+	891122	494	0.3- 0.4-			

1989 WQ1

Epoch 1989 Nov. 30.0 ET = JDE 2447860.5				Nakano	
M 324.96581	(1950.0)		P	Q	
n 0.46346152	Peri.	41.26787	-0.31572635	-0.91395046	
a 1.6537135	Node	68.56085	+0.78269484	-0.40276508	
e 0.1263551	Incl.	15.89811	+0.53638201	+0.04974794	
P 2.13	H 15.0		G 0.25		

From 13 observations 1989 Nov. 25-Dec. 18.

1989 WV1 = 1978 WZ

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 159.49607	(1950.0)		P	Q	
n 0.26981554	Peri.	281.44076	+0.95838842	+0.26789226	
a 2.3718729	Node	63.08488	-0.19915144	+0.87494592	
e 0.1518499	Incl.	6.34975	-0.20452466	+0.40336507	
P 3.65	H 13.5		G 0.25		

Residuals in seconds of arc

781129	675	0.2- 0.4+	891129	400	0.3- 0.8-	891206	400	0.3- 0.2+
781130	675	0.8+ 0.3-	891201	400	2.1+ 2.1+	891206	400	0.2- 0.3-
891129	400	1.0- 0.1+	891201	400	1.5+ 0.9-			

1989 WB2 = 1965 AM1 = 1986 AM1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P)				Ichikawa	
M 62.26704	(1950.0)		P	Q	
n 0.23446671	Peri.	172.81973	-0.25575133	-0.96328745	
a 2.6046505	Node	291.97169	+0.88248868	-0.19813826	
e 0.2406587	Incl.	5.05183	+0.39472141	-0.18115885	
P 4.20	H 13.3		G 0.25		

Residuals in seconds of arc

650112	330	1.8+ 4.0+	891129	886	3.1- 0.8+ Y	891206	886	0.9+ 1.7+
860111	688	1.3+ 0.6-	891203	403	0.9+ 1.2-	891218	403	0.6+ 0.5+ Y
860111	688	1.2- 1.2-	891203	403	0.7+ 1.3-	891218	403	1.7- 1.2+ Y
860117	688	0.4- 1.5-	891204	886	1.4+ 1.1- Y	891220	886	0.0 0.5+ Y
860117	688	1.4- 1.4-	891204	886	0.4+ 0.2- Y			
891129	886	1.3- 0.6- Y	891206	886	1.0+ 0.6+			

1989 WC2 = 1982 BT

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kaneda	
M 75.17382	(1950.0)		P	Q	
n 0.24101769	Peri.	19.07620	+0.11807058	-0.98220990	
a 2.5572319	Node	64.36746	+0.88866303	+0.03889734	
e 0.1757505	Incl.	9.32088	+0.44309972	+0.18371365	
P 4.09	H 13.5		G 0.25		

Residuals in seconds of arc

820118	688	1.3- 0.1+	891129	400	0.4- 1.1-	891201	400	1.6- 0.8+
820118	688	0.5+ 0.8-	891129	400	2.4+ 0.5-	891205	400	0.4- 0.5-
820120	095	0.8+ 0.6+	891201	400	0.2- 1.3+	891205	400	0.3+ 0.0

1989 WM3 = 1942 VD = 1972 VB1 = 1973 AL2 = 1987 HP2
Id. H. Oishi, S. Nakano (d)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Oishi

M	77.11944	(1950.0)	P	Q	
n	0.23159332	Peri.	18.82889	+0.38614420	-0.90538760
a	2.6261450	Node	48.87623	+0.81333478	+0.24389029
e	0.1938831	Incl.	13.55371	+0.43517719	+0.34754974
P	4.26	H	13.0	G 0.25	

Residuals in seconds of arc

421105	062	0.4+	0.5-	730103	095	0.1-	0.6-	891130 888	0.6+	1.6+
421105	062	0.2+	0.1+	870429	046	0.1+	0.1-	891130 888	(1.3-	4.0+)
421107	062	0.5-	0.1+	870429	046	0.6+	1.2+	891223 888	0.2-	0.7-
721109	095	(1.1+ | 6.2+)	891129	888	(1.8- | 7.1+)	891223 888	0.2+	0.7-
730102	095	1.0+	0.8-	891129	888	1.7-	1.9+			

1989 XC = 1986 CX1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Urata

M	113.08111	(1950.0)	P	Q	
n	0.20343417	Peri.	301.57299	+0.90765929	-0.41596204
a	2.8632173	Node	83.05899	+0.40163261	+0.82211983
e	0.1067803	Incl.	3.23097	+0.12184358	+0.38870884
P	4.84	H	12.2	G 0.25	

Residuals in seconds of arc

860211	809	0.8-	1.2+	860213	809	0.1-	0.1+	891202 385	2.1-	0.8+
860211	809	0.8-	1.3+	860213	809	0.0	0.0	891202 385	0.6+	0.3+
860211	809	0.4-	1.4+	860213	809	0.3+	0.2+	891204 385	0.8+	0.1-
860212	809	1.2+	1.5-	860214	809	1.0-	0.3+	891204 385	1.9+	0.5-
860212	809	1.4+	1.5-	860214	809	0.8-	0.1+	891209 385	1.2-	0.8-
860212	809	1.5+	1.4-	860214	809	0.6-	0.1-	891209 385	0.1+	0.3+

1989 XD = 1930 XP = 1965 AT = 1980 TT = 1982 BC2
Id. K. Ichikawa
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	67.07443	(1950.0)	P	Q	
n	0.23456894	Peri.	177.76052	-0.03977165	-0.97763403
a	2.6038885	Node	274.47038	+0.91346030	+0.04819476
e	0.1267195	Incl.	11.95531	+0.40497963	-0.20471678
P	4.20	H	12.0	G 0.25	

Residuals in seconds of arc

301213	690	1.0-	3.7-	820131	688	2.0+	0.0	891208 403	1.4-	1.1+	Y
301214	690	(5.8+	10.5-)	820131	688	1.0+	0.2+	891218 403	1.2-	0.2+	
301216	690	3.5+	1.4+	891203	403	1.9+	0.0 Y	891218 403	0.5+	0.4-	
650108	330	7.8-	4.1-	891203	403	0.7-	1.1+ Y	891223 391	0.2-	1.6+	
801003	033	(8.6-	6.1-)	891205	403	1.0+	0.0	891223 391	0.9+	2.1+	
801003	033	0.1-	2.4-	891205	403	0.4+	0.7-	891225 391	(4.4+	0.9+)	
820124	688	0.8+	0.7-	891208	403	0.9-	1.0+ Y	891225 391	1.8+	1.6+	

2093 P-L = 1976 UG9
Id. K. Hurukawa (MPC 9298)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	331.97020	(1950.0)	P	Q	
n	0.18697403	Peri.	74.35688	+0.29945790	+0.95018817
a	3.0288785	Node	213.46260	-0.92436224	+0.26648943
e	0.0566041	Incl.	9.01656	-0.23638826	+0.16163487
P	5.27	H	13.1	G 0.25	

Residuals in seconds of arc

600924	675	0.2-	0.4+	761024	381	0.5+	1.2-	890227	888	1.2+	0.2-
600926	675	0.9-	1.1+	890204	809	0.7-	1.5-	890227	888	2.8+	0.6+
600928	675	0.5-	1.2-	890204	809	0.2-	1.4-	890302	809	0.1-	2.2+
600929	675	0.2+	1.3+	890204	809	0.7-	1.4-	890302	809	0.8-	2.6+
601022	675	0.4-	0.5+	890205	888	2.6+	0.5-	890302	809	0.7-	2.3+
601025	675	0.4+	0.9+	890205	888	1.0+	1.2-	890303	809	0.2-	1.2+
601026	675	0.8+	0.1-	890207	809	1.8-	0.7-	890303	809	0.3-	1.3+
761022	381	0.1-	0.4-	890207	809	1.3-	1.3-	890303	809	1.0-	1.2+
761022	381	0.1+	0.1-	890207	809	0.3+	1.7-				

4601 P-L = 1976 YN = 1976 YB5
Id. K. Hurukawa (MPC 9300), H. Oishi (d, JAM 1665)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	236.13476		(1950.0)	P	Q
n	0.18932739	Peri.	10.36133	+0.10774897	-0.99294089
a	3.0037267	Node	73.46640	+0.90835453	+0.07805366
e	0.2226226	Incl.	2.96479	+0.40408194	+0.08930853
P	5.21	H	13.5	G 0.25	

Residuals in seconds of arc

600924	675	0.4+	0.7-	601025	675	0.5-	0.5+	861005	046	1.0-	0.0
600926	675	0.1+	0.2-	601026	675	0.4-	0.7+	861005	046	0.3-	0.1+
600927	675	0.2+	0.9-	761216	095	(5.8-	0.7+)	861005	046	2.1-	0.5+
600928	675	0.3+	0.2-	761218	095	0.1+	0.6+	861009	046	2.3+	1.7-
601017	675	0.1-	0.9+	761220	095	0.1-	0.7-	861009	046	(1.6+	3.8+)
601022	675	0.2-	0.4+	861004	046	1.2+	0.6+				

6555 P-L = 1977 GB = 1987 FU1 = 1989 UE6
Id. S. J. Bus (k), B. G. Marsden
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden

M	306.37543		(1950.0)	P	Q
n	0.20626834	Peri.	37.84041	-0.95062476	-0.30728128
a	2.8369294	Node	124.20972	+0.27034366	-0.88874018
e	0.0072270	Incl.	3.01401	+0.15240363	-0.34017511
P	4.78	H	13.0	G 0.25	

Residuals in seconds of arc

600924	675	0.0	0.2-	601022	675	1.4-	0.3-	870323	033	0.4-	0.1-
600926	675	0.1+	0.3-	601024	675	0.1+	0.6+	891030	807	0.3+	0.4-
600927	675	0.6+	0.2-	601026	675	0.5+	0.5+	891101	807	0.4-	0.1-
600928	675	1.0+	0.2-	770415	801	0.1-	0.3-	891101	807	0.0	0.1-
601017	675	0.8-	0.4-	870322	033	0.2+	0.7-	891102	807	0.3+	0.2+

2114 T-2 = 1938 DS1 = 1975 EA5 = 1982 BC9 = 1986 ED2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	128.13786		(1950.0)	P	Q
n	0.26789399	Peri.	305.83219	-0.61861815	-0.78568773
a	2.3832014	Node	182.38764	+0.73897346	-0.58073888
e	0.1574336	Incl.	3.47702	+0.26688913	-0.21315990
P	3.68	H	14.2	G 0.25	

Residuals in seconds of arc

380223	024(71.0-	44.7-)X		730929	675	0.2+	0.3-	731005	675	1.1+	0.9-
730919	675	0.2+	1.1-	730929	675	0.6+	0.0	731005	675	2.2-	2.7+
730919	675	0.0	0.5+	730930	675	0.9+	1.1-	750315	095	0.1-	0.3-
730920	675	2.2-	1.5-	730930	675	0.0	0.5-	820119	095	0.0	0.1+
730924	675	0.2-	0.3+	731004	675	1.3+	1.0+	860306	688	0.4-	0.9+
730924	675	0.5-	0.1+	731004	675	2.2+	0.7+	860306	688	0.2+	1.5-
730925	675	0.2-	1.7-	731005	675	0.9+	1.3-				
730925	675	0.4+	0.2-	731005	675	2.3-	2.2+				

2155 T-2 = 1979 KP
Id. D. W. E. Green (MPC 14965)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	59.61779		(1950.0)		P		Q				
n	0.28207433	Peri.	72.89973		-0.23214186		+0.97267125				
a	2.3026451	Node	183.68618		-0.91718072		-0.22045463				
e	0.1128455	Incl.	4.06785		-0.32386676		-0.07287247				
P	3.49	H	15.0	G	0.25						

Residuals in seconds of arc

730919	675	0.2-	0.3-	730929	675	1.4-	0.2-	790521	809	0.1+	0.1-
730919	675	0.5+	0.9-	730930	675	0.5-	0.5-	790523	809	0.0	0.5+
730920	675	1.7-	0.9-	730930	675	0.4-	0.7-	790523	809	0.1-	0.3-
730924	675	2.2-	0.7+	731004	675	2.0+	1.1+	790524	809	0.2+	0.3+
730924	675	1.3-	0.9+	731004	675	0.5+	0.0	830714	808	0.3-	1.9-
730925	675	1.2+	0.7+	731005	675	2.0+	0.2+	830714	808	(3.9-	3.5-)
730925	675	0.1-	1.0-	731005	675	1.0+	0.6+	830716	808	0.1-	0.3+
730929	675	0.6+	0.3+	790519	809	0.3-	0.5-	830716	808	0.4+	1.6+

3102 T-2 = 1982 SY9 = 1984 DP1 = 1984 FP1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	205.21500		(1950.0)		P		Q				
n	0.22212082	Peri.	113.65284		-0.50029175		-0.86546314				
a	2.7002867	Node	6.55019		+0.68731119		-0.41528734				
e	0.1378345	Incl.	13.23146		+0.52660374		-0.28019634				
P	4.44	H	12.6	G	0.25						

Residuals in seconds of arc

730919	675	0.2+	0.4-	730925	675	2.5-	1.5-	731004	675	0.3+	1.1-
730919	675	0.8-	1.1+	730925	675	0.2-	0.0	731004	675	1.8+	0.5-
730919	675	0.4+	0.4+	730925	675	0.7+	1.5-	731005	675	0.3+	0.5+
730919	675	0.3+	2.0+	730925	675	0.4-	0.6-	731005	675	0.3+	0.8+
730920	675	0.9-	0.5-	730929	675	0.2+	0.2+	731005	675	0.0	0.2+
730920	675	0.5+	0.2+	730929	675	0.6-	1.4+	731005	675	0.8+	0.6+
730924	675	0.0	2.5-	730930	675	0.7-	0.7+	820921	095	0.8-	0.9+
730924	675	1.0-	0.6+	730930	675	0.7+	0.1-	840226	095	0.8+	0.4-
730924	675	1.3+	2.4-	731004	675	0.1-	0.5-	840321	095	1.3-	0.3+
730924	675	0.8-	1.2+	731004	675	0.7+	0.2+				

3211 T-2 = 1982 DU3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	156.21441		(1950.0)		P		Q				
n	0.17390645	Peri.	132.10960		-0.90814281		+0.41630086				
a	3.1787687	Node	72.53533		-0.39652182		-0.82125225				
e	0.1567752	Incl.	2.66707		-0.13433943		-0.39017732				
P	5.67	H	13.9	G	0.25						

Residuals in seconds of arc

730919	675	0.1+	1.4+	730929	675	1.0-	0.1-	731005	675	0.3+	1.8+
730919	675	0.8-	1.7+	730929	675	1.4-	1.1-	820220	033	0.1+	0.4+
730920	675	0.4+	0.4-	730930	675	0.4-	0.2-	820220	033	0.0	0.3+
730924	675	0.5+	1.9-	730930	675	0.5-	0.6-	820220	033	0.1-	0.4+
730924	675	0.3-	0.5+	731004	675	2.3+	0.5+	820221	033	0.1+	0.6-
730925	675	0.4+	1.1-	731004	675	0.4-	0.7-	820221	033	0.1-	0.5-
730925	675	1.2+	0.3-	731005	675	0.5-	0.4+				

3288 T-2 = 1982 DK3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	138.90876	(1950.0)	P	Q
n	0.17550044	Peri. 161.21331	-0.65382420	+0.75590757
a	3.1594919	Node 67.94142	-0.69871573	-0.58622074
e	0.1403048	Incl. 2.06721	-0.29036226	-0.29146009
P	5.62	H 13.9	G 0.25	

Residuals in seconds of arc

730919	675	0.7- 0.5+	730930	675	0.6+ 0.8+	731005	675	0.5+ 0.2+
730919	675	0.2- 1.0-	730930	675	1.3- 1.1+	731005	675	1.4- 0.9-
730920	675	0.2- 0.0	730930	675	1.7+ 0.9-	731005	675	2.3+ 0.8-
730924	675	1.3- 0.9-	731004	675	1.5- 0.3+	731005	675	0.0 1.1+
730924	675	0.2- 1.5-	731004	675	0.3+ 0.1-	731005	675	1.1- 0.0
730925	675	0.1+ 0.1-	731004	675	1.3- 0.7-	820220	033	0.5+ 0.2-
730925	675	0.1+ 0.3+	731004	675	0.3+ 0.5-	820220	033	0.0 0.1-
730929	675	2.2+ 3.0+	731004	675	0.4- 0.7+	820220	033	0.2- 0.0
730929	675	1.7+ 1.8+	731004	675	0.8- 1.7-	820221	033	0.4- 0.3+
730930	675	1.6+ 0.4+	731005	675	1.0- 1.1-	820221	033	0.1+ 0.1-

4216 T-2 = 1989 TP2
Id. S. J. Bus
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	106.04034	(1950.0)	P	Q
n	0.12621842	Peri. 145.15176	+0.70184919	+0.71168721
a	3.9359922	Node 169.31053	-0.68488991	+0.68584612
e	0.1663245	Incl. 9.35478	-0.19578951	+0.15204083
P	7.81	H 12.5	G 0.25	

Residuals in seconds of arc

730919	675	0.7+ 0.3-	730929	675	0.1- 2.4-	731005	675	0.2- 0.2+
730919	675	1.1+ 0.7-	730929	675	1.4+ 1.6-	891003	807	0.1+ 0.5+
730920	675	0.0 0.4-	730930	675	0.4+ 1.2+	891006	807	0.3- 0.3-
730924	675	1.2- 0.7+	730930	675	1.5+ 1.8+	891030	807	0.3+ 0.4+
730924	675	0.6- 0.1-	731004	675	0.1- 0.4-	891101	807	0.0 0.6-
730925	675	0.8- 0.9+	731004	675	0.5- 0.0			
730925	675	0.4- 1.2+	731005	675	1.3- 0.1-			

4314 T-2 = 1962 XR1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	149.48483	(1950.0)	P	Q
n	0.26062517	Peri. 322.57386	+0.52653864	-0.84779462
a	2.4273094	Node 95.57181	+0.79452314	+0.46424886
e	0.1690222	Incl. 3.64397	+0.30247322	+0.25635380
P	3.78	H 15.1	G 0.25	

Residuals in seconds of arc

621203	033	1.3- 0.3-	730930	675	0.8- 1.6+	731005	675	0.5- 0.9+
621204	033	1.3+ 0.3+	730930	675	0.6- 0.3+	731005	675	0.7- 0.8+
730929	675	1.3+ 1.8-	731004	675	0.6+ 0.5-			
730929	675	0.4+ 1.6-	731004	675	0.3+ 0.3+			

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EPHEMERIDES.

Comet Skorichenko-George (1989e1) Elements MPC 15673

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990	01 09	20 37.97	+28 39.6	2.410	2.005	54.5	23.5	9.9
1990	01 19	21 03.34	+30 37.1					
1990	01 29	21 32.12	+32 49.8	2.284	1.855	52.4	24.9	9.5
1990	02 08	22 04.72	+35 11.5					

1990 02 18	22 41.48	+37 32.2	2.182	1.729	50.4	26.1	9.1
1990 02 28	23 22.50	+39 38.9					
1990 03 10	00 07.32	+41 16.6	2.139	1.635	47.2	26.5	8.8
1990 03 20	00 54.76	+42 11.3					
1990 03 30	01 42.99	+42 14.5	2.174	1.581	42.1	25.0	8.7

Comet Austin (1989c1) Elements MPC 15672

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990 01 09	00 29.30	-48 57.6	2.120	1.934	65.6	27.6	9.0
1990 01 19	00 32.50	-44 00.6					
1990 01 29	00 38.69	-38 37.8	1.960	1.607	54.7	30.0	8.0
1990 02 08	00 47.26	-32 45.8					
1990 02 18	00 57.72	-26 17.1	1.769	1.253	43.5	32.9	6.7
1990 02 28	01 09.68	-19 00.2					
1990 03 10	01 22.67	-10 37.0	1.542	0.867	31.5	36.7	4.8
1990 03 20	01 35.69	-00 39.7					
1990 03 30	01 45.56	+11 29.1	1.251	0.465	20.1	47.7	1.7

1989 UY3 a,e,i = 2.74, 0.48, 22 Elements MPC 15720

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	02 47.17	+05 03.5	0.947	1.606	112.6	34.4	15.7
1990 01 19	02 57.78	+03 20.1					
1990 01 29	03 11.90	+02 11.5	1.048	1.530	97.6	39.6	15.9
1990 02 08	03 29.09	+01 30.2					
1990 02 18	03 48.94	+01 09.0	1.148	1.473	86.9	42.1	16.1
1990 02 28	04 11.14	+01 01.7					
1990 03 10	04 35.44	+01 02.7	1.241	1.440	79.5	42.7	16.2
1990 03 20	05 01.54	+01 07.3					
1990 03 30	05 29.22	+01 11.6	1.330	1.434	74.5	42.1	16.4

1989 WQ1 a,e,i = 1.65, 0.13, 16 Elements MPC 15725

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	03 17.19	+30 55.0	0.640	1.456	126.2	33.0	16.1
1990 01 19	03 22.14	+33 18.5					
1990 01 29	03 33.18	+35 26.3	0.770	1.447	110.5	39.6	16.6
1990 02 08	03 49.56	+37 19.1					
1990 02 18	04 10.45	+38 55.2	0.911	1.445	99.0	42.5	17.1
1990 02 28	04 35.19	+40 11.7					
1990 03 10	05 03.14	+41 05.2	1.054	1.450	90.2	43.2	17.4

1989 WM a,e,i = 2.93, 0.55, 3 Elements MPC 15722

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	08 51.89	+26 36.3	0.366	1.330	158.1	16.0	15.2
1990 01 19	09 03.00	+26 44.3					
1990 01 29	09 11.16	+26 34.2	0.353	1.333	169.4	7.8	14.9
1990 02 08	09 17.51	+25 58.7					
1990 02 18	09 23.43	+24 56.2	0.395	1.372	164.1	11.4	15.3
1990 02 28	09 30.06	+23 30.5					
1990 03 10	09 38.23	+21 47.3	0.493	1.442	150.3	20.0	16.1
1990 03 20	09 48.09	+19 53.3					
1990 03 30	09 59.48	+17 53.3	0.646	1.536	137.0	26.3	17.0

(4055) 1985 DO2 a,e,i = 1.82, 0.33, 23 Elements MPC 14466

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	11 49.39	-03 50.6	1.859	2.366	108.7	23.2	19.1
1990 01 19	11 52.41	-03 13.7					
1990 01 29	11 52.69	-02 07.3	1.588	2.337	129.0	19.1	18.6
1990 02 08	11 49.95	-00 27.8					
1990 02 18	11 44.12	+01 45.8	1.378	2.302	152.9	11.3	18.0

1990 02 28	11 35.47	+04 29.4						
1990 03 10	11 24.82	+07 31.8	1.268	2.260	176.5	1.5	17.4	
1990 03 20	11 13.44	+10 36.5						
1990 03 30	11 02.81	+13 26.0	1.278	2.212	152.4	12.1	17.8	
1990 04 09	10 54.31	+15 46.8						
1990 04 19	10 48.83	+17 33.0	1.386	2.157	128.2	21.5	18.2	
1990 04 29	10 46.75	+18 44.4						
1990 05 09	10 48.08	+19 24.2	1.549	2.096	108.1	27.2	18.5	
1990 05 19	10 52.51	+19 36.9						
1990 05 29	10 59.70	+19 26.5	1.727	2.029	91.7	30.0	18.8	

1989 UP a,e,i = 1.86, 0.47, 4 Elements MPC 15718

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	12 03.35	+16 50.3	0.253	1.107	113.1	54.8	19.0
1990 01 19	11 57.46	+17 45.9					
1990 01 29	11 44.70	+18 56.8	0.300	1.222	137.0	33.4	19.1
1990 02 08	11 26.79	+20 02.3					
1990 02 18	11 07.08	+20 41.9	0.377	1.352	162.3	12.9	19.2
1990 02 28	10 49.13	+20 45.7					
1990 03 10	10 35.66	+20 15.0	0.512	1.487	161.2	12.4	20.1

Periodic Comet Helin-Roman-Crockett (1988 XIII) Elements MPC 15672

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1990 01 09	12 43.74	+00 12.6	3.545	3.807	97.9	14.8	19.6
1990 01 19	12 46.87	+00 06.0					
1990 01 29	12 48.40	+00 10.0	3.280	3.831	117.1	13.2	19.4
1990 02 08	12 48.23	+00 24.4					
1990 02 18	12 46.38	+00 48.4	3.064	3.854	137.9	9.9	19.3
1990 02 28	12 42.94	+01 20.7					
1990 03 10	12 38.19	+01 58.8	2.931	3.878	159.8	5.1	19.2
1990 03 20	12 32.52	+02 39.4					
1990 03 30	12 26.40	+03 19.1	2.909	3.903	173.2	1.7	19.2
1990 04 09	12 20.41	+03 54.1					
1990 04 19	12 15.06	+04 21.5	3.005	3.927	153.1	6.7	19.3
1990 04 29	12 10.75	+04 39.4					
1990 05 09	12 07.79	+04 46.5	3.203	3.951	132.1	10.9	19.5
1990 05 19	12 06.32	+04 42.8					
1990 05 29	12 06.39	+04 28.7	3.472	3.975	112.8	13.6	19.7
1990 06 08	12 07.95	+04 05.1					
1990 06 18	12 10.89	+03 33.1	3.779	4.000	95.1	14.7	19.9
1990 06 28	12 15.08	+02 53.6					
1990 07 08	12 20.39	+02 07.8	4.095	4.024	78.8	14.4	20.1
1990 07 18	12 26.68	+01 16.7					
1990 07 28	12 33.82	+00 21.3	4.397	4.048	63.6	13.0	20.3
1990 08 07	12 41.70	-00 37.7					
1990 08 17	12 50.20	-01 39.3	4.664	4.072	49.0	10.8	20.4

1989 FB a,e,i = 1.04, 0.25, 14 Elements MPC 15717

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	13 22.55	+29 10.3	0.486	1.167	99.6	56.2	17.6
1990 01 14	13 26.89	+29 45.6					
1990 01 19	13 29.82	+30 29.9	0.458	1.198	106.7	51.9	17.4
1990 01 24	13 31.07	+31 23.4					
1990 01 29	13 30.35	+32 26.0	0.427	1.226	114.6	46.9	17.2
1990 02 03	13 27.33	+33 36.4					
1990 02 08	13 21.66	+34 52.2	0.396	1.249	123.5	41.2	16.9
1990 02 13	13 13.00	+36 09.9					
1990 02 18	13 01.05	+37 24.1	0.369	1.269	132.8	34.9	16.6
1990 02 23	12 45.71	+38 27.3					

1990 02 28	12 27.24	+39 10.2	0.352	1.284	141.0	29.0	16.4
1990 03 05	12 06.41	+39 23.5					
1990 03 10	11 44.48	+39 01.2	0.349	1.295	145.0	26.1	16.3
1990 03 15	11 22.88	+38 01.7					
1990 03 20	11 02.96	+36 28.6	0.362	1.301	142.1	28.0	16.5
1990 03 25	10 45.67	+34 28.7					
1990 03 30	10 31.51	+32 10.6	0.391	1.303	134.5	33.1	16.8
1990 04 04	10 20.57	+29 42.4					
1990 04 09	10 12.61	+27 10.7	0.432	1.301	125.5	38.8	17.1
1990 04 14	10 07.28	+24 39.9					
1990 04 19	10 04.19	+22 12.6	0.481	1.294	116.7	43.9	17.5

Periodic Comet Peters-Hartley — Elements MPC 12128

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1990 01 29	11 40.47	-42 38.7	1.663	2.163	-0.76	+9.3	20.5
1990 02 08	11 43.85	-46 02.8					
1990 02 18	11 44.60	-49 11.7	1.424	2.046	-0.59	+11.8	19.9
1990 02 28	11 42.38	-51 55.8					
1990 03 10	11 37.29	-54 03.6	1.224	1.936	0.31	+16.9	19.3
1990 03 20	11 30.15	-55 24.1					
1990 03 30	11 22.58	-55 47.2	1.065	1.837	2.02	+24.3	18.8
1990 04 09	11 16.96	-55 07.3					
1990 04 19	11 15.54	-53 24.8	0.945	1.753	2.89	+30.1	18.3
1990 04 29	11 19.74	-50 43.5					
1990 05 09	11 30.03	-47 12.2	0.870	1.688	1.46	+28.9	18.0
1990 05 19	11 45.79	-43 01.8					
1990 05 29	12 05.95	-38 26.0	0.851	1.644	-7.61	+18.9	17.8
1990 06 08	12 29.28	-33 41.8					
1990 06 18	12 54.50	-29 06.1	0.898	1.626	-4.62	+5.1	17.9
1990 06 28	13 20.66	-24 53.2					
1990 07 08	13 47.04	-21 12.6	1.015	1.635	-3.14	-5.7	18.2
1990 07 18	14 13.16	-18 07.9					
1990 07 28	14 38.79	-15 37.9	1.190	1.669	-2.45	-11.2	18.6
1990 08 07	15 03.83	-13 38.9					
1990 08 17	15 28.25	-12 05.2	1.408	1.727	-2.02	-13.1	19.1
1990 08 27	15 52.12	-10 51.5					
1990 09 06	16 15.48	-09 52.3	1.657	1.805	-1.69	-13.1	19.7
1990 09 16	16 38.37	-09 03.0					
1990 09 26	17 00.87	-08 19.6	1.925	1.899	-1.42	-12.3	20.2

Periodic Comet Johnson — Elements MPC 12123

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1990 02 18	17 48.78	-14 22.9	3.241	2.905	61.6	17.4	20.2
1990 02 28	18 02.64	-14 23.1					
1990 03 10	18 15.81	-14 18.4	2.928	2.837	74.9	19.8	19.9
1990 03 20	18 28.13	-14 10.0					
1990 03 30	18 39.41	-13 59.1	2.605	2.770	88.8	21.1	19.5
1990 04 09	18 49.43	-13 47.6					
1990 04 19	18 57.99	-13 37.3	2.286	2.706	103.7	21.1	19.1
1990 04 29	19 04.81	-13 30.6					
1990 05 09	19 09.65	-13 30.1	1.991	2.644	120.0	19.3	18.7
1990 05 19	19 12.29	-13 38.5					
1990 05 29	19 12.52	-13 58.3	1.740	2.586	138.4	15.1	18.3
1990 06 08	19 10.30	-14 31.5					
1990 06 18	19 05.80	-15 19.0	1.558	2.532	158.8	8.4	18.0
1990 06 28	18 59.42	-16 20.0					
1990 07 08	18 51.98	-17 31.5	1.469	2.482	174.1	2.4	17.8
1990 07 18	18 44.47	-18 49.4					
1990 07 28	18 37.97	-20 09.0	1.481	2.438	154.6	10.3	17.7

1990 08 07	18 33.48	-21 25.9						
1990 08 17	18 31.64	-22 37.1	1.582	2.399	134.0	17.7	17.8	
1990 08 27	18 32.81	-23 40.7						
1990 09 06	18 37.07	-24 35.3	1.747	2.367	115.8	22.5	18.0	
1990 09 16	18 44.24	-25 20.2						
1990 09 26	18 54.09	-25 54.6	1.948	2.342	100.1	24.9	18.1	
1990 10 06	19 06.30	-26 17.9						
1990 10 16	19 20.51	-26 29.4	2.167	2.324	86.2	25.3	18.3	
1990 10 26	19 36.42	-26 28.6						
1990 11 05	19 53.69	-26 15.3	2.388	2.315	73.7	24.3	18.5	
1990 11 15	20 12.03	-25 49.2						
1990 11 25	20 31.19	-25 10.5	2.602	2.313	62.2	22.2	18.7	
1990 12 05	20 50.91	-24 19.7						
1990 12 15	21 10.99	-23 17.4	2.803	2.319	51.4	19.4	18.9	
1990 12 25	21 31.27	-22 04.5						
1991 01 04	21 51.61	-20 42.2	2.985	2.334	41.0	16.1	19.1	
1991 01 14	22 11.89	-19 11.6						
1991 01 24	22 32.04	-17 34.1	3.143	2.356	31.1	12.5	19.2	

1982 XV a,e,i = 2.21, 0.06, 2 Elements MPC 15707

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	07 28.44	+20 32.2	1.257	2.240	176.9	1.3	15.9
1990 01 19	07 16.91	+21 08.5					
1990 01 29	07 06.47	+21 41.1	1.286	2.227	157.1	9.9	16.3
1990 02 08	06 58.60	+22 07.8					
1990 02 18	06 54.14	+22 28.0	1.410	2.213	134.0	18.7	16.8

1986 JT a,e,i = 2.90, 0.27, 8 Elements MPC 15711

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	09 03.26	+06 26.0	2.578	3.465	150.0	8.2	18.2
1990 01 19	08 56.21	+06 44.8					
1990 01 29	08 48.18	+07 14.1	2.461	3.433	169.0	3.2	17.8
1990 02 08	08 39.88	+07 51.5					
1990 02 18	08 32.07	+08 33.7	2.465	3.399	157.5	6.4	17.9
1990 02 28	08 25.45	+09 17.3					
1990 03 10	08 20.56	+09 59.0	2.579	3.362	135.7	11.9	18.2

1980 FV1 a,e,i = 3.03, 0.12, 9 Elements MPC 15702

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	09 31.87	+24 35.7	2.078	2.966	149.2	9.8	16.3
1990 01 19	09 24.37	+25 03.9					
1990 01 29	09 15.34	+25 28.7	2.015	2.989	169.5	3.4	16.0
1990 02 08	09 05.74	+25 45.2					
1990 02 18	08 56.62	+25 50.3	2.068	3.012	159.2	6.7	16.2
1990 02 28	08 48.92	+25 43.1					
1990 03 10	08 43.35	+25 24.1	2.228	3.035	137.5	12.8	16.6

1988 VL a,e,i = 2.60, 0.17, 11 Elements MPC 14025

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	10 12.41	-01 20.9	2.208	2.951	131.3	14.5	17.3
1990 01 19	10 07.92	-01 07.5					
1990 01 29	10 01.48	-00 35.1	2.058	2.970	153.0	8.7	16.9
1990 02 08	09 53.66	+00 15.1					
1990 02 18	09 45.23	+01 19.2	2.011	2.986	168.5	3.8	16.7
1990 02 28	09 37.08	+02 32.2					
1990 03 10	09 30.07	+03 47.4	2.082	3.001	153.1	8.6	17.0
1990 03 20	09 24.83	+04 59.0					
1990 03 30	09 21.75	+06 02.4	2.254	3.013	131.8	14.3	17.4

1988 VO1 a,e,i = 2.34, 0.12, 6 Elements MPC 14026

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 15.88	+02 06.6	1.836	2.602	132.3	16.2	17.2
1990	01 19	10 11.52	+02 05.8					
1990	01 29	10 04.70	+02 24.1	1.667	2.591	154.4	9.4	16.7
1990	02 08	09 56.01	+03 00.4					
1990	02 18	09 46.36	+03 51.0	1.597	2.578	170.9	3.5	16.4
1990	02 28	09 36.88	+04 50.5					
1990	03 10	09 28.72	+05 51.8	1.640	2.563	152.7	10.2	16.7
1990	03 20	09 22.73	+06 48.6					
1990	03 30	09 19.42	+07 36.5	1.778	2.547	130.9	17.2	17.1

1985 JY a,e,i = 3.25, 0.09, 3 Elements MPC 11426

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 12.10	+15 32.7	2.393	3.195	138.3	11.8	17.5
1990	01 19	10 08.14	+16 05.6					
1990	01 29	10 02.30	+16 45.9	2.230	3.178	161.0	5.8	17.2
1990	02 08	09 55.06	+17 29.3					
1990	02 18	09 47.17	+18 11.1	2.178	3.160	172.8	2.3	16.9
1990	02 28	09 39.45	+18 46.6					
1990	03 10	09 32.73	+19 12.5	2.241	3.144	150.4	9.0	17.3
1990	03 20	09 27.67	+19 27.0					
1990	03 30	09 24.68	+19 29.6	2.402	3.127	128.8	14.4	17.6

1988 RR a,e,i = 2.27, 0.11, 2 Elements MPC 14621

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 20.02	+12 33.4	1.685	2.485	135.6	16.1	17.9
1990	01 19	10 15.19	+13 04.2					
1990	01 29	10 07.64	+13 47.7	1.550	2.495	159.1	8.1	17.4
1990	02 08	09 58.07	+14 38.4					
1990	02 18	09 47.59	+15 29.5	1.518	2.504	174.9	2.0	17.1
1990	02 28	09 37.45	+16 14.3					
1990	03 10	09 28.91	+16 47.6	1.598	2.510	150.6	11.2	17.6
1990	03 20	09 22.84	+17 07.0					
1990	03 30	09 19.66	+17 12.0	1.769	2.515	128.5	18.1	18.1

4254 T-2 a,e,i = 2.40, 0.24, 3 Elements MPC 15086

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 20.13	+15 01.1	2.151	2.942	136.3	13.3	18.7
1990	01 19	10 14.92	+15 44.9					
1990	01 29	10 07.48	+16 37.6	2.007	2.951	159.7	6.6	18.3
1990	02 08	09 58.39	+17 33.7					
1990	02 18	09 48.55	+18 27.2	1.975	2.958	172.7	2.4	18.1
1990	02 28	09 38.94	+19 12.6					
1990	03 10	09 30.57	+19 46.0	2.061	2.961	149.7	9.7	18.5
1990	03 20	09 24.18	+20 05.6					
1990	03 30	09 20.19	+20 11.5	2.244	2.961	127.6	15.5	18.9

1985 PD2 a,e,i = 2.19, 0.15, 6 Elements MPC 14020

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 21.14	+12 18.7	1.379	2.189	135.2	18.4	17.2
1990	01 19	10 17.05	+13 19.8					
1990	01 29	10 09.86	+14 37.5	1.276	2.223	158.8	9.2	16.8
1990	02 08	10 00.41	+16 03.6					
1990	02 18	09 49.98	+17 27.6	1.271	2.256	173.7	2.7	16.5
1990	02 28	09 40.05	+18 39.7					
1990	03 10	09 32.03	+19 33.2	1.373	2.288	150.1	12.5	17.1
1990	03 20	09 26.81	+20 05.9					
1990	03 30	09 24.76	+20 18.4	1.561	2.319	128.5	19.7	17.7

1988 TD a,e,i = 2.44, 0.20, 1 Elements MPC 13687

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 21.10	+08 58.5	2.050	2.823	134.1	14.5	18.0
1990	01 19	10 16.11	+09 19.8					
1990	01 29	10 08.87	+09 54.0	1.911	2.846	157.5	7.6	17.7
1990	02 08	09 59.99	+10 37.3					
1990	02 18	09 50.37	+11 24.7	1.879	2.866	176.9	1.1	17.3
1990	02 28	09 41.01	+12 11.0					
1990	03 10	09 32.91	+12 51.1	1.965	2.884	152.7	9.1	17.8
1990	03 20	09 26.77	+13 22.0					
1990	03 30	09 23.03	+13 41.9	2.150	2.899	130.3	15.2	18.2

1980 FN1 a,e,i = 2.26, 0.02, 1 Elements MPC 13854

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 20.26	+11 05.7	1.466	2.270	135.0	17.8	18.4
1990	01 19	10 16.41	+11 31.6					
1990	01 29	10 09.55	+12 13.4	1.331	2.275	158.2	9.2	17.9
1990	02 08	10 00.40	+13 06.0					
1990	02 18	09 50.11	+14 01.8	1.292	2.279	176.3	1.6	17.5
1990	02 28	09 40.12	+14 52.9					
1990	03 10	09 31.83	+15 32.8	1.360	2.283	151.7	11.9	18.1
1990	03 20	09 26.21	+15 57.8					
1990	03 30	09 23.74	+16 07.1	1.516	2.287	129.8	19.6	18.6

1988 SH a,e,i = 2.77, 0.18, 8 Elements MPC 13859

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 23.53	+16 39.7	1.919	2.714	136.0	14.6	17.3
1990	01 19	10 18.42	+17 00.8					
1990	01 29	10 10.93	+17 28.6	1.809	2.752	159.0	7.4	17.0
1990	02 08	10 01.75	+17 57.8					
1990	02 18	09 51.88	+18 23.0	1.805	2.789	173.1	2.4	16.7
1990	02 28	09 42.43	+18 39.8					
1990	03 10	09 34.42	+18 45.3	1.916	2.826	151.0	9.8	17.2
1990	03 20	09 28.55	+18 39.0					
1990	03 30	09 25.19	+18 21.6	2.122	2.861	129.3	15.7	17.7

(4059) 1987 SB5 a,e,i = 3.02, 0.07, 9 Elements MPC 14467

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 16.51	-02 26.4	2.423	3.145	129.9	13.9	16.7
1990	01 19	10 12.77	-02 40.3					
1990	01 29	10 07.17	-02 37.7	2.239	3.135	150.6	8.9	16.4
1990	02 08	10 00.17	-02 18.4					
1990	02 18	09 52.41	-01 44.1	2.155	3.123	166.0	4.4	16.1
1990	02 28	09 44.69	-00 58.2					
1990	03 10	09 37.82	-00 05.4	2.186	3.112	154.5	7.9	16.3
1990	03 20	09 32.46	+00 48.9					
1990	03 30	09 29.06	+01 40.0	2.319	3.100	134.2	13.3	16.6

1985 UG5 a,e,i = 2.32, 0.17, 9 Elements MPC 12321

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 25.98	+23 50.7	1.361	2.184	136.8	17.9	17.7
1990	01 19	10 22.00	+25 20.9					
1990	01 29	10 14.63	+26 55.3	1.281	2.222	157.1	9.9	17.3
1990	02 08	10 04.76	+28 21.3					
1990	02 18	09 53.82	+29 27.2	1.298	2.260	162.4	7.6	17.3
1990	02 28	09 43.44	+30 05.6					
1990	03 10	09 35.13	+30 14.4	1.415	2.298	144.6	14.5	17.8
1990	03 20	09 29.80	+29 57.0					
1990	03 30	09 27.80	+29 18.3	1.611	2.335	125.3	20.4	18.3

1975 QO a,e,i = 2.64, 0.31, 11 Elements MPC 9291

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 28.42	+11 43.8	2.094	2.860	133.4	14.5	18.1
1990	01 19	10 22.52	+11 50.9					
1990	01 29	10 14.41	+12 07.2	1.985	2.918	157.1	7.6	17.8
1990	02 08	10 04.75	+12 29.2					
1990	02 18	09 54.46	+12 52.4	1.985	2.972	177.8	0.7	17.5
1990	02 28	09 44.56	+13 12.8					
1990	03 10	09 35.99	+13 27.1	2.105	3.025	153.3	8.5	18.0
1990	03 20	09 29.41	+13 33.5					
1990	03 30	09 25.17	+13 31.3	2.326	3.074	130.9	14.2	18.5

1977 TS3 a,e,i = 3.07, 0.25, 4 Elements MPC 14012

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 20.96	+12 58.3	2.599	3.372	135.5	11.8	17.3
1990	01 19	10 16.57	+13 36.9					
1990	01 29	10 10.44	+14 23.6	2.477	3.413	158.6	6.0	17.0
1990	02 08	10 03.08	+15 14.3					
1990	02 18	09 55.15	+16 04.4	2.466	3.452	175.5	1.3	16.8
1990	02 28	09 47.40	+16 49.6					
1990	03 10	09 40.56	+17 26.5	2.577	3.490	152.9	7.5	17.2
1990	03 20	09 35.20	+17 52.9					
1990	03 30	09 31.66	+18 08.3	2.791	3.526	130.9	12.4	17.6

1978 RS a,e,i = 2.25, 0.19, 2 Elements MPC 10390

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 27.87	+09 22.2	1.763	2.535	132.7	16.6	18.0
1990	01 19	10 22.98	+09 42.4					
1990	01 29	10 15.43	+10 17.1	1.630	2.563	156.2	8.9	17.6
1990	02 08	10 05.88	+11 02.0					
1990	02 18	09 55.36	+11 51.3	1.600	2.588	178.2	0.7	17.2
1990	02 28	09 45.06	+12 38.6					
1990	03 10	09 36.19	+13 18.2	1.685	2.611	153.4	9.8	17.8
1990	03 20	09 29.59	+13 46.7					
1990	03 30	09 25.71	+14 02.7	1.866	2.630	130.9	16.7	18.2

1987 RX3 a,e,i = 3.15, 0.08, 5 Elements MPC 15249

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 21.82	+07 34.2	2.464	3.219	133.4	12.8	16.7
1990	01 19	10 18.07	+07 37.6					
1990	01 29	10 12.42	+07 52.0	2.280	3.204	155.9	7.2	16.3
1990	02 08	10 05.32	+08 15.6					
1990	02 18	09 57.40	+08 45.2	2.202	3.189	176.5	1.1	15.9
1990	02 28	09 49.45	+09 17.0					
1990	03 10	09 42.30	+09 47.1	2.243	3.174	155.7	7.4	16.2
1990	03 20	09 36.61	+10 12.2					
1990	03 30	09 32.84	+10 29.9	2.387	3.159	133.5	13.3	16.6

1987 HS a,e,i = 2.32, 0.17, 24 Elements MPC 13457

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 24.89	+10 52.5	1.904	2.681	133.9	15.3	17.8
1990	01 19	10 21.45	+12 35.3					
1990	01 29	10 15.45	+14 38.2	1.731	2.667	157.5	8.1	17.3
1990	02 08	10 07.36	+16 53.9					
1990	02 18	09 58.00	+19 11.9	1.668	2.651	172.7	2.7	17.0
1990	02 28	09 48.44	+21 21.0					
1990	03 10	09 39.89	+23 11.5	1.727	2.633	149.8	10.9	17.4
1990	03 20	09 33.32	+24 38.4					
1990	03 30	09 29.36	+25 40.4	1.883	2.612	127.3	17.7	17.8

1988 VC a,e,i = 2.98, 0.11, 9 Elements MPC 14024

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 26.78	+13 30.7	2.163	2.935	134.3	13.9	16.7
1990	01 19	10 22.30	+13 37.9					
1990	01 29	10 15.64	+13 53.1	2.025	2.958	157.3	7.4	16.4
1990	02 08	10 07.37	+14 12.9					
1990	02 18	09 58.30	+14 32.9	1.993	2.980	177.2	0.9	16.0
1990	02 28	09 49.39	+14 49.3					
1990	03 10	09 41.56	+14 58.8	2.078	3.002	154.1	8.3	16.5
1990	03 20	09 35.51	+14 59.5					
1990	03 30	09 31.68	+14 51.1	2.264	3.025	132.0	14.2	16.9

1985 TG3 a,e,i = 5.26, 0.05, 12 Elements MPC 12786

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 18.01	+05 52.6	4.630	5.355	133.5	7.7	17.5
1990	01 19	10 14.77	+05 53.1					
1990	01 29	10 10.58	+05 59.9	4.451	5.362	155.3	4.4	17.2
1990	02 08	10 05.71	+06 11.8					
1990	02 18	10 00.48	+06 27.6	4.384	5.368	174.4	1.0	17.0
1990	02 28	09 55.25	+06 45.4					
1990	03 10	09 50.39	+07 03.6	4.441	5.375	158.1	4.0	17.2
1990	03 20	09 46.22	+07 20.2					
1990	03 30	09 42.97	+07 34.1	4.612	5.382	136.7	7.3	17.4

1987 QW1 a,e,i = 2.95, 0.10, 2 Elements MPC 12950

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 25.14	+09 00.8	2.478	3.231	133.2	12.8	18.2
1990	01 19	10 21.41	+09 24.8					
1990	01 29	10 15.79	+10 00.0	2.314	3.238	156.0	7.1	17.8
1990	02 08	10 08.72	+10 43.5					
1990	02 18	10 00.85	+11 31.2	2.256	3.244	179.4	0.2	17.4
1990	02 28	09 52.97	+12 18.4					
1990	03 10	09 45.87	+13 00.8	2.318	3.249	155.7	7.2	17.8
1990	03 20	09 40.20	+13 35.1					
1990	03 30	09 36.40	+13 59.4	2.485	3.253	133.3	12.9	18.2

1982 UG7 a,e,i = 2.15, 0.19, 2 Elements MPC 10309

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 35.51	+05 27.6	1.786	2.527	129.4	17.5	18.6
1990	01 19	10 31.54	+05 43.5					
1990	01 29	10 24.82	+06 17.7	1.625	2.539	152.4	10.3	18.2
1990	02 08	10 15.86	+07 07.4					
1990	02 18	10 05.58	+08 07.5	1.561	2.548	176.1	1.5	17.7
1990	02 28	09 55.14	+09 11.2					
1990	03 10	09 45.77	+10 11.1	1.612	2.553	156.4	8.9	18.1
1990	03 20	09 38.47	+11 01.6					
1990	03 30	09 33.84	+11 39.4	1.763	2.554	133.4	16.5	18.5

2558 P-L a,e,i = 3.13, 0.17, 5 Elements MPC 12690

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 32.84	+15 36.2	2.129	2.895	133.5	14.3	17.7
1990	01 19	10 29.30	+16 04.0					
1990	01 29	10 23.53	+16 39.9	2.000	2.927	155.9	7.9	17.3
1990	02 08	10 16.04	+17 19.1					
1990	02 18	10 07.63	+17 56.1	1.975	2.960	173.9	2.0	17.0
1990	02 28	09 59.22	+18 26.1					
1990	03 10	09 51.75	+18 45.4	2.066	2.993	154.6	8.2	17.5
1990	03 20	09 45.95	+18 52.2					
1990	03 30	09 42.27	+18 46.5	2.256	3.026	132.9	14.0	17.9

1988 MB a,e,i = 2.33, 0.25, 23 Elements MPC 13458

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 43.51	-14 22.0	1.906	2.518	117.7	20.2	17.8
1990	01 19	10 38.28	-16 06.9					
1990	01 29	10 30.22	-17 29.2	1.770	2.567	135.6	15.6	17.5
1990	02 08	10 19.87	-18 22.9					
1990	02 18	10 08.17	-18 44.7	1.715	2.614	149.2	11.2	17.4
1990	02 28	09 56.31	-18 34.6					
1990	03 10	09 45.58	-17 57.4	1.762	2.657	148.0	11.4	17.5
1990	03 20	09 36.97	-17 01.4					
1990	03 30	09 31.08	-15 55.8	1.906	2.697	134.0	15.4	17.8

1984 YH1 a,e,i = 2.66, 0.06, 3 Elements MPC 12580

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 34.24	+07 39.3	1.895	2.643	130.6	16.4	17.3
1990	01 19	10 31.05	+07 44.4					
1990	01 29	10 25.36	+08 04.1	1.740	2.656	153.1	9.7	16.9
1990	02 08	10 17.67	+08 35.7					
1990	02 18	10 08.80	+09 14.8	1.682	2.669	176.9	1.2	16.4
1990	02 28	09 59.76	+09 56.0					
1990	03 10	09 51.66	+10 33.6	1.737	2.683	157.8	8.1	16.8
1990	03 20	09 45.37	+11 03.3					
1990	03 30	09 41.44	+11 22.6	1.893	2.696	135.3	15.1	17.3

1964 TU2 a,e,i = 2.29, 0.17, 5 Elements MPC 14182

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 40.69	+10 32.3	1.672	2.425	130.1	18.1	18.4
1990	01 19	10 36.56	+10 42.2					
1990	01 29	10 29.50	+11 06.0	1.538	2.458	153.2	10.4	18.0
1990	02 08	10 20.12	+11 39.7					
1990	02 18	10 09.41	+12 17.3	1.501	2.489	178.3	0.7	17.5
1990	02 28	09 58.65	+12 52.7					
1990	03 10	09 49.13	+13 20.3	1.576	2.518	156.4	9.1	18.0
1990	03 20	09 41.84	+13 36.8					
1990	03 30	09 37.32	+13 40.9	1.750	2.545	133.7	16.5	18.5

4517 P-L a,e,i = 2.30, 0.18, 7 Elements MPC 13863

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 40.68	+16 12.6	1.938	2.696	131.9	15.8	17.8
1990	01 19	10 36.38	+16 46.2					
1990	01 29	10 29.36	+17 29.2	1.780	2.703	154.6	9.0	17.4
1990	02 08	10 20.12	+18 16.1					
1990	02 18	10 09.53	+19 00.1	1.724	2.707	172.8	2.6	17.1
1990	02 28	09 58.75	+19 34.9					
1990	03 10	09 48.99	+19 55.9	1.784	2.709	153.4	9.4	17.5
1990	03 20	09 41.21	+20 01.3					
1990	03 30	09 36.01	+19 51.7	1.944	2.707	131.1	16.1	17.9

1981 EZ10 a,e,i = 2.78, 0.04, 3 Elements MPC 10615

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 34.50	+04 59.1	2.159	2.885	129.4	15.3	18.7
1990	01 19	10 31.48	+05 00.3					
1990	01 29	10 26.21	+05 16.0	1.976	2.881	151.6	9.4	18.3
1990	02 08	10 19.11	+05 44.8					
1990	02 18	10 10.86	+06 23.3	1.891	2.876	174.0	2.0	17.9
1990	02 28	10 02.32	+07 07.2					
1990	03 10	09 54.48	+07 51.0	1.922	2.871	159.0	7.1	18.2
1990	03 20	09 48.15	+08 30.0					
1990	03 30	09 43.89	+09 00.7	2.057	2.865	136.5	13.9	18.5

6047 P-L a,e,i = 2.31, 0.08, 5 Elements MPC 12208

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 32.52	+01 34.7	1.372	2.127	128.4	21.3	17.0
1990	01 19	10 31.35	+01 27.1					
1990	01 29	10 27.05	+01 44.4	1.217	2.126	149.6	13.6	16.6
1990	02 08	10 20.07	+02 26.5					
1990	02 18	10 11.37	+03 29.2	1.145	2.127	171.2	4.1	16.1
1990	02 28	10 02.24	+04 45.1					
1990	03 10	09 54.19	+06 03.8	1.173	2.130	159.1	9.6	16.3
1990	03 20	09 48.42	+07 15.8					
1990	03 30	09 45.65	+08 14.0	1.292	2.135	137.1	18.5	16.8

1977 DD1 a,e,i = 2.19, 0.11, 6 Elements MPC 14780

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 38.17	+08 01.0	1.462	2.224	129.8	19.9	17.9
1990	01 19	10 35.82	+08 43.6					
1990	01 29	10 30.34	+09 47.5	1.327	2.248	152.6	11.6	17.5
1990	02 08	10 22.25	+11 07.6					
1990	02 18	10 12.56	+12 35.3	1.283	2.271	177.5	1.1	17.0
1990	02 28	10 02.61	+14 00.4					
1990	03 10	09 53.83	+15 13.4	1.347	2.292	156.7	9.9	17.5
1990	03 20	09 47.34	+16 08.3					
1990	03 30	09 43.76	+16 42.9	1.504	2.313	134.1	18.1	18.0

1988 VJ a,e,i = 2.27, 0.19, 5 Elements MPC 13862

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 39.42	+01 46.1	2.000	2.707	126.9	16.9	18.0
1990	01 19	10 36.03	+01 46.6					
1990	01 29	10 30.11	+02 05.3	1.810	2.703	149.1	10.8	17.5
1990	02 08	10 22.06	+02 41.5					
1990	02 18	10 12.62	+03 32.0	1.715	2.696	171.2	3.2	17.1
1990	02 28	10 02.77	+04 31.9					
1990	03 10	09 53.64	+05 34.4	1.735	2.686	159.0	7.6	17.3
1990	03 20	09 46.18	+06 33.2					
1990	03 30	09 41.06	+07 23.2	1.860	2.672	136.2	15.0	17.7

1973 SQ1 a,e,i = 5.16, 0.03, 6 Elements MPC 14343

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 27.18	+02 53.3	4.598	5.286	130.2	8.2	17.4
1990	01 19	10 24.58	+03 01.4					
1990	01 29	10 20.98	+03 17.3	4.398	5.286	151.7	5.1	17.2
1990	02 08	10 16.63	+03 39.9					
1990	02 18	10 11.83	+04 07.7	4.307	5.287	171.8	1.5	17.0
1990	02 28	10 06.92	+04 39.0					
1990	03 10	10 02.27	+05 11.5	4.338	5.287	161.1	3.5	17.1
1990	03 20	09 58.22	+05 43.0					
1990	03 30	09 55.02	+06 11.6	4.485	5.288	139.9	7.0	17.3

1988 RF7 a,e,i = 2.19, 0.24, 6 Elements MPC 14953

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 43.47	+12 39.7	1.923	2.666	130.2	16.4	17.8
1990	01 19	10 39.69	+13 31.9					
1990	01 29	10 33.21	+14 38.0	1.769	2.686	153.3	9.5	17.4
1990	02 08	10 24.50	+15 52.3					
1990	02 18	10 14.40	+17 07.3	1.717	2.702	174.1	2.1	17.0
1990	02 28	10 03.98	+18 15.2					
1990	03 10	09 54.46	+19 09.3	1.782	2.714	154.9	8.9	17.5
1990	03 20	09 46.79	+19 46.3					
1990	03 30	09 41.61	+20 05.5	1.948	2.722	132.3	15.8	17.9

1987 QS7 a,e,i = 2.90, 0.04, 2 Elements MPC 12943

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 35.47	+07 43.1	2.148	2.884	130.3	15.1	17.2
1990	01 19	10 32.97	+08 00.6					
1990	01 29	10 28.23	+08 32.2	1.965	2.875	152.6	9.1	16.8
1990	02 08	10 21.62	+09 15.4					
1990	02 18	10 13.82	+10 05.9	1.879	2.867	176.7	1.1	16.3
1990	02 28	10 05.68	+10 58.2					
1990	03 10	09 58.15	+11 46.6	1.909	2.858	158.9	7.2	16.6
1990	03 20	09 52.08	+12 26.7					
1990	03 30	09 48.05	+12 55.4	2.043	2.850	136.4	14.0	17.0

1980 BB a,e,i = 2.85, 0.07, 3 Elements MPC 14014

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 37.40	+12 39.5	2.310	3.053	131.6	13.9	17.3
1990	01 19	10 34.32	+13 12.0					
1990	01 29	10 29.07	+13 55.1	2.139	3.056	154.1	8.1	17.0
1990	02 08	10 22.06	+14 44.9					
1990	02 18	10 13.95	+15 36.2	2.071	3.057	175.5	1.5	16.6
1990	02 28	10 05.56	+16 23.7					
1990	03 10	09 57.81	+17 02.4	2.120	3.058	156.7	7.4	16.9
1990	03 20	09 51.47	+17 29.4					
1990	03 30	09 47.09	+17 43.2	2.274	3.057	134.4	13.5	17.3

(4115) 1982 QS3 a,e,i = 3.00, 0.03, 10 Elements MPC 14772

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 33.89	-02 49.9	2.213	2.902	125.9	15.9	16.6
1990	01 19	10 31.64	-02 56.2					
1990	01 29	10 27.28	-02 43.8	2.029	2.904	146.8	10.7	16.2
1990	02 08	10 21.18	-02 12.3					
1990	02 18	10 13.97	-01 23.8	1.937	2.906	166.3	4.6	15.9
1990	02 28	10 06.45	-00 22.3					
1990	03 10	09 59.51	+00 46.3	1.956	2.910	160.0	6.7	16.0
1990	03 20	09 53.93	+01 55.6					
1990	03 30	09 50.25	+02 59.8	2.082	2.913	139.3	12.9	16.4

1987 RG a,e,i = 3.09, 0.18, 4 Elements MPC 12448

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 35.99	+10 49.2	2.922	3.647	131.3	11.7	18.3
1990	01 19	10 32.68	+11 19.0					
1990	01 29	10 27.65	+11 58.2	2.736	3.647	153.9	6.8	17.9
1990	02 08	10 21.25	+12 43.8					
1990	02 18	10 13.98	+13 32.0	2.657	3.645	176.8	0.9	17.6
1990	02 28	10 06.47	+14 18.8					
1990	03 10	09 59.43	+15 00.2	2.701	3.641	158.0	5.9	17.9
1990	03 20	09 53.45	+15 33.2					
1990	03 30	09 48.99	+15 56.3	2.855	3.636	135.5	11.1	18.2

1988 NF a,e,i = 2.20, 0.36, 22 Elements MPC 13858

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 46.33	-21 24.0	2.415	2.941	113.0	17.9	17.1
1990	01 19	10 42.04	-22 36.6					
1990	01 29	10 35.33	-23 27.3	2.230	2.962	130.1	14.7	16.8
1990	02 08	10 26.56	-23 51.2					
1990	02 18	10 16.41	-23 44.9	2.120	2.977	144.1	11.2	16.6
1990	02 28	10 05.80	-23 08.0					
1990	03 10	09 55.78	-22 03.8	2.108	2.988	146.7	10.5	16.6
1990	03 20	09 47.27	-20 39.4					
1990	03 30	09 40.94	-19 03.3	2.198	2.994	135.6	13.5	16.8

1977 UD a,e,i = 2.43, 0.17, 4 Elements MPC 13690

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 42.33	+14 42.4	1.374	2.152	131.1	20.1	17.2
1990	01 19	10 40.50	+15 22.1					
1990	01 29	10 35.33	+16 16.4	1.259	2.183	153.1	11.8	16.8
1990	02 08	10 27.38	+17 18.2					
1990	02 18	10 17.74	+18 17.9	1.233	2.217	172.7	3.2	16.5
1990	02 28	10 07.84	+19 06.5					
1990	03 10	09 59.19	+19 37.3	1.310	2.252	155.6	10.5	16.9
1990	03 20	09 52.90	+19 47.8					
1990	03 30	09 49.59	+19 38.8	1.477	2.288	134.1	18.3	17.5

1988 VB5 a,e,i = 2.53, 0.19, 12 Elements MPC 14201

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 42.09	-08 00.0	2.277	2.914	121.5	16.7	17.9
1990	01 19	10 39.09	-08 18.3					
1990	01 29	10 33.89	-08 16.4	2.094	2.933	141.9	12.0	17.6
1990	02 08	10 26.85	-07 52.6					
1990	02 18	10 18.61	-07 07.8	2.000	2.950	160.5	6.4	17.3
1990	02 28	10 10.00	-06 04.9					
1990	03 10	10 01.94	-04 49.9	2.017	2.964	158.8	7.0	17.3
1990	03 20	09 55.24	-03 29.7					
1990	03 30	09 50.47	-02 11.1	2.143	2.977	139.9	12.5	17.7

1980 RC1 a,e,i = 2.46, 0.20, 3 Elements MPC 10952

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 45.72	+04 46.9	2.138	2.838	126.8	16.1	18.2
1990	01 19	10 42.23	+04 52.3					
1990	01 29	10 36.37	+05 12.8	1.970	2.862	149.4	10.1	17.8
1990	02 08	10 28.53	+05 46.6					
1990	02 18	10 19.44	+06 30.0	1.899	2.883	173.1	2.4	17.4
1990	02 28	10 09.99	+07 18.3					
1990	03 10	10 01.20	+08 05.6	1.946	2.901	160.6	6.5	17.7
1990	03 20	09 53.92	+08 47.2					
1990	03 30	09 48.73	+09 19.8	2.101	2.917	137.6	13.3	18.1

(4138) 1973 SM a,e,i = 5.16, 0.04, 2 Elements MPC 14934

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 33.46	+06 52.9	4.618	5.309	130.4	8.1	17.2
1990	01 19	10 30.95	+07 05.6					
1990	01 29	10 27.42	+07 24.9	4.421	5.313	152.3	4.9	17.0
1990	02 08	10 23.09	+07 49.5					
1990	02 18	10 18.26	+08 17.6	4.332	5.317	174.7	1.0	16.7
1990	02 28	10 13.28	+08 47.2					
1990	03 10	10 08.52	+09 16.2	4.367	5.321	162.1	3.3	16.9
1990	03 20	10 04.32	+09 42.6					
1990	03 30	10 00.94	+10 04.8	4.518	5.325	140.3	6.9	17.2

1964 TA2 a,e,i = 2.28, 0.17, 6 Elements MPC 13851

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 49.78	+09 58.9	1.895	2.616	127.8	17.3	17.3
1990	01 19	10 46.24	+10 08.5					
1990	01 29	10 39.93	+10 31.5	1.726	2.629	150.6	10.6	16.9
1990	02 08	10 31.25	+11 04.7					
1990	02 18	10 21.02	+11 43.1	1.653	2.639	175.5	1.7	16.4
1990	02 28	10 10.30	+12 20.9					
1990	03 10	10 00.34	+12 52.3	1.695	2.646	159.1	7.7	16.7
1990	03 20	09 52.15	+13 13.5					
1990	03 30	09 46.43	+13 22.5	1.841	2.651	135.8	15.2	17.2

1981 EM24 a,e,i = 2.79, 0.10, 3 Elements MPC 14187

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	10 45.41	+08 32.3	2.192	2.906	128.3	15.4	18.8
1990 01 19	10 42.50	+08 43.1					
1990 01 29	10 37.29	+09 06.6	2.025	2.925	150.8	9.5	18.4
1990 02 08	10 30.17	+09 40.2					
1990 02 18	10 21.82	+10 19.6	1.957	2.942	175.0	1.7	18.0
1990 02 28	10 13.10	+11 00.0					
1990 03 10	10 04.95	+11 36.3	2.004	2.959	160.6	6.4	18.3
1990 03 20	09 58.20	+12 04.6					
1990 03 30	09 53.43	+12 22.7	2.159	2.975	137.8	13.0	18.7

1988 TQ a,e,i = 2.68, 0.20, 3 Elements MPC 13860

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	10 47.07	+10 46.6	2.200	2.918	128.7	15.2	18.3
1990 01 19	10 43.99	+11 20.3					
1990 01 29	10 38.59	+12 06.3	2.049	2.952	151.4	9.2	17.9
1990 02 08	10 31.31	+13 00.7					
1990 02 18	10 22.82	+13 58.0	1.999	2.984	174.7	1.8	17.6
1990 02 28	10 13.98	+14 52.3					
1990 03 10	10 05.77	+15 38.3	2.066	3.015	159.0	6.8	17.9
1990 03 20	09 58.97	+16 12.3					
1990 03 30	09 54.15	+16 32.9	2.241	3.043	136.4	13.1	18.3

(3978) 1983 VP1 a,e,i = 2.88, 0.00, 12 Elements MPC 14173

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	10 42.60	-08 45.5	2.243	2.875	121.0	17.0	16.6
1990 01 19	10 40.47	-09 26.2					
1990 01 29	10 36.13	-09 47.8	2.047	2.876	140.4	12.6	16.3
1990 02 08	10 29.90	-09 47.9					
1990 02 18	10 22.35	-09 26.1	1.936	2.876	158.0	7.4	16.0
1990 02 28	10 14.28	-08 43.8					
1990 03 10	10 06.63	-07 45.8	1.930	2.877	158.4	7.3	16.0
1990 03 20	10 00.24	-06 38.5					
1990 03 30	09 55.72	-05 28.8	2.030	2.878	141.2	12.6	16.3

(4327) 1982 KB1 a,e,i = 2.77, 0.23, 17 Elements MPC 15687

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	10 52.85	+30 22.0	2.644	3.377	131.5	12.6	17.9
1990 01 19	10 49.20	+31 35.9					
1990 01 29	10 43.19	+32 50.7	2.501	3.386	149.3	8.5	17.7
1990 02 08	10 35.20	+33 59.3					
1990 02 18	10 25.89	+34 54.4	2.463	3.392	156.5	6.7	17.6
1990 02 28	10 16.14	+35 30.7					
1990 03 10	10 06.93	+35 45.1	2.536	3.396	144.7	9.7	17.7
1990 03 20	09 59.10	+35 37.8					
1990 03 30	09 53.26	+35 11.1	2.706	3.398	126.6	13.7	18.0

1971 UN1 a,e,i = 3.15, 0.21, 1 Elements MPC 14011

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 09	10 46.78	+06 33.2	2.568	3.259	127.3	13.9	18.3
1990 01 19	10 43.94	+06 49.9					
1990 01 29	10 39.16	+07 18.8	2.410	3.298	149.7	8.7	18.0
1990 02 08	10 32.80	+07 57.6					
1990 02 18	10 25.44	+08 42.7	2.353	3.336	173.5	1.9	17.7
1990 02 28	10 17.75	+09 29.7					
1990 03 10	10 10.52	+10 14.1	2.414	3.374	162.3	5.1	17.9
1990 03 20	10 04.39	+10 52.1					
1990 03 30	09 59.86	+11 21.3	2.587	3.410	139.6	10.9	18.3

(3994) Ayashi a,e,i = 2.65, 0.24, 4 Elements MPC 14178

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 50.43	+12 29.0	2.507	3.213	128.5	13.9	17.8
1990	01 19	10 47.09	+13 01.7					
1990	01 29	10 41.62	+13 44.7	2.335	3.233	151.1	8.5	17.5
1990	02 08	10 34.37	+14 34.1					
1990	02 18	10 25.93	+15 25.1	2.266	3.250	173.4	2.0	17.1
1990	02 28	10 17.08	+16 12.6					
1990	03 10	10 08.67	+16 51.7	2.317	3.264	159.0	6.3	17.4
1990	03 20	10 01.47	+17 19.6					
1990	03 30	09 56.05	+17 34.9	2.479	3.276	136.4	12.1	17.8

(4053) 1981 TQ1 a,e,i = 2.34, 0.08, 5 Elements MPC 14465

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 53.11	+08 23.8	1.797	2.510	126.5	18.4	17.5
1990	01 19	10 50.65	+08 25.2					
1990	01 29	10 45.33	+08 41.6	1.621	2.515	148.8	11.7	17.1
1990	02 08	10 37.47	+09 10.6					
1990	02 18	10 27.83	+09 47.7	1.534	2.519	173.4	2.6	16.6
1990	02 28	10 17.47	+10 27.1					
1990	03 10	10 07.68	+11 02.3	1.560	2.521	161.4	7.2	16.8
1990	03 20	09 59.57	+11 28.6					
1990	03 30	09 53.91	+11 43.0	1.689	2.522	138.1	15.3	17.3

1986 AO2 a,e,i = 2.46, 0.15, 7 Elements MPC 15413

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 54.92	+14 00.2	1.491	2.235	128.0	20.3	16.9
1990	01 19	10 52.82	+14 04.6					
1990	01 29	10 47.38	+14 21.6	1.357	2.263	149.9	12.6	16.5
1990	02 08	10 39.08	+14 46.2					
1990	02 18	10 28.87	+15 12.0	1.309	2.293	172.9	3.1	16.1
1990	02 28	10 18.08	+15 32.1					
1990	03 10	10 08.22	+15 40.8	1.368	2.324	159.5	8.6	16.4
1990	03 20	10 00.47	+15 35.7					
1990	03 30	09 55.57	+15 16.4	1.523	2.356	137.2	16.7	17.0

1981 QT a,e,i = 2.30, 0.13, 1 Elements MPC 14347

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 55.84	+05 43.1	1.702	2.404	124.9	19.6	17.4
1990	01 19	10 53.77	+05 46.3					
1990	01 29	10 48.75	+06 07.7	1.543	2.429	147.0	12.8	17.0
1990	02 08	10 41.15	+06 45.0					
1990	02 18	10 31.72	+07 33.8	1.472	2.454	171.6	3.4	16.6
1990	02 28	10 21.59	+08 27.7					
1990	03 10	10 12.02	+09 19.2	1.510	2.476	162.9	6.8	16.8
1990	03 20	10 04.16	+10 02.1					
1990	03 30	09 58.76	+10 32.5	1.651	2.497	139.6	15.0	17.3

(3987) Wujek a,e,i = 2.73, 0.12, 5 Elements MPC 14176

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 53.67	+13 52.0	2.290	2.999	128.2	14.9	17.1
1990	01 19	10 51.08	+14 25.0					
1990	01 29	10 46.15	+15 08.6	2.116	3.012	150.3	9.3	16.8
1990	02 08	10 39.24	+15 58.6					
1990	02 18	10 30.93	+16 49.5	2.041	3.023	171.6	2.7	16.4
1990	02 28	10 22.07	+17 35.6					
1990	03 10	10 13.59	+18 11.7	2.083	3.032	159.1	6.7	16.6
1990	03 20	10 06.36	+18 34.5					
1990	03 30	10 01.00	+18 43.0	2.233	3.040	137.0	13.0	17.0

1986 TR6 a,e,i = 5.11, 0.05, 12 Elements MPC 15067

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 43.91	-04 26.1	4.481	5.083	123.0	9.3	17.3
1990	01 19	10 41.56	-04 39.9					
1990	01 29	10 38.10	-04 44.4	4.266	5.091	143.5	6.6	17.1
1990	02 08	10 33.74	-04 39.5					
1990	02 18	10 28.78	-04 26.0	4.149	5.099	162.3	3.4	16.9
1990	02 28	10 23.55	-04 05.1					
1990	03 10	10 18.46	-03 38.7	4.149	5.107	163.0	3.3	16.9
1990	03 20	10 13.86	-03 09.3					
1990	03 30	10 10.07	-02 39.1	4.267	5.115	144.8	6.5	17.1

1982 FN a,e,i = 2.56, 0.21, 27 Elements MPC 10762

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 40.81	-14 28.6	1.636	2.272	118.1	22.4	17.8
1990	01 19	10 41.88	-14 20.0					
1990	01 29	10 40.28	-13 34.7	1.406	2.230	137.0	17.5	17.3
1990	02 08	10 36.14	-12 06.0					
1990	02 18	10 29.98	-09 51.5	1.246	2.191	157.1	10.1	16.8
1990	02 28	10 22.72	-06 54.4					
1990	03 10	10 15.61	-03 27.3	1.186	2.154	162.5	8.0	16.5
1990	03 20	10 09.91	+00 11.3					
1990	03 30	10 06.62	+03 41.8	1.235	2.121	143.2	16.4	16.9

1978 TR2 a,e,i = 2.85, 0.10, 1 Elements MPC 8391

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 52.66	+06 17.1	2.377	3.058	125.8	15.1	18.0
1990	01 19	10 50.32	+06 26.8					
1990	01 29	10 45.80	+06 49.9	2.190	3.069	147.9	9.8	17.7
1990	02 08	10 39.43	+07 24.4					
1990	02 18	10 31.74	+08 06.8	2.098	3.079	171.9	2.6	17.3
1990	02 28	10 23.49	+08 52.8					
1990	03 10	10 15.54	+09 37.1	2.123	3.088	163.7	5.2	17.5
1990	03 20	10 08.69	+10 15.4					
1990	03 30	10 03.55	+10 44.4	2.258	3.096	140.7	11.8	17.9

1983 NR a,e,i = 2.56, 0.13, 15 Elements MPC 8285

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 59.05	+00 17.6	2.210	2.854	121.9	17.0	17.8
1990	01 19	10 56.14	-00 27.8					
1990	01 29	10 50.72	-01 00.1	1.992	2.842	143.1	12.0	17.4
1990	02 08	10 43.04	-01 18.3					
1990	02 18	10 33.65	-01 22.4	1.863	2.827	164.6	5.3	17.0
1990	02 28	10 23.40	-01 14.0					
1990	03 10	10 13.34	-00 56.4	1.847	2.811	162.9	5.9	17.0
1990	03 20	10 04.47	-00 34.3					
1990	03 30	09 57.58	-00 12.1	1.942	2.794	141.5	12.9	17.3

1987 SZ6 a,e,i = 3.14, 0.17, 9 Elements MPC 15415

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 52.68	-02 28.3	2.987	3.606	122.0	13.4	16.3
1990	01 19	10 49.96	-02 44.6					
1990	01 29	10 45.47	-02 47.9	2.781	3.618	143.2	9.4	16.1
1990	02 08	10 39.49	-02 38.0					
1990	02 18	10 32.46	-02 15.9	2.668	3.628	163.9	4.3	15.8
1990	02 28	10 24.96	-01 43.7					
1990	03 10	10 17.65	-01 04.8	2.673	3.637	163.9	4.3	15.8
1990	03 20	10 11.16	-00 23.2					
1990	03 30	10 05.99	+00 17.2	2.793	3.645	143.6	9.4	16.1

1973 UJ5 a,e,i = 2.88, 0.08, 2 Elements MPC 14184

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 53.03	+05 23.6	2.310	2.989	125.4	15.6	16.9
1990	01 19	10 51.02	+05 35.0					
1990	01 29	10 46.82	+06 00.7	2.125	3.002	147.4	10.2	16.6
1990	02 08	10 40.71	+06 39.1					
1990	02 18	10 33.25	+07 26.5	2.034	3.014	171.2	2.9	16.2
1990	02 28	10 25.19	+08 18.2					
1990	03 10	10 17.41	+09 08.8	2.058	3.026	164.3	5.1	16.3
1990	03 20	10 10.74	+09 53.4					
1990	03 30	10 05.77	+10 28.4	2.193	3.037	141.3	11.9	16.7

1987 SG1 a,e,i = 2.57, 0.30, 12 Elements MPC 13687

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 54.01	-00 27.2	2.448	3.092	122.7	15.5	19.1
1990	01 19	10 52.12	-00 12.4					
1990	01 29	10 48.04	+00 20.5	2.197	3.052	144.4	10.8	18.7
1990	02 08	10 41.98	+01 11.4					
1990	02 18	10 34.37	+02 18.3	2.037	3.010	167.5	4.1	18.3
1990	02 28	10 25.89	+03 37.0					
1990	03 10	10 17.43	+05 01.2	1.995	2.965	164.9	5.0	18.2
1990	03 20	10 09.86	+06 24.0					
1990	03 30	10 03.92	+07 39.4	2.067	2.917	141.7	12.3	18.5

1988 VB a,e,i = 2.79, 0.23, 9 Elements MPC 13862

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 02.13	+18 30.5	2.420	3.118	127.5	14.5	17.6
1990	01 19	10 59.25	+19 15.2					
1990	01 29	10 54.05	+20 07.7	2.270	3.155	149.0	9.3	17.3
1990	02 08	10 46.88	+21 02.6					
1990	02 18	10 38.33	+21 53.9	2.218	3.189	166.9	4.0	17.1
1990	02 28	10 29.21	+22 35.7					
1990	03 10	10 20.44	+23 03.7	2.285	3.221	156.8	7.0	17.3
1990	03 20	10 12.85	+23 15.7					
1990	03 30	10 07.05	+23 11.9	2.458	3.251	136.0	12.3	17.7

1981 UM11 a,e,i = 2.34, 0.15, 3 Elements MPC 13855

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 00.64	+03 49.4	1.896	2.568	123.0	18.7	18.3
1990	01 19	10 58.88	+03 59.6					
1990	01 29	10 54.40	+04 28.4	1.722	2.591	145.0	12.6	17.9
1990	02 08	10 47.50	+05 14.2					
1990	02 18	10 38.82	+06 12.8	1.635	2.613	169.4	4.0	17.5
1990	02 28	10 29.30	+07 18.3					
1990	03 10	10 20.08	+08 23.1	1.660	2.632	165.1	5.6	17.6
1990	03 20	10 12.20	+09 20.5					
1990	03 30	10 06.45	+10 05.9	1.793	2.649	141.6	13.6	18.1

1974 SR1 a,e,i = 2.27, 0.24, 5 Elements MPC 12004

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 03.89	+08 47.3	2.134	2.807	124.2	16.8	18.7
1990	01 19	11 01.38	+08 58.8					
1990	01 29	10 56.22	+09 24.2	1.921	2.795	146.5	11.2	18.3
1990	02 08	10 48.66	+10 01.1					
1990	02 18	10 39.23	+10 45.4	1.800	2.780	170.9	3.2	17.8
1990	02 28	10 28.82	+11 31.4					
1990	03 10	10 18.53	+12 13.2	1.795	2.761	163.4	5.9	17.9
1990	03 20	10 09.42	+12 45.7					
1990	03 30	10 02.34	+13 05.9	1.901	2.739	139.6	13.7	18.3

(4306) 1976 SZ5 a,e,i = 3.13, 0.17, 2 Elements MPC 15679

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 56.57	+06 39.1	2.999	3.654	125.1	12.7	18.5
1990	01 19	10 54.29	+06 56.3					
1990	01 29	10 50.22	+07 24.5	2.786	3.653	147.2	8.4	18.1
1990	02 08	10 44.61	+08 02.0					
1990	02 18	10 37.89	+08 45.9	2.672	3.651	170.8	2.5	17.8
1990	02 28	10 30.60	+09 32.6					
1990	03 10	10 23.42	+10 17.7	2.678	3.648	165.3	4.0	17.9
1990	03 20	10 16.97	+10 57.7					
1990	03 30	10 11.77	+11 29.7	2.801	3.643	142.3	9.7	18.2

1987 SS17 a,e,i = 3.15, 0.17, 7 Elements MPC 15249

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 59.25	+11 07.2	3.003	3.669	126.1	12.5	18.4
1990	01 19	10 56.64	+11 23.1					
1990	01 29	10 52.19	+11 47.8	2.794	3.668	148.1	8.2	18.1
1990	02 08	10 46.16	+12 19.0					
1990	02 18	10 38.97	+12 53.3	2.685	3.665	171.1	2.4	17.7
1990	02 28	10 31.20	+13 26.9					
1990	03 10	10 23.54	+13 56.2	2.697	3.661	163.6	4.4	17.8
1990	03 20	10 16.66	+14 18.2					
1990	03 30	10 11.07	+14 31.0	2.825	3.655	141.0	9.9	18.1

(4245) 1981 UC10 a,e,i = 2.37, 0.17, 2 Elements MPC 15393

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 04.78	+07 29.7	1.851	2.530	123.5	18.9	17.8
1990	01 19	11 02.89	+07 40.6					
1990	01 29	10 58.18	+08 07.8	1.688	2.562	145.6	12.5	17.4
1990	02 08	10 50.94	+08 48.5					
1990	02 18	10 41.86	+09 38.0	1.612	2.592	170.1	3.8	17.0
1990	02 28	10 31.91	+10 29.9					
1990	03 10	10 22.30	+11 17.3	1.649	2.620	164.6	5.8	17.2
1990	03 20	10 14.09	+11 54.7					
1990	03 30	10 08.06	+12 19.0	1.792	2.645	141.2	13.7	17.7

(4339) 1985 UK a,e,i = 2.19, 0.18, 2 Elements MPC 15691

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 07.00	+04 15.7	1.756	2.422	121.7	20.2	17.7
1990	01 19	11 05.22	+04 13.8					
1990	01 29	11 00.46	+04 30.4	1.587	2.451	143.7	13.8	17.3
1990	02 08	10 52.98	+05 04.1					
1990	02 18	10 43.47	+05 51.1	1.502	2.478	168.2	4.7	16.9
1990	02 28	10 32.96	+06 45.7					
1990	03 10	10 22.73	+07 40.3	1.527	2.502	165.9	5.6	17.0
1990	03 20	10 13.97	+08 28.2					
1990	03 30	10 07.52	+09 04.7	1.659	2.522	142.1	14.1	17.5

1978 TB2 a,e,i = 2.27, 0.12, 4 Elements MPC 12326

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 00.03	+01 12.1	1.448	2.138	122.0	22.9	17.3
1990	01 19	11 00.14	+01 06.9					
1990	01 29	10 57.04	+01 25.9	1.296	2.165	143.0	15.9	16.9
1990	02 08	10 50.97	+02 08.9					
1990	02 18	10 42.66	+03 12.2	1.219	2.193	166.8	5.9	16.4
1990	02 28	10 33.24	+04 28.7					
1990	03 10	10 24.14	+05 48.4	1.243	2.221	166.5	6.0	16.5
1990	03 20	10 16.67	+07 01.5					
1990	03 30	10 11.74	+08 00.8	1.367	2.249	143.4	15.3	17.1

1982 KN1 a,e,i = 2.63, 0.11, 14 Elements MPC 10828

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	10 57.10	+20 37.9	1.723	2.465	129.2	18.0	16.5
1990	01 19	10 57.64	+22 11.2					
1990	01 29	10 55.23	+23 59.5	1.548	2.444	148.6	12.1	16.0
1990	02 08	10 50.02	+25 54.4					
1990	02 18	10 42.56	+27 44.4	1.466	2.424	161.7	7.4	15.7
1990	02 28	10 33.82	+29 17.6					
1990	03 10	10 25.15	+30 24.1	1.487	2.405	151.3	11.4	15.9
1990	03 20	10 17.84	+30 59.4					
1990	03 30	10 12.87	+31 03.9	1.599	2.389	132.4	18.0	16.2

1975 VS5 a,e,i = 2.26, 0.16, 6 Elements MPC 13297

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 02.37	+02 15.6	1.527	2.211	122.0	22.2	17.7
1990	01 19	11 02.07	+02 32.7					
1990	01 29	10 58.62	+03 14.1	1.378	2.247	143.5	15.1	17.3
1990	02 08	10 52.32	+04 18.2					
1990	02 18	10 43.87	+05 39.8	1.307	2.283	168.0	5.2	16.9
1990	02 28	10 34.38	+07 10.4					
1990	03 10	10 25.21	+08 39.4	1.341	2.318	166.2	5.8	17.0
1990	03 20	10 17.60	+09 57.5					
1990	03 30	10 12.42	+10 58.6	1.478	2.352	142.6	14.9	17.5

3107 T-3 a,e,i = 3.09, 0.17, 3 Elements MPC 13863

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 03.11	+09 25.2	2.074	2.754	124.6	17.1	16.6
1990	01 19	11 02.02	+09 38.3					
1990	01 29	10 58.47	+10 04.9	1.910	2.783	146.2	11.4	16.2
1990	02 08	10 52.74	+10 42.2					
1990	02 18	10 45.40	+11 25.4	1.836	2.814	169.5	3.7	15.9
1990	02 28	10 37.27	+12 09.2					
1990	03 10	10 29.32	+12 47.6	1.873	2.845	165.4	5.1	16.0
1990	03 20	10 22.45	+13 16.4					
1990	03 30	10 17.35	+13 32.9	2.018	2.878	142.8	12.1	16.5

1988 TC2 a,e,i = 2.34, 0.20, 2 Elements MPC 15561

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 09.12	+03 38.3	2.056	2.697	121.0	18.2	18.5
1990	01 19	11 07.26	+03 40.3					
1990	01 29	11 02.78	+03 59.1	1.870	2.721	142.9	12.6	18.2
1990	02 08	10 55.92	+04 33.4					
1990	02 18	10 47.23	+05 20.1	1.770	2.742	167.1	4.6	17.8
1990	02 28	10 37.58	+06 14.2					
1990	03 10	10 28.01	+07 09.3	1.783	2.760	167.3	4.5	17.8
1990	03 20	10 19.57	+07 59.3					
1990	03 30	10 13.02	+08 39.5	1.908	2.775	143.5	12.3	18.3

(4050) 1976 SF a,e,i = 3.17, 0.15, 1 Elements MPC 14464

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 03.31	+06 12.9	2.649	3.294	123.4	14.4	17.7
1990	01 19	11 01.57	+06 27.6					
1990	01 29	10 57.84	+06 54.8	2.463	3.320	145.2	9.7	17.4
1990	02 08	10 52.37	+07 32.5					
1990	02 18	10 45.61	+08 17.6	2.370	3.345	168.8	3.3	17.1
1990	02 28	10 38.20	+09 05.7					
1990	03 10	10 30.86	+09 52.3	2.395	3.370	167.1	3.8	17.1
1990	03 20	10 24.31	+10 33.1					
1990	03 30	10 19.11	+11 05.0	2.534	3.394	144.1	9.9	17.5

1984 AR a,e,i = 3.13, 0.14, 1 Elements MPC 8535

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 09	11 02.35	+07 30.3	2.076	2.750	124.1	17.2	17.1
1990	01 19	11 01.66	+07 36.7					
1990	01 29	10 58.54	+07 57.4	1.898	2.767	145.4	11.7	16.7
1990	02 08	10 53.23	+08 30.3					
1990	02 18	10 46.28	+09 11.6	1.808	2.784	168.9	3.9	16.3
1990	02 28	10 38.45	+09 56.1					
1990	03 10	10 30.72	+10 37.8	1.828	2.804	166.8	4.6	16.4
1990	03 20	10 24.00	+11 12.0					
1990	03 30	10 19.00	+11 35.0	1.956	2.825	143.9	12.0	16.8

1978 RV5 a,e,i = 2.25, 0.12, 3 Elements MPC 13684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 05.86	+08 46.0	1.592	2.458	144.0	13.6	17.2
1990	02 08	10 58.89	+09 23.8					
1990	02 18	10 49.71	+10 10.9	1.496	2.472	168.3	4.6	16.7
1990	02 28	10 39.32	+11 00.7					
1990	03 10	10 28.99	+11 45.7	1.508	2.483	165.9	5.6	16.8
1990	03 20	10 19.96	+12 20.0					
1990	03 30	10 13.16	+12 40.2	1.627	2.492	142.2	14.2	17.2
1990	04 09	10 09.15	+12 44.8					
1990	04 19	10 08.04	+12 34.4	1.824	2.499	121.4	20.1	17.7

1975 TQ3 a,e,i = 2.62, 0.18, 13 Elements MPC 14184

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 05.94	+24 11.7	2.217	3.085	146.2	10.2	17.3
1990	02 08	10 58.74	+25 10.0					
1990	02 18	10 49.79	+26 02.5	2.135	3.091	162.1	5.6	17.0
1990	02 28	10 39.90	+26 42.4					
1990	03 10	10 30.09	+27 04.5	2.167	3.094	154.7	7.9	17.1
1990	03 20	10 21.32	+27 06.9					
1990	03 30	10 14.36	+26 49.9	2.305	3.096	135.3	13.1	17.4
1990	04 09	10 09.69	+26 15.9					
1990	04 19	10 07.45	+25 28.1	2.521	3.095	115.9	17.0	17.8

1987 KB a,e,i = 2.37, 0.27, 11 Elements MPC 13606

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 02.55	-09 53.9	2.099	2.886	135.5	13.8	17.6
1990	02 08	10 56.42	-09 55.3					
1990	02 18	10 48.42	-09 34.9	1.926	2.855	155.6	8.2	17.2
1990	02 28	10 39.20	-08 52.9					
1990	03 10	10 29.73	-07 52.7	1.858	2.821	162.7	6.0	17.0
1990	03 20	10 20.98	-06 40.3					
1990	03 30	10 13.84	-05 23.0	1.901	2.784	145.7	11.7	17.2
1990	04 09	10 08.95	-04 08.3					
1990	04 19	10 06.59	-03 01.9	2.036	2.744	125.4	17.3	17.5

1246 T-2 a,e,i = 2.78, 0.18, 7 Elements MPC 14963

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	10 59.33	-01 02.1	1.954	2.792	141.3	12.7	17.3
1990	02 08	10 54.48	-00 30.8					
1990	02 18	10 47.81	+00 18.3	1.792	2.755	163.8	5.7	16.9
1990	02 28	10 39.98	+01 22.2					
1990	03 10	10 31.93	+02 34.7	1.739	2.719	168.3	4.2	16.7
1990	03 20	10 24.61	+03 48.9					
1990	03 30	10 18.89	+04 57.8	1.795	2.682	145.9	12.0	17.0
1990	04 09	10 15.37	+05 55.9					
1990	04 19	10 14.35	+06 39.8	1.939	2.645	124.9	18.2	17.4

1983 RY4 a,e,i = 2.76, 0.24, 9 Elements MPC 14190

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 02.32	-06 07.4	2.499	3.297	137.8	11.6	17.7
1990	02 08	10 56.35	-05 59.3					
1990	02 18	10 49.00	-05 35.4	2.377	3.318	159.0	6.1	17.4
1990	02 28	10 40.87	-04 57.5					
1990	03 10	10 32.73	-04 09.3	2.367	3.338	165.7	4.2	17.3
1990	03 20	10 25.32	-03 15.6					
1990	03 30	10 19.26	-02 21.5	2.473	3.355	147.1	9.3	17.6
1990	04 09	10 14.98	-01 31.6					
1990	04 19	10 12.69	-00 49.3	2.675	3.370	126.5	13.9	18.0

1978 ON a,e,i = 2.75, 0.11, 3 Elements MPC 14013

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 03.88	+10 05.0	2.116	2.977	144.9	11.0	16.6
1990	02 08	10 57.86	+10 44.1					
1990	02 18	10 50.19	+11 29.3	2.014	2.989	168.4	3.8	16.2
1990	02 28	10 41.61	+12 15.5					
1990	03 10	10 33.02	+12 56.9	2.027	3.000	166.0	4.6	16.3
1990	03 20	10 25.33	+13 29.2					
1990	03 30	10 19.24	+13 49.6	2.151	3.010	143.1	11.5	16.7
1990	04 09	10 15.24	+13 56.8					
1990	04 19	10 13.52	+13 51.0	2.361	3.018	122.2	16.4	17.0

1933 SD a,e,i = 2.19, 0.23, 5 Elements MPC 14181

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 06.97	+01 24.5	1.806	2.644	140.8	13.6	18.6
1990	02 08	11 00.32	+02 08.4					
1990	02 18	10 51.70	+03 08.4	1.696	2.663	165.0	5.5	18.2
1990	02 28	10 41.95	+04 19.3					
1990	03 10	10 32.15	+05 33.7	1.697	2.678	168.5	4.2	18.1
1990	03 20	10 23.41	+06 44.1					
1990	03 30	10 16.56	+07 44.4	1.812	2.689	144.7	12.4	18.6
1990	04 09	10 12.18	+08 30.6					
1990	04 19	10 10.42	+09 01.1	2.012	2.696	123.2	18.2	19.0

1989 CQ1 a,e,i = 5.08, 0.10, 15 Elements MPC 14794

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	10 57.36	+02 08.2	4.376	5.199	143.3	6.5	17.2
1990	02 08	10 53.06	+02 13.8					
1990	02 18	10 48.04	+02 25.1	4.251	5.213	165.2	2.8	17.0
1990	02 28	10 42.63	+02 40.6					
1990	03 10	10 37.19	+02 58.3	4.247	5.227	169.7	1.9	16.9
1990	03 20	10 32.11	+03 16.5					
1990	03 30	10 27.70	+03 33.0	4.364	5.241	148.4	5.7	17.2
1990	04 09	10 24.24	+03 46.3					
1990	04 19	10 21.89	+03 55.2	4.582	5.254	127.5	8.7	17.4

2141 T-3 a,e,i = 2.40, 0.17, 4 Elements MPC 12573

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 07.31	-01 14.0	1.635	2.468	139.5	15.0	17.8
1990	02 08	11 00.98	-00 56.3					
1990	02 18	10 52.62	-00 20.0	1.544	2.505	162.5	6.8	17.4
1990	02 28	10 43.13	+00 30.8					
1990	03 10	10 33.68	+01 29.7	1.559	2.540	168.5	4.5	17.3
1990	03 20	10 25.42	+02 28.9					
1990	03 30	10 19.19	+03 22.1	1.682	2.574	146.4	12.4	17.8
1990	04 09	10 15.51	+04 04.2					
1990	04 19	10 14.51	+04 32.8	1.890	2.606	125.5	18.3	18.3

(4354) 2142 P-L a,e,i = 2.79, 0.21, 7 Elements MPC 15696

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 03.90	-01 36.1	1.726	2.560	140.0	14.3	17.3
1990	02 08	10 58.72	-00 57.1					
1990	02 18	10 51.73	+00 00.4	1.643	2.604	162.9	6.4	17.0
1990	02 28	10 43.77	+01 11.7					
1990	03 10	10 35.86	+02 29.1	1.667	2.649	169.3	4.0	16.9
1990	03 20	10 29.00	+03 44.9					
1990	03 30	10 23.93	+04 52.2	1.799	2.693	147.2	11.6	17.4
1990	04 09	10 21.13	+05 46.4					
1990	04 19	10 20.72	+06 25.2	2.019	2.738	126.5	17.2	17.9

1987 QU10 a,e,i = 2.89, 0.23, 4 Elements MPC 15247

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 04.05	+10 15.3	2.685	3.537	144.9	9.2	17.9
1990	02 08	10 58.50	+11 00.6					
1990	02 18	10 51.59	+11 51.3	2.559	3.532	168.0	3.3	17.6
1990	02 28	10 43.89	+12 43.0					
1990	03 10	10 36.08	+13 30.9	2.553	3.525	166.3	3.8	17.6
1990	03 20	10 28.87	+14 11.1					
1990	03 30	10 22.86	+14 40.7	2.664	3.517	143.5	9.7	17.9
1990	04 09	10 18.51	+14 58.4					
1990	04 19	10 16.05	+15 04.0	2.865	3.506	122.3	14.0	18.2

1988 RP a,e,i = 2.17, 0.03, 4 Elements MPC 13692

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 11.80	+03 09.6	1.359	2.210	140.5	16.5	16.2
1990	02 08	11 05.74	+03 21.4					
1990	02 18	10 57.01	+03 50.2	1.248	2.215	164.3	6.9	15.7
1990	02 28	10 46.63	+04 31.3					
1990	03 10	10 36.00	+05 17.2	1.236	2.220	169.5	4.7	15.5
1990	03 20	10 26.59	+06 00.1					
1990	03 30	10 19.56	+06 33.6	1.327	2.224	145.7	14.7	16.1
1990	04 09	10 15.61	+06 53.5					
1990	04 19	10 14.88	+06 58.2	1.495	2.228	124.9	21.7	16.5

1976 SZ9 a,e,i = 3.19, 0.21, 4 Elements MPC 9957

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 06.98	+08 55.7	2.593	3.438	143.8	9.7	18.1
1990	02 08	11 01.43	+09 28.8					
1990	02 18	10 54.56	+10 07.4	2.501	3.471	167.1	3.6	17.8
1990	02 28	10 46.95	+10 47.6					
1990	03 10	10 39.31	+11 24.9	2.526	3.504	168.2	3.3	17.8
1990	03 20	10 32.34	+11 55.7					
1990	03 30	10 26.61	+12 17.6	2.668	3.535	145.3	9.2	18.2
1990	04 09	10 22.54	+12 29.0					
1990	04 19	10 20.32	+12 29.7	2.902	3.565	124.2	13.5	18.6

1988 TO1 a,e,i = 3.04, 0.25, 3 Elements MPC 13861

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 08.14	+08 32.1	2.114	2.964	143.4	11.4	18.1
1990	02 08	11 02.53	+09 17.6					
1990	02 18	10 55.36	+10 10.1	2.043	3.014	166.9	4.2	17.8
1990	02 28	10 47.34	+11 04.2					
1990	03 10	10 39.35	+11 54.1	2.086	3.064	167.9	3.9	17.8
1990	03 20	10 32.22	+12 35.1					
1990	03 30	10 26.62	+13 04.2	2.241	3.113	145.0	10.6	18.3
1990	04 09	10 22.97	+13 20.0					
1990	04 19	10 21.43	+13 22.6	2.486	3.160	124.1	15.2	18.7

1982 UV1 a,e,i = 3.09, 0.18, 3 Elements MPC 10758

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 07.40	+08 30.8	2.688	3.530	143.6	9.5	17.9
1990	02 08	11 02.20	+09 12.7					
1990	02 18	10 55.69	+10 00.6	2.578	3.547	166.8	3.6	17.6
1990	02 28	10 48.39	+10 50.7					
1990	03 10	10 40.99	+11 38.3	2.585	3.563	168.4	3.2	17.6
1990	03 20	10 34.16	+12 19.3					
1990	03 30	10 28.48	+12 50.9	2.709	3.578	145.5	9.1	18.0
1990	04 09	10 24.38	+13 11.4					
1990	04 19	10 22.07	+13 20.3	2.927	3.591	124.3	13.4	18.3

(4003) Schumann a,e,i = 3.43, 0.08, 5 Elements MPC 14325

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 04.81	+01 55.7	2.782	3.606	141.6	9.8	16.4
1990	02 08	11 00.33	+02 25.3					
1990	02 18	10 54.58	+03 05.2	2.633	3.594	164.4	4.3	16.0
1990	02 28	10 48.03	+03 52.7					
1990	03 10	10 41.31	+04 43.5	2.598	3.582	170.8	2.5	15.9
1990	03 20	10 35.04	+05 33.6					
1990	03 30	10 29.80	+06 18.9	2.682	3.570	148.2	8.5	16.2
1990	04 09	10 26.03	+06 56.2					
1990	04 19	10 23.98	+07 23.7	2.862	3.557	126.9	13.0	16.5

1981 ED43 a,e,i = 2.79, 0.22, 8 Elements MPC 12697

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 10.58	+11 52.6	2.427	3.274	143.8	10.2	18.6
1990	02 08	11 04.70	+12 27.4					
1990	02 18	10 57.17	+13 06.9	2.280	3.250	166.6	4.0	18.2
1990	02 28	10 48.57	+13 46.5					
1990	03 10	10 39.71	+14 21.2	2.250	3.224	166.4	4.2	18.1
1990	03 20	10 31.42	+14 47.0					
1990	03 30	10 24.46	+15 01.2	2.336	3.195	143.7	10.7	18.5
1990	04 09	10 19.36	+15 02.7					
1990	04 19	10 16.40	+14 51.7	2.511	3.165	122.4	15.5	18.7

1985 UY4 a,e,i = 2.28, 0.13, 6 Elements MPC 12317

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 10.61	+04 22.4	1.296	2.154	141.3	16.6	16.5
1990	02 08	11 05.70	+05 27.3					
1990	02 18	10 58.27	+06 50.5	1.212	2.182	165.4	6.6	16.0
1990	02 28	10 49.30	+08 23.1					
1990	03 10	10 40.20	+09 53.5	1.227	2.211	169.2	4.8	16.0
1990	03 20	10 32.34	+11 11.7					
1990	03 30	10 26.75	+12 10.7	1.345	2.240	145.4	14.7	16.6
1990	04 09	10 24.04	+12 47.4					
1990	04 19	10 24.33	+13 02.2	1.539	2.269	124.9	21.3	17.1

(4137) 1970 WC a,e,i = 2.36, 0.02, 4 Elements MPC 14933

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 13.82	+07 18.1	1.485	2.339	141.7	15.1	16.7
1990	02 08	11 08.25	+07 41.4					
1990	02 18	11 00.17	+08 16.4	1.367	2.336	165.4	6.1	16.2
1990	02 28	10 50.46	+08 57.6					
1990	03 10	10 40.40	+09 37.5	1.351	2.334	169.4	4.5	16.1
1990	03 20	10 31.34	+10 09.3					
1990	03 30	10 24.39	+10 28.4	1.439	2.332	145.6	14.0	16.6
1990	04 09	10 20.24	+10 32.3					
1990	04 19	10 19.12	+10 20.7	1.606	2.330	124.8	20.7	17.1

1986 TS6 a,e,i = 5.23, 0.08, 11 Elements MPC 14351

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 03.75	+08 26.2	4.407	5.240	144.4	6.3	17.2
1990 02 08	10 59.72	+08 41.7					
1990 02 18	10 54.92	+09 00.5	4.284	5.251	166.8	2.5	17.0
1990 02 28	10 49.68	+09 20.8					
1990 03 10	10 44.37	+09 40.4	4.281	5.262	170.2	1.8	17.0
1990 03 20	10 39.35	+09 57.3					
1990 03 30	10 34.97	+10 10.0	4.400	5.274	148.1	5.7	17.2
1990 04 09	10 31.48	+10 17.2					
1990 04 19	10 29.09	+10 18.4	4.619	5.285	127.0	8.7	17.5

4069 P-L a,e,i = 3.08, 0.03, 9 Elements MPC 9299

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 10.13	-04 12.6	2.191	2.991	137.3	12.9	18.3
1990 02 08	11 06.01	-03 49.3					
1990 02 18	11 00.24	-03 08.4	2.043	2.987	159.2	6.8	18.0
1990 02 28	10 53.37	-02 12.4					
1990 03 10	10 46.19	-01 06.0	2.001	2.984	170.3	3.2	17.8
1990 03 20	10 39.53	+00 04.7					
1990 03 30	10 34.11	+01 13.4	2.072	2.982	150.4	9.5	18.1
1990 04 09	10 30.48	+02 14.6					
1990 04 19	10 28.94	+03 04.6	2.239	2.980	129.4	15.1	18.5

(3972) Richard a,e,i = 2.16, 0.18, 4 Elements MPC 14171

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 18.96	+03 27.6	1.717	2.544	139.0	14.7	18.3
1990 02 08	11 13.33	+04 16.5					
1990 02 18	11 05.39	+05 21.5	1.585	2.547	163.1	6.5	17.9
1990 02 28	10 55.88	+06 37.0					
1990 03 10	10 45.90	+07 54.8	1.561	2.547	171.3	3.4	17.7
1990 03 20	10 36.65	+09 06.6					
1990 03 30	10 29.15	+10 05.8	1.649	2.544	146.8	12.4	18.2
1990 04 09	10 24.12	+10 48.2					
1990 04 19	10 21.84	+11 12.8	1.825	2.538	125.1	18.9	18.6

(4258) 1987 RZ2 a,e,i = 2.96, 0.07, 4 Elements MPC 15397

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 15.68	+10 36.5	2.334	3.171	142.3	11.0	17.1
1990 02 08	11 10.73	+11 18.8					
1990 02 18	11 04.11	+12 07.3	2.206	3.171	165.0	4.6	16.8
1990 02 28	10 56.40	+12 57.0					
1990 03 10	10 48.38	+13 42.4	2.192	3.170	168.3	3.7	16.7
1990 03 20	10 40.88	+14 18.9					
1990 03 30	10 34.60	+14 43.5	2.292	3.169	145.9	10.2	17.1
1990 04 09	10 30.11	+14 54.4					
1990 04 19	10 27.66	+14 51.9	2.483	3.167	124.9	15.1	17.4

(4152) 1985 JF a,e,i = 3.18, 0.08, 17 Elements MPC 14938

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 12.44	-12 21.3	2.163	2.916	132.1	14.5	17.0
1990 02 08	11 08.99	-12 01.7					
1990 02 18	11 03.82	-11 18.4	2.004	2.915	152.2	9.1	16.7
1990 02 28	10 57.49	-10 12.4					
1990 03 10	10 50.78	-08 47.6	1.945	2.915	165.1	5.0	16.4
1990 03 20	10 44.51	-07 10.8					
1990 03 30	10 39.43	-05 29.8	1.997	2.917	152.1	9.2	16.7
1990 04 09	10 36.13	-03 52.6					
1990 04 19	10 34.90	-02 25.5	2.148	2.920	132.2	14.8	17.0

1988 VU1 a,e,i = 2.67, 0.07, 6 Elements MPC 14200

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 19.05	-04 07.7	2.050	2.837	135.5	14.1	17.0
1990	02 08	11 14.23	-04 01.5					
1990	02 18	11 07.49	-03 37.9	1.905	2.844	157.5	7.6	16.6
1990	02 28	10 59.44	-02 58.6					
1990	03 10	10 50.94	-02 07.7	1.865	2.849	170.5	3.3	16.4
1990	03 20	10 42.93	-01 11.2					
1990	03 30	10 36.27	-00 15.1	1.938	2.853	151.1	9.7	16.8
1990	04 09	10 31.57	+00 34.8					
1990	04 19	10 29.16	+01 14.6	2.106	2.857	130.0	15.6	17.1

(4007) 1973 SR a,e,i = 5.15, 0.06, 11 Elements MPC 14326

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 13.13	+11 50.9	4.224	5.048	143.2	6.7	17.1
1990	02 08	11 09.23	+12 11.6					
1990	02 18	11 04.46	+12 34.5	4.095	5.056	164.9	2.9	16.8
1990	02 28	10 59.14	+12 57.4					
1990	03 10	10 53.65	+13 17.9	4.085	5.065	169.3	2.1	16.8
1990	03 20	10 48.40	+13 34.1					
1990	03 30	10 43.74	+13 44.2	4.196	5.073	148.4	5.9	17.1
1990	04 09	10 40.00	+13 47.4					
1990	04 19	10 37.36	+13 43.2	4.407	5.082	127.5	9.0	17.3

1981 EX3 a,e,i = 2.75, 0.10, 8 Elements MPC 10820

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 18.61	-07 37.6	1.778	2.559	133.7	16.2	18.6
1990	02 08	11 14.56	-07 37.8					
1990	02 18	11 08.39	-07 15.5	1.646	2.575	154.7	9.4	18.2
1990	02 28	11 00.77	-06 31.9					
1990	03 10	10 52.67	-05 31.3	1.611	2.591	168.1	4.5	18.0
1990	03 20	10 45.13	-04 20.8					
1990	03 30	10 39.08	-03 08.3	1.684	2.609	152.0	10.3	18.3
1990	04 09	10 35.18	-02 01.4					
1990	04 19	10 33.73	-01 05.5	1.850	2.627	131.7	16.6	18.7

1989 BA1 a,e,i = 2.77, 0.16, 37 Elements MPC 14359

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1990	01 29	11 23.36	-44 26.1	2.455	2.906	-0.94	+1.2	18.1
1990	02 08	11 18.24	-45 40.4					
1990	02 18	11 10.70	-46 23.7	2.319	2.936	-0.92	+1.9	18.0
1990	02 28	11 01.43	-46 30.6					
1990	03 10	10 51.52	-45 58.3	2.236	2.965	-0.74	+3.2	17.8
1990	03 20	10 42.19	-44 48.1					
1990	03 30	10 34.51	-43 05.2	2.226	2.993	-0.55	+4.2	17.8
1990	04 09	10 29.26	-40 58.1					
1990	04 19	10 26.79	-38 37.2	2.295	3.020	-0.48	+4.5	17.9

1979 HE3 a,e,i = 2.41, 0.14, 3 Elements MPC 11518

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 19.88	+10 08.7	1.295	2.153	141.1	16.7	17.5
1990	02 08	11 16.29	+10 49.5					
1990	02 18	11 09.79	+11 42.3	1.167	2.134	163.6	7.5	17.0
1990	02 28	11 01.17	+12 39.4					
1990	03 10	10 51.75	+13 30.9	1.134	2.117	168.9	5.2	16.8
1990	03 20	10 43.04	+14 08.0					
1990	03 30	10 36.36	+14 25.4	1.198	2.104	146.5	15.2	17.2
1990	04 09	10 32.63	+14 20.9					
1990	04 19	10 32.16	+13 55.8	1.337	2.094	126.3	22.7	17.7

(3981) 1984 BL a,e,i = 3.15, 0.18, 2 Elements MPC 14174

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 19.80	+07 55.0	2.188	3.014	140.5	12.0	16.6
1990	02 08	11 15.11	+08 34.0					
1990	02 18	11 08.71	+09 20.8	2.089	3.050	163.6	5.3	16.3
1990	02 28	11 01.22	+10 10.9					
1990	03 10	10 53.45	+10 58.4	2.101	3.086	171.1	2.8	16.2
1990	03 20	10 46.24	+11 38.6					
1990	03 30	10 40.30	+12 07.9	2.227	3.122	148.4	9.6	16.7
1990	04 09	10 36.13	+12 24.3					
1990	04 19	10 34.00	+12 27.5	2.446	3.158	127.3	14.7	17.1

1988 XA a,e,i = 3.01, 0.05, 9 Elements MPC 14202

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 19.27	-09 23.4	2.167	2.925	132.5	14.4	15.7
1990	02 08	11 15.18	-09 28.9					
1990	02 18	11 09.27	-09 14.7	2.017	2.933	153.1	8.8	15.4
1990	02 28	11 02.10	-08 41.3					
1990	03 10	10 54.46	-07 51.7	1.967	2.941	166.3	4.6	15.2
1990	03 20	10 47.23	-06 51.2					
1990	03 30	10 41.18	-05 46.0	2.028	2.950	152.5	9.0	15.4
1990	04 09	10 36.92	-04 42.8					
1990	04 19	10 34.77	-03 46.8	2.187	2.959	132.5	14.5	15.8

(4177) 1987 SS1 a,e,i = 3.31, 0.28, 17 Elements MPC 15386

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 17.72	-11 55.0	3.358	4.076	131.3	10.5	19.2
1990	02 08	11 13.42	-11 40.0					
1990	02 18	11 07.95	-11 10.2	3.202	4.099	151.7	6.6	18.9
1990	02 28	11 01.71	-10 26.5					
1990	03 10	10 55.22	-09 31.2	3.154	4.121	164.9	3.6	18.8
1990	03 20	10 49.00	-08 28.0					
1990	03 30	10 43.55	-07 21.1	3.227	4.141	152.9	6.3	19.0
1990	04 09	10 39.26	-06 14.9					
1990	04 19	10 36.38	-05 13.3	3.407	4.159	133.2	10.1	19.2

(4020) 1981 ET38 a,e,i = 2.77, 0.16, 10 Elements MPC 14331

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 20.54	-03 43.8	2.344	3.123	135.4	12.8	18.1
1990	02 08	11 16.02	-03 13.2					
1990	02 18	11 09.84	-02 26.3	2.202	3.140	157.9	6.8	17.7
1990	02 28	11 02.51	-01 25.8					
1990	03 10	10 54.80	-00 16.5	2.169	3.156	172.5	2.4	17.5
1990	03 20	10 47.49	+00 55.9					
1990	03 30	10 41.28	+02 05.3	2.253	3.170	152.0	8.5	17.9
1990	04 09	10 36.75	+03 06.6					
1990	04 19	10 34.17	+03 56.5	2.438	3.182	130.4	13.9	18.2

1978 SH1 a,e,i = 2.26, 0.16, 8 Elements MPC 12325

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 29.68	+17 35.8	1.481	2.326	140.4	15.7	17.6
1990	02 08	11 24.03	+18 53.2					
1990	02 18	11 15.63	+20 12.3	1.404	2.360	160.7	8.0	17.3
1990	02 28	11 05.40	+21 22.6					
1990	03 10	10 54.70	+22 14.2	1.430	2.392	161.4	7.6	17.3
1990	03 20	10 44.95	+22 41.3					
1990	03 30	10 37.27	+22 42.6	1.557	2.422	141.9	14.7	17.8
1990	04 09	10 32.38	+22 20.3					
1990	04 19	10 30.47	+21 38.5	1.761	2.451	122.4	20.2	18.3

1981 EY8 a,e,i = 2.76, 0.24, 6 Elements MPC 9424

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 24.62	-01 39.1	2.433	3.211	135.5	12.4	18.6
1990	02 08	11 19.28	-01 29.7					
1990	02 18	11 12.27	-01 07.1	2.302	3.241	158.3	6.5	18.3
1990	02 28	11 04.14	-00 33.6					
1990	03 10	10 55.64	+00 07.1	2.280	3.268	172.9	2.2	18.1
1990	03 20	10 47.58	+00 50.4					
1990	03 30	10 40.63	+01 31.7	2.378	3.293	152.0	8.2	18.5
1990	04 09	10 35.36	+02 07.1					
1990	04 19	10 32.05	+02 33.9	2.577	3.316	130.3	13.4	18.8

(3955) Bruckner a,e,i = 3.02, 0.08, 10 Elements MPC 14010

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 25.41	+16 05.2	2.039	2.873	141.2	12.4	16.0
1990	02 08	11 20.28	+16 41.2					
1990	02 18	11 13.13	+17 19.1	1.929	2.885	162.2	6.0	15.6
1990	02 28	11 04.61	+17 52.9					
1990	03 10	10 55.68	+18 16.7	1.927	2.899	165.2	5.0	15.6
1990	03 20	10 47.31	+18 26.6					
1990	03 30	10 40.37	+18 20.8	2.036	2.912	145.1	11.3	16.0
1990	04 09	10 35.45	+17 59.3					
1990	04 19	10 32.84	+17 23.8	2.233	2.926	124.9	16.3	16.3

(4145) 1981 SJ7 a,e,i = 2.27, 0.20, 5 Elements MPC 14936

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 27.63	-01 53.0	1.929	2.714	134.7	14.9	18.3
1990	02 08	11 22.31	-01 45.8					
1990	02 18	11 14.71	-01 21.7	1.763	2.703	157.7	8.0	17.8
1990	02 28	11 05.41	-00 42.5					
1990	03 10	10 55.38	+00 07.3	1.701	2.689	172.8	2.6	17.3
1990	03 20	10 45.71	+01 01.5					
1990	03 30	10 37.40	+01 53.7	1.754	2.673	151.1	10.4	17.9
1990	04 09	10 31.27	+02 38.0					
1990	04 19	10 27.70	+03 10.8	1.902	2.653	129.1	17.1	18.3

(4237) 1979 SD4 a,e,i = 2.64, 0.10, 3 Elements MPC 15390

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 26.64	+07 27.3	2.018	2.833	138.7	13.3	17.5
1990	02 08	11 21.74	+08 01.7					
1990	02 18	11 14.80	+08 45.6	1.889	2.845	162.0	6.2	17.1
1990	02 28	11 06.43	+09 34.3					
1990	03 10	10 57.54	+10 21.5	1.869	2.856	172.3	2.7	16.9
1990	03 20	10 49.11	+11 01.8					
1990	03 30	10 42.00	+11 30.7	1.963	2.865	149.1	10.3	17.3
1990	04 09	10 36.86	+11 45.9					
1990	04 19	10 34.02	+11 46.9	2.149	2.874	127.6	16.1	17.7

1980 FT3 a,e,i = 2.25, 0.15, 2 Elements MPC 14344

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 28.70	+00 42.9	1.778	2.577	135.7	15.5	18.6
1990	02 08	11 23.82	+01 11.0					
1990	02 18	11 16.55	+01 56.5	1.631	2.578	159.1	7.9	18.1
1990	02 28	11 07.54	+02 55.7					
1990	03 10	10 57.79	+04 01.9	1.587	2.577	174.9	2.0	17.8
1990	03 20	10 48.45	+05 07.7					
1990	03 30	10 40.57	+06 06.0	1.655	2.574	150.8	10.9	18.2
1990	04 09	10 34.95	+06 51.5					
1990	04 19	10 31.97	+07 21.4	1.816	2.567	128.8	17.8	18.7

1974 QM2 a,e,i = 2.25, 0.18, 6 Elements MPC 10773

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 30.80	+04 07.8	1.600	2.413	136.6	16.3	18.2
1990	02 08	11 26.03	+04 15.1					
1990	02 18	11 18.45	+04 36.7	1.424	2.377	159.9	8.2	17.7
1990	02 28	11 08.63	+05 09.4					
1990	03 10	10 57.67	+05 47.3	1.348	2.339	174.8	2.2	17.2
1990	03 20	10 46.93	+06 23.4					
1990	03 30	10 37.75	+06 51.5	1.380	2.299	149.9	12.6	17.7
1990	04 09	10 31.15	+07 06.8					
1990	04 19	10 27.66	+07 07.2	1.498	2.258	127.9	20.6	18.0

(4004) 1971 SN1 a,e,i = 3.09, 0.21, 16 Elements MPC 14325

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 30.82	+18 17.3	2.779	3.591	140.2	10.1	17.5
1990	02 08	11 25.31	+18 55.3					
1990	02 18	11 18.19	+19 33.3	2.666	3.612	160.3	5.3	17.2
1990	02 28	11 10.00	+20 06.6					
1990	03 10	11 01.43	+20 30.7	2.669	3.632	163.5	4.5	17.2
1990	03 20	10 53.22	+20 42.5					
1990	03 30	10 46.02	+20 40.7	2.788	3.650	144.8	9.1	17.5
1990	04 09	10 40.35	+20 25.3					
1990	04 19	10 36.51	+19 57.5	3.003	3.666	124.5	13.1	17.8

1986 EJ1 a,e,i = 2.61, 0.15, 16 Elements MPC 11855

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 36.32	+18 31.5	1.717	2.543	138.9	14.7	16.9
1990	02 08	11 30.94	+18 58.5					
1990	02 18	11 22.74	+19 26.0	1.561	2.510	159.4	8.0	16.5
1990	02 28	11 12.37	+19 46.7					
1990	03 10	11 00.99	+19 53.0	1.507	2.477	164.1	6.3	16.3
1990	03 20	10 49.97	+19 40.0					
1990	03 30	10 40.56	+19 06.2	1.561	2.445	144.7	13.6	16.6
1990	04 09	10 33.72	+18 12.9					
1990	04 19	10 29.89	+17 03.4	1.699	2.414	124.4	20.1	16.9

1985 TT a,e,i = 3.98, 0.28, 7 Elements MPC 10634

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 23.11	-00 04.3	3.968	4.732	136.6	8.2	18.0
1990	02 08	11 19.56	+00 19.8					
1990	02 18	11 14.97	+00 52.2	3.766	4.701	158.9	4.3	17.7
1990	02 28	11 09.62	+01 31.3					
1990	03 10	11 03.92	+02 14.6	3.678	4.669	175.8	0.9	17.4
1990	03 20	10 58.29	+02 59.2					
1990	03 30	10 53.14	+03 42.2	3.714	4.635	154.5	5.3	17.7
1990	04 09	10 48.86	+04 20.9					
1990	04 19	10 45.71	+04 53.3	3.859	4.601	132.8	9.2	17.9

1974 MG a,e,i = 2.23, 0.18, 5 Elements MPC 10295

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 35.22	+00 32.7	1.741	2.527	134.1	16.2	18.4
1990	02 08	11 30.52	+00 34.8					
1990	02 18	11 23.16	+00 53.0	1.560	2.500	157.1	8.8	17.9
1990	02 28	11 13.67	+01 25.4					
1990	03 10	11 03.05	+02 07.4	1.479	2.470	175.6	1.8	17.4
1990	03 20	10 52.52	+02 52.4					
1990	03 30	10 43.32	+03 33.9	1.510	2.438	152.2	11.0	17.8
1990	04 09	10 36.43	+04 05.9					
1990	04 19	10 32.38	+04 25.1	1.633	2.403	129.8	18.7	18.2

1988 XW1 a,e,i = 3.02, 0.11, 11 Elements MPC 14204

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 31.34	+18 45.1	2.406	3.224	140.1	11.3	17.6
1990	02 08	11 26.79	+19 45.8					
1990	02 18	11 20.40	+20 47.4	2.296	3.240	159.4	6.2	17.3
1990	02 28	11 12.73	+21 43.5					
1990	03 10	11 04.53	+22 28.3	2.297	3.255	161.7	5.5	17.3
1990	03 20	10 56.66	+22 57.3					
1990	03 30	10 49.86	+23 08.6	2.409	3.268	143.8	10.4	17.6
1990	04 09	10 44.72	+23 02.1					
1990	04 19	10 41.56	+22 39.5	2.611	3.281	124.1	14.7	17.9

1978 SL6 a,e,i = 2.22, 0.16, 1 Elements MPC 13853

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 34.71	+03 53.2	1.771	2.568	135.6	15.6	18.5
1990	02 08	11 30.08	+04 27.7					
1990	02 18	11 22.95	+05 17.4	1.616	2.563	159.1	7.9	18.1
1990	02 28	11 13.90	+06 17.7					
1990	03 10	11 03.92	+07 21.6	1.564	2.555	175.5	1.8	17.7
1990	03 20	10 54.19	+08 21.5					
1990	03 30	10 45.81	+09 10.7	1.625	2.545	150.9	11.0	18.2
1990	04 09	10 39.66	+09 44.8					
1990	04 19	10 36.17	+10 01.9	1.778	2.531	128.8	18.0	18.6

1981 EJ40 a,e,i = 2.78, 0.32, 33 Elements MPC 13854

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 47.28	+06 40.1	2.133	2.902	133.6	14.2	18.7
1990	02 08	11 39.04	+06 15.9					
1990	02 18	11 28.58	+05 58.4	2.025	2.964	158.0	7.2	18.4
1990	02 28	11 16.65	+05 45.3					
1990	03 10	11 04.27	+05 33.4	2.032	3.024	176.4	1.2	18.1
1990	03 20	10 52.52	+05 20.2					
1990	03 30	10 42.32	+05 03.6	2.167	3.082	151.6	8.9	18.7
1990	04 09	10 34.32	+04 41.9					
1990	04 19	10 28.78	+04 14.5	2.406	3.138	129.0	14.4	19.1

1977 QK1 a,e,i = 2.36, 0.24, 2 Elements MPC 13684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 37.49	+02 42.4	2.026	2.806	134.5	14.5	18.5
1990	02 08	11 32.39	+03 10.2					
1990	02 18	11 25.10	+03 51.4	1.890	2.831	158.0	7.5	18.1
1990	02 28	11 16.23	+04 42.0					
1990	03 10	11 06.65	+05 36.4	1.861	2.854	177.0	1.1	17.8
1990	03 20	10 57.38	+06 28.3					
1990	03 30	10 49.33	+07 12.4	1.950	2.873	152.5	9.2	18.3
1990	04 09	10 43.20	+07 44.8					
1990	04 19	10 39.39	+08 03.7	2.136	2.889	130.2	15.4	18.7

(3984) 1984 SB6 a,e,i = 2.44, 0.18, 3 Elements MPC 14175

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 36.03	+06 22.8	2.034	2.828	136.2	14.0	18.6
1990	02 08	11 31.37	+07 07.5					
1990	02 18	11 24.54	+08 03.5	1.897	2.844	159.5	7.0	18.2
1990	02 28	11 16.13	+09 05.8					
1990	03 10	11 06.99	+10 07.6	1.868	2.857	173.8	2.2	18.0
1990	03 20	10 58.11	+11 02.4					
1990	03 30	10 50.40	+11 45.3	1.954	2.867	150.8	9.8	18.4
1990	04 09	10 44.59	+12 13.0					
1990	04 19	10 41.04	+12 24.8	2.136	2.875	128.9	15.8	18.8

1324 T-2 a,e,i = 2.36, 0.13, 5 Elements MPC 15080

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 36.63	+08 06.8	1.632	2.443	136.6	16.1	17.8
1990	02 08	11 32.65	+08 34.4					
1990	02 18	11 25.91	+09 13.9	1.466	2.416	159.4	8.3	17.3
1990	02 28	11 16.96	+10 00.2					
1990	03 10	11 06.81	+10 45.8	1.399	2.388	173.2	2.8	16.9
1990	03 20	10 56.75	+11 23.1					
1990	03 30	10 48.06	+11 46.5	1.439	2.359	150.2	12.1	17.3
1990	04 09	10 41.73	+11 52.5					
1990	04 19	10 38.31	+11 40.7	1.567	2.330	128.6	19.7	17.7

1987 QQ11 a,e,i = 3.01, 0.07, 10 Elements MPC 15247

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 35.64	-03 46.8	2.165	2.918	132.1	14.5	16.7
1990	02 08	11 31.37	-04 05.5					
1990	02 18	11 25.09	-04 09.5	2.012	2.932	153.9	8.5	16.4
1990	02 28	11 17.29	-03 59.6					
1990	03 10	11 08.76	-03 38.4	1.960	2.946	171.5	2.8	16.1
1990	03 20	11 00.40	-03 09.8					
1990	03 30	10 53.06	-02 38.7	2.022	2.960	155.5	8.0	16.4
1990	04 09	10 47.43	-02 10.0					
1990	04 19	10 43.91	-01 47.7	2.185	2.975	134.3	14.0	16.8

(3944) Halliday a,e,i = 2.37, 0.15, 8 Elements MPC 14006

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 39.85	+13 56.4	1.888	2.696	137.3	14.3	17.4
1990	02 08	11 35.15	+14 58.9					
1990	02 18	11 28.02	+16 07.8	1.761	2.707	158.9	7.6	17.1
1990	02 28	11 19.07	+17 15.6					
1990	03 10	11 09.26	+18 14.0	1.741	2.716	166.1	5.0	16.9
1990	03 20	10 59.71	+18 56.3					
1990	03 30	10 51.46	+19 18.7	1.832	2.722	146.6	11.6	17.3
1990	04 09	10 45.30	+19 20.5					
1990	04 19	10 41.65	+19 03.3	2.013	2.726	126.0	17.3	17.7

1988 AK a,e,i = 5.31, 0.06, 22 Elements MPC 14354

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 29.03	+30 20.8	4.340	5.138	140.4	7.0	16.2
1990	02 08	11 25.67	+31 17.6					
1990	02 18	11 21.24	+32 10.1	4.247	5.147	152.9	5.0	16.1
1990	02 28	11 16.04	+32 54.8					
1990	03 10	11 10.50	+33 28.5	4.264	5.155	151.0	5.4	16.1
1990	03 20	11 05.06	+33 49.4					
1990	03 30	11 00.13	+33 56.5	4.389	5.164	137.0	7.6	16.3
1990	04 09	10 56.10	+33 50.0					
1990	04 19	10 53.21	+33 31.1	4.600	5.173	119.8	9.7	16.4

(4342) 1987 QO9 a,e,i = 2.76, 0.09, 6 Elements MPC 15692

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 34.51	+06 38.3	2.202	2.995	136.6	13.1	17.1
1990	02 08	11 30.86	+07 27.6					
1990	02 18	11 25.23	+08 28.2	2.041	2.987	159.4	6.7	16.7
1990	02 28	11 18.07	+09 35.3					
1990	03 10	11 10.14	+10 42.6	1.989	2.978	173.5	2.2	16.4
1990	03 20	11 02.30	+11 43.5					
1990	03 30	10 55.37	+12 33.0	2.052	2.967	151.4	9.3	16.8
1990	04 09	10 50.08	+13 07.4					
1990	04 19	10 46.83	+13 25.6	2.211	2.956	129.7	15.2	17.1

(4151) 1985 HV1 a,e,i = 3.14, 0.15, 1 Elements MPC 14938

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 35.73	+04 11.6	1.907	2.699	135.5	14.8	16.3
1990	02 08	11 32.73	+04 35.1					
1990	02 18	11 27.56	+05 11.2	1.771	2.713	157.9	7.9	15.9
1990	02 28	11 20.76	+05 56.2					
1990	03 10	11 13.16	+06 44.1	1.736	2.729	177.5	0.9	15.5
1990	03 20	11 05.70	+07 28.9					
1990	03 30	10 59.29	+08 05.2	1.812	2.746	154.4	9.0	16.0
1990	04 09	10 54.65	+08 29.1					
1990	04 19	10 52.18	+08 38.9	1.982	2.766	132.9	15.4	16.4

1981 ET a,e,i = 2.75, 0.25, 10 Elements MPC 12443

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 41.25	+06 08.2	2.572	3.340	134.9	12.1	17.8
1990	02 08	11 36.66	+06 27.5					
1990	02 18	11 30.17	+06 55.4	2.381	3.317	157.8	6.5	17.4
1990	02 28	11 22.21	+07 28.9					
1990	03 10	11 13.43	+08 03.6	2.300	3.292	176.3	1.1	17.0
1990	03 20	11 04.61	+08 35.3					
1990	03 30	10 56.53	+09 00.0	2.340	3.264	153.4	7.9	17.4
1990	04 09	10 49.88	+09 14.8					
1990	04 19	10 45.11	+09 18.4	2.484	3.233	131.1	13.5	17.7

6073 P-L a,e,i = 2.74, 0.05, 4 Elements MPC 7943

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 39.37	+02 31.7	2.022	2.797	134.0	14.7	18.5
1990	02 08	11 35.68	+02 43.0					
1990	02 18	11 29.77	+03 07.3	1.852	2.788	156.7	8.1	18.1
1990	02 28	11 22.10	+03 41.9					
1990	03 10	11 13.48	+04 22.1	1.785	2.778	178.9	0.4	17.6
1990	03 20	11 04.87	+05 02.2					
1990	03 30	10 57.22	+05 37.0	1.830	2.767	154.9	8.8	18.0
1990	04 09	10 51.33	+06 02.0					
1990	04 19	10 47.68	+06 14.8	1.974	2.757	132.8	15.5	18.4

1981 QE3 a,e,i = 3.14, 0.18, 2 Elements MPC 15243

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 37.59	+05 47.7	2.937	3.706	135.6	10.7	18.3
1990	02 08	11 33.72	+06 19.4					
1990	02 18	11 28.31	+06 59.3	2.764	3.701	158.3	5.7	17.9
1990	02 28	11 21.75	+07 44.3					
1990	03 10	11 14.56	+08 30.3	2.703	3.694	175.9	1.1	17.6
1990	03 20	11 07.39	+09 13.3					
1990	03 30	11 00.84	+09 49.6	2.763	3.686	153.9	6.8	18.0
1990	04 09	10 55.46	+10 16.3					
1990	04 19	10 51.62	+10 32.2	2.928	3.677	132.0	11.7	18.3

1985 FC a,e,i = 1.86, 0.04, 24 Elements MPC 11435

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 18.95	+36 11.4	0.994	1.789	129.4	25.2	17.3
1990	02 08	12 11.24	+36 53.6					
1990	02 18	11 57.27	+37 15.3	0.890	1.787	144.0	19.0	16.9
1990	02 28	11 38.23	+36 54.6					
1990	03 10	11 16.97	+35 34.0	0.861	1.787	148.9	16.7	16.7
1990	03 20	10 57.03	+33 11.9					
1990	03 30	10 41.24	+30 01.5	0.919	1.788	137.5	22.2	17.0
1990	04 09	10 30.95	+26 23.0					
1990	04 19	10 26.10	+22 34.8	1.052	1.791	121.1	28.7	17.5

1988 TP a,e,i = 2.42, 0.15, 4 Elements MPC 13859

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 45.31	-03 23.7	1.944	2.686	130.1	16.3	17.9
1990	02 08	11 41.60	-03 07.2					
1990	02 18	11 35.56	-02 32.3	1.791	2.707	152.7	9.6	17.5
1990	02 28	11 27.69	-01 41.1					
1990	03 10	11 18.83	-00 38.3	1.736	2.726	174.8	1.9	17.1
1990	03 20	11 09.97	+00 29.5					
1990	03 30	11 02.09	+01 35.2	1.795	2.743	157.2	8.1	17.5
1990	04 09	10 56.00	+02 32.4					
1990	04 19	10 52.17	+03 16.9	1.955	2.758	134.9	15.0	17.9

(3992) Wagner a,e,i = 3.01, 0.09, 10 Elements MPC 14178

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 40.46	+00 34.1	2.513	3.264	132.9	12.8	17.2
1990	02 08	11 37.45	+01 15.2					
1990	02 18	11 32.68	+02 10.1	2.333	3.259	155.6	7.2	16.9
1990	02 28	11 26.51	+03 15.8					
1990	03 10	11 19.55	+04 27.4	2.260	3.253	179.6	0.1	16.4
1990	03 20	11 12.51	+05 39.2					
1990	03 30	11 06.09	+06 45.7	2.306	3.246	156.5	7.0	16.8
1990	04 09	11 00.96	+07 41.9					
1990	04 19	10 57.51	+08 25.2	2.457	3.238	134.2	12.8	17.2

1981 ED21 a,e,i = 2.74, 0.36, 9 Elements MPC 9589

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 53.54	+03 00.4	1.413	2.188	130.9	19.9	17.8
1990	02 08	11 48.74	+02 46.0					
1990	02 18	11 40.95	+02 46.7	1.336	2.266	154.0	11.0	17.5
1990	02 28	11 31.01	+02 59.0					
1990	03 10	11 20.18	+03 17.5	1.353	2.346	178.7	0.6	17.1
1990	03 20	11 09.85	+03 36.0					
1990	03 30	11 01.20	+03 49.4	1.477	2.425	156.4	9.5	17.8
1990	04 09	10 55.05	+03 53.7					
1990	04 19	10 51.71	+03 47.4	1.695	2.505	134.6	16.6	18.4

1989 CJ3 a,e,i = 5.14, 0.05, 8 Elements MPC 14623

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 36.77	-07 34.1	4.515	5.202	129.9	8.3	17.9
1990	02 08	11 34.04	-07 29.2					
1990	02 18	11 30.37	-07 15.1	4.324	5.210	150.9	5.3	17.6
1990	02 28	11 25.98	-06 52.6					
1990	03 10	11 21.20	-06 23.3	4.239	5.218	169.1	2.1	17.4
1990	03 20	11 16.38	-05 49.0					
1990	03 30	11 11.87	-05 12.3	4.275	5.226	160.2	3.7	17.6
1990	04 09	11 07.99	-04 35.6					
1990	04 19	11 05.01	-04 01.4	4.425	5.233	139.9	7.1	17.8

1973 SW1 a,e,i = 5.12, 0.04, 11 Elements MPC 14942

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 39.20	+12 15.8	4.185	4.952	137.1	7.8	17.6
1990	02 08	11 36.09	+12 40.5					
1990	02 18	11 31.92	+13 08.1	4.024	4.955	158.2	4.2	17.3
1990	02 28	11 26.96	+13 36.0					
1990	03 10	11 21.58	+14 01.6	3.976	4.958	170.4	1.9	17.2
1990	03 20	11 16.16	+14 22.5					
1990	03 30	11 11.12	+14 36.7	4.049	4.961	153.2	5.2	17.4
1990	04 09	11 06.81	+14 42.8					
1990	04 19	11 03.49	+14 40.5	4.229	4.965	132.7	8.6	17.6

(4032) 1985 UT4 a,e,i = 2.18, 0.14, 2 Elements MPC 14335

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 52.07	+00 27.8	1.672	2.427	130.3	18.0	18.3
1990	02 08	11 48.73	+00 57.1					
1990	02 18	11 42.64	+01 45.3	1.521	2.444	153.2	10.5	17.8
1990	02 28	11 34.28	+02 48.8					
1990	03 10	11 24.58	+04 00.8	1.466	2.459	178.3	0.7	17.3
1990	03 20	11 14.74	+05 12.9					
1990	03 30	11 05.94	+06 17.0	1.522	2.471	156.7	9.2	17.8
1990	04 09	10 59.18	+07 06.6					
1990	04 19	10 55.02	+07 38.6	1.675	2.480	134.0	16.9	18.3

1988 VD7 a,e,i = 2.28, 0.21, 6 Elements MPC 14201

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 53.22	+10 06.9	1.985	2.755	133.2	15.1	17.9
1990	02 08	11 49.35	+10 59.8					
1990	02 18	11 42.97	+12 03.3	1.819	2.749	155.5	8.6	17.5
1990	02 28	11 34.52	+13 11.3					
1990	03 10	11 24.79	+14 16.0	1.756	2.740	170.1	3.6	17.2
1990	03 20	11 14.85	+15 10.1					
1990	03 30	11 05.75	+15 47.9	1.808	2.727	151.5	10.1	17.5
1990	04 09	10 58.43	+16 06.3					
1990	04 19	10 53.46	+16 05.5	1.956	2.712	129.9	16.5	17.9

1930 XK a,e,i = 2.36, 0.14, 7 Elements MPC 14778

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 55.90	+04 24.6	1.940	2.689	130.9	16.1	16.9
1990	02 08	11 52.09	+04 39.1					
1990	02 18	11 45.72	+05 06.2	1.767	2.688	153.6	9.4	16.4
1990	02 28	11 37.21	+05 42.4					
1990	03 10	11 27.38	+06 22.4	1.693	2.685	177.0	1.1	15.9
1990	03 20	11 17.27	+07 00.2					
1990	03 30	11 07.97	+07 30.3	1.733	2.679	156.6	8.5	16.3
1990	04 09	11 00.44	+07 48.5					
1990	04 19	10 55.27	+07 52.8	1.874	2.671	133.9	15.7	16.8

1971 SX3 a,e,i = 2.62, 0.13, 13 Elements MPC 12007

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 46.09	-08 54.5	1.616	2.347	127.3	19.5	16.5
1990	02 08	11 44.84	-08 28.5					
1990	02 18	11 41.00	-07 35.1	1.468	2.368	148.7	12.5	16.1
1990	02 28	11 35.03	-06 15.4					
1990	03 10	11 27.78	-04 35.0	1.406	2.391	170.6	3.9	15.6
1990	03 20	11 20.34	-02 42.9					
1990	03 30	11 13.79	-00 50.5	1.452	2.416	160.5	7.9	15.9
1990	04 09	11 09.05	+00 51.9					
1990	04 19	11 06.67	+02 16.9	1.596	2.442	138.6	15.8	16.4

1983 TW1 a,e,i = 2.60, 0.22, 4 Elements MPC 12454

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 51.99	+04 23.7	2.253	3.000	131.8	14.2	18.3
1990	02 08	11 48.99	+05 01.5					
1990	02 18	11 43.81	+05 52.6	2.048	2.969	154.3	8.3	17.8
1990	02 28	11 36.76	+06 53.4					
1990	03 10	11 28.48	+07 58.4	1.944	2.936	175.7	1.5	17.4
1990	03 20	11 19.82	+09 01.2					
1990	03 30	11 11.68	+09 55.6	1.958	2.900	156.2	8.0	17.7
1990	04 09	11 04.90	+10 36.8					
1990	04 19	11 00.09	+11 02.2	2.075	2.862	133.7	14.7	18.0

1969 GD a,e,i = 2.62, 0.16, 13 Elements MPC 14183

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 53.11	-17 08.9	2.149	2.791	121.3	17.5	16.7
1990	02 08	11 50.02	-17 41.7					
1990	02 18	11 44.64	-17 52.5	1.983	2.820	140.9	12.8	16.4
1990	02 28	11 37.37	-17 39.0					
1990	03 10	11 28.95	-17 01.3	1.901	2.847	158.3	7.4	16.1
1990	03 20	11 20.30	-16 02.8					
1990	03 30	11 12.36	-14 49.3	1.925	2.873	157.5	7.7	16.2
1990	04 09	11 05.98	-13 28.8					
1990	04 19	11 01.68	-12 09.4	2.054	2.898	140.1	12.8	16.5

1978 VB a,e,i = 2.86, 0.16, 14 Elements MPC 11836

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 57.10	+00 20.2	2.449	3.164	129.1	14.0	17.6
1990	02 08	11 52.93	+00 12.7					
1990	02 18	11 46.73	+00 16.1	2.281	3.185	151.6	8.5	17.3
1990	02 28	11 38.89	+00 29.0					
1990	03 10	11 30.08	+00 48.5	2.215	3.205	175.2	1.5	16.9
1990	03 20	11 21.08	+01 10.8					
1990	03 30	11 12.71	+01 32.1	2.268	3.224	159.8	6.1	17.2
1990	04 09	11 05.69	+01 48.6					
1990	04 19	11 00.48	+01 57.9	2.431	3.241	137.3	12.1	17.6

1981 EA22 a,e,i = 2.73, 0.03, 13 Elements MPC 10618

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 50.17	-01 23.3	2.053	2.790	129.9	15.7	18.5
1990	02 08	11 48.26	-00 35.6					
1990	02 18	11 44.15	+00 31.1	1.873	2.786	152.3	9.5	18.1
1990	02 28	11 38.19	+01 53.7					
1990	03 10	11 31.05	+03 26.3	1.790	2.782	176.6	1.2	17.6
1990	03 20	11 23.58	+05 01.0					
1990	03 30	11 16.69	+06 29.7	1.822	2.778	159.0	7.4	18.0
1990	04 09	11 11.19	+07 45.4					
1990	04 19	11 07.65	+08 43.9	1.958	2.773	136.4	14.5	18.4

9507 P-L a,e,i = 5.25, 0.08, 5 Elements MPC 13303

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 45.56	+06 09.1	4.925	5.652	133.9	7.2	18.2
1990	02 08	11 42.90	+06 29.1					
1990	02 18	11 39.33	+06 53.6	4.742	5.657	155.6	4.1	18.0
1990	02 28	11 35.05	+07 20.9					
1990	03 10	11 30.35	+07 48.9	4.670	5.661	175.5	0.8	17.7
1990	03 20	11 25.56	+08 15.5					
1990	03 30	11 20.99	+08 38.8	4.722	5.665	158.8	3.7	17.9
1990	04 09	11 16.95	+08 57.0					
1990	04 19	11 13.68	+09 09.2	4.887	5.668	137.5	6.9	18.2

1988 XK1 a,e,i = 2.37, 0.24, 2 Elements MPC 14203

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 58.92	+03 23.9	2.206	2.936	129.8	14.9	18.3
1990	02 08	11 55.46	+03 55.8					
1990	02 18	11 49.71	+04 40.9	2.020	2.933	152.5	8.9	17.9
1990	02 28	11 42.02	+05 35.9					
1990	03 10	11 33.08	+06 35.5	1.936	2.927	175.7	1.5	17.4
1990	03 20	11 23.75	+07 33.5					
1990	03 30	11 14.99	+08 23.8	1.969	2.917	157.7	7.5	17.8
1990	04 09	11 07.65	+09 01.8					
1990	04 19	11 02.31	+09 25.1	2.107	2.904	134.9	14.2	18.1

(4035) 1986 WD a,e,i = 5.25, 0.06, 12 Elements MPC 14337

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 47.12	-11 43.2	4.660	5.294	125.6	8.7	16.7
1990 02 08	11 44.77	-11 42.0					
1990 02 18	11 41.44	-11 31.0	4.454	5.303	146.0	6.0	16.5
1990 02 28	11 37.34	-11 10.4					
1990 03 10	11 32.76	-10 41.3	4.348	5.311	164.4	2.9	16.3
1990 03 20	11 28.05	-10 05.4					
1990 03 30	11 23.55	-09 25.1	4.360	5.320	162.2	3.3	16.3
1990 04 09	11 19.59	-08 43.1					
1990 04 19	11 16.43	-08 01.8	4.488	5.328	143.4	6.5	16.5

1986 CS1 a,e,i = 2.43, 0.14, 3 Elements MPC 14022

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 56.24	-00 28.0	1.497	2.251	128.9	19.9	18.5
1990 02 08	11 54.61	-00 04.0					
1990 02 18	11 50.08	+00 40.7	1.364	2.280	151.0	12.1	18.1
1990 02 28	11 43.10	+01 42.9					
1990 03 10	11 34.59	+02 55.4	1.319	2.310	175.6	1.9	17.6
1990 03 20	11 25.78	+04 09.3					
1990 03 30	11 17.88	+05 15.5	1.379	2.341	159.8	8.5	18.1
1990 04 09	11 11.94	+06 06.9					
1990 04 19	11 08.54	+06 39.7	1.534	2.373	137.4	16.6	18.6

(4021) 1981 QD2 a,e,i = 2.28, 0.17, 4 Elements MPC 14332

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	12 02.18	+04 47.0	1.839	2.580	129.5	17.1	18.1
1990 02 08	11 58.90	+05 19.4					
1990 02 18	11 52.96	+06 05.8	1.686	2.601	152.2	10.2	17.7
1990 02 28	11 44.77	+07 01.8					
1990 03 10	11 35.15	+08 00.7	1.629	2.619	174.5	2.1	17.3
1990 03 20	11 25.20	+08 55.3					
1990 03 30	11 16.03	+09 38.9	1.685	2.635	157.2	8.4	17.6
1990 04 09	11 08.60	+10 07.1					
1990 04 19	11 03.53	+10 18.2	1.842	2.647	134.8	15.6	18.1

1942 AC a,e,i = 2.66, 0.20, 16 Elements MPC 13690

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 58.10	+23 31.0	1.522	2.320	134.3	17.7	16.1
1990 02 08	11 56.46	+25 28.9					
1990 02 18	11 51.70	+27 26.9	1.447	2.356	150.2	12.0	15.8
1990 02 28	11 44.38	+29 12.0					
1990 03 10	11 35.55	+30 31.8	1.464	2.395	153.7	10.6	15.8
1990 03 20	11 26.55	+31 18.4					
1990 03 30	11 18.66	+31 29.0	1.576	2.435	141.1	14.9	16.1
1990 04 09	11 12.91	+31 06.2					
1990 04 19	11 09.80	+30 15.6	1.764	2.476	124.6	19.5	16.6

1979 GE a,e,i = 3.14, 0.11, 1 Elements MPC 10630

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 55.17	+02 40.2	2.167	2.904	130.4	15.0	17.7
1990 02 08	11 53.27	+02 58.1					
1990 02 18	11 49.20	+03 28.9	1.976	2.888	152.3	9.2	17.3
1990 02 28	11 43.29	+04 10.1					
1990 03 10	11 36.12	+04 57.1	1.882	2.873	175.5	1.6	16.8
1990 03 20	11 28.52	+05 44.4					
1990 03 30	11 21.36	+06 26.3	1.900	2.859	160.0	6.9	17.1
1990 04 09	11 15.46	+06 58.1					
1990 04 19	11 11.40	+07 16.7	2.021	2.846	137.8	13.7	17.5

1967 DB a,e,i = 2.76, 0.08, 15 Elements MPC 14183

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 55.04	+08 50.3	1.775	2.546	132.5	16.6	15.6
1990	02 08	11 54.19	+10 20.4					
1990	02 18	11 50.84	+12 06.1	1.625	2.549	153.6	9.9	15.2
1990	02 28	11 45.32	+13 59.8					
1990	03 10	11 38.36	+15 51.0	1.574	2.553	167.6	4.8	14.9
1990	03 20	11 30.91	+17 29.2					
1990	03 30	11 24.03	+18 46.0	1.631	2.559	152.4	10.4	15.2
1990	04 09	11 18.67	+19 36.6					
1990	04 19	11 15.44	+20 00.5	1.782	2.565	132.1	16.9	15.6

1978 SH3 a,e,i = 2.22, 0.17, 4 Elements MPC 13853

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 04.72	-04 57.0	1.851	2.548	125.1	18.4	18.7
1990	02 08	12 02.18	-04 46.1					
1990	02 18	11 56.98	-04 15.1	1.678	2.566	147.3	12.0	18.3
1990	02 28	11 49.46	-03 24.9					
1990	03 10	11 40.38	-02 19.5	1.595	2.580	171.2	3.4	17.9
1990	03 20	11 30.76	-01 05.6					
1990	03 30	11 21.72	+00 09.1	1.623	2.592	162.3	6.7	18.1
1990	04 09	11 14.28	+01 16.4					
1990	04 19	11 09.10	+02 10.7	1.757	2.601	139.2	14.6	18.5

1989 BL a,e,i = 5.23, 0.10, 9 Elements MPC 14358

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 53.57	+11 38.3	4.178	4.909	133.6	8.4	17.1
1990	02 08	11 51.18	+12 10.4					
1990	02 18	11 47.67	+12 46.2	4.013	4.922	154.4	5.0	16.8
1990	02 28	11 43.26	+13 23.1					
1990	03 10	11 38.29	+13 58.1	3.957	4.936	169.3	2.1	16.7
1990	03 20	11 33.15	+14 28.5					
1990	03 30	11 28.23	+14 51.9	4.021	4.950	156.0	4.7	16.9
1990	04 09	11 23.91	+15 06.9					
1990	04 19	11 20.47	+15 12.5	4.194	4.965	135.9	8.1	17.1

(4117) Wilke a,e,i = 2.84, 0.17, 13 Elements MPC 14773

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 58.66	-00 44.4	2.490	3.195	128.3	14.0	17.7
1990	02 08	11 56.61	-00 00.9					
1990	02 18	11 52.61	+00 58.4	2.275	3.173	150.6	8.8	17.3
1990	02 28	11 46.91	+02 11.2					
1990	03 10	11 40.02	+03 32.8	2.159	3.149	174.4	1.8	16.9
1990	03 20	11 32.63	+04 57.1					
1990	03 30	11 25.51	+06 17.6	2.162	3.123	161.0	6.0	17.1
1990	04 09	11 19.41	+07 28.2					
1990	04 19	11 14.89	+08 24.8	2.275	3.097	138.1	12.5	17.4

(4118) 1982 TH3 a,e,i = 3.02, 0.11, 9 Elements MPC 14773

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 03.78	-08 37.1	2.612	3.262	123.6	14.6	17.4
1990	02 08	12 00.97	-08 56.1					
1990	02 18	11 56.21	-09 00.8	2.418	3.276	144.8	10.0	17.1
1990	02 28	11 49.78	-08 50.8					
1990	03 10	11 42.23	-08 27.3	2.317	3.288	165.7	4.3	16.7
1990	03 20	11 34.24	-07 53.1					
1990	03 30	11 26.57	-07 12.2	2.330	3.299	163.5	4.9	16.8
1990	04 09	11 19.93	-06 29.6					
1990	04 19	11 14.86	-05 49.9	2.454	3.309	142.7	10.6	17.1

1976 UH16 a,e,i = 3.17, 0.16, 13 Elements MPC 12784

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 00.47	-07 04.9	2.804	3.465	125.1	13.5	17.6
1990	02 08	11 58.20	-06 42.8					
1990	02 18	11 54.20	-06 05.5	2.617	3.487	146.9	8.9	17.3
1990	02 28	11 48.76	-05 13.9					
1990	03 10	11 42.37	-04 11.2	2.526	3.507	169.4	3.0	17.0
1990	03 20	11 35.64	-03 01.4					
1990	03 30	11 29.21	-01 49.7	2.554	3.526	164.5	4.4	17.1
1990	04 09	11 23.68	-00 41.4					
1990	04 19	11 19.51	+00 19.0	2.696	3.545	142.3	10.0	17.5

1985 SM3 a,e,i = 2.15, 0.14, 4 Elements MPC 14194

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 10.68	-04 42.2	1.639	2.335	123.9	20.5	18.3
1990	02 08	12 08.40	-04 54.7					
1990	02 18	12 03.10	-04 47.4	1.476	2.359	145.7	13.7	17.9
1990	02 28	11 55.10	-04 20.2					
1990	03 10	11 45.23	-03 36.4	1.397	2.380	169.4	4.4	17.4
1990	03 20	11 34.65	-02 41.7					
1990	03 30	11 24.66	-01 43.8	1.425	2.399	163.3	6.9	17.6
1990	04 09	11 16.47	-00 51.0					
1990	04 19	11 10.83	-00 09.3	1.555	2.415	140.4	15.4	18.1

(4063) Euforbo a,e,i = 5.16, 0.12, 19 Elements MPC 14469

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 59.79	+19 13.5	4.415	5.142	133.5	8.0	16.3
1990	02 08	11 57.65	+20 06.8					
1990	02 18	11 54.38	+21 01.3	4.268	5.160	151.8	5.2	16.1
1990	02 28	11 50.18	+21 54.1					
1990	03 10	11 45.38	+22 41.4	4.231	5.178	160.7	3.6	16.0
1990	03 20	11 40.35	+23 20.6					
1990	03 30	11 35.47	+23 49.4	4.310	5.196	149.6	5.6	16.1
1990	04 09	11 31.12	+24 06.6					
1990	04 19	11 27.60	+24 11.8	4.493	5.214	131.6	8.3	16.4

(3963) 1969 TP2 a,e,i = 2.44, 0.20, 3 Elements MPC 14168

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 11.37	+02 44.1	1.982	2.689	126.7	17.1	18.2
1990	02 08	12 08.95	+03 18.5					
1990	02 18	12 04.01	+04 07.8	1.827	2.722	149.0	10.8	17.9
1990	02 28	11 56.91	+05 08.3					
1990	03 10	11 48.32	+06 13.9	1.765	2.752	172.3	2.8	17.5
1990	03 20	11 39.19	+07 17.5					
1990	03 30	11 30.52	+08 12.5	1.817	2.780	161.0	6.7	17.8
1990	04 09	11 23.22	+08 53.6					
1990	04 19	11 17.93	+09 18.3	1.975	2.806	138.4	13.8	18.2

(3985) Raybatson a,e,i = 2.85, 0.10, 16 Elements MPC 14175

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 09.53	+22 52.9	2.004	2.758	131.6	15.5	15.9
1990	02 08	12 08.29	+24 21.3					
1990	02 18	12 04.39	+25 53.8	1.850	2.739	148.2	11.0	15.5
1990	02 28	11 58.09	+27 21.4					
1990	03 10	11 50.06	+28 33.9	1.789	2.721	154.8	8.9	15.4
1990	03 20	11 41.26	+29 22.9					
1990	03 30	11 32.78	+29 43.3	1.829	2.702	144.1	12.5	15.5
1990	04 09	11 25.67	+29 33.8					
1990	04 19	11 20.66	+28 56.9	1.955	2.685	127.2	17.3	15.8

1984 QQ a,e,i = 2.41, 0.13, 8 Elements MPC 14349

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 09.98	-06 35.0	1.998	2.668	123.2	18.0	17.5
1990	02 08	12 08.37	-06 20.4					
1990	02 18	12 04.27	-05 45.6	1.812	2.682	144.9	12.2	17.1
1990	02 28	11 57.96	-04 51.1					
1990	03 10	11 50.06	-03 40.4	1.713	2.694	168.6	4.2	16.7
1990	03 20	11 41.44	-02 19.5					
1990	03 30	11 33.12	-00 56.0	1.726	2.704	165.3	5.4	16.7
1990	04 09	11 26.04	+00 21.8					
1990	04 19	11 20.89	+01 27.7	1.847	2.712	142.3	13.1	17.2

1969 TB6 a,e,i = 2.75, 0.07, 2 Elements MPC 12710

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 09.19	-03 47.6	2.180	2.856	124.6	16.5	17.2
1990	02 08	12 07.75	-03 44.7					
1990	02 18	12 04.02	-03 25.9	1.970	2.845	146.1	11.2	16.9
1990	02 28	11 58.22	-02 51.6					
1990	03 10	11 50.88	-02 04.7	1.850	2.832	169.5	3.7	16.4
1990	03 20	11 42.78	-01 09.9					
1990	03 30	11 34.82	-00 13.0	1.841	2.819	165.6	5.1	16.4
1990	04 09	11 27.90	+00 39.5					
1990	04 19	11 22.73	+01 22.6	1.940	2.806	142.7	12.5	16.8

(4094) Aoshima a,e,i = 2.87, 0.34, 2 Elements MPC 14607

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 11.02	-03 49.3	3.182	3.824	124.2	12.3	19.3
1990	02 08	12 08.14	-03 36.3					
1990	02 18	12 03.60	-03 11.8	2.970	3.831	146.3	8.2	19.0
1990	02 28	11 57.63	-02 36.7					
1990	03 10	11 50.66	-01 53.4	2.856	3.837	169.6	2.7	18.6
1990	03 20	11 43.23	-01 05.2					
1990	03 30	11 35.94	-00 16.1	2.863	3.839	165.9	3.6	18.7
1990	04 09	11 29.36	+00 30.1					
1990	04 19	11 23.98	+01 09.8	2.989	3.839	143.1	9.0	19.0

1988 US a,e,i = 2.30, 0.15, 4 Elements MPC 14024

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 16.34	-06 51.3	1.994	2.647	121.7	18.5	17.9
1990	02 08	12 14.52	-07 02.1					
1990	02 18	12 10.09	-06 54.8	1.794	2.651	143.1	12.9	17.6
1990	02 28	12 03.25	-06 29.0					
1990	03 10	11 54.60	-05 46.4	1.677	2.653	166.3	5.1	17.1
1990	03 20	11 45.02	-04 51.3					
1990	03 30	11 35.59	-03 49.9	1.671	2.651	166.1	5.2	17.1
1990	04 09	11 27.36	-02 49.7					
1990	04 19	11 21.13	-01 57.1	1.773	2.648	143.3	13.1	17.5

1983 GR a,e,i = 2.37, 0.06, 7 Elements MPC 14017

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 17.08	+07 17.5	1.565	2.295	126.8	20.1	16.7
1990	02 08	12 16.60	+07 34.9					
1990	02 18	12 13.00	+08 06.1	1.386	2.284	147.7	13.4	16.2
1990	02 28	12 06.42	+08 46.9					
1990	03 10	11 57.54	+09 30.4	1.290	2.273	169.0	4.8	15.7
1990	03 20	11 47.46	+10 08.1					
1990	03 30	11 37.53	+10 32.7	1.297	2.263	160.7	8.4	15.8
1990	04 09	11 29.11	+10 38.7					
1990	04 19	11 23.16	+10 24.7	1.399	2.255	139.0	17.0	16.3

1988 SP a,e,i = 2.38, 0.21, 2 Elements MPC 14477

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 20.96	+00 18.2	1.792	2.477	123.5	19.4	18.1
1990	02 08	12 19.26	+00 38.5					
1990	02 18	12 14.75	+01 15.8	1.643	2.521	145.5	12.8	17.7
1990	02 28	12 07.74	+02 07.4					
1990	03 10	11 58.94	+03 07.6	1.579	2.563	169.7	4.0	17.4
1990	03 20	11 49.35	+04 09.4					
1990	03 30	11 40.09	+05 05.5	1.626	2.603	164.7	5.8	17.5
1990	04 09	11 32.22	+05 49.4					
1990	04 19	11 26.45	+06 17.7	1.779	2.641	141.6	13.7	18.0

(3995) 1988 XM a,e,i = 2.63, 0.10, 9 Elements MPC 14179

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 17.15	+10 24.5	2.132	2.843	127.6	15.9	16.8
1990	02 08	12 15.65	+11 22.8					
1990	02 18	12 11.72	+12 32.0	1.963	2.852	148.5	10.4	16.4
1990	02 28	12 05.61	+13 46.7					
1990	03 10	11 57.90	+14 59.4	1.888	2.861	165.7	4.9	16.1
1990	03 20	11 49.42	+16 02.5					
1990	03 30	11 41.09	+16 49.6	1.925	2.868	156.3	8.0	16.3
1990	04 09	11 33.84	+17 16.9					
1990	04 19	11 28.36	+17 23.3	2.065	2.874	136.1	14.0	16.7

1986 CC2 a,e,i = 2.38, 0.28, 10 Elements MPC 15413

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 24.59	-10 17.8	2.389	2.984	118.3	16.9	18.9
1990	02 08	12 21.95	-10 43.8					
1990	02 18	12 16.96	-10 54.3	2.182	3.003	139.5	12.3	18.5
1990	02 28	12 09.81	-10 48.1					
1990	03 10	12 01.01	-10 25.4	2.060	3.019	161.6	6.0	18.2
1990	03 20	11 51.35	-09 48.7					
1990	03 30	11 41.72	-09 02.1	2.051	3.031	166.5	4.4	18.1
1990	04 09	11 33.05	-08 11.3					
1990	04 19	11 26.04	-07 22.1	2.157	3.039	145.7	10.7	18.5

(3962) 1967 CC a,e,i = 3.20, 0.13, 2 Elements MPC 14167

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 12.03	+01 24.8	1.946	2.821	146.2	11.2	16.3
1990	02 28	12 06.92	+01 59.5					
1990	03 10	12 00.26	+02 41.9	1.852	2.834	169.3	3.7	15.9
1990	03 20	11 52.80	+03 26.7					
1990	03 30	11 45.41	+04 08.5	1.868	2.848	166.3	4.8	16.0
1990	04 09	11 38.97	+04 41.8					
1990	04 19	11 34.13	+05 03.2	1.991	2.864	143.9	11.9	16.4
1990	04 29	11 31.30	+05 10.9					
1990	05 09	11 30.67	+05 04.3	2.196	2.881	123.7	16.9	16.8

(4323) 1981 QN a,e,i = 2.25, 0.20, 4 Elements MPC 15685

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 17.77	-08 53.0	1.860	2.697	140.5	13.5	17.9
1990	02 28	12 11.19	-08 27.1					
1990	03 10	12 02.70	-07 43.0	1.735	2.701	163.5	6.0	17.5
1990	03 20	11 53.15	-06 44.4					
1990	03 30	11 43.56	-05 37.2	1.718	2.702	167.9	4.4	17.4
1990	04 09	11 34.99	-04 29.0					
1990	04 19	11 28.28	-03 26.9	1.812	2.700	145.5	12.2	17.8
1990	04 29	11 23.92	-02 36.3					
1990	05 09	11 22.13	-02 00.3	1.993	2.695	124.3	18.0	18.2

1981 EJ23 a,e,i = 2.72, 0.06, 4 Elements MPC 10541

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 16.56	-02 21.3	1.815	2.677	143.8	12.6	18.1
1990	02 28	12 10.68	-02 00.5					
1990	03 10	12 03.01	-01 28.1	1.712	2.689	167.3	4.7	17.7
1990	03 20	11 54.37	-00 48.8					
1990	03 30	11 45.75	-00 08.0	1.717	2.702	168.2	4.3	17.7
1990	04 09	11 38.16	+00 28.2					
1990	04 19	11 32.36	+00 55.3	1.830	2.715	145.1	12.2	18.1
1990	04 29	11 28.80	+01 10.1					
1990	05 09	11 27.68	+01 11.3	2.026	2.728	124.5	17.7	18.5

1989 AU a,e,i = 2.69, 0.31, 8 Elements MPC 14357

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 15.99	+09 15.1	2.619	3.491	147.1	8.8	17.3
1990	02 28	12 09.89	+10 14.9					
1990	03 10	12 02.50	+11 15.5	2.527	3.502	167.1	3.6	17.0
1990	03 20	11 54.45	+12 11.7					
1990	03 30	11 46.42	+12 58.5	2.554	3.510	160.3	5.5	17.2
1990	04 09	11 39.13	+13 32.4					
1990	04 19	11 33.13	+13 51.5	2.694	3.515	139.1	10.8	17.5
1990	04 29	11 28.80	+13 55.7					
1990	05 09	11 26.35	+13 45.7	2.918	3.518	118.8	14.6	17.8

(4057) 1985 TQ a,e,i = 5.26, 0.12, 3 Elements MPC 14467

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 08.07	+00 53.9	4.370	5.226	147.0	5.9	17.1
1990	02 28	12 04.19	+01 18.0					
1990	03 10	11 59.66	+01 45.7	4.266	5.245	169.3	2.0	16.9
1990	03 20	11 54.78	+02 14.8					
1990	03 30	11 49.92	+02 43.0	4.282	5.263	168.0	2.3	16.9
1990	04 09	11 45.42	+03 08.3					
1990	04 19	11 41.58	+03 28.7	4.416	5.281	146.3	6.1	17.2
1990	04 29	11 38.64	+03 42.9					
1990	05 09	11 36.75	+03 50.2	4.648	5.299	125.6	8.9	17.4

(3993) 1988 VV5 a,e,i = 2.57, 0.07, 3 Elements MPC 14178

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 16.07	-04 33.4	1.667	2.527	142.9	13.6	16.2
1990	02 28	12 10.68	-03 54.1					
1990	03 10	12 03.40	-02 59.3	1.566	2.542	166.4	5.3	15.8
1990	03 20	11 55.08	-01 54.4					
1990	03 30	11 46.79	-00 46.9	1.571	2.558	168.6	4.4	15.8
1990	04 09	11 39.57	+00 15.4					
1990	04 19	11 34.22	+01 06.4	1.682	2.573	145.5	12.8	16.2
1990	04 29	11 31.22	+01 42.0					
1990	05 09	11 30.74	+02 00.5	1.874	2.588	124.9	18.6	16.7

1981 EO15 a,e,i = 2.73, 0.07, 7 Elements MPC 10821

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 15.41	-09 14.7	1.989	2.825	140.8	12.8	18.4
1990	02 28	12 10.19	-08 42.4					
1990	03 10	12 03.32	-07 52.8	1.872	2.837	163.2	5.8	18.0
1990	03 20	11 55.54	-06 49.6					
1990	03 30	11 47.74	-05 38.9	1.862	2.849	168.9	3.9	17.9
1990	04 09	11 40.82	-04 27.6					
1990	04 19	11 35.47	-03 22.5	1.964	2.860	147.2	11.0	18.3
1990	04 29	11 32.17	-02 28.4					
1990	05 09	11 31.11	-01 48.7	2.154	2.870	126.4	16.4	18.7