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Brian G. Marsden, Director

ERRATA.

MPC	Line	
11151	17	For 1983 DE = 1957 EE = 1978 YF = 1985 TC3 read 1983 DE = 1978 YF = 1985 TC3
12453	9	For 850901 read 810901
13297	5	Delete (M-P)
13686	9	For 591.71045 read 231.71045
14343	28	For (MPC 1053) read (NOC 1053)
14353	2	Add Bardwell as the orbit computer
15332	-14	Add L. M. French, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A.
15405	-12	For (MPC 12671) read (d, MPC 12671)
15506	-11	Add L. M. French, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A.
15565	-7 to 15566 6	The identification 1989 TJ1 = 1979 OE3 is invalid, and the 1989 TJ1 orbit should be eliminated.
15613, 15648, 15660-62		35 observations were accidentally duplicated.
15631	-23	Add L. M. French, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A.
15699	12	For S. J. Bus read E. Bowell
15708	- 7	For S. J. Bus read E. Bowell
15727	27	For S. J. Bus read E. Bowell
15729	20	For S. J. Bus read E. Bowell

* * * * *

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N	Obs.
1961 TO1	1961 10	13.05487	00 42 51.88	+14 44 03.6	MPC12184		1	760
1961 TO1	1961 10	13.09793	00 42 49.51	+14 43 54.9	MPC12184		1	760
1962 WU1	1962 12	03.34370	04 34 24.94	+17 45 33.8	MPC 3777		2	760
1962 XD	1962 12	02.12274	03 11 40.03	+18 39 36.5	MPC 4189			760
1962 XD	1962 12	02.17714	03 11 37.78	+18 39 17.1	MPC 4189			760
1962 XX	1962 12	03.29856	04 36 24.55	+14 41 32.8	MPC 5485		3	760
1964 FG	1964 03	16.27851	10 39 17.51	+06 51 08.5	MPC 7009		4	760
1965 CC	1965 02	05.21545	09 12 26.50	+21 10 03.1	MPC 2869		5	760
1988 RN1	1988 09	12.27065	22 51 27.63	-00 00 26.8	MPC13667			675
1989 ST4	1989 10	07.26181	01 40 05.23	+05 36 00.0	MPC15647	18.6		809
1989 TR6 *	1989 10	07.21944	01 20 55.56	+01 37 00.0	MPC15659	19.4		809
1989 VN1	1989 11	06.26250	03 00 00.00	+05 33 38.3	MPC15664			809
4314 T-2	1973 09	30.24826	00 40 36.95	-03 05 00.0	MPC15629			675

148	1958 08 17.25532	22 04 18.30	-13 05 19.7	MPC 2132		3	760
515	1958 08 17.25532	22 01 58.00	-13 25 46.4	MPC 2132		3	760
877	1958 08 17.25532	22 04 02.41	-15 55 51.8	MPC 2237		3	760
1152	1958 08 17.25532	22 04 52.03	-12 37 09.2	MPC 2132		3	760
2452	1964 03 16.23268	10 47 43.03	+14 01 37.1	MPC 6456			760
2452	1964 03 16.27851	10 47 40.59	+14 01 36.7	MPC 6456			760

Note 1: date erroneously given as 1961 11 13. 2: 1962 WU1 = (2527). 3: time originally slightly in error. 4: 1964 FG = (4027). 5: 1965 CC = (2007).

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 15602.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1973 SY6 *	1973 09 24.81281	22 03 03.07	-06 31 22.8	1973 SE2	17.0		095
1978 RA17*	1978 09 06.08576	23 04 44.99	-06 47 54.8	1978 RA4			809
1978 YD2 *	1978 12 31.73789	04 58 22.78	+12 07 42.7	1978 YN1	17.0		095
1987 SB30*	1987 09 26.89957	00 08 53.20	+07 16 54.6	1987 SM2	16.8V		095
1988 SY4 *	1988 09 16.42326	00 21 28.17	-03 48 50.7	1988 RJ1			675
1989 LK1 *	1989 06 05.42465	01 35 14.90	-00 09 27.4	1988 JF	18.2		809
1989 LK1	1989 06 05.42951	01 35 15.30	-00 09 24.0	1988 JF			809

* * * * *

IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 15439.

	Note		Note		Note
1946 UR = (795)	1	1959 AD = (767)	2	1959 XD = (1926)	2
1960 CC = (2521)	2	1961 AQ = (1032)	5	1961 CN = (2494)	2
1961 DK = (2909)	2	1961 PB = (1269)	2	1961 PC = (1214)	5
1961 TB2 = (1996)	2	1961 VK = (1724)	2	1961 VP = (1366)	2
1961 WB = (220)	2	1962 CK = (3131)	2	1962 JH = (3837)	2
1962 PO = (2808)	2	1962 RB = (1598)	2	1962 TC = (3418)	2
1962 VJ = (2342)	2	1964 PO = (791)	2	1964 XM = (2070)	2
1965 VL = (2415)	2	1967 GK1 = (2301)	2		

Note 1: identification by S. Nakano. 2: identification by G. V. Williams. 3: contrary to MPC 8958. 5 = 2 + 3.

* * * * *

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

046 Klet. Observers A. Mrkos and Z. Vavrova.
056 Skalnate Pleso. 0.3-m f/5 astrograph. Observer P. Rychtarcik. Communicated by J. Svoren.
364 JCPM Kagoshima Station. Observer M. Mukai. Measured by M. Takeishi.
368 Ochiai. 0.16-m f/4.8 reflector. Observer T. Hioki. Long. and Parallax 138.81, -346, -248 (see MPC 11200).
369 Chichibu. Observer N. Sato. 0.25-m f/4.2 Wright-Schmidt. Measured by H. Kosai. Long. and Parallax 139.15, -346, -249 (see MPC 11200).

372 Geisei. Observer T. Seki.
385 Oohira. Observers W. Kakei, M. Kizawa and T. Urata.
402 Dynic Astronomical Observatory. 0.25-m f/3.4 Schmidt. Observer A. Sugie.
413 Siding Spring. Uppsala Southern Schmidt. Observer R. H. McNaught.
657 Victoria. Observers J. Tatum and D. Balam.
675 Palomar. 1.5-m reflector + CCD. Observer J. Gibson.
877 Okutama. Observers T. Hioki and S. Hayakawa.
892 YGCO Hoshikawa and Nagano stations. 0.25-m f/4.0 reflector. Observer S. Hayakawa. Communicated by T. Kobayashi.
896 Yatsugatake South Base Observatory. Observers Y. Kushida and R. Kushida. Measured by O. Muramatsu.
897 YGCO Chiyoda Station. 0.25-m f/3.4 Wright-Schmidt camera. Observers T. Kojima and T. Ootsuka.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Schwassmann-Wachmann 1					
/1974 II	1989	11 18.75069	23 27 23.14	+05 16 48.9			046
/1974 II	1989	11 18.76562	23 27 23.28	+05 16 42.1	15.5T		046
/1974 II	1989	11 20.56597	23 27 22.25	+05 14 59.8	15 T		897
/1974 II	1989	11 24.41875	23 27 27.70	+05 11 55.2	16 T		897
/1974 II	1989	12 01.42442	23 28 01.88	+05 08 54.0	16 T		897
/1974 II	1989	12 01.50469	23 28 02.80	+05 08 57.7			897
		Periodic Comet Gehrels 2					
/1989n	1989	11 24.45486	02 14 09.94	+11 21 58.4	16 T		897
/1989n	1989	11 24.48785	02 14 09.29	+11 21 49.4			897
/1989n	1989	11 30.74456	02 12 40.51	+10 54 00.4			046
/1989n	1989	11 30.75868	02 12 40.41	+10 53 55.1			046
/1989n	1989	12 04.56597	02 12 13.84	+10 40 33.3	15.5T		897
/1989n	1989	12 04.59225	02 12 13.86	+10 40 25.7			897
		Periodic Comet Lovas 1					
/1989p	1989	11 23.77477	07 11 51.44	+46 03 15.7	14.5T		897
/1989p	1989	11 23.79977	07 11 52.03	+46 03 19.6			897
/1989p	1989	12 20.49167	07 02 56.72	+46 17 39.2	14 T		897
/1989p	1989	12 20.53056	07 02 54.25	+46 17 29.0			897
/1989p	1990	01 17.18549	06 39 21.68	+42 31 24.6			657
/1989p	1990	01 17.20979	06 39 20.56	+42 31 07.0			657
/1989p	1990	01 24.47986	06 36 18.20	+41 04 04.9	15.0T		892
/1989p	1990	01 24.49375	06 36 18.24	+41 03 48.9			892
		Comet Okazaki-Levy-Rudenko (1989r)					
/1989r	1989	11 20.80862	13 11 18.00	-00 24 01.2			897
/1989r	1989	11 20.80978	13 11 17.91	-00 24 13.5			897
/1989r	1989	11 20.81036	13 11 17.73	-00 24 17.9			897
/1989r	1989	11 20.82726	13 11 15.32	-00 26 47.4			897
/1989r	1989	11 20.82772	13 11 15.24	-00 26 51.7			897
/1989r	1989	11 23.82025	13 04 11.50	-08 29 09.7			897
/1989r	1989	11 23.82083	13 04 11.41	-08 29 16.4			897
/1989r	1989	11 23.82130	13 04 11.35	-08 29 20.8			897
/1989r	1989	11 23.82795	13 04 10.43	-08 30 30.7			897
/1989r	1989	11 23.82841	13 04 10.36	-08 30 36.2			897
		Comet Helin-Roman-Alu (1989v)					
/1989v	1989	10 27.74091	22 00 51.17	+16 53 25.0			046
/1989v	1989	10 27.74525	22 00 49.81	+16 53 39.8			046

/1989v	1989	10	28.72691	21	55	48.79	+17	48	12.2		046
/1989v	1989	10	28.73125	21	55	47.70	+17	48	25.6		046
/1989v	1989	11	17.72066	20	32	21.37	+32	26	23.7		046
/1989v	1989	11	17.72367	20	32	20.85	+32	26	29.2		046
/1989v	1989	11	18.71933	20	29	05.47	+32	59	45.4		046
/1989v	1989	11	18.72245	20	29	04.80	+32	59	54.8		046
/1989v	1989	11	19.71690	20	25	54.31	+33	32	21.2		046
/1989v	1989	11	19.71991	20	25	53.68	+33	32	28.7		046
/1989v	1989	11	21.73148	20	19	39.84	+34	36	00.9		046
/1989v	1989	11	21.73449	20	19	39.28	+34	36	05.1		046
/1989v	1989	11	23.73866	20	13	41.94	+35	36	42.3		046
/1989v	1989	11	23.74167	20	13	41.51	+35	36	48.3		046
/1989v	1989	11	25.73038	20	08	00.26	+36	34	32.2		046
/1989v	1989	11	25.73403	20	07	59.71	+36	34	33.2		046
/1989v	1989	11	29.73420	19	57	08.42	+38	24	27.0		046
/1989v	1989	11	29.73860	19	57	07.81	+38	24	33.8		046
/1989v	1989	11	30.70139	19	54	36.75	+38	49	47.1		046
/1989v	1989	11	30.70486	19	54	36.28	+38	49	54.7		046
/1989v	1989	12	01.70486	19	52	01.72	+39	15	41.4		046
/1989v	1989	12	01.70799	19	52	01.25	+39	15	47.5		046
/1989v	1989	12	22.73924	19	02	21.64	+47	06	07.0		046
/1989v	1989	12	22.74497	19	02	20.85	+47	06	12.9		046
/1989v	1989	12	25.71997	18	55	30.25	+48	05	47.8		046
/1989v	1989	12	25.72569	18	55	29.44	+48	05	55.9		046
/1989v	1989	12	26.71823	18	53	11.57	+48	25	40.7		046
/1989v	1989	12	26.72257	18	53	10.92	+48	25	48.3		046
/1989v	1989	12	28.70118	18	48	33.64	+49	05	02.2		046
/1989v	1989	12	28.70558	18	48	33.21	+49	05	11.2		046
/1989v	1989	12	29.70448	18	46	11.77	+49	24	53.1		046
/1989v	1989	12	29.70894	18	46	11.15	+49	25	04.1		046
/1989v	1989	12	31.70539	18	41	25.06	+50	04	42.9		046
/1989v	1989	12	31.70973	18	41	24.41	+50	04	48.6		046
/1989v	1990	01	01.70521	18	39	00.04	+50	24	32.9		046
/1989v	1990	01	01.70955	18	38	59.30	+50	24	37.9		046

Comet Aarseth-Brewington (1989a1)

/1989a1	1989	12	11.84734	16	23	32.43	+04	44	28.4		897
/1989a1	1989	12	11.84832	16	23	32.41	+04	44	23.2		897
/1989a1	1989	12	11.85313	16	23	32.55	+04	43	58.2		897
/1989a1	1989	12	11.85382	16	23	32.62	+04	43	54.8		897
/1989a1	1989	12	21.86273	16	36	59.84	-14	39	55.4	4 T	368
/1989a1	1989	12	21.86569	16	37	00.26	-14	40	11.4		368
/1989a1	1989	12	21.86979	16	37	00.87	-14	40	59.6		897
/1989a1	1989	12	21.87321	16	37	01.68	-14	41	29.7		897
/1989a1	1989	12	21.87355	16	37	01.7	-14	41	33		897
/1989a1	1989	12	29.75534	17	30	51.48	-35	28	17.1		413
/1989a1	1989	12	29.75794	17	30	53.27	-35	28	38.0		413
/1989a1	1989	12	29.76042	17	30	55.11	-35	28	58.4		413

Comet Austin (1989c1)

/1989c1	1989	12	26.52118	00	31	09.70	-54	58	37.9		413
/1989c1	1989	12	27.45417	00	30	45.59	-54	35	10.7		413
/1989c1	1990	01	17.43576	00	31	45.6	-44	48	52	9.5T	372
/1989c1	1990	01	26.40833	00	36	48.47	-40	04	22.8	8.5T	372

Comet Skorichenko-George (1989e1)

/1989e1	1989	12	22.70764	20	01	01.23	+26	01	33.2		046
/1989e1	1989	12	22.71354	20	01	01.91	+26	01	40.5		046
/1989e1	1989	12	23.37627	20	02	17.97	+26	06	35.7		897

```
/1989e1    1989 12 23.39404  20 02 20.00  +26 06 43.3                    897
/1989e1    1989 12 25.70174  20 06 50.62  +26 24 35.9                    046
/1989e1    1989 12 25.70608  20 06 51.10  +26 24 37.9                    046
/1989e1    1989 12 26.73767  20 08 54.59  +26 32 58.6                    046
/1989e1    1989 12 26.74062  20 08 55.05  +26 32 59.6                    046
/1989e1    1989 12 28.37419  20 12 14.11  +26 46 39.6          11  T     897
/1989e1    1989 12 28.39525  20 12 16.58  +26 46 50.4                    897
/1989e1    1989 12 28.71675  20 12 56.62  +26 49 33.8                    046
/1989e1    1989 12 28.71987  20 12 56.90  +26 49 37.3                    046
/1989e1    1989 12 29.72028  20 15 01.60  +26 58 19.7                    046
/1989e1    1989 12 29.72329  20 15 01.84  +26 58 21.3                    046
/1989e1    1990 01 01.72187  20 21 25.21  +27 25 41.7                    046
/1989e1    1990 01 01.72487  20 21 25.70  +27 25 43.9                    046
/1989e1    1990 01 07.40868  20 34 13.74  +28 22 31.2          10  T     364
/1989e1    1990 01 07.41250  20 34 13.98  +28 22 36.7                    364
/1989e1    1990 01 21.40903  21 09 56.89  +31 07 44.2           9  T     364
/1989e1    1990 01 21.41528  21 09 57.90  +31 07 49.7                    364

                Comet McKenzie-Russell (1989f1)
/1989f1    1989 12 02.64622  07 11 52.47  +08 22 42.7                1  897
/1989f1    1989 12 02.64965  07 11 51.15  +08 22 43.3          14  T 1  897
/1989f1    1989 12 19.59848  05 14 30.0   +03 20 56           13  T 3  369
/1989f1    1989 12 19.61858  05 14 21.7   +03 20 34                3  369
/1989f1    1989 12 21.51635  05 01 32.77  +02 47 36.1          14  T     413
/1989f1    1989 12 21.56496  05 01 12.30  +02 46 43.7                    413
/1989f1    1989 12 24.49892  04 42 24.31  +01 59 08.1          13  T     413
/1989f1    1989 12 24.64931  04 41 28.6   +01 56 43           13  T     372
/1989f1    1989 12 26.52894  04 30 11.20  +01 29 01.3                    413
/1989f1    1989 12 26.83368  04 28 24.87  +01 24 33.2                    046
/1989f1    1989 12 26.84774  04 28 20.27  +01 24 23.5                    046
/1989f1    1989 12 27.46007  04 24 49.51  +01 16 02.7                    413
/1989f1    1989 12 27.50241  04 24 34.91  +01 15 27.3                    413
/1989f1    1989 12 27.61267  04 23 57.42  +01 13 51.5          13  T     372
/1989f1    1989 12 27.61331  04 23 57.56  +01 13 54.9          13  T     402
/1989f1    1989 12 27.62159  04 23 54.80  +01 13 41.6          13  T     402
/1989f1    1989 12 27.81424  04 22 50.49  +01 11 06.0          12  T     056
/1989f1    1989 12 27.87685  04 22 28.57  +01 10 17.6                    056
/1989f1    1989 12 27.91146  04 22 17.01  +01 09 49.8                    046
/1989f1    1989 12 27.91887  04 22 14.22  +01 09 41.4                    046
/1989f1    1989 12 28.50544  04 18 59.43  +01 02 00.4          14  T 4  897
/1989f1    1989 12 28.51516  04 18 56.17  +01 01 52.2                    897
/1989f1    1989 12 28.59867  04 18 28.15  +01 00 45.8          14.5T     877
/1989f1    1989 12 28.60770  04 18 25.79  +01 00 34.3                    877
/1989f1    1989 12 28.78872  04 17 26.90  +00 58 19.8                    056
/1989f1    1989 12 28.80564  04 17 21.03  +00 58 07.2                    046
/1989f1    1989 12 28.81003  04 17 19.79  +00 58 04.2                    046
/1989f1    1989 12 28.81094  04 17 18.76  +00 58 00.7                    056
/1989f1    1989 12 29.74815  04 12 19.13  +00 46 15.2                    056
/1989f1    1989 12 29.79186  04 12 05.05  +00 45 46.9                    046
/1989f1    1989 12 29.79531  04 12 03.89  +00 45 40.5                    056
/1989f1    1989 12 29.79626  04 12 03.62  +00 45 42.1                    046
/1989f1    1989 12 30.44931  04 08 40.16  +00 37 55.7          14  T     385
/1989f1    1989 12 30.46667  04 08 34.79  +00 37 44.0                    385
/1989f1    1989 12 30.63819  04 07 41.6   +00 35 45                5  896
/1989f1    1989 12 30.64618  04 07 39.46  +00 35 40.4                    896
/1989f1    1989 12 30.74330  04 07 09.82  +00 34 31.5                    056
/1989f1    1989 12 30.78831  04 06 56.19  +00 33 56.4                    056
/1989f1    1989 12 31.72361  04 02 16.69  +00 23 25.2                    056
/1989f1    1989 12 31.79828  04 01 54.86  +00 22 37.7                    046
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/1989f1	1989	12	31.80267	04	01	53.59	+00	22	33.9				046
/1989f1	1990	01	01.45990	03	58	43.32	+00	15	33.9		14	T	6 897
/1989f1	1990	01	01.46910	03	58	40.66	+00	15	28.3				897
/1989f1	1990	01	01.74838	03	57	20.91	+00	12	32.5				056
/1989f1	1990	01	01.77315	03	57	14.77	+00	12	18.4				056
/1989f1	1990	01	01.81753	03	57	01.85	+00	11	48.7				046
/1989f1	1990	01	01.82193	03	57	00.45	+00	11	47.1				046
/1989f1	1990	01	03.76528	03	48	12.96	-00	06	59.5				056
/1989f1	1990	01	04.52535	03	44	57.26	-00	13	50.4				385
/1989f1	1990	01	04.53993	03	44	53.59	-00	13	56.4				385
			Periodic Comet Russell 4										
/1989g1	1989	12	11.35311	07	31	03.33	+26	20	51.1		19	N	7 675
/1989g1	1989	12	11.36774	07	31	02.93	+26	20	55.2				7 675
/1989g1	1989	12	11.38325	07	31	02.53	+26	20	59.0				7 675
/1989g1	1989	12	11.40928	07	31	01.81	+26	21	05.7				7 675
/1989g1	1989	12	12.36030	07	30	37.44	+26	25	12.4				7 675
/1989g1	1989	12	12.36612	07	30	37.28	+26	25	13.7				7 675
/1989g1	1989	12	12.38179	07	30	36.84	+26	25	17.8				7 675
/1989g1	1989	12	12.39352	07	30	36.54	+26	25	21.1				7 675
			Periodic Comet Van Biesbroeck										
/1989h1	1989	12	09.51631	12	42	04.51	-01	11	19.9		21	N	8 675
/1989h1	1989	12	09.52863	12	42	05.02	-01	11	23.4				8 675
/1989h1	1989	12	09.54023	12	42	05.52	-01	11	25.1				8 675
/1989h1	1989	12	09.55117	12	42	05.96	-01	11	28.0				8 675
/1989h1	1989	12	10.51184	12	42	47.78	-01	14	42.5				8 675
/1989h1	1989	12	10.51786	12	42	48.02	-01	14	43.2				8 675
/1989h1	1989	12	10.52421	12	42	48.35	-01	14	44.5				8 675
/1989h1	1989	12	10.53023	12	42	48.54	-01	14	45.6				8 675

Note 1: prediscovery observation. 2: tail 3′ long in p.a. 50 . 3 = 1 + 2. 4: tail 2′ long in p.a. 50 . 5: weak image. 6: tail 0′.2 long in p.a. 50 . 7: stellar within the limits of seeing. 8: stellar image.

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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
f involved with emulsion or plate flaw
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								
A. Maury, 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 UQ		1989 11 29.85278		23 40 54.36	-08 45 21.8	18.5		010
1990 BA	*	1990 01 21.89861		06 28 01.04	+26 20 19.1	16		010
1990 BA		1990 01 21.93333		06 28 03.81	+26 19 53.0			010
1990 BA		1990 01 21.94028		06 28 04.64	+26 19 45.6			010
1990 BA		1990 01 21.94722		06 28 05.06	+26 19 41.9			010
1990 BA		1990 01 22.89516		06 29 43.12	+26 07 08.0	16		010
1990 BA		1990 01 22.92502		06 29 45.60	+26 06 45.3			010
1990 BA		1990 01 22.93196		06 29 46.35	+26 06 38.9			010
1990 BA		1990 01 22.93899		06 29 46.82	+26 06 35.2			010
033 Tautenburg								
S. Marx, Karl Schwarzschild Observatorium, DDR-6901 Tautenburg, Democratic Republic of Germany								
Observers F. Borngen, B. Stecklum, R. Ziener								
1.3-m Schmidt telescope								
SAOC								
1976 SM2		1989 10 23.92234		03 05 48.66	+16 17 49.2			033
1976 SM2		1989 10 23.97234		03 05 45.86	+16 17 35.4			033
1976 SM2		1989 10 25.92500		03 03 59.85	+16 07 59.2	17.2		033
1976 SM2		1989 10 25.97639		03 03 56.87	+16 07 44.5			033
1976 SM2		1989 10 27.93194		03 02 05.77	+15 57 46.0			033
1976 UR15		1989 10 23.92234		03 10 10.80	+15 34 20.0			033
1976 UR15		1989 10 23.97234		03 10 08.01	+15 34 22.0			033
1976 UR15		1989 10 25.92500		03 08 21.05	+15 35 14.7	18.1		033
1976 UR15		1989 10 25.97639		03 08 18.10	+15 35 17.0			033
1976 UR15		1989 10 27.93194		03 06 26.85	+15 36 01.1			033
1978 SN7		1989 11 28.99201		04 21 15.29	+14 37 19.3	17.5		033
1978 SN7		1989 11 29.01910		04 21 14.19	+14 37 10.3			033
1978 SN7		1989 12 02.99688		04 17 51.15	+14 16 20.5			033
1978 SN7		1989 12 03.02118		04 17 50.20	+14 16 13.5			033
1978 SN7		1989 12 03.90486		04 17 05.63	+14 11 44.3			033
1978 VP8		1989 10 23.92234		03 07 27.19	+14 29 35.4			033
1978 VP8		1989 10 23.97234		03 07 25.03	+14 29 26.7			033
1978 VP8		1989 10 25.92500		03 06 03.70	+14 23 23.2	19.0		033

1978	VP8		1989	10	25.97639	03	06	01.56	+14	23	14.0	033
1978	VP8		1989	10	27.93194	03	04	37.77	+14	17	03.9	033
1982	SL		1989	11	29.10000	08	19	15.29	+16	06	34.1	18.1 033
1982	SL		1989	11	29.16146	08	19	15.25	+16	06	26.9	033
1982	SL		1989	12	02.04236	08	19	10.43	+16	00	56.7	033
1989	UN1		1989	10	25.92500	03	01	07.88	+16	01	55.5	17.1 033
1989	UN1		1989	10	25.97639	03	01	06.00	+16	01	32.1	033
1989	UN1		1989	10	27.93194	02	59	55.67	+15	46	10.7	033
1989	UY2		1989	10	23.92234	03	10	59.29	+15	11	35.2	033
1989	UY2		1989	10	23.97234	03	10	56.38	+15	11	31.3	033
1989	UY2		1989	10	25.92500	03	09	06.32	+15	08	02.7	17.7 033
1989	UY2		1989	10	25.97639	03	09	03.28	+15	07	57.6	033
1989	UY2		1989	10	27.93194	03	07	08.56	+15	04	17.6	033
1989	UZ6	*	1989	10	23.92234	03	03	07.92	+15	34	57.2	033
1989	UZ6		1989	10	23.97234	03	03	04.74	+15	35	07.4	033
1989	UZ6		1989	10	25.92500	03	01	02.94	+15	41	20.5	19.4 033
1989	UZ6		1989	10	25.97639	03	00	59.55	+15	41	31.7	033
1989	UZ6		1989	10	27.93194	02	58	51.50	+15	47	31.3	033
1989	UA7		1989	09	07.04028	03	16	02.32	+17	00	35.4	18.3 033
1989	UA7		1989	09	07.09028	03	16	04.02	+17	00	41.3	033
1989	UA7	*	1989	10	23.92234	03	03	16.83	+15	58	37.6	033
1989	UA7		1989	10	23.97234	03	03	13.63	+15	58	25.6	033
1989	UA7		1989	10	25.92500	03	01	11.16	+15	50	04.4	18.5 033
1989	UA7		1989	10	25.97639	03	01	07.78	+15	49	51.8	033
1989	UA7		1989	10	27.93194	02	59	01.33	+15	41	12.7	033
1989	UB7	*	1989	10	23.92234	03	03	19.30	+15	22	48.9	033
1989	UB7		1989	10	23.97234	03	03	16.78	+15	22	47.5	033
1989	UB7		1989	10	25.92500	03	01	42.09	+15	20	47.6	18.7 033
1989	UB7		1989	10	25.97639	03	01	39.44	+15	20	44.9	033
1989	UB7		1989	10	27.93194	02	59	59.01	+15	18	30.6	033
1989	UC7	*	1989	10	23.92234	03	03	41.42	+14	47	02.3	033
1989	UC7		1989	10	23.97234	03	03	38.70	+14	46	48.0	033
1989	UC7		1989	10	25.92500	03	01	51.45	+14	38	39.6	19.7 033
1989	UC7		1989	10	25.97639	03	01	48.54	+14	38	27.6	033
1989	UC7		1989	10	27.93194	02	59	57.86	+14	30	08.6	033
1989	UD7	*	1989	10	23.92234	03	04	01.12	+17	05	21.3	033
1989	UD7		1989	10	23.97234	03	03	58.33	+17	05	11.8	033
1989	UD7		1989	10	25.92500	03	02	08.41	+16	59	20.1	19.2 033
1989	UD7		1989	10	25.97639	03	02	05.42	+16	59	10.9	033
1989	UD7		1989	10	27.93194	03	00	12.27	+16	53	00.5	033
1989	UE7		1989	09	07.04028	03	12	57.51	+17	00	16.7	18.1 033
1989	UE7		1989	09	07.09028	03	12	58.67	+17	00	19.1	033
1989	UE7	*	1989	10	23.92234	03	04	18.42	+15	54	05.7	033
1989	UE7		1989	10	23.97234	03	04	16.17	+15	53	55.2	033
1989	UE7		1989	10	25.92500	03	02	50.29	+15	46	55.9	17.8 033
1989	UE7		1989	10	25.97639	03	02	47.93	+15	46	45.6	033
1989	UE7		1989	10	27.93194	03	01	18.74	+15	39	33.3	033
1989	UF7		1989	09	07.04028	03	20	05.35	+17	12	39.5	18.6 033
1989	UF7		1989	09	07.09028	03	20	06.18	+17	12	44.5	033
1989	UF7	*	1989	10	23.92234	03	04	37.77	+16	40	21.3	033
1989	UF7		1989	10	23.97234	03	04	34.90	+16	40	12.4	033
1989	UF7		1989	10	25.92500	03	02	45.94	+16	34	28.0	18.8 033
1989	UF7		1989	10	25.97639	03	02	43.00	+16	34	19.4	033
1989	UF7		1989	10	27.93194	03	00	50.50	+16	28	17.1	033
1989	UG7	*	1989	10	23.92234	03	05	47.83	+17	18	51.1	033
1989	UG7		1989	10	23.97234	03	05	45.51	+17	18	40.7	033
1989	UG7		1989	10	25.92500	03	04	19.59	+17	10	37.1	19.2 033
1989	UG7		1989	10	25.97639	03	04	17.24	+17	10	24.4	033
1989	UG7		1989	10	27.93194	03	02	48.81	+17	02	06.4	033

1989	UH7	*	1989	10	23.92234	03	05	55.78	+15	12	53.8	033
1989	UH7		1989	10	23.97234	03	05	53.32	+15	12	40.3	033
1989	UH7		1989	10	25.92500	03	04	17.66	+15	03	22.9	19.5 033
1989	UH7		1989	10	25.97639	03	04	15.06	+15	03	08.5	033
1989	UH7		1989	10	27.93194	03	02	36.02	+14	53	37.9	033
1989	UJ7	*	1989	10	23.92234	03	06	46.51	+16	03	00.6	033
1989	UJ7		1989	10	23.97234	03	06	44.14	+16	02	46.2	033
1989	UJ7		1989	10	25.92500	03	05	11.10	+15	54	47.2	19.4 033
1989	UJ7		1989	10	25.97639	03	05	08.48	+15	54	35.0	033
1989	UJ7		1989	10	27.93194	03	03	30.43	+15	46	15.0	033
1989	UK7	*	1989	10	23.92234	03	06	46.74	+15	01	10.5	033
1989	UK7		1989	10	23.97234	03	06	44.32	+15	00	59.8	033
1989	UK7		1989	10	25.92500	03	05	10.16	+14	54	12.7	19.5 033
1989	UK7		1989	10	25.97639	03	05	07.59	+14	54	02.6	033
1989	UK7		1989	10	27.93194	03	03	30.03	+14	47	05.9	033
1989	UL7	*	1989	10	23.92234	03	07	37.31	+14	16	12.3	033
1989	UL7		1989	10	23.97234	03	07	35.08	+14	16	11.3	033
1989	UL7		1989	10	25.92500	03	06	08.70	+14	14	58.8	18.9 033
1989	UL7		1989	10	25.97639	03	06	06.34	+14	14	58.3	033
1989	UL7		1989	10	27.93194	03	04	37.22	+14	13	42.6	033
1989	UM7	*	1989	10	23.92234	03	07	53.41	+15	27	55.4	033
1989	UM7		1989	10	23.97234	03	07	51.17	+15	27	47.8	033
1989	UM7		1989	10	25.92500	03	06	22.22	+15	22	42.8	19.6 033
1989	UM7		1989	10	25.97639	03	06	19.82	+15	22	35.9	033
1989	UM7		1989	10	27.93194	03	04	47.92	+15	17	21.7	033
1989	UN7	*	1989	10	23.92234	03	08	06.17	+15	57	16.8	033
1989	UN7		1989	10	23.97234	03	08	03.62	+15	57	07.9	033
1989	UN7		1989	10	25.92500	03	06	27.00	+15	51	29.7	19.3 033
1989	UN7		1989	10	25.97639	03	06	24.44	+15	51	21.3	033
1989	UN7		1989	10	27.93194	03	04	43.90	+15	45	27.9	033
1989	UO7	*	1989	10	23.92234	03	08	56.58	+15	27	41.5	033
1989	UO7		1989	10	23.97234	03	08	54.55	+15	27	23.1	033
1989	UO7		1989	10	25.92500	03	07	35.06	+15	16	36.7	19.1 033
1989	UO7		1989	10	25.97639	03	07	32.81	+15	16	19.7	033
1989	UO7		1989	10	27.93194	03	06	08.14	+15	05	15.3	033
1989	UP7	*	1989	10	23.92234	03	09	57.29	+15	03	58.8	033
1989	UP7		1989	10	23.97234	03	09	54.79	+15	03	44.7	033
1989	UP7		1989	10	25.92500	03	08	19.17	+14	54	55.6	19.9 033
1989	UP7		1989	10	25.97639	03	08	16.52	+14	54	41.8	033
1989	UP7		1989	10	27.93194	03	06	36.82	+14	45	39.1	033
1989	UQ7	*	1989	10	23.92234	03	10	00.56	+16	06	25.2	033
1989	UQ7		1989	10	23.97234	03	09	58.31	+16	06	10.9	033
1989	UQ7		1989	10	25.92500	03	08	31.28	+15	57	07.4	19.1 033
1989	UQ7		1989	10	25.97639	03	08	28.90	+15	56	53.2	033
1989	UQ7		1989	10	27.93194	03	06	58.16	+15	47	32.6	033
1989	UR7	*	1989	10	23.92234	03	10	10.86	+15	24	27.0	033
1989	UR7		1989	10	23.97234	03	10	08.19	+15	24	31.1	033
1989	UR7		1989	10	25.92500	03	08	26.29	+15	26	26.4	19.3 033
1989	UR7		1989	10	25.97639	03	08	23.47	+15	26	30.5	033
1989	UR7		1989	10	27.93194	03	06	37.00	+15	28	15.8	033
1989	US7	*	1989	10	25.92500	03	11	31.51	+14	04	31.9	19.8 033
1989	US7		1989	10	25.97639	03	11	29.19	+14	04	23.9	033
1989	US7		1989	10	27.93194	03	10	02.57	+13	58	31.8	033
1989	VV		1989	10	23.92234	03	12	04.57	+15	37	25.1	033
1989	VV		1989	10	23.97234	03	12	02.01	+15	37	17.3	033
1989	VV		1989	10	25.92500	03	10	24.40	+15	31	37.1	18.1 033
1989	VV		1989	10	25.97639	03	10	21.66	+15	31	28.9	033
1989	VV		1989	10	27.93194	03	08	39.12	+15	25	34.1	033
1989	WE1		1989	11	28.99201	04	25	15.53	+14	07	54.5	16.7 033

1989	WE1		1989	11	29.01910	04	25	14.33	+14	07	55.8		033
1989	WE1		1989	12	02.99688	04	21	30.95	+14	13	42.6		033
1989	WE1		1989	12	03.02118	04	21	29.80	+14	13	44.3		033
1989	WE1		1989	12	03.90486	04	20	40.61	+14	15	08.7		033
1989	WL1		1989	11	28.99201	04	17	24.10	+16	40	30.3	16.6	033
1989	WL1		1989	11	29.01910	04	17	22.81	+16	40	15.1		033
1989	WT1		1989	11	28.99201	04	27	03.71	+17	02	55.3	17.1	033
1989	WT1		1989	11	29.01910	04	27	02.51	+17	02	52.7		033
1989	WT1		1989	12	02.99688	04	23	30.71	+16	59	05.5		033
1989	WT1		1989	12	03.02118	04	23	29.65	+16	59	03.7		033
1989	WT1		1989	12	03.90486	04	22	43.13	+16	58	17.4		033
1989	WU1		1989	11	28.99201	04	26	42.03	+15	46	39.2	18.0	033
1989	WU1		1989	11	29.01910	04	26	40.75	+15	46	29.7		033
1989	WU1		1989	12	02.99688	04	22	35.64	+15	21	09.0		033
1989	WU1		1989	12	03.02118	04	22	34.41	+15	21	00.5		033
1989	WU1		1989	12	03.90486	04	21	41.09	+15	15	33.8		033
1989	WN3	*	1989	11	29.10000	08	11	11.25	+16	35	35.3	18.9	033
1989	WN3		1989	11	29.16146	08	11	10.81	+16	35	36.9		033
1989	WN3		1989	12	02.04236	08	10	47.52	+16	37	45.4		033
1989	WO3	*	1989	11	29.10000	08	11	31.58	+17	24	20.4	18.6	033
1989	WO3		1989	11	29.16146	08	11	31.14	+17	24	18.8		033
1989	WO3		1989	12	02.04236	08	11	08.69	+17	24	19.0		033
1989	WP3	*	1989	11	29.10000	08	15	11.58	+18	44	17.8	17.5	033
1989	WP3		1989	11	29.16146	08	15	11.47	+18	44	10.0		033
1989	WP3		1989	12	02.04236	08	15	02.67	+18	38	35.5		033
1989	WQ3	*	1989	11	29.10000	08	15	32.28	+17	04	23.8	16.2	033
1989	WQ3		1989	11	29.16146	08	15	32.07	+17	04	29.0		033
1989	WQ3		1989	12	02.04236	08	15	19.86	+17	09	06.0		033
1989	WR3	*	1989	11	29.10000	08	15	32.84	+17	01	06.8	17.9	033
1989	WR3		1989	11	29.16146	08	15	32.67	+17	01	08.1		033
1989	WR3		1989	12	02.04236	08	15	17.35	+17	03	03.2		033
1989	WS3	*	1989	11	29.10000	08	15	44.82	+18	51	08.7	16.4	033
1989	WS3		1989	11	29.16146	08	15	46.41	+18	51	21.9		033
1989	WS3		1989	12	02.04236	08	16	54.65	+19	02	23.9		033
1989	WT3	*	1989	11	29.10000	08	21	05.63	+18	45	47.9	18.5	033
1989	WT3		1989	11	29.16146	08	21	05.73	+18	45	33.4		033
1989	WT3		1989	12	02.04236	08	21	07.09	+18	34	57.0		033
1989	WU3	*	1989	11	29.10000	08	22	04.79	+18	27	16.3	18.3	033
1989	WU3		1989	11	29.16146	08	22	05.05	+18	27	19.1		033
1989	WU3		1989	12	02.04236	08	22	12.97	+18	30	12.9		033
1989	WX3	*	1989	11	28.99201	04	21	27.79	+14	29	56.9	17.4	033
1989	WX3		1989	11	29.01910	04	21	26.52	+14	29	54.9		033
1989	WX3		1989	12	02.99688	04	17	36.92	+14	26	26.2		033
1989	WX3		1989	12	03.02118	04	17	35.74	+14	26	24.3		033
1989	WY3	*	1989	11	28.99201	04	23	51.46	+15	55	22.1	17.7	033
1989	WY3		1989	11	29.01910	04	23	49.77	+15	55	24.6		033
1989	WY3		1989	12	02.99688	04	19	18.61	+16	04	35.0		033
1989	WY3		1989	12	03.02118	04	19	17.23	+16	04	38.3		033
1989	WY3		1989	12	03.90486	04	18	17.80	+16	06	47.7		033
1989	WZ3	*	1989	11	28.99201	04	24	41.48	+15	12	51.2	18.3	033
1989	WZ3		1989	11	29.01910	04	24	39.96	+15	12	51.2		033
1989	WZ3		1989	12	02.99688	04	20	41.33	+15	17	01.5		033
1989	WZ3		1989	12	03.02118	04	20	40.10	+15	16	59.3		033
1989	WZ3		1989	12	03.90486	04	19	47.88	+15	18	02.3		033
1989	WA4	*	1989	11	28.99201	04	24	57.39	+15	13	18.8	18.2	033
1989	WA4		1989	11	29.01910	04	24	55.88	+15	13	18.4		033
1989	WA4		1989	12	02.99688	04	20	35.73	+15	16	58.8		033
1989	WA4		1989	12	03.02118	04	20	34.40	+15	17	00.9		033
1989	WA4		1989	12	03.90486	04	19	36.88	+15	18	01.1		033

1989	WD4	*	1989	11	28.99201	04	27	49.51	+15	55	56.4	18.0	033
1989	WD4		1989	11	29.01910	04	27	48.08	+15	55	59.4		033
1989	WD4		1989	12	02.99688	04	23	44.40	+16	04	55.2		033
1989	WD4		1989	12	03.02118	04	23	43.36	+16	04	57.6		033
1989	WD4		1989	12	03.90486	04	22	50.13	+16	07	02.4		033
1989	WE4	*	1989	11	28.99201	04	28	05.74	+16	28	49.2	17.9	033
1989	WE4		1989	11	29.01910	04	28	04.33	+16	28	44.8		033
1989	WE4		1989	12	02.99688	04	23	56.53	+16	21	41.4		033
1989	WE4		1989	12	03.02118	04	23	55.29	+16	21	38.0		033
1989	WE4		1989	12	03.90486	04	23	01.47	+16	20	12.8		033
1989	XR	*	1989	12	02.99688	04	29	55.51	+16	40	59.8	18.5	033
1989	XR		1989	12	03.02118	04	29	54.13	+16	41	00.2		033
1989	XR		1989	12	03.90486	04	28	57.46	+16	41	37.7		033
70			1989	10	23.92234	03	13	50.81	+16	22	23.2		033
70			1989	10	23.97234	03	13	47.83	+16	22	25.3		033
70			1989	10	25.92500	03	11	52.94	+16	23	14.3	12.7	033
70			1989	10	25.97639	03	11	49.80	+16	23	15.7		033
70			1989	10	27.93194	03	09	51.16	+16	23	52.4		033
288			1989	11	28.99201	04	25	14.79	+16	31	16.5	15.3	033
288			1989	11	29.01910	04	25	13.47	+16	31	12.8		033
288			1989	12	02.99688	04	21	27.30	+16	24	58.0		033
288			1989	12	03.02118	04	21	26.16	+16	24	55.4		033
288			1989	12	03.90486	04	20	36.14	+16	23	34.8		033
846			1989	10	28.16597	10	06	30.32	+11	26	36.2	16.8	033
846			1989	10	28.18299	10	06	31.46	+11	26	30.1		033
938			1989	11	29.10000	08	18	01.97	+19	03	40.2	16.5	033
938			1989	11	29.16146	08	18	01.42	+19	03	43.3		033
938			1989	12	02.04236	08	17	32.40	+19	06	23.9		033
991			1989	10	23.92234	03	13	44.15	+16	55	32.3		033
991			1989	10	23.97234	03	13	41.86	+16	55	25.2		033
991			1989	10	25.92500	03	12	14.34	+16	50	30.9	16.3	033
991			1989	10	25.97639	03	12	11.92	+16	50	23.6		033
1208			1989	10	23.92234	03	11	39.87	+16	09	15.4		033
1208			1989	10	23.97234	03	11	37.93	+16	09	19.8		033
1208			1989	10	25.92500	03	10	22.99	+16	11	43.0	16.5	033
1208			1989	10	25.97639	03	10	20.98	+16	11	46.9		033
1208			1989	10	27.93194	03	09	04.31	+16	14	04.9		033
1635			1989	10	23.92234	03	12	24.14	+16	06	45.0	I	033
1635			1989	10	23.97234	03	12	21.79	+16	06	34.9		033
1635			1989	10	25.92500	03	10	52.12	+15	59	13.8	16.1	033
1635			1989	10	25.97639	03	10	49.66	+15	59	02.7		033
1635			1989	10	27.93194	03	09	16.66	+15	51	28.1		033
1728			1989	10	26.06979	04	24	46.54	+22	38	07.1		033
1728			1989	10	26.12292	04	24	44.68	+22	37	55.3	16.7	033
1728			1989	10	28.03958	04	23	36.43	+22	30	48.3		033
1968			1989	10	26.06979	04	32	24.00	+20	26	44.2		033
1968			1989	10	26.12292	04	32	22.25	+20	26	42.8	17.4	033
1968			1989	10	28.03958	04	31	17.71	+20	26	00.0		033
1985			1989	10	28.16597	10	08	47.26	+09	22	48.6	16.5	033
1985			1989	10	28.18299	10	08	48.46	+09	22	36.9		033
2120			1989	10	23.92234	03	05	34.08	+17	15	03.8		033
2120			1989	10	23.97234	03	05	31.88	+17	14	41.5		033
2120			1989	10	25.92500	03	04	07.44	+16	59	37.8	16.0	033
2120			1989	10	25.97639	03	04	05.15	+16	59	14.1		033
2120			1989	10	27.93194	03	02	38.24	+16	43	52.0		033
2341			1989	10	23.92234	03	08	35.21	+14	19	14.2		033
2341			1989	10	23.97234	03	08	32.52	+14	19	12.9		033
2341			1989	10	25.92500	03	06	50.30	+14	17	44.9	15.5	033
2341			1989	10	25.97639	03	06	47.40	+14	17	43.4		033

2341		1989	10	27.93194	03	04	58.98	+14	16	06.4	033
2377		1989	11	29.10000	08	18	22.40	+19	07	19.9	16.9 033
2377		1989	11	29.16146	08	18	22.36	+19	07	17.9	033
2377		1989	12	02.04236	08	18	17.05	+19	06	15.6	033
2658		1989	11	28.99201	04	20	35.19	+14	20	50.7	17.8 033
2658		1989	11	29.01910	04	20	34.06	+14	20	42.4	033
2658		1989	12	02.99688	04	17	01.11	+14	02	51.5	E 033
2658		1989	12	03.02118	04	17	00.32	+14	02	46.3	E 033
2659		1989	10	23.92234	03	09	42.69	+15	53	20.3	033
2659		1989	10	23.97234	03	09	40.53	+15	53	11.3	033
2659		1989	10	25.92500	03	08	17.07	+15	46	46.6	16.8 033
2659		1989	10	25.97639	03	08	14.78	+15	46	36.8	033
2659		1989	10	27.93194	03	06	48.10	+15	39	59.9	033
2838		1989	10	26.06979	04	26	24.98	+19	40	18.7	033
2838		1989	10	26.12292	04	26	23.94	+19	40	19.0	17.5 033
2838		1989	10	28.03958	04	25	45.62	+19	40	29.4	033
2891		1989	11	29.10000	08	16	59.40	+18	26	33.3	16.3 033
2891		1989	11	29.16146	08	16	59.00	+18	26	40.5	033
2891		1989	12	02.04236	08	16	37.09	+18	32	20.1	033
2919		1989	10	23.92234	03	10	37.10	+15	58	48.3	033
2919		1989	10	23.97234	03	10	34.88	+15	58	38.6	033
2919		1989	10	25.92500	03	09	09.80	+15	52	16.0	18.0 033
2919		1989	10	25.97639	03	09	07.50	+15	52	06.2	033
2919		1989	10	27.93194	03	07	39.91	+15	45	33.5	033
2962		1989	10	26.06979	04	26	58.50	+22	22	02.7	033
2962		1989	10	26.12292	04	26	56.40	+22	22	16.4	16.4 033
2962		1989	10	28.03958	04	25	39.48	+22	30	46.8	033
3191		1989	10	23.92234	03	04	01.03	+16	41	57.5	033
3191		1989	10	23.97234	03	03	58.62	+16	41	49.2	033
3191		1989	10	25.92500	03	02	24.78	+16	36	54.5	17.6 033
3191		1989	10	25.97639	03	02	22.25	+16	36	47.0	033
3191		1989	10	27.93194	03	00	45.29	+16	31	36.7	033
3375		1989	11	29.10000	08	13	32.05	+18	20	49.4	17.7 033
3375		1989	11	29.16146	08	13	32.55	+18	20	45.7	033
3375		1989	12	02.04236	08	13	49.61	+18	18	35.9	I 033
3429		1989	11	29.10000	08	13	44.62	+18	03	00.1	18.7 033
3429		1989	11	29.16146	08	13	44.10	+18	02	59.0	033
3429		1989	12	02.04236	08	13	14.75	+18	03	02.0	033
3478		1989	11	29.10000	08	21	56.03	+16	45	14.5	16.0 033
3478		1989	11	29.16146	08	21	56.70	+16	45	14.8	033
3478		1989	12	02.04236	08	22	24.77	+16	46	21.9	033
3482		1989	12	03.89653	04	30	23.82	+15	02	41.2	16.8 033
3482		1989	12	03.91319	04	30	23.07	+15	02	40.5	033
3941		1989	11	29.10000	08	15	56.94	+17	35	40.1	18.8 033
3941		1989	11	29.16146	08	15	56.82	+17	35	37.5	033
3941		1989	12	02.04236	08	15	47.57	+17	34	26.5	033
4281		1989	10	23.92234	03	06	17.61	+16	44	45.4	033
4281		1989	10	23.97234	03	06	15.05	+16	44	34.2	033
4281		1989	10	25.92500	03	04	38.23	+16	36	57.9	18.2 033
4281		1989	10	25.97639	03	04	35.53	+16	36	46.3	033
4281		1989	10	27.93194	03	02	54.09	+16	28	48.4	033

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1931	TR1	1989	10	05.94830	00	52	44.68	+09	22	13.3	16.6 046
1931	TR1	1989	10	05.96242	00	52	44.19	+09	22	07.3	046

1979	SG		1989	11	30.92187	03	53	35.83	+41	06	17.5		046
1979	SG		1989	11	30.93600	03	53	34.70	+41	06	14.7		046
1979	SG		1989	12	01.76615	03	52	37.87	+41	03	55.5		046
1979	SG		1989	12	01.78009	03	52	36.49	+41	03	52.4		046
1981	QE1		1989	12	25.88247	05	31	27.20	+23	02	44.7		046
1981	QE1		1989	12	25.89653	05	31	26.14	+23	02	44.0		046
1981	QE1		1989	12	26.86719	05	30	28.80	+23	01	03.5		046
1981	QE1		1989	12	26.88125	05	30	28.24	+23	01	01.1		046
1982	OK		1989	11	29.85764	02	45	39.03	+08	17	18.1		046
1982	OK		1989	11	29.87176	02	45	38.32	+08	17	19.1		046
1982	OK		1989	11	30.81447	02	44	57.91	+08	16	15.8	F	046
1982	OK		1989	11	30.82859	02	44	57.31	+08	16	14.4	F	046
1982	OK		1989	12	01.80347	02	44	13.80	+08	15	11.4	F	046
1982	OK		1989	12	01.81753	02	44	13.22	+08	15	12.9	F	046
1982	VB1		1989	10	05.94830	00	57	15.02	+11	42	53.8	16.6	046
1982	VB1		1989	10	05.96242	00	57	14.32	+11	42	47.2		046
1982	VD5		1989	12	29.76322	05	05	08.41	+18	47	58.9		046
1982	VD5		1989	12	29.77734	05	05	07.80	+18	47	56.0		046
1982	VD5		1989	12	29.84360	05	05	04.14	+18	47	48.0		046
1982	VD5		1989	12	29.85772	05	05	03.45	+18	47	46.0		046
1982	VD5		1989	12	31.77189	05	03	35.31	+18	44	01.8		046
1982	VD5		1989	12	31.78462	05	03	34.43	+18	44	01.3		046
1982	VD5		1990	01	01.83455	05	02	49.22	+18	42	04.4		046
1982	VD5		1990	01	01.84728	05	02	48.66	+18	42	04.1		046
1984	OA		1989	12	25.82025	04	24	11.00	-00	23	23.1		046
1984	OA		1989	12	25.83437	04	24	10.33	-00	23	19.2		046
1984	OA		1989	12	26.83368	04	23	30.13	-00	16	07.7		046
1984	OA		1989	12	26.84774	04	23	29.33	-00	16	00.3		046
1984	QF		1989	12	01.87222	04	15	38.86	+00	29	21.9		046
1984	QF		1989	12	01.88628	04	15	38.09	+00	29	24.6		046
1984	QF		1989	12	25.78455	03	57	13.66	+01	58	51.0		046
1984	QF		1989	12	25.79931	03	57	13.20	+01	58	55.3		046
1984	QF		1989	12	26.80017	03	56	42.43	+02	04	54.7		046
1984	QF		1989	12	26.81424	03	56	41.79	+02	05	01.8		046
1987	BJ		1989	12	01.83872	04	15	24.18	+11	41	05.4	16.7	046
1987	BJ		1989	12	01.85278	04	15	23.09	+11	41	05.0		046
1987	DQ		1989	12	29.81137	04	50	32.40	+14	40	32.9		046
1987	DQ		1989	12	29.82559	04	50	31.84	+14	40	33.8		046
1989	RR3	*	1989	09	09.02610	23	54	49.08	+08	47	49.9	17.0	046
1989	RR3		1989	09	09.03877	23	54	48.30	+08	47	49.0		046
1989	RR3		1989	09	22.86531	23	43	39.80	+08	12	45.5	16.8	046
1989	RR3		1989	09	22.87799	23	43	39.38	+08	12	42.6		046
1989	US1		1989	11	18.79083	02	09	17.68	+19	53	47.4	16.4	046
1989	US1		1989	11	18.80640	02	09	16.88	+19	53	48.8		046
1989	UO2		1989	10	24.87164	02	07	23.09	+12	39	05.9	17.0	046
1989	UO2		1989	10	24.88576	02	07	22.63	+12	39	10.2		046
1989	UY2		1989	11	23.80579	02	40	15.14	+14	14	00.2	16.7	046
1989	UY2		1989	11	23.81991	02	40	14.34	+14	14	00.9		046
1989	UY2		1989	11	29.82471	02	35	47.56	+14	08	45.9		046
1989	UY2		1989	11	29.83889	02	35	46.83	+14	08	46.5		046
1989	UY2		1989	11	30.77888	02	35	11.20	+14	08	18.3	16.7	046
1989	UY2		1989	11	30.79306	02	35	10.51	+14	08	17.6		046
1989	UP4		1989	10	24.87164	02	01	16.62	+13	36	20.4	16.7	046
1989	UP4		1989	10	24.88576	02	01	16.00	+13	36	17.3		046
1989	UW4		1989	11	02.89549	02	15	27.44	+13	53	24.4		046
1989	UW4		1989	11	02.90972	02	15	26.76	+13	53	26.5		046
1989	UA5		1989	11	02.92986	02	21	33.77	+06	07	15.8	16.6	046
1989	UA5		1989	11	02.94410	02	21	33.02	+06	07	08.1		046
1989	WS		1989	11	18.79083	02	17	32.94	+17	01	23.8	16.7	046

1989	WS		1989	11	18.80640	02	17	32.43	+17	01	13.5		046
1989	WV		1989	12	01.83872	04	15	04.47	+12	47	51.4	16.6	046
1989	WV		1989	12	01.85278	04	15	03.49	+12	47	54.1		046
1989	WD1		1989	12	01.83872	04	24	56.86	+10	33	05.7	16.6	046
1989	WD1		1989	12	01.85278	04	24	56.02	+10	33	05.5		046
1989	WG4		1989	11	23.84062	02	55	29.19	+07	33	49.0	16.6	046
1989	WG4		1989	11	23.85475	02	55	28.17	+07	33	49.9		046
1989	WG4	*	1989	11	29.85764	02	50	09.91	+07	39	05.7	16.5	046
1989	WG4		1989	11	29.87176	02	50	09.28	+07	39	05.2		046
1989	WG4		1989	11	30.81447	02	49	24.50	+07	40	35.4		046
1989	WG4		1989	11	30.82859	02	49	23.68	+07	40	36.5		046
1989	WG4		1989	12	01.80347	02	48	38.91	+07	42	16.5		046
1989	WG4		1989	12	01.81753	02	48	38.04	+07	42	17.2		046
1989	WH4		1989	11	23.84062	03	04	01.99	+07	15	42.6	16.7	046
1989	WH4		1989	11	23.85475	03	04	01.10	+07	15	42.9		046
1989	WH4	*	1989	11	29.89178	02	58	59.42	+07	10	50.6	16.5	046
1989	WH4		1989	11	29.90590	02	58	58.66	+07	10	52.7		046
1989	WH4		1989	11	30.84907	02	58	18.07	+07	10	50.1		046
1989	WH4		1989	11	30.86319	02	58	16.17	+07	10	50.8		046
1989	XF		1989	12	28.89424	05	02	31.36	+15	46	49.0	16.6	046
1989	XF		1989	12	28.90836	05	02	30.66	+15	46	51.9		046
1989	XF		1989	12	29.81137	05	01	45.79	+15	50	39.3		046
1989	XF		1989	12	29.82560	05	01	45.12	+15	50	41.7		046
1989	XF		1989	12	31.81575	05	00	10.15	+15	59	12.9		046
1989	XF		1989	12	31.82848	05	00	09.45	+15	59	15.1		046
1989	YQ6	*	1989	12	28.89424	04	54	38.10	+16	31	23.3	16.6	046
1989	YQ6		1989	12	28.90836	04	54	37.28	+16	31	27.8		046
1989	YQ6		1989	12	29.81137	04	53	55.88	+16	37	33.3		046
1989	YQ6		1989	12	29.82560	04	53	55.30	+16	37	39.8		046
1989	YQ6		1989	12	31.81575	04	52	28.32	+16	51	22.6		046
1989	YQ6		1989	12	31.82848	04	52	27.76	+16	51	25.9		046
1989	YS6	*	1989	12	29.84360	05	10	18.30	+20	25	33.4	16.6	046
1989	YS6		1989	12	29.85772	05	10	17.51	+20	25	37.2		046
1989	YS6		1989	12	31.77189	05	08	33.58	+20	31	09.6		046
1989	YS6		1989	12	31.78462	05	08	32.85	+20	31	13.2		046
1989	YS6		1990	01	01.83455	05	07	38.65	+20	34	16.6		046
1989	YS6		1990	01	01.84728	05	07	37.90	+20	34	20.0		046
4265	T-2		1989	11	18.79083	02	13	16.22	+18	17	33.4	16.7	046
4265	T-2		1989	11	18.80640	02	13	15.75	+18	17	32.5		046
4265	T-2		1989	11	23.77130	02	09	29.73	+18	12	21.1		046
4265	T-2		1989	11	23.78542	02	09	29.08	+18	12	19.9		046
4265	T-2		1989	11	29.74954	02	05	36.16	+18	07	10.3		046
4265	T-2		1989	11	29.76366	02	05	35.61	+18	07	10.2		046
3045	T-3		1989	11	29.74954	02	08	31.22	+17	43	07.6	16.6	046
3045	T-3		1989	11	29.76366	02	08	30.46	+17	43	07.7		046
70			1989	11	23.80579	02	41	41.67	+16	21	51.0		046
70			1989	11	23.81991	02	41	40.85	+16	21	50.8		046
70			1989	11	29.82471	02	36	28.77	+16	22	15.9		046
70			1989	11	29.83889	02	36	28.06	+16	22	16.3		046
70			1989	11	30.77888	02	35	43.74	+16	22	29.4		046
70			1989	11	30.79306	02	35	43.02	+16	22	28.7		046
115			1989	11	30.92187	03	57	30.72	+41	18	11.3		046
115			1989	11	30.93600	03	57	29.70	+41	18	03.2		046
115			1989	12	01.76615	03	56	34.76	+41	10	51.9		046
115			1989	12	01.78009	03	56	33.83	+41	10	44.6		046
135			1989	11	18.79083	02	12	01.90	+16	59	20.2		046
135			1989	11	18.80640	02	12	01.14	+16	59	16.6		046
135			1989	11	23.77130	02	08	27.93	+16	39	12.9		046
135			1989	11	23.78542	02	08	27.33	+16	39	09.7		046

135	1989	11	25.78420	02	07	13.11	+16	31	47.3		046
135	1989	11	25.79832	02	07	12.57	+16	31	43.7		046
135	1989	11	29.74954	02	05	06.17	+16	18	21.7		046
135	1989	11	29.76366	02	05	05.69	+16	18	18.6		046
197	1989	11	30.81447	02	39	26.42	+08	09	12.1		046
197	1989	11	30.82859	02	39	25.83	+08	09	13.5		046
197	1989	12	01.80347	02	38	46.46	+08	10	45.5		046
197	1989	12	01.81753	02	38	46.88	+08	10	46.4		046
230	1989	11	29.74954	01	59	54.46	+15	42	33.6		046
230	1989	11	29.76366	01	59	54.07	+15	42	28.9		046
240	1989	12	29.76322	05	02	04.92	+20	57	37.9		046
240	1989	12	29.77734	05	02	04.28	+20	57	38.5		046
240	1989	12	29.84360	05	02	01.48	+20	57	40.8		046
240	1989	12	29.85772	05	02	00.88	+20	57	41.0		046
240	1989	12	31.77189	05	00	39.56	+20	58	50.8		046
240	1989	12	31.78462	05	00	38.98	+20	58	51.7		046
240	1990	01	01.83455	04	59	56.97	+20	59	31.9		046
240	1990	01	01.84728	04	59	56.42	+20	59	33.2		046
533	1989	12	28.89424	05	01	59.39	+13	23	07.2		046
533	1989	12	28.90836	05	01	58.77	+13	23	05.2		046
533	1989	12	29.81137	05	01	18.56	+13	23	08.6		046
533	1989	12	29.82560	05	01	17.95	+13	23	07.8		046
533	1989	12	31.81575	04	59	52.03	+13	23	23.6		046
533	1989	12	31.82848	04	59	51.47	+13	23	24.3		046
570	1989	12	25.88247	05	26	44.30	+21	36	49.9		046
570	1989	12	25.89653	05	26	43.65	+21	36	48.1		046
570	1989	12	26.86719	05	25	57.67	+21	35	59.5		046
570	1989	12	26.88125	05	25	57.05	+21	35	59.5		046
637	1989	11	29.82471	02	28	22.45	+14	59	09.7	16.6	046
637	1989	11	29.83889	02	28	21.89	+14	59	08.9		046
1002	1989	12	25.74601	04	30	31.31	+38	00	42.0		046
1002	1989	12	25.76007	04	30	30.53	+38	00	38.8		046
1002	1989	12	26.76215	04	29	38.94	+37	55	43.4		046
1002	1989	12	26.77622	04	29	38.29	+37	55	40.9		046
1146	1989	11	23.84062	02	58	09.31	+10	16	09.4		046
1146	1989	11	23.85475	02	58	08.66	+10	16	04.7		046
1146	1989	11	29.89178	02	54	02.77	+09	43	05.1		046
1146	1989	11	29.90590	02	54	02.23	+09	43	01.7		046
1146	1989	11	30.84907	02	53	26.64	+09	38	14.1		046
1146	1989	11	30.86319	02	53	25.96	+09	38	11.3		046
1201	1989	11	29.89178	02	58	50.53	+11	08	58.8		046
1201	1989	11	29.90590	02	58	49.96	+11	08	54.8		046
1201	1989	11	30.84907	02	58	10.25	+11	04	50.3		046
1201	1989	11	30.86319	02	58	09.49	+11	04	46.3		046
1243	1989	12	29.84360	05	05	19.12	+17	04	48.2		046
1243	1989	12	29.85772	05	05	18.38	+17	04	44.7		046
1331	1989	12	28.77404	05	29	55.15	+20	51	25.2		046
1331	1989	12	28.78822	05	29	54.44	+20	51	24.8		046
1331	1989	12	31.84689	05	27	28.12	+20	51	51.1		046
1331	1989	12	31.85962	05	27	27.45	+20	51	52.5		046
1331	1990	01	01.86545	05	26	40.59	+20	52	01.8		046
1331	1990	01	01.87818	05	26	40.05	+20	52	02.8		046
1352	1989	12	29.84360	05	10	30.27	+17	11	59.7		046
1352	1989	12	29.85772	05	10	29.56	+17	11	59.4		046
1470	1989	11	18.79083	02	15	46.66	+17	02	09.3		046
1470	1989	11	18.80640	02	15	45.92	+17	02	07.2		046
1470	1989	11	23.77130	02	12	28.59	+16	46	05.4		046
1470	1989	11	23.78542	02	12	28.06	+16	46	04.6		046
1470	1989	11	25.78420	02	11	15.62	+16	40	00.6		046

1470	1989	11	25.79832	02	11	15.01	+16	39	57.2		046
1470	1989	11	29.74954	02	09	03.66	+16	28	35.2		046
1470	1989	11	29.76366	02	09	03.20	+16	28	31.8		046
1479	1989	11	18.79083	02	15	49.00	+19	52	46.7		046
1479	1989	11	18.80640	02	15	48.05	+19	52	45.0		046
1479	1989	11	23.77130	02	11	34.35	+19	44	20.9		046
1479	1989	11	23.78542	02	11	33.65	+19	44	20.1		046
1479	1989	11	25.78420	02	10	01.40	+19	41	06.5		046
1479	1989	11	25.79832	02	10	00.59	+19	41	04.6		046
1479	1989	11	29.74954	02	07	15.59	+19	35	11.5		046
1479	1989	11	29.76366	02	07	15.02	+19	35	10.2		046
1512	1989	11	17.77992	01	56	03.03	+15	58	40.1		046
1512	1989	11	17.79265	01	56	02.49	+15	58	37.2		046
1609	1989	12	01.87222	04	19	40.53	+01	01	35.7		046
1609	1989	12	01.88628	04	19	39.66	+01	01	40.5		046
1609	1989	12	25.78455	03	58	08.35	+03	59	55.7		046
1609	1989	12	25.79931	03	58	07.78	+04	00	03.6		046
1609	1989	12	26.80017	03	57	30.97	+04	09	10.5		046
1609	1989	12	26.81424	03	57	30.45	+04	09	18.6		046
1633	1989	12	25.88247	05	32	31.26	+21	27	29.8		046
1633	1989	12	25.89653	05	32	30.49	+21	27	28.8		046
1633	1989	12	26.86719	05	31	39.54	+21	27	39.2		046
1633	1989	12	26.88125	05	31	38.86	+21	27	40.3		046
1633	1989	12	28.77404	05	30	00.88	+21	27	59.5		046
1633	1989	12	28.78822	05	30	00.16	+21	28	00.2		046
1633	1989	12	31.84689	05	27	26.68	+21	28	37.4		046
1633	1989	12	31.85962	05	27	26.09	+21	28	37.6		046
1633	1990	01	01.86545	05	26	36.87	+21	28	51.0		046
1633	1990	01	01.87818	05	26	36.42	+21	28	51.3		046
1635	1989	11	23.80579	02	46	41.40	+14	03	32.7		046
1635	1989	11	23.81991	02	46	40.76	+14	03	31.1		046
1635	1989	11	29.82471	02	42	24.57	+13	43	29.5		046
1635	1989	11	29.83889	02	42	23.97	+13	43	26.8		046
1635	1989	11	30.77888	02	41	47.35	+13	40	33.2		046
1635	1989	11	30.79306	02	41	46.87	+13	40	33.3		046
1648	1989	11	29.92575	03	27	53.97	+11	47	02.7		046
1648	1989	11	29.93854	03	27	53.04	+11	47	01.2		046
1680	1989	11	30.74456	02	16	39.91	+09	50	13.4	16.6	046
1680	1989	11	30.75868	02	16	39.34	+09	50	12.5		046
1960	1989	11	17.77992	01	54	39.85	+16	14	32.1		046
1960	1989	11	17.79265	01	54	39.23	+16	14	31.8		046
2012	1989	11	18.79083	02	13	20.82	+17	35	16.7		046
2012	1989	11	18.80640	02	13	20.05	+17	35	10.6		046
2012	1989	11	23.77130	02	09	42.63	+17	06	33.1		046
2012	1989	11	23.78542	02	09	42.07	+17	06	34.5		046
2012	1989	11	29.74954	02	06	15.26	+16	35	47.2		046
2012	1989	11	29.76366	02	06	14.70	+16	35	42.5		046
2084	1989	11	29.89178	03	02	56.26	+08	18	39.7		046
2084	1989	11	29.90590	03	02	55.57	+08	18	33.6		046
2084	1989	11	30.84907	03	02	12.81	+08	17	22.1		046
2084	1989	11	30.86319	03	02	12.26	+08	17	21.5		046
2120	1989	11	23.80579	02	42	21.17	+13	10	08.6		046
2120	1989	11	23.81991	02	42	20.66	+13	10	04.8		046
2120	1989	11	29.82471	02	38	36.89	+12	27	57.6		046
2120	1989	11	29.83889	02	38	36.45	+12	27	53.0		046
2120	1989	11	30.77888	02	38	04.63	+12	21	40.4		046
2120	1989	11	30.79306	02	38	04.07	+12	21	34.2		046
2322	1989	12	28.77404	05	31	23.23	+19	12	28.1		046
2322	1989	12	28.78822	05	31	22.43	+19	12	27.4		046

2322	1989	12	31.84689	05	28	17.54	+19	11	07.8	046
2322	1989	12	31.85962	05	28	16.85	+19	11	08.3	046
2341	1989	11	23.80579	02	37	53.18	+13	57	03.8	046
2341	1989	11	23.81991	02	37	52.48	+13	57	03.4	046
2341	1989	11	29.82471	02	33	20.45	+13	59	48.0	046
2341	1989	11	29.83889	02	33	19.84	+13	59	49.3	046
2341	1989	11	30.77888	02	32	43.80	+14	00	40.0	046
2341	1989	11	30.79306	02	32	43.31	+14	00	40.5	046
2411	1989	12	29.76322	05	03	03.89	+20	53	52.3	046
2411	1989	12	29.77734	05	03	03.02	+20	53	50.7	046
2411	1989	12	29.84360	05	02	59.30	+20	53	49.8	046
2411	1989	12	29.85772	05	02	58.44	+20	53	47.2	046
2411	1989	12	31.77189	05	01	08.35	+20	52	55.6	046
2411	1989	12	31.78462	05	01	07.71	+20	52	55.9	046
2411	1990	01	01.83455	05	00	09.63	+20	52	29.5	046
2411	1990	01	01.84728	05	00	08.82	+20	52	28.7	046
2572	1989	12	28.89424	04	53	22.29	+15	37	53.0	046
2572	1989	12	28.90836	04	53	21.53	+15	37	49.4	046
2572	1989	12	29.81137	04	52	34.98	+15	36	55.6	046
2572	1989	12	29.82560	04	52	34.11	+15	36	55.5	046
2659	1989	11	29.82471	02	41	13.13	+13	45	39.4	046
2659	1989	11	29.83889	02	41	12.33	+13	45	35.5	046
2659	1989	11	30.77888	02	40	36.24	+13	43	00.3	046
2659	1989	11	30.79306	02	40	35.75	+13	42	58.5	046
2729	1989	11	30.74456	02	12	28.53	+11	48	50.8	046
2729	1989	11	30.75868	02	12	28.14	+11	48	50.3	046
2857	1989	12	28.89424	05	02	58.06	+13	42	11.4	046
2857	1989	12	28.90836	05	02	57.34	+13	42	13.7	046
2857	1989	12	29.81137	05	02	10.66	+13	43	57.8	046
2857	1989	12	29.82560	05	02	09.84	+13	43	58.3	046
2857	1989	12	31.81575	05	00	30.89	+13	48	07.7	046
2857	1989	12	31.82848	05	00	30.21	+13	48	09.2	046
3191	1989	11	29.82471	02	33	25.48	+14	58	23.1	046
3191	1989	11	29.83889	02	33	24.93	+14	58	26.6	046
3191	1989	11	30.77888	02	32	48.28	+14	56	21.2	046
3191	1989	11	30.79306	02	32	47.79	+14	56	19.9	046
3355	1989	12	28.89424	04	52	54.21	+16	15	46.1	046
3355	1989	12	28.90836	04	52	53.51	+16	15	46.4	046
3489	1989	11	18.79083	02	10	02.08	+18	37	55.3	046
3489	1989	11	18.80640	02	10	01.19	+18	37	52.4	046
3489	1989	11	23.77130	02	05	58.40	+18	28	10.7	046
3489	1989	11	23.78542	02	05	57.38	+18	28	10.6	046
3489	1989	11	29.74954	02	02	00.74	+18	18	19.9	046
3489	1989	11	29.76366	02	02	00.28	+18	18	17.1	046
3495	1989	12	29.84360	05	07	17.52	+20	42	54.3	16.7 046
3495	1989	12	29.85772	05	07	16.86	+20	42	52.4	046
3495	1989	12	31.77189	05	05	51.79	+20	42	21.2	046
3495	1989	12	31.78462	05	05	50.97	+20	42	21.0	046
3495	1990	01	01.83455	05	05	05.64	+20	42	04.8	046
3495	1990	01	01.84728	05	05	05.02	+20	42	05.3	046
3715	1989	12	01.83872	04	23	45.60	+10	47	06.7	046
3715	1989	12	01.85278	04	23	44.65	+10	47	05.5	046
4281	1989	11	23.80579	02	38	21.66	+14	31	33.9	046
4281	1989	11	23.81991	02	38	20.98	+14	31	34.6	046
4281	1989	11	29.82471	02	34	08.76	+14	11	07.1	046
4281	1989	11	29.83889	02	34	08.11	+14	11	05.1	046
4281	1989	11	30.77888	02	33	33.89	+14	08	18.2	046
4281	1989	11	30.79306	02	33	33.30	+14	08	14.8	046
4286	1989	12	28.77404	05	24	16.42	+19	54	54.3	16.8 046

4286		1989	12	28.78822	05	24	15.89	+19 54 59.4		046
4286		1989	12	31.84689	05	21	42.92	+19 56 02.7		046
4286		1989	12	31.85962	05	21	42.20	+19 56 05.3		046
4286		1990	01	01.86545	05	20	54.11	+19 56 32.4		046
4286		1990	01	01.87818	05	20	53.49	+19 56 31.9		046
4350		1989	11	18.79083	02	07	34.07	+17 18 21.2	16.8	046
4350		1989	11	18.80640	02	07	33.10	+17 18 20.9		046
4350		1989	11	29.74954	01	58	03.42	+17 17 23.3	16.9	046
4350		1989	11	29.76366	01	58	02.69	+17 17 23.5		046
4352		1989	11	23.84062	02	59	43.03	+11 22 05.7		046
4352		1989	11	23.85475	02	59	42.24	+11 22 03.5		046

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

A909	TF	1989	10	08.23264	00	08	11.88	-02 41 43.4		293
A909	TF	1989	10	08.24653	00	08	11.07	-02 41 43.0		293
1981	SC7	1989	10	08.27222	00	30	39.96	-06 30 19.5		293

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

1977	TG7	1989	12	20.67248	08	56	18.38	+20 01 32.9	17.5	372
1977	TG7	1989	12	20.69479	08	56	17.54	+20 01 36.3		372
1977	TG7	1989	12	24.78854	08	54	57.43	+20 13 05.3	18.5	372
1977	TG7	1989	12	24.80208	08	54	56.96	+20 13 07.3		372
1977	TG7	1989	12	29.65330	08	52	47.67	+20 28 45.2	17	372
1977	TG7	1989	12	29.66701	08	52	47.23	+20 28 47.0		372
1977	TG7	1989	12	31.72639	08	51	41.10	+20 36 04.7	17	372
1982	TQ2	1990	01	17.55833	08	28	16.69	+21 52 16.6	18	372
1982	TQ2	1990	01	17.57117	08	28	15.98	+21 52 20.0		372
1989	UG	1989	10	23.70799	03	13	49.94	+26 35 03.1	16.5	372
1989	UG	1989	10	23.72049	03	13	48.96	+26 35 03.0		372
1989	UG	1989	10	24.75174	03	12	41.66	+26 36 22.3	16.5	372
1989	UG	1989	10	24.76410	03	12	40.89	+26 36 22.5		372
1989	UG	1989	10	26.67882	03	10	32.39	+26 38 10.1		372
1989	WV3 *	1989	11	20.52604	02	51	26.64	+24 25 23.6	18	372
1989	WV3	1989	11	20.53715	02	51	26.26	+24 25 19.3		372
1989	WV3	1989	11	23.70278	02	48	42.36	+24 02 55.0	18	372
1989	WV3	1989	11	23.71736	02	48	41.77	+24 02 48.2		372
1989	WV3	1989	11	24.64757	02	47	56.25	+23 56 07.5	18	372
1989	WV3	1989	11	24.65938	02	47	55.72	+23 56 03.5		372
1989	WV3	1989	11	26.64444	02	46	22.57	+23 41 53.5	18	372
1989	WV3	1989	11	30.63681	02	43	33.27	+23 13 38.9	18	372
1989	WW3 *	1989	11	26.64444	02	48	59.51	+24 03 05.3	18	372
1989	WW3	1989	11	28.67500	02	46	51.49	+24 03 44.1	18	372
1989	WW3	1989	11	30.63681	02	44	52.84	+24 04 08.6	18	372
1989	WJ4 *	1989	11	23.73194	04	07	06.14	+15 06 24.0	17	372
1989	WJ4	1989	11	23.74375	04	07	05.80	+15 06 21.1		372
1989	WJ4	1989	11	24.69931	04	06	05.66	+15 01 41.3	17	372
1989	WJ4	1989	11	24.71111	04	06	04.70	+15 01 37.7		372
1989	WJ4	1989	11	26.69201	04	03	59.75	+14 51 57.7	16.5	372
1989	WJ4	1989	11	26.70313	04	03	59.06	+14 51 54.4		372
1989	WJ4	1989	11	28.75972	04	01	48.99	+14 42 09.3	16.5	372
1989	WJ4	1989	11	28.77014	04	01	48.43	+14 42 04.7		372
1989	WJ4	1989	12	02.64618	03	57	46.82	+14 24 45.7	16.5	372
1989	WJ4	1989	12	02.66007	03	57	46.06	+14 24 43.3		372
1989	WJ4	1989	12	04.69028	03	55	42.97	+14 16 15.4	17	372

1989	WK4	*	1989	11	23.73194	04	07	34.77	+14	20	03.9	18.5	372
1989	WK4		1989	11	23.74375	04	07	34.01	+14	20	00.6		372
1989	WK4		1989	11	24.67361	04	06	32.33	+14	18	45.5	18	372
1989	WK4		1989	11	24.68611	04	06	31.64	+14	18	44.8		372
1989	WK4		1989	11	26.66424	04	04	18.55	+14	16	18.0		372
1989	WK4		1989	11	26.67778	04	04	17.92	+14	16	16.5		372
1989	WK4		1989	11	30.66146	03	59	51.39	+14	12	07.1	18	372
1989	WK4		1989	11	30.67500	03	59	50.31	+14	12	06.1		372
1989	WK4		1989	12	04.69028	03	55	27.67	+14	09	12.2	18.5	372
1989	WK4		1989	12	04.71111	03	55	26.58	+14	09	13.8	18.5	372
1989	WL4	*	1989	11	24.67361	04	05	44.59	+14	15	42.5	18	372
1989	WL4		1989	11	24.68611	04	05	43.16	+14	15	45.9		372
1989	WL4		1989	11	26.66424	04	04	05.01	+14	15	18.4	18	372
1989	WL4		1989	11	26.67778	04	04	04.66	+14	15	19.5		372
1989	WL4		1989	11	30.66146	04	00	46.99	+14	14	54.5	19	372
1989	WL4		1989	11	30.67500	04	00	46.51	+14	14	54.4		372
1989	XS	*	1989	12	02.65313	03	58	40.62	+14	14	58.7		372
1989	XS		1989	12	04.69028	03	56	47.96	+14	14	41.9		372
1989	YH	*	1989	12	20.66701	08	55	20.04	+19	58	24.8	17.5	372
1989	YH		1989	12	20.67795	08	55	19.76	+19	58	24.6		372
1989	YH		1989	12	24.78854	08	53	17.75	+19	57	22.7	17.5	372
1989	YH		1989	12	24.80208	08	53	17.36	+19	57	23.1		372
1989	YH		1989	12	29.68090	08	50	16.02	+19	57	39.5	17	372
1989	YH		1989	12	29.69271	08	50	15.59	+19	57	40.2		372
1989	YH		1990	01	03.75590	08	46	28.87	+19	59	22.8	17	372
1989	YH		1990	01	03.76632	08	46	28.35	+19	59	22.8		372
1989	YL	*	1989	12	24.66145	08	41	26.53	+12	30	28.7	18	372
1989	YL		1989	12	27.68055	08	39	38.36	+12	39	19.4	17.5	372
1989	YL		1989	12	27.69271	08	39	37.85	+12	39	20.2		372
1989	YL		1989	12	31.77951	08	36	43.19	+12	54	04.6	17.5	372
1989	YL		1989	12	31.79163	08	36	42.50	+12	54	08.5		372
1989	YM	*	1989	12	24.76250	08	28	55.15	+21	40	57.8	16	372
1989	YM		1989	12	24.77500	08	28	54.60	+21	40	54.8		372
1989	YM		1989	12	29.70937	08	25	08.41	+21	24	16.7	16	372
1989	YM		1989	12	31.66319	08	23	27.32	+21	17	47.3	16	372
1989	YM		1989	12	31.67222	08	23	26.77	+21	17	45.7		372
1989	YM		1990	01	03.77778	08	20	33.71	+21	07	23.2	16	372
1989	YM		1990	01	03.78750	08	20	33.13	+21	07	22.2		372
1989	YM		1990	01	17.47049	08	05	52.00	+20	20	43.5	15.5	372
1989	YM		1990	01	17.48403	08	05	51.00	+20	20	42.2		372
1989	YN6	*	1989	12	29.62604	08	39	21.60	+21	18	24.6	18.5	372
1989	YN6		1989	12	29.63958	08	39	21.08	+21	18	27.5		372
1989	YN6		1990	01	03.68472	08	36	23.72	+21	44	39.0	18	372
1989	YN6		1990	01	03.69861	08	36	23.02	+21	44	43.8		372
1989	YO6	*	1989	12	29.62604	08	40	34.59	+21	16	02.9	18.5	372
1989	YO6		1989	12	29.63958	08	40	34.06	+21	16	06.4		372
1989	YO6		1990	01	03.68472	08	37	12.32	+21	43	16.2	18.5	372
1989	YO6		1990	01	03.69861	08	37	11.95	+21	43	18.9		372
1989	YP6	*	1989	12	29.62604	08	40	52.68	+20	59	14.8	17.5	372
1989	YP6		1989	12	29.63958	08	40	52.13	+20	59	16.7		372
1989	YP6		1990	01	05.72066	08	35	38.55	+21	22	04.1	18.5	372
1989	YP6		1990	01	05.74722	08	35	37.26	+21	22	11.0		372
1990	AF	*	1990	01	03.80069	08	36	20.19	+20	36	31.5	17	372
1990	AF		1990	01	05.68993	08	34	47.90	+20	45	56.7	17	372
1990	AF		1990	01	05.70174	08	34	47.30	+20	45	59.5		372
1990	AF		1990	01	17.50903	08	23	08.02	+21	48	27.5	16	372
1990	AF		1990	01	17.56458	08	23	03.68	+21	48	48.7		372
546			1989	11	24.81250	11	58	23.7	+11	46	49	13	372
546			1989	11	24.82639	11	58	25.3	+11	46	43		372

2984		1989 12 24.78854	08	53	46.63	+20	20	24.0	17.5		372
2984		1989 12 24.80208	08	53	46.15	+20	20	26.9			372
2984		1989 12 29.65330	08	52	00.64	+20	39	45.2	16.5		372
2984		1989 12 29.66701	08	52	00.32	+20	39	50.2			372
2984		1989 12 31.72639	08	51	00.38	+20	48	56.3	16.5		372

374 Minami-Oda
T. Nomura, 1-8, Yamate 1 Chome, Tarumi-Ku, Kobe 655, Japan
Observer M. Sugano
Measurer K. Kawanishi
0.25-m f/3.4 Schmidt camera
AGK3

1989 YM		1990 01 17.58701	08	05	43.84	+20	20	22.3	16.0		374
1989 YM		1990 01 17.60611	08	05	42.46	+20	20	16.7			374
1989 YM		1990 01 21.68159	08	01	03.34	+20	05	42.1	16.0		374
1989 YM		1990 01 21.70451	08	01	01.68	+20	05	37.2			374
1990 BL	*	1990 01 17.58701	08	11	48.50	+18	52	40.1	16.0		374
1990 BL		1990 01 17.60611	08	11	47.22	+18	52	42.5			374
1990 BL		1990 01 21.68159	08	07	21.03	+19	03	16.5	16.0		374
1990 BL		1990 01 21.70451	08	07	19.10	+19	03	19.9			374

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

1989 WD1		1989 12 28.50069	04	04	38.97	+11	24	05.7			376
1989 WD1		1989 12 28.54965	04	04	37.31	+11	24	13.8			376
1989 WE1		1989 12 28.51875	04	01	41.03	+15	14	07.4			376
1989 WE1		1989 12 28.56597	04	01	39.45	+15	14	15.9			376
1989 XB		1989 12 28.48576	04	01	46.87	+09	09	40.1			376
1989 XB		1989 12 28.53438	04	01	45.89	+09	10	02.2			376
951		1989 12 31.68576	09	18	00.56	+10	24	19.2			376
951		1989 12 31.70729	09	17	59.76	+10	24	18.4			376

385 Nihondaira Observatory, Oohira Station
T. Urata, 6-1, Muramatsubara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers W. Kakei, M. Kizawa, T. Urata
Measurer T. Urata

1989 UE7		1989 12 04.49861	02	34	07.5	+13	31	06	17	F	385
1989 UE7		1989 12 04.52917	02	34	06.4	+13	31	04		F	385
1989 WU		1989 12 28.50729	04	26	02.79	+22	56	34.5	16.5		385
1989 WU		1989 12 28.54618	04	26	01.27	+22	56	19.1			385
1989 WU		1989 12 30.43229	04	25	00.27	+22	45	28.5	16.5		385
1989 WU		1989 12 30.47986	04	24	58.57	+22	45	13.8		F	385
1989 WO1		1989 12 28.51910	04	30	49.01	+26	24	01.7	16.5	r	385
1989 WO1		1989 12 28.55729	04	30	47.31	+26	24	04.2		r	385
1989 XC		1990 01 04.51215	05	02	03.54	+23	02	14.8	17		385
1989 XC		1990 01 04.55104	05	02	01.81	+23	02	15.7			385
940		1989 12 28.50729	04	27	07.72	+22	49	23.3	15		385
940		1989 12 28.54618	04	27	06.04	+22	49	23.0			385
940		1989 12 30.43229	04	25	57.07	+22	49	05.7	14.5		385
940		1989 12 30.47986	04	25	55.01	+22	49	05.6			385
1378		1989 11 20.58866	04	58	08.02	+25	09	16.2			385
1378		1989 11 20.62743	04	58	05.85	+25	09	12.8			385
1635		1989 11 22.55069	02	47	38.53	+14	08	05.3			385
1635		1989 11 22.57326	02	47	37.69	+14	08	03.5			385
2120		1989 11 04.56632	02	56	44.91	+15	42	24.9			385
2120		1989 11 04.59965	02	56	43.31	+15	42	08.8			385
2120		1989 11 19.53160	02	45	18.40	+13	42	21.2			385

2120		1989	11	19.55243	02	45	17.33	+13	42	11.2		385
2120		1989	11	22.55069	02	43	11.72	+13	19	30.7		385
2120		1989	11	22.57326	02	43	10.81	+13	19	20.7		385
2406		1989	11	19.59201	02	42	51.50	+18	49	41.0		385
2406		1989	11	19.62326	02	42	49.62	+18	49	31.1		385
2659		1989	11	04.56632	03	00	48.53	+15	12	48.8		385
2659		1989	11	04.59965	03	00	46.89	+15	12	40.9		385
2659		1989	11	19.53160	02	48	38.75	+14	18	23.1		385
2659		1989	11	19.55243	02	48	37.72	+14	18	18.7		385
2874		1989	12	02.65451	05	35	23.42	+23	04	29.5	16	385
2874		1989	12	02.67396	05	35	22.11	+23	04	33.4		385
2874		1989	12	04.57425	05	33	17.73	+23	10	14.9	15.5	385
2874		1989	12	04.60486	05	33	15.66	+23	10	20.0		385
2919		1989	11	04.56632	03	01	42.25	+15	19	05.2		385
2919		1989	11	04.59965	03	01	40.76	+15	18	56.4		385
4293		1989	11	27.58854	04	51	24.71	+26	07	42.4	15	385
4293		1989	11	27.62396	04	51	22.39	+26	07	51.7		385
4293		1989	11	29.55521	04	49	21.80	+26	16	26.9	15	385
4293		1989	11	29.58715	04	49	19.71	+26	16	35.0		385
4293		1989	12	02.59896	04	46	04.75	+26	29	18.4	15.5	385
4293		1989	12	02.62257	04	46	03.11	+26	29	24.7		385
4293		1989	12	04.51424	04	43	58.64	+26	37	02.9	15 I	385
4293		1989	12	04.54410	04	43	56.33	+26	37	10.5		385
4293		1989	12	06.61736	04	41	38.24	+26	45	12.4	15 G	385

391 Sendai Observatory, Ayashi Station
M. Koishikawa, Sendai Municipal Observatory, 1-1 Sakuragaoka-koen, Sendai 980, Japan
Observer M. Koishikawa
0.20-m reflector and 0.30-m f/3.8 hyperboloid astrocamera

1977	TG7		1990	01	17.62222	08	39	33.32	+21	42	06.6	391
1977	TG7		1990	01	17.63611	08	39	32.70	+21	42	09.9	391
1990	BD	*	1990	01	20.72431	09	02	42.45	+19	44	27.1	16 391
1990	BD		1990	01	20.73819	09	02	41.53	+19	44	31.6	16 391
1990	BD		1990	01	21.63542	09	01	50.15	+19	48	41.7	391
1990	BD		1990	01	24.73403	08	58	46.18	+20	03	06.9	391
1990	BD		1990	01	24.74792	08	58	45.57	+20	03	12.1	391
63			1989	12	20.68229	05	30	41.60	+31	55	50.3	391
63			1989	12	20.69618	05	30	40.59	+31	55	49.3	391
63			1989	12	23.71250	05	27	07.10	+31	49	59.0	391
63			1989	12	23.73333	05	27	05.63	+31	49	56.4	391
100			1989	12	19.58993	04	31	33.12	+14	38	05.3	391
146			1989	12	19.62326	05	46	19.77	+24	33	59.2	391
146			1989	12	19.63750	05	46	18.72	+24	34	02.5	391
380			1989	12	23.54861	04	15	40.28	+17	57	18.8	391
380			1989	12	23.56944	04	15	39.29	+17	57	19.4	391
425			1989	12	19.72083	05	50	06.82	+26	11	01.7	391
425			1989	12	19.73438	05	50	06.02	+26	11	02.6	391
568			1989	12	23.54861	04	17	59.65	+17	55	03.9	391
568			1989	12	23.56944	04	17	58.82	+17	54	51.8	391
579			1989	12	19.62326	05	42	12.89	+24	27	36.9	391
579			1989	12	19.63750	05	42	12.01	+24	27	39.4	391
895			1989	12	20.74549	06	11	04.07	+18	11	35.0	391
895			1989	12	20.75799	06	11	03.28	+18	11	27.7	391
917			1989	12	20.68229	05	29	09.17	+31	45	29.7	391
917			1989	12	20.69618	05	29	08.09	+31	45	29.7	391
917			1989	12	23.71250	05	25	30.07	+31	38	35.3	391
917			1989	12	23.73333	05	25	28.66	+31	38	32.1	391

1056		1989	12	20.65104	05	27	15.05	+20	15	22.3		391
1056		1989	12	20.66493	05	27	14.24	+20	15	23.1		391
1215		1990	01	24.73403	09	00	06.77	+19	41	39.9		391
1215		1990	01	24.74792	09	00	06.07	+19	41	49.1		391
1938		1989	12	20.74549	06	12	50.92	+18	00	55.0		391
1938		1989	12	20.75799	06	12	50.17	+18	00	53.9		391
2217		1989	12	20.66493	05	23	05.19	+21	01	41.7		391
2387		1989	12	20.68229	05	28	57.75	+32	18	47.5		391
2387		1989	12	20.69618	05	28	56.87	+32	18	51.5		391
2387		1989	12	23.71250	05	25	50.55	+32	24	54.9		391
2387		1989	12	23.73333	05	25	49.16	+32	24	56.5		391
4292		1989	11	25.60764	03	25	59.71	+24	31	09.1	15.1	391
4292		1989	11	25.62847	03	25	58.44	+24	31	03.1		391
4292		1989	11	26.61979	03	25	02.41	+24	27	12.8	15	391
4292		1989	11	26.63368	03	25	01.68	+24	27	10.2		391
4292		1989	11	27.62118	03	24	06.54	+24	23	16.4		391
4292		1989	11	27.62813	03	24	06.09	+24	23	16.5		391
4292		1989	11	28.61285	03	23	11.90	+24	19	20.9		391
4292		1989	11	28.61979	03	23	11.46	+24	19	20.2		391
4292		1989	12	03.58160	03	18	50.42	+23	59	17.2		391
4292		1989	12	03.60590	03	18	49.13	+23	59	11.2		391

399 Kushiro
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 and 0.22-m f/3.5 Schmidt camera
AGK3, SAOC

1978	PR4	1989	12	17.39271	03	39	10.05	+24	00	51.6	16.5	399
1978	PR4	1989	12	17.40868	03	39	09.05	+24	00	47.6		399
1978	PR4	1989	12	17.47396	03	39	05.32	+24	00	39.4		399
1978	PR4	1989	12	18.54063	03	38	10.27	+23	58	23.7	16.5	399
1981	EE43	1989	12	31.72598	04	51	42.65	+41	33	56.4	16	399
1981	EE43	1989	12	31.74410	04	51	41.61	+41	33	48.0		399
1981	EE43	1989	12	31.76007	04	51	41.06	+41	33	45.3		399
1981	EE43	1990	01	02.63090	04	50	19.37	+41	25	47.6	16	399
1981	EE43	1990	01	02.64444	04	50	18.59	+41	25	43.4		399
1981	EE43	1990	01	17.43611	04	44	24.31	+40	08	32.7	16.5	399
1981	EE43	1990	01	17.45226	04	44	24.21	+40	08	26.9		399
1981	EE43	1990	01	17.47014	04	44	23.98	+40	08	22.7		399
1989	WB	1989	12	18.43229	03	34	34.14	+20	44	19.4	16	399
1989	WB	1989	12	18.44763	03	34	33.47	+20	44	19.3		399
1989	WB	1989	12	18.46458	03	34	32.89	+20	44	23.4		399
1989	WV	1989	12	23.61597	03	55	29.29	+13	57	49.3	16	399
1989	WV	1989	12	23.63785	03	55	28.38	+13	57	54.4		399
1989	WV	1989	12	23.65764	03	55	27.26	+13	58	00.6		399
1989	WE1	1989	12	06.71713	04	18	05.40	+14	19	55.9	16	399
1989	WE1	1989	12	06.73194	04	18	04.62	+14	19	57.4		399
1989	WE1	1989	12	06.74907	04	18	03.58	+14	19	59.6		399
1989	WE1	1989	12	23.61597	04	04	35.96	+14	59	14.9	16	399
1989	WE1	1989	12	23.63785	04	04	34.99	+14	59	18.2		399
1989	WE1	1989	12	23.65764	04	04	34.39	+14	59	20.9		399
1989	WJ1	1989	12	22.49028	03	47	33.59	+14	03	46.5	16.5	399
1989	WJ1	1989	12	22.50764	03	47	33.20	+14	03	44.2		399
1989	WJ1	1989	12	23.53837	03	47	06.08	+14	01	10.6	16.5	399
1989	WJ1	1989	12	23.56076	03	47	05.24	+14	01	06.5		399
1989	WT1	1989	11	29.69167	04	26	26.43	+17	02	12.2	16	399
1989	WT1	1989	11	29.70949	04	26	25.41	+17	02	10.5		399
1989	WT1	1989	11	29.72500	04	26	24.71	+17	02	07.9		399

1989	WT1		1989	12	18.48579	04	11	13.87	+16	53	42.7	16.5	399
1989	WT1		1989	12	18.50104	04	11	13.42	+16	53	41.7		399
1989	WT1		1989	12	18.51817	04	11	12.57	+16	53	47.0		399
1989	WU1		1989	11	29.69167	04	25	58.87	+15	42	08.8	16.5	399
1989	WU1		1989	11	29.70949	04	25	57.55	+15	41	58.1		399
1989	WU1		1989	12	06.71713	04	18	54.60	+14	58	47.4	16.5	399
1989	WU1		1989	12	06.73194	04	18	53.55	+14	58	44.1		399
1989	WU1		1989	12	06.74907	04	18	52.49	+14	58	41.5		399
1989	WM2		1989	12	01.65417	04	27	44.09	+16	44	33.6	16.5	399
1989	WM2		1989	12	01.66875	04	27	43.13	+16	44	37.5		399
1989	WM2		1989	12	01.68576	04	27	41.95	+16	44	41.4		399
1989	WM2		1989	12	18.48579	04	10	44.02	+18	30	55.1	16.5	399
1989	WM2		1989	12	18.50104	04	10	43.34	+18	31	03.8		399
1989	WS2		1989	12	22.49028	03	45	01.89	+12	00	12.5	16.5	399
1989	WS2		1989	12	22.50764	03	45	01.31	+12	00	17.3		399
1989	WS2		1989	12	23.53837	03	44	29.19	+12	06	08.0	16.5	399
1989	WS2		1989	12	23.56076	03	44	28.51	+12	06	15.6		399
1989	XA		1989	11	21.57396	04	16	07.28	+22	38	41.4	16.5	399
1989	XA		1989	11	21.58924	04	16	06.23	+22	38	40.3		399
1989	XA		1989	11	22.61736	04	15	09.06	+22	37	15.3	16.5	399
1989	XA		1989	11	22.63194	04	15	08.13	+22	37	12.4		399
1989	YJ	*	1989	12	22.49028	03	46	51.58	+13	02	30.2	16.5	399
1989	YJ		1989	12	22.50764	03	46	50.94	+13	02	33.7		399
1989	YJ		1989	12	23.53837	03	46	21.92	+13	07	41.9	16.5	399
1989	YJ		1989	12	23.56076	03	46	21.13	+13	07	47.8		399
1989	YA2		1990	01	21.48472	08	31	31.92	+14	36	28.7	16	399
1989	YA2		1990	01	21.49931	08	31	30.80	+14	36	27.8		399
1989	YA2		1990	01	21.51563	08	31	29.98	+14	36	28.7		399
1989	YA2		1990	01	23.50417	08	29	29.78	+14	36	22.2	16.5	399
1989	YA2		1990	01	23.51898	08	29	28.78	+14	36	22.7		399
1989	YA2		1990	01	23.53576	08	29	27.97	+14	36	22.6		399
1990	BO	*	1990	01	21.59167	09	03	42.18	+14	28	17.5	16.5	399
1990	BO		1990	01	21.60625	09	03	41.41	+14	28	18.0		399
1990	BO		1990	01	21.62604	09	03	40.33	+14	28	17.2		399
1990	BO		1990	01	23.66076	09	01	51.20	+14	27	11.4	16.5	399
1990	BO		1990	01	23.67535	09	01	50.47	+14	27	12.4		399
1990	BO		1990	01	23.69097	09	01	49.57	+14	27	11.4		399
236			1989	11	30.53993	04	02	41.41	+09	49	40.3	11.0	399
236			1989	11	30.56120	04	02	40.25	+09	49	33.4		399
236			1989	11	30.57868	04	02	39.33	+09	49	33.0		399
2861			1989	12	22.49028	03	42	56.36	+13	45	29.7	16.0	399
2861			1989	12	23.53837	03	42	24.45	+13	44	34.7	16.0	399
2861			1989	12	23.56076	03	42	23.75	+13	44	33.2		399
4291			1989	11	19.52431	02	50	37.71	+22	07	12.6	16.5	399
4291			1989	11	19.53924	02	50	36.89	+22	07	06.1		399
4291			1989	11	20.50220	02	49	52.07	+22	00	09.7	16	399
4291			1989	11	20.51840	02	49	51.29	+22	00	02.4		399
4291			1989	11	20.53513	02	49	50.43	+21	59	53.7		399
4349			1989	12	22.49028	03	42	33.68	+13	29	08.0	15.5	399
4349			1989	12	22.50764	03	42	33.11	+13	29	13.9		399
4349			1989	12	23.53837	03	42	02.39	+13	35	35.7	15.5	399
4349			1989	12	23.56076	03	42	01.60	+13	35	44.3		399

400 Kitami
K. Watanabe, 3-8-B203, Ashibetsu Chuo 3 Jo 4 Chome, Shiroishi-Ku,
Sapporo 005, Japan
Observers K. Endate, A. Takahashi, M. Yanai
Measurer K. Watanabe
0.20-m f/4.8 reflector and 0.20-m f/4.0 reflector

1989	WA2		1989	12	31.60486	04	22	33.32	+26	06	34.5	16.0	400
1989	WA2		1989	12	31.62431	04	22	32.46	+26	06	40.4		400
1989	WQ3		1990	01	01.71042	07	57	54.25	+19	00	07.4	16.0	400
1989	WQ3		1990	01	01.72847	07	57	53.22	+19	00	17.8		400
1989	WQ3		1990	01	02.67361	07	56	59.44	+19	05	05.3	16.0	400
1989	WQ3		1990	01	02.69444	07	56	58.31	+19	05	11.5		400
1989	XH		1990	01	02.56632	04	36	58.82	+18	31	02.7	16.0	400
1989	XH		1990	01	02.60382	04	36	57.54	+18	30	54.9		400
1989	XH		1990	01	02.63021	04	36	56.70	+18	30	47.6		400
1989	XO		1989	12	24.47743	04	55	51.84	+27	14	26.8	16.0	400
1989	XO		1989	12	24.49479	04	55	50.72	+27	14	21.5		400
1989	XO		1989	12	28.53924	04	52	03.00	+26	52	18.6	16.0	400
1989	XO		1989	12	28.55868	04	52	01.93	+26	52	13.6		400
1989	YB		1989	12	28.50313	04	21	10.97	+24	41	23.6	16.0	400
1989	YB		1989	12	28.51979	04	21	10.57	+24	41	19.1		400
1989	YB		1989	12	31.60486	04	20	01.55	+24	21	41.4	16.0	400
1989	YB		1989	12	31.62431	04	20	01.15	+24	21	32.7		400
1989	YB		1990	01	05.53715	04	18	56.64	+23	52	57.9	16.0	400
1989	YB		1990	01	05.55035	04	18	56.54	+23	52	53.5		400
1989	YB		1990	01	05.56771	04	18	56.27	+23	52	46.3		400
1989	YF		1990	01	05.63819	08	12	12.31	+17	57	11.8	16.5	400
1989	YF		1990	01	05.65486	08	12	11.48	+17	57	19.1		400
1989	YM		1990	01	16.51701	08	06	57.04	+20	24	08.3	16.0	400
1989	YM		1990	01	16.53299	08	06	55.91	+20	24	03.8		400
1989	YM		1990	01	17.51910	08	05	48.63	+20	20	33.7	16.0	400
1989	YM		1990	01	17.53646	08	05	47.44	+20	20	28.3		400
1990	AC		1990	01	01.71042	07	54	56.51	+15	27	51.9	16.5	400
1990	AC	*	1990	01	02.67361	07	54	15.92	+15	35	56.8	16.5	400
1990	AC		1990	01	02.69444	07	54	14.82	+15	36	07.3		400
1990	AD		1990	01	02.61215	07	45	26.37	+25	16	14.3	16.0	400
1990	AD		1990	01	02.62951	07	45	25.54	+25	16	22.5		400
1990	AD		1990	01	02.64549	07	45	24.88	+25	16	32.8		400
1990	AE	*	1990	01	01.66319	07	59	32.58	+25	11	08.6	16.0	400
1990	AE		1990	01	01.68125	07	59	31.62	+25	11	14.8		400
1990	AE		1990	01	02.64028	07	58	40.59	+25	18	10.5	16.0	400
1990	AE		1990	01	17.48785	07	43	49.12	+26	56	23.5	16.0	400
1990	AE		1990	01	17.50451	07	43	48.11	+26	56	30.6		400
1990	AE		1990	01	21.46493	07	39	48.71	+27	17	32.6	16.0	400
1990	AE		1990	01	21.48160	07	39	47.75	+27	17	36.8		400
1990	BC	*	1990	01	17.58993	08	41	13.91	+26	02	08.4	16.5	400
1990	BC		1990	01	17.60729	08	41	12.76	+26	02	08.1		400
1990	BC		1990	01	21.50521	08	36	50.93	+26	18	38.9	16.5	400
1990	BC		1990	01	21.52257	08	36	49.87	+26	18	42.9		400
43			1989	11	29.54826	04	56	06.77	+23	51	37.5	11.5	400
43			1989	11	29.56563	04	56	05.54	+23	51	34.2		400
43			1989	12	01.57049	04	53	42.52	+23	45	19.4	11.0	400
43			1989	12	01.58646	04	53	41.40	+23	45	17.3		400
43			1989	12	05.47049	04	49	02.13	+23	32	36.1	11.5	400
43			1989	12	05.48646	04	49	01.03	+23	32	33.6		400
43			1989	12	06.55139	04	47	44.54	+23	28	58.3	11.0	400
43			1989	12	06.56181	04	47	43.77	+23	28	55.9		400
753			1989	12	01.66146	05	07	48.65	+26	41	57.8	14.0	400
753			1989	12	01.67743	05	07	47.42	+26	42	00.6		400
753			1989	12	05.49965	05	03	16.08	+26	47	51.9	14.0	400
753			1989	12	05.51563	05	03	14.91	+26	47	54.4		400
1060			1989	11	26.56319	03	01	15.53	+14	41	42.0	16.0	400
1060			1989	11	26.58194	03	01	14.54	+14	41	35.4		400
2035			1989	12	18.51597	05	01	36.59	+27	20	57.3	14.5	400
2035			1989	12	18.53264	05	01	34.74	+27	21	09.3		400

2158	1990 01 05.63819	08 08 58.29	+18 04 22.8		16.5	400
2158	1990 01 05.65486	08 08 57.59	+18 04 24.1			400
2768	1989 12 05.56528	05 16 17.64	+28 10 17.4		14.0	400
2768	1989 12 05.58750	05 16 15.41	+28 10 21.7			400
3100	1989 12 24.47743	04 59 16.29	+27 07 20.5		16.0	400
3100	1989 12 24.49479	04 59 15.13	+27 07 22.2			400
3375	1990 01 01.71042	07 58 26.24	+18 57 09.4		16.5	400
3375	1990 01 02.67361	07 57 28.58	+18 59 58.1		16.5	400
3375	1990 01 02.69444	07 57 27.44	+19 00 00.6			400
3966	1990 01 17.48785	07 44 52.27	+26 27 16.9		16.5	400
3966	1990 01 17.50451	07 44 51.33	+26 27 18.2			400

401 Oosato
Y. Yamagishi, 884-1, Tudashinden, Oosato, Saitama 360-01, Japan
Observers Y. Yamagishi, S. Hayakawa
Measurer S. Hayakawa
0.20-m f/4.8 reflector

2137	1990 01 25.64282	09 48 52.85	+13 40 19.5		16.0	401
2137	1990 01 25.66146	09 48 52.04	+13 40 19.4			401
3266	1989 12 31.60674	07 37 54.02	+17 36 14.3		15.5	401
3266	1989 12 31.62757	07 37 52.32	+17 36 41.7			401

402 Dynic Astronomical Observatory
A. Sugie, Dynic Astronomical Observatory, Taga 270, Taga-Cho, Inukami-Gun, Shiga-Ken, 522-03, Japan
0.60-m f/5.0 reflector and 0.25-m f/3.4 Schmidt
SAOC

1989 WM	1990 01 21.65417	09 05 32.56	+26 46 22.7		14.0	402
1989 WM	1990 01 21.67153	09 05 33.31	+26 46 22.0			402
1989 YQ6	1989 11 28.65903	05 24 05.15	+13 38 27.6		16.5	402
1989 YQ6	1989 11 28.68785	05 24 03.47	+13 38 35.4		16.5	402

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

1978 VV5	1990 01 21.54236	08 00 19.3	+19 27 40		16.5	403
1978 VV5	1990 01 21.55521	08 00 18.6	+19 27 42			403
1978 VV5	1990 01 23.62500	07 58 02.64	+19 36 16.5			403
1978 VV5	1990 01 23.63762	07 58 01.76	+19 36 20.3			403
1989 TU10*	1989 10 04.60417	00 31 35.8	+00 56 11		16.5	403
1989 TU10	1989 10 04.61944	00 31 35.1	+00 56 00			403
1989 UU3	1989 10 28.63507	03 00 38.24	+13 18 40.1			403
1989 WE	1989 12 01.53438	03 51 49.80	+08 03 59.2			403
1989 WE	1989 12 01.54514	03 51 49.31	+08 03 56.8			403
1989 WA1	1989 12 03.54201	03 55 19.1	+19 06 16			403
1989 XF	1989 12 08.57153	05 22 50.81	+14 34 46.7			403
1989 XF	1989 12 08.58021	05 22 50.12	+14 34 47.3			403
1989 XF	1989 12 18.50486	05 12 21.03	+15 06 30.6			403
1989 XF	1989 12 18.51354	05 12 20.43	+15 06 32.1			403
1989 YG *	1989 12 19.59132	06 36 19.13	+33 28 34.4		16.5	403
1989 YG	1989 12 19.61319	06 36 17.60	+33 28 38.3			403
1989 YG	1989 12 27.54653	06 26 37.7	+33 40 48			403
1989 YG	1989 12 27.55694	06 26 37.26	+33 40 48.9			403
1989 YG	1989 12 31.51979	06 21 45.55	+33 42 16.2			403
1989 YG	1989 12 31.53090	06 21 44.65	+33 42 17.3			403
1989 YG	1990 01 04.59201	06 16 55.28	+33 40 30.2			403
1989 YK	1989 12 31.58993	07 05 01.2	+18 03 25		16.0	403
1989 YK	1989 12 31.60000	07 05 00.63	+18 03 24.7			403

1989	YK		1990	01	04.61563	07	00	26.30	+18	07	57.9		403
1989	YK		1990	01	04.62569	07	00	25.59	+18	07	57.3		403
1989	YM		1990	01	17.59479	08	05	43.0	+20	20	18	16.0	403
1989	YM		1990	01	17.60521	08	05	42.4	+20	20	18		403
1989	YM		1990	01	21.54236	08	01	13.12	+20	06	10.0		403
1989	YM		1990	01	21.55521	08	01	12.25	+20	06	07.2		403
1989	YS	*	1989	12	31.54514	07	08	24.9	+25	32	18	16.5	403
1989	YS		1989	12	31.55503	07	08	24.31	+25	32	22.8		403
1989	YS		1990	01	04.63854	07	03	58.87	+26	09	09.8		403
1989	YS		1990	01	04.64861	07	03	58.33	+26	09	13.6		403
1989	YH1		1990	01	21.56910	08	24	12.3	+20	27	47	16.5	403
1989	YH1		1990	01	21.57963	08	24	11.71	+20	27	50.1		403
1989	YH1		1990	01	23.65104	08	21	58.7	+20	33	12		403
1989	YH1		1990	01	23.66262	08	21	58.03	+20	33	15.4		403
1990	BE	*	1990	01	21.51528	07	50	31.1	+25	33	02	16.0	403
1990	BE		1990	01	21.52813	07	50	30.4	+25	32	59		403
1990	BE		1990	01	23.60012	07	48	06.34	+25	30	15.4		403
1990	BE		1990	01	23.61076	07	48	05.58	+25	30	16.0		403
1990	BF	*	1990	01	21.51528	07	50	58.7	+24	45	24	16.0	403
1990	BF		1990	01	21.52813	07	50	57.7	+24	45	22		403
1990	BF		1990	01	23.60012	07	48	36.14	+24	45	09.4		403
1990	BF		1990	01	23.61076	07	48	35.44	+24	45	08.8		403
1990	BM	*	1990	01	21.51528	07	48	44.9	+25	38	16	15.5	403
1990	BM		1990	01	21.52813	07	48	43.9	+25	38	26		403
1990	BM		1990	01	23.60012	07	46	34.48	+25	55	00.9		403
1990	BM		1990	01	23.61076	07	46	33.83	+25	55	06.2		403
1378			1989	11	25.63889	04	52	49.57	+25	08	04.7		403
1378			1989	11	25.64896	04	52	48.91	+25	08	05.5		403
1378			1989	11	26.57222	04	51	48.76	+25	07	39.6		403
2233			1989	11	21.62083	04	40	28.81	+22	19	31.6		403
2233			1989	11	21.63090	04	40	28.16	+22	19	29.0		403
3683			1989	12	05.63333	05	26	48.19	+14	30	32.3		403
3683			1989	12	05.64410	05	26	47.56	+14	30	32.1		403
4293			1989	11	25.63889	04	53	23.79	+25	58	52.1	15.0	403
4293			1989	11	25.64896	04	53	23.28	+25	58	54.8		403
4293			1989	11	26.57222	04	52	27.80	+26	03	08.2		403
4293			1989	11	26.58507	04	52	26.86	+26	03	11.7		403

413 Siding Spring
R. H. McNaught, Siding Spring Observatory, Coonabarabran, N.S.W. 2357, Australia
Observers R. H. McNaught, D. Olsson-Steel, K. S. Russell
Measurer R. H. McNaught
1.2-m U. K. Schmidt Telescope and (1) Uppsala Southern Schmidt

1975	VD		1989	10	06.68120	00	27	30.14	+04	47	50.8		1	413
1975	VD		1989	10	08.69968	00	25	38.06	+04	47	41.7	16 V	1	413
1976	KC2	*	1976	05	29.64486	18	11	39.69	-17	20	05.5	18 V		413
1976	KC2		1976	05	29.67264	18	11	38.47	-17	20	03.6			413
1976	KD2	*	1976	05	29.64486	17	58	20.92	-21	16	46.5	18 V		413
1976	KD2		1976	05	29.67264	17	58	19.65	-21	16	55.2			413
1976	KD2		1976	05	30.61304	17	57	35.90	-21	21	49.5			413
1976	KD2		1976	05	30.64429	17	57	34.44	-21	21	59.4			413
1976	KE2	*	1976	05	29.64486	17	58	23.78	-20	22	24.3	17.5V		413
1976	KE2		1976	05	29.67264	17	58	22.42	-20	22	36.3			413
1976	KE2		1976	05	30.61304	17	57	39.06	-20	29	32.0			413
1976	KE2		1976	05	30.64429	17	57	37.69	-20	29	44.9		I	413
1976	KF2	*	1976	05	29.64486	17	58	59.03	-21	22	12.2	17.5V		413
1976	KF2		1976	05	29.67264	17	58	57.73	-21	22	18.5			413
1976	KF2		1976	05	30.61304	17	58	16.58	-21	25	57.2			413

1976	KF2		1976	05	30.64429	17	58	15.05	-21	26	05.2		413
1976	KG2	*	1976	05	29.64486	17	59	10.06	-21	48	23.3	17.5V	413
1976	KG2		1976	05	29.67264	17	59	08.11	-21	48	07.8		413
1976	KG2		1976	05	30.61304	17	57	53.72	-21	38	13.4		413
1976	KG2		1976	05	30.64429	17	57	51.17	-21	37	54.2		413
1976	KH2	*	1976	05	29.64486	17	59	15.54	-21	50	45.8	18 V	413
1976	KH2		1976	05	29.67264	17	59	14.46	-21	50	45.1		413
1976	KH2		1976	05	30.61304	17	57	24.23	-21	51	33.4		413
1976	KH2		1976	05	30.64429	17	57	22.75	-21	51	27.6		413
1976	KJ2	*	1976	05	29.64486	17	59	24.59	-17	57	24.3	18.5V o	413
1976	KJ2		1976	05	29.67264	17	59	23.32	-17	57	24.9	o	413
1976	KJ2		1976	05	30.61304	17	58	37.20	-17	58	16.3		413
1976	KJ2		1976	05	30.64429	17	58	35.68	-17	58	18.8		413
1976	KK2	*	1976	05	29.64486	18	00	12.28	-21	17	12.2	17.5V	413
1976	KK2		1976	05	29.67264	18	00	10.81	-21	17	15.0		413
1976	KK2		1976	05	30.61304	17	59	21.49	-21	18	50.8		413
1976	KK2		1976	05	30.64429	17	59	19.73	-21	18	54.5		413
1976	KL2	*	1976	05	29.64486	18	00	37.21	-19	48	35.8	18.5V F	413
1976	KL2		1976	05	29.67264	18	00	35.75	-19	48	35.5	F	413
1976	KL2		1976	05	30.61304	17	59	50.12	-19	48	41.0	V	413
1976	KL2		1976	05	30.64429	17	59	48.37	-19	48	41.0	V	413
1976	KM2	*	1976	05	29.64486	18	00	38.63	-19	41	30.9	18 V	413
1976	KM2		1976	05	29.67264	18	00	37.18	-19	41	37.6		413
1976	KM2		1976	05	30.61304	17	59	52.25	-19	44	58.0		413
1976	KM2		1976	05	30.64429	17	59	50.72	-19	45	05.2		413
1976	KN2	*	1976	05	29.64486	18	00	59.17	-18	33	27.2	18 V	413
1976	KN2		1976	05	29.67264	18	00	58.10	-18	33	18.6		413
1976	KN2		1976	05	30.61304	18	00	18.81	-18	28	58.4		413
1976	KN2		1976	05	30.64429	18	00	17.50	-18	28	50.1		413
1976	KO2	*	1976	05	29.64486	18	01	03.40	-21	43	52.8	18.5V	413
1976	KO2		1976	05	29.67264	18	01	01.98	-21	43	56.2		413
1976	KO2		1976	05	30.61304	18	00	14.95	-21	45	24.6		413
1976	KO2		1976	05	30.64429	18	00	13.32	-21	45	28.1		413
1976	KP2	*	1976	05	29.64486	18	01	52.71	-22	25	48.5	17 V	413
1976	KP2		1976	05	29.67264	18	01	51.61	-22	25	44.0		413
1976	KP2		1976	05	30.61304	18	01	17.14	-22	23	41.4		413
1976	KP2		1976	05	30.64429	18	01	15.82	-22	23	37.2		413
1976	KQ2	*	1976	05	29.64486	18	02	02.28	-22	11	33.6	18 V	413
1976	KQ2		1976	05	29.67264	18	02	01.12	-22	11	34.4		413
1976	KQ2		1976	05	30.61304	18	01	24.53	-22	12	03.1		413
1976	KQ2		1976	05	30.64429	18	01	23.22	-22	12	04.4		413
1976	KR2	*	1976	05	29.64486	18	04	00.75	-20	16	12.2	17 V	413
1976	KR2		1976	05	29.67264	18	03	59.39	-20	16	07.7		413
1976	KR2		1976	05	30.61304	18	03	15.61	-20	14	05.4		413
1976	KR2		1976	05	30.64429	18	03	14.12	-20	14	00.9		413
1976	KS2	*	1976	05	29.64486	18	04	07.71	-17	37	43.0	18.5V	413
1976	KS2		1976	05	29.67264	18	04	06.40	-17	37	49.2		413
1976	KS2		1976	05	30.61304	18	03	22.22	-17	41	09.0		413
1976	KS2		1976	05	30.64429	18	03	20.72	-17	41	16.8		413
1976	KT2	*	1976	05	29.64486	18	04	18.56	-18	56	12.7	18.5V	413
1976	KT2		1976	05	30.61304	18	03	38.46	-18	56	25.0		413
1976	KT2		1976	05	30.64429	18	03	37.16	-18	56	25.9		413
1976	KU2	*	1976	05	29.67264	17	59	13.20	-17	56	42.4	17.5V o	413
1976	KU2		1976	05	30.61304	17	58	31.20	-17	58	39.4		413
1976	KU2		1976	05	30.64429	17	58	29.84	-17	58	44.2		413
1976	KV2	*	1976	05	29.67264	17	59	18.18	-20	20	04.0	18.5V	413
1976	KV2		1976	05	30.61304	17	58	35.43	-20	16	28.7		413
1976	KV2		1976	05	30.64429	17	58	33.98	-20	16	20.9		413
1976	KW2	*	1976	05	29.67264	18	01	51.82	-19	32	39.8	18.5V	413

1976	KW2		1976	05	30.61304	18	01	11.89	-19	34	56.5			413
1976	KW2		1976	05	30.64429	18	01	10.44	-19	35	02.5			413
1976	KX2	*	1976	05	29.67264	18	02	20.47	-19	39	42.9	18.5V		413
1976	KX2		1976	05	30.61304	18	01	43.66	-19	37	50.6			413
1976	KX2		1976	05	30.64429	18	01	42.27	-19	37	46.2			413
1977	TG7		1989	12	30.67459	08	52	15.75	+20	32	23.6			413
1977	TG7		1989	12	30.71626	08	52	14.57	+20	32	31.9			413
1977	TG7		1989	12	31.63238	08	51	44.78	+20	35	44.7			413
1977	TG7		1989	12	31.66002	08	51	43.90	+20	35	51.5			413
1981	EP13		1989	12	31.63238	09	06	11.90	+17	51	45.8	17.5		413
1981	EP13		1989	12	31.66002	09	06	10.67	+17	51	49.3			413
1981	YS1		1976	05	29.64486	18	11	39.69	-17	20	05.5	18 V		413
1981	YS1		1976	05	29.67264	18	11	38.47	-17	20	03.6			413
1981	YS1		1984	08	02.56884	21	12	21.16	-13	36	31.4	17.5V		413
1981	YS1		1984	08	02.60356	21	12	19.68	-13	36	39.5			413
1983	GC2		1989	12	30.67459	09	04	33.21	+20	10	53.0			413
1983	GC2		1989	12	30.71626	09	04	32.04	+20	11	03.9			413
1983	GC2		1989	12	31.63238	09	04	04.20	+20	14	20.9			413
1983	GC2		1989	12	31.66002	09	04	03.42	+20	14	29.5			413
1984	PF	*	1984	08	02.56884	21	11	51.96	-12	44	49.9	17 V		413
1984	PF		1984	08	02.60356	21	11	50.48	-12	45	14.6			413
1984	PG	*	1984	08	02.56884	21	12	21.16	-13	36	31.4	17.5V		413
1984	PG		1984	08	02.60356	21	12	19.68	-13	36	39.5			413
1985	KC		1988	03	19.59610	12	40	39.98	-08	46	35.9	17 V		413
1985	KC		1988	03	19.67249	12	40	35.20	-08	46	25.3			413
1987	SG3		1987	10	22.45579	00	00	09.25	-05	47	55.0	16.5V		413
1987	SG3		1987	10	22.52176	00	00	08.97	-05	49	03.1			413
1987	SH3		1987	10	22.45579	23	50	21.45	-04	19	19.5	16.5V		413
1987	SH3		1987	10	22.52176	23	50	19.71	-04	20	47.3			413
1989	OG		1984	04	01.47101	10	09	58.13	+17	42	16.5			413
1989	OG		1984	04	01.51267	10	09	56.55	+17	42	10.4			413
1989	UQ		1989	11	22.42307	23	53	18.48	-07	35	06.8	17.5V	V	413
1989	UQ		1989	11	22.46821	23	53	12.32	-07	35	39.5		F	413
1989	WK2		1989	12	06.66735	05	15	20.45	-23	01	04.8		1	413
1989	WK2		1989	12	06.69005	05	15	19.30	-23	00	58.2		1	413
1989	WK2		1989	12	27.49196	04	59	30.92	-19	10	07.9	16 V	1	413
1989	WL2		1989	12	06.66735	05	12	10.61	-21	59	36.8		1	413
1989	WL2		1989	12	06.69005	05	12	08.96	-21	59	25.4		1	413
1989	WL2		1989	12	27.47727	04	49	46.68	-16	56	56.8	16 V	1	413
1989	YH		1989	12	30.67459	08	49	34.41	+19	57	59.1	17 V		413
1989	YH		1989	12	30.71626	08	49	32.77	+19	57	59.2			413
1989	YH		1989	12	31.63238	08	48	53.18	+19	58	15.4			413
1989	YH		1989	12	31.66002	08	48	52.05	+19	58	16.4			413
1989	YO	*	1989	12	21.51635	04	52	30.18	-02	08	41.1	16 V		413
1989	YO		1989	12	21.56496	04	52	27.64	-02	08	37.3			413
1989	YO		1989	12	26.54072	04	48	44.56	-01	58	57.3		1	413
1989	YO		1989	12	26.55328	04	48	43.98	-01	58	55.4		1	413
1989	YP	*	1989	12	21.51635	05	02	46.80	+00	43	16.6	16.5V		413
1989	YP		1989	12	21.56496	05	02	44.21	+00	43	41.8			413
1989	YP		1989	12	26.56872	04	58	55.28	+01	26	29.3		1	413
1989	YP		1989	12	26.58156	04	58	54.73	+01	26	35.8		1	413
1989	YQ	*	1989	12	27.68001	10	34	22.08	-24	15	45.4	17.5V	F	413
1989	YQ		1989	12	27.71911	10	34	25.02	-24	16	18.9		S	413
1989	YQ		1989	12	29.66347	10	36	49.92	-24	42	24.3			413
1989	YQ		1989	12	29.71208	10	36	53.31	-24	43	01.9			413
1989	YW	*	1989	12	30.67459	08	40	23.31	+17	00	13.5	18 V		413
1989	YW		1989	12	30.71626	08	40	21.94	+17	00	18.8			413
1989	YW		1989	12	31.64620	08	39	48.25	+17	03	35.5			413
1989	YX	*	1989	12	30.67459	08	40	33.32	+19	03	21.2	18 V	V	413

1989	YX		1989	12	30.71626	08	40	32.10	+19	03	20.8		V	413
1989	YX		1989	12	31.64620	08	39	55.70	+19	03	58.2		V	413
1989	YY	*	1989	12	30.67459	08	40	53.36	+18	48	29.9	18 V	V	413
1989	YY		1989	12	30.71626	08	40	51.99	+18	48	38.8		F	413
1989	YY		1989	12	31.64620	08	40	18.49	+18	52	20.2		V	413
1989	YZ	*	1989	12	30.67459	08	41	06.18	+19	00	26.0	17.5V		413
1989	YZ		1989	12	30.71626	08	41	04.77	+19	00	35.1			413
1989	YZ		1989	12	31.63238	08	40	29.86	+19	04	29.8			413
1989	YA1	*	1989	12	30.67459	08	41	21.86	+17	01	16.6	18 V		413
1989	YA1		1989	12	30.71626	08	41	20.49	+17	01	32.2			413
1989	YA1		1989	12	31.64620	08	40	50.30	+17	07	56.0		V	413
1989	YB1	*	1989	12	30.67459	08	41	31.37	+17	08	19.4	17.5V	F	413
1989	YB1		1989	12	30.71626	08	41	29.86	+17	08	14.2		F	413
1989	YB1		1989	12	31.64620	08	40	59.06	+17	10	20.0		F	413
1989	YC1	*	1989	12	30.67459	08	41	31.72	+19	05	34.4	18 V	F	413
1989	YC1		1989	12	30.71626	08	41	30.65	+19	05	39.9		F	413
1989	YC1		1989	12	31.63238	08	40	55.36	+19	08	55.5			413
1989	YC1		1989	12	31.66002	08	40	54.43	+19	09	01.0			413
1989	YD1	*	1989	12	30.67459	08	41	39.80	+16	43	44.9	17.5V		413
1989	YD1		1989	12	30.71626	08	41	38.45	+16	43	50.3			413
1989	YD1		1989	12	31.63238	08	41	09.76	+16	45	58.9			413
1989	YD1		1989	12	31.66002	08	41	08.89	+16	46	02.2			413
1989	YE1	*	1989	12	30.67459	08	41	46.07	+20	23	40.2	17.5V		413
1989	YE1		1989	12	30.71626	08	41	44.24	+20	23	42.9			413
1989	YE1		1989	12	31.63238	08	41	04.12	+20	25	21.0			413
1989	YE1		1989	12	31.66002	08	41	03.08	+20	25	23.9			413
1989	YF1	*	1989	12	30.67459	08	41	58.38	+15	01	23.6	17.5V		413
1989	YF1		1989	12	30.71626	08	41	56.61	+15	01	15.8			413
1989	YF1		1989	12	31.63238	08	41	18.22	+14	58	54.8			413
1989	YF1		1989	12	31.66002	08	41	16.85	+14	58	50.3			413
1989	YG1	*	1989	12	30.67459	08	42	26.29	+15	54	30.1	18 V	V	413
1989	YG1		1989	12	30.71626	08	42	24.26	+15	54	31.4		V	413
1989	YG1		1989	12	31.64620	08	41	40.43	+15	54	57.5		V	413
1989	YH1	*	1989	12	30.67459	08	43	07.76	+19	35	18.6	17 V		413
1989	YH1		1989	12	30.71626	08	43	06.38	+19	35	22.0			413
1989	YH1		1989	12	31.63238	08	42	33.98	+19	37	00.0			413
1989	YH1		1989	12	31.66002	08	42	33.06	+19	37	03.5			413
1989	YJ1	*	1989	12	30.67459	08	43	38.42	+16	13	18.8	18 V	V	413
1989	YJ1		1989	12	30.71626	08	43	36.40	+16	13	23.8		V	413
1989	YJ1		1989	12	31.63238	08	43	01.31	+16	14	48.8			413
1989	YJ1		1989	12	31.66002	08	43	00.08	+16	14	51.6		F	413
1989	YK1	*	1989	12	30.67459	08	43	50.79	+19	34	51.5	18 V	F	413
1989	YK1		1989	12	30.71626	08	43	49.02	+19	34	51.6		F	413
1989	YK1		1989	12	31.63238	08	43	11.47	+19	35	32.5			413
1989	YK1		1989	12	31.66002	08	43	10.43	+19	35	34.3			413
1989	YL1	*	1989	12	30.67459	08	44	19.61	+16	08	03.2	18 V		413
1989	YL1		1989	12	30.71626	08	44	17.98	+16	08	18.5		F	413
1989	YL1		1989	12	31.64620	08	43	46.57	+16	12	42.0		V	413
1989	YM1	*	1989	12	30.67459	08	44	31.55	+18	30	18.6	18.5V	V	413
1989	YM1		1989	12	31.64620	08	43	48.87	+18	32	10.9		V	413
1989	YN1	*	1989	12	30.67459	08	44	38.45	+20	26	57.3	17.5V	F	413
1989	YN1		1989	12	30.71626	08	44	36.20	+20	27	00.9		F	413
1989	YN1		1989	12	31.64620	08	43	54.96	+20	28	16.5		V	413
1989	YO1	*	1989	12	30.67459	08	44	49.34	+15	59	18.2	18 V		413
1989	YO1		1989	12	30.71626	08	44	47.68	+15	59	22.7			413
1989	YO1		1989	12	31.63238	08	44	14.15	+16	01	09.2			413
1989	YO1		1989	12	31.66002	08	44	13.07	+16	01	13.4			413
1989	YP1	*	1989	12	30.67459	08	45	27.65	+17	37	46.3	18 V		413
1989	YP1		1989	12	30.71626	08	45	26.33	+17	37	53.3			413

1989	YP1		1989	12	31.63238	08	44	53.74	+17	40	49.6			413
1989	YP1		1989	12	31.66002	08	44	52.68	+17	40	55.6			413
1989	YQ1	*	1989	12	30.67459	08	45	30.65	+19	56	53.3	17.5	V	413
1989	YQ1		1989	12	30.71626	08	45	29.50	+19	57	04.8		I	413
1989	YQ1		1989	12	31.63238	08	45	01.19	+20	00	49.9			413
1989	YQ1		1989	12	31.66002	08	45	00.42	+20	00	57.2			413
1989	YR1	*	1989	12	30.67459	08	45	41.64	+14	57	37.2	18	V V	413
1989	YR1		1989	12	30.71626	08	45	39.98	+14	57	36.3		V	413
1989	YR1		1989	12	31.63238	08	44	56.63	+14	57	16.3		F	413
1989	YR1		1989	12	31.66002	08	44	55.02	+14	57	16.3		F	413
1989	YS1	*	1989	12	30.67459	08	46	31.81	+18	01	13.6	18	V	413
1989	YS1		1989	12	30.71626	08	46	30.67	+18	01	22.8			413
1989	YS1		1989	12	31.63238	08	46	04.54	+18	05	08.3			413
1989	YS1		1989	12	31.66002	08	46	03.76	+18	05	13.3			413
1989	YT1	*	1989	12	30.67459	08	46	49.58	+16	33	07.8	17.5	V	413
1989	YT1		1989	12	30.71626	08	46	48.34	+16	33	15.8			413
1989	YT1		1989	12	31.63238	08	46	21.82	+16	36	35.9			413
1989	YT1		1989	12	31.66002	08	46	20.86	+16	36	43.2			413
1989	YU1	*	1989	12	30.67459	08	47	18.52	+18	45	48.4	18	V	413
1989	YU1		1989	12	30.71626	08	47	17.00	+18	46	02.3			413
1989	YU1		1989	12	31.63238	08	46	44.96	+18	50	47.0			413
1989	YU1		1989	12	31.66002	08	46	43.84	+18	50	57.0			413
1989	YV1	*	1989	12	30.67459	08	47	57.18	+19	53	32.1	18	V	413
1989	YV1		1989	12	30.71626	08	47	55.91	+19	53	43.2			413
1989	YV1		1989	12	31.64620	08	47	22.89	+19	57	51.6			413
1989	YW1	*	1989	12	30.67459	08	48	19.32	+19	08	21.1	18	V	413
1989	YW1		1989	12	30.71626	08	48	18.03	+19	08	27.4			413
1989	YW1		1989	12	31.63238	08	47	47.87	+19	11	11.2			413
1989	YW1		1989	12	31.66002	08	47	47.03	+19	11	16.9			413
1989	YX1	*	1989	12	30.67459	08	48	39.73	+15	26	28.2	17.5	V	413
1989	YX1		1989	12	30.71626	08	48	38.27	+15	26	30.6			413
1989	YX1		1989	12	31.63238	08	48	07.28	+15	27	27.6		F	413
1989	YX1		1989	12	31.66002	08	48	06.29	+15	27	29.6		F	413
1989	YY1	*	1989	12	30.67459	08	48	48.86	+14	34	09.7	18	V V	413
1989	YY1		1989	12	30.71626	08	48	47.10	+14	34	00.8		V	413
1989	YY1		1989	12	31.64620	08	48	07.15	+14	31	05.7		F	413
1989	YZ1	*	1989	12	30.67459	08	48	50.26	+20	11	22.3	17	V	413
1989	YZ1		1989	12	30.71626	08	48	48.88	+20	11	29.5			413
1989	YZ1		1989	12	31.63238	08	48	17.05	+20	14	07.5			413
1989	YZ1		1989	12	31.66002	08	48	16.18	+20	14	14.1			413
1989	YA2	*	1989	12	30.67459	08	49	10.05	+15	00	09.6	17	V	413
1989	YA2		1989	12	31.63238	08	48	39.17	+14	58	04.9			413
1989	YA2		1989	12	31.66002	08	48	38.20	+14	58	02.1			413
1989	YB2	*	1989	12	30.67459	08	49	17.02	+19	17	20.4	17	V	413
1989	YB2		1989	12	30.71626	08	49	15.34	+19	17	13.6			413
1989	YB2		1989	12	31.63238	08	48	36.24	+19	14	51.1			413
1989	YB2		1989	12	31.66002	08	48	35.09	+19	14	48.4			413
1989	YC2	*	1989	12	30.67459	08	49	27.86	+19	57	31.1	18.5	V	413
1989	YC2		1989	12	30.71626	08	49	26.47	+19	57	34.2			413
1989	YC2		1989	12	31.63238	08	48	55.03	+19	59	30.1			413
1989	YC2		1989	12	31.66002	08	48	54.25	+19	59	33.9			413
1989	YD2	*	1989	12	30.67459	08	49	48.06	+19	12	33.7	18	V	413
1989	YD2		1989	12	30.71626	08	49	46.38	+19	12	48.0			413
1989	YD2		1989	12	31.63238	08	49	03.72	+19	18	14.2		F	413
1989	YD2		1989	12	31.66002	08	49	02.63	+19	18	24.7		F	413
1989	YE2	*	1989	12	30.67459	08	49	56.56	+15	55	30.3	17.5	V	413
1989	YE2		1989	12	30.71626	08	49	55.36	+15	55	48.5			413
1989	YE2		1989	12	31.63238	08	49	27.31	+16	03	01.2		p	413
1989	YE2		1989	12	31.66002	08	49	26.32	+16	03	16.0			413

1989	YF2	*	1989	12	30.67459	08	50	05.82	+20	08	43.4	18	V	F 413
1989	YF2		1989	12	30.71626	08	50	04.16	+20	08	53.6			F 413
1989	YF2		1989	12	31.64620	08	49	31.44	+20	12	15.0			413
1989	YG2	*	1989	12	30.67459	08	50	13.80	+19	22	36.5	18.5V	V	413
1989	YG2		1989	12	30.71626	08	50	12.32	+19	22	41.6		V	413
1989	YG2		1989	12	31.64620	08	49	34.14	+19	25	09.5		V	413
1989	YH2	*	1989	12	30.67459	08	50	25.46	+19	49	37.4	17.5V		413
1989	YH2		1989	12	30.71626	08	50	24.22	+19	49	45.0			413
1989	YH2		1989	12	31.63238	08	49	54.18	+19	52	31.9			413
1989	YH2		1989	12	31.66002	08	49	53.38	+19	52	37.7			413
1989	YJ2	*	1989	12	30.67459	08	50	55.03	+20	05	09.7	18	V	413
1989	YJ2		1989	12	30.71626	08	50	53.66	+20	05	18.0			413
1989	YJ2		1989	12	31.64620	08	50	21.07	+20	07	38.2			413
1989	YK2	*	1989	12	30.67459	08	50	58.84	+16	37	01.3	18	V	413
1989	YK2		1989	12	30.71626	08	50	56.86	+16	36	58.6			413
1989	YK2		1989	12	31.63238	08	50	09.94	+16	35	28.1			413
1989	YK2		1989	12	31.66002	08	50	08.52	+16	35	26.1			413
1989	YL2	*	1989	12	30.67459	08	51	03.65	+16	34	40.3	18	V	413
1989	YL2		1989	12	30.71626	08	51	02.45	+16	34	50.5			413
1989	YL2		1989	12	31.64620	08	50	35.43	+16	38	13.4		F	413
1989	YM2	*	1989	12	30.67459	08	51	06.02	+16	53	27.3	18	V	F 413
1989	YM2		1989	12	30.71626	08	51	04.55	+16	53	25.3			F 413
1989	YM2		1989	12	31.63238	08	50	33.32	+16	52	32.0			F 413
1989	YM2		1989	12	31.66002	08	50	32.27	+16	52	31.8			F 413
1989	YN2	*	1989	12	30.67459	08	51	09.02	+18	20	24.1	18	V	F 413
1989	YN2		1989	12	31.63238	08	50	34.46	+18	25	29.3			413
1989	YN2		1989	12	31.66002	08	50	33.52	+18	25	37.4			413
1989	YO2	*	1989	12	30.67459	08	51	10.28	+18	51	05.7	17.5V		413
1989	YO2		1989	12	30.71626	08	51	08.76	+18	51	25.1			413
1989	YO2		1989	12	31.63238	08	50	37.11	+18	58	04.5			413
1989	YO2		1989	12	31.66002	08	50	36.11	+18	58	17.7			413
1989	YP2	*	1989	12	30.67459	08	51	58.67	+18	51	15.5	17.5V		413
1989	YP2		1989	12	30.71626	08	51	57.07	+18	51	14.7			413
1989	YP2		1989	12	31.63238	08	51	21.96	+18	50	41.9			413
1989	YP2		1989	12	31.66002	08	51	20.92	+18	50	42.7			413
1989	YQ2	*	1989	12	30.67459	08	52	07.94	+17	29	42.7	17.5V		413
1989	YQ2		1989	12	30.71626	08	52	06.85	+17	29	43.8			413
1989	YQ2		1989	12	31.63238	08	51	40.21	+17	30	24.1			413
1989	YQ2		1989	12	31.66002	08	51	39.35	+17	30	24.9			413
1989	YR2	*	1989	12	30.67459	08	52	43.62	+18	03	34.8	18	V	F 413
1989	YR2		1989	12	31.63238	08	52	07.90	+18	05	14.7			413
1989	YR2		1989	12	31.66002	08	52	06.88	+18	05	18.0			413
1989	YS2	*	1989	12	30.67459	08	53	12.08	+19	41	47.9	17.5V		413
1989	YS2		1989	12	30.71626	08	53	10.85	+19	42	07.4			413
1989	YS2		1989	12	31.63238	08	52	44.70	+19	49	11.3			413
1989	YS2		1989	12	31.66002	08	52	43.87	+19	49	24.6			413
1989	YT2	*	1989	12	30.67459	08	53	22.36	+15	13	35.8	18	V	413
1989	YT2		1989	12	30.71626	08	53	20.80	+15	13	43.0		F	413
1989	YT2		1989	12	31.63238	08	52	40.28	+15	17	13.1			413
1989	YT2		1989	12	31.66002	08	52	39.16	+15	17	18.6			413
1989	YU2	*	1989	12	30.67459	08	53	27.27	+20	44	52.6	18	V	413
1989	YU2		1989	12	30.71626	08	53	25.75	+20	44	57.1			413
1989	YU2		1989	12	31.64620	08	52	52.10	+20	46	29.6			413
1989	YV2	*	1989	12	30.67459	08	53	51.15	+17	29	39.6	18.5V	F	413
1989	YV2		1989	12	30.71626	08	53	49.87	+17	29	38.4		F	413
1989	YV2		1989	12	31.64620	08	53	15.25	+17	29	16.9			413
1989	YW2	*	1989	12	30.67459	08	54	14.96	+16	04	52.5	18.5V		413
1989	YW2		1989	12	30.71626	08	54	13.78	+16	04	51.1			413
1989	YW2		1989	12	31.63238	08	53	48.48	+16	03	57.7			413

1989	YW2		1989	12	31.66002	08	53	47.53	+16	03	56.8		413
1989	YX2	*	1989	12	30.67459	08	54	39.71	+19	37	19.8	18.5V V	413
1989	YX2		1989	12	30.71626	08	54	38.11	+19	37	38.9	V	413
1989	YX2		1989	12	31.63238	08	54	03.24	+19	44	02.3		413
1989	YX2		1989	12	31.66002	08	54	02.14	+19	44	15.7		413
1989	YY2	*	1989	12	30.67459	08	54	44.93	+19	16	55.4	18 V	413
1989	YY2		1989	12	30.71626	08	54	43.35	+19	16	58.7		413
1989	YY2		1989	12	31.64620	08	54	10.87	+19	18	18.7		413
1989	YZ2	*	1989	12	30.67459	08	54	49.90	+20	02	18.4	18 V	413
1989	YZ2		1989	12	30.71626	08	54	48.32	+20	02	27.0	F	413
1989	YZ2		1989	12	31.63238	08	54	14.32	+20	05	02.0		413
1989	YZ2		1989	12	31.66002	08	54	13.25	+20	05	06.5		413
1989	YA3	*	1989	12	30.67459	08	54	52.42	+15	20	28.8	17 V	413
1989	YA3		1989	12	30.71626	08	54	50.52	+15	20	24.6		413
1989	YA3		1989	12	31.63238	08	54	09.26	+15	18	37.0		413
1989	YA3		1989	12	31.66002	08	54	07.92	+15	18	35.0		413
1989	YB3	*	1989	12	30.67459	08	55	25.00	+17	04	48.3	18 V	413
1989	YB3		1989	12	30.71626	08	55	23.73	+17	04	56.4		413
1989	YB3		1989	12	31.63238	08	54	56.05	+17	08	14.2		413
1989	YB3		1989	12	31.66002	08	54	55.10	+17	08	21.0		413
1989	YC3	*	1989	12	30.67459	08	55	39.17	+19	26	19.7	18 V	413
1989	YC3		1989	12	30.71626	08	55	37.74	+19	26	38.0	F	413
1989	YC3		1989	12	31.64620	08	55	13.87	+19	32	16.3		413
1989	YD3	*	1989	12	30.67459	08	55	41.10	+17	57	42.0	18 V V	413
1989	YD3		1989	12	30.71626	08	55	39.45	+17	58	02.3	V	413
1989	YD3		1989	12	31.63238	08	55	06.51	+18	04	39.4		413
1989	YD3		1989	12	31.66002	08	55	05.52	+18	04	52.7		413
1989	YE3	*	1989	12	30.67459	08	55	57.82	+16	58	37.0	18 V	413
1989	YE3		1989	12	30.71626	08	55	56.92	+16	58	30.4		413
1989	YE3		1989	12	31.63238	08	55	36.10	+16	55	48.6		413
1989	YE3		1989	12	31.66002	08	55	35.43	+16	55	44.9		413
1989	YF3	*	1989	12	30.67459	08	56	09.51	+19	29	32.1	17.5V	413
1989	YF3		1989	12	30.71626	08	56	07.61	+19	29	42.9		413
1989	YF3		1989	12	31.63238	08	55	27.67	+19	33	16.8		413
1989	YF3		1989	12	31.66002	08	55	26.54	+19	33	24.8		413
1989	YG3	*	1989	12	30.67459	08	56	10.10	+17	44	35.8	18 V F	413
1989	YG3		1989	12	30.71626	08	56	08.22	+17	44	36.4	F	413
1989	YG3		1989	12	31.63238	08	55	26.59	+17	45	06.8		413
1989	YG3		1989	12	31.66002	08	55	25.24	+17	45	07.9		413
1989	YH3	*	1989	12	30.67459	08	56	26.30	+16	46	29.1	17.5V V	413
1989	YH3		1989	12	30.71626	08	56	24.06	+16	46	30.1	V	413
1989	YH3		1989	12	31.64620	08	55	45.32	+16	46	49.2		413
1989	YJ3	*	1989	12	30.67459	08	56	35.52	+14	58	04.8	17 V I	413
1989	YJ3		1989	12	30.71626	08	56	34.21	+14	58	16.9		413
1989	YJ3		1989	12	31.63238	08	56	05.65	+15	02	48.0	p	413
1989	YJ3		1989	12	31.66002	08	56	04.76	+15	02	55.9		413
1989	YK3	*	1989	12	30.67459	08	57	03.64	+14	50	33.4	17.5V	413
1989	YK3		1989	12	30.71626	08	57	02.23	+14	50	41.5		413
1989	YK3		1989	12	31.63238	08	56	33.74	+14	53	40.1		413
1989	YK3		1989	12	31.66002	08	56	32.86	+14	53	47.4		413
1989	YL3	*	1989	12	30.67459	08	57	12.53	+14	39	27.1	18.5V V	413
1989	YL3		1989	12	30.71626	08	57	10.83	+14	39	34.4	V	413
1989	YL3		1989	12	31.63238	08	56	33.25	+14	42	05.1	V	413
1989	YL3		1989	12	31.66002	08	56	31.99	+14	42	12.2	V	413
1989	YM3	*	1989	12	30.67459	08	58	21.10	+16	44	49.5	18 V	413
1989	YM3		1989	12	30.71626	08	58	19.70	+16	44	51.2		413
1989	YM3		1989	12	31.64620	08	57	44.22	+16	46	17.5	F	413
1989	YN3	*	1989	12	30.67459	08	58	36.36	+15	44	14.7	17 V	413
1989	YN3		1989	12	30.71626	08	58	34.80	+15	44	11.1		413

1989	YN3		1989	12	31.63238	08	58	00.66	+15	42	20.2		413
1989	YN3		1989	12	31.66002	08	57	59.48	+15	42	18.4		413
1989	YO3	*	1989	12	30.67459	08	59	03.45	+18	45	20.3	18 V	413
1989	YO3		1989	12	30.71626	08	59	01.80	+18	45	29.6		413
1989	YO3		1989	12	31.63238	08	58	30.54	+18	48	28.5		413
1989	YO3		1989	12	31.66002	08	58	29.84	+18	48	35.0		413
1989	YP3	*	1989	12	30.67459	08	59	05.46	+15	48	00.7	17.5V I	413
1989	YP3		1989	12	30.71626	08	59	04.19	+15	48	07.7		413
1989	YP3		1989	12	31.63238	08	58	36.18	+15	50	36.6		413
1989	YP3		1989	12	31.66002	08	58	35.22	+15	50	42.8		413
1989	YQ3	*	1989	12	30.67459	08	59	32.57	+15	52	29.6	17 V	413
1989	YQ3		1989	12	30.71626	08	59	31.72	+15	52	36.6		413
1989	YQ3		1989	12	31.63238	08	59	11.68	+15	55	32.5		413
1989	YQ3		1989	12	31.66002	08	59	10.90	+15	55	39.0		413
1989	YR3	*	1989	12	30.67459	09	00	26.82	+18	19	07.1	18 V	413
1989	YR3		1989	12	30.71626	09	00	24.99	+18	19	07.4	V	413
1989	YR3		1989	12	31.63238	08	59	45.80	+18	18	38.4		413
1989	YR3		1989	12	31.66002	08	59	44.67	+18	18	39.0		413
1989	YS3	*	1989	12	30.67459	09	00	36.79	+20	20	08.7	17.5V	413
1989	YS3		1989	12	30.71626	09	00	35.49	+20	20	16.7		413
1989	YS3		1989	12	31.63238	09	00	06.22	+20	22	49.6		413
1989	YS3		1989	12	31.66002	09	00	05.46	+20	22	56.0		413
1989	YT3	*	1989	12	30.67459	09	00	41.31	+19	47	38.0	17.5V	413
1989	YT3		1989	12	30.71626	09	00	40.30	+19	47	47.5		413
1989	YT3		1989	12	31.63238	09	00	16.13	+19	50	51.1		413
1989	YT3		1989	12	31.66002	09	00	15.52	+19	50	57.2		413
1989	YU3	*	1989	12	30.67459	09	01	11.99	+14	49	49.9	18.5V V	413
1989	YU3		1989	12	30.71626	09	01	10.13	+14	50	09.5	V	413
1989	YU3		1989	12	31.64620	09	00	39.22	+14	55	25.6		413
1989	YV3	*	1989	12	30.67459	09	01	19.85	+20	09	29.7	18.5V	413
1989	YV3		1989	12	31.63238	09	00	48.22	+20	12	51.6		413
1989	YV3		1989	12	31.66002	09	00	47.47	+20	12	59.0		413
1989	YW3	*	1989	12	30.67459	09	01	33.20	+14	52	00.4	18 V F	413
1989	YW3		1989	12	30.71626	09	01	31.66	+14	52	02.5	V	413
1989	YW3		1989	12	31.64620	09	01	08.87	+14	52	19.4	V	413
1989	YX3	*	1989	12	30.67459	09	01	58.49	+20	15	51.0	18 V F	413
1989	YX3		1989	12	30.71626	09	01	56.03	+20	15	29.2	F	413
1989	YX3		1989	12	31.63238	09	01	05.13	+20	07	11.4		413
1989	YX3		1989	12	31.66002	09	01	03.62	+20	06	58.3		413
1989	YY3	*	1989	12	30.67459	09	02	05.75	+19	19	43.7	17.5V	413
1989	YY3		1989	12	30.71626	09	02	04.53	+19	19	55.6		413
1989	YY3		1989	12	31.63238	09	01	40.28	+19	23	50.4		413
1989	YY3		1989	12	31.66002	09	01	39.46	+19	23	59.3		413
1989	YZ3	*	1989	12	30.67459	09	02	09.97	+15	55	15.2	17.5V	413
1989	YZ3		1989	12	30.71626	09	02	08.63	+15	55	20.7		413
1989	YZ3		1989	12	31.63238	09	01	38.87	+15	57	20.7		413
1989	YZ3		1989	12	31.66002	09	01	37.82	+15	57	26.1		413
1989	YA4	*	1989	12	30.67459	09	02	39.67	+16	29	09.7	17.5V	413
1989	YA4		1989	12	30.71626	09	02	38.77	+16	29	12.7		413
1989	YA4		1989	12	31.63238	09	02	17.54	+16	30	26.3		413
1989	YA4		1989	12	31.66002	09	02	16.82	+16	30	29.9		413
1989	YB4	*	1989	12	30.67459	09	02	56.10	+20	45	36.1	17.5V	413
1989	YB4		1989	12	30.71626	09	02	54.86	+20	45	46.4		413
1989	YB4		1989	12	31.63238	09	02	25.58	+20	49	10.5		413
1989	YB4		1989	12	31.66002	09	02	24.80	+20	49	18.0		413
1989	YC4	*	1989	12	30.67459	09	03	03.12	+14	44	29.5	17.5V F	413
1989	YC4		1989	12	30.71626	09	03	01.53	+14	44	32.8	F	413
1989	YC4		1989	12	31.63238	09	02	25.66	+14	45	18.1		413
1989	YC4		1989	12	31.66002	09	02	24.53	+14	45	19.5		413

1989	YD4	*	1989	12	30.67459	09	03	07.46	+15	07	00.6	18	V	V 413
1989	YD4		1989	12	30.71626	09	03	06.21	+15	07	04.0			V 413
1989	YD4		1989	12	31.64620	09	02	34.20	+15	08	30.3			413
1989	YE4	*	1989	12	30.67459	09	03	28.74	+15	18	32.6	17.5	V	413
1989	YE4		1989	12	30.71626	09	03	27.72	+15	18	44.6			413
1989	YE4		1989	12	31.63238	09	03	06.86	+15	23	23.0			413
1989	YE4		1989	12	31.66002	09	03	06.33	+15	23	30.0			413
1989	YF4	*	1989	12	30.67459	09	03	33.40	+17	02	39.9	16.5	V	413
1989	YF4		1989	12	30.71626	09	03	31.04	+17	01	51.1			413
1989	YF4		1989	12	31.63238	09	02	40.88	+16	43	04.7			413
1989	YF4		1989	12	31.66002	09	02	39.32	+16	42	34.5			413
1989	YG4	*	1989	12	30.67459	09	04	20.12	+16	07	28.0	18.5	V	413
1989	YG4		1989	12	30.71626	09	04	18.87	+16	07	34.6			413
1989	YG4		1989	12	31.64620	09	03	55.32	+16	09	35.0		V	413
1989	YH4	*	1989	12	30.67459	09	04	32.30	+20	11	02.1	17	V	I 413
1989	YH4		1989	12	30.71626	09	04	31.97	+20	11	54.0			413
1989	YH4		1989	12	31.63238	09	04	24.67	+20	31	51.2			413
1989	YH4		1989	12	31.66002	09	04	24.40	+20	32	29.2			413
1989	YJ4	*	1989	12	30.67459	09	04	58.87	+15	58	00.2	18.5	V	F 413
1989	YJ4		1989	12	30.71626	09	04	57.73	+15	58	03.8			V 413
1989	YJ4		1989	12	31.63238	09	04	27.14	+15	58	54.6			413
1989	YJ4		1989	12	31.66002	09	04	25.96	+15	58	57.6			413
1989	YK4	*	1989	12	30.67459	09	05	27.48	+18	19	26.4	17.5	V	413
1989	YK4		1989	12	30.71626	09	05	26.26	+18	19	40.2			413
1989	YK4		1989	12	31.63238	09	04	59.27	+18	24	32.8			413
1989	YK4		1989	12	31.66002	09	04	58.45	+18	24	43.2			413
1989	YL4	*	1989	12	30.67459	09	05	46.60	+19	55	42.0	18	V	413
1989	YL4		1989	12	30.71626	09	05	45.39	+19	55	52.2			F 413
1989	YL4		1989	12	31.63238	09	05	15.74	+19	58	56.4			413
1989	YL4		1989	12	31.66002	09	05	14.83	+19	59	05.2			413
1989	YM4	*	1989	12	30.69543	08	40	47.71	+17	34	50.0	18.5	V	V 413
1989	YM4		1989	12	31.64620	08	40	02.77	+17	37	37.9			V 413
1989	YN4	*	1989	12	30.69543	08	48	17.14	+15	02	25.1	18.5	V	V 413
1989	YN4		1989	12	31.63238	08	47	34.63	+15	03	36.9			V 413
1989	YN4		1989	12	31.66002	08	47	32.91	+15	03	42.6			V 413
1989	YO4	*	1989	12	30.69543	08	48	41.53	+14	35	47.6	19	V	V 413
1989	YO4		1989	12	31.64620	08	48	09.35	+14	37	22.4			V 413
1989	YP4	*	1989	12	30.69543	08	49	22.51	+14	50	44.8	18.5	V	V 413
1989	YP4		1989	12	31.64620	08	48	53.42	+14	52	02.6			V 413
1989	YQ4	*	1989	12	30.69543	08	52	46.83	+16	20	16.0	18	V	413
1989	YQ4		1989	12	31.64620	08	52	17.35	+16	19	20.7			V 413
1989	YR4	*	1989	12	30.69543	08	54	34.89	+19	22	12.3	18	V	413
1989	YR4		1989	12	31.64620	08	54	04.15	+19	24	21.2			413
1989	YS4	*	1989	12	30.69543	08	58	37.53	+20	09	26.8	18	V	V 413
1989	YS4		1989	12	31.63238	08	57	59.56	+20	13	20.6			413
1989	YS4		1989	12	31.66002	08	57	58.57	+20	13	27.6			413
1989	YT4	*	1989	12	30.69543	08	58	40.39	+19	57	53.7	18.5	V	V 413
1989	YT4		1989	12	31.63238	08	58	04.91	+19	59	13.4			413
1989	YT4		1989	12	31.66002	08	58	03.97	+19	59	17.1			413
1989	YU4	*	1989	12	30.69543	09	00	23.84	+20	16	51.6	18	V	413
1989	YU4		1989	12	31.63238	08	59	50.25	+20	20	20.6			413
1989	YU4		1989	12	31.66002	08	59	49.09	+20	20	30.0			413
1989	YV4	*	1989	12	30.69543	09	02	18.77	+19	43	05.7	17.5	V	413
1989	YV4		1989	12	31.63238	09	01	52.50	+19	45	50.3			413
1989	YV4		1989	12	31.66002	09	01	51.78	+19	45	57.3			413
1989	YW4	*	1989	12	30.69543	09	03	41.09	+20	25	01.7	18.5	V	V 413
1989	YW4		1989	12	31.66002	09	02	59.70	+20	27	33.0			413
1989	YX4	*	1989	12	30.69543	09	03	46.23	+20	33	55.0	18	V	413
1989	YX4		1989	12	31.63238	09	03	14.67	+20	36	54.8			413

1989	YX4		1989	12	31.66002	09	03	13.82	+20	37	01.2		413
1989	YY4	*	1989	12	30.69543	09	05	27.05	+18	23	23.0	18.5V V	413
1989	YY4		1989	12	31.63238	09	04	58.71	+18	26	37.2	F	413
1989	YY4		1989	12	31.66002	09	04	57.88	+18	26	43.5	F	413
1989	YZ4	*	1989	12	30.71626	08	48	05.92	+15	32	11.0	17.5V	413
1989	YZ4		1989	12	31.63238	08	47	27.60	+15	30	25.4		413
1989	YZ4		1989	12	31.66002	08	47	26.43	+15	30	23.1		413
4530	P-L		1989	12	30.67459	08	59	58.93	+15	00	51.9	V	413
4530	P-L		1989	12	30.71626	08	59	57.16	+15	00	58.0	V	413
4530	P-L		1989	12	31.63238	08	59	18.32	+15	03	12.1		413
4530	P-L		1989	12	31.66002	08	59	16.82	+15	03	17.4		413
102			1976	05	29.64486	18	04	32.08	-16	59	42.7	14.5V	413
102			1976	05	29.67264	18	04	31.06	-16	59	38.4		413
102			1976	05	30.61304	18	03	51.05	-16	57	03.4		413
102			1976	05	30.64429	18	03	49.78	-16	56	58.6		413
165			1989	12	30.67459	09	02	57.98	+16	27	30.2		413
165			1989	12	30.71626	09	02	56.56	+16	27	30.7		413
165			1989	12	31.63238	09	02	25.29	+16	27	20.5		413
165			1989	12	31.66002	09	02	24.38	+16	27	21.2		413
307			1989	12	30.67459	09	00	33.68	+20	09	45.0		413
307			1989	12	30.71626	09	00	32.56	+20	09	57.0		413
307			1989	12	31.63238	09	00	04.78	+20	14	37.5		413
307			1989	12	31.66002	09	00	04.02	+20	14	46.2		413
449			1989	11	21.54456	02	54	56.44	+13	36	22.1	1	413
522			1976	05	29.64486	17	58	29.82	-20	02	07.3	16 V	413
522			1976	05	29.67264	17	58	28.90	-20	02	07.6		413
522			1976	05	30.61304	17	57	53.92	-20	02	24.2		413
522			1976	05	30.64429	17	57	52.81	-20	02	25.0		413
665			1989	12	30.67459	08	50	56.86	+16	22	21.5		413
665			1989	12	30.71626	08	50	55.30	+16	22	20.1		413
665			1989	12	31.63238	08	50	20.80	+16	21	38.0		413
665			1989	12	31.66002	08	50	19.83	+16	21	37.5		413
696			1989	12	30.67459	08	50	40.00	+17	30	00.3		413
696			1989	12	30.71626	08	50	38.26	+17	29	56.4		413
696			1989	12	31.63238	08	49	58.86	+17	28	24.0		413
696			1989	12	31.66002	08	49	57.69	+17	28	22.6		413
885			1976	05	30.61304	17	57	18.98	-19	01	26.1	15.5V	413
885			1976	05	30.64429	17	57	17.78	-19	01	25.9		413
992			1988	03	19.59610	12	34	52.11	-11	26	10.0		413
992			1988	03	19.67249	12	34	48.96	-11	25	38.2		413
1050			1989	11	01.54251	01	24	04.93	+28	17	46.6		413
1060			1988	03	19.59610	12	45	11.15	-10	48	43.2		413
1060			1988	03	19.67249	12	45	07.06	-10	48	13.5		413
1274			1989	12	30.67459	09	03	54.18	+20	26	56.5		413
1274			1989	12	30.71626	09	03	52.93	+20	27	00.1		413
1274			1989	12	31.63238	09	03	21.52	+20	28	21.5		413
1274			1989	12	31.66002	09	03	20.63	+20	28	25.4		413
1295			1989	12	20.50730	04	16	03.61	+17	26	41.6		413
1295			1989	12	20.53777	04	16	02.14	+17	26	38.3		413
1295			1989	12	20.57735	04	16	00.70	+17	26	34.3		413
1618			1989	12	30.67459	08	49	52.86	+19	09	14.0		413
1618			1989	12	30.71626	08	49	51.56	+19	09	22.3		413
1618			1989	12	31.63238	08	49	19.62	+19	12	35.7		413
1618			1989	12	31.66002	08	49	18.74	+19	12	41.7		413
2057			1989	12	30.67459	08	45	42.80	+20	08	03.3	16.8V	413
2057			1989	12	30.71626	08	45	41.19	+20	08	10.1		413
2057			1989	12	31.63238	08	45	04.99	+20	10	45.8		413
2057			1989	12	31.66002	08	45	03.99	+20	10	50.6		413
2256			1989	12	30.67459	08	43	25.51	+18	13	06.7		413

2256	1989	12	31.63238	08	42	50.82	+18	15	24.9				413
2256	1989	12	31.66002	08	42	49.89	+18	15	28.9				413
2607	1989	12	30.67459	08	51	02.51	+20	27	38.7				413
2607	1989	12	30.71626	08	51	00.85	+20	27	46.6				413
2607	1989	12	31.63238	08	50	18.45	+20	30	47.0				413
2607	1989	12	31.66002	08	50	17.23	+20	30	53.7				413
2652	1989	12	03.60115	02	43	48.42	+13	41	16.0	17	V	1	413
2652	1989	12	03.61529	02	43	47.90	+13	41	15.4			1	413
2681	1989	12	03.60115	02	48	27.67	+14	47	50.6	16	V	1	413
2681	1989	12	03.61529	02	48	27.01	+14	47	49.7			1	413
2879	1984	08	02.56884	21	08	13.57	-12	02	02.6	16	V		413
2879	1984	08	02.60356	21	08	11.90	-12	02	16.3				413
2915	1988	03	19.59610	12	37	19.66	-09	49	00.8				413
2915	1988	03	19.67249	12	37	15.52	-09	48	53.2				413
2984	1989	12	30.67459	08	51	32.16	+20	44	20.3				413
2984	1989	12	30.71626	08	51	31.02	+20	44	30.7				413
2984	1989	12	31.63238	08	51	03.76	+20	48	35.4				413
2984	1989	12	31.66002	08	51	03.00	+20	48	43.5				413
3205	1989	12	30.67459	08	59	26.37	+16	58	31.5				413
3205	1989	12	30.71626	08	59	25.05	+16	58	49.4				413
3205	1989	12	31.63238	08	58	55.59	+17	05	47.8				413
3205	1989	12	31.66002	08	58	54.63	+17	06	01.3				413
3408	1989	12	30.67459	09	03	41.70	+16	00	24.3				413
3408	1989	12	30.71626	09	03	40.08	+16	00	33.4				413
3408	1989	12	31.63238	09	03	04.08	+16	03	43.6				413
3408	1989	12	31.66002	09	03	02.90	+16	03	51.3				413
3726	1987	10	22.45579	23	54	30.36	-05	31	01.6				413
3726	1987	10	22.52176	23	54	28.33	-05	31	09.6				413
3753	1989	10	29.71323	03	39	54.54	-59	40	53.4			1	413
3753	1989	10	29.71531	03	39	54.04	-59	40	59.3			1	413
3753	1989	10	29.71786	03	39	53.69	-59	41	07.3			1	413
3753	1989	11	21.42510	00	37	04.99	-76	45	27.0				413
3753	1989	11	21.47024	00	36	14.72	-76	46	23.1				413
3769	1987	10	22.45579	00	00	10.23	-06	10	31.9				413
3769	1987	10	22.52176	00	00	07.30	-06	10	34.6				413
3809	1976	05	29.64486	18	00	24.62	-16	58	19.3	17.5V			413
3809	1976	05	29.67264	18	00	23.35	-16	58	19.5				413
3809	1976	05	30.61304	17	59	40.47	-16	58	38.8				413
3809	1976	05	30.64429	17	59	39.05	-16	58	40.0				413
3822	1989	10	06.68120	00	21	06.45	+04	58	44.8			1	413
3822	1989	10	08.69968	00	19	09.96	+04	47	52.5	17.5V		1	413
3851	1989	10	08.69968	00	21	50.47	+06	38	55.4	15.5V		1	413
3947	1976	05	29.64486	17	59	19.03	-22	18	03.2	17.5V			413
3947	1976	05	29.67264	17	59	20.27	-22	18	06.2				413
3947	1976	05	30.61304	17	58	39.78	-22	16	25.2			I	413
3947	1976	05	30.64429	17	58	38.41	-22	16	24.4				413
4141	1989	03	12.63997	12	01	51.78	-08	54	32.4	16	V	1	413
4197	1989	10	29.45639	22	03	09.80	+04	20	18.3				413
4197	1989	10	29.45995	22	03	07.75	+04	20	17.2				413
4197	1989	10	29.46331	22	03	05.81	+04	20	16.2				413
4337	1989	12	30.67459	09	05	03.18	+19	54	32.1				413
4337	1989	12	30.71626	09	05	02.16	+19	54	39.7				413
4337	1989	12	31.63238	09	04	36.48	+19	57	10.3				413
4337	1989	12	31.66002	09	04	35.78	+19	57	17.0				413

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1983	DE		1989	12	25.90369	05	37	08.74	+22	43	33.5	494
1983	DE		1989	12	28.89826	05	34	12.17	+22	50	26.4	494
1989	YD	*	1989	12	17.94226	02	37	16.84	+12	00	58.6	494
1989	YD		1989	12	21.83548	02	36	47.09	+11	57	30.8	494
1989	YE	*	1989	12	25.90369	05	41	02.30	+23	33	39.0	15.5V 494
1989	YE		1989	12	28.92011	05	37	39.09	+23	26	20.3	494
2652			1989	11	22.87211	02	52	24.71	+13	41	37.5	494
2652			1989	11	22.89446	02	52	23.42	+13	41	36.6	494
2652			1989	11	23.93765	02	51	27.31	+13	41	10.1	494
2652			1989	11	25.86156	02	49	47.06	+13	40	32.4	494
2652			1989	11	29.84956	02	46	32.43	+13	40	13.1	494

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1976	GO8		1989	12	28.83472	06	21	03.82	+38	47	18.0	18.0 511
1976	GO8		1989	12	28.85278	06	21	02.42	+38	47	18.0	511
1976	GO8		1989	12	29.85069	06	19	44.85	+38	46	45.1	511
1976	GO8		1989	12	29.87292	06	19	42.92	+38	46	45.6	511
1983	VN7		1989	12	29.05625	06	59	44.32	+20	58	59.4	511
1983	VN7		1989	12	29.07569	06	59	43.15	+20	59	02.4	511
1983	VN7		1989	12	30.09514	06	58	47.09	+21	00	43.8	17.5 511
1983	VN7		1989	12	30.11736	06	58	45.95	+21	00	46.0	511
1988	PB2		1989	12	28.83472	06	18	49.27	+37	24	48.5	17.0 511
1988	PB2		1989	12	28.85278	06	18	48.17	+37	24	47.3	511
1988	PB2		1989	12	29.85069	06	17	44.52	+37	23	45.2	511
1988	PB2		1989	12	29.87292	06	17	42.64	+37	23	43.7	511
1988	PX2		1989	12	28.93785	05	05	35.56	+07	16	47.0	17.0 511
1988	PX2		1989	12	28.95521	05	05	34.95	+07	16	49.0	511
1988	PX2		1989	12	28.98819	05	05	33.43	+07	16	51.2	511
1988	PX2		1989	12	29.95625	05	04	51.98	+07	17	46.0	511
1988	PX2		1989	12	29.97986	05	04	51.21	+07	17	47.9	511
1988	PX2		1989	12	30.00139	05	04	50.12	+07	17	49.2	511
1989	YU		1989	12	29.10208	07	26	33.47	+14	01	19.7	511
1989	YU		1989	12	29.12222	07	26	32.24	+14	01	20.4	16.7 511
1989	YU		1989	12	31.04583	07	24	42.29	+14	02	37.2	511
1989	YU		1989	12	31.06806	07	24	40.97	+14	02	38.0	511
1989	YA5	*	1989	12	28.83472	06	15	22.88	+36	39	37.8	17.5 511
1989	YA5		1989	12	28.85278	06	15	21.75	+36	39	32.3	511
1989	YA5		1989	12	29.85069	06	14	14.48	+36	34	29.8	511
1989	YA5		1989	12	29.87292	06	14	12.89	+36	34	22.4	511
1989	YB5	*	1989	12	28.83472	06	19	31.53	+37	15	06.5	17.5 511
1989	YB5		1989	12	28.85278	06	19	30.43	+37	15	10.5	511
1989	YB5		1989	12	29.85069	06	18	28.29	+37	18	30.0	511
1989	YB5		1989	12	29.87292	06	18	26.57	+37	18	36.2	511
1989	YC5	*	1989	12	28.83472	06	24	16.18	+36	33	50.5	17.6 511
1989	YC5		1989	12	28.85278	06	24	15.11	+36	33	46.0	511
1989	YC5		1989	12	29.85069	06	23	09.59	+36	30	26.4	511
1989	YC5		1989	12	29.87292	06	23	08.03	+36	30	21.7	511
1989	YD5	*	1989	12	28.88264	05	50	40.08	+25	14	26.1	511
1989	YD5		1989	12	29.89514	05	49	45.48	+25	14	35.7	511
1989	YD5		1989	12	29.91771	05	49	44.14	+25	14	35.1	17.6 511
1989	YD5		1989	12	29.93507	05	49	43.29	+25	14	35.7	511
1989	YE5	*	1989	12	28.88264	05	51	36.54	+24	27	43.4	511
1989	YE5		1989	12	29.89514	05	50	30.86	+24	28	37.2	511
1989	YE5		1989	12	29.91771	05	50	29.27	+24	28	37.5	17.5 511
1989	YE5		1989	12	29.93507	05	50	28.33	+24	28	38.9	511

1989	YF5	*	1989	12	28.88264	05	53	48.20	+26	26	16.9	511
1989	YF5		1989	12	29.89514	05	52	41.93	+26	20	47.5	511
1989	YF5		1989	12	29.91771	05	52	40.35	+26	20	40.9	16.8 511
1989	YF5		1989	12	29.93507	05	52	39.30	+26	20	35.5	511
1989	YG5	*	1989	12	28.88264	05	54	32.44	+24	42	18.0	511
1989	YG5		1989	12	29.89514	05	53	34.32	+24	46	27.5	511
1989	YG5		1989	12	29.91771	05	53	32.86	+24	46	34.2	17.2 511
1989	YG5		1989	12	29.93507	05	53	32.02	+24	46	38.1	511
1989	YH5	*	1989	12	28.88264	05	55	50.84	+23	51	46.1	511
1989	YH5		1989	12	29.89514	05	54	43.47	+23	55	54.7	511
1989	YH5		1989	12	29.91771	05	54	41.82	+23	56	01.9	18.0 511
1989	YH5		1989	12	29.93507	05	54	40.81	+23	56	04.6	511
1989	YJ5	*	1989	12	28.88264	05	56	46.25	+23	21	08.5	511
1989	YJ5		1989	12	29.89514	05	55	49.12	+23	22	09.9	511
1989	YJ5		1989	12	29.91771	05	55	47.86	+23	22	12.8	17.6 511
1989	YJ5		1989	12	29.93507	05	55	46.87	+23	22	12.7	511
1989	YK5	*	1989	12	28.88264	05	59	38.23	+23	23	50.5	511
1989	YK5		1989	12	29.89514	05	58	34.66	+23	25	32.6	511
1989	YK5		1989	12	29.91771	05	58	33.20	+23	25	35.5	17.5 511
1989	YK5		1989	12	29.93507	05	58	32.19	+23	25	36.5	511
1989	YL5	*	1989	12	28.88264	06	00	29.60	+25	40	03.2	511
1989	YL5		1989	12	29.89514	05	59	24.87	+25	38	49.4	511
1989	YL5		1989	12	29.91771	05	59	23.28	+25	38	47.4	17.4 511
1989	YL5		1989	12	29.93507	05	59	22.26	+25	38	47.2	511
1989	YM5	*	1989	12	28.88264	06	01	17.26	+24	21	55.2	511
1989	YM5		1989	12	29.89514	06	00	46.56	+24	21	34.6	511
1989	YM5		1989	12	29.91771	06	00	44.83	+24	21	38.3	17.5 511
1989	YM5		1989	12	29.93507	06	00	43.79	+24	21	42.3	511
1989	YN5	*	1989	12	28.88264	06	03	44.70	+24	24	07.4	511
1989	YN5		1989	12	29.89514	06	02	40.24	+24	18	44.0	511
1989	YN5		1989	12	29.91771	06	02	38.61	+24	18	35.9	17.8 511
1989	YN5		1989	12	29.93507	06	02	37.52	+24	18	30.1	511
1989	YO5	*	1989	12	28.88264	06	03	50.64	+23	23	30.6	511
1989	YO5		1989	12	29.89514	06	02	56.38	+23	24	12.5	511
1989	YO5		1989	12	29.91771	06	02	55.24	+23	24	13.9	17.5 511
1989	YO5		1989	12	29.93507	06	02	54.38	+23	24	13.4	511
1989	YP5	*	1989	12	29.01354	06	30	27.70	+18	47	32.8	511
1989	YP5		1989	12	29.03472	06	30	26.38	+18	47	34.0	17.4 511
1989	YP5		1989	12	30.02431	06	29	24.41	+18	50	21.2	511
1989	YP5		1989	12	30.07118	06	29	21.54	+18	50	28.0	511
1989	YQ5	*	1989	12	29.01354	06	36	03.21	+18	31	21.1	511
1989	YQ5		1989	12	29.03472	06	36	02.32	+18	31	23.0	17.4 511
1989	YQ5		1989	12	30.02431	06	34	55.85	+18	35	28.3	511
1989	YQ5		1989	12	30.07118	06	34	52.65	+18	35	41.2	511
1989	YR5	*	1989	12	29.01354	06	36	13.60	+20	03	20.3	511
1989	YR5		1989	12	29.03472	06	36	12.47	+20	03	17.9	17.0 511
1989	YR5		1989	12	30.02431	06	35	17.68	+20	01	45.7	511
1989	YR5		1989	12	30.07118	06	35	15.20	+20	01	42.8	511
1989	YS5	*	1989	12	29.01354	06	36	21.17	+19	25	39.3	511
1989	YS5		1989	12	29.03472	06	36	19.75	+19	25	38.7	17.5 511
1989	YS5		1989	12	30.02431	06	35	10.38	+19	27	06.5	511
1989	YS5		1989	12	30.07118	06	35	07.00	+19	27	09.7	511
1989	YT5	*	1989	12	29.05625	07	00	47.46	+22	24	12.3	511
1989	YT5		1989	12	29.07569	07	00	46.05	+22	24	16.1	511
1989	YT5		1989	12	30.09514	06	59	34.82	+22	27	40.6	18.0 511
1989	YT5		1989	12	30.11736	06	59	32.97	+22	27	45.7	511
1989	YU5	*	1989	12	29.05625	07	01	07.32	+22	04	23.7	511
1989	YU5		1989	12	29.07569	07	01	05.77	+22	04	25.3	511
1989	YU5		1989	12	30.09514	06	59	49.38	+22	04	52.1	17.5 511

1989	YU5		1989	12	30.11736	06	59	47.66	+22	04	52.8	511
1989	YV5	*	1989	12	29.05625	07	04	46.34	+22	09	49.7	511
1989	YV5		1989	12	29.07569	07	04	45.03	+22	09	55.1	511
1989	YV5		1989	12	30.09514	07	03	35.57	+22	13	54.5	17.8 511
1989	YV5		1989	12	30.11736	07	03	34.19	+22	13	59.9	511
1989	YW5	*	1989	12	29.05625	07	08	00.54	+19	42	53.5	511
1989	YW5		1989	12	29.07569	07	07	59.45	+19	42	59.2	511
1989	YW5		1989	12	30.09514	07	07	05.07	+19	47	28.0	17.3 511
1989	YW5		1989	12	30.11736	07	07	03.98	+19	47	33.7	511
1989	YX5	*	1989	12	28.77847	04	49	26.18	+29	46	14.2	511
1989	YX5		1989	12	28.80347	04	49	24.75	+29	46	15.0	17.2 511
1989	YX5		1989	12	29.79514	04	48	28.25	+29	47	19.9	511
1989	YX5		1989	12	29.82569	04	48	26.48	+29	47	20.0	511
1989	YY5	*	1989	12	28.77847	04	55	37.10	+30	44	03.6	511
1989	YY5		1989	12	28.80347	04	55	35.75	+30	44	03.8	17.4 511
1989	YY5		1989	12	29.79514	04	54	43.43	+30	43	32.8	511
1989	YY5		1989	12	29.82569	04	54	41.73	+30	43	30.6	511
1989	YZ5	*	1989	12	28.77847	05	04	19.53	+29	22	23.1	511
1989	YZ5		1989	12	28.80347	05	04	18.16	+29	22	18.7	17.4 511
1989	YZ5		1989	12	29.79514	05	03	22.00	+29	18	21.1	511
1989	YZ5		1989	12	29.82569	05	03	20.27	+29	18	12.2	511
1989	YA6	*	1989	12	29.10208	07	27	06.38	+16	35	45.9	511
1989	YA6		1989	12	29.12222	07	27	04.93	+16	35	47.8	17.7 511
1989	YA6		1989	12	31.04583	07	24	59.38	+16	41	42.9	511
1989	YA6		1989	12	31.06806	07	24	57.93	+16	41	49.5	511
1989	YB6	*	1989	12	29.10208	07	27	30.57	+15	44	27.8	511
1989	YB6		1989	12	29.12222	07	27	29.56	+15	44	32.9	17.2 511
1989	YB6		1989	12	31.04583	07	25	57.12	+15	55	46.7	511
1989	YB6		1989	12	31.06806	07	25	55.89	+15	55	56.3	511
1989	YC6	*	1989	12	29.10208	07	29	15.27	+13	26	20.5	511
1989	YC6		1989	12	29.12222	07	29	13.93	+13	26	25.5	17.5 511
1989	YC6		1989	12	31.04583	07	27	27.09	+13	17	07.9	511
1989	YD6	*	1989	12	29.10208	07	29	36.74	+13	56	25.7	511
1989	YD6		1989	12	29.12222	07	29	35.58	+13	56	22.3	17.2 511
1989	YD6		1989	12	31.04583	07	27	45.78	+13	52	19.6	511
1989	YD6		1989	12	31.06806	07	27	44.36	+13	52	13.8	511
1989	YE6	*	1989	12	29.10208	07	31	37.81	+14	57	33.5	511
1989	YE6		1989	12	29.12222	07	31	36.40	+14	57	28.8	17.5 511
1989	YE6		1989	12	31.04583	07	30	02.19	+14	52	13.0	511
1989	YE6		1989	12	31.06806	07	30	00.95	+14	52	26.4	511
1989	YF6	*	1989	12	28.93785	04	56	36.40	+07	02	03.7	16.8 511
1989	YF6		1989	12	28.95521	04	56	35.71	+07	02	11.7	511
1989	YF6		1989	12	28.98819	04	56	34.23	+07	02	26.2	511
1989	YF6		1989	12	29.95625	04	55	51.25	+07	09	50.1	511
1989	YF6		1989	12	29.97986	04	55	50.25	+07	10	02.4	511
1989	YF6		1989	12	30.00139	04	55	49.26	+07	10	11.8	511
1989	YG6	*	1989	12	28.93785	05	04	15.53	+06	23	29.6	17.5 511
1989	YG6		1989	12	28.95521	05	04	15.03	+06	23	33.1	511
1989	YG6		1989	12	28.98819	05	04	13.58	+06	23	37.6	511
1989	YG6		1989	12	29.95625	05	03	36.33	+06	26	17.7	511
1989	YG6		1989	12	29.97986	05	03	35.76	+06	26	19.8	511
1989	YG6		1989	12	30.00139	05	03	34.85	+06	26	23.4	511
1989	YH6	*	1989	12	30.88750	05	49	19.08	+20	06	49.8	17.5 511
1989	YH6		1989	12	30.92500	05	49	16.52	+20	06	53.3	511
1989	YH6		1990	01	02.02431	05	47	01.20	+20	11	24.2	17.5 511
1989	YJ6	*	1989	12	30.88750	05	53	12.76	+20	00	46.7	17.3 511
1989	YJ6		1989	12	30.92500	05	53	10.76	+20	00	34.6	511
1989	YJ6		1990	01	02.02431	05	51	23.07	+19	48	27.9	17.0 511
1989	YK6	*	1989	12	30.88750	06	03	30.46	+20	35	35.4	17.7 511

1989	YK6		1989	12	30.92500	06	03	27.90	+20	35	49.2		511
1989	YK6		1990	01	02.02431	06	01	07.39	+20	50	12.6	17.7	511
1989	YL6	*	1989	12	31.09514	07	17	59.83	+26	50	44.7	17.7	511
1989	YL6		1989	12	31.11875	07	17	58.16	+26	50	51.2		511
1989	YL6		1990	01	02.09097	07	18	29.19	+27	01	47.9		511
1989	YL6		1990	01	02.11806	07	18	27.23	+27	01	39.1		511
1989	YM6	*	1989	12	31.09514	07	20	03.67	+23	47	29.3	17.3	511
1989	YM6		1989	12	31.11875	07	20	02.08	+23	47	28.6		511
1989	YM6		1990	01	02.09097	07	17	49.36	+23	47	24.4		511
1989	YM6		1990	01	02.11806	07	17	47.50	+23	47	23.0		511
4829	T-2		1989	12	29.05625	06	54	55.11	+20	21	23.8		511
4829	T-2		1989	12	29.07569	06	54	53.81	+20	21	26.8		511
4829	T-2		1989	12	30.09514	06	53	48.81	+20	24	39.3	16.8	511
4829	T-2		1989	12	30.11736	06	53	47.47	+20	24	44.5		511
150			1989	12	30.88750	05	47	21.39	+20	27	33.8	15.0	511
150			1989	12	30.92500	05	47	19.32	+20	27	32.7		511
295			1989	12	28.88264	05	49	00.25	+23	47	57.9		511
295			1989	12	29.89514	05	48	03.14	+23	46	12.8		511
295			1989	12	29.91771	05	48	01.68	+23	46	10.1	15.0	511
295			1989	12	29.93507	05	48	00.61	+23	46	08.1		511
358			1990	01	02.02431	05	48	32.15	+17	42	13.2	14.0	511
448			1989	12	28.83472	06	28	38.12	+38	35	36.8	16.5	511
448			1989	12	28.85278	06	28	37.02	+38	35	38.2		511
448			1989	12	29.85069	06	27	34.86	+38	37	21.8		511
448			1989	12	29.87292	06	27	33.54	+38	37	24.5		511
464			1989	12	29.05625	07	08	12.70	+22	38	07.9	14.0	511
464			1989	12	29.07569	07	08	11.49	+22	38	14.1		511
929			1989	12	29.10208	07	33	58.94	+16	19	05.2		511
929			1989	12	29.12222	07	33	57.61	+16	19	04.2	16.5	511
929			1989	12	31.04583	07	31	56.81	+16	20	21.1		511
929			1989	12	31.06806	07	31	55.32	+16	20	22.7		511
974			1989	12	28.88264	05	52	40.25	+24	19	38.4		511
974			1989	12	29.89514	05	51	36.23	+24	22	01.7		511
974			1989	12	29.91771	05	51	34.65	+24	22	04.8	14.5	511
974			1989	12	29.93507	05	51	33.69	+24	22	07.4		511
1247			1989	12	30.88750	05	56	10.69	+21	10	28.5	16.8	511
1247			1989	12	30.92500	05	56	08.79	+21	10	30.1		511
1247			1990	01	02.02431	05	54	25.11	+21	10	52.9	16.5	511
1319			1989	12	29.05625	07	08	47.98	+20	38	56.9		511
1319			1989	12	29.07569	07	08	46.90	+20	38	57.9		511
1319			1989	12	30.09514	07	07	51.68	+20	39	37.9	16.2	511
1319			1989	12	30.11736	07	07	50.57	+20	39	39.3		511
1383			1989	12	28.88264	05	58	07.10	+23	22	26.8		511
1383			1989	12	29.89514	05	57	11.90	+23	22	23.3		511
1383			1989	12	29.91771	05	57	10.56	+23	22	23.3	17.3	511
1383			1989	12	29.93507	05	57	09.67	+23	22	22.9		511
1438			1989	12	29.05625	07	01	35.74	+20	36	07.8		511
1438			1989	12	29.07569	07	01	34.61	+20	36	09.1		511
1438			1989	12	30.09514	07	00	39.05	+20	37	02.0	16.8	511
1438			1989	12	30.11736	07	00	37.91	+20	37	03.5		511
1851			1989	12	28.88264	05	52	52.29	+25	43	55.5		511
1851			1989	12	29.89514	05	51	56.70	+25	43	45.2		511
1851			1989	12	29.91771	05	51	55.33	+25	43	45.0	17.2	511
1851			1989	12	29.93507	05	51	54.39	+25	43	44.8		511
1938			1990	01	02.02431	05	58	41.43	+18	06	57.8	16.8	511
1947			1989	12	28.88264	06	00	05.42	+23	43	37.8		511
1947			1989	12	29.89514	05	59	10.49	+23	46	41.0		511
1947			1989	12	29.91771	05	59	09.10	+23	46	45.3	17.0	511
1947			1989	12	29.93507	05	59	08.22	+23	46	49.3		511

2191	1989	12	29.10208	07	22	41.50	+13	24	35.5	511
2191	1989	12	29.12222	07	22	40.33	+13	24	33.9	16.6 511
2191	1989	12	31.04583	07	21	00.02	+13	21	48.6	511
2191	1989	12	31.06806	07	20	58.79	+13	21	47.5	511
2439	1989	12	28.88264	06	04	04.83	+23	17	31.7	511
2439	1989	12	29.89514	06	03	09.90	+23	17	43.1	511
2439	1989	12	29.91771	06	03	08.63	+23	17	44.1	16.5 511
2439	1989	12	29.93507	06	03	07.70	+23	17	44.8	511
2626	1989	12	31.09514	07	26	45.10	+24	07	17.3	17.2 511
2626	1989	12	31.11875	07	26	43.74	+24	07	19.7	511
2626	1990	01	02.09097	07	24	52.65	+24	11	01.9	511
2626	1990	01	02.11806	07	24	51.10	+24	11	03.8	511
2768	1989	12	28.77847	04	49	42.08	+28	56	06.0	511
2768	1989	12	28.80347	04	49	40.77	+28	56	05.9	16.0 511
2768	1989	12	29.79514	04	48	49.54	+28	56	42.9	511
2768	1989	12	29.82569	04	48	47.91	+28	56	44.1	511
2843	1989	12	29.01354	06	21	59.03	+19	48	06.6	511
2843	1989	12	29.03472	06	21	57.47	+19	48	01.6	16.5 511
2843	1989	12	30.02431	06	20	49.27	+19	45	15.3	511
2843	1989	12	30.07118	06	20	46.03	+19	45	07.5	511
3016	1989	12	29.05625	06	54	54.03	+20	43	04.1	511
3016	1989	12	29.07569	06	54	52.90	+20	43	05.3	511
3016	1989	12	30.09514	06	53	54.82	+20	45	15.6	16.5 511
3016	1989	12	30.11736	06	53	53.65	+20	45	18.9	511
3336	1989	12	29.89514	06	01	33.25	+22	39	43.1	511
3336	1989	12	29.91771	06	01	31.65	+22	39	44.2	17.8 511
3336	1989	12	29.93507	06	01	30.57	+22	39	44.3	511
3356	1989	12	29.05625	07	02	48.50	+21	53	00.7	511
3356	1989	12	29.07569	07	02	47.22	+21	53	04.8	511
3356	1989	12	30.09514	07	01	35.74	+21	56	38.4	17.3 511
3356	1989	12	30.11736	07	01	34.15	+21	56	42.8	511
3370	1989	12	31.04583	07	32	29.88	+13	01	41.0	16.8 511
3370	1989	12	31.06806	07	32	28.66	+13	01	47.4	511
3652	1989	12	29.05625	07	04	42.29	+20	29	07.2	511
3652	1989	12	29.07569	07	04	40.96	+20	29	10.0	511
3652	1989	12	30.09514	07	03	34.07	+20	30	09.3	17.6 511
3652	1989	12	30.11736	07	03	33.33	+20	30	12.3	511
3673	1989	12	28.83472	06	21	18.97	+37	15	01.8	16.3 511
3673	1989	12	28.85278	06	21	17.68	+37	15	02.3	511
3673	1989	12	29.85069	06	20	03.33	+37	15	16.1	511
3673	1989	12	29.87292	06	20	01.44	+37	15	18.1	511
4227	1989	12	29.05625	07	09	34.71	+19	54	27.6	511
4227	1989	12	29.07569	07	09	33.36	+19	54	30.5	511
4227	1989	12	30.09514	07	08	31.26	+19	57	26.8	16.7 511
4227	1989	12	30.11736	07	08	30.12	+19	57	30.3	511

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Measurer J. M. Baur
0.6-m f/3 Wright-Schmidt reflector
AGK3

1989 XA	1989	12	29.91458	03	45	39.14	+21	36	39.9	18 567
1989 XA	1989	12	29.93264	03	45	38.71	+21	36	38.1	567
1989 XA	1989	12	30.82292	03	45	14.69	+21	35	38.0	567
1989 XA	1989	12	30.84097	03	45	14.16	+21	35	36.8	567
1989 XA	1990	01	01.83819	03	44	24.38	+21	33	31.9	567
1989 XA	1990	01	01.85069	03	44	24.03	+21	33	31.2	567
1989 YC	1989	12	29.96319	07	01	57.81	+22	57	10.0	17 567

1989	YC		1989 12 29.97986	07 01 56.64	+22 57 19.0					567
1989	YC		1989 12 30.94653	07 00 47.92	+23 05 16.1					567
1989	YC		1989 12 30.96319	07 00 46.74	+23 05 24.7					567
1989	YC		1990 01 01.94792	06 58 25.51	+23 21 33.3					567
1989	YC		1990 01 01.96736	06 58 24.21	+23 21 42.4					567
1989	YC		1990 01 03.97153	06 56 00.61	+23 37 41.5					567
1989	YC		1990 01 03.98819	06 55 59.40	+23 37 50.3					567
1989	YF	*	1989 12 30.01042	08 18 07.35	+17 22 36.1				17	567
1989	YF		1989 12 30.02986	08 18 06.35	+17 22 41.4					567
1989	YF		1989 12 31.00347	08 17 17.80	+17 27 30.5					567
1989	YF		1989 12 31.02153	08 17 16.91	+17 27 35.4					567
1989	YF		1990 01 02.01181	08 15 33.70	+17 37 46.7					567
1989	YF		1990 01 02.02847	08 15 32.71	+17 37 52.2					567
1989	YF		1990 01 04.01319	08 13 44.57	+17 48 21.4					567
1989	YF		1990 01 04.02986	08 13 43.53	+17 48 26.7					567
1349			1989 12 26.01042	08 09 06.81	+23 46 59.7					567
1349			1989 12 26.02153	08 09 06.35	+23 46 59.1					567
1349			1989 12 28.00486	08 07 37.22	+23 48 17.1					567
1349			1989 12 28.02292	08 07 36.36	+23 48 18.1				16.5	567

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2.24-m telescope encoders
AGK3, SAOC

1989	OB		1989 10 23.37361	23 20 42.50	+33 15 22.0					568
1989	OB		1989 10 23.40949	23 20 49.11	+33 15 15.0					568
1989	OB		1989 10 24.31910	23 23 48.78	+33 12 16.9					568
1989	OB		1989 11 19.27934	00 44 43.51	+29 19 32.8					568
1989	OB		1989 11 20.38958	00 47 50.25	+29 07 12.1					568
1989	VA		1989 11 19.35260	01 42 39.66	-08 03 01.7					568
1989	VA		1989 11 20.28576	01 37 29.91	-09 24 37.6					568
1989	VA		1989 11 20.43455	01 36 39.55	-09 37 08.4					568
449			1989 11 19.47205	02 56 56.24	+13 41 53.0					568
449			1989 11 19.53333	02 56 52.51	+13 41 42.6					568
951			1989 11 20.54201	09 13 27.57	+12 51 06.1					568
951			1990 01 18.53113	09 03 03.72	+10 44 40.7				14.5V	568

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1989	WM		1990 01 17.23757	09 01 23.53	+26 46 08.6					657
1989	WM		1990 01 17.25840	09 01 24.70	+26 46 11.0					657
1989	WM		1990 01 18.24486	09 02 23.61	+26 46 27.7					657
1989	WM		1990 01 18.25875	09 02 24.47	+26 46 29.3					657
48			1989 08 29.38965	23 51 14.47	+01 13 30.8					657
48			1989 08 30.29174	23 50 44.02	+01 08 48.0					657
48			1989 08 30.37785	23 50 41.01	+01 08 20.6					657
1106			1989 08 29.30632	22 55 50.33	-01 40 09.5					657
1106			1989 08 30.32924	22 54 50.82	-01 41 38.7					657
1989			1989 10 03.21326	00 06 48.26	-04 29 24.5					657
1989			1989 10 03.22437	00 06 47.59	-04 29 29.5					657
1989			1989 10 04.22437	00 05 46.66	-04 31 49.2					657
1989			1989 10 04.27160	00 05 44.05	-04 31 58.5					657
2249			1989 08 29.31535	23 10 58.37	-06 57 26.3					657
2249			1989 08 30.25701	23 10 19.61	-07 02 42.4					657
2249			1989 08 30.33549	23 10 16.27	-07 03 06.3					657

2385	1989 09 06.36743	01 08 33.02	+03 22 22.9			657
2385	1989 09 06.40910	01 08 32.34	+03 22 08.1			657
2466	1989 10 04.22437	00 01 29.25	-04 01 50.2			657
2466	1989 10 04.27160	00 01 27.27	-04 02 08.7			657
2714	1989 08 08.35458	23 35 23.70	-06 55 14.6			657
2714	1989 08 08.39764	23 35 23.03	-06 55 34.4			657
2714	1989 08 09.37750	23 35 06.26	-07 03 21.7			657
2714	1989 08 12.44028	23 34 01.64	-07 28 50.7			657
2827	1989 08 29.35493	23 06 49.11	-06 52 00.9			657
2827	1989 08 30.25701	23 05 53.01	-06 53 51.9			657
2827	1989 08 30.33549	23 05 48.07	-06 54 04.3			657
3069	1989 08 29.32715	23 18 08.26	-01 07 04.3			657
3069	1989 08 29.36396	23 18 06.91	-01 07 12.4			657
3069	1989 08 30.26396	23 17 33.26	-01 11 23.0			657
3069	1989 08 30.34521	23 17 30.01	-01 11 47.5			657
3533	1989 08 29.30632	22 54 08.76	-01 15 30.3			657
3533	1989 08 29.34174	22 54 06.82	-01 15 47.4			657
3533	1989 08 30.25076	22 53 18.41	-01 22 29.9			657
3533	1989 08 30.32924	22 53 13.99	-01 23 02.4			657
3749	1989 05 05.32604	12 34 09.72	-13 37 58.4			657
3749	1989 05 05.33889	12 34 09.40	-13 37 55.4			657
3831	1989 08 29.31535	23 08 25.88	-07 15 39.2			657
3831	1989 08 29.35493	23 08 23.98	-07 16 03.3			657
3831	1989 08 30.25701	23 07 42.13	-07 24 56.2			657
3831	1989 08 30.33549	23 07 38.22	-07 25 43.5			657

675 Palomar
E. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A. (2)
C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A. (3)
C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands (4)
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A. (6)
9 = 3 + 6
Observers J. Alu (2, S), T. Gehrels (4, L), E. Helin (2, S), H. E. Holt (3, S), K. Lawrence (2, S), D. Levy (3, S), B. Roman (2, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S), K. W. Zeigler (6, S)
Measurers J. Alu (2), E. Dyer (3), K. Lawrence (2), B. Roman (2), C. S. Shoemaker (3), D. Tracy (2), C. J. van Houten (4), I. van Houten-Groeneveld (4), A. Wisse (4), K. W. Zeigler (6)
1.2-m (L) and 0.46-m (S) Schmidt telescopes

1978 VP11	1988 07 13.30503	19 11 44.14	-23 37 01.2	16.5	2	675
1978 VP11	1988 07 13.33420	19 11 42.77	-23 37 05.8		2	675
1978 VP11	1989 10 27.30816	02 54 51.69	+12 39 14.8	16.2	2	675
1978 VP11	1989 10 27.33194	02 54 50.52	+12 39 10.1		2	675
1978 VP11	1989 10 29.32292	02 53 14.77	+12 33 02.3		2	675
1978 VP11	1989 10 29.34878	02 53 13.57	+12 32 58.6		2	675
1978 VP11	1989 11 30.21215	02 29 19.66	+11 16 41.8	17.0	2	675
1978 VP11	1989 11 30.23490	02 29 18.95	+11 16 40.9		2	675
1979 HE5	1989 08 01.30677	20 13 57.29	-22 30 21.6	17.2	9	675
1979 HE5	1989 08 01.33646	20 13 55.33	-22 30 31.9		9	675
1979 QT8	1989 08 02.26042	19 18 55.81	-25 27 37.2	16.8	9	675
1979 QT8	1989 08 02.29066	19 18 54.07	-25 27 32.2		9	675
1981 EN17	1989 08 01.31406	20 32 12.10	-09 36 44.4	17.0	9	675
1981 EN17	1989 08 01.34478	20 32 10.35	-09 36 51.3		9	675
1981 JC2	1989 11 02.38090	02 45 47.78	+17 33 05.9	16.9	3	675
1981 JC2	1989 11 03.35729	02 45 03.50	+17 24 19.9		3	675
1981 JC2	1989 11 24.24333	02 30 15.57	+14 17 48.0	17.2	3	675

1981	JC2		1989	11	24.27917	02	30	14.19	+14	17	30.4	3 675
1985	QO6		1989	07	29.26111	19	29	00.18	-19	03	53.1	17.0 9 675
1985	QO6		1989	07	29.29219	19	28	58.60	-19	03	58.6	9 675
1985	QO6		1989	08	02.26771	19	25	54.97	-19	19	56.1	17.8 9 675
1985	QO6		1989	08	02.29809	19	25	53.58	-19	20	00.8	9 675
1985	TP		1989	07	29.26111	19	19	21.36	-19	30	26.4	17.5 9 675
1985	TP		1989	07	29.29219	19	19	19.78	-19	30	28.1	9 675
1986	TJ2		1988	04	10.28733	13	48	52.21	+00	15	09.0	16.8 2 675
1986	TJ2		1988	04	10.30903	13	48	50.90	+00	15	18.1	2 675
1986	TJ2		1989	08	10.35052	21	13	29.19	-18	55	55.8	16.0 2 675
1986	TJ2		1989	08	10.37257	21	13	27.90	-18	56	04.3	2 675
1986	TJ2		1989	08	11.38212	21	12	27.46	-19	03	35.8	2 675
1986	TJ2		1989	08	11.40347	21	12	26.20	-19	03	45.0	2 675
1988	TU2		1989	11	04.26197	02	15	22.53	+31	35	47.6	17 3 675
1988	TU2		1989	11	04.29635	02	15	21.32	+31	35	37.1	3 675
1988	TU2		1989	11	22.24392	02	06	07.25	+29	52	47.5	17.2 3 675
1988	TU2		1989	11	22.28055	02	06	06.30	+29	52	34.1	3 675
1989	KE		1989	07	05.23110	15	26	21.00	+02	30	02.5	17.8 9 675
1989	KE		1989	07	05.27470	15	26	21.08	+02	29	39.7	9 675
1989	NY		1989	07	31.28628	20	09	22.44	-14	15	47.4	17.2 9 675
1989	NY		1989	07	31.31701	20	09	20.79	-14	16	09.6	9 675
1989	OB		1989	09	27.22465	22	05	27.60	+29	38	24.8	16 3 675
1989	OB		1989	09	29.17708	22	09	52.46	+30	16	51.3	3 675
1989	OB		1989	10	30.13177	23	42	49.49	+32	40	28.6	3 675
1989	OB		1989	11	01.16076	23	49	24.11	+32	25	15.0	16.7 3 675
1989	OB		1989	11	03.21128	23	55	59.41	+32	08	04.6	3 675
1989	OB		1989	11	22.10972	00	52	39.03	+28	48	06.7	17.2 3 675
1989	OB		1989	11	25.12326	01	00	51.48	+28	15	31.6	3 675
1989	OW	*	1989	07	29.31580	20	24	55.07	-09	06	28.4	16.5 9 675
1989	OW		1989	07	29.34774	20	24	53.02	-09	06	20.7	9 675
1989	OW		1989	08	01.29931	20	21	46.95	-08	55	56.4	17.2 9 675
1989	OW		1989	08	01.32882	20	21	45.03	-08	55	50.2	9 675
1989	OX	*	1989	07	29.31580	20	31	13.97	-15	29	39.4	16.8 9 675
1989	OX		1989	07	29.34774	20	31	11.81	-15	29	35.5	9 675
1989	OX		1989	08	01.31406	20	27	54.72	-15	24	03.5	16.8 9 675
1989	OX		1989	08	01.34478	20	27	52.69	-15	24	00.5	9 675
1989	OK1	*	1989	07	29.26111	19	14	37.03	-14	56	13.2	17.2 9 675
1989	OK1		1989	07	29.29219	19	14	36.64	-14	56	28.6	9 675
1989	OK1		1989	08	02.26771	19	13	05.31	-15	22	21.7	17.8 9 675
1989	OK1		1989	08	02.29809	19	13	04.10	-15	22	37.1	9 675
1989	RO2		1989	10	30.13177	23	57	30.28	+30	24	50.3	3 675
1989	RO2		1989	11	01.16076	23	55	10.08	+30	38	35.4	15.5 3 675
1989	SZ		1989	08	31.42013	00	41	33.71	+26	53	55.7	17.7 3 675
1989	SZ		1989	09	01.47170	00	41	05.27	+26	56	38.8	3 675
1989	SZ		1989	11	01.13506	00	06	39.31	+26	11	51.7	17.5 3 675
1989	SZ		1989	11	02.17864	00	06	11.89	+26	08	35.8	3 675
1989	SZ		1989	11	24.12326	23	59	49.71	+24	59	06.4	17.6 3 675
1989	SZ		1989	11	25.11406	23	59	41.88	+24	56	09.8	3 675
1989	SC7		1989	08	30.45364	00	28	35.30	+19	43	05.5	18 3 675
1989	SC7		1989	09	01.47170	00	27	53.31	+19	40	44.5	3 675
1989	SC7		1989	09	02.46510	00	27	31.60	+19	39	22.0	3 675
1989	SC7	*	1989	09	30.27899	00	15	13.43	+18	22	49.2	17.8 3 675
1989	SC7		1989	09	30.31342	00	15	12.44	+18	22	40.2	3 675
1989	SC7		1989	11	01.20190	00	02	15.79	+15	55	03.9	18 3 675
1989	SC7		1989	11	02.23142	00	01	58.56	+15	50	07.3	3 675
1989	YF4		1990	01	22.41476	08	32	58.25	+08	50	22.2	15.7 2 675
1989	YF4		1990	01	22.43889	08	32	55.71	+08	49	51.2	2 675
1989	YF4		1990	01	25.38507	08	28	04.42	+07	46	12.1	2 675
1989	YF4		1990	01	25.40799	08	28	02.09	+07	45	43.9	2 675

1990	BA		1990	01	22.27326	06	28	38.35	+26	15	33.9	16.0	2 675
1990	BG	*	1990	01	21.30990	07	09	39.67	+31	26	00.1	15.8	2 675
1990	BG		1990	01	22.29132	07	05	55.42	+32	08	12.9		2 675
1990	BG		1990	01	24.17344	06	58	33.83	+33	28	38.7	15.0	2 675
1990	BG		1990	01	24.43698	06	57	29.36	+33	39	46.8		2 675
1990	BG		1990	01	25.25990	06	54	11.67	+34	14	30.0		2 675
1990	BH	*	1990	01	22.40885	08	58	43.63	+17	55	41.5	15.5	2 675
1990	BH		1990	01	22.43299	08	58	42.75	+17	56	36.2		2 675
1990	BH		1990	01	25.39653	08	57	03.52	+19	54	32.9		2 675
1990	BH		1990	01	25.41910	08	57	02.62	+19	55	28.3		2 675
1990	BJ	*	1990	01	22.24583	06	09	40.76	+25	58	48.0	16.0	2 675
1990	BJ		1990	01	22.27326	06	09	39.36	+25	58	18.6		2 675
1990	BJ		1990	01	24.18993	06	08	19.48	+25	25	59.7		2 675
1990	BJ		1990	01	24.21146	06	08	18.54	+25	25	38.3		2 675
1990	BW	*	1990	01	21.36840	08	07	14.66	+15	58	17.2	16.5	2 675
1990	BW		1990	01	21.39253	08	07	12.68	+15	58	47.1		2 675
1990	BW		1990	01	24.41493	08	03	22.36	+16	59	16.0		2 675
2012	P-L	*	1960	09	24.45000	00	44	17.86	+08	05	52.7	17.3	4 675
2012	P-L		1960	09	26.37010	00	42	37.48	+08	11	37.7		4 675
2012	P-L		1960	09	28.45140	00	40	45.10	+08	17	26.2		4 675
2012	P-L		1960	09	29.44510	00	39	50.73	+08	20	04.3		4 675
2012	P-L		1960	10	17.30420	00	23	52.31	+08	55	15.4		4 675
2012	P-L		1960	10	22.27920	00	20	15.73	+09	03	19.3		4 675
2012	P-L		1960	10	25.37570	00	18	21.16	+09	08	35.5		4 675
2012	P-L		1960	10	26.36840	00	17	48.29	+09	10	22.6		4 675
2019	P-L	*	1960	09	24.45000	00	42	32.98	+07	45	48.8	17.9	4 675
2019	P-L		1960	09	28.45140	00	38	55.54	+07	18	45.8		4 675
2019	P-L		1960	09	29.44510	00	38	00.59	+07	11	48.5		4 675
2019	P-L		1960	10	17.30420	00	21	48.10	+05	01	04.7		4 675
2019	P-L		1960	10	22.27920	00	17	54.42	+04	26	41.8		4 675
2019	P-L		1960	10	25.37570	00	15	43.95	+04	06	40.7		4 675
2019	P-L		1960	10	26.32573	00	15	06.59	+04	00	46.3		4 675
2019	P-L		1960	10	26.35766	00	15	05.38	+04	00	35.2		4 675
2019	P-L		1960	10	26.36840	00	15	04.94	+04	00	31.3		4 675
2562	P-L	*	1960	09	24.46184	00	55	46.90	+04	31	30.8	18.4	4 675
2562	P-L		1960	09	26.37988	00	54	01.87	+04	21	10.2		4 675
2562	P-L		1960	09	28.43822	00	52	06.59	+04	09	51.6		4 675
2562	P-L		1960	09	29.39514	00	51	12.59	+04	04	32.7		4 675
2562	P-L		1960	10	17.31529	00	34	14.60	+02	26	08.2		4 675
2562	P-L		1960	10	22.26809	00	30	00.33	+02	02	13.0		4 675
2562	P-L		1960	10	26.35766	00	26	48.88	+01	44	36.6		4 675
2716	P-L	*	1960	09	24.46184	00	50	18.30	+02	42	06.6	19.2	4 675
2716	P-L		1960	09	26.37988	00	48	47.10	+02	28	04.8		4 675
2716	P-L		1960	09	28.43822	00	47	06.56	+02	12	56.4		4 675
2716	P-L		1960	09	29.39514	00	46	19.40	+02	05	55.2		4 675
2716	P-L		1960	10	17.31529	00	32	15.49	+00	07	48.8		4 675
2716	P-L		1960	10	25.30351	00	27	40.38	-00	27	49.4		4 675
2768	P-L	*	1960	09	24.46184	00	59	17.45	+02	11	11.3	19.3	4 675
2768	P-L		1960	09	26.37988	00	57	44.48	+02	00	03.2		4 675
2768	P-L		1960	09	28.43822	00	56	02.44	+01	48	01.7		4 675
2768	P-L		1960	09	29.39514	00	55	14.58	+01	42	25.7		4 675
2796	P-L	*	1960	09	26.37988	01	01	06.18	+01	25	42.2	18.8	4 675
2796	P-L		1960	09	28.43822	00	59	41.28	+01	12	04.1		4 675
2796	P-L		1960	09	29.39514	00	59	00.89	+01	05	42.1		4 675
3016	P-L	*	1960	09	24.27708	00	08	23.28	+16	08	13.2	17.9	4 675
3016	P-L		1960	09	24.36250	00	08	19.19	+16	07	34.5		4 675
3016	P-L		1960	09	24.47431	00	08	13.83	+16	06	39.6		4 675
3016	P-L		1960	09	25.22986	00	07	39.29	+16	00	32.7		4 675
3016	P-L		1960	09	25.36042	00	07	32.84	+15	59	30.9		4 675

3016	P-L		1960	09	25.46250	00	07	27.82	+15	58	38.9	4 675
3016	P-L		1960	09	26.24514	00	06	51.89	+15	52	10.9	4 675
3016	P-L		1960	09	26.29514	00	06	49.54	+15	51	47.3	4 675
3016	P-L		1960	09	26.40208	00	06	44.37	+15	50	53.1	4 675
3016	P-L		1960	09	27.27569	00	06	04.11	+15	43	29.0	4 675
3016	P-L		1960	09	27.44444	00	05	55.93	+15	42	02.4	4 675
3016	P-L		1960	09	28.34722	00	05	14.43	+15	34	14.6	4 675
3016	P-L		1960	09	28.40764	00	05	11.44	+15	33	44.2	4 675
3016	P-L		1960	09	29.34722	00	04	28.22	+15	25	28.0	4 675
3016	P-L		1960	09	29.47153	00	04	22.31	+15	24	19.8	4 675
3083	P-L	*	1960	09	24.27708	00	28	23.23	+15	06	47.8	18.1 4 675
3083	P-L		1960	09	25.22986	00	27	30.12	+15	01	34.0	4 675
3083	P-L		1960	09	25.46250	00	27	16.61	+15	00	16.2	4 675
3083	P-L		1960	09	26.24514	00	26	33.05	+14	55	50.5	4 675
3083	P-L		1960	09	27.27569	00	25	35.00	+14	49	49.6	4 675
3083	P-L		1960	09	28.34722	00	24	34.47	+14	43	25.0	4 675
3083	P-L		1960	09	28.46181	00	24	27.87	+14	42	42.9	4 675
3083	P-L		1960	09	29.47153	00	23	31.00	+14	36	29.1	4 675
3083	P-L		1960	10	17.33750	00	08	05.84	+12	30	51.6	4 675
3083	P-L		1960	10	22.12083	00	04	49.80	+11	55	55.7	4 675
3509	P-L	*	1960	10	17.17917	00	21	12.47	+15	32	24.1	18.8 4 675
3509	P-L		1960	10	17.23681	00	21	06.54	+15	32	41.3	4 675
3509	P-L		1960	10	17.33750	00	20	56.17	+15	33	10.7	4 675
3509	P-L		1960	10	22.12083	00	13	17.45	+15	54	26.3	4 675
3509	P-L		1960	10	22.17778	00	13	12.06	+15	54	40.7	4 675
3509	P-L		1960	10	22.29097	00	13	01.51	+15	55	08.3	4 675
3509	P-L		1960	10	24.30972	00	10	02.55	+16	03	07.3	4 675
3509	P-L		1960	10	25.20486	00	08	46.49	+16	06	30.8	4 675
3509	P-L		1960	10	25.32778	00	08	35.93	+16	06	57.7	4 675
3509	P-L		1960	10	26.28264	00	07	17.07	+16	10	28.4	4 675
3509	P-L		1960	10	26.37951	00	07	08.92	+16	10	47.8	4 675
4027	P-L	*	1960	09	24.37573	00	23	20.84	+07	53	01.2	18.1 4 675
4027	P-L		1960	09	25.42780	00	22	33.94	+07	48	08.4	4 675
4027	P-L		1960	09	26.30558	00	21	55.06	+07	43	59.1	4 675
4027	P-L		1960	09	28.36808	00	20	23.03	+07	34	08.0	4 675
4027	P-L		1960	10	17.27085	00	07	12.33	+06	00	41.3	4 675
4027	P-L		1960	10	22.22293	00	04	20.00	+05	37	41.7	4 675
4027	P-L		1960	10	24.35836	00	03	12.23	+05	28	16.1	4 675
4027	P-L		1960	10	26.32573	00	02	13.84	+05	19	51.4	4 675
4041	P-L	*	1960	09	24.37573	00	27	04.30	+06	49	39.3	18.1 4 675
4041	P-L		1960	09	25.42780	00	26	09.92	+06	44	42.7	4 675
4041	P-L		1960	09	26.30558	00	25	24.70	+06	40	29.1	4 675
4041	P-L		1960	09	28.36808	00	23	36.47	+06	30	16.2	4 675
4041	P-L		1960	10	17.27085	00	08	19.43	+04	50	52.7	4 675
4041	P-L		1960	10	22.22293	00	05	23.94	+04	28	10.1	4 675
4041	P-L		1960	10	24.35836	00	04	20.70	+04	19	24.1	4 675
4041	P-L		1960	10	26.32573	00	03	30.34	+04	11	56.6	4 675
4089	P-L	*	1960	09	24.37573	00	25	11.18	+08	14	04.3	17.5 4 675
4089	P-L		1960	09	25.42780	00	24	27.77	+08	04	11.5	4 675
4089	P-L		1960	09	26.30558	00	23	51.78	+07	55	50.6	4 675
4089	P-L		1960	09	28.36808	00	22	25.84	+07	35	56.8	4 675
4089	P-L		1960	10	17.27085	00	10	30.82	+04	29	59.6	4 675
4089	P-L		1960	10	22.22293	00	08	16.57	+03	45	45.7	4 675
4089	P-L		1960	10	24.35836	00	07	28.69	+03	27	54.8	4 675
4089	P-L		1960	10	26.32573	00	06	50.79	+03	12	11.3	4 675
4511	P-L	*	1960	09	24.38750	00	24	22.71	-01	19	16.4	19.8 4 675
4511	P-L		1960	09	24.41183	00	24	21.56	-01	19	31.6	4 675
4511	P-L		1960	09	26.31530	00	22	52.24	-01	38	50.0	4 675
4511	P-L		1960	09	27.37500	00	22	01.65	-01	49	32.7	4 675

4511	P-L		1960	09	27.40836	00	21	59.94	-01	49	55.1	4 675
4511	P-L		1960	09	28.37778	00	21	13.71	-01	59	41.0	4 675
4511	P-L		1960	09	28.39725	00	21	12.76	-01	59	51.2	4 675
4667	P-L	*	1960	09	26.31530	00	35	09.04	-01	25	11.4	17.5 4 675
4667	P-L		1960	09	27.40836	00	34	07.90	-01	27	04.1	4 675
4667	P-L		1960	09	28.39725	00	33	12.61	-01	28	42.5	4 675
4667	P-L		1960	10	17.31529	00	16	48.65	-01	44	49.7	4 675
4667	P-L		1960	10	22.26809	00	13	27.84	-01	42	07.6	4 675
4667	P-L		1960	10	25.25350	00	11	43.95	-01	38	47.7	4 675
4667	P-L		1960	10	25.30351	00	11	42.37	-01	38	42.8	4 675
4667	P-L		1960	10	26.31531	00	11	10.29	-01	37	16.3	4 675
4667	P-L		1960	10	26.35766	00	11	09.10	-01	37	13.1	4 675
4817	P-L	*	1960	09	24.41183	00	29	24.60	+02	28	36.5	19.1 4 675
4817	P-L		1960	09	26.31530	00	27	53.63	+02	10	31.4	4 675
4817	P-L		1960	09	27.40836	00	27	00.52	+02	00	06.5	4 675
4817	P-L		1960	09	28.39725	00	26	12.45	+01	50	38.5	4 675
4817	P-L		1960	10	17.28198	00	11	47.83	-01	00	36.1	4 675
4817	P-L		1960	10	22.23406	00	08	51.04	-01	37	41.6	4 675
5023	P-L	*	1960	09	24.45000	00	37	56.13	+10	58	35.5	19.6 4 675
5023	P-L		1960	09	26.37010	00	36	17.51	+10	42	29.9	4 675
5023	P-L		1960	10	17.30420	00	19	06.22	+07	31	06.7	4 675
5023	P-L		1960	10	25.37570	00	14	14.30	+06	22	25.1	4 675
5023	P-L		1960	10	26.36840	00	13	45.08	+06	14	34.0	4 675
5565	P-L	*	1960	10	17.31529	00	32	08.04	-01	30	06.5	17.3 4 675
5565	P-L		1960	10	22.26809	00	27	55.37	-01	19	19.1	4 675
5565	P-L		1960	10	25.30351	00	25	40.95	-01	10	22.0	4 675
5565	P-L		1960	10	26.35766	00	24	58.39	-01	06	49.4	4 675
6217	P-L	*	1960	09	24.33613	23	57	47.35	+06	16	17.4	19.3 4 675
6217	P-L		1960	09	25.32502	23	57	07.83	+06	08	31.6	4 675
6217	P-L		1960	09	26.27573	23	56	29.93	+06	01	02.5	4 675
6217	P-L		1960	09	28.32780	23	55	08.57	+05	44	48.8	4 675
6217	P-L		1960	10	22.15559	23	41	54.61	+02	43	26.0	4 675
6217	P-L		1960	10	24.18787	23	41	06.80	+02	29	47.4	4 675
6217	P-L		1960	10	26.26113	23	40	22.18	+02	16	17.6	4 675
6837	P-L	*	1960	09	24.32431	00	00	24.40	-05	36	31.1	20.0 4 675
6837	P-L		1960	09	24.35002	00	00	23.17	-05	36	39.9	4 675
6837	P-L		1960	09	26.26528	23	58	51.96	-05	45	54.8	4 675
6837	P-L		1960	09	26.28543	23	58	51.07	-05	46	01.4	4 675
6837	P-L		1960	09	27.30972	23	58	02.33	-05	50	51.2	4 675
6837	P-L		1960	09	27.34237	23	58	00.76	-05	50	59.5	4 675
6837	P-L		1960	09	28.31736	23	57	14.85	-05	55	29.5	4 675
6837	P-L		1960	09	28.33822	23	57	13.92	-05	55	36.8	4 675
1010	T-2	*	1973	09	29.25330	23	55	55.50	+04	57	53.0	17.5 4 675
1010	T-2		1973	09	29.31806	23	55	52.81	+04	57	26.2	4 675
1010	T-2		1973	09	30.21007	23	55	15.84	+04	51	10.8	4 675
1010	T-2		1973	09	30.27431	23	55	13.10	+04	50	43.3	4 675
1010	T-2		1973	10	04.28958	23	52	30.17	+04	22	24.5	4 675
1010	T-2		1973	10	04.35208	23	52	27.62	+04	21	58.3	4 675
1010	T-2		1973	10	05.31684	23	51	49.31	+04	15	16.0	4 675
1010	T-2		1973	10	05.37917	23	51	46.76	+04	14	49.1	4 675
1169	T-2		1973	09	19.18611	00	15	35.28	+03	02	14.8	4 675
1169	T-2		1973	09	19.23785	00	15	32.81	+03	02	00.1	4 675
1169	T-2		1973	09	24.34688	00	11	32.58	+02	38	58.7	4 675
1169	T-2		1973	09	24.41597	00	11	29.17	+02	38	40.7	4 675
1169	T-2		1973	09	25.30729	00	10	46.95	+02	34	33.4	4 675
1169	T-2	*	1973	09	29.25330	00	07	39.91	+02	16	20.3	19.1 4 675
1169	T-2		1973	09	29.31806	00	07	36.68	+02	16	01.6	4 675
1169	T-2		1973	09	30.21007	00	06	54.75	+02	11	54.5	4 675
1169	T-2		1973	09	30.27431	00	06	51.61	+02	11	35.1	4 675

1169	T-2		1973	10	04.28958	00	03	44.70	+01	53	06.0	4 675
1169	T-2		1973	10	04.35208	00	03	41.69	+01	52	51.3	4 675
1169	T-2		1973	10	05.31684	00	02	57.67	+01	48	27.7	4 675
1169	T-2		1973	10	05.37917	00	02	54.80	+01	48	10.9	4 675
2314	T-2		1973	09	29.26632	00	44	17.39	+01	37	31.9	4 675
2314	T-2	*	1973	09	29.33073	00	44	13.70	+01	37	01.3	18.2 4 675
2314	T-2		1973	09	30.22257	00	43	24.49	+01	30	08.6	4 675
2314	T-2		1973	09	30.24826	00	43	22.74	+01	30	02.3	4 675
2314	T-2		1973	09	30.28785	00	43	20.72	+01	29	39.2	4 675
2314	T-2		1973	09	30.31476	00	43	18.93	+01	29	30.8	4 675
2314	T-2		1973	10	04.30208	00	39	36.32	+00	59	09.1	4 675
2314	T-2		1973	10	04.32708	00	39	34.76	+00	59	00.0	4 675
2314	T-2		1973	10	04.36476	00	39	32.68	+00	58	42.0	4 675
2314	T-2		1973	10	04.38889	00	39	31.18	+00	58	31.2	4 675
2314	T-2		1973	10	05.32917	00	38	39.04	+00	51	28.2	4 675
2314	T-2		1973	10	05.35382	00	38	37.35	+00	51	18.4	4 675
2314	T-2		1973	10	05.39132	00	38	35.49	+00	51	00.3	4 675
2314	T-2		1973	10	05.41597	00	38	33.76	+00	50	50.9	4 675
2415	T-2		1973	09	30.22257	00	44	27.41	+02	10	23.2	4 675
2415	T-2	*	1973	09	30.28785	00	44	23.51	+02	10	27.4	16.4 4 675
2415	T-2		1973	10	04.30208	00	40	39.41	+02	15	57.5	4 675
2415	T-2		1973	10	04.36476	00	40	35.65	+02	16	02.6	4 675
2415	T-2		1973	10	05.32917	00	39	42.29	+02	17	23.6	4 675
2415	T-2		1973	10	05.39132	00	39	38.71	+02	17	29.3	4 675
4053	T-2		1973	09	19.22500	00	29	27.33	-00	02	04.8	4 675
4053	T-2		1973	09	19.27865	00	29	24.86	-00	02	22.7	4 675
4053	T-2		1973	09	20.30278	00	28	39.80	-00	08	11.6	4 675
4053	T-2		1973	09	24.38750	00	25	35.93	-00	31	29.2	4 675
4053	T-2		1973	09	24.45434	00	25	32.79	-00	31	53.3	4 675
4053	T-2		1973	09	25.28125	00	24	55.23	-00	36	38.9	4 675
4053	T-2		1973	09	25.34601	00	24	52.10	-00	37	00.4	4 675
4053	T-2	*	1973	09	29.29219	00	21	50.09	-00	59	32.9	17.4 4 675
4053	T-2		1973	09	29.35694	00	21	46.95	-00	59	54.9	4 675
4053	T-2		1973	09	30.23524	00	21	06.46	-01	04	46.5	4 675
4053	T-2		1973	09	30.24826	00	21	05.85	-01	04	52.7	4 675
4053	T-2		1973	09	30.30174	00	21	03.23	-01	05	09.5	4 675
4053	T-2		1973	09	30.31476	00	21	02.71	-01	05	15.3	4 675
4053	T-2		1973	10	04.32708	00	17	58.02	-01	27	22.6	4 675
4053	T-2		1973	10	04.38889	00	17	55.15	-01	27	42.6	4 675
4053	T-2		1973	10	05.34167	00	17	12.10	-01	32	48.2	4 675
4053	T-2		1973	10	05.35382	00	17	11.41	-01	32	54.3	4 675
4053	T-2		1973	10	05.40347	00	17	09.10	-01	33	08.3	4 675
4053	T-2		1973	10	05.41597	00	17	08.54	-01	33	13.0	4 675
5162	T-2		1973	09	20.21458	00	25	56.43	+13	48	27.9	4 675
5162	T-2		1973	09	20.29253	00	25	52.73	+13	48	16.6	4 675
5162	T-2		1973	09	24.40035	00	22	32.85	+13	38	14.4	4 675
5162	T-2		1973	09	24.47986	00	22	28.83	+13	38	00.4	4 675
5162	T-2	*	1973	09	25.29375	00	21	48.99	+13	35	43.3	17.5 4 675
5162	T-2		1973	09	25.35903	00	21	45.67	+13	35	32.4	4 675
5162	T-2		1973	09	29.24062	00	18	33.46	+13	23	34.6	4 675
5162	T-2		1973	09	29.30486	00	18	30.18	+13	23	21.6	4 675
5162	T-2		1973	09	30.19722	00	17	46.20	+13	20	20.5	4 675
5162	T-2		1973	09	30.35295	00	17	38.27	+13	19	49.2	4 675
5162	T-2		1973	10	04.27708	00	14	25.57	+13	05	39.8	4 675
5162	T-2		1973	10	04.33906	00	14	22.49	+13	05	25.8	4 675
5162	T-2		1973	10	05.36632	00	13	32.81	+13	01	30.1	4 675
5162	T-2		1973	10	05.42847	00	13	29.68	+13	01	14.8	4 675
5465	T-2		1973	09	29.24062	00	24	16.61	+16	47	09.7	4 675
5465	T-2		1973	09	29.30486	00	24	13.40	+16	46	38.2	4 675

5465	T-2	*	1973	09	30.19722	00	23	32.28	+16	39	03.7	17.8	4 675
5465	T-2		1973	09	30.35295	00	23	24.68	+16	37	44.1		4 675
5465	T-2		1973	10	04.27708	00	20	23.00	+16	02	41.3		4 675
5465	T-2		1973	10	04.33906	00	20	19.95	+16	02	06.8		4 675
5465	T-2		1973	10	05.36632	00	19	32.95	+15	52	31.5		4 675
5465	T-2		1973	10	05.42847	00	19	30.03	+15	51	57.1		4 675
1142	T-3		1977	10	07.24652	01	06	09.34	+19	29	05.0		4 675
1142	T-3		1977	10	11.26632	01	02	10.30	+19	08	53.5		4 675
1142	T-3		1977	10	11.33351	01	02	06.11	+19	08	32.1		4 675
1142	T-3		1977	10	12.26510	01	01	10.85	+19	03	25.4		4 675
1142	T-3		1977	10	12.33125	01	01	06.86	+19	03	04.5		4 675
1142	T-3		1977	10	16.25156	00	57	17.18	+18	40	03.3		4 675
1142	T-3		1977	10	16.31684	00	57	13.25	+18	39	40.8		4 675
1142	T-3	*	1977	10	17.25365	00	56	19.74	+18	33	54.0	17.2	4 675
1142	T-3		1977	10	17.32083	00	56	15.72	+18	33	28.7		4 675
1142	T-3		1977	10	22.42812	00	51	34.34	+18	00	16.9		4 675
1142	T-3		1977	10	22.48003	00	51	31.75	+17	59	55.5		4 675
2400	T-3		1977	10	12.27587	01	17	36.26	+14	01	57.3		4 675
2400	T-3		1977	10	12.34271	01	17	32.27	+14	01	37.4		4 675
2400	T-3	*	1977	10	16.26233	01	13	43.73	+13	42	07.7	17.9	4 675
2400	T-3		1977	10	16.32795	01	13	39.80	+13	41	48.2		4 675
2400	T-3		1977	10	17.26458	01	12	45.38	+13	37	00.4		4 675
2400	T-3		1977	10	17.33177	01	12	41.41	+13	36	40.1		4 675
2400	T-3		1977	10	21.40868	01	08	48.47	+13	15	04.6		4 675
2400	T-3		1977	10	21.46910	01	08	44.92	+13	14	44.1		4 675
2400	T-3		1977	10	22.41528	01	07	51.99	+13	09	41.9		4 675
2400	T-3		1977	10	22.46962	01	07	49.00	+13	09	23.4		4 675
3021	T-3	*	1977	10	16.27309	01	26	41.10	+06	27	36.5	20.5	4 675
3021	T-3		1977	10	16.33872	01	26	38.07	+06	27	03.8		4 675
3021	T-3		1977	10	17.27552	01	25	53.33	+06	19	25.1		4 675
3021	T-3		1977	10	17.34236	01	25	49.98	+06	18	51.2		4 675
3021	T-3		1977	10	21.39792	01	22	38.31	+05	46	03.3		4 675
3021	T-3		1977	10	21.45799	01	22	35.28	+05	45	32.7		4 675
3108	T-3		1977	10	07.27031	01	26	59.80	+08	35	42.3		4 675
3108	T-3		1977	10	11.28819	01	25	00.59	+08	24	42.9		4 675
3108	T-3		1977	10	11.35642	01	24	58.59	+08	24	32.3		4 675
3108	T-3		1977	10	12.28681	01	24	30.94	+08	21	57.6		4 675
3108	T-3		1977	10	12.35347	01	24	28.85	+08	21	46.4		4 675
3108	T-3	*	1977	10	16.27309	01	22	31.40	+08	10	53.0	19.2	4 675
3108	T-3		1977	10	16.33872	01	22	29.32	+08	10	42.9		4 675
3108	T-3		1977	10	17.27552	01	22	01.22	+08	08	07.0		4 675
3108	T-3		1977	10	17.34236	01	21	59.23	+08	07	57.1		4 675
3108	T-3		1977	10	21.39792	01	19	58.27	+07	56	43.5		4 675
3108	T-3		1977	10	21.45799	01	19	56.46	+07	56	34.9		4 675
3108	T-3		1977	10	22.39844	01	19	28.61	+07	53	59.6		4 675
3108	T-3		1977	10	22.45920	01	19	26.94	+07	53	49.0		4 675
3188	T-3		1977	10	07.27031	01	26	28.70	+04	41	22.7		4 675
3188	T-3		1977	10	11.28819	01	23	02.46	+04	19	19.2		4 675
3188	T-3		1977	10	11.35642	01	22	58.81	+04	18	55.9		4 675
3188	T-3		1977	10	12.28681	01	22	10.75	+04	13	49.2		4 675
3188	T-3		1977	10	12.35347	01	22	07.20	+04	13	28.0		4 675
3188	T-3	*	1977	10	16.27309	01	18	44.13	+03	52	17.9	19.5	4 675
3188	T-3		1977	10	16.28368	01	18	43.48	+03	52	16.8		4 675
3188	T-3		1977	10	16.33872	01	18	40.63	+03	51	59.0		4 675
3188	T-3		1977	10	16.34931	01	18	40.02	+03	51	57.4		4 675
3188	T-3		1977	10	17.27552	01	17	52.34	+03	47	04.3		4 675
3188	T-3		1977	10	17.28628	01	17	51.80	+03	47	00.8		4 675
3188	T-3		1977	10	17.34236	01	17	48.71	+03	46	43.0		4 675
3188	T-3		1977	10	17.35313	01	17	48.13	+03	46	38.0		4 675

3188	T-3		1977	10	21.38698	01	14	22.75	+03	25	59.4	4 675
3188	T-3		1977	10	21.44705	01	14	19.73	+03	25	41.8	4 675
3188	T-3		1977	10	22.44878	01	13	29.67	+03	20	45.3	4 675
3197	T-3		1977	10	07.27031	01	24	38.54	+04	51	14.5	4 675
3197	T-3		1977	10	11.28819	01	21	33.04	+04	35	36.0	4 675
3197	T-3		1977	10	11.35642	01	21	29.84	+04	35	20.0	4 675
3197	T-3		1977	10	12.28681	01	20	46.29	+04	31	42.9	4 675
3197	T-3		1977	10	12.35347	01	20	43.14	+04	31	27.0	4 675
3197	T-3	*	1977	10	16.27309	01	17	39.21	+04	16	35.4	17.4 4 675
3197	T-3		1977	10	16.33872	01	17	35.98	+04	16	20.6	4 675
3197	T-3		1977	10	17.27552	01	16	52.14	+04	12	54.1	4 675
3197	T-3		1977	10	17.34236	01	16	48.86	+04	12	40.1	4 675
3197	T-3		1977	10	21.39792	01	13	41.58	+03	58	24.7	4 675
3197	T-3		1977	10	21.45799	01	13	38.75	+03	58	12.1	4 675
3197	T-3		1977	10	22.39844	01	12	56.54	+03	55	02.8	4 675
3197	T-3		1977	10	22.45920	01	12	53.75	+03	54	50.0	4 675
4045	T-3		1977	10	07.28125	01	22	08.64	-01	10	31.6	4 675
4045	T-3		1977	10	11.30000	01	18	25.34	-01	34	47.6	4 675
4045	T-3		1977	10	11.36771	01	18	21.47	-01	35	10.6	4 675
4045	T-3		1977	10	12.29826	01	17	29.49	-01	40	34.1	4 675
4045	T-3		1977	10	12.36441	01	17	25.68	-01	40	58.0	4 675
4045	T-3	*	1977	10	16.28368	01	13	46.98	-02	02	35.1	18.2 4 675
4045	T-3		1977	10	16.34931	01	13	43.25	-02	02	56.4	4 675
4045	T-3		1977	10	17.28628	01	12	51.60	-02	07	49.7	4 675
4045	T-3		1977	10	17.35313	01	12	47.74	-02	08	11.2	4 675
4045	T-3		1977	10	21.38698	01	09	08.57	-02	27	48.2	4 675
4045	T-3		1977	10	21.44705	01	09	05.29	-02	28	04.4	4 675
4045	T-3		1977	10	22.38542	01	08	15.50	-02	32	17.8	4 675
4045	T-3		1977	10	22.44878	01	08	12.16	-02	32	35.1	4 675
4074	T-3		1977	10	07.28125	01	23	13.29	+03	06	24.0	4 675
4074	T-3		1977	10	11.30000	01	19	29.07	+02	44	23.7	4 675
4074	T-3		1977	10	11.36771	01	19	25.07	+02	44	00.6	4 675
4074	T-3		1977	10	12.29826	01	18	32.67	+02	38	58.2	4 675
4074	T-3		1977	10	12.36441	01	18	28.90	+02	38	37.0	4 675
4074	T-3	*	1977	10	16.28368	01	14	47.68	+02	17	55.6	18.8 4 675
4074	T-3		1977	10	16.34931	01	14	43.87	+02	17	36.2	4 675
4074	T-3		1977	10	17.28628	01	13	51.37	+02	12	47.5	4 675
4074	T-3		1977	10	17.35313	01	13	47.48	+02	12	26.7	4 675
4074	T-3		1977	10	21.38698	01	10	04.25	+01	52	42.5	4 675
4074	T-3		1977	10	21.44705	01	10	00.84	+01	52	23.5	4 675
4074	T-3		1977	10	22.44878	01	09	06.52	+01	47	44.6	4 675
4094	T-3		1977	10	07.28125	01	24	56.35	+02	39	35.6	4 675
4094	T-3		1977	10	11.30000	01	21	11.54	+02	24	25.6	4 675
4094	T-3		1977	10	11.36771	01	21	07.50	+02	24	09.9	4 675
4094	T-3		1977	10	12.29826	01	20	14.98	+02	20	45.7	4 675
4094	T-3		1977	10	12.36441	01	20	11.03	+02	20	31.2	4 675
4094	T-3	*	1977	10	16.28368	01	16	29.26	+02	06	49.2	18.6 4 675
4094	T-3		1977	10	16.34931	01	16	25.32	+02	06	37.2	4 675
4094	T-3		1977	10	17.28628	01	15	32.85	+02	03	29.5	4 675
4094	T-3		1977	10	17.35313	01	15	28.95	+02	03	16.7	4 675
4094	T-3		1977	10	21.38698	01	11	46.02	+01	50	59.4	4 675
4094	T-3		1977	10	21.44705	01	11	42.70	+01	50	48.5	4 675
4094	T-3		1977	10	22.38542	01	10	52.07	+01	48	12.0	4 675
4094	T-3		1977	10	22.44878	01	10	48.63	+01	48	00.9	4 675
4101	T-3		1977	10	07.28125	01	22	16.29	+02	46	42.7	4 675
4101	T-3		1977	10	11.30000	01	19	56.78	+02	43	10.0	4 675
4101	T-3		1977	10	11.36771	01	19	54.31	+02	43	04.9	4 675
4101	T-3		1977	10	12.29826	01	19	21.86	+02	42	17.4	4 675
4101	T-3		1977	10	12.36441	01	19	19.44	+02	42	14.2	4 675

4101	T-3	*	1977	10	16.28368	01	17	02.37	+02	39	05.6	19.4	4 675
4101	T-3		1977	10	16.34931	01	16	59.99	+02	39	02.9		4 675
4101	T-3		1977	10	17.28628	01	16	27.30	+02	38	20.1		4 675
4101	T-3		1977	10	17.35313	01	16	24.84	+02	38	16.7		4 675
4101	T-3		1977	10	21.38698	01	14	05.05	+02	35	34.0		4 675
4101	T-3		1977	10	21.44705	01	14	02.89	+02	35	31.7		4 675
4101	T-3		1977	10	22.38542	01	13	30.64	+02	34	58.1		4 675
4101	T-3		1977	10	22.44878	01	13	28.53	+02	34	56.7		4 675
4179	T-3		1977	10	07.28125	01	25	41.97	+03	16	01.4		4 675
4179	T-3		1977	10	11.30000	01	23	42.00	+03	05	01.2		4 675
4179	T-3		1977	10	11.36771	01	23	39.93	+03	04	51.3		4 675
4179	T-3		1977	10	12.29826	01	23	11.84	+03	02	16.4		4 675
4179	T-3		1977	10	12.36441	01	23	09.82	+03	02	06.5		4 675
4179	T-3	*	1977	10	16.28368	01	21	11.32	+02	51	41.0	19.5	4 675
4179	T-3		1977	10	16.34931	01	21	09.25	+02	51	29.6		4 675
4179	T-3		1977	10	17.28628	01	20	41.06	+02	48	59.6		4 675
4179	T-3		1977	10	17.35313	01	20	38.90	+02	48	49.5		4 675
4179	T-3		1977	10	21.38698	01	18	37.76	+02	38	35.6		4 675
4179	T-3		1977	10	21.44705	01	18	35.87	+02	38	27.2		4 675
4179	T-3		1977	10	22.38542	01	18	07.94	+02	36	09.1		4 675
4179	T-3		1977	10	22.44878	01	18	06.33	+02	36	00.2		4 675
4194	T-3		1977	10	11.30000	01	26	25.24	+01	54	09.5		4 675
4194	T-3		1977	10	11.36771	01	26	21.68	+01	53	29.6		4 675
4194	T-3		1977	10	12.29826	01	25	37.21	+01	44	41.4		4 675
4194	T-3		1977	10	12.36441	01	25	33.70	+01	44	02.8		4 675
4194	T-3	*	1977	10	16.28368	01	22	22.70	+01	07	53.7	19.8	4 675
4194	T-3		1977	10	16.34931	01	22	19.25	+01	07	18.2		4 675
4194	T-3		1977	10	17.28628	01	21	33.80	+00	58	55.0		4 675
4194	T-3		1977	10	17.35313	01	21	30.22	+00	58	19.4		4 675
4194	T-3		1977	10	21.38698	01	18	15.93	+00	23	57.0		4 675
4194	T-3		1977	10	21.44705	01	18	12.69	+00	23	27.3		4 675
4346	T-3		1977	10	12.29826	01	35	45.52	+04	01	00.1		4 675
4346	T-3		1977	10	12.36441	01	35	42.27	+04	00	35.6		4 675
4346	T-3	*	1977	10	16.28368	01	32	40.87	+03	37	11.2	18.4	4 675
4346	T-3		1977	10	16.34931	01	32	37.55	+03	36	47.8		4 675
4346	T-3		1977	10	17.28628	01	31	53.83	+03	31	21.7		4 675
4346	T-3		1977	10	17.35313	01	31	50.51	+03	30	58.2		4 675
4346	T-3		1977	10	21.38698	01	28	41.98	+03	08	30.6		4 675
4346	T-3		1977	10	21.44705	01	28	39.23	+03	08	10.9		4 675
4346	T-3		1977	10	22.38542	01	27	55.90	+03	03	17.0		4 675
4346	T-3		1977	10	22.44878	01	27	52.95	+03	02	57.5		4 675
5166	T-3		1977	10	11.31111	01	44	33.65	-03	04	41.4		4 675
5166	T-3		1977	10	11.37865	01	44	30.24	-03	05	19.7		4 675
5166	T-3		1977	10	12.30885	01	43	45.21	-03	13	59.2		4 675
5166	T-3		1977	10	12.37500	01	43	41.84	-03	14	36.1		4 675
5166	T-3	*	1977	10	16.29444	01	40	29.00	-03	49	38.9	17.6	4 675
5166	T-3		1977	10	16.36024	01	40	25.64	-03	50	11.8		4 675
5166	T-3		1977	10	17.29688	01	39	39.34	-03	58	12.8		4 675
5166	T-3		1977	10	17.36372	01	39	35.88	-03	58	47.0		4 675
5166	T-3		1977	10	21.37622	01	36	18.01	-04	31	14.6		4 675
5166	T-3		1977	10	21.43611	01	36	14.95	-04	31	42.1		4 675
5166	T-3		1977	10	22.37274	01	35	29.45	-04	38	50.6		4 675
5166	T-3		1977	10	22.43872	01	35	26.18	-04	39	20.8		4 675
5174	T-3		1977	10	12.30885	01	44	50.93	-06	28	38.2		4 675
5174	T-3		1977	10	12.37500	01	44	47.78	-06	28	51.0		4 675
5174	T-3	*	1977	10	16.29444	01	41	46.27	-06	41	13.5	18.1	4 675
5174	T-3		1977	10	16.36024	01	41	43.12	-06	41	25.6		4 675
5174	T-3		1977	10	17.29688	01	40	59.49	-06	44	06.5		4 675
5174	T-3		1977	10	17.36372	01	40	56.38	-06	44	17.2		4 675

5174	T-3	1977	10	21.37622	01	37	49.44	-06	54	39.3	4 675
5174	T-3	1977	10	21.43611	01	37	46.55	-06	54	45.9	4 675
5174	T-3	1977	10	22.43872	01	37	00.33	-06	57	02.4	4 675
60		1989	07	29.26111	19	13	03.02	-16	56	48.9	9 675
60		1989	07	29.29219	19	13	01.28	-16	56	53.7	9 675
60		1989	08	02.26771	19	09	37.74	-17	07	05.8	9 675
60		1989	08	02.29809	19	09	36.37	-17	07	10.7	9 675
119		1989	07	29.26111	19	15	00.84	-12	48	17.4	9 675
119		1989	07	29.29219	19	14	58.95	-12	48	23.5	9 675
119		1989	08	02.26771	19	11	54.34	-13	00	16.5	9 675
119		1989	08	02.29809	19	11	53.12	-13	00	20.5	9 675
807		1989	07	05.23110	15	19	28.72	-04	20	12.9	9 675
807		1989	07	05.27470	15	19	28.31	-04	20	24.7	9 675
865		1989	07	05.23110	15	32	01.82	-01	01	50.5	9 675
1138		1989	07	29.26111	19	36	29.96	-16	35	34.1	9 675
1138		1989	07	29.29219	19	36	28.30	-16	35	32.4	9 675
1138		1989	08	02.26771	19	33	15.72	-16	30	06.4	9 675
1138		1989	08	02.29809	19	33	14.32	-16	30	03.1	9 675
1369		1989	07	05.23110	15	15	34.32	+00	09	14.7	9 675
1369		1989	07	05.27470	15	15	34.11	+00	09	06.9	9 675
1943		1990	01	21.26510	06	41	28.13	+04	16	16.5	16.5 2 675
1943		1990	01	21.29601	06	41	24.42	+04	16	05.5	2 675
1943		1990	01	24.28194	06	35	53.58	+04	00	01.6	2 675
1943		1990	01	24.30955	06	35	50.46	+03	59	52.0	2 675
2416		1989	07	29.26111	19	20	42.51	-13	19	38.7	9 675
2416		1989	08	02.26771	19	17	58.85	-13	41	04.1	9 675
2416		1989	08	02.29809	19	17	57.44	-13	41	15.3	9 675
3115		1989	07	29.26111	19	20	06.57	-12	34	35.5	9 675
3115		1989	08	02.26771	19	16	41.26	-12	36	04.7	9 675
3115		1989	08	02.29809	19	16	39.88	-12	36	01.5	9 675
3162		1989	08	02.26771	19	20	00.68	-16	11	49.5	9 675
3162		1989	08	02.29809	19	19	59.45	-16	11	59.9	9 675
3363		1989	08	02.26771	19	31	21.63	-17	15	53.7	9 675
3363		1989	08	02.29809	19	31	20.43	-17	16	00.2	9 675
3398		1989	12	01.48090	06	22	54.87	+38	45	26.2	16.0 2 675
3398		1989	12	03.42500	06	21	14.59	+39	39	52.6	2 675
3398		1989	12	03.44913	06	21	13.21	+39	40	33.6	2 675
3539		1989	07	05.23110	15	24	50.25	+01	11	51.0	9 675
3837		1989	08	02.26771	19	40	46.62	-13	20	09.6	9 675
3837		1989	08	02.29809	19	40	44.94	-13	20	11.7	9 675
4348		1989	11	03.27378	01	51	50.01	+12	48	00.8	16.2 3 675
4348		1989	11	04.29097	01	51	20.67	+12	44	09.0	3 675
4348		1989	11	22.25399	01	43	40.20	+11	39	46.5	16.6 3 675
4348		1989	11	22.28888	01	43	39.49	+11	39	39.4	3 675

688 Lowell Observatory, Anderson Mesa Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observers S. J. Bus, B. A. Skiff
Measurers S. J. Bus, B. A. Skiff, L. M. Sauter
0.33-m photographic telescope and 1.8-m reflector

1986	AE	1989	11	29.09566	21	37	38.45	+24	17	28.6	688
1986	AE	1989	11	29.09942	21	37	38.90	+24	17	28.8	688
1988	JJ	1989	11	29.32419	06	43	40.03	-08	03	26.8	688
1988	JJ	1989	11	29.32917	06	43	39.79	-08	03	29.6	688
1989	JA	1989	11	29.17743	02	04	06.33	+06	08	14.4	688
1989	JA	1989	11	29.18438	02	04	05.97	+06	08	19.7	688
1989	JA	1989	11	29.18924	02	04	05.74	+06	08	24.0	688
1989	RC	1989	11	28.23524	01	25	42.21	-07	08	54.2	688

1989	RC	1989 11 29.14340	01	26	26.00	-06	54	48.0	688
1989	RC	1989 11 29.14826	01	26	26.16	-06	54	42.3	688
1989	RC	1989 11 29.15527	01	26	26.47	-06	54	37.0	688
1989	RS1	1989 11 29.16076	01	35	49.57	-06	59	24.9	688
1989	RS1	1989 11 29.16562	01	35	50.00	-06	59	19.7	688
1989	RS1	1989 11 29.17222	01	35	50.71	-06	59	13.9	688
1989	TS2	1989 11 28.21331	01	55	26.25	-01	01	26.5	688
1989	TS2	1989 11 28.21979	01	55	26.15	-01	01	26.7	688
1989	UX5	1989 11 28.13646	01	35	25.89	+06	06	51.3	688
1989	UX5	1989 11 28.14427	01	35	25.75	+06	06	51.0	688
1989	UA6	1989 11 28.16910	01	35	06.98	+07	56	25.3	688
1989	UA6	1989 11 28.17604	01	35	06.82	+07	56	25.1	688
1989	UB6	1989 11 29.21553	01	37	21.80	+05	35	51.9	688
1989	UB6	1989 11 29.22546	01	37	21.63	+05	35	51.4	688
4216	T-2	1989 11 28.19722	01	47	22.73	+01	50	14.3	688
4216	T-2	1989 11 28.20382	01	47	22.58	+01	50	13.7	688
238		1989 12 24.20208	04	51	10.07	+04	05	25.2	688
238		1989 12 24.22361	04	51	09.05	+04	05	25.0	688
801		1989 12 24.20208	05	11	54.22	+01	03	59.3	688
801		1989 12 24.22361	05	11	52.95	+01	04	00.4	688
4290		1984 11 18.23472	02	38	26.59	+19	18	42.2	16.5 688
4290		1984 11 18.28750	02	38	24.25	+19	18	19.8	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
See also MPC 9198, MPC 10373 and Astron. J. 91, 1242, 1986

1989	UP	1989 12 23.41306	11	57	42.55	+16	14	17.0	19.6V 691
1989	UP	1989 12 23.45101	11	57	44.22	+16	14	18.5	691
1989	UP	1989 12 23.47476	11	57	45.19	+16	14	19.2	691
1989	UP	1989 12 23.54391	11	57	48.04	+16	14	20.3	691
1989	UP	1990 01 01.41106	12	03	13.15	+16	24	48.0	691
1989	UP	1990 01 01.43338	12	03	13.27	+16	24	52.1	19.4V 691
1989	UP	1990 01 01.44487	12	03	13.35	+16	24	54.0	691
1989	UP	1990 01 01.46898	12	03	13.48	+16	24	58.1	691

760 Goethe Link
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A.
Observers C. F. Capen, M. Dyck, J. D. Fix, R. C. Hall, G. Karthas, A. U. Landolt, D. J. May, J. E. Michlovic, J. G. Peters, A. I. Poland, D. V. Pytko, D. L. Rogers, W. Schuster, S. F. Strother, Y. Terzian, W. Thayer, C. T. van Sant, H. S. Yun
Measurers B. A. Skiff, L. M. Sauter
0.25-m refractor
PDS scanning microdensitometer
AGK3 and Perth 70 secondary nets, global solutions

1955	UW	1955 10 20.25765	01	35	24.65	+18	15	55.8	760
1955	UW	1955 10 20.30209	01	35	21.86	+18	15	32.8	760
1955	UW1	1955 10 20.25765	01	33	59.18	+15	05	43.1	760
1955	UW1	1955 10 20.30209	01	33	56.48	+15	05	31.9	760
1957	OG	1957 07 25.16666	20	12	12.57	-16	01	05.2	A 760
1957	OG	1957 07 25.20891	20	12	10.11	-16	01	07.5	A 760
1957	OH	1957 07 25.16666	19	57	15.17	-16	43	11.4	760
1957	OH	1957 07 25.20891	19	57	13.04	-16	43	28.8	760
1962	JH	1962 05 05.11216	13	33	01.55	-12	47	06.2	760

1962	JH	1962	05	05.15557	13	32	59.47	-12	46	42.6	760
1962	WM1	1962	11	30.17910	04	49	08.64	+22	29	34.2	760
1962	WM1	1962	11	30.22424	04	49	05.30	+22	29	36.2	760
1962	WO1	1962	11	30.17910	04	43	27.50	+20	02	53.9	760
1962	WO1	1962	11	30.22424	04	43	24.61	+20	02	36.4	760
1962	WP1	1962	11	30.17910	04	42	18.96	+18	33	25.6	760
1962	WP1	1962	11	30.22424	04	42	16.19	+18	33	19.5	760
1962	WQ1	1962	11	30.17910	04	41	08.56	+18	58	08.9	760
1962	WQ1	1962	11	30.22424	04	41	05.45	+18	58	07.5	760
1962	WR1	1962	11	30.17910	04	41	53.36	+20	21	21.4	760
1962	WR1	1962	11	30.22424	04	41	49.96	+20	21	49.1	760
1962	WS1	1962	11	30.17910	04	41	35.56	+22	02	06.8	760
1962	WS1	1962	11	30.22424	04	41	32.35	+22	01	53.1	760
1962	WX1	1962	11	30.17910	04	32	36.59	+17	58	19.3	A 760
1962	WX1	1962	11	30.22424	04	32	33.87	+17	58	03.2	A 760
1962	WZ1	1962	11	30.17910	04	31	42.98	+19	24	07.6	760
1962	WZ1	1962	11	30.22424	04	31	40.26	+19	23	54.9	760
1962	WA2	1962	11	30.17910	04	33	26.75	+20	59	42.0	A 760
1962	WA2	1962	11	30.22424	04	33	23.59	+20	59	40.8	A 760
1962	WB2	1962	11	30.17910	04	33	01.92	+22	32	48.4	760
1962	WB2	1962	11	30.22424	04	32	59.33	+22	32	45.3	760
1962	WC2	1962	11	30.17910	04	32	53.46	+24	28	21.9	760
1962	WF2	1962	11	30.17910	04	24	33.92	+22	06	02.7	760
1962	WF2	1962	11	30.22424	04	24	30.88	+22	06	16.1	760
1962	WH2	1962	11	30.17910	04	23	38.49	+19	46	42.0	760
1962	WH2	1962	11	30.22424	04	23	35.90	+19	46	37.2	760
1962	WJ2	1962	11	30.17910	04	22	59.09	+18	58	52.1	760
1962	WJ2	1962	11	30.22424	04	22	56.36	+18	58	47.6	760
1962	WK2	1962	11	30.17910	04	33	05.54	+18	02	49.6	760
1962	WK2	1962	11	30.22424	04	33	00.36	+18	01	04.0	760
1962	XH	1962	12	01.18118	04	51	13.34	+06	52	34.6	760
1962	XH	1962	12	01.22563	04	51	10.84	+06	52	32.8	760
1962	XJ	1962	12	01.18118	04	48	27.10	+07	07	08.8	760
1962	XJ	1962	12	01.22563	04	48	24.57	+07	07	00.4	760
1962	XK	1962	12	01.18118	04	42	51.93	+05	11	52.0	760
1962	XK	1962	12	01.22563	04	42	49.47	+05	11	45.5	760
1962	XL	1962	12	01.18118	04	36	09.17	+08	44	23.9	760
1962	XL	1962	12	01.22563	04	36	06.53	+08	44	16.3	760
1962	XN	1962	12	02.12274	03	20	35.43	+17	53	41.7	760
1962	XN	1962	12	02.17714	03	20	31.11	+17	53	45.8	760
1962	XO	1962	12	02.12274	03	18	54.47	+19	40	32.6	760
1962	XO	1962	12	02.17714	03	18	51.65	+19	40	11.5	760
1962	XY	1962	12	03.29856	04	26	32.21	+14	30	38.0	760
1962	XY	1962	12	03.34370	04	26	29.56	+14	30	41.4	760
1962	XA1	1962	12	03.29856	04	19	15.80	+20	07	45.3	760
1962	XA1	1962	12	03.34370	04	19	13.10	+20	07	49.6	760
1962	XD1	1962	12	03.29856	04	12	01.85	+21	21	00.0	760
1962	XD1	1962	12	03.34370	04	11	59.11	+21	20	58.4	760
1962	XE1	1962	12	03.29856	04	11	43.93	+21	07	54.6	760
1962	XE1	1962	12	03.34370	04	11	41.41	+21	07	39.5	760
1962	XF1	1962	12	03.29856	04	11	01.92	+19	32	28.7	760
1962	XF1	1962	12	03.34370	04	10	58.89	+19	32	18.0	760
1962	XG1	1962	12	03.29856	04	29	38.72	+17	40	32.9	760
1962	XG1	1962	12	03.34370	04	29	36.18	+17	40	17.8	760
1962	XN1	1962	12	03.29856	04	31	11.00	+19	22	20.5	760
1962	XN1	1962	12	03.34370	04	31	08.72	+19	22	16.5	760
1962	XO1	1962	12	03.29856	04	35	17.02	+14	23	48.7	760
1962	XO1	1962	12	03.34370	04	35	14.79	+14	23	34.6	760
1963	TA	1963	10	13.10628	01	28	09.39	+06	19	33.0	760

1963	TA	1963	10	13.16844	01	28	06.30	+06	19	10.8	760
1963	TD	1963	10	13.10628	01	19	35.89	+11	40	42.9	760
1963	TD	1963	10	13.16844	01	19	31.87	+11	40	34.2	760
1963	TH	1963	10	13.10628	01	16	02.51	+09	15	07.8	760
1963	TH	1963	10	13.16844	01	15	59.37	+09	14	50.2	760
1963	TO	1963	10	13.23162	02	24	40.92	+23	17	53.8	760
1963	TO	1963	10	13.27606	02	24	38.99	+23	17	40.0	760
1964	FF	1964	03	16.23268	10	39	50.10	+12	13	59.0	760
1964	FF	1964	03	16.27851	10	39	47.43	+12	13	52.4	760
1965	VG	1965	11	01.32500	01	58	43.09	+06	22	18.0	760
1965	VG	1965	11	01.36944	01	58	40.14	+06	22	44.7	760
1965	VL	1965	11	01.32500	02	03	37.35	+09	15	42.1	760
1965	VL	1965	11	01.36944	02	03	35.07	+09	15	27.1	760
10		1963	10	13.23162	02	40	15.68	+20	38	38.1	760
10		1963	10	13.27606	02	40	13.87	+20	38	31.4	760
16		1953	05	09.22435	14	53	28.39	-12	04	00.6	760
16		1953	05	09.26116	14	53	26.55	-12	03	52.0	760
21		1958	08	17.21175	22	08	35.88	-17	21	14.6	760
21		1958	08	17.25532	22	08	33.71	-17	21	29.0	760
24		1962	12	02.12274	03	20	34.58	+18	50	48.0	760
24		1962	12	02.17714	03	20	32.02	+18	50	39.0	760
24		1964	03	18.22569	10	04	16.14	+12	52	45.1	760
24		1964	03	18.27153	10	04	14.79	+12	52	55.0	760
45		1964	03	16.23268	10	44	29.67	+11	17	42.1	760
45		1964	03	16.27851	10	44	27.66	+11	18	00.8	760
46		1962	12	03.29856	04	11	29.46	+17	23	07.7	760
46		1962	12	03.34370	04	11	26.80	+17	23	00.1	760
47		1955	10	20.25765	01	34	30.73	+13	09	31.8	760
47		1955	10	20.30209	01	34	28.52	+13	09	22.8	760
51		1954	09	06.30135	00	36	04.63	+02	53	55.2	760
51		1954	09	06.34928	00	36	03.00	+02	53	31.6	760
66		1964	03	18.22569	10	18	36.98	+12	45	42.4	760
66		1964	03	18.27153	10	18	35.15	+12	45	53.5	760
68		1957	03	01.04515	07	36	46.03	+32	00	08.7	760
68		1957	03	01.11598	07	36	44.68	+32	00	00.6	760
78		1958	08	17.21175	21	59	42.13	-14	06	04.6	760
78		1958	08	17.25532	21	59	39.80	-14	06	11.5	760
115		1949	12	25.41516	09	53	29.79	+14	05	54.0	760
115		1949	12	28.35765	09	52	40.85	+13	54	14.1	760
115		1949	12	28.44653	09	52	39.04	+13	53	55.1	760
124		1957	07	25.16666	19	47	02.24	-16	26	37.9	760
124		1957	07	25.20891	19	46	59.81	-16	26	47.0	760
126		1949	12	28.35765	09	53	40.97	+17	01	33.1	760
126		1949	12	28.44653	09	53	39.68	+17	01	45.5	760
149		1962	11	30.17910	04	34	51.73	+20	10	31.3	760
149		1962	11	30.22424	04	34	48.47	+20	10	25.6	760
149		1962	12	03.29856	04	31	15.24	+20	03	00.4	760
149		1962	12	03.34370	04	31	12.19	+20	02	53.8	760
157		1962	11	24.29716	04	01	34.37	+20	34	00.8	760
157		1962	11	24.34091	04	01	31.16	+20	34	12.0	760
160		1955	10	20.25765	01	30	24.79	+11	22	37.0	760
160		1955	10	20.30209	01	30	22.48	+11	22	26.4	760
163		1954	09	06.30135	00	37	18.30	+01	18	48.9	760
163		1954	09	06.34928	00	37	16.67	+01	18	29.6	760
178		1962	12	02.12274	03	19	57.39	+18	48	06.8	760
178		1962	12	02.17714	03	19	54.33	+18	47	58.1	760
188		1962	11	30.17910	04	26	03.47	+19	39	52.9	760
188		1962	11	30.22424	04	26	00.75	+19	39	37.8	760
188		1962	12	03.29856	04	23	04.94	+19	22	23.0	760

209	1963	10	13.23162	02	46	07.34	+22	22	19.4	760
209	1963	10	13.27606	02	46	05.52	+22	22	18.5	760
235	1950	07	15.15000	17	29	18.18	-29	37	14.3	760
235	1950	07	15.19236	17	29	16.46	-29	37	16.8	760
239	1953	03	14.10350	09	45	56.98	+09	14	31.4	760
239	1953	03	14.18960	09	45	53.79	+09	14	57.7	760
244	1953	03	14.10350	09	42	21.83	+09	52	48.0	760
244	1953	03	14.18960	09	42	18.13	+09	53	13.6	760
245	1952	04	26.34167	14	16	16.15	-10	17	52.8	760
245	1952	04	26.38438	14	16	14.23	-10	17	44.7	760
249	1953	03	14.10350	09	51	42.42	+12	47	14.9	760
249	1953	03	14.18960	09	51	38.14	+12	47	20.4	760
251	1962	12	01.18118	04	44	04.38	+06	04	16.6	760
251	1962	12	01.22563	04	44	02.12	+06	04	12.0	760
254	1962	11	24.29716	04	07	34.13	+25	22	02.7	760
254	1962	11	24.34091	04	07	30.70	+25	21	59.2	760
258	1962	05	05.11216	13	32	41.13	-08	23	35.3	760
258	1962	05	05.15557	13	32	39.18	-08	23	14.6	760
268	1952	04	26.34167	14	22	40.63	-10	07	17.7	760
268	1952	04	26.38438	14	22	38.63	-10	07	08.0	760
268	1954	09	06.30135	00	56	30.64	+02	50	33.9	760
268	1954	09	06.34928	00	56	29.29	+02	50	23.6	760
291	1953	05	09.22435	14	59	04.04	-13	45	51.9	760
291	1953	05	09.26116	14	59	01.71	-13	45	39.8	760
310	1962	11	30.17910	04	45	52.79	+20	37	15.9	760
310	1962	11	30.22424	04	45	50.09	+20	37	08.4	760
315	1965	11	01.32500	01	44	44.46	+06	52	57.2	760
315	1965	11	01.36944	01	44	42.36	+06	52	40.0	760
320	1952	04	26.34167	14	19	31.22	-14	49	54.5	760
320	1952	04	26.38438	14	19	29.14	-14	49	43.6	760
321	1955	12	06.07530	03	44	09.46	+21	24	27.1	760
321	1955	12	06.10481	03	44	07.97	+21	24	23.9	760
321	1955	12	06.14440	03	44	05.82	+21	24	19.0	760
327	1958	08	17.21175	22	10	17.18	-17	15	04.7	760
327	1958	08	17.25532	22	10	14.90	-17	15	10.3	760
336	1952	04	26.34167	14	12	23.63	-17	01	30.1	760
336	1952	04	26.38438	14	12	20.87	-17	01	17.8	760
356	1957	03	01.04515	07	45	57.34	+30	06	22.0	760
356	1957	03	01.11598	07	45	56.82	+30	05	57.7	760
369	1950	10	20.27891	02	29	30.62	-05	37	15.2	760
369	1950	10	20.30452	02	29	29.23	-05	37	20.1	760
385	1958	08	17.21175	22	17	05.68	-17	13	32.3	760
385	1958	08	17.25532	22	17	03.38	-17	13	36.9	760
396	1962	11	24.29716	04	23	29.58	+21	54	06.2	760
396	1962	11	24.34091	04	23	27.12	+21	53	59.2	760
396	1962	12	03.29856	04	14	56.35	+21	27	49.4	760
396	1962	12	03.34370	04	14	53.89	+21	27	40.9	760
425	1952	04	26.34167	14	12	12.47	-10	15	52.1	760
425	1952	04	26.38438	14	12	10.30	-10	15	43.4	760
428	1965	02	05.16684	09	20	14.69	+25	33	10.1	760
428	1965	02	05.21545	09	20	11.20	+25	33	19.7	760
456	1962	11	26.09371	02	42	15.56	+15	50	47.9	760
456	1962	11	26.13746	02	42	13.63	+15	50	32.6	760
463	1962	05	05.11216	13	31	51.40	-07	27	29.0	760
463	1962	05	05.15557	13	31	48.90	-07	27	25.1	760
519	1953	05	09.22435	14	58	39.94	-17	41	05.9	760
519	1953	05	09.26116	14	58	37.81	-17	41	04.2	760
551	1955	12	06.07530	03	49	56.71	+20	39	51.2	760

551	1955	12	06.10481	03	49	55.24	+20	39	47.7	760
551	1955	12	06.14440	03	49	53.12	+20	39	41.8	760
565	1962	05	05.11216	13	18	42.76	-13	16	42.4	760
565	1962	05	05.15557	13	18	41.09	-13	16	11.6	760
573	1965	02	05.16684	09	26	36.80	+21	48	28.7	760
573	1965	02	05.21545	09	26	34.11	+21	48	33.8	760
592	1953	03	14.18960	09	38	09.64	+09	53	29.6	760
617	1965	11	01.32500	02	02	11.29	+06	10	21.1	760
617	1965	11	01.36944	02	02	09.69	+06	10	21.1	760
628	1965	02	05.16684	09	25	23.10	+23	04	34.3	760
628	1965	02	05.21545	09	25	20.33	+23	04	58.5	760
644	1965	07	29.16323	19	36	48.97	-21	50	42.4	760
644	1965	07	29.20837	19	36	46.40	-21	50	48.5	760
666	1953	05	09.22435	15	12	26.65	-15	07	58.1	760
666	1953	05	09.26116	15	12	24.31	-15	07	47.0	760
673	1950	07	14.26872	21	08	49.20	-11	59	43.4	760
673	1950	07	14.31385	21	08	47.43	-11	59	49.1	760
673	1953	03	14.10350	09	27	39.68	+10	41	28.1	760
673	1953	03	14.18960	09	27	36.84	+10	41	48.4	760
677	1963	10	13.23162	02	31	06.03	+25	40	31.0	760
677	1963	10	13.27606	02	31	04.06	+25	40	25.1	760
761	1962	12	02.12274	03	11	50.50	+19	41	50.5	760
761	1962	12	02.17714	03	11	47.88	+19	41	42.3	760
774	1955	10	20.25765	01	33	52.31	+15	53	17.7	760
774	1955	10	20.30209	01	33	50.35	+15	53	04.3	760
829	1964	03	16.23268	10	50	50.59	+08	54	35.0	760
829	1964	03	16.27851	10	50	47.96	+08	54	40.5	760
832	1955	10	20.25765	01	34	20.56	+11	08	52.2	760
832	1955	10	20.30209	01	34	18.48	+11	08	38.2	760
848	1952	04	26.34167	14	13	43.50	-13	16	52.0	760
848	1952	04	26.38438	14	13	41.37	-13	16	42.9	760
910	1962	11	24.29716	04	07	46.05	+24	01	37.0	760
910	1962	11	24.34091	04	07	43.45	+24	01	39.0	760
933	1950	07	14.26872	21	28	09.36	-13	08	42.1	760
933	1950	07	14.31385	21	28	07.51	-13	08	54.6	760
936	1952	04	26.34167	14	24	26.08	-12	42	02.8	760
936	1952	04	26.38438	14	24	24.02	-12	41	54.3	760
991	1964	03	16.23268	10	50	49.79	+10	25	37.6	760
991	1964	03	16.27851	10	50	47.71	+10	25	49.2	760
1052	1965	11	01.32500	02	09	35.28	+03	49	18.6	760
1052	1965	11	01.36944	02	09	32.59	+03	49	10.3	760
1072	1952	04	26.34167	14	27	37.71	-14	52	10.4	760
1075	1965	02	05.16684	09	32	31.92	+24	52	44.1	760
1075	1965	02	05.21545	09	32	29.58	+24	53	01.8	760
1076	1965	11	01.32500	02	02	40.33	+06	31	34.0	760
1076	1965	11	01.36944	02	02	37.88	+06	31	18.7	760
1082	1953	05	09.22435	14	56	03.19	-14	02	53.1	760
1082	1953	05	09.26116	14	56	01.34	-14	02	46.0	760
1118	1953	03	14.10350	09	46	22.30	+08	18	29.8	760
1118	1953	03	14.18960	09	46	18.66	+08	18	35.6	760
1135	1957	03	01.04515	07	44	31.40	+25	36	32.0	760
1135	1957	03	01.11598	07	44	29.97	+25	36	24.8	760
1165	1952	04	26.34167	14	33	43.22	-10	29	18.5	760
1165	1952	04	26.38438	14	33	41.44	-10	28	58.3	760
1169	1955	10	20.25765	01	35	32.34	+16	16	53.5	760
1169	1955	10	20.30209	01	35	29.96	+16	16	36.4	760
1171	1952	09	13.13376	21	48	05.10	-15	41	49.4	760
1171	1952	09	13.21014	21	48	02.16	-15	42	05.0	760

1173	1950	07	15.15000	17	33	31.26	-25	27	16.6	760
1173	1950	07	15.19236	17	33	30.13	-25	27	13.6	760
1211	1965	07	29.16323	19	51	39.35	-17	15	51.3	760
1211	1965	07	29.20837	19	51	37.15	-17	16	09.4	760
1212	1952	09	13.13376	21	25	54.69	-14	26	49.1	760
1212	1952	09	13.21014	21	25	52.67	-14	27	04.0	760
1231	1964	03	18.22569	10	08	38.57	+12	04	42.8	760
1231	1964	03	18.27153	10	08	36.23	+12	04	44.6	760
1262	1962	12	01.18118	04	46	36.05	+06	23	06.1	760
1262	1962	12	01.22563	04	46	33.72	+06	23	07.0	760
1292	1962	11	30.17910	04	47	55.81	+23	41	15.0	760
1292	1962	11	30.22424	04	47	52.89	+23	41	07.1	760
1308	1963	10	13.10628	01	15	19.09	+12	01	49.0	760
1308	1963	10	13.16844	01	15	15.81	+12	01	36.3	760
1331	1964	03	16.23268	10	52	08.74	+10	22	10.9	760
1331	1964	03	16.27851	10	52	06.41	+10	22	28.6	760
1378	1965	02	05.21545	09	18	46.92	+22	00	07.4	760
1412	1962	12	02.12274	03	22	25.14	+17	42	28.1	760
1412	1962	12	02.17714	03	22	21.82	+17	42	29.5	760
1551	1962	12	02.12274	03	05	40.57	+12	23	22.5	760
2416	1958	08	17.21175	21	58	36.15	-11	33	56.1	760
2416	1958	08	17.25532	21	58	34.17	-11	34	14.6	760
2692	1955	12	06.14440	03	40	03.68	+17	56	27.3	760
2889	1953	05	09.26116	15	00	23.27	-15	27	40.6	760
2894	1962	12	03.29856	04	20	52.30	+20	15	12.4	760
2894	1962	12	03.34370	04	20	49.86	+20	15	08.8	760
2985	1962	05	05.11216	13	24	31.09	-08	33	01.1	760
2985	1962	05	05.15557	13	24	29.28	-08	32	53.3	760
3166	1955	12	06.07530	03	45	59.78	+18	43	12.6	760
3302	1965	07	29.16323	19	50	09.81	-17	32	54.8	760
3302	1965	07	29.20837	19	50	07.28	-17	33	03.6	760
3395	1962	11	24.29716	04	00	29.86	+26	06	55.6	760
3395	1962	11	24.34091	04	00	27.76	+26	06	51.5	760
3458	1964	03	16.23268	10	58	32.67	+07	29	16.6	760
3458	1964	03	16.27851	10	58	30.18	+07	29	34.8	760
3846	1955	10	20.25765	01	26	13.74	+13	42	50.8	760
3846	1955	10	20.30209	01	26	11.80	+13	42	37.3	760
3851	1965	02	05.16684	09	06	07.53	+21	13	59.6	760
3851	1965	02	05.21545	09	06	04.10	+21	14	06.4	760
3899	1949	12	25.41516	09	45	35.48	+16	22	24.1	760
3899	1949	12	28.35765	09	45	01.65	+16	29	14.4	760
3899	1949	12	28.44653	09	45	00.51	+16	29	27.7	760
3919	1965	07	29.16323	19	51	05.78	-15	32	32.6	760
3919	1965	07	29.20837	19	51	03.39	-15	32	50.3	760
3921	1954	09	06.30135	00	50	15.60	-03	54	32.5	760
3921	1954	09	06.34928	00	50	15.22	-03	55	10.1	760
3974	1963	10	13.23162	02	31	17.54	+19	40	00.4	760
3974	1963	10	13.27606	02	31	14.91	+19	40	02.3	760
3975	1952	09	13.13376	21	26	01.01	-13	30	32.5	760
3989	1952	09	13.21014	21	26	05.16	-14	11	29.0	760
3992	1953	03	14.18960	09	36	21.79	+09	42	49.9	760
4027	1964	03	16.23268	10	39	19.73	+06	50	49.5	760
4174	1952	04	26.34167	14	15	31.50	-09	57	24.6	760
4174	1952	04	26.38438	14	15	29.40	-09	57	15.1	760
4195	1963	10	13.10628	01	26	37.74	+07	42	45.5	760
4195	1963	10	13.16844	01	26	34.70	+07	42	27.5	760
4293	1962	11	24.29716	04	03	58.50	+22	00	15.1	760
4293	1962	11	24.34091	04	04	06.58	+21	59	22.7	760

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A909	TF	1989	10	27.17984	23	53	20.35	-02	20	57.9	801
1936	PB	1989	10	27.26368	03	46	40.73	+30	10	10.3	801
1982	VD5	1989	12	01.27897	05	33	24.41	+20	13	16.9	801
1982	VD5	1989	12	01.31796	05	33	22.11	+20	13	08.5	801
1984	QF	1989	10	30.36299	04	43	05.84	+01	33	23.8	801
1984	QF	1989	10	30.40431	04	43	04.35	+01	33	12.2	801
1985	PB	1987	02	25.33254	11	28	05.22	+05	05	53.5	17.5 801
1985	VW3	1986	01	11.05868	02	21	33.74	+10	22	50.6	W 801
1917		1989	09	30.08534	20	22	55.19	+05	48	19.0	801
2825		1989	11	27.39048	08	53	34.44	+21	22	59.6	801
4281		1989	12	02.13476	02	32	46.37	+14	04	31.5	801
4298		1989	10	26.35123	05	37	28.66	+21	17	25.3	801

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1931	TR1	1989	10	28.05417	00	37	07.65	+05	31	50.6	807
1931	TR1	1989	10	31.09028	00	35	34.23	+05	04	24.0	807
1979	YV8	1989	10	02.09444	00	46	37.12	+03	46	18.8	807
1979	YV8	1989	10	04.08681	00	45	08.01	+03	37	38.4	807
1979	YV8	1989	10	29.06111	00	27	49.66	+01	59	14.4	807
1979	YV8	1989	11	01.07292	00	26	10.71	+01	50	22.4	807
1981	EQ9	1989	10	02.09444	00	42	09.16	+06	44	57.9	807
1981	EQ9	1989	10	04.08681	00	40	45.22	+06	34	06.5	807
1981	EQ9	1989	10	28.05417	00	25	20.16	+04	27	12.6	807
1981	EQ9	1989	10	31.09028	00	23	47.71	+04	13	21.3	807
1981	ES9	1989	10	02.09444	00	45	14.72	+07	00	26.5	807
1981	ES9	1989	10	04.08681	00	43	52.50	+06	47	02.9	807
1981	ES9	1989	10	28.05417	00	28	50.80	+04	11	07.3	807
1981	ES9	1989	10	31.09028	00	27	22.83	+03	54	05.4	807
1981	EM26	1989	10	02.09444	00	46	13.38	+05	59	20.1	807
1981	EM26	1989	10	04.08681	00	44	39.15	+05	53	19.1	807
1981	EM26	1989	10	28.05417	00	27	15.85	+04	45	01.5	807
1981	EM26	1989	10	31.09028	00	25	31.70	+04	38	27.3	807
1981	EY35	1989	10	28.05417	00	35	08.92	+05	50	57.9	807
1981	EY35	1989	10	31.09028	00	32	54.49	+05	39	46.7	807
1981	EK41	1989	10	29.06111	00	35	30.80	+02	08	11.8	807
1981	EK41	1989	11	01.07292	00	33	51.01	+01	48	39.0	807
1984	TB	1989	10	02.09444	00	41	56.48	+04	18	12.3	807
1984	TB	1989	10	04.08681	00	40	20.46	+04	09	25.5	807
1984	TB	1989	10	28.05417	00	23	13.54	+02	36	21.8	807
1984	TB	1989	10	29.06111	00	22	41.54	+02	33	32.9	807
1984	TB	1989	10	31.09028	00	21	41.05	+02	28	23.8	807
1984	TB	1989	11	01.07292	00	21	13.77	+02	26	03.5	807
1988	RG10	1989	10	02.09444	00	48	37.12	+07	42	00.0	807
1988	RG10	1989	10	04.08681	00	47	36.06	+07	36	28.0	807
1988	RG10	1989	10	28.05417	00	36	00.32	+06	29	30.9	807
1988	RG10	1989	10	31.09028	00	34	45.80	+06	21	54.5	807

1988	RL10	1989	10	01.22396	00	33	29.67	+00	22	27.1	807
1988	RL10	1989	10	03.08472	00	32	37.27	+00	16	24.1	807
1988	RL10	1989	10	29.06111	00	21	27.33	-00	56	44.5	807
1988	RL10	1989	11	01.07292	00	20	25.19	-01	03	00.9	807
1988	RN10	1989	10	03.13611	00	52	18.73	-07	40	51.8	807
1988	RN10	1989	10	05.14306	00	51	23.29	-07	49	28.2	807
1988	RN10	1989	10	30.03889	00	40	37.06	-09	12	56.2	807
1988	RN10	1989	10	31.04028	00	40	14.97	-09	15	09.6	807
1988	RO10	1989	10	03.13611	01	03	01.77	-10	09	03.8	807
1988	RO10	1989	10	05.14306	01	02	06.87	-10	19	22.0	807
1988	RO10	1989	10	30.03889	00	51	09.98	-11	59	25.7	807
1988	RO10	1989	10	31.04028	00	50	46.93	-12	02	09.5	807
1988	RS10	1989	10	01.22396	00	41	53.51	+01	05	13.1	807
1988	RS10	1989	10	03.08472	00	41	00.84	+00	59	20.0	807
1988	RS10	1989	10	29.06111	00	29	33.65	-00	12	46.7	807
1988	RS10	1989	11	01.07292	00	28	28.33	-00	19	03.3	807
1988	RN11	1989	10	02.09444	00	42	17.73	+03	54	38.9	807
1988	RN11	1989	10	04.08681	00	41	22.71	+03	48	33.4	807
1988	RN11	1989	10	28.05417	00	31	02.14	+02	40	09.3	807
1988	RN11	1989	10	29.06111	00	30	39.73	+02	37	41.4	807
1988	RN11	1989	10	31.09028	00	29	55.82	+02	32	52.5	807
1988	RN11	1989	11	01.07292	00	29	35.24	+02	30	37.1	807
1988	RY11	1989	10	02.14583	01	37	57.90	-08	42	56.7	807
1988	RY11	1989	10	04.13889	01	37	06.15	-08	54	40.7	807
1988	RY11	1989	10	29.21667	01	25	30.62	-10	57	09.3	807
1988	SG3	1989	10	02.30208	02	18	57.75	-07	12	08.8	807
1988	SG3	1989	10	29.32153	02	05	00.13	-08	04	11.0	807
1988	SG3	1989	10	30.29722	02	04	28.17	-08	04	58.5	807
1988	SJ3	1989	10	02.30208	02	25	22.35	-09	56	53.9	807
1988	SJ3	1989	10	29.32153	02	11	35.09	-10	54	46.4	807
1988	SJ3	1989	10	30.29722	02	11	02.92	-10	55	36.9	807
1988	VC11*	1988	11	05.04306	22	10	19.50	-10	47	29.6	807
1989	SD	1989	10	01.22396	00	40	20.88	+02	19	27.1	807
1989	SD	1989	10	03.08472	00	38	33.53	+02	12	20.5	807
1989	SP	1989	10	28.05417	00	24	49.90	+04	39	24.8	807
1989	SP	1989	10	31.09028	00	23	54.65	+04	09	54.0	807
1989	TJ1	1989	10	02.09444	00	48	39.46	+07	48	00.9	807
1989	TJ1	1989	10	04.08681	00	47	01.22	+07	38	40.4	807
1989	TJ1	1989	10	28.05417	00	29	05.36	+05	46	48.9	807
1989	TJ1	1989	10	31.09028	00	27	24.97	+05	35	12.8	807
1989	TU10	1989	10	01.22396	00	34	00.61	+01	32	53.9	15.5 807
1989	TU10	1989	10	03.08472	00	32	41.54	+01	12	46.5	807
1989	TN11*	1989	10	02.09444	00	37	48.76	+03	54	32.0	16.0 807
1989	TN11	1989	10	04.08681	00	35	45.58	+03	53	34.9	807
1989	TO11*	1989	10	02.09444	00	42	47.54	+06	39	49.9	18.0 807
1989	TO11	1989	10	04.08681	00	41	51.51	+06	30	37.0	807
1989	TO11	1989	10	28.05417	00	31	26.03	+04	42	29.2	807
1989	TO11	1989	10	31.09028	00	30	20.96	+04	30	09.8	807
1989	TP11*	1989	10	02.09444	00	43	29.28	+04	42	14.2	15.8 807
1989	TP11	1989	10	04.08681	00	41	50.26	+04	26	21.0	807
1989	TP11	1989	10	29.06111	00	24	51.83	+01	36	08.8	807
1989	TP11	1989	11	01.07292	00	23	43.13	+01	22	40.5	807
1989	TQ11*	1989	10	02.09444	00	49	10.04	+06	32	59.0	16.0 807
1989	TQ11	1989	10	04.08681	00	47	37.63	+06	23	03.2	807
1989	TQ11	1989	10	28.05417	00	30	38.32	+04	28	12.5	807
1989	TQ11	1989	10	31.09028	00	29	01.36	+04	16	33.5	807
1989	TR11*	1989	10	02.09444	00	49	29.25	+03	50	50.8	16.2 807
1989	TR11	1989	10	04.08681	00	47	18.31	+03	54	21.6	807
1989	TR11	1989	10	28.05417	00	24	12.78	+04	43	50.8	807

1989	TR11		1989	10	31.09028	00	22	10.24	+04	52	22.9		807
1989	TS11	*	1989	10	02.09444	00	52	01.88	+06	36	26.6	16.5	807
1989	TS11		1989	10	04.08681	00	50	55.08	+06	14	18.4		807
1989	TT11	*	1989	10	02.09444	00	53	06.59	+06	08	40.1	16.2	807
1989	TT11		1989	10	04.08681	00	51	33.56	+05	57	42.3		807
1989	TT11		1989	10	28.05417	00	34	18.63	+03	52	26.1		807
1989	TT11		1989	10	31.09028	00	32	39.15	+03	39	49.3		807
1989	TU11	*	1989	10	01.22396	00	33	51.62	+01	24	59.9	16.2	807
1989	TU11		1989	10	03.08472	00	31	59.32	+01	25	13.3		807
1989	TV11	*	1989	10	01.22396	00	34	15.50	+02	19	29.4	17.2	807
1989	TV11		1989	10	03.08472	00	32	39.98	+02	14	56.7		807
1989	TW11	*	1989	10	01.22396	00	43	35.07	-00	10	31.2	16.5	807
1989	TW11		1989	10	03.08472	00	42	48.58	-00	30	17.0		807
1989	TX11	*	1989	10	02.14583	01	29	49.02	-07	51	58.1	19.5	807
1989	TX11		1989	10	04.13889	01	28	52.10	-07	59	03.2		807
1989	TX11		1989	10	29.21667	01	16	28.37	-09	04	22.5		807
1989	TY11	*	1989	10	02.14583	01	41	02.97	-07	33	15.6	16.2	807
1989	TY11		1989	10	04.13889	01	39	14.13	-07	35	14.4		807
1989	TZ11	*	1989	10	02.14583	01	44	47.82	-10	09	42.1	15.5	807
1989	TZ11		1989	10	04.13889	01	43	20.84	-10	00	57.8		807
1989	TA12	*	1989	10	03.13611	00	51	30.81	-10	40	50.5	15.0	807
1989	TA12		1989	10	05.14306	00	49	47.33	-10	47	39.2		807
1989	TB12	*	1989	10	03.13611	00	54	44.02	-07	28	34.9	16.0	807
1989	TB12		1989	10	05.14306	00	53	11.95	-07	54	28.2		807
1989	UV1		1989	10	02.09444	00	40	34.80	+04	08	21.1		807
1989	UV1		1989	10	04.08681	00	39	03.10	+03	59	23.1		807
1989	UV1		1989	10	28.05417	00	23	21.78	+02	28	00.5		807
1989	UV1		1989	10	29.06111	00	22	54.43	+02	25	24.5		807
1989	UV1		1989	10	31.09028	00	22	03.37	+02	20	41.6		807
1989	UV1		1989	11	01.07292	00	21	40.70	+02	18	35.1		807
1989	UN2		1989	10	29.32153	02	10	36.62	-06	47	05.1	17.0	807
1989	UN2		1989	10	30.29722	02	09	40.71	-07	03	45.4		807
1989	UT7	*	1989	10	29.32153	02	04	15.24	-07	55	12.7	18.8	807
1989	UT7		1989	10	30.29722	02	03	26.69	-07	56	45.0		807
1989	UU7	*	1989	10	29.32153	02	07	02.59	-09	48	47.2	16.2	807
1989	UU7		1989	10	30.29722	02	06	01.90	-09	44	13.8		807
1989	UV7		1989	10	02.30208	02	24	16.39	-07	56	25.6		807
1989	UV7	*	1989	10	29.32153	02	11	01.08	-09	02	01.5	20.0	807
1989	UV7		1989	10	30.29722	02	10	30.42	-09	03	18.8		807
1989	UW7	*	1989	10	29.32153	02	11	19.93	-09	55	40.2	15.5	807
1989	UW7		1989	10	30.29722	02	10	27.43	-09	58	17.7		807
2086	T-2		1989	10	28.05417	00	28	27.37	+06	52	58.7		807
2086	T-2		1989	10	31.09028	00	26	36.41	+06	42	33.2		807
34			1989	10	02.19722	01	15	17.20	+06	08	13.8		807
34			1989	10	06.24514	01	12	07.19	+05	41	12.9		807
34			1989	10	28.10556	00	55	02.49	+03	19	14.0		807
182			1989	10	02.19722	01	13	56.16	+03	38	40.8		807
182			1989	10	06.24514	01	10	33.39	+03	15	56.2		807
201			1989	10	29.26736	02	27	45.78	+05	39	18.5		807
201			1989	11	01.30556	02	25	07.57	+05	22	30.5		807
225			1989	10	28.10556	00	59	54.08	+03	33	29.8		807
321			1989	10	04.29583	02	01	31.95	+11	15	26.2		807
321			1989	10	30.19097	01	40	33.08	+09	42	06.6		807
321			1989	11	01.17292	01	38	56.48	+09	34	54.1		807
365			1989	10	01.22396	00	31	40.27	+02	11	42.9		807
365			1989	10	03.08472	00	30	24.11	+01	50	47.1		807
401			1989	10	01.22396	00	39	48.38	-00	01	59.8		807
401			1989	10	03.08472	00	38	25.21	-00	08	04.1		807
401			1989	10	29.06111	00	21	06.06	-01	10	09.7		807

401	1989	11	01.07292	00	19	37.29	-01	13	15.1	807
459	1989	10	29.06111	00	22	11.04	-01	21	23.4	807
459	1989	11	01.07292	00	20	16.11	-01	09	48.1	807
531	1989	10	04.19028	01	21	56.22	+07	50	28.6	807
531	1989	10	28.10556	01	03	56.63	+02	18	43.2	807
636	1989	10	04.29583	02	05	38.68	+10	18	49.8	807
636	1989	10	30.19097	01	42	36.06	+09	40	55.2	807
636	1989	11	01.17292	01	40	51.89	+09	38	07.3	807
742	1989	10	05.14306	01	07	00.70	-08	08	42.9	807
755	1989	10	02.09444	00	44	49.48	+03	38	40.9	807
755	1989	10	04.08681	00	43	25.36	+03	28	25.8	807
755	1989	10	29.06111	00	27	26.33	+01	32	42.4	807
755	1989	11	01.07292	00	25	56.48	+01	21	54.6	807
770	1989	11	01.07292	00	39	22.19	+01	00	26.3	807
993	1989	10	04.29583	02	01	33.51	+11	22	00.7	807
993	1989	10	30.19097	01	41	22.50	+09	13	03.4	807
993	1989	11	01.17292	01	39	49.56	+09	03	13.5	807
1045	1989	10	02.09444	00	37	29.46	+04	33	29.2	807
1045	1989	10	04.08681	00	35	38.44	+04	21	37.8	807
1088	1989	10	03.23958	02	17	04.35	+03	48	36.2	807
1088	1989	10	06.29722	02	14	46.68	+03	51	10.9	807
1088	1989	11	01.26319	01	48	25.45	+04	39	46.4	807
1088	1989	11	02.05556	01	47	38.35	+04	42	31.0	807
1121	1989	10	02.09444	00	34	24.22	+06	13	53.9	807
1130	1989	10	30.13889	01	12	24.12	+08	18	35.5	807
1130	1989	11	01.12222	01	11	01.53	+08	06	15.4	807
1267	1989	10	04.19028	01	27	09.75	+08	07	30.4	807
1267	1989	10	05.19167	01	26	11.02	+08	04	09.4	807
1449	1989	10	03.35486	02	43	13.55	+04	52	51.0	807
1475	1989	10	02.09444	00	38	53.60	+05	53	28.7	807
1475	1989	10	04.08681	00	37	17.64	+05	35	50.7	807
1475	1989	10	29.06111	00	20	45.41	+02	12	48.3	807
1475	1989	11	01.07292	00	19	42.38	+01	55	05.0	807
1482	1989	10	30.19097	01	51	01.79	+08	20	57.8	807
1482	1989	11	01.17292	01	49	24.23	+08	13	51.3	807
1482	1989	11	01.26319	01	49	19.71	+08	13	32.5	807
1482	1989	11	02.05556	01	48	41.61	+08	10	46.2	807
1504	1989	10	02.14583	01	30	13.45	-09	20	06.3	807
1504	1989	10	04.13889	01	28	26.75	-09	32	18.7	807
1517	1989	10	02.19722	01	19	44.32	+01	39	58.0	807
1517	1989	10	28.10556	00	57	54.21	+00	11	19.4	807
1533	1989	10	30.24306	02	10	32.01	-00	39	04.2	807
1745	1989	10	02.19722	01	12	28.10	+02	42	01.5	807
1745	1989	10	06.24514	01	09	13.48	+02	23	22.8	807
1805	1989	10	06.24514	01	26	51.89	+05	50	40.5	807
1805	1989	10	28.10556	01	10	49.68	+04	22	06.8	807
1856	1989	10	06.24514	01	14	31.05	+06	11	16.3	807
1856	1989	10	28.10556	00	54	53.52	+03	22	58.8	807
1982	1989	10	04.29583	02	04	04.48	+07	14	15.9	807
2004	1989	10	04.08681	00	53	12.65	+06	28	23.4	807
2004	1989	10	28.05417	00	30	36.59	+04	45	54.5	807
2004	1989	10	31.09028	00	28	32.78	+04	36	45.2	807
2031	1989	10	02.19722	01	20	01.11	+03	47	39.2	807
2031	1989	10	06.24514	01	17	03.18	+03	09	57.2	807
2031	1989	10	28.10556	01	00	51.96	+00	11	24.4	807
2132	1989	10	03.35486	02	40	17.82	+07	56	40.0	807
2132	1989	10	29.26736	02	20	37.31	+06	36	54.4	807
2132	1989	11	01.30556	02	17	53.71	+06	28	42.4	807
2164	1989	10	02.19722	01	10	09.85	+03	17	14.3	807

2207	1989	10	29.06111	00	38	33.47	-01	00	57.5	807
2207	1989	11	01.07292	00	37	25.26	-01	08	30.4	807
2225	1989	10	01.22396	00	35	33.15	-01	33	32.0	807
2228	1989	10	04.29583	01	56	11.68	+08	57	02.4	807
2228	1989	10	30.19097	01	37	10.42	+06	57	32.7	807
2274	1989	10	04.19028	01	23	11.18	+10	38	03.2	807
2274	1989	10	05.19167	01	22	16.67	+10	33	26.8	807
2357	1989	10	04.29583	02	02	04.21	+10	43	09.6	807
2357	1989	10	30.19097	01	49	41.94	+09	27	53.0	807
2357	1989	11	01.17292	01	48	44.39	+09	22	09.5	807
2376	1989	11	01.26319	01	56	02.27	+08	53	08.9	807
2376	1989	11	02.05556	01	55	25.96	+08	50	52.6	807
2410	1989	10	28.10556	01	11	57.91	+03	18	30.2	807
2461	1989	10	01.22396	00	31	52.88	-00	37	59.3	807
2461	1989	10	03.08472	00	30	31.35	-00	47	09.1	807
2480	1989	10	30.13889	01	08	22.83	+06	26	35.1	807
2480	1989	11	01.12222	01	06	43.78	+06	21	33.3	807
2492	1989	10	04.19028	01	26	22.21	+09	01	43.5	807
2492	1989	10	05.19167	01	25	37.85	+08	57	36.5	807
2492	1989	10	30.13889	01	07	11.57	+07	12	22.1	807
2492	1989	11	01.12222	01	05	54.75	+07	04	56.0	807
2508	1989	10	02.09444	00	46	12.02	+05	04	33.6	807
2508	1989	10	04.08681	00	44	30.44	+04	45	59.4	807
2508	1989	10	29.06111	00	26	40.61	+01	21	58.0	807
2508	1989	11	01.07292	00	25	22.26	+01	04	30.9	807
2518	1989	10	02.09444	00	44	22.46	+07	22	21.3	807
2518	1989	10	04.08681	00	42	31.72	+07	05	35.2	807
2518	1989	10	28.05417	00	23	12.07	+03	56	08.9	807
2518	1989	10	31.09028	00	21	28.96	+03	36	47.1	807
2569	1989	10	30.03889	00	56	18.45	-11	40	46.8	807
2569	1989	10	31.04028	00	55	35.44	-11	36	48.5	807
2603	1989	10	04.29583	01	58	27.95	+10	54	20.2	807
2603	1989	10	30.19097	01	36	38.13	+09	20	50.8	807
2622	1989	10	03.13611	00	52	22.27	-09	42	04.2	807
2622	1989	10	05.14306	00	50	55.11	-09	55	37.0	807
2674	1989	10	04.19028	01	25	24.60	+08	05	16.1	807
2674	1989	10	05.19167	01	24	56.92	+08	02	19.9	807
2674	1989	10	30.13889	01	13	14.79	+06	48	02.7	807
2674	1989	11	01.12222	01	12	22.94	+06	42	34.5	807
2688	1989	10	02.19722	01	16	57.71	+02	46	05.6	807
2688	1989	10	06.24514	01	13	57.02	+02	27	42.2	807
2688	1989	10	28.10556	00	58	03.32	+01	01	39.9	807
2894	1989	10	04.29583	01	51	48.98	+07	55	11.2	807
2898	1989	10	29.32153	02	10	50.11	-11	22	02.9	807
2898	1989	10	30.29722	02	09	57.11	-11	24	32.0	807
2905	1989	10	04.19028	01	16	48.45	+10	11	17.8	807
2905	1989	10	05.19167	01	15	55.97	+10	08	49.9	807
2914	1989	11	01.26319	02	02	35.33	+07	44	36.6	807
2914	1989	11	02.05556	02	01	53.47	+07	39	51.1	807
3074	1989	10	02.09444	00	48	52.67	+06	59	08.4	807
3074	1989	10	04.08681	00	46	55.99	+06	49	07.2	807
3074	1989	10	28.05417	00	25	17.85	+04	50	28.6	807
3074	1989	10	31.09028	00	23	12.51	+04	38	25.0	807
3091	1989	10	30.13889	01	08	54.24	+08	38	22.9	807
3091	1989	11	01.12222	01	07	18.30	+08	26	48.9	807
3215	1989	10	03.35486	02	31	30.04	+08	14	21.0	807
3261	1989	10	04.29583	01	56	05.09	+07	59	13.6	807
3306	1989	10	28.05417	00	29	01.06	+05	06	04.8	807
3306	1989	10	31.09028	00	27	19.35	+04	46	15.2	807

3397		1989	10	04.29583	02	03	47.05	+10	39	45.7	807
3458		1989	10	28.10556	01	07	50.21	+04	25	10.5	807
3643		1989	10	02.14583	01	34	27.54	-09	08	45.8	807
3643		1989	10	04.13889	01	32	26.53	-09	11	06.8	807
3650		1989	10	28.10556	01	05	40.33	+00	07	00.9	807
3659		1989	10	02.09444	00	43	34.14	+04	34	59.8	807
3659		1989	10	04.08681	00	41	52.78	+04	20	45.9	807
3659		1989	10	29.06111	00	22	59.79	+01	37	52.4	807
3659		1989	11	01.07292	00	21	25.52	+01	23	18.6	807
3661		1989	10	04.19028	01	22	04.34	+08	41	15.4	807
3661		1989	10	05.19167	01	21	17.85	+08	37	14.8	807
3703		1989	11	01.22153	01	57	04.75	+03	30	11.5	807
3836		1989	10	29.06111	00	27	46.88	-00	14	38.7	807
3836		1989	11	01.07292	00	26	04.36	-00	20	44.8	807
3857		1989	11	01.07292	00	37	59.94	+01	37	42.5	807
3882		1989	10	04.29583	01	58	57.91	+10	55	35.4	807
3882		1989	10	30.19097	01	36	15.81	+07	54	37.9	807
4197		1989	10	02.09444	00	46	41.33	+05	08	18.3	807
4197		1989	10	04.08681	00	40	31.32	+05	08	15.7	807
4230		1989	10	02.19722	01	22	14.44	+06	00	14.1	807
4230		1989	10	06.24514	01	19	56.99	+05	44	36.1	807
4230		1989	10	28.10556	01	07	22.91	+04	22	02.7	807
4232		1989	10	29.32153	02	16	05.20	-11	12	47.8	807
4232		1989	10	30.29722	02	15	12.29	-11	31	37.7	807
4238		1989	10	06.24514	01	24	06.42	+06	14	57.8	807
4238		1989	10	28.10556	01	04	30.53	+04	08	50.5	807
4264		1989	10	04.29583	01	48	48.61	+09	09	19.9	807
4273		1989	10	02.19722	01	20	32.22	+02	03	16.0	807
4273		1989	10	06.24514	01	17	33.29	+01	38	26.6	807
4273		1989	10	28.10556	01	01	30.42	-00	03	25.8	807
4280		1989	10	30.19097	01	55	05.86	+09	06	35.3	16.5 807
4280		1989	11	01.17292	01	53	06.95	+09	00	38.2	807
4284		1989	10	29.32153	02	04	52.38	-08	48	28.8	807
4284		1989	10	30.29722	02	03	57.65	-08	51	58.4	807
4322		1989	10	01.22396	00	45	00.09	+03	04	14.4	807
4322		1989	10	03.08472	00	43	08.18	+03	00	23.5	807
4322		1989	10	28.05417	00	22	12.89	+02	31	55.9	807
4322		1989	10	29.06111	00	21	41.69	+02	32	21.1	807
4322		1989	11	01.07292	00	20	20.41	+02	34	43.3	807

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Measurers E. W. Elst, W. Landgraf, P. Van den Eijnde
GPO 0.4-m astrograph and 1.0-m Schmidt

1975	XJ	1989	12	02.10833	02	26	24.41	+00	42	55.6	4 809
1975	XJ	1989	12	02.12153	02	26	23.87	+00	42	56.6	4 809
1975	XJ	1989	12	02.13472	02	26	23.34	+00	42	56.2	4 809
1975	XJ	1989	12	03.13611	02	25	49.07	+00	43	58.2	19.0 4 809
1975	XJ	1989	12	03.14931	02	25	48.60	+00	43	58.5	4 809
1975	XJ	1989	12	03.16250	02	25	48.08	+00	43	59.8	4 809
1981	EA42	1989	12	02.10833	02	28	51.06	+02	14	08.0	4 809
1981	EA42	1989	12	02.12153	02	28	50.64	+02	14	07.2	4 809
1981	EA42	1989	12	02.13472	02	28	50.24	+02	14	06.5	4 809
1981	EA42	1989	12	03.13611	02	28	25.12	+02	13	29.4	18.8 4 809
1981	EA42	1989	12	03.14931	02	28	24.69	+02	13	28.5	4 809
1981	EA42	1989	12	03.16250	02	28	24.27	+02	13	28.4	4 809

1988	JF		1989	06	05.42465	01	35	24.90	-00	08	55.1	17.7	2 809
1988	JF		1989	06	05.42951	01	35	25.21	-00	08	53.0		2 809
1989	SC6	*	1989	09	26.25486	01	48	40.83	+06	39	17.3	19.7	4 809
1989	SC6		1989	09	26.26806	01	48	40.42	+06	39	14.4		4 809
1989	SC6		1989	09	26.28125	01	48	39.85	+06	39	11.2		4 809
1989	SC6		1989	09	28.26111	01	47	32.53	+06	32	33.3	19.0	4 809
1989	SC6		1989	09	28.27431	01	47	31.95	+06	32	31.0		4 809
1989	SC6		1989	09	28.28750	01	47	31.47	+06	32	28.1		4 809
1989	SD6	*	1989	09	26.25486	01	49	26.30	+06	54	30.9	19.8	4 809
1989	SD6		1989	09	26.26806	01	49	25.85	+06	54	26.1		4 809
1989	SD6		1989	09	26.28125	01	49	25.44	+06	54	18.1		4 809
1989	SD6		1989	09	28.26111	01	48	19.26	+06	40	04.7		4 809
1989	SD6		1989	09	28.27431	01	48	18.76	+06	39	58.2		4 809
1989	SD6		1989	09	28.28750	01	48	18.24	+06	39	51.8		4 809
1989	SV6	*	1989	09	28.26111	01	48	55.99	+06	25	54.4		4 809
1989	SV6		1989	09	28.27431	01	48	55.39	+06	25	50.6		4 809
1989	SV6		1989	09	28.28750	01	48	54.80	+06	25	47.5		4 809
1989	SV6		1989	10	07.26181	01	41	48.95	+05	32	26.1	19.6	4 809
1989	SV6		1989	10	07.27500	01	41	48.00	+05	32	23.9		4 809
1989	SV6		1989	10	07.28819	01	41	47.28	+05	32	19.2		4 809
1989	TC3		1989	09	28.12014	01	30	50.43	+03	38	32.1		4 809
1989	TC3		1989	09	28.13333	01	30	49.95	+03	38	25.9		4 809
1989	TC3		1989	09	28.14653	01	30	49.32	+03	38	19.7		4 809
1989	TH3		1989	09	28.26111	01	33	45.41	+03	05	42.0		4 809
1989	TH3		1989	09	28.27431	01	33	44.82	+03	05	37.4		4 809
1989	TH3		1989	09	28.28750	01	33	44.22	+03	05	32.7		4 809
1989	TF4		1989	09	28.26111	01	40	20.04	+04	50	49.2		4 809
1989	TF4		1989	09	28.27431	01	40	19.40	+04	50	42.0		4 809
1989	TF4		1989	09	28.28750	01	40	18.70	+04	50	35.6		4 809
1989	TM4		1989	09	26.25486	01	41	36.36	+05	48	05.8	19.5	4 809
1989	TM4		1989	09	26.26806	01	41	35.79	+05	47	57.7		4 809
1989	TM4		1989	09	26.28125	01	41	35.25	+05	47	51.3		4 809
1989	UP3		1989	12	02.10833	02	41	54.14	+03	31	06.9		4 809
1989	UP3		1989	12	02.12153	02	41	53.76	+03	31	03.3		4 809
1989	UP3		1989	12	02.13472	02	41	53.34	+03	30	58.5		4 809
1989	UP3		1989	12	03.13611	02	41	24.96	+03	26	00.8	18.4	4 809
1989	UP3		1989	12	03.14931	02	41	24.50	+03	25	57.7		4 809
1989	UP3		1989	12	03.16250	02	41	24.07	+03	25	53.5		4 809
1989	VD1		1989	12	02.10833	02	28	02.59	+04	22	44.7	19.6	4 809
1989	VD1		1989	12	02.12153	02	28	02.04	+04	22	47.2		4 809
1989	VD1		1989	12	02.13472	02	28	01.56	+04	22	49.1		4 809
1989	VD1		1989	12	03.13611	02	27	24.26	+04	25	22.8	19.2	4 809
1989	VD1		1989	12	03.14931	02	27	23.71	+04	25	24.1		4 809
1989	VD1		1989	12	03.16250	02	27	23.22	+04	25	26.5		4 809
1989	VJ1		1989	12	02.10833	02	35	36.93	+02	43	51.1		4 809
1989	VJ1		1989	12	02.12153	02	35	36.48	+02	43	50.1		4 809
1989	VJ1		1989	12	02.13472	02	35	36.09	+02	43	48.8		4 809
1989	VJ1		1989	12	03.13611	02	35	10.45	+02	42	42.2	18.6	4 809
1989	VJ1		1989	12	03.14931	02	35	10.07	+02	42	41.4		4 809
1989	VJ1		1989	12	03.16250	02	35	09.66	+02	42	40.6		4 809
1989	VM1		1989	12	02.10833	02	38	13.31	+03	37	14.1	19.7	4 809
1989	VM1		1989	12	02.12153	02	38	12.82	+03	37	16.3		4 809
1989	VM1		1989	12	02.13472	02	38	12.39	+03	37	18.6		4 809
1989	VP1		1989	12	02.10833	02	42	29.97	+01	20	48.5		4 809
1989	VP1		1989	12	02.12153	02	42	29.42	+01	20	45.0		4 809
1989	VP1		1989	12	02.13472	02	42	28.87	+01	20	41.7		4 809
1989	VP1		1989	12	03.13611	02	41	54.86	+01	16	32.7	18.5	4 809
1989	VP1		1989	12	03.14931	02	41	54.32	+01	16	29.6		4 809
1989	VP1		1989	12	03.16250	02	41	53.79	+01	16	26.4		4 809

1989	VQ1		1989	12	02.10833	02	39	47.29	+03	40	12.0		4 809
1989	VQ1		1989	12	02.12153	02	39	46.77	+03	40	10.8		4 809
1989	VQ1		1989	12	02.13472	02	39	46.25	+03	40	10.1		4 809
1989	VQ1		1989	12	03.13611	02	39	05.55	+03	39	31.8	19.8	4 809
1989	VQ1		1989	12	03.14931	02	39	05.01	+03	39	31.4		4 809
1989	VQ1		1989	12	03.16250	02	39	04.48	+03	39	30.9		4 809
1989	VR1		1989	12	02.10833	02	39	36.43	+03	53	53.9		4 809
1989	VR1		1989	12	02.12153	02	39	35.85	+03	53	53.4		4 809
1989	VR1		1989	12	02.13472	02	39	35.33	+03	53	52.4		4 809
1989	VR1		1989	12	03.13611	02	38	58.38	+03	53	40.5	18.0	4 809
1989	VR1		1989	12	03.14931	02	38	57.90	+03	53	40.8		4 809
1989	VR1		1989	12	03.16250	02	38	57.31	+03	53	40.1		4 809
1989	XQ	*	1989	12	02.10833	02	35	13.22	+00	24	22.3		4 809
1989	XQ		1989	12	02.12153	02	35	12.16	+00	24	30.7		4 809
1989	XQ		1989	12	02.13472	02	35	11.15	+00	24	39.1		4 809
1989	XQ		1989	12	03.13611	02	34	00.14	+00	35	46.7	17.5	4 809
1989	XQ		1989	12	03.14931	02	33	59.18	+00	35	55.4		4 809
1989	XQ		1989	12	03.16250	02	33	58.21	+00	36	03.6		4 809
1989	XT	*	1989	12	02.10833	02	23	29.70	+03	41	27.5		4 809
1989	XT		1989	12	02.12153	02	23	29.21	+03	41	26.7		4 809
1989	XT		1989	12	02.13472	02	23	28.76	+03	41	25.2		4 809
1989	XT		1989	12	03.13611	02	22	58.75	+03	40	51.8	19.0	4 809
1989	XT		1989	12	03.14931	02	22	58.31	+03	40	51.4		4 809
1989	XT		1989	12	03.16250	02	22	57.93	+03	40	50.3		4 809
1989	XU	*	1989	12	02.10833	02	23	56.76	+03	38	50.9		4 809
1989	XU		1989	12	02.12153	02	23	56.51	+03	38	46.5		4 809
1989	XU		1989	12	02.13472	02	23	56.31	+03	38	41.9		4 809
1989	XU		1989	12	03.13611	02	23	43.39	+03	33	14.7	18.5	4 809
1989	XU		1989	12	03.14931	02	23	43.14	+03	33	10.3		4 809
1989	XU		1989	12	03.16250	02	23	42.97	+03	33	06.0		4 809
1989	XV	*	1989	12	02.10833	02	24	01.38	+04	40	11.2		4 809
1989	XV		1989	12	02.12153	02	24	00.98	+04	40	12.6		4 809
1989	XV		1989	12	02.13472	02	24	00.53	+04	40	14.2		4 809
1989	XV		1989	12	03.13611	02	24	03.58	+04	21	45.6	20.0	4 809
1989	XV		1989	12	03.14931	02	24	03.08	+04	21	45.8		4 809
1989	XV		1989	12	03.16250	02	24	02.55	+04	21	45.4		4 809
1989	XW	*	1989	12	02.10833	02	24	17.77	+02	43	27.1		4 809
1989	XW		1989	12	02.12153	02	24	17.24	+02	43	29.2		4 809
1989	XW		1989	12	02.13472	02	24	16.61	+02	43	30.1		4 809
1989	XW		1989	12	03.13611	02	23	40.12	+02	45	50.0	19.0	4 809
1989	XW		1989	12	03.14931	02	23	39.57	+02	45	51.2		4 809
1989	XW		1989	12	03.16250	02	23	39.02	+02	45	52.8		4 809
1989	XX	*	1989	12	02.10833	02	24	44.83	+03	25	47.4		4 809
1989	XX		1989	12	02.12153	02	24	44.53	+03	25	44.6		4 809
1989	XX		1989	12	02.13472	02	24	44.17	+03	25	41.2		4 809
1989	XX		1989	12	03.13611	02	24	24.28	+03	22	32.2	18.6	4 809
1989	XX		1989	12	03.14931	02	24	23.94	+03	22	29.2		4 809
1989	XX		1989	12	03.16250	02	24	23.59	+03	22	26.2		4 809
1989	XY	*	1989	12	02.10833	02	25	00.70	+04	51	23.4		4 809
1989	XY		1989	12	02.12153	02	25	00.21	+04	51	23.8		4 809
1989	XY		1989	12	02.13472	02	24	59.75	+04	51	24.6		4 809
1989	XY		1989	12	03.13611	02	24	29.59	+04	52	52.1	18.2	4 809
1989	XY		1989	12	03.14931	02	24	29.13	+04	52	53.4		4 809
1989	XY		1989	12	03.16250	02	24	28.66	+04	52	54.4		4 809
1989	XZ	*	1989	12	02.10833	02	25	04.00	+02	41	54.8		4 809
1989	XZ		1989	12	02.12153	02	25	03.62	+02	41	53.6		4 809
1989	XZ		1989	12	02.13472	02	25	03.26	+02	41	51.1		4 809
1989	XZ		1989	12	03.13611	02	24	36.82	+02	40	13.5	19.2	4 809
1989	XZ		1989	12	03.14931	02	24	36.37	+02	40	12.0		4 809

1989	XZ		1989	12	03.16250	02	24	35.96	+02	40	09.5	4 809
1989	XA1	*	1989	12	02.10833	02	25	32.41	+02	40	07.3	4 809
1989	XA1		1989	12	02.12153	02	25	31.82	+02	40	09.2	4 809
1989	XA1		1989	12	02.13472	02	25	31.31	+02	40	10.4	4 809
1989	XA1		1989	12	03.13611	02	24	54.83	+02	42	05.1	20.0 4 809
1989	XA1		1989	12	03.14931	02	24	54.28	+02	42	07.5	4 809
1989	XA1		1989	12	03.16250	02	24	53.79	+02	42	08.2	4 809
1989	XB1	*	1989	12	02.10833	02	25	42.65	+03	12	42.4	4 809
1989	XB1		1989	12	02.12153	02	25	42.13	+03	12	45.2	4 809
1989	XB1		1989	12	02.13472	02	25	41.59	+03	12	47.1	4 809
1989	XB1		1989	12	03.13611	02	25	06.91	+03	16	05.0	18.5 4 809
1989	XB1		1989	12	03.14931	02	25	06.43	+03	16	08.8	4 809
1989	XB1		1989	12	03.16250	02	25	05.90	+03	16	10.6	4 809
1989	XC1		1989	11	06.24931	02	46	16.19	+02	30	40.4	17.0 4 809
1989	XC1		1989	11	06.26250	02	46	15.34	+02	30	38.5	4 809
1989	XC1		1989	11	06.27569	02	46	14.62	+02	30	37.0	4 809
1989	XC1	*	1989	12	02.10833	02	26	10.85	+02	46	28.4	4 809
1989	XC1		1989	12	02.12153	02	26	10.38	+02	46	30.9	4 809
1989	XC1		1989	12	02.13472	02	26	09.90	+02	46	33.1	4 809
1989	XC1		1989	12	03.13611	02	25	39.04	+02	49	38.4	16.8 4 809
1989	XC1		1989	12	03.14931	02	25	38.58	+02	49	41.1	4 809
1989	XC1		1989	12	03.16250	02	25	38.11	+02	49	43.3	4 809
1989	XD1		1989	11	03.25556	02	49	08.40	+06	18	21.9	17.4 4 809
1989	XD1		1989	11	03.26875	02	49	07.59	+06	18	18.3	4 809
1989	XD1		1989	11	03.28194	02	49	06.78	+06	18	13.4	4 809
1989	XD1	*	1989	12	02.10833	02	27	09.12	+05	06	25.2	4 809
1989	XD1		1989	12	02.12153	02	27	08.75	+05	06	26.9	4 809
1989	XD1		1989	12	02.13472	02	27	08.39	+05	06	27.0	4 809
1989	XD1		1989	12	03.13611	02	26	45.20	+05	07	33.6	18.3 4 809
1989	XD1		1989	12	03.14931	02	26	44.84	+05	07	34.0	4 809
1989	XD1		1989	12	03.16250	02	26	44.51	+05	07	34.8	4 809
1989	XE1	*	1989	12	02.10833	02	27	41.61	+00	39	01.7	4 809
1989	XE1		1989	12	02.12153	02	27	41.26	+00	39	06.1	4 809
1989	XE1		1989	12	02.13472	02	27	40.90	+00	39	09.3	4 809
1989	XE1		1989	12	03.13611	02	27	20.27	+00	44	36.4	18.5 4 809
1989	XE1		1989	12	03.14931	02	27	19.94	+00	44	40.8	4 809
1989	XE1		1989	12	03.16250	02	27	19.65	+00	44	44.6	4 809
1989	XF1	*	1989	12	02.10833	02	28	53.42	+03	18	11.6	4 809
1989	XF1		1989	12	02.12153	02	28	52.78	+03	18	14.0	4 809
1989	XF1		1989	12	02.13472	02	28	52.15	+03	18	15.4	4 809
1989	XF1		1989	12	03.13611	02	28	14.09	+03	19	53.2	19.5 4 809
1989	XF1		1989	12	03.14931	02	28	13.57	+03	19	56.0	4 809
1989	XF1		1989	12	03.16250	02	28	13.00	+03	19	57.1	4 809
1989	XG1	*	1989	12	02.10833	02	31	45.75	+02	30	50.5	4 809
1989	XG1		1989	12	02.12153	02	31	45.25	+02	30	50.1	4 809
1989	XG1		1989	12	02.13472	02	31	44.65	+02	30	49.0	4 809
1989	XG1		1989	12	03.13611	02	31	08.80	+02	30	40.2	19.6 4 809
1989	XG1		1989	12	03.14931	02	31	08.33	+02	30	40.1	4 809
1989	XG1		1989	12	03.16250	02	31	07.81	+02	30	39.6	4 809
1989	XH1	*	1989	12	02.10833	02	32	12.81	+03	45	50.5	4 809
1989	XH1		1989	12	02.12153	02	32	12.29	+03	45	52.3	4 809
1989	XH1		1989	12	02.13472	02	32	11.70	+03	45	56.0	4 809
1989	XH1		1989	12	03.13611	02	31	34.87	+03	48	54.1	19.5 4 809
1989	XH1		1989	12	03.14931	02	31	34.43	+03	48	57.0	4 809
1989	XH1		1989	12	03.16250	02	31	33.87	+03	48	59.7	4 809
1989	XJ1	*	1989	12	02.10833	02	32	24.63	+03	09	55.3	20.0 4 809
1989	XJ1		1989	12	02.12153	02	32	24.08	+03	09	52.4	4 809
1989	XJ1		1989	12	02.13472	02	32	23.66	+03	09	49.9	4 809
1989	XJ1		1989	12	03.13611	02	31	20.09	+03	06	02.8	20.0 4 809

1989	XJ1		1989	12	03.14931	02	31	19.53	+03	05	59.1		4 809
1989	XJ1		1989	12	03.16250	02	31	18.85	+03	05	54.8		4 809
1989	XK1	*	1989	12	02.10833	02	33	10.30	+03	11	51.6		4 809
1989	XK1		1989	12	02.12153	02	33	09.99	+03	11	53.2		4 809
1989	XK1		1989	12	02.13472	02	33	09.65	+03	11	55.8		4 809
1989	XK1		1989	12	03.13611	02	32	49.13	+03	14	59.7	19.0	4 809
1989	XK1		1989	12	03.14931	02	32	48.82	+03	15	01.5		4 809
1989	XK1		1989	12	03.16250	02	32	48.51	+03	15	02.9		4 809
1989	XL1	*	1989	12	02.10833	02	33	14.08	+03	07	11.5		4 809
1989	XL1		1989	12	02.12153	02	33	13.51	+03	07	12.3		4 809
1989	XL1		1989	12	02.13472	02	33	12.94	+03	07	12.6		4 809
1989	XL1		1989	12	03.13611	02	32	36.31	+03	08	09.7	18.7	4 809
1989	XL1		1989	12	03.14931	02	32	35.75	+03	08	09.3		4 809
1989	XL1		1989	12	03.16250	02	32	35.29	+03	08	09.7		4 809
1989	XM1	*	1989	12	02.10833	02	33	30.81	+01	11	15.7		4 809
1989	XM1		1989	12	02.12153	02	33	30.32	+01	11	21.9		4 809
1989	XM1		1989	12	02.13472	02	33	29.71	+01	11	27.9		4 809
1989	XM1		1989	12	03.13611	02	32	54.82	+01	19	26.9	17.7	4 809
1989	XM1		1989	12	03.14931	02	32	54.35	+01	19	33.6		4 809
1989	XM1		1989	12	03.16250	02	32	53.82	+01	19	38.8		4 809
1989	XN1		1989	11	06.24931	02	57	28.38	+01	51	21.8	18.0	4 809
1989	XN1		1989	11	06.26250	02	57	27.57	+01	51	24.1		4 809
1989	XN1		1989	11	06.27569	02	57	26.67	+01	51	24.6		4 809
1989	XN1	*	1989	12	02.10833	02	33	56.08	+03	26	00.3		4 809
1989	XN1		1989	12	02.12153	02	33	55.49	+03	26	04.9		4 809
1989	XN1		1989	12	02.13472	02	33	54.88	+03	26	08.9		4 809
1989	XN1		1989	12	03.13611	02	33	14.13	+03	31	59.1	17.7	4 809
1989	XN1		1989	12	03.14931	02	33	13.53	+03	32	03.9		4 809
1989	XN1		1989	12	03.16250	02	33	13.02	+03	32	08.3		4 809
1989	XO1	*	1989	12	02.10833	02	33	56.25	+04	30	25.9		4 809
1989	XO1		1989	12	02.12153	02	33	55.67	+04	30	26.3		4 809
1989	XO1		1989	12	02.13472	02	33	55.10	+04	30	24.4		4 809
1989	XO1		1989	12	03.13611	02	33	17.88	+04	29	57.2	18.6	4 809
1989	XO1		1989	12	03.14931	02	33	17.34	+04	29	55.6		4 809
1989	XO1		1989	12	03.16250	02	33	16.76	+04	29	54.9		4 809
1989	XP1	*	1989	12	02.10833	02	34	15.23	+02	40	22.5		4 809
1989	XP1		1989	12	02.12153	02	34	14.78	+02	40	29.3		4 809
1989	XP1		1989	12	02.13472	02	34	14.24	+02	40	34.9		4 809
1989	XP1		1989	12	03.13611	02	33	41.95	+02	48	49.6	17.9	4 809
1989	XP1		1989	12	03.14931	02	33	41.48	+02	48	56.0		4 809
1989	XP1		1989	12	03.16250	02	33	41.04	+02	49	02.0		4 809
1989	XQ1	*	1989	12	02.10833	02	34	54.32	+01	24	46.2		4 809
1989	XQ1		1989	12	02.12153	02	34	53.94	+01	24	46.0		4 809
1989	XQ1		1989	12	02.13472	02	34	53.48	+01	24	46.1		4 809
1989	XQ1		1989	12	03.13611	02	34	24.34	+01	25	09.4	20.0	4 809
1989	XQ1		1989	12	03.14931	02	34	23.91	+01	25	09.6		4 809
1989	XQ1		1989	12	03.16250	02	34	23.43	+01	25	09.7		4 809
1989	XR1		1989	11	06.24931	02	54	50.71	+02	09	08.1	17.7	4 809
1989	XR1		1989	11	06.26250	02	54	49.95	+02	09	06.1		4 809
1989	XR1		1989	11	06.27569	02	54	49.22	+02	09	05.5		4 809
1989	XR1	*	1989	12	02.10833	02	35	32.62	+02	35	47.9		4 809
1989	XR1		1989	12	02.12153	02	35	32.23	+02	35	51.2		4 809
1989	XR1		1989	12	02.13472	02	35	31.77	+02	35	53.1		4 809
1989	XR1		1989	12	03.13611	02	35	03.17	+02	39	47.1	18.0	4 809
1989	XR1		1989	12	03.14931	02	35	02.79	+02	39	50.0		4 809
1989	XR1		1989	12	03.16250	02	35	02.33	+02	39	52.6		4 809
1989	XS1	*	1989	12	02.10833	02	35	41.28	+00	22	15.1		4 809
1989	XS1		1989	12	02.12153	02	35	40.76	+00	22	16.0		4 809
1989	XS1		1989	12	02.13472	02	35	40.22	+00	22	16.7		4 809

1989	XS1		1989	12	03.13611	02	35	05.21	+00	23	47.0	18.0	4	809
1989	XS1		1989	12	03.14931	02	35	04.68	+00	23	48.9		4	809
1989	XS1		1989	12	03.16250	02	35	04.14	+00	23	50.0		4	809
1989	XT1	*	1989	12	02.10833	02	36	58.34	+03	01	43.5		4	809
1989	XT1		1989	12	02.12153	02	36	57.78	+03	01	50.5		4	809
1989	XT1		1989	12	02.13472	02	36	57.30	+03	01	57.7		4	809
1989	XT1		1989	12	03.13611	02	36	23.18	+03	11	18.6	17.7	4	809
1989	XT1		1989	12	03.14931	02	36	22.68	+03	11	25.5		4	809
1989	XT1		1989	12	03.16250	02	36	22.21	+03	11	33.0		4	809
1989	XU1	*	1989	12	02.10833	02	37	05.71	+02	30	14.3		4	809
1989	XU1		1989	12	02.12153	02	37	05.40	+02	30	12.9		4	809
1989	XU1		1989	12	02.13472	02	37	04.82	+02	30	09.7		4	809
1989	XU1		1989	12	03.13611	02	36	14.56	+02	27	23.2	20.5	4	809
1989	XU1		1989	12	03.14931	02	36	14.02	+02	27	22.0		4	809
1989	XU1		1989	12	03.16250	02	36	13.52	+02	27	20.5		4	809
1989	XV1	*	1989	12	02.10833	02	37	55.19	+02	17	43.5		4	809
1989	XV1		1989	12	02.12153	02	37	54.82	+02	17	42.8		4	809
1989	XV1		1989	12	02.13472	02	37	54.42	+02	17	42.0		4	809
1989	XV1		1989	12	03.13611	02	37	08.44	+02	17	08.9	20.0	4	809
1989	XV1		1989	12	03.14931	02	37	08.01	+02	17	08.5		4	809
1989	XV1		1989	12	03.16250	02	37	07.71	+02	17	08.2		4	809
1989	XW1		1989	11	06.24931	02	55	47.61	+03	37	16.0	18.0	4	809
1989	XW1		1989	11	06.26250	02	55	46.89	+03	37	12.0		4	809
1989	XW1		1989	11	06.27569	02	55	46.34	+03	37	07.6		4	809
1989	XW1	*	1989	12	02.10833	02	38	02.43	+02	03	06.7		4	809
1989	XW1		1989	12	02.12153	02	38	02.01	+02	03	05.8		4	809
1989	XW1		1989	12	02.13472	02	38	01.55	+02	03	05.0		4	809
1989	XW1		1989	12	03.13611	02	37	31.69	+02	01	54.8	18.0	4	809
1989	XW1		1989	12	03.14931	02	37	31.21	+02	01	54.0		4	809
1989	XW1		1989	12	03.16250	02	37	30.75	+02	01	52.6		4	809
1989	XX1	*	1989	12	02.10833	02	38	30.70	+02	18	46.1		4	809
1989	XX1		1989	12	02.12153	02	38	30.30	+02	18	45.2		4	809
1989	XX1		1989	12	02.13472	02	38	29.84	+02	18	43.9		4	809
1989	XX1		1989	12	03.13611	02	37	58.57	+02	17	33.2	19.7	4	809
1989	XX1		1989	12	03.14931	02	37	58.11	+02	17	32.1		4	809
1989	XX1		1989	12	03.16250	02	37	57.73	+02	17	31.0		4	809
1989	XY1	*	1989	12	02.10833	02	38	31.92	+00	28	17.2		4	809
1989	XY1		1989	12	02.12153	02	38	31.22	+00	28	24.6		4	809
1989	XY1		1989	12	02.13472	02	38	30.52	+00	28	31.2		4	809
1989	XY1		1989	12	03.13611	02	37	45.89	+00	37	16.8	18.5	4	809
1989	XY1		1989	12	03.14931	02	37	45.20	+00	37	24.1		4	809
1989	XY1		1989	12	03.16250	02	37	44.54	+00	37	30.8		4	809
1989	XZ1	*	1989	12	02.10833	02	38	44.25	+01	16	26.5		4	809
1989	XZ1		1989	12	02.12153	02	38	43.68	+01	16	29.8		4	809
1989	XZ1		1989	12	02.13472	02	38	43.13	+01	16	33.1		4	809
1989	XZ1		1989	12	03.13611	02	38	05.77	+01	21	13.6	18.7	4	809
1989	XZ1		1989	12	03.14931	02	38	05.31	+01	21	16.7		4	809
1989	XZ1		1989	12	03.16250	02	38	04.81	+01	21	20.1		4	809
1989	XA2	*	1989	12	02.10833	02	39	02.42	+02	57	28.6		4	809
1989	XA2		1989	12	02.12153	02	39	01.84	+02	57	31.0		4	809
1989	XA2		1989	12	02.13472	02	39	01.24	+02	57	33.1		4	809
1989	XA2		1989	12	03.13611	02	38	16.64	+03	00	31.0	18.8	4	809
1989	XA2		1989	12	03.14931	02	38	16.05	+03	00	32.6		4	809
1989	XA2		1989	12	03.16250	02	38	15.40	+03	00	37.1		4	809
1989	XB2	*	1989	12	02.10833	02	39	22.30	+04	09	44.0		4	809
1989	XB2		1989	12	02.12153	02	39	21.69	+04	09	43.2		4	809
1989	XB2		1989	12	02.13472	02	39	21.07	+04	09	42.3		4	809
1989	XB2		1989	12	03.13611	02	38	39.33	+04	08	50.2	18.5	4	809
1989	XB2		1989	12	03.14931	02	38	38.82	+04	08	48.8		4	809

1989	XB2		1989	12	03.16250	02	38	38.17	+04	08	48.7	4 809
1989	XC2	*	1989	12	02.10833	02	39	51.70	+03	28	47.5	4 809
1989	XC2		1989	12	02.12153	02	39	51.30	+03	28	50.9	4 809
1989	XC2		1989	12	02.13472	02	39	50.84	+03	28	53.5	4 809
1989	XC2		1989	12	03.13611	02	39	27.57	+03	32	26.1	19.0 4 809
1989	XC2		1989	12	03.14931	02	39	27.24	+03	32	27.7	4 809
1989	XC2		1989	12	03.16250	02	39	26.97	+03	32	31.0	4 809
1989	XD2		1989	11	06.24931	02	59	57.68	+02	54	37.1	17.6 4 809
1989	XD2		1989	11	06.26250	02	59	56.92	+02	54	34.9	4 809
1989	XD2		1989	11	06.27569	02	59	56.20	+02	54	33.7	4 809
1989	XD2	*	1989	12	02.10833	02	40	54.81	+03	02	56.3	4 809
1989	XD2		1989	12	02.12153	02	40	54.37	+03	02	59.7	4 809
1989	XD2		1989	12	02.13472	02	40	53.91	+03	03	01.6	4 809
1989	XD2		1989	12	03.13611	02	40	26.38	+03	06	27.7	17.7 4 809
1989	XD2		1989	12	03.14931	02	40	25.95	+03	06	30.0	4 809
1989	XD2		1989	12	03.16250	02	40	25.52	+03	06	32.7	4 809
1989	XE2	*	1989	12	02.10833	02	41	13.03	+00	42	53.2	4 809
1989	XE2		1989	12	02.12153	02	41	12.51	+00	42	57.8	4 809
1989	XE2		1989	12	02.13472	02	41	11.91	+00	43	02.3	4 809
1989	XE2		1989	12	03.13611	02	40	32.41	+00	49	11.1	18.6 4 809
1989	XE2		1989	12	03.14931	02	40	31.86	+00	49	15.8	4 809
1989	XE2		1989	12	03.16250	02	40	31.32	+00	49	20.7	4 809
1989	XF2	*	1989	12	02.10833	02	42	57.98	+02	53	15.8	4 809
1989	XF2		1989	12	02.12153	02	42	57.47	+02	53	15.9	4 809
1989	XF2		1989	12	02.13472	02	42	56.89	+02	53	15.7	4 809
1989	XF2		1989	12	03.13611	02	42	23.85	+02	53	35.0	19.0 4 809
1989	XF2		1989	12	03.14931	02	42	23.32	+02	53	35.2	4 809
1989	XF2		1989	12	03.16250	02	42	22.83	+02	53	35.1	4 809
197			1989	11	03.25556	03	03	47.95	+08	10	46.4	14.0 4 809
197			1989	11	03.26875	03	03	47.09	+08	10	45.8	4 809
197			1989	11	03.28194	03	03	46.27	+08	10	44.7	4 809
260			1989	11	03.25556	02	55	08.97	+08	35	44.6	14.0 4 809
260			1989	11	03.26875	02	55	08.24	+08	35	40.9	4 809
260			1989	11	03.28194	02	55	07.60	+08	35	37.2	4 809
269			1989	11	03.25556	02	55	13.76	+08	43	16.8	14.0 4 809
269			1989	11	03.26875	02	55	12.99	+08	43	11.6	4 809
269			1989	11	03.28194	02	55	12.17	+08	43	09.2	4 809
688			1989	10	07.21944	01	10	36.65	-00	10	06.8	16.5 4 809
688			1989	10	07.23264	01	10	36.03	-00	10	14.4	4 809
688			1989	10	07.24583	01	10	35.34	-00	10	21.6	4 809
688			1989	10	08.24931	01	09	49.31	-00	19	27.5	16.0 4 809
688			1989	10	08.26250	01	09	48.64	-00	19	35.1	4 809
688			1989	10	08.27569	01	09	47.98	-00	19	42.7	4 809
1075			1989	12	02.10833	02	30	45.58	+00	35	55.4	4 809
1075			1989	12	02.12153	02	30	45.05	+00	35	57.6	4 809
1075			1989	12	02.13472	02	30	44.53	+00	36	00.0	4 809
1075			1989	12	03.13611	02	30	11.95	+00	39	05.6	16.8 4 809
1075			1989	12	03.14931	02	30	11.49	+00	39	08.2	4 809
1075			1989	12	03.16250	02	30	11.02	+00	39	10.4	4 809
1517			1989	10	07.21944	01	15	27.59	+01	19	22.9	17.0 4 809
1517			1989	10	07.23264	01	15	26.84	+01	19	19.8	4 809
1517			1989	10	07.24583	01	15	26.05	+01	19	17.4	4 809
1517			1989	10	08.24931	01	14	33.85	+01	15	15.1	17.0 4 809
1517			1989	10	08.26250	01	14	33.10	+01	15	12.2	4 809
1517			1989	10	08.27569	01	14	32.38	+01	15	08.8	4 809
1805			1989	10	07.26181	01	26	07.87	+05	46	20.7	17.5 4 809
1805			1989	10	07.27500	01	26	07.28	+05	46	17.6	4 809
1805			1989	10	07.28819	01	26	06.65	+05	46	14.2	4 809
1805			1989	10	08.29167	01	25	22.70	+05	42	03.3	17.5 4 809

1805	1989	10	08.30486	01	25	22.10	+05	42	00.5		4 809
1805	1989	10	08.31806	01	25	21.53	+05	41	56.8		4 809
1871	1989	10	07.21944	01	11	30.14	-01	15	07.4	18.9	4 809
1871	1989	10	07.23264	01	11	29.73	-01	15	10.2		4 809
1871	1989	10	07.24583	01	11	29.30	-01	15	12.9		4 809
1871	1989	10	08.24931	01	11	01.56	-01	18	44.3	18.6	4 809
1871	1989	10	08.26250	01	11	01.14	-01	18	47.9		4 809
1871	1989	10	08.27569	01	11	00.73	-01	18	51.1		4 809
2031	1989	10	08.24931	01	15	30.89	+02	51	15.1	16.0	4 809
2031	1989	10	08.26250	01	15	30.14	+02	51	07.1		4 809
2031	1989	10	08.27569	01	15	29.55	+02	50	59.9		4 809
2288	1989	12	02.10833	02	26	02.69	+03	37	50.7		4 809
2288	1989	12	02.12153	02	26	02.11	+03	37	52.7		4 809
2288	1989	12	02.13472	02	26	01.58	+03	37	53.6		4 809
2288	1989	12	03.13611	02	25	22.95	+03	40	00.4	16.7	4 809
2288	1989	12	03.14931	02	25	22.43	+03	40	01.4		4 809
2288	1989	12	03.16250	02	25	21.86	+03	40	03.1		4 809
2400	1989	11	03.25556	03	03	53.68	+04	40	07.6	17.4	4 809
2400	1989	11	03.26875	03	03	52.92	+04	40	03.5		4 809
2400	1989	11	03.28194	03	03	52.19	+04	39	58.7		4 809
2400	1989	11	06.24931	03	01	33.04	+04	23	48.5	17.6	4 809
2400	1989	11	06.26250	03	01	32.36	+04	23	44.6		4 809
2400	1989	11	06.27569	03	01	31.78	+04	23	40.8		4 809
2400	1989	12	02.10833	02	43	06.24	+02	50	32.0		4 809
2400	1989	12	02.12153	02	43	05.74	+02	50	31.9		4 809
2400	1989	12	02.13472	02	43	05.26	+02	50	29.9		4 809
2400	1989	12	03.13611	02	42	32.55	+02	48	59.0	18.0	4 809
2400	1989	12	03.14931	02	42	32.12	+02	48	57.6		4 809
2400	1989	12	03.16250	02	42	31.65	+02	48	56.7		4 809
2410	1989	10	07.26181	01	32	13.37	+05	23	10.8	16.8	4 809
2410	1989	10	07.27500	01	32	12.61	+05	23	06.1		4 809
2410	1989	10	07.28819	01	32	11.79	+05	23	01.3		4 809
2410	1989	10	08.29167	01	31	14.13	+05	16	38.6	17.2	4 809
2410	1989	10	08.30486	01	31	13.34	+05	16	33.6		4 809
2410	1989	10	08.31806	01	31	12.50	+05	16	28.5		4 809
2560	1989	10	07.26181	01	34	28.11	+02	00	04.9	17.3	4 809
2560	1989	10	07.27500	01	34	27.43	+01	59	59.7		4 809
2560	1989	10	07.28819	01	34	26.76	+01	59	54.5		4 809
2560	1989	10	08.29167	01	33	40.73	+01	53	21.7	17.5	4 809
2560	1989	10	08.30486	01	33	40.06	+01	53	16.5		4 809
2560	1989	10	08.31806	01	33	39.39	+01	53	12.1		4 809
2567	1989	12	02.10833	02	24	27.31	+00	17	43.4		4 809
2567	1989	12	02.12153	02	24	26.85	+00	17	44.9		4 809
2567	1989	12	02.13472	02	24	26.39	+00	17	45.0		4 809
2567	1989	12	03.13611	02	23	58.72	+00	18	59.0	17.2	4 809
2567	1989	12	03.14931	02	23	58.30	+00	19	00.0		4 809
2567	1989	12	03.16250	02	23	57.87	+00	19	00.6		4 809
2688	1989	10	07.21944	01	13	12.93	+02	23	19.7	17.6	4 809
2688	1989	10	07.23264	01	13	12.30	+02	23	16.5		4 809
2688	1989	10	07.24583	01	13	11.65	+02	23	12.1		4 809
2688	1989	10	08.24931	01	12	26.22	+02	18	39.6	17.5	4 809
2688	1989	10	08.26250	01	12	25.60	+02	18	35.5		4 809
2688	1989	10	08.27569	01	12	25.00	+02	18	32.5		4 809
2778	1989	10	07.21944	01	13	01.36	-01	54	36.5	16.8	4 809
2778	1989	10	07.23264	01	13	00.57	-01	54	40.4		4 809
2778	1989	10	07.24583	01	12	59.71	-01	54	44.3		4 809
2778	1989	10	08.24931	01	12	04.09	-01	59	42.3	17.5	4 809
2778	1989	10	08.26250	01	12	03.30	-01	59	45.9		4 809

2778		1989	10	08.27569	01	12	02.55	-01	59	49.3	4 809
3105		1989	12	02.10833	02	37	54.86	+03	21	14.4	4 809
3105		1989	12	02.12153	02	37	54.38	+03	21	16.2	4 809
3105		1989	12	02.13472	02	37	53.87	+03	21	17.0	4 809
3105		1989	12	03.13611	02	37	22.41	+03	23	13.2	17.0 4 809
3105		1989	12	03.14931	02	37	21.94	+03	23	14.6	4 809
3105		1989	12	03.16250	02	37	21.43	+03	23	16.6	4 809
3570		1989	11	03.25556	02	57	02.57	+04	52	46.0	17.0 4 809
3570		1989	11	03.26875	02	57	01.80	+04	52	44.9	4 809
3570		1989	11	03.28194	02	57	01.08	+04	52	42.8	4 809
3570		1989	11	06.24931	02	54	27.13	+04	48	40.8	17.2 4 809
3570		1989	11	06.26250	02	54	26.41	+04	48	39.8	4 809
3570		1989	11	06.27569	02	54	25.69	+04	48	39.2	4 809
3570		1989	12	02.10833	02	34	17.84	+04	52	43.7	4 809
3570		1989	12	02.12153	02	34	17.38	+04	52	45.4	4 809
3570		1989	12	02.13472	02	34	16.83	+04	52	46.6	4 809
3570		1989	12	03.13611	02	33	40.94	+04	54	32.9	18.8 4 809
3570		1989	12	03.14931	02	33	40.45	+04	54	34.4	4 809
3570		1989	12	03.16250	02	33	39.92	+04	54	35.9	4 809
3650		1989	10	07.21944	01	25	03.03	-00	11	14.9	17.3 4 809
3650		1989	10	07.23264	01	25	02.25	-00	11	14.2	4 809
3650		1989	10	07.24583	01	25	01.42	-00	11	14.6	4 809
4265		1989	10	08.24931	01	29	29.98	+00	20	53.2	17.4 4 809
4265		1989	10	08.26250	01	29	29.29	+00	20	48.5	4 809
4265		1989	10	08.27569	01	29	28.62	+00	20	43.7	4 809
4273		1989	10	07.21944	01	16	48.66	+01	32	36.6	17.3 4 809
4273		1989	10	07.23264	01	16	47.96	+01	32	31.1	4 809
4273		1989	10	07.24583	01	16	47.27	+01	32	26.7	4 809
4273		1989	10	08.24931	01	16	00.80	+01	26	26.7	17.2 4 809
4273		1989	10	08.26250	01	16	00.12	+01	26	22.1	4 809
4273		1989	10	08.27569	01	15	59.48	+01	26	17.7	4 809

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

1990 BN	*	1990	01	21.58900	08	46	30.21	+10	43	58.3	16.5 875
1990 BN		1990	01	21.60972	08	46	29.09	+10	44	07.5	875
1990 BN		1990	01	24.55845	08	44	03.16	+11	04	20.3	16 875
1990 BN		1990	01	24.57708	08	44	02.17	+11	04	26.4	875
1990 BR	*	1990	01	21.62650	09	21	21.57	+22	55	37.8	17.5 875
1990 BR		1990	01	21.64583	09	21	20.81	+22	55	50.5	875
1990 BR		1990	01	25.61528	09	19	09.80	+23	30	58.1	17.5 875
1990 BS	*	1990	01	21.62650	09	23	57.41	+21	00	44.0	16.5 875
1990 BS		1990	01	21.64583	09	23	56.09	+21	00	51.4	875
1990 BS		1990	01	24.62569	09	20	53.81	+21	17	55.2	16.5 875
1990 BS		1990	01	24.65104	09	20	52.72	+21	18	01.5	875
1990 BU	*	1990	01	21.66354	09	36	57.14	+17	18	29.7	16.5 875
1990 BU		1990	01	21.68403	09	36	55.96	+17	18	30.9	875
1990 BU		1990	01	24.59525	09	34	11.11	+17	22	47.6	16.5 875
1990 BU		1990	01	24.61458	09	34	09.90	+17	22	51.2	875
4291		1989	11	24.50567	02	46	51.87	+21	31	11.3	17 875
4291		1989	11	24.52292	02	46	51.06	+21	31	03.4	875
4293		1989	11	21.55208	04	57	17.75	+25	39	32.0	16 875
4293		1989	11	21.57361	04	57	16.56	+25	39	37.5	875
4293		1989	11	24.57743	04	54	26.95	+25	53	57.8	15.5 875
4293		1989	11	24.59549	04	54	25.84	+25	54	03.2	875

4293		1989 11 25.61331	04	53	25.81	+25	58	46.7	15.5	875
4293		1989 11 25.63194	04	53	24.64	+25	58	52.2		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

1983 GC2		1990 01 21.58854	08	47	12.17	+21	47	30.2	17.0	877
1983 GC2		1990 01 21.61632	08	47	10.29	+21	47	39.7		877
1983 GC2		1990 01 24.57882	08	44	03.37	+22	01	45.8		877
1983 GC2		1990 01 24.60590	08	44	01.53	+22	01	54.6		877
1989 WL		1989 12 30.48090	03	22	17.16	+17	05	28.8	17.0	877
1989 WL		1989 12 30.57419	03	22	16.33	+17	05	50.8		877
1989 WL		1990 01 14.43403	03	25	07.70	+18	18	44.2		877
1989 WL		1990 01 14.47396	03	25	08.80	+18	18	58.9		877
1990 AA	*	1990 01 03.77361	07	16	14.34	+33	24	34.1	16.5	877
1990 AA		1990 01 03.79583	07	16	12.52	+33	24	31.1		877
1990 AA		1990 01 04.77888	07	14	59.66	+33	22	26.5		877
1990 AA		1990 01 06.68229	07	12	38.50	+33	17	56.9		877
1990 AA		1990 01 06.70660	07	12	36.75	+33	17	52.9		877
1990 AA		1990 01 06.82882	07	12	27.34	+33	17	34.2		877
1990 AA		1990 01 08.71389	07	10	08.33	+33	12	34.2		877
1990 AA		1990 01 18.58363	06	58	33.52	+32	37	57.7	16.5	877
1990 AA		1990 01 18.60428	06	58	32.18	+32	37	50.0		877
1990 BT	*	1990 01 21.62951	08	50	30.17	+23	26	03.1	16.5	877
1990 BT		1990 01 21.69965	08	50	24.69	+23	26	03.3		877
1990 BT		1990 01 24.61910	08	46	51.82	+23	26	08.8		877
1990 BT		1990 01 24.64410	08	46	49.86	+23	26	10.5		877
1990 BV	*	1990 01 21.71635	08	51	17.30	+26	34	51.0	16.5	877
1990 BV		1990 01 21.73993	08	51	15.57	+26	35	05.5		877
1990 BV		1990 01 24.65799	08	48	10.83	+27	05	43.5		877
1990 BV		1990 01 24.68160	08	48	09.33	+27	05	56.6		877
2126		1990 01 18.58363	06	51	39.96	+32	15	43.2	16.5	877
2126		1990 01 18.60428	06	51	38.62	+32	15	37.8		877
2237		1989 12 29.46875	03	24	16.27	+15	55	06.0	16.0	877
2237		1989 12 29.54865	03	24	15.31	+15	55	11.4	16.0	877
2925		1989 11 29.56910	03	37	52.02	+17	44	22.3	17.0	877
2925		1989 11 29.59002	03	37	50.75	+17	44	15.2		877
3907		1989 12 21.62292	06	02	52.93	+27	28	32.7	16.0	877
3907		1989 12 21.64072	06	02	51.71	+27	28	29.9	16.0	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 02.60868	04	41	28.54	+13	30	31.1	15.5	881
1987 BJ		1989 11 02.62292	04	41	28.04	+13	30	27.5		881
1990 BB	*	1990 01 17.58090	08	07	03.87	+15	12	57.1	16	881
1990 BB		1990 01 17.60451	08	07	02.33	+15	12	54.4		881
1990 BB		1990 01 21.52535	08	02	58.80	+15	03	39.7	16	881
1990 BB		1990 01 21.54757	08	02	57.37	+15	03	37.1		881
2060		1989 12 19.53924	06	58	07.49	+15	27	57.9	17	881
2060		1989 12 19.56285	06	58	07.15	+15	27	58.1		881
2311		1989 12 19.53924	06	56	08.45	+15	17	38.9	16.5	881
2311		1989 12 19.56285	06	56	07.56	+15	17	39.6		881
2933		1989 12 18.56701	03	58	55.83	+11	36	46.3	16	881
2933		1989 12 18.59132	03	58	54.71	+11	36	49.5		881

883 Shizuoka
M. Kizawa, 1458-10, Minami Numagami, Shizuoka 420, Japan
Observer M. Kizawa
0.31-m f/6.4 reflector

2120		1989 11 17.51971	02 46 45.65	+13 57 56.0						883
2120		1989 11 17.54256	02 46 44.38	+13 57 46.1						883
2341		1989 11 17.51971	02 43 40.65	+13 58 24.3						883
2341		1989 11 17.54256	02 43 38.79	+13 58 23.5						883

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

1990 AD	*	1990 01 04.62014	07 43 39.65	+25 32 41.4				16.0		886
1990 AD		1990 01 04.63108	07 43 39.00	+25 32 46.0						886
1990 AD		1990 01 14.47951	07 34 30.63	+26 49 52.3						886
1990 AD		1990 01 14.48993	07 34 29.94	+26 49 46.9						886

887 Ojima
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		1990 01 01.51933	04 48 11.89	+14 45 02.0				16.5		887
1987 DQ		1990 01 01.53831	04 48 11.03	+14 45 04.8						887
1987 FA		1990 01 21.56563	07 23 43.14	+20 25 23.8				16		887
1987 FA		1990 01 21.58750	07 23 41.65	+20 25 26.1						887
1987 GD		1990 01 20.52894	06 00 57.34	+20 02 18.6				17		887
1987 GD		1990 01 20.54815	06 00 56.50	+20 02 21.8						887
1989 YR	*	1989 12 20.61042	06 28 29.06	+20 41 35.9				16.5		887
1989 YR		1989 12 20.62998	06 28 28.0	+20 41 38					M	887
1989 YR		1989 12 20.63796	06 28 27.13	+20 41 41.1						887
1989 YR		1990 01 01.57975	06 16 05.02	+21 17 03.8				16.5		887
1989 YR		1990 01 01.60590	06 16 03.34	+21 17 08.7						887
1989 YR		1990 01 14.43912	06 04 22.79	+21 55 03.7				16.5		887
1989 YR		1990 01 14.46516	06 04 21.55	+21 55 06.9						887
1989 YR		1990 01 20.49861	06 00 22.20	+22 11 59.6				16		887
1989 YR		1990 01 20.51956	06 00 21.51	+22 12 03.3						887
1989 YE1		1990 01 21.60243	08 20 50.9	+21 08 11				17	V	887
1989 YE1		1990 01 21.62813	08 20 48.7	+21 08 48					V	887
1989 YE1		1990 01 24.56285	08 17 34.68	+21 14 31.5				17		887
1989 YE1		1990 01 24.57350	08 17 34.01	+21 14 33.1						887
1990 BP	*	1990 01 21.60243	08 18 00.9	+20 45 43				17	V	887
1990 BP		1990 01 21.62813	08 17 59.1	+20 45 53					V	887
1990 BP		1990 01 24.56285	08 14 52.18	+21 03 44.3				17		887
1990 BP		1990 01 24.57350	08 14 51.64	+21 03 46.6						887
1990 BQ	*	1990 01 21.60243	08 19 39.0	+21 02 08				17	V	887
1990 BQ		1990 01 21.62813	08 19 37.7	+21 02 18					V	887
1990 BQ		1990 01 24.56285	08 16 57.30	+21 20 09.1				17		887
1990 BQ		1990 01 24.57350	08 16 56.79	+21 20 12.2						887
2843		1989 12 20.61042	06 31 29.57	+20 12 11.5				16		887
2843		1989 12 20.62998	06 31 28.33	+20 12 08.2						887
2843		1989 12 20.63796	06 31 27.73	+20 12 06.7						887
3428		1990 01 01.51933	04 46 37.41	+15 07 43.4				15.5		887
3428		1990 01 01.53831	04 46 36.55	+15 07 41.0						887
3615		1990 01 01.57975	06 15 53.34	+21 31 16.9				16.5		887
3615		1990 01 01.60590	06 15 51.87	+21 31 17.9						887

888 Gekko
Y. Oshima, Gekko Observatory, Kan-nami, Shizuoka 419-01, Japan
Observer Y. Oshima
0.5-m f/4 reflector and 0.16-m hyperboloid astrocamera

1931	VS	1989	12	20.47639	02	27	03.52	+25 06 07.3	17.0	888
1931	VS	1989	12	20.50972	02	27	03.12	+25 06 13.0		888
1978	SS7	1989	12	20.47639	02	31	04.37	+23 24 20.4	17.5	888
1978	SS7	1989	12	20.51806	02	31	04.43	+23 24 16.2		888
1987	FA	1990	01	04.76250	07	42	28.22	+19 45 50.3	17	888
1987	FA	1990	01	04.79444	07	42	26.19	+19 45 54.9		888
1987	FA	1990	01	05.69861	07	41	26.28	+19 48 04.2	16.5	888
1987	FA	1990	01	05.73542	07	41	23.76	+19 48 08.7		888
1987	FA	1990	01	21.63125	07	23	38.74	+20 25 32.4	16.0	888
1987	FA	1990	01	21.67847	07	23	35.66	+20 25 38.1		888
1988	VT	1989	12	29.73854	08	09	52.39	+03 20 51.5	18.5	888
1988	VT	1989	12	29.78924	08	09	50.25	+03 20 47.3		888
1989	SP	1989	11	20.46319	00	24	15.94	+01 53 41.1	17	888
1989	SP	1989	11	20.49722	00	24	16.45	+01 53 34.9		888
1989	VW	1989	12	20.53750	03	28	45.79	+21 22 49.2	17.5	888
1989	VW	1989	12	20.57083	03	28	44.76	+21 22 47.7		888
1989	WG	1989	12	20.54583	03	42	58.19	+17 12 29.3	17.5	888
1989	WG	1989	12	20.57917	03	42	56.97	+17 12 34.9		888
1989	WG	1989	12	28.50972	03	39	52.65	+17 39 25.2	17.5	888
1989	WG	1989	12	28.54653	03	39	51.96	+17 39 33.1		888
1989	WG	1989	12	30.47778	03	39	28.55	+17 46 50.0	17.5	888
1989	WG	1989	12	30.51111	03	39	28.13	+17 46 57.4		888
1989	WH	1989	12	20.55417	03	48	26.36	+13 33 04.6	17.5	888
1989	WH	1989	12	20.58750	03	48	25.07	+13 32 58.2		888
1989	WH	1989	12	29.56389	03	44	57.37	+13 05 23.0	18.0	888
1989	WH	1989	12	29.59722	03	44	56.81	+13 05 18.3		888
1989	WJ	1989	12	20.56250	04	01	27.23	+24 01 11.1	17.5	888
1989	WJ	1989	12	20.59583	04	01	25.33	+24 01 21.7		888
1989	WK	1989	12	28.50972	03	40	12.29	+17 50 12.5	17.5	888
1989	WK	1989	12	28.54653	03	40	11.25	+17 50 08.6		888
1989	WK	1989	12	30.47778	03	39	23.34	+17 46 53.3	17.5	888
1989	WK	1989	12	30.51111	03	39	22.55	+17 46 50.3		888
1989	WX	1989	12	28.50972	03	39	31.19	+18 16 21.0	17	888
1989	WX	1989	12	28.54653	03	39	30.11	+18 16 25.4		888
1989	WX	1989	12	30.47014	03	38	38.49	+18 19 25.7	16.5	888
1989	WX	1989	12	30.50278	03	38	37.60	+18 19 28.6		888
1989	WX	1990	01	01.52292	03	37	48.98	+18 22 53.4	17.0	888
1989	WX	1990	01	01.55625	03	37	48.13	+18 22 56.9		888
1989	WC3	1989	12	03.60694	04	21	08.65	+20 41 56.6	17.0	888
1989	WC3	1989	12	03.63958	04	21	06.39	+20 41 46.9		888
1989	WC3	1989	12	20.60764	04	04	37.37	+19 29 57.7	17.0	888
1989	WC3	1989	12	20.64097	04	04	35.73	+19 29 50.2		888
1989	WC3	1989	12	28.57569	03	59	39.70	+19 05 00.6	17.5	888
1989	WC3	1989	12	28.60903	03	59	38.69	+19 04 55.4		888
1989	WM3	1989	12	27.50278	03	31	54.82	+29 20 42.7	16.5	888
1989	WM3	1989	12	28.50208	03	31	29.71	+29 23 26.9		888
1989	WM3	1989	12	28.53819	03	31	28.72	+29 23 32.7		888
1989	XM	1989	11	29.58194	04	24	44.37	+22 22 08.4	17	888
1989	XM	1989	11	29.61458	04	24	42.44	+22 22 06.3		888
1989	XM	1989	12	20.61597	04	06	27.46	+21 53 52.1	18.0	888
1989	XM	1989	12	20.64931	04	06	25.90	+21 53 49.3		888
1989	XM	1989	12	29.62569	04	00	46.29	+21 43 50.4	17.5	888
1989	XM	1989	12	29.65833	04	00	45.17	+21 43 49.6		888
1989	XP	1989	12	26.61319	04	38	41.36	+20 34 22.8	16.5	888
1989	XP	1989	12	26.64653	04	38	39.82	+20 34 26.6	16	888

1989	XP		1989	12	29.64167	04	36	12.58	+20	41	32.9	17.0	888
1989	XP		1989	12	29.67500	04	36	10.88	+20	41	37.7		888
1989	XP		1990	01	01.53958	04	34	05.18	+20	48	38.5	17.0	888
1989	XP		1990	01	01.57292	04	34	03.72	+20	48	43.4		888
1989	YC		1990	01	04.67431	06	55	10.78	+23	43	13.3	17	888
1989	YC		1990	01	04.72153	06	55	07.25	+23	43	35.0		888
1989	YC		1990	01	05.69028	06	53	58.76	+23	51	10.0	17.0	888
1989	YC		1990	01	05.72708	06	53	56.07	+23	51	26.6		888
1989	YT	*	1989	12	20.49306	03	21	59.27	+21	51	21.9	17	888
1989	YT		1989	12	20.52639	03	21	58.28	+21	51	19.4		888
1989	YT		1989	12	28.49375	03	19	18.28	+21	43	18.1	17.5	888
1989	YT		1989	12	28.52986	03	19	17.70	+21	43	18.0		888
1989	YT		1989	12	29.55556	03	19	06.14	+21	42	38.4	18.0	888
1989	YT		1989	12	29.58889	03	19	05.79	+21	42	37.0		888
1989	YT		1990	01	01.51458	03	18	44.81	+21	41	24.4	17.5	888
1989	YT		1990	01	01.54792	03	18	44.67	+21	41	24.1		888
1990	AB	*	1990	01	04.65903	06	52	09.00	+24	12	21.8	18.5	888
1990	AB		1990	01	04.70625	06	52	05.79	+24	12	32.2		888
1990	AB		1990	01	05.68021	06	51	02.63	+24	16	16.3	18.0	888
1990	AB		1990	01	05.71701	06	51	00.05	+24	16	24.4		888
6829	P-L		1989	12	21.66181	06	19	08.26	+39	56	00.8	17.5	888
6829	P-L		1989	12	21.69722	06	19	05.87	+39	56	07.2		888
6829	P-L		1990	01	04.64653	06	03	46.05	+40	19	08.5	17.0	888
6829	P-L		1990	01	04.69444	06	03	42.87	+40	19	09.0		888
389			1989	11	25.52153	02	36	24.67	+25	32	19.0		888
389			1989	11	25.55417	02	36	23.02	+25	32	05.3	13.0	888
596			1989	11	28.57535	04	46	37.32	+22	32	43.3	14.5	888
596			1989	11	28.61007	04	46	35.46	+22	32	42.0		888
673			1989	12	20.63264	04	10	50.95	+19	10	01.0	15.0	888
673			1989	12	20.66597	04	10	49.42	+19	09	55.9		888
940			1989	11	28.73438	04	51	03.32	+22	53	30.3	15.5	888
940			1989	11	28.75938	04	51	02.00	+22	53	30.7		888
1214			1990	01	01.59792	06	54	31.35	+23	51	58.2	16.5	888
1214			1990	01	01.64514	06	54	28.35	+23	51	53.8		888
1214			1990	01	05.68021	06	50	15.65	+23	45	38.3	16	888
1214			1990	01	05.71701	06	50	13.16	+23	45	33.8		888
1233			1990	01	05.69028	06	54	04.87	+24	03	45.0	16.0	888
1233			1990	01	05.72708	06	54	02.38	+24	03	44.9		888
1303			1989	12	20.60764	04	03	53.97	+20	00	43.0	15	888
1303			1989	12	20.64097	04	03	52.28	+20	00	46.6		888
1670			1989	11	28.73438	05	01	04.09	+26	49	00.5	15.0	888
1670			1989	11	28.75938	05	01	02.64	+26	49	06.2		888
1806			1989	12	20.53750	03	30	15.03	+21	26	19.9	16	888
1806			1989	12	20.57083	03	30	13.81	+21	26	09.9		888
1853			1989	12	30.53958	04	40	27.44	+36	15	03.0	16.5	888
1853			1989	12	30.57639	04	40	25.70	+36	14	45.6		888
2182			1989	12	02.56389	04	19	19.16	+22	20	24.8	17	888
2182			1989	12	02.59722	04	19	17.47	+22	20	22.1		888
2182			1989	12	29.62569	03	59	29.68	+21	37	23.2	17.5	888
2182			1989	12	29.65833	03	59	28.56	+21	37	20.3		888
2233			1989	11	28.66285	04	32	55.60	+21	48	35.2	16.0	888
2233			1989	11	28.68299	04	32	54.22	+21	48	30.1		888
2478			1989	11	28.69896	04	59	19.71	+19	41	12.1	15.5	888
2478			1989	11	28.72257	04	59	18.18	+19	41	08.6		888
2626			1990	01	01.63333	07	25	18.53	+24	10	14.7	17	888
2626			1990	01	01.68056	07	25	15.83	+24	10	20.1		888
2870			1989	12	20.60764	04	04	54.93	+19	20	34.3	16.5	888
2870			1989	12	20.64097	04	04	53.38	+19	20	36.2		888
3651			1989	11	27.62917	04	29	18.85	+20	59	37.9	18.0	888

3651		1989 11 27.67292	04	29	15.92	+20	59	37.9			888
3651		1989 11 29.57921	04	27	04.52	+21	00	19.5	17.5		888
3651		1989 11 29.63056	04	27	02.27	+21	00	20.0			888
3651		1989 12 01.56111	04	24	49.84	+21	00	57.0	17.5		888
3651		1989 12 01.59097	04	24	47.18	+21	00	57.2			888
4293		1989 11 25.65278	04	53	23.00	+25	58	56.7	15.5		888
4293		1989 11 25.68542	04	53	20.95	+25	59	05.7			888
4294		1989 11 25.66944	06	30	28.13	+30	05	40.7	17.5		888
4294		1989 11 25.70139	06	30	27.00	+30	05	44.4			888
4294		1989 12 21.60139	06	07	24.91	+30	25	56.0	17.5		888
4294		1989 12 21.63472	06	07	22.71	+30	25	55.2			888
4302		1989 12 21.51528	04	37	13.88	+13	39	49.3	17.5		888
4302		1989 12 21.55556	04	37	11.62	+13	39	48.9			888
4302		1989 12 30.49444	04	29	54.40	+13	42	07.5	17.5		888
4302		1989 12 30.52778	04	29	52.94	+13	42	09.2			888
4325		1989 12 21.50694	04	25	58.63	+24	09	19.9	17.0		888
4325		1989 12 21.54722	04	25	56.45	+24	09	19.3			888
4325		1989 12 30.48611	04	18	53.89	+24	06	06.1	17.0		888
4325		1989 12 30.51944	04	18	52.50	+24	06	05.6			888
4353		1989 12 26.59653	04	18	24.43	+20	53	05.6	16.5		888
4353		1989 12 26.62986	04	18	22.67	+20	53	08.3			888

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

1925	BA	1989 12 01.58325	02	57	28.78	+34	13	11.6			894
1925	BA	1989 12 01.61209	02	57	27.33	+34	12	55.9			894
1935	TG	1989 12 01.66450	05	23	33.23	+20	59	19.3			894
1935	TG	1989 12 01.68727	05	23	31.61	+20	59	16.1			894
1987	BJ	1989 11 26.61944	04	21	06.07	+11	55	56.8			894
1987	BJ	1989 12 28.51791	03	52	16.73	+11	34	52.9			894
1987	BJ	1989 12 28.53278	03	52	16.27	+11	34	54.8			894
75		1989 12 20.61736	04	23	09.94	+29	26	07.0			894
75		1989 12 20.63611	04	23	08.91	+29	26	02.6			894
2933		1989 11 26.61944	04	18	46.38	+11	31	38.4			894
2933		1989 11 26.64306	04	18	44.71	+11	31	34.0			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, S. Izumikawa
Measurer O. Muramatsu
0.20-m f/4.0 reflector and 0.20-m f/6.0 reflector

1989	WF1	1989 12 21.66319	03	58	45.28	+26	23	43.5	16.5			896
1989	WF1	1989 12 21.69063	03	58	44.13	+26	23	49.6				896
1989	WF1	1989 12 29.56042	03	53	54.46	+26	57	09.5	17		w	896
1989	WF1	1989 12 29.59097	03	53	53.56	+26	57	13.3			R	896
1989	WN2	1989 12 22.67396	04	39	16.3	+19	36	56			t	896
1989	WN2	1989 12 29.57569	04	34	25.53	+18	48	17.1	17		w	896
1989	WN2	1989 12 29.60694	04	34	24.31	+18	48	03.6			R	896
1989	WN2	1990 01 03.66701	04	31	42.61	+18	16	25.0			w	896
1989	YK *	1989 12 22.74306	07	14	37.9	+17	56	36	15.5		E	896
1989	YK	1989 12 27.64444	07	09	26.16	+17	59	44.1				896
1989	YK	1989 12 28.65278	07	08	19.22	+18	00	34.3	16.8			896
1989	YK	1989 12 28.68333	07	08	17.04	+18	00	39.3				896
1989	YK	1990 01 06.76319	06	58	00.05	+18	10	40.7				896
1989	YN *	1989 12 27.72431	07	25	24.56	+18	33	18.2	16.0		E	896

1989	YN		1989	12	30.61458	07	22	25.73	+18	30	39.2	D 896
1989	YN		1990	01	02.73160	07	19	05.17	+18	28	19.9	D 896
1989	YN		1990	01	02.76319	07	19	03.07	+18	28	19.5	R 896
1989	YN		1990	01	03.70243	07	18	01.96	+18	27	44.3	896
1989	YN		1990	01	03.73299	07	17	59.74	+18	27	42.7	D 896
1989	YN		1990	01	06.76771	07	14	40.29	+18	25	58.3	896
1989	YN		1990	01	06.79688	07	14	38.41	+18	25	56.8	896
1989	YN		1990	01	17.47639	07	03	18.9	+18	22	15	p 896
1989	YN		1990	01	17.51146	07	03	16.67	+18	22	15.7	16.2 896
1989	YU	*	1989	12	27.62847	07	27	55.70	+14	00	46.3	16.5 E 896
1989	YU		1989	12	30.69410	07	25	02.59	+14	02	22.9	E 896
1990	BK	*	1990	01	17.54115	08	58	48.74	+19	53	45.3	16.5 896
1990	BK		1990	01	17.57188	08	58	47.36	+19	53	50.1	896
1990	BK		1990	01	21.72604	08	55	26.2	+20	11	39	S 896
1990	BK		1990	01	21.75729	08	55	24.4	+20	11	48	S 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

1925	BA		1989	11	21.50492	03	06	37.55	+35	31	58.0	15.5 897
1925	BA		1989	11	21.52784	03	06	36.13	+35	31	48.6	897
1989	WM3		1989	11	24.50556	04	03	17.59	+27	07	35.7	15.5 897
1989	WM3		1989	11	24.54375	04	03	14.75	+27	07	49.7	897
1989	WM3		1989	11	26.52031	04	00	50.91	+27	19	22.1	15 897
1989	WM3		1989	11	26.54421	04	00	49.04	+27	19	30.5	897
1989	YV	*	1989	12	31.52778	06	20	00.52	+46	40	07.0	16 897
1989	YV		1989	12	31.56817	06	19	57.18	+46	40	01.8	897
1989	YV		1990	01	03.51597	06	15	55.57	+46	28	19.9	16.5 897
1989	YV		1990	01	03.55492	06	15	52.54	+46	28	10.9	897
528			1989	11	20.52708	05	02	04.73	+29	24	26.4	14.5 897
528			1989	11	20.55833	05	02	03.19	+29	24	29.2	897
840			1989	11	20.52708	05	04	47.99	+27	50	56.6	16 897
840			1989	11	20.55833	05	04	46.51	+27	50	51.5	897
1268			1989	11	20.52708	05	07	24.64	+28	45	55.0	15 897
1268			1989	11	20.55833	05	07	23.31	+28	45	55.6	897
2084			1989	11	29.53715	03	03	12.98	+08	19	15.4	15 897
2084			1989	11	29.57645	03	03	10.99	+08	19	11.2	897

The following discoveries were observed on one night only:

1989	HH	*	1989	04	28.60104	13	00	51.91	+02	04	13.8	16.5 399
1989	HH		1989	04	28.61568	13	00	51.20	+02	04	14.0	399
1989	HH		1989	04	28.63229	13	00	50.57	+02	04	14.1	399
1989	JO	*	1989	05	09.14211	13	50	52.66	-06	48	35.5	808
1989	JO		1989	05	09.16288	13	50	51.63	-06	48	32.9	808
1989	JP	*	1989	05	03.77812	22	15	01.81	-11	16	01.7	17 372
1989	JP		1989	05	03.78854	22	15	01.94	-11	15	58.0	372
1989	JQ	*	1989	05	09.78663	22	19	30.55	-10	38	15.1	19 372
1989	JR	*	1989	05	09.78663	22	20	33.80	-10	35	16.9	19 372
1989	JS	*	1989	05	09.78663	22	21	37.40	-10	20	29.2	18.5 372
1989	JT	*	1989	05	09.78663	22	21	44.42	-10	26	18.6	18.5 372
1989	JU	*	1989	05	15.67535	16	05	22.30	-20	11	33.3	15 391
1989	JU		1989	05	15.67708	16	05	22.12	-20	11	35.5	15 391
1989	KM	*	1989	05	29.98643	13	31	01.14	-37	28	19.8	d 808
1989	KM		1989	05	30.02105	13	30	57.74	-37	27	57.2	d 808
1989	KN	*	1989	05	29.98643	13	32	36.90	-39	43	59.3	808
1989	KN		1989	05	30.02105	13	32	36.19	-39	44	04.6	808

1989	KO	*	1989	05	31.15406	16	27	26.74	-29	18	13.7		808
1989	KO		1989	05	31.18176	16	27	25.01	-29	18	04.4		808
1989	KP	*	1989	05	26.60799	15	25	17.86	-13	00	53.5	19	372
1989	KP		1989	05	26.61979	15	25	17.23	-13	00	50.4		372
1989	KQ	*	1989	05	26.60799	15	25	30.48	-13	18	07.3	18	372
1989	KQ		1989	05	26.61979	15	25	29.75	-13	18	05.7		372
1989	KR	*	1989	05	26.60799	15	26	07.44	-13	36	55.6	18	372
1989	KR		1989	05	26.61979	15	26	06.81	-13	36	53.6		372
1989	KS	*	1989	05	26.91900	15	35	36.75	-00	20	02.2	16.5	046
1989	KS		1989	05	26.93168	15	35	36.29	-00	20	00.4		046
1989	LY	*	1989	06	02.75347	22	47	34.8	-06	21	13	18.5	372
1989	LZ	*	1989	06	02.75347	22	49	19.6	-06	06	09	14 d	372
1989	LA1	*	1989	06	02.75347	22	49	21.8	-06	06	12	15 d	372
1989	LB1	*	1989	06	05.40451	22	58	49.36	-08	35	43.7	17.5	809
1989	LB1		1989	06	05.40938	22	58	49.74	-08	35	43.0		809
1989	LB1		1989	06	05.41424	22	58	50.11	-08	35	39.6		809
1989	LC1	*	1989	06	05.40451	22	59	35.10	-07	31	43.5	17.9 d	809
1989	LC1		1989	06	05.40938	22	59	35.35	-07	31	50.1		809
1989	LC1		1989	06	05.41424	22	59	35.46	-07	31	52.5		809
1989	LD1	*	1989	06	05.40451	23	00	07.46	-08	04	58.3	16.8	809
1989	LD1		1989	06	05.40938	23	00	07.06	-08	04	57.2		809
1989	LD1		1989	06	05.41424	23	00	06.78	-08	04	53.5		809
1989	LE1	*	1989	06	05.40451	23	00	11.84	-08	30	21.6	16.5	809
1989	LE1		1989	06	05.40938	23	00	12.36	-08	30	19.4		809
1989	LE1		1989	06	05.41424	23	00	12.96	-08	30	18.2		809
1989	LF1	*	1989	06	05.42465	01	36	34.14	+00	16	23.0	17.5	809
1989	LF1		1989	06	05.42951	01	36	34.47	+00	16	26.5		809
1989	LG1	*	1989	06	05.42465	01	36	34.45	+00	19	21.7	17.5	809
1989	LG1		1989	06	05.42951	01	36	34.80	+00	19	23.8		809
1989	LH1	*	1989	06	05.42465	01	36	56.34	+00	13	55.3	17.5	809
1989	LH1		1989	06	05.42951	01	36	56.60	+00	13	57.1		809
1989	LJ1	*	1989	06	10.38542	01	42	38.00	+00	06	24.8	14	809
1989	LJ1		1989	06	10.39100	01	42	38.71	+00	06	20.1		809
1989	MM	*	1989	06	30.25017	16	32	37.05	-16	20	37.7	14.0	675
1989	MM		1989	06	30.27934	16	32	47.14	-16	18	55.0		675
1989	NM1	*	1989	07	04.98578	14	25	46.15	-11	46	57.0		808
1989	NM1		1989	07	05.01348	14	25	46.13	-11	46	59.3		808
1989	NN1	*	1989	07	04.98578	14	42	51.15	-11	26	34.6		808
1989	NN1		1989	07	05.01348	14	42	51.17	-11	26	35.6		808
1989	NO1	*	1989	07	08.33124	16	24	57.74	-29	13	19.4	18.3	474
1989	NO1		1989	07	08.36006	16	24	56.98	-29	13	14.2		474
1989	NP1	*	1989	07	08.33124	16	26	10.67	-29	16	26.3	17.9 t	474
1989	NP1		1989	07	08.36006	16	26	09.94	-29	16	31.2	t	474
1989	NQ1	*	1989	07	01.23542	15	54	37.27	-19	27	17.1		675
1989	NQ1		1989	07	01.25799	15	54	36.75	-19	27	07.8		675
1989	NR1	*	1989	07	07.29896	19	35	04.53	-13	02	00.5	17.5	675
1989	NR1		1989	07	07.33299	19	35	02.59	-13	02	08.4		675
1989	NS1	*	1989	07	07.39167	20	57	31.25	-04	00	44.0	17.2	675
1989	NS1		1989	07	07.42708	20	57	30.15	-04	00	40.0		675
1989	NT1	*	1989	07	07.39167	21	04	09.98	-07	01	39.3	17.0	675
1989	NT1		1989	07	07.42708	21	04	09.15	-07	01	52.0		675
1989	NU1	*	1989	07	08.41024	20	49	18.93	-07	05	01.6	17.2	675
1989	NU1		1989	07	08.41858	20	49	18.72	-07	05	02.1		675
1989	NU1		1989	07	08.45087	20	49	16.98	-07	04	56.7		675
1989	NU1		1989	07	08.45799	20	49	16.68	-07	04	55.8		675
1989	NV1	*	1989	07	09.31042	20	15	03.39	+03	01	42.8	16.5	675
1989	NV1		1989	07	09.34387	20	15	02.14	+03	01	37.4		675
1989	NW1	*	1989	07	10.33190	19	42	58.91	-18	00	44.6	17.5	675
1989	NW1		1989	07	10.36806	19	42	56.71	-18	00	36.1		675

1989	NX1	*	1989	07	10.35053	20	23	17.86	-04	20	28.4	17.2	675
1989	NX1		1989	07	10.38698	20	23	16.26	-04	20	48.7		675
1989	OO	*	1989	07	29.70742	21	14	54.53	-14	34	52.4	16.6	474
1989	OO		1989	07	29.72206	21	14	53.91	-14	34	58.6		474
1989	OP	*	1989	07	29.70742	21	16	05.43	-14	37	38.1	17.3	474
1989	OP		1989	07	29.72206	21	16	04.76	-14	37	40.4		474
1989	OQ	*	1989	07	29.18177	15	02	43.64	-03	10	32.2	17.2	675
1989	OQ		1989	07	29.22292	15	02	45.74	-03	10	45.0		675
1989	OR	*	1989	07	29.27569	19	54	31.38	-09	09	37.9	17.8	675
1989	OR		1989	07	29.30781	19	54	29.84	-09	10	04.2		675
1989	OS	*	1989	07	29.27569	19	56	53.29	-08	11	59.3	17.5	675
1989	OS		1989	07	29.30781	19	56	51.67	-08	12	15.7		675
1989	OT	*	1989	07	29.27569	20	17	01.67	-08	11	18.1	17.5	675
1989	OT		1989	07	29.30781	20	16	59.91	-08	11	25.8		675
1989	OU	*	1989	07	29.27569	20	19	25.56	-07	37	48.0	18.0	675
1989	OU		1989	07	29.30781	20	19	23.86	-07	37	48.0		675
1989	OV	*	1989	07	29.31580	20	21	39.00	-15	37	35.5	17.8	675
1989	OV		1989	07	29.34774	20	21	37.40	-15	37	47.2		675
1989	OY	*	1989	07	29.31580	20	37	50.20	-13	09	27.9	17.8	675
1989	OY		1989	07	29.34774	20	37	48.56	-13	09	35.6		675
1989	OZ	*	1989	07	29.31580	20	40	26.54	-12	12	12.7	17.0	675
1989	OZ		1989	07	29.34774	20	40	24.60	-12	12	24.4		675
1989	OA1	*	1989	07	29.33960	20	36	05.98	-19	51	33.5	17.5	675
1989	OA1		1989	07	29.37066	20	36	04.31	-19	51	31.5		675
1989	OB1	*	1989	07	29.33960	20	36	54.64	-20	43	48.9	17.0	675
1989	OB1		1989	07	29.37066	20	36	52.61	-20	43	42.4		675
1989	OC1	*	1989	07	29.33960	20	45	01.07	-21	31	31.6	17.0	675
1989	OC1		1989	07	29.37066	20	44	59.23	-21	31	43.0		675
1989	OD1	*	1989	07	29.33960	20	47	26.14	-20	40	28.7	17.5	675
1989	OD1		1989	07	29.37066	20	47	24.65	-20	40	41.2		675
1989	OE1	*	1989	07	29.33960	20	52	33.92	-20	02	39.2	16.8	675
1989	OE1		1989	07	29.37066	20	52	32.54	-20	03	07.8		675
1989	OF1	*	1989	07	29.33960	20	59	52.16	-19	02	35.3	17.0	675
1989	OF1		1989	07	29.37066	20	59	50.34	-19	02	49.2		675
1989	OG1	*	1989	07	27.61299	21	28	21.42	-43	41	12.2	16	413
1989	OG1		1989	07	27.67549	21	28	17.16	-43	42	48.4		413
1989	OH1	*	1989	07	29.88669	19	45	14.22	+00	02	08.7		046
1989	OH1		1989	07	29.90087	19	45	13.82	+00	02	06.3		046
1989	OJ1	*	1989	07	29.92176	19	44	29.10	-13	04	28.5		046
1989	OJ1		1989	07	29.93588	19	44	28.20	-13	04	27.7		046
1989	OL1	*	1989	07	29.26111	19	28	30.30	-16	32	01.5	17.8	675
1989	OL1		1989	07	29.29219	19	28	28.81	-16	32	13.3		675
1989	OM1	*	1989	07	29.26111	19	35	09.77	-16	21	00.1	18.0	675
1989	OM1		1989	07	29.29219	19	35	08.15	-16	20	59.8		675
1989	PV	*	1989	08	09.26719	18	44	55.03	-02	51	09.1	17.5	675
1989	PV		1989	08	09.28993	18	44	54.32	-02	51	13.2		675
1989	PW	*	1989	08	09.32517	20	03	03.13	-18	31	35.4	17.0	675
1989	PW		1989	08	09.34774	20	03	01.72	-18	31	34.1		675
1989	PX	*	1989	08	01.30677	20	02	53.40	-18	05	37.4	17.2	675
1989	PX		1989	08	01.33646	20	02	51.39	-18	05	37.2		675
1989	PY	*	1989	08	01.30677	20	10	18.87	-21	19	23.9	17.0	675
1989	PY		1989	08	01.33646	20	10	17.39	-21	19	28.4		675
1989	PZ	*	1989	08	01.30677	20	12	06.20	-20	50	01.1	17.5	675
1989	PZ		1989	08	01.33646	20	12	04.38	-20	50	15.4		675
1989	PA1	*	1989	08	01.30677	20	24	32.46	-17	06	59.4	17.5	675
1989	PA1		1989	08	01.33646	20	24	31.24	-17	07	04.4		675
1989	PB1	*	1989	08	01.31406	20	25	28.70	-15	25	42.0	18.0	675
1989	PB1		1989	08	01.34478	20	25	26.63	-15	25	50.4		675
1989	PC1	*	1989	08	01.31406	20	32	03.33	-11	46	44.5	17.8	675

1989	PC1		1989	08	01.34478	20	32	01.73	-11	46	45.1	675
1989	PD1	*	1989	08	01.31406	20	33	35.89	-12	00	35.9	17.8 675
1989	PD1		1989	08	01.34478	20	33	34.17	-12	00	44.1	675
1989	PE1	*	1989	08	01.31406	20	39	24.10	-10	27	51.2	18.0 675
1989	PE1		1989	08	01.34478	20	39	22.21	-10	27	53.3	675
1989	PF1	*	1989	08	01.31406	20	45	05.51	-10	32	11.4	17.2 675
1989	PF1		1989	08	01.34478	20	45	03.90	-10	32	24.3	675
1989	PG1	*	1989	08	01.31406	20	45	37.21	-12	52	34.1	17.5 675
1989	PG1		1989	08	01.34478	20	45	35.19	-12	52	40.0	675
1989	PH1	*	1989	08	02.26042	19	28	09.07	-21	16	47.7	17.2 675
1989	PH1		1989	08	02.29066	19	28	07.24	-21	16	46.8	675
1989	PJ1	*	1989	08	03.50525	19	55	53.45	-23	51	31.4	413
1989	PK1	*	1989	08	09.64812	23	15	01.58	-08	53	46.2	16.5 413
1989	PK1		1989	08	09.70021	23	14	58.10	-08	53	21.8	413
1989	PL1	*	1989	08	05.90000	19	57	50.59	-12	23	56.9	046
1989	PL1		1989	08	05.91406	19	57	49.92	-12	23	51.8	046
1989	PM1	*	1989	08	05.90000	20	02	08.52	-12	16	34.5	046
1989	PM1		1989	08	05.91406	20	02	07.86	-12	16	29.7	046
1989	PN1	*	1989	08	05.97847	22	05	56.31	-11	43	54.7	17.9 033
1989	PN1		1989	08	06.02708	22	05	54.25	-11	43	58.7	033
1989	PO1	*	1989	08	05.97847	22	06	22.42	-10	14	53.7	16.9 033
1989	PO1		1989	08	06.02708	22	06	20.09	-10	14	56.5	033
1989	PP1	*	1989	08	05.97847	22	08	51.50	-10	39	36.0	17.7 033
1989	PP1		1989	08	06.02708	22	08	49.61	-10	39	56.1	033
1989	PQ1	*	1989	08	05.97847	22	08	20.33	-11	41	59.5	18.8 033
1989	PR1	*	1989	08	05.97847	22	10	01.95	-11	26	29.0	18.5 033
1989	PR1		1989	08	06.02708	22	09	59.94	-11	26	42.6	033
1989	PS1	*	1989	08	05.97847	22	11	03.51	-11	00	58.0	18.0 033
1989	PS1		1989	08	06.02708	22	11	01.02	-11	01	09.0	033
1989	PT1	*	1989	08	02.26771	19	32	25.92	-16	28	48.5	18.0 675
1989	PT1		1989	08	02.29809	19	32	24.21	-16	28	51.2	675
1989	PU1	*	1989	08	02.26771	19	32	35.52	-16	00	25.8	17.8 675
1989	PU1		1989	08	02.29809	19	32	34.31	-16	00	36.4	675
1989	QY	*	1989	08	28.57708	22	21	45.47	-10	54	26.1	17 888
1989	QY		1989	08	28.61042	22	21	43.15	-10	54	20.3	888
1989	QZ	*	1989	08	28.57708	22	24	05.79	-09	57	10.7	17 888
1989	QZ		1989	08	28.61042	22	24	04.42	-09	57	26.3	888
1989	QA1	*	1989	08	28.57708	22	24	11.35	-10	56	36.7	16.5 888
1989	QA1		1989	08	28.58854	22	24	10.48	-10	56	42.6	16.0 403
1989	QA1		1989	08	28.60278	22	24	09.81	-10	56	47.4	403
1989	QA1		1989	08	28.61042	22	24	09.58	-10	56	46.9	888
1989	QB1	*	1989	08	28.58542	23	09	57.07	-04	49	00.3	17.0 888
1989	QB1		1989	08	28.61875	23	09	55.08	-04	49	05.5	888
1989	QC1	*	1989	08	28.58542	23	11	58.19	-05	03	16.5	17.0 888
1989	QC1		1989	08	28.61875	23	11	56.50	-05	03	26.1	888
1989	QD1	*	1989	08	24.22361	21	44	57.46	+04	12	14.8	17.5 807
1989	QD1		1989	08	24.24444	21	44	56.62	+04	12	09.4	807
1989	QD1		1989	08	24.29722	21	44	53.92	+04	11	52.0	807
1989	QD1		1989	08	24.30764	21	44	53.48	+04	11	49.1	807
1989	QD1		1989	08	24.33958	21	44	51.87	+04	11	38.5	807
1989	QD1		1989	08	24.35000	21	44	51.43	+04	11	36.1	807
1989	QE1		1989	08	26.48883	21	37	43.19	-43	24	18.4	17 V F 413
1989	QE1	*	1989	08	26.58509	21	37	32.69	-43	23	12.3	413
1989	QE1		1989	08	26.62676	21	37	28.10	-43	22	42.9	413
1989	QF1	*	1989	08	31.96863	23	52	21.52	+08	54	49.9	17.0 046
1989	QF1		1989	08	31.98328	23	52	20.67	+08	54	55.4	046
1989	QG1	*	1989	08	31.96863	23	57	41.14	+09	34	39.5	16.8 046
1989	QG1		1989	08	31.98328	23	57	40.25	+09	34	40.2	046
1989	RZ2	*	1989	09	03.01563	23	18	59.13	-03	23	42.8	17.6 511

1989	RZ2		1989	09	03.04896	23	18	57.70	-03	23	52.4		511
1989	RA3	*	1989	09	03.01563	23	29	48.60	-03	10	10.1	18.0	511
1989	RB3	*	1989	09	03.86424	21	55	52.02	+01	13	38.6		511
1989	RB3		1989	09	03.88646	21	55	50.43	+01	13	28.9	18.0	511
1989	RC3	*	1989	09	05.87118	20	59	47.93	-14	45	49.5	18.0	511
1989	RC3		1989	09	05.89722	20	59	47.00	-14	45	51.0		511
1989	RC3		1989	09	05.91944	20	59	46.16	-14	45	47.8		511
1989	RD3	*	1989	09	07.10556	23	14	31.60	+03	23	02.5	17.2	511
1989	RD3		1989	09	07.12639	23	14	30.35	+03	22	59.4		511
1989	RE3	*	1989	09	08.00625	23	01	34.20	-04	39	40.0		511
1989	RE3		1989	09	08.02708	23	01	33.42	-04	39	46.0		511
1989	RF3	*	1989	09	08.05139	23	27	33.84	+01	25	14.8	18.0	511
1989	RF3		1989	09	08.07222	23	27	32.93	+01	25	14.3		511
1989	RG3	*	1989	09	03.04896	23	29	45.91	-02	52	24.9		511
1989	RH3	*	1989	09	01.61326	00	15	43.84	+03	24	18.6	18.8 t	474
1989	RH3		1989	09	01.63207	00	15	43.30	+03	24	17.3	t	474
1989	RJ3	*	1989	09	01.61326	00	17	49.30	+03	23	40.6	18.4 t	474
1989	RJ3		1989	09	01.63207	00	17	48.47	+03	23	46.5	t	474
1989	RK3	*	1989	09	02.64347	00	25	19.28	-31	16	30.5	t	474
1989	RK3		1989	09	02.68612	00	25	14.66	-31	16	53.6	t	474
1989	RL3	*	1989	09	06.48596	22	40	11.23	-03	15	11.9	t	474
1989	RL3		1989	09	06.50054	22	40	10.83	-03	15	13.5	t	474
1989	RM3	*	1989	09	09.71056	00	09	08.73	+03	23	07.0	17.9 t	474
1989	RM3		1989	09	09.72716	00	09	07.33	+03	23	22.2	t	474
1989	RN3	*	1989	09	03.46767	21	20	17.89	-46	24	04.8	18 V	413
1989	RN3		1989	09	03.51281	21	20	15.56	-46	23	10.4		413
1989	RO3	*	1989	09	03.46767	21	25	23.76	-43	50	16.9	18.5V F	413
1989	RO3		1989	09	03.51281	21	25	21.67	-43	50	19.0	F	413
1989	RP3	*	1989	09	03.46767	21	41	01.49	-47	05	20.9	18.5V	413
1989	RP3		1989	09	03.51281	21	40	58.80	-47	05	28.5		413
1989	RQ3	*	1989	09	07.92521	22	55	31.48	-10	15	54.3	16.9	046
1989	RQ3		1989	09	07.93933	22	55	30.72	-10	15	56.1		046
1989	RS3	*	1989	09	07.04028	03	09	04.48	+17	07	17.2	18.2	033
1989	RS3		1989	09	07.09028	03	09	05.13	+17	07	22.0		033
1989	RT3	*	1989	09	07.04028	03	09	22.88	+18	24	16.6	18.4	033
1989	RT3		1989	09	07.09028	03	09	24.47	+18	24	36.0		033
1989	SW5	*	1989	09	26.21042	01	21	30.76	+04	04	20.2	18.5	809
1989	SW5		1989	09	26.22361	01	21	29.97	+04	04	19.0		809
1989	SW5		1989	09	26.23681	01	21	29.29	+04	04	17.3		809
1989	SX5	*	1989	09	26.21042	01	30	52.23	+04	35	15.8	19.0	809
1989	SX5		1989	09	26.22361	01	30	51.71	+04	35	12.8		809
1989	SX5		1989	09	26.23681	01	30	51.22	+04	35	08.6		809
1989	SY5	*	1989	09	26.25486	01	34	31.64	+05	39	06.6	19.3	809
1989	SY5		1989	09	26.26806	01	34	31.00	+05	39	08.1		809
1989	SY5		1989	09	26.28125	01	34	30.16	+05	39	09.6		809
1989	SZ5	*	1989	09	26.25486	01	37	25.43	+06	42	23.0	20.0	809
1989	SZ5		1989	09	26.26806	01	37	24.88	+06	42	16.9		809
1989	SZ5		1989	09	26.28125	01	37	24.36	+06	42	07.9		809
1989	SA6	*	1989	09	26.25486	01	41	34.02	+02	29	29.2	18.6	809
1989	SA6		1989	09	26.26806	01	41	33.54	+02	29	20.9		809
1989	SA6		1989	09	26.28125	01	41	33.08	+02	29	10.8		809
1989	SE6	*	1989	09	26.25486	01	50	01.27	+03	45	13.1	20.0	809
1989	SE6		1989	09	26.26806	01	50	00.68	+03	45	10.2		809
1989	SE6		1989	09	26.28125	01	50	00.02	+03	45	06.2		809
1989	SF6	*	1989	09	26.25486	01	52	57.38	+07	17	15.7	18.0	809
1989	SF6		1989	09	26.26806	01	52	56.84	+07	17	14.8		809
1989	SF6		1989	09	26.28125	01	52	56.28	+07	17	13.9		809
1989	SG6	*	1989	09	26.25486	01	53	19.52	+07	18	42.5	18.8	809
1989	SG6		1989	09	26.26806	01	53	18.91	+07	18	42.2		809

1989	SG6		1989	09	26.28125	01	53	18.26	+07	18	40.3		809
1989	SH6	*	1989	09	26.25486	01	53	19.54	+07	05	06.5	19.5	809
1989	SH6		1989	09	26.26806	01	53	19.00	+07	05	02.4		809
1989	SH6		1989	09	26.28125	01	53	18.30	+07	04	59.0		809
1989	SJ6	*	1989	09	26.25486	01	54	53.84	+04	52	57.6	20.0	809
1989	SJ6		1989	09	26.26806	01	54	53.33	+04	52	52.8		809
1989	SJ6		1989	09	26.28125	01	54	52.89	+04	52	47.2		809
1989	SK6	*	1989	09	28.12014	01	24	39.07	-00	03	51.8	20.0	809
1989	SK6		1989	09	28.13333	01	24	38.34	-00	03	57.5		809
1989	SK6		1989	09	28.14653	01	24	37.58	-00	04	05.3		809
1989	SL6	*	1989	09	28.12014	01	24	52.86	+04	21	12.5	18.3	809
1989	SL6		1989	09	28.13333	01	24	52.06	+04	21	12.0		809
1989	SL6		1989	09	28.14653	01	24	51.24	+04	21	10.6		809
1989	SM6	*	1989	09	28.12014	01	25	41.24	+01	44	05.5		809
1989	SM6		1989	09	28.13333	01	25	40.78	+01	44	04.1		809
1989	SM6		1989	09	28.14653	01	25	40.23	+01	44	01.9		809
1989	SP6	*	1989	09	28.26111	01	37	09.93	+02	45	41.3	19.8	809
1989	SP6		1989	09	28.27431	01	37	09.25	+02	45	37.3		809
1989	SP6		1989	09	28.28750	01	37	08.67	+02	45	33.1		809
1989	SQ6	*	1989	09	28.26111	01	38	15.32	+06	38	38.3		809
1989	SQ6		1989	09	28.27431	01	38	14.79	+06	38	33.6		809
1989	SQ6		1989	09	28.28750	01	38	14.33	+06	38	29.1		809
1989	ST6	*	1989	09	28.26111	01	47	36.11	+06	31	20.0	18.7	809
1989	ST6		1989	09	28.27431	01	47	35.79	+06	31	16.6		809
1989	ST6		1989	09	28.28750	01	47	35.50	+06	31	14.5		809
1989	SW6	*	1989	09	28.26111	01	50	53.96	+06	43	28.9		809
1989	SW6		1989	09	28.27431	01	50	53.41	+06	43	25.1		809
1989	SW6		1989	09	28.28750	01	50	52.78	+06	43	20.9		809
1989	SX6	*	1989	09	26.56875	00	29	34.67	+04	21	00.6	16.5	399
1989	SX6		1989	09	26.58403	00	29	34.11	+04	21	02.6		399
1989	SX6		1989	09	26.61146	00	29	33.24	+04	21	00.7		399
1989	SY6	*	1989	09	26.56875	00	29	42.75	+05	05	07.0	16.5	399
1989	SY6		1989	09	26.58403	00	29	41.80	+05	04	58.6		399
1989	SY6		1989	09	26.61146	00	29	40.14	+05	04	46.9		399
1989	SZ6	*	1989	09	30.64965	01	15	47.16	+11	40	55.7	16.0	374
1989	SZ6		1989	09	30.67049	01	15	45.61	+11	41	17.6		374
1989	SA7	*	1989	09	30.64965	01	16	37.81	+12	02	00.9	16.0 d	374
1989	SA7		1989	09	30.67049	01	16	36.80	+12	02	10.2	d	374
1989	SB7	*	1989	09	30.19895	23	18	48.30	+01	09	25.3	18	675
1989	SB7		1989	09	30.25190	23	18	46.57	+01	09	09.4		675
1989	SD7	*	1989	09	30.34895	01	05	32.08	+02	27	38.1	17.8	675
1989	SD7		1989	09	30.38298	01	05	30.34	+02	27	35.9		675
1989	SE7	*	1989	09	24.38265	21	34	53.44	-47	24	24.2	18.5V F	413
1989	SE7		1989	09	24.42432	21	34	52.25	-47	24	14.2	F	413
1989	SE7		1989	09	24.43597	21	34	51.79	-47	24	10.6	F	413
1989	SE7		1989	09	24.47764	21	34	50.36	-47	23	58.2	F	413
1989	SF7	*	1989	09	24.42432	21	31	02.10	-41	53	57.2	18 p	413
1989	SF7		1989	09	24.43597	21	31	01.86	-41	53	41.9		413
1989	SF7		1989	09	24.47764	21	31	00.77	-41	52	52.0		413
1989	SG7	*	1989	09	22.86531	23	37	42.23	+09	35	31.2	16.7	046
1989	SG7		1989	09	22.87799	23	37	41.76	+09	35	21.4		046
1989	SH7	*	1989	09	22.86531	23	37	55.21	+07	13	20.9	16.9	046
1989	SH7		1989	09	22.87799	23	37	54.77	+07	13	10.4		046
1989	SJ7	*	1989	09	22.86531	23	39	31.11	+09	09	19.0	16.9	046
1989	SJ7		1989	09	22.87799	23	39	30.34	+09	09	18.9		046
1989	SK7	*	1989	09	22.86531	23	43	15.93	+08	27	41.2	16.8	046
1989	SK7		1989	09	22.87799	23	43	15.41	+08	27	36.8		046
1989	SM7	*	1989	09	22.86531	23	47	29.64	+09	03	52.3	16.7	046
1989	SM7		1989	09	22.87799	23	47	28.99	+09	03	46.4		046

1989	SN7	*	1989	09	29.41927	02	00	42.38	+15	10	01.6	16.4	675
1989	SN7		1989	09	29.45572	02	00	41.56	+15	09	52.3		675
1989	TT7	*	1989	10	02.88830	22	32	41.16	-06	54	41.3		071
1989	TT7		1989	10	02.92788	22	32	40.33	-06	54	50.6	18.0	071
1989	TU7	*	1989	10	02.88830	22	32	44.39	-08	10	28.7		071
1989	TU7		1989	10	02.92788	22	32	43.13	-08	10	35.8	17.3	071
1989	TV7	*	1989	10	02.88830	22	33	37.15	-05	02	58.7		071
1989	TV7		1989	10	02.92788	22	33	36.42	-05	03	24.2	17.5	071
1989	TW7	*	1989	10	02.88830	22	34	26.65	-06	51	28.6		071
1989	TW7		1989	10	02.92788	22	34	24.67	-06	51	38.1	18.3	071
1989	TX7	*	1989	10	02.90774	22	55	57.47	-00	55	12.4	18.5	071
1989	TX7		1989	10	02.94767	22	55	55.95	-00	55	39.7		071
1989	TY7	*	1989	10	02.90774	22	57	01.70	-01	01	45.6	18.6	071
1989	TY7		1989	10	02.94767	22	57	00.63	-01	02	04.5		071
1989	TZ7	*	1989	10	02.90774	22	57	17.21	-00	52	29.7	18.6	071
1989	TZ7		1989	10	02.94767	22	57	16.46	-00	52	48.0		071
1989	TA8	*	1989	10	02.90774	22	59	10.14	+00	58	12.1	16.8	071
1989	TA8		1989	10	02.94767	22	59	09.00	+00	57	45.1		071
1989	TB8	*	1989	10	02.90774	23	01	29.77	+01	13	36.1	17.2	071
1989	TB8		1989	10	02.94767	23	01	28.45	+01	13	34.3		071
1989	TC8	*	1989	10	02.90774	23	01	56.31	-00	14	46.6	18.2	071
1989	TC8		1989	10	02.94767	23	01	54.96	-00	15	02.0		071
1989	TD8	*	1989	10	02.90774	23	03	24.26	+02	29	07.8	18.2	071
1989	TD8		1989	10	02.94767	23	03	22.95	+02	28	49.1		071
1989	TE8	*	1989	10	02.96979	22	52	15.05	-03	43	16.5		071
1989	TE8		1989	10	02.99167	22	52	13.89	-03	43	23.2	18.0	071
1989	TF8	*	1989	10	07.26181	01	25	22.59	+03	19	19.6	20.0	809
1989	TF8		1989	10	07.27500	01	25	22.01	+03	19	14.1		809
1989	TF8		1989	10	07.28819	01	25	21.15	+03	19	07.2		809
1989	TG8	*	1989	10	07.26181	01	25	40.89	+01	19	27.7	20.0	809
1989	TG8		1989	10	07.27500	01	25	39.95	+01	19	26.9		809
1989	TG8		1989	10	07.28819	01	25	39.19	+01	19	26.1		809
1989	TH8		1989	10	07.21944	01	27	44.80	+01	54	48.4	19.5	809
1989	TH8		1989	10	07.23264	01	27	44.13	+01	54	46.2		809
1989	TH8		1989	10	07.24583	01	27	43.40	+01	54	43.3		809
1989	TH8	*	1989	10	07.26181	01	27	42.85	+01	54	41.6	19.7	809
1989	TH8		1989	10	07.27500	01	27	42.18	+01	54	39.5		809
1989	TH8		1989	10	07.28819	01	27	41.55	+01	54	36.2		809
1989	TJ8	*	1989	10	07.26181	01	29	00.44	+04	02	08.1	18.8	809
1989	TJ8		1989	10	07.27500	01	28	59.63	+04	02	03.2		809
1989	TJ8		1989	10	07.28819	01	28	58.77	+04	01	57.5		809
1989	TK8	*	1989	10	07.26181	01	31	18.56	+01	58	23.3	20.0	809
1989	TK8		1989	10	07.27500	01	31	17.80	+01	58	18.9		809
1989	TK8		1989	10	07.28819	01	31	16.99	+01	58	15.0		809
1989	TL8	*	1989	10	07.26181	01	38	27.26	+04	43	56.7	20.0	809
1989	TL8		1989	10	07.27500	01	38	26.63	+04	43	52.3		809
1989	TL8		1989	10	07.28819	01	38	26.00	+04	43	47.1		809
1989	TM8	*	1989	10	07.26181	01	38	38.84	+01	22	04.5	19.7	809
1989	TM8		1989	10	07.27500	01	38	38.03	+01	22	03.2		809
1989	TM8		1989	10	07.28819	01	38	37.13	+01	22	01.5		809
1989	TN8	*	1989	10	07.26181	01	38	49.56	+05	53	50.1	19.0	809
1989	TN8		1989	10	07.27500	01	38	48.79	+05	53	44.6		809
1989	TN8		1989	10	07.28819	01	38	48.25	+05	53	38.4		809
1989	TP8	*	1989	10	07.26181	01	42	38.49	+02	41	01.6	19.4	809
1989	TP8		1989	10	07.27500	01	42	37.77	+02	40	58.6		809
1989	TP8		1989	10	07.28819	01	42	36.91	+02	40	57.0		809
1989	TQ8	*	1989	10	07.26181	01	43	17.64	+02	40	32.3	18.8	809
1989	TQ8		1989	10	07.27500	01	43	16.79	+02	40	27.4		809
1989	TQ8		1989	10	07.28819	01	43	15.98	+02	40	22.2		809

1989	TR8	*	1989	10	07.26181	01	43	33.51	+04	01	12.8	19.5	809
1989	TR8		1989	10	07.27500	01	43	32.83	+04	01	10.5		809
1989	TR8		1989	10	07.28819	01	43	32.20	+04	01	05.0		809
1989	TS8	*	1989	10	07.26181	01	43	49.75	+04	31	40.2	19.4	809
1989	TS8		1989	10	07.27500	01	43	49.07	+04	31	40.3		809
1989	TS8		1989	10	07.28819	01	43	48.17	+04	31	40.1		809
1989	TT8	*	1989	10	08.29167	01	21	10.07	+03	33	34.0	19.2	809
1989	TT8		1989	10	08.30486	01	21	09.73	+03	33	30.5		809
1989	TT8		1989	10	08.31806	01	21	09.09	+03	33	25.1		809
1989	TU8	*	1989	10	08.29167	01	21	52.44	+04	56	30.3	18.2	809
1989	TU8		1989	10	08.30486	01	21	51.76	+04	56	26.5		809
1989	TU8		1989	10	08.31806	01	21	51.19	+04	56	22.1		809
1989	TV8	*	1989	10	08.29167	01	23	51.00	+05	32	05.8	18.5	809
1989	TV8		1989	10	08.30486	01	23	50.34	+05	32	01.8		809
1989	TV8		1989	10	08.31806	01	23	49.68	+05	31	57.0		809
1989	TW8	*	1989	10	08.29167	01	25	05.47	+03	17	33.4	19.3	809
1989	TW8		1989	10	08.30486	01	25	04.58	+03	17	29.0		809
1989	TW8		1989	10	08.31806	01	25	03.72	+03	17	24.9		809
1989	TX8	*	1989	10	08.29167	01	26	38.15	+01	40	07.1	19.3	809
1989	TX8		1989	10	08.30486	01	26	37.28	+01	40	04.0		809
1989	TX8		1989	10	08.31806	01	26	36.30	+01	40	00.4		809
1989	TY8	*	1989	10	08.29167	01	29	55.41	+03	34	31.7	20.0	809
1989	TY8		1989	10	08.30486	01	29	54.71	+03	34	25.3		809
1989	TY8		1989	10	08.31806	01	29	54.16	+03	34	20.9		809
1989	TZ8	*	1989	10	08.29167	01	30	49.63	+03	46	15.3	19.7	809
1989	TZ8		1989	10	08.30486	01	30	48.99	+03	46	12.1		809
1989	TZ8		1989	10	08.31806	01	30	48.35	+03	46	08.6		809
1989	TA9	*	1989	10	08.29167	01	33	10.78	+00	36	52.2	19.2	809
1989	TA9		1989	10	08.30486	01	33	09.75	+00	36	52.6		809
1989	TA9		1989	10	08.31806	01	33	08.90	+00	36	52.6		809
1989	TB9	*	1989	10	07.21944	01	07	52.58	-00	50	59.2	17.9	809
1989	TB9		1989	10	07.23264	01	07	51.89	-00	51	03.5		809
1989	TB9		1989	10	07.24583	01	07	51.23	-00	51	08.1		809
1989	TC9	*	1989	10	07.21944	01	07	52.97	+00	31	03.0	18.7	809
1989	TC9		1989	10	07.23264	01	07	52.22	+00	30	58.1		809
1989	TC9		1989	10	07.24583	01	07	51.42	+00	30	52.9		809
1989	TD9	*	1989	10	07.21944	01	08	08.94	+01	15	41.2	19.3	809
1989	TD9		1989	10	07.23264	01	08	08.18	+01	15	36.2		809
1989	TD9		1989	10	07.24583	01	08	07.39	+01	15	28.9		809
1989	TE9	*	1989	10	07.21944	01	08	19.53	+00	09	13.4	18.3	809
1989	TE9		1989	10	07.23264	01	08	18.82	+00	09	12.3		809
1989	TE9		1989	10	07.24583	01	08	18.06	+00	09	12.8		809
1989	TF9	*	1989	10	07.21944	01	08	36.81	-00	35	00.3	18.8	809
1989	TF9		1989	10	07.23264	01	08	36.09	-00	35	03.6		809
1989	TF9		1989	10	07.24583	01	08	35.41	-00	35	08.4		809
1989	TG9	*	1989	10	07.21944	01	09	14.16	+02	12	38.3	18.6	809
1989	TG9		1989	10	07.23264	01	09	13.64	+02	12	35.6		809
1989	TG9		1989	10	07.24583	01	09	12.95	+02	12	30.8		809
1989	TH9	*	1989	10	07.21944	01	09	15.09	-00	09	39.5	17.7	809
1989	TH9		1989	10	07.23264	01	09	14.48	-00	09	47.4		809
1989	TH9		1989	10	07.24583	01	09	13.82	-00	09	53.3		809
1989	TJ9	*	1989	10	07.21944	01	09	16.40	-01	36	30.4	19.5	809
1989	TJ9		1989	10	07.23264	01	09	15.54	-01	36	35.6		809
1989	TJ9		1989	10	07.24583	01	09	14.70	-01	36	39.8		809
1989	TK9	*	1989	10	07.21944	01	09	19.76	+01	07	58.9	19.1	809
1989	TK9		1989	10	07.23264	01	09	19.11	+01	07	53.4		809
1989	TK9		1989	10	07.24583	01	09	18.45	+01	07	48.9		809
1989	TL9	*	1989	10	07.21944	01	09	21.73	+01	00	10.5	18.0	809
1989	TL9		1989	10	07.23264	01	09	21.16	+00	59	48.4		809

1989	TL9		1989	10	07.24583	01	09	20.50	+00	59	24.4		809
1989	TM9	*	1989	10	07.21944	01	09	25.53	+00	49	24.0	17.7	809
1989	TM9		1989	10	07.23264	01	09	24.71	+00	49	21.0		809
1989	TM9		1989	10	07.24583	01	09	23.90	+00	49	17.5		809
1989	TN9	*	1989	10	07.21944	01	09	36.12	-01	15	31.3	19.4	809
1989	TN9		1989	10	07.23264	01	09	35.53	-01	15	37.9		809
1989	TN9		1989	10	07.24583	01	09	34.88	-01	15	43.1		809
1989	TO9	*	1989	10	07.21944	01	10	10.93	-01	41	41.0	18.5	809
1989	TO9		1989	10	07.23264	01	10	10.17	-01	41	50.1		809
1989	TO9		1989	10	07.24583	01	10	09.54	-01	41	57.1		809
1989	TP9	*	1989	10	07.21944	01	10	41.71	+02	13	02.0	19.6	809
1989	TP9		1989	10	07.23264	01	10	41.13	+02	12	59.0		809
1989	TP9		1989	10	07.24583	01	10	40.51	+02	12	54.4		809
1989	TQ9	*	1989	10	07.21944	01	11	50.46	-02	18	28.1	19.2	809
1989	TQ9		1989	10	07.23264	01	11	49.60	-02	18	28.4		809
1989	TQ9		1989	10	07.24583	01	11	48.78	-02	18	30.6		809
1989	TR9	*	1989	10	07.21944	01	11	58.48	-02	13	26.5	19.3	809
1989	TR9		1989	10	07.23264	01	11	57.72	-02	13	29.9		809
1989	TR9		1989	10	07.24583	01	11	56.95	-02	13	30.0		809
1989	TS9	*	1989	10	07.21944	01	12	37.14	+01	53	37.7	19.6	809
1989	TS9		1989	10	07.23264	01	12	36.56	+01	53	33.3		809
1989	TS9		1989	10	07.24583	01	12	35.92	+01	53	27.0		809
1989	TT9	*	1989	10	07.21944	01	13	59.48	-01	28	35.1	19.7	809
1989	TT9		1989	10	07.23264	01	13	58.77	-01	28	43.4		809
1989	TT9		1989	10	07.24583	01	13	58.03	-01	28	51.5		809
1989	TU9	*	1989	10	07.21944	01	14	51.20	-02	07	37.0	19.2	809
1989	TU9		1989	10	07.23264	01	14	50.58	-02	07	49.0		809
1989	TU9		1989	10	07.24583	01	14	50.02	-02	08	00.1		809
1989	TV9	*	1989	10	07.21944	01	19	29.76	-01	00	51.1	18.9	809
1989	TV9		1989	10	07.23264	01	19	28.89	-01	00	51.4		809
1989	TV9		1989	10	07.24583	01	19	28.00	-01	00	49.0		809
1989	TW9	*	1989	10	07.21944	01	20	19.63	-01	15	29.3	20.0	809
1989	TW9		1989	10	07.23264	01	20	19.20	-01	15	32.1		809
1989	TW9		1989	10	07.24583	01	20	18.85	-01	15	35.5		809
1989	TX9	*	1989	10	07.21944	01	23	09.62	-00	15	02.4	19.6	809
1989	TX9		1989	10	07.23264	01	23	09.02	-00	15	09.6		809
1989	TX9		1989	10	07.24583	01	23	08.48	-00	15	15.3		809
1989	TY9	*	1989	10	07.21944	01	24	16.64	-01	25	30.1	18.7	809
1989	TY9		1989	10	07.23264	01	24	15.76	-01	25	29.6		809
1989	TY9		1989	10	07.24583	01	24	14.83	-01	25	29.3		809
1989	TZ9	*	1989	10	07.21944	01	24	44.52	-01	21	43.2	18.7	809
1989	TZ9		1989	10	07.23264	01	24	43.71	-01	21	43.7		809
1989	TZ9		1989	10	07.24583	01	24	42.79	-01	21	45.3		809
1989	TA10	*	1989	10	07.21944	01	25	11.77	+00	01	09.4	19.0	809
1989	TA10		1989	10	07.23264	01	25	11.03	+00	01	04.8		809
1989	TA10		1989	10	07.24583	01	25	10.20	+00	00	59.8		809
1989	TB10	*	1989	10	07.21944	01	25	38.20	-02	05	58.0	18.8	809
1989	TB10		1989	10	07.23264	01	25	37.44	-02	06	03.6		809
1989	TB10		1989	10	07.24583	01	25	36.62	-02	06	10.2		809
1989	TC10	*	1989	10	07.21944	01	26	09.86	-01	40	22.2	19.8	809
1989	TC10		1989	10	07.23264	01	26	09.14	-01	40	25.6		809
1989	TC10		1989	10	07.24583	01	26	08.58	-01	40	27.0		809
1989	TD10	*	1989	10	07.21944	01	28	07.55	-00	28	19.8	20.0	809
1989	TD10		1989	10	07.23264	01	28	06.80	-00	28	24.0		809
1989	TD10		1989	10	07.24583	01	28	06.03	-00	28	27.0		809
1989	TE10	*	1989	10	08.24931	01	13	20.08	-00	20	10.7	19.5	809
1989	TE10		1989	10	08.26250	01	13	19.13	-00	20	15.8		809
1989	TE10		1989	10	08.27569	01	13	18.21	-00	20	18.4		809
1989	TF10	*	1989	10	08.24931	01	13	58.48	+00	28	25.7	20.0	809

1989	TF10	1989	10	08.26250	01	13	57.74	+00	28	24.0	809
1989	TF10	1989	10	08.27569	01	13	57.08	+00	28	22.8	809
1989	TG10*	1989	10	08.24931	01	15	29.78	+01	45	39.5	20.0 809
1989	TG10	1989	10	08.26250	01	15	29.27	+01	45	35.8	809
1989	TG10	1989	10	08.27569	01	15	28.80	+01	45	32.5	809
1989	TH10*	1989	10	08.24931	01	16	12.76	+01	30	43.9	19.6 809
1989	TH10	1989	10	08.26250	01	16	12.10	+01	30	39.8	809
1989	TH10	1989	10	08.27569	01	16	11.33	+01	30	33.1	809
1989	TJ10*	1989	10	08.24931	01	21	06.90	-01	02	01.1	19.6 809
1989	TJ10	1989	10	08.26250	01	21	06.48	-01	02	03.2	809
1989	TJ10	1989	10	08.27569	01	21	06.03	-01	02	07.5	809
1989	TK10*	1989	10	08.24931	01	22	55.03	+00	42	55.3	19.6 809
1989	TK10	1989	10	08.26250	01	22	54.38	+00	42	57.7	809
1989	TK10	1989	10	08.27569	01	22	53.79	+00	42	58.8	809
1989	TL10*	1989	10	08.24931	01	24	17.63	+00	39	58.7	19.7 809
1989	TL10	1989	10	08.26250	01	24	16.83	+00	39	57.8	809
1989	TL10	1989	10	08.27569	01	24	16.14	+00	39	56.4	809
1989	TM10*	1989	10	08.24931	01	26	11.23	+02	39	25.3	20.0 809
1989	TM10	1989	10	08.26250	01	26	10.75	+02	39	23.9	809
1989	TM10	1989	10	08.27569	01	26	10.13	+02	39	22.6	809
1989	TN10*	1989	10	08.24931	01	27	01.90	+02	37	10.4	19.5 809
1989	TN10	1989	10	08.26250	01	27	01.20	+02	37	06.9	809
1989	TN10	1989	10	08.27569	01	27	00.47	+02	37	01.8	809
1989	TO10*	1989	10	08.24931	01	27	46.73	+00	18	51.7	19.0 809
1989	TO10	1989	10	08.26250	01	27	45.92	+00	18	47.4	809
1989	TO10	1989	10	08.27569	01	27	45.16	+00	18	44.1	809
1989	TP10*	1989	10	02.55174	00	10	45.60	+04	42	20.0	16 385
1989	TP10	1989	10	02.57708	00	10	44.36	+04	42	14.0	385
1989	TQ10*	1989	10	02.55174	00	13	02.53	+04	25	36.6	16 385
1989	TQ10	1989	10	02.57708	00	13	01.09	+04	25	26.0	385
1989	TR10*	1989	10	03.59618	00	45	11.04	+15	03	31.3	16.5 399
1989	TR10	1989	10	03.61834	00	45	10.14	+15	03	25.4	399
1989	TR10	1989	10	03.63472	00	45	09.28	+15	03	19.1	399
1989	TS10*	1989	10	04.53611	23	43	45.36	+00	23	37.9	16.5 403
1989	TS10	1989	10	04.55069	23	43	44.2	+00	23	41	403
1989	TT10*	1989	10	04.56944	00	11	18.2	+00	17	25	16.5 403
1989	TT10	1989	10	04.58403	00	11	17.5	+00	17	33	403
1989	TV10*	1989	10	07.54375	23	40	56.15	-00	30	31.9	16.5 403
1989	TV10	1989	10	07.55799	23	40	55.1	-00	30	32	403
1989	TW10*	1989	10	08.54965	01	24	18.04	+07	54	34.3	16.5 403
1989	TW10	1989	10	08.59618	01	24	15.5	+07	54	11	403
1989	TW10	1989	10	08.60799	01	24	14.63	+07	54	05.9	403
1989	TX10*	1989	10	04.60243	23	59	54.82	-04	40	11.8	16.5 400
1989	TX10	1989	10	04.61979	23	59	54.06	-04	40	21.9	400
1989	TY10*	1989	10	09.58681	01	29	31.56	+08	56	39.8	16.5 400
1989	TY10	1989	10	09.60243	01	29	30.83	+08	56	32.7	400
1989	TY10	1989	10	09.61354	01	29	30.38	+08	56	28.7	400
1989	TZ10*	1989	10	09.71979	01	28	48.49	+12	38	47.2	16.5 400
1989	TZ10	1989	10	09.73507	01	28	47.36	+12	38	46.0	400
1989	TZ10	1989	10	09.74653	01	28	46.44	+12	38	45.2	400
1989	TA11*	1989	10	09.71979	01	29	26.36	+12	53	08.4	16.5 400
1989	TA11	1989	10	09.73507	01	29	25.25	+12	53	03.1	400
1989	TA11	1989	10	09.74653	01	29	24.48	+12	53	01.5	400
1989	TB11*	1989	10	04.60868	01	09	16.72	+12	17	42.0	15.0 374
1989	TB11	1989	10	04.63229	01	09	15.65	+12	17	36.0	374
1989	TC11*	1989	10	04.33108	00	18	41.40	+31	56	10.0	16.5 675
1989	TC11	1989	10	04.36042	00	18	38.45	+31	56	05.6	675
1989	TD11*	1989	10	04.90406	23	38	43.12	+06	54	54.6	17.2V 494
1989	TD11	1989	10	04.92475	23	38	42.23	+06	54	46.2	494

1989	TE11*	1989	10	05.58890	23	57	38.10	-00	12	27.3	15	327
1989	TE11	1989	10	05.74446	23	57	22.76	-00	10	55.9		327
1989	TF11*	1989	10	03.93962	00	37	11.95	+09	09	49.8	16.9	046
1989	TF11	1989	10	03.95380	00	37	11.30	+09	09	50.2		046
1989	TG11*	1989	10	03.93962	00	41	55.40	+08	15	04.2	16.8	046
1989	TG11	1989	10	03.95380	00	41	54.86	+08	15	01.5		046
1989	TH11*	1989	10	03.97278	00	53	04.27	+11	37	38.7	16.7	046
1989	TH11	1989	10	03.99153	00	53	03.12	+11	37	30.4		046
1989	TJ11*	1989	10	04.92608	00	34	24.72	+10	11	29.5	17.0	046
1989	TJ11	1989	10	04.93887	00	34	24.05	+10	11	38.9		046
1989	TK11*	1989	10	04.95640	00	55	25.92	+00	38	38.0	16.9	046
1989	TK11	1989	10	04.96913	00	55	25.20	+00	38	27.2		046
1989	TL11*	1989	10	05.94830	00	52	24.29	+10	38	59.2	16.7	046
1989	TL11	1989	10	05.96242	00	52	23.84	+10	38	49.7		046
1989	TM11*	1989	10	01.11155	23	39	22.89	+01	09	32.5	18	801

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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.

Periodic Comet Helin-Roman-Alu 2
T 1989 Nov. 1.06076 ET Marsden

		(1950.0)	P	Q
q 1.9294607				
n 0.12040386	Peri.	200.73801	+0.73176899	-0.67978537
a 4.0617118	Node	202.32169	+0.64206789	+0.71172777
e 0.5249636	Incl.	7.42034	+0.22861097	+0.17701817

P 8.19
From 10 observations 1989 Oct. 26-Dec. 2.

Comet McKenzie-Russell (1989f1)
T 1989 Nov. 7.69995 ET Nakano

		(1950.0)	P	Q
q 1.9758333				
	Peri.	191.75928	-0.20950533	+0.92759741
	Node	293.21316	+0.92215745	+0.29262926
e 1.0	Incl.	160.33304	+0.32516635	-0.23223084

From 21 observations 1989 Dec. 2-1990 Jan. 4.

Comet Helin-Roman-Alu (1989v)
Epoch 1989 Dec. 20.0 ET = JDE 2447880.5
T 1989 Dec. 15.94163 ET Marsden

		(1950.0)	P	Q
q 1.0473284				
z +0.0089024	Peri.	68.12363	+0.28146235	-0.95456058
+/-0.0000401	Node	7.82144	+0.36635605	+0.01255995
e 0.9906763	Incl.	46.03141	+0.88688342	+0.29775216

From 67 observations 1989 Oct. 1-1990 Jan. 1, mean residual 1".2.

Comet Aarseth-Brewington (1989a1)
T 1989 Dec. 27.88881 ET Nakano

		(1950.0)	P	Q
q 0.3006815				
	Peri.	205.26249	-0.87751390	+0.40611513
	Node	345.21864	+0.37070516	+0.23709685
e 1.0	Incl.	88.37883	-0.30421546	-0.88252795

From 35 observations 1989 Nov. 19-Dec. 29.

Comet Austin (1989c1)
T 1990 Apr. 9.91381 ET Nakano

		(1950.0)	P	Q
q 0.3494284				
	Peri.	61.57086	-0.31814018	-0.46070021
	Node	75.30430	+0.22836108	-0.88549313
e 1.0	Incl.	58.93701	+0.92012936	+0.06047510

From 19 observations 1989 Dec. 6-1990 Jan. 26.

Comet Skorichenko-George (1989e1)
T 1990 Apr. 11.95160 ET Nakano

		(1950.0)	P	Q
q 1.5706364				
	Peri.	137.79178	+0.21838748	-0.48094060
	Node	279.28512	+0.49134213	+0.80597434
e 1.0	Incl.	59.36064	+0.84314282	-0.34511086

From 32 observations 1989 Dec. 20-1990 Jan. 21.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1989 KE	13.5	890623	0.78	94.63	150.82	14.02	0.1355	2.6121	37	8		E
1989 NY	15.0	890713	358.78	155.83	142.78	8.39	0.1700	2.2408	29	6		N
1989 RO2	13.0	891001	346.75	45.15	354.25	23.15	0.2962	2.4308	59	0		M
1989 SP	13.0	891110	31.23	133.97	204.52	11.22	0.1869	2.5718	52	0		N
1989 SC7	10.0	891001	16.77	110.14	241.83	15.68	0.0107	5.2885	64	7		W
1989 TJ1	12.1	891110	358.31	71.46	312.24	1.68	0.0886	2.8121	58	0		E

1989	TS2	11.3	891110	79.78	158.92	148.97	11.28	0.0406	5.2722	56	5	E
1989	TC3	14.0	891001	299.95	285.49	166.22	7.19	0.1374	2.9988	10	0	N
1989	TH3	16.5	891001	32.51	194.89	127.76	3.35	0.2402	2.3369	10	0	N
1989	TF4	15.5	891001	158.60	52.21	162.17	5.59	0.1302	2.2230	10	9	N
1989	TM4	14.0	891001	94.33	93.15	180.92	10.08	0.0913	2.7100	12	9	N
1989	TU10	14.0	891001	334.95	230.90	178.57	5.28	0.2503	2.2595	3	4	E W
1989	TO11	10.5	891021	72.64	93.39	197.89	13.68	0.0817	5.1534	29	4	E
1989	TP11	13.0	891001	26.21	143.58	190.35	3.62	0.1578	2.4216	30	4	M
1989	TX11	12.7	891021	347.23	282.00	109.90	12.88	0.0548	5.2038	27	3	E
1989	UG	13.5	891021	42.61	331.21	1.92	6.72	0.2557	2.3073	41	0	N
1989	UN1	13.5	891021	0.53	182.34	213.89	5.33	0.2994	2.7008	4	0	G
1989	US1	13.0	891110	19.80	339.50	31.40	13.85	0.2333	2.6372	33	0	W
1989	UV1	13.1	891021	24.24	317.67	19.64	0.75	0.2175	3.1068	33	0	E
1989	UO2	14.5	891021	12.49	155.94	211.22	5.47	0.2876	2.4292	9	6	N
1989	UY2	13.5	891110	42.80	281.06	62.25	3.57	0.2113	2.4151	38	0	W
1989	UP3	14.5	891110	349.56	220.79	199.12	12.58	0.1472	2.6161	38	0	N
1989	UU3	13.5	891021	318.27	267.14	193.33	4.19	0.2170	2.4628	5	4	N
1989	UP4	13.5	891021	7.67	31.18	345.67	0.89	0.2710	2.9787	6	8	W
1989	UW4	12.5	891110	4.31	1.11	32.54	1.94	0.1508	2.9850	8	8	N
1989	UA5	14.5	891110	25.29	169.95	188.58	6.73	0.2582	2.2582	4	4	E N
1989	UX5	10.7	891110	318.18	357.74	76.54	4.27	0.0296	5.0699	55	6	E
1989	UA6	10.9	891110	98.37	217.60	57.98	3.63	0.1637	3.9578	55	5	E
1989	UZ6	17.0	891021	340.46	19.37	43.66	9.52	0.1302	2.2232	4	5	E G
1989	UA7	14.0	891001	54.19	212.62	102.58	0.75	0.2077	2.2135	51	7	G
1989	UB7	16.5	891021	338.82	15.04	54.80	3.26	0.2070	2.3719	4	5	G
1989	UC7	16.5	891021	36.02	198.29	136.69	1.32	0.2978	2.6088	4	5	G
1989	UD7	14.0	891021	200.33	164.09	44.93	3.24	0.2492	2.3601	4	5	E M
1989	UF7	13.5	891001	127.57	209.64	50.87	2.58	0.0966	2.4268	51	7	G
1989	UH7	15.0	891021	163.38	41.52	195.36	3.12	0.0208	2.6082	4	5	G
1989	UJ7	16.5	891021	355.60	229.30	175.34	1.06	0.1507	2.3940	4	5	G
1989	UK7	16.0	891021	29.18	222.70	123.58	1.41	0.3029	3.0011	4	5	E G
1989	UL7	15.0	891021	359.17	342.11	59.57	6.19	0.2349	3.2745	4	5	E G
1989	UM7	15.0	891021	43.58	269.81	74.82	2.52	0.1490	3.1378	4	5	G
1989	UN7	15.5	891021	15.63	310.78	72.97	1.90	0.0477	2.6641	4	5	E G
1989	UO7	17.0	891021	11.90	179.84	196.31	2.62	0.2735	2.4950	4	5	G
1989	UP7	16.5	891021	33.32	179.46	175.64	2.08	0.1559	2.5833	4	5	G
1989	UQ7	14.5	891021	288.14	283.18	207.63	3.96	0.1493	2.8248	4	5	G
1989	UR7	16.0	891021	17.12	322.48	50.14	7.64	0.2186	2.7479	4	5	G
1989	UV7	12.9	891021	83.62	192.75	95.40	18.49	0.1335	5.2225	28	3	E
1989	VW	11.5	891130	336.43	44.92	47.70	6.34	0.1498	4.0069	46	0	N
1989	VD1	15.5	891110	316.31	351.51	100.92	7.54	0.0648	2.3444	30	0	N
1989	VJ1	15.0	891110	18.32	202.43	177.56	8.09	0.1452	2.3328	30	0	N
1989	VM1	16.5	891110	22.22	231.62	141.65	5.83	0.1751	2.2052	29	9	N
1989	VP1	14.5	891110	307.50	279.10	191.71	13.35	0.1262	2.5656	30	0	N
1989	VQ1	15.0	891110	246.46	24.05	144.69	7.36	0.1020	2.4404	30	0	N
1989	VR1	14.5	891110	320.42	302.37	152.31	6.16	0.1180	2.2210	30	0	N
1989	WE	13.0	891130	4.73	262.81	152.08	6.00	0.2249	2.5333	11	5	N
1989	WG	14.0	891130	29.50	294.95	85.49	5.68	0.1997	2.3632	40	0	N
1989	WH	13.5	891130	2.19	197.95	223.39	8.63	0.1472	2.7588	39	0	N
1989	WJ	13.5	891130	355.19	7.40	66.58	15.11	0.1354	2.6010	30	0	N
1989	WS	13.5	891110	5.00	158.37	237.15	8.70	0.1903	2.5560	13	0	W
1989	WU	13.5	891130	350.40	174.36	269.73	4.96	0.1548	2.2334	40	0	N
1989	WA1	13.5	891130	307.91	53.88	69.33	9.49	0.0731	2.2464	12	5	N
1989	WF1	13.5	891220	13.36	352.85	60.45	12.97	0.2197	2.7018	36	8	N
1989	WL1	12.0	891130	16.03	170.42	234.51	13.13	0.1419	2.6145	11	0	W
1989	WO1	11.0	891130	23.33	338.86	62.41	11.26	0.1521	3.4641	38	0	N
1989	WT1	12.5	891130	10.56	285.45	124.38	3.16	0.2374	3.0145	23	0	N
1989	WU1	12.5	891130	59.24	109.73	226.91	10.02	0.2787	2.6000	11	0	N
1989	WA2	12.0	891220	38.24	316.22	71.47	16.29	0.1457	2.5661	32	0	N

1989 WK2	13.0	891130	353.19	300.73	143.15	25.27	0.3288	2.7811	33	7	G
1989 WL2	14.0	891130	20.85	264.74	138.36	23.39	0.1126	1.9358	33	7	G
1989 WM2	14.5	891130	22.10	308.01	85.13	7.38	0.2164	2.1340	23	0	N
1989 WN2	13.0	891220	15.49	165.61	252.14	11.87	0.1427	2.6496	34	0	N
1989 WS2	13.5	891130	1.22	315.83	106.53	7.43	0.1338	2.2553	23	9	N
1989 WC3	14.0	891130	357.38	190.29	240.33	2.78	0.0693	2.1891	31	0	N
1989 WV3	14.5	891130	13.85	114.82	282.19	5.44	0.1342	2.4761	10	8	N
1989 WW3	14.0	891130	359.84	20.18	35.19	13.82	0.0068	2.4339	4	3 E	N
1989 WY3	14.5	891130	44.57	284.28	87.72	8.48	0.1132	2.3631	5	5	W
1989 WZ3	14.0	891130	61.07	241.54	91.32	9.66	0.2853	2.9349	5	5	W
1989 WA4	15.5	891130	329.33	8.96	100.96	5.75	0.1745	2.3480	5	5	W
1989 WD4	14.5	891130	31.21	284.85	91.40	7.75	0.2500	2.7507	5	5 E	W
1989 WE4	15.0	891130	35.54	219.50	151.98	2.71	0.2383	2.4472	5	5 E	W
1989 WG4	13.5	891130	354.98	318.00	101.97	6.04	0.0830	2.2171	8	8	N
1989 WH4	13.5	891130	31.54	236.07	139.08	4.88	0.1302	2.1824	7	5	N
1989 XF	12.5	891220	52.35	255.10	112.79	8.75	0.2052	2.5647	28	0	N
1989 XH	12.0	891130	358.94	188.53	245.92	7.23	0.1558	2.7143	32	9	N
1989 XC1	12.5	891130	29.79	266.77	103.34	8.64	0.1180	2.6895	27	9	N
1989 XD1	15.0	891130	31.50	218.18	149.97	4.90	0.1638	2.2510	30	9	N
1989 XN1	13.0	891130	358.41	333.42	76.72	15.28	0.1063	2.7648	27	9	N
1989 XR1	14.0	891130	17.95	269.89	112.53	8.12	0.2112	2.7354	27	9	N
1989 XW1	13.0	891130	352.60	249.54	168.56	9.83	0.1125	3.0433	27	9	N
1989 XD2	14.0	891130	18.32	258.07	124.22	7.15	0.2309	2.6370	27	9	N
1989 YC	14.0	900109	52.50	282.14	100.35	9.92	0.2705	2.3813	11	0	N
1989 YF	12.5	900109	160.05	187.28	125.36	6.42	0.0748	2.2861	7	0	N
1989 YG	13.5	891220	33.62	36.96	10.80	5.52	0.1532	2.3556	16	6	N
1989 YM	12.5	900109	5.79	169.88	298.23	12.57	0.1239	2.6288	28	0	N
1989 YT	13.0	900109	28.05	6.45	30.97	3.42	0.1211	2.6410	12	8	N
1989 YH1	13.5	900129	331.61	198.73	323.66	1.62	0.1445	2.3981	24	8	N
1989 YQ6	13.0	891220	18.53	310.22	103.11	10.34	0.1966	2.5499	33	8	N
1989 YR6	13.0	891220	30.48	289.98	113.19	8.59	0.1221	2.5616	3	6	W
1989 YS6	13.5	891220	52.41	270.76	102.57	5.15	0.1769	2.2144	3	6	W
1990 AD	12.0	900109	35.30	316.05	98.77	13.63	0.2431	3.1234	12	6	N
1990 AE	13.5	900109	23.71	349.67	82.14	4.85	0.2507	2.3565	20	7	N

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(610) Valeska Obs. 24 M 184.09793 Peri. 0.21838
H 12.1 G 0.25 Opp. 7 n 0.18278605 Node 20.05226
rms res. 0".94 (M-P) 1906-1984 e 0.2651154 Incl. 12.73284

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(742) Edisona Obs. 48 M 92.45732 Peri. 284.70755
H 9.59 G 0.25 Opp. 24 n 0.18819934 Node 64.16601
rms res. 1".06 (M-P) 1913-1989 e 0.1112119 Incl. 11.21789

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(770) Bali Obs. 64 M 81.39858 Peri. 17.54808
H 10.93 G 0.25 Opp. 18 n 0.29776933 Node 44.26073
rms res. 0".98 (M-P) 1931-1989 e 0.1510102 Incl. 4.38722

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(792) Metcalfia Obs. 38 M 293.57601 Peri. 226.56132
H 10.13 G 0.15 Opp. 12 n 0.23238966 Node 265.03729
rms res. 0".91 (M-P) 1947-1986 e 0.1346820 Incl. 8.62222

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(795) Fini Obs. 41 M 32.98554 Peri. 190.14177
H 9.81 G 0.15 Opp. 20 n 0.21602250 Node 17.00997
rms res. 1".12 (M-P) 1917-1987 e 0.0991471 Incl. 19.02535

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(865) Zubaida Obs. 40 M 241.60687 Peri. 300.35699
H 12.10 G 0.25 Opp. 17 n 0.26224606 Node 176.69959
rms res. 1".01 (M-P) 1908-1989 e 0.1957462 Incl. 13.29749

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1079) Mimosa Obs. 131 M 72.04651 Peri. 104.74826
H 11.25 G 0.25 Opp. 19 n 0.20228838 Node 329.24965
rms res. 0".90 (M-P) 1927-1988 e 0.0494619 Incl. 1.18113

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1130) Skuld Obs. 53 M 150.81840 Peri. 113.34348
H 12.1 G 0.25 Opp. 16 n 0.29597240 Node 215.73965
rms res. 1".13 (M-P) 1906-1989 e 0.1970604 Incl. 2.16565

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1369) Ostanina Obs. 39 M 49.06014 Peri. 124.15734
H 10.69 G 0.15 Opp. 11 n 0.18005563 Node 180.74361
rms res. 1".22 (M-P) 1928-1989 e 0.2227610 Incl. 14.27704

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1442) Corvina Obs. 53 M 58.85541 Peri. 125.33686
H 11.62 G 0.25 Opp. 15 n 0.20226058 Node 220.76234
rms res. 0".92 (M-P) 1937-1989 e 0.0766109 Incl. 1.24993

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1444) Pannonia Obs. 13 M 14.51662 Peri. 314.43091
H 11.0 G 0.25 Opp. 6 n 0.17589370 Node 302.80898
rms res. 1".12 (M-P) 1938-1983 e 0.1372680 Incl. 17.73932

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1482) Sebastiana Obs. 73 M 179.01501 Peri. 212.47044
H 10.97 G 0.25 Opp. 22 n 0.20224622 Node 70.85388
rms res. 1".13 (M-P) 1928-1989 e 0.0354144 Incl. 2.97487

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1517) Beograd Obs. 56 M 165.25839 Peri. 229.00276
H 11.0 G 0.25 Opp. 18 n 0.21993124 Node 63.64150
rms res. 1".02 (M-P) 1931-1989 e 0.0423096 Incl. 5.27808

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2127) Tanya Obs. 13 M 111.96284 Peri. 176.59411
H 11.56 G 0.15 Opp. 7 n 0.17173994 Node 106.44320
rms res. 0".69 (M-P) 1953-1988 e 0.0474545 Incl. 13.15025

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2315) Czechoslovakia Obs. 31 M 134.65769 Peri. 11.33717
H 10.4 G 0.25 Opp. 8 n 0.18907991 Node 29.95468
rms res. 0".85 (M-P) 1946-1988 e 0.1132959 Incl. 10.72171

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2376) Martynov Obs. 57 M 93.60800 Peri. 294.09207
H 10.78 G 0.15 Opp. 11 n 0.17089511 Node 61.79587
rms res. 0".76 (M-P) 1954-1989 e 0.0967376 Incl. 3.85479

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2410) Morrison Obs. 93 M 310.47517 Peri. 61.68497
H 12.99 G 0.25 Opp. 11 n 0.29877420 Node 126.08382
rms res. 0".87 (M-P) 1955-1989 e 0.0631115 Incl. 2.39817

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2416) Sharonov Obs. 28 M 132.25915 Peri. 97.65560
H 11.0 G 0.25 Opp. 12 n 0.18861411 Node 148.35125
rms res. 1".35 (M-P) 1916-1989 e 0.0481735 Incl. 10.51421

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2441) Hibbs Obs. 19 M 326.24810 Peri. 215.69336
H 13.7 G 0.25 Opp. 7 n 0.26356825 Node 139.64332
rms res. 0".84 (M-P) 1957-1987 e 0.1922979 Incl. 3.74661

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2447) Kronstadt Obs. 31 M 82.82773 Peri. 209.14175
H 13.05 G 0.15 Opp. 7 n 0.24349274 Node 146.38896
rms res. 0".89 (M-P) 1961-1989 e 0.2609087 Incl. 8.78142

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2461) 1981 EC1 Obs. 89 M 89.81114 Peri. 223.07861
H 11.4 G 0.25 Opp. 9 n 0.17292525 Node 115.95566
rms res. 0".76 (M-P) 1955-1989 e 0.1532434 Incl. 2.51318

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2508) Alupka Obs. 21 M 156.76319 Peri. 118.48263
H 13.5 G 0.25 Opp. 6 n 0.27021808 Node 191.12728
rms res. 0".74 (M-P) 1956-1989 e 0.1259419 Incl. 6.08258

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2518) Rutllant Obs. 36 M 223.22020 Peri. 37.89399
H 13.69 G 0.25 Opp. 4 n 0.28088859 Node 205.16903
rms res. 0".71 (M-P) 1974-1989 e 0.1726580 Incl. 5.92635

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2603) Taylor Obs. 21 M 147.39881 Peri. 278.77054
H 11.98 G 0.15 Opp. 9 n 0.21234767 Node 37.59810
rms res. 1".41 (M-P) 1936-1989 e 0.0411837 Incl. 3.05195

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2622) Bolzano Obs. 53 M 88.70692 Peri. 218.34953
H 11.6 G 0.25 Opp. 6 n 0.18911133 Node 134.40283
rms res. 0".61 (M-P) 1972-1989 e 0.0957607 Incl. 11.00982

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2894) Kakhovka Obs. 16 M 350.58360 Peri. 34.75948
H 12.2 G 0.25 Opp. 7 n 0.17966837 Node 85.84527
rms res. 0".97 (M-P) 1953-1989 e 0.1478244 Incl. 2.58826

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2898) 1938 DN Obs. 15 M 148.40579 Peri. 212.67871
H 12.7 G 0.25 Opp. 5 n 0.24100563 Node 116.24278
rms res. 0".71 (M-P) 1938-1989 e 0.0205238 Incl. 14.31146

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2985) Shakespeare Obs. 23 M 238.98570 Peri. 276.32157
H 12.29 G 0.25 Opp. 8 n 0.20520480 Node 34.03117
rms res. 1".27 (M-P) 1962-1988 e 0.0455891 Incl. 2.65514

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3045) Alois Obs. 18 M 170.45151 Peri. 336.22028
H 11.45 G 0.15 Opp. 7 n 0.17819009 Node 35.85754
rms res. 1".06 (M-P) 1954-1987 e 0.1164538 Incl. 3.34210

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3074) Popov Obs. 20 M 352.82844 Peri. 151.08232
H 13.60 G 0.25 Opp. 8 n 0.27549042 Node 348.33916
rms res. 1".18 (M-P) 1975-1989 e 0.1119306 Incl. 2.41864

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3091) van den Heuvel Obs. 23 M 238.95465 Peri. 8.66572
H 13.80 G 0.25 Opp. 7 n 0.27357874 Node 228.12272
rms res. 0".53 (M-P) 1960-1989 e 0.1666362 Incl. 2.00958

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3541) 1984 ML Obs. 18 M 237.01638 Peri. 130.65863
H 12.5 G 0.25 Opp. 6 n 0.25560833 Node 91.78808
rms res. 1".02 (M-P) 1949-1988 e 0.1459957 Incl. 4.01267

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3643) 1978 UN2 Obs. 16 M 70.27039 Peri. 3.31993
H 13.1 G 0.25 Opp. 6 n 0.26457224 Node 56.29845
rms res. 0".90 (M-P) 1963-1989 e 0.1503814 Incl. 13.88930

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3661) 1979 UY3 Obs. 19 M 302.64153 Peri. 140.61187
H 11.9 G 0.25 Opp. 9 n 0.19648741 Node 17.53991
rms res. 1".08 (M-P) 1966-1989 e 0.0584275 Incl. 1.95131

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3851) Alhambra Obs. 27 M 57.16728 Peri. 97.05028
H 13.8 G 0.25 Opp. 7 n 0.30729754 Node 344.23810
rms res. 1".10 (M-P) 1950-1989 e 0.0644674 Incl. 4.62841

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3921) 1971 OH Obs. 9 M 131.86283 Peri. 215.35634
H 12.9 G 0.25 Opp. 6 n 0.22863079 Node 154.97995
rms res. 1".41 (M-P) 1954-1988 e 0.2832695 Incl. 12.06218

(4358)* A909 TF = 1943 VB = 1981 TO1 = 1985 SD6 = 1988 GK
Discovered 1909 Oct. 5 by P. H. Cowell at Greenwich.
Id. T. Kobayashi (MPC 14340)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 162.39895 (1950.0) P Q
n 0.23409253 Peri. 260.94419 +0.09394705 +0.99389787
a 2.6074201 Node 14.82261 -0.80136987 +0.10994304
e 0.1725529 Incl. 13.05804 -0.59074553 +0.00891879
P 4.21 H 11.7 G 0.25
Residuals in seconds of arc
091005 000 1.0+ 1.0- 431103 024 1.1+ 2.7- 880419 897 1.3+ 1.8-
091005 000 1.3- 1.6- 811002 095 0.3- 0.3+ 891008 293 1.5- 0.5+
091006 000 0.5+ 0.1+ 850921 095 0.5+ 1.3+ 891008 293 1.2- 0.8+
091006 000 0.5+ 0.9- 880415 897 0.9- 0.1+ 891027 801 0.2- 1.2+
091008 000 1.8+ 0.4- 880415 897 1.8- 0.3-
091012 000 0.5+ 0.3- 880419 897 0.3- 0.1-

(4359)* 1935 TG = 1951 WQ1 = 1954 UM = 1973 UZ = 1976 QD2 = 1976 SA7
= 1979 OZ13 = 1979 QA7
Discovered 1935 Sept. 28 by H. van Gent at Johannesburg.
Id. T. Kobayashi (MPC 14341)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	164.74921	(1950.0)	P	Q
n	0.31190852	Peri. 185.32479	+0.99949881	+0.03155860
a	2.1533662	Node 172.86531	-0.02825374	+0.92472590
e	0.1659492	Incl. 1.14670	-0.01427760	+0.37932315
P	3.16	H 13.1	G 0.25	

Residuals in seconds of arc

350928	078	(80.8+	4.9+)	511129	711	2.8+	0.1+ Y	790820	095	0.7-	0.4+
351001	078	(79.6+	1.5-)	541022	760	0.9-	0.4-	891201	888	1.7-	0.4+
351002	094	(82.7+	15.2-)	541022	760	1.0+	1.4-	891201	894	0.7-	0.2-
351016	078	0.8-	1.6+	731026	095	1.3-	3.5-	891201	888	0.6+	0.1+
351018	078	0.4-	1.4-	760828	675	1.3+	0.0	891201	894	0.0	1.5-
351023	094	0.2+	1.6+	760925	095	1.4+	0.4+	891202	888	0.9+	1.4+
511129	711	2.0-	3.6+ Y	790719	095	0.8-	1.5+	891202	888	1.0+	0.2+

(4360)* 1964 TG2 = 1981 UN12

Discovered 1964 Oct. 9 at the Purple Mountain Observatory.

Id. C. M. Bardwell (MPC 10037)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	58.68610	(1950.0)	P	Q
n	0.23514343	Peri. 77.88044	+0.66097254	-0.75010326
a	2.5996456	Node 330.71032	+0.67026731	+0.60299745
e	0.1593993	Incl. 2.51373	+0.33742709	+0.27154957
P	4.19	H 12.9	G 0.25	

Residuals in seconds of arc

641009	330	0.4+	0.4-	811025	095	0.9+	0.6+	860112	801	0.6+	0.4+
641030	330	1.6-	0.5-	811028	095	0.4+	0.0	890929	801	0.4-	1.0+
641109	330	1.7+	0.1-	851107	688	1.9+	0.5-				
811023	095	1.6-	0.6+	851107	688	1.9-	0.6-				

(4361)* 1977 TG7 = 1983 WV

Discovered 1977 Oct. 9 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. S. Nakano (MPC 12578)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	87.45954	(1950.0)	P	Q
n	0.17774666	Peri. 358.91552	+0.28535967	-0.95731946
a	3.1328175	Node 74.50289	+0.87964890	+0.24258042
e	0.1747022	Incl. 2.73175	+0.38050975	+0.15714385
P	5.55	H 12.5	G 0.25	

Residuals in seconds of arc

771007	675	0.4+	0.8-	771022	675	2.2+	0.3-	840104	688	0.0	2.3+
771009	095	0.0	0.1+	771022	675	1.1+	1.0-	881013	801	1.2+	0.1+
771011	675	1.6-	0.8+	831127	330	1.1-	1.3+	881207	801	1.3-	0.6-
771011	675	0.3+	0.3+	831129	688	0.5-	0.1+	891220	372	1.2+	0.7+
771011	675	2.4-	0.7+	831129	688	0.3-	0.9-	891220	372	(5.0-	0.5+)
771011	675	1.0+	1.1+	831201	688	0.6-	0.6-	891224	372	0.4+	0.6-
771012	675	0.2-	1.3-	831201	688	0.2+	0.2-	891224	372	1.6-	1.0-
771012	675	0.5+	2.3-	831204	046	1.0-	0.7+	891229	372	1.6-	0.7-
771012	675	0.7+	1.2-	831204	046	0.2-	0.0	891229	372	1.6-	1.8-
771012	675	0.4+	0.9-	831205	046	0.9-	1.4+	891230	413	2.1-	0.7+
771016	675	0.5-	0.3-	831205	046	0.2+	0.8+	891230	413	1.1+	0.3+
771016	675	1.1-	0.1+	831208	330	(3.0-	0.0)	891231	413	0.4-	1.0-
771017	675	0.6-	0.6+	831208	046	2.2+	1.1-	891231	413	0.8+	0.1-
771017	675	0.5-	0.6+	831208	046	0.4+	0.3-	891231	372	(6.9-	3.7+)
771021	675	0.3+	1.7+	840102	688	1.4+	1.7-	900117	391	0.7+	0.4+
771021	675	0.5+	0.5+	840104	688	0.2-	1.4+	900117	391	2.2+	0.4+

(4362)* 1978 PR4 = 1974 FM1 = 1984 EE1
Discovered 1978 Aug. 1 at the Perth Observatory.
Id. C. M. Bardwell (MPC 9424)
Epoch 1990 Nov. 5.0 ET = JDE 2448200. Bardwell

M 327.02949	(1950.0)	P	Q	
n 0.29432240	Peri. 171.32219	-0.90400596	+0.42504757	
a 2.2383114	Node 33.94982	-0.39699248	-0.79474899	
e 0.1013981	Incl. 4.71551	-0.15865115	-0.43325351	
P 3.35	H 13.4	G 0.25		

Residuals in seconds of arc

740321 095	(4.3-	3.3-)	791124 675	0.3-	1.0+	850819 095	0.2+	0.0			
780801 323	1.6-	0.1+	791125 675	0.3-	1.5+	850824 095	1.8-	0.7+			
780806 323	0.4+	0.9-	840226 095	1.7+	1.6-	891121 399	0.6+	1.5-			
780806 323	1.7+	0.4-	840301 675	0.1-	1.3+	891121 399	0.4+	0.9-			
780807 323	1.8-	0.5-	840301 675	0.4+	1.0+	891121 399	0.5-	0.7-			
780807 323	0.0	0.3+	840304 675	0.1+	1.5+	891122 399	1.4+	0.9-			
780809 323	0.0	1.9-	840304 675	1.2-	1.3+	891122 399	0.9+	0.1+			
780809 323	1.5+	1.4-	840329 095	2.3-	0.3-	891122 399	0.6+	0.6-			
780811 323	0.5-	0.4-	840403 095	0.6+	2.7-	891217 399	1.9+	0.8+			
780811 323	0.9+	0.3-	840405 095	0.4+	1.3-	891217 399	0.1+	1.3-			
780905 323	1.6+	2.2+	850813 095	1.5-	0.6+	891217 399	2.4-	1.4-			
791122 675	0.6-	1.2+	850817 095	0.3+	0.9+	891218 399	0.1-	0.3-			

(4363)* 1978 TU7 = 1967 TG
Discovered 1978 Oct. 2 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.
Id. L. D. Schmadel (MPC 7608)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M 112.36342	(1950.0)	P	Q	
n 0.26905227	Peri. 293.13512	+0.94696912	-0.28380449	
a 2.3763566	Node 83.62220	+0.32107240	+0.85431245	
e 0.2295582	Incl. 8.72073	-0.01272759	+0.43543685	
P 3.66	H 13.3	G 0.25		

Residuals in seconds of arc

671012 095	1.8+	0.1+	781101 095	1.4+	1.0+	851114 474	0.2-	0.1-			
671029 095	2.1-	3.8-	821222 511	0.2+	0.1+	891028 807	0.0	0.3+			
781002 095	0.9+	0.7+	821223 511	0.3+	0.3+	891029 801	1.1-	0.1+			
781008 095	0.4+	1.5+	830202 095	0.3-	0.6-	891029 801	1.3-	0.0			

(4364)* 1978 VV5 = 1983 CX1 = 1988 RK3
Discovered 1978 Nov. 7 by E. F. Helin and S. J. Bus at Palomar.
Id. C. M. Bardwell (MPC 14013)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 27.81265	(1950.0)	P	Q	
n 0.27753569	Peri. 45.87671	-0.99578241	+0.08957503	
a 2.3276812	Node 139.25036	-0.09043826	-0.92196297	
e 0.1383439	Incl. 1.74192	-0.01543754	-0.37677660	
P 3.55	H 13.9	G 0.25		

Residuals in seconds of arc

781105 675	0.2+	0.7+	880909 033	0.0	0.7-	881104 807	1.8-	0.1+			
781106 675	1.0-	1.2+	880909 033	1.0+	0.3-	881105 807	0.4-	0.3+			
781107 675	1.0+	0.1+	880910 033	0.5+	0.4-	881106 807	1.5-	0.3-			
781108 675	0.6-	0.9+	880910 033	0.2+	0.8-	881107 807	1.0-	0.4-			
781129 675	0.1+	0.0	880911 033	0.1+	0.0	900121 403	1.3-	0.5+	Y		
781130 675	0.0	0.4+	880916 807	1.0+	0.3+	900121 403	1.2+	0.7-	Y		
830204 046	0.9-	0.8-	880918 807	0.3+	0.9-	900123 403	0.1+	1.0-			
830204 046	0.2+	1.3-	881005 807	0.3+	0.4-	900123 403	0.2-	0.4-			
880908 033	1.1+	0.3-	881008 807	1.1+	0.3-						

(4365)* 1978 VH8 = 1963 TH = 1977 RV8 = 1980 FQ9 = 1982 UD = 1987 SD5

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

Id. E. Bowell (MPC 12576), B. G. Marsden (ibid.), S. Nakano (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 298.04387	(1950.0)	P	Q	
n 0.20486093	Peri. 55.44114	+0.49772235	+0.86718279	
a 2.8499022	Node 244.41633	-0.80153933	+0.45269250	
e 0.0535441	Incl. 1.03702	-0.33137163	+0.20751748	
P 4.81	H 12.5	G 0.25		

Residuals in seconds of arc

631013	760	0.3+	0.9-	781108	675	0.2+	0.4-	870929	054	0.5-	0.8+
631013	760	0.0	0.5+	781129	675	0.1-	0.4+	870930	054	0.3-	1.0+
770908	675	0.4+	0.3+	781130	675	0.2-	0.9-	870930	054	0.2-	1.1+
770909	675	0.5-	0.2-	800316	095	0.7+	1.8+	881207	033	0.3+	0.2-
781105	675	0.0	0.3-	820918	095	(4.6-	0.2+)	881208	033	0.3-	0.0
781106	675	0.1-	0.4-	821017	688	0.7+	0.1-				
781107	675	0.0	0.5+	821017	688	0.6-	0.5-				

(4366)* 1979 YV8 = 1980 BJ3 = 1952 BH = 1969 BC = 1975 ES5 = 1978 SQ5 = 1981 JJ = 1981 JW2 = 1986 EU

Discovered 1979 Dec. 24 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. S. Nakano (MPC 10632; unpublished), E. Bowell (d, MPC 6815), C. Shoemaker (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 326.50992	(1950.0)	P	Q	
n 0.17609400	Peri. 91.83117	-0.64409626	-0.76471440	
a 3.1523881	Node 38.28805	+0.68919912	-0.59078269	
e 0.1458020	Incl. 1.73492	+0.33188038	-0.25726972	
P 5.60	H 12.2	G 0.25		

Residuals in seconds of arc

520128	711	0.3+	2.4- Y	800117	330	1.6+	0.2-	810510	675	1.3-	1.2+
520130	760	0.4-	0.8+	800123	095	0.8-	1.2+	810511	675	(4.4+	2.5+)
520130	760	(1.0-	18.6+)	810503	688	1.0+	2.0-	830911	095	2.2-	0.8-
690120	095	3.4-	2.9-	810503	688	0.7+	2.2-	860305	688	0.6+	1.2+
750315	095	0.3+	1.7+	810505	675	(1.2+	4.0-)	860305	688	0.7+	0.9+
750317	095	1.5+	0.3+	810505	675	0.3+	1.8-	891002	807	0.5+	1.2-
780927	095	1.0+	2.1+	810505	675	2.6-	2.6+	891004	807	0.1-	1.4-
781003	095	0.2-	0.5+	810506	675	0.0	0.2-	891029	807	0.2+	0.9-
781007	095	1.2+	1.5+	810506	675	1.2+	1.0-	891101	807	0.3+	0.4-
791224	095	0.8-	0.1+	810506	675	(1.7-	3.9+)				

(4367)* 1981 EE43 = 1930 UG1 = 1974 SK3

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

Id. H. Kaneda (MPC 15705), W. Landgraf (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 70.06194	(1950.0)	P	Q	
n 0.20176817	Peri. 67.82139	+0.27924649	-0.96000090	
a 2.8789510	Node 6.07396	+0.79411719	+0.21889504	
e 0.2339410	Incl. 11.16329	+0.53981412	+0.17459448	
P 4.88	H 12.7	G 0.25		

Residuals in seconds of arc

301017	690	1.5-	1.1-	810306	413	2.2+	0.3+	810406	413	1.7+	0.3+
301019	690	2.2+	0.1-	810311	413	0.5-	1.2-	810406	413	0.4-	0.8+
740922	095	1.0-	1.8+	810311	413	0.1+	0.1+	810407	413	0.1-	1.0+
810302	413	1.1-	1.2-	810315	413	1.1+	0.2+	810407	413	1.4+	0.8+
810302	413	0.4+	0.8-	810405	413	(4.4+	0.6-)	810410	413	1.3-	0.2+
810306	413	2.3-	0.2-	810405	413	0.8-	0.2+	891231	399	0.0	1.6+

891231 399 2.2- 1.9- 900102 399 0.7- 0.2+ 900117 399 0.7+ 0.4-
891231 399 0.1- 0.4- 900117 399 0.1+ 1.2+
900102 399 1.4+ 0.7+ 900117 399 1.0+ 0.7-

(4368)* 1981 JC2 = 1972 TV4 = 1977 UC = 1983 TA2 = 1988 PG4
Discovered 1981 May 5 by C. S. Shoemaker at Palomar.
Id. C. S. Shoemaker (1989 obs.), B. G. Marsden
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Marsden
M 157.63282 (1950.0) P Q
n 0.17333923 Peri. 82.21717 +0.56366138 +0.78570717
a 3.1856995 Node 225.40110 -0.82551340 +0.54649558
e 0.0094590 Incl. 20.97250 +0.02852145 +0.28983932
P 5.69 H 11.3 G 0.25
Residuals in seconds of arc
721005 095 0.7+ 4.4+ 810506 675 0.1- 0.1- 880814 675 0.1- 0.8+
771016 801 1.8- 2.1+ 810511 675 2.2+ 0.1- 891102 675 0.2- 1.4-
810411 675 2.1- 0.4+ 830912 688 0.4- 3.4- 891103 675 0.6+ 0.1-
810411 675 1.0- 0.2- 830912 688 0.1+ 2.2- 891124 675 0.6- 0.2-
810505 675 0.6+ 2.2- 831012 688 1.0+ 1.3- 891124 675 0.9- 0.2+
810505 675 0.1+ 0.6- 831012 688 1.5+ 0.1-
810506 675 0.2+ 1.3+ 880814 675 0.3- 0.7+

(4369)* 1982 OR = 1940 RD = 1957 SD = 1970 WC1 = 1971 BC4 = 1980 BT2 = 1987 YF
Discovered 1982 July 30 by L. Brozek at Klet.
Id. T. Kobayashi (MPC 12800; unpublished)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 306.86869 (1950.0) P Q
n 0.23384265 Peri. 75.57622 +0.94814609 -0.26306523
a 2.6092773 Node 299.40297 +0.14899176 +0.86359366
e 0.2546904 Incl. 11.81444 +0.28074980 +0.43011938
P 4.21 H 11.6 G 0.25
Residuals in seconds of arc
400906 024 1.1+ 1.0- 820812 046 1.7+ 0.0 871225 385 (1.7- 3.8-)
570924 760 3.5- 2.3+ 820814 046 0.2- 1.1- 871227 385 3.2- 2.3-
701127 095 2.9+ 0.6- 820814 046 0.1- 0.3- 871227 385 (0.6+ 6.6-)
710118 095 1.7+ 3.1+ 871222 385 (0.8- 6.2-) 871228 385 0.7- 1.9-
800124 095 0.8- 0.1+ 871222 385 (1.1- 5.5-) 871228 385 1.9- 1.8-
820730 046 0.2- 2.0- 871224 385 0.4- 2.5- 871228 385 0.9- 0.5+
820730 046 0.1- 2.0- 871224 385 1.5- 0.8- 880109 385 0.6- 1.9-
820812 046 2.0+ 0.6- 871225 385 1.4+ 2.6+ 880109 385 (0.6- 3.9-)

(4370)* 1982 SL = 1969 TZ3 = 1979 XD1
Discovered 1982 Sept. 22 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Id. C. M. Bardwell (MPC 7470)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell
M 170.05341 (1950.0) P Q
n 0.30288337 Peri. 152.76561 +0.98249497 -0.18426881
a 2.1959331 Node 217.88451 +0.16176849 +0.91675698
e 0.2000611 Incl. 2.55379 +0.09238286 +0.35440323
P 3.25 H 14.6 G 0.25
Residuals in seconds of arc
691011 095 0.4+ 0.7+ 820915 046 0.7+ 0.5- 820919 046 1.3- 0.8-
691014 095 (1.0+ 8.4-) 820915 046 1.8+ 0.2- 820919 046 0.8- 1.3-
780509 675 0.8- 0.6- 820916 046 0.2- 0.2+ 820920 095 0.8- 2.0+
780510 675 0.1- 0.8- 820916 095 0.7- 2.7+ 820922 688 0.7+ 0.3-
791214 095 1.3- 0.8+ 820916 046 1.3+ 0.6+ 820922 688 1.1+ 0.2-
820914 046 1.0- 0.0 820918 095 (1.2+ 3.8+) 820926 095 0.1+ 1.9+

821009 688 0.8- 1.5- 821017 688 0.2- 1.6- 891202 033 0.7+ 1.0-
821009 688 1.0+ 0.9- 891129 033 0.5+ 0.6-
821017 688 0.4- 2.0- 891129 033 0.0 0.0

(4371)* 1983 GC2 = 1934 HH = 1949 FE1 = 1968 HF1 = 1987 MW

Discovered 1983 Apr. 10 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. S. Nakano (MPC 14190)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	0.98764		(1950.0)		P		Q
n	0.26201418	Peri.	166.77494		-0.75229766		+0.65799393
a	2.4187233	Node	54.42189		-0.60806752		-0.67415861
e	0.1884398	Incl.	2.32882		-0.25357865		-0.33549092
P	3.76	H	13.5	G	0.25		

Residuals in seconds of arc

340417 078 (1.5+ 13.4+)X 830512 095 0.1+ 1.9- 891231 413 0.9+ 0.9+
490326 094(74.3- 36.7+)X 870628 675 0.1- 1.3+ 900121 877 0.5+ 1.4-
680427 095 1.5- 0.5- 870630 675(13.2- 1.9+) 900121 877 0.8- 0.0
680522 095 1.3+ 0.2+ 891230 413 0.6- 0.6- 900124 877 0.0 2.1+
830410 095 0.5- 0.4+ 891230 413 1.5+ 1.4+ 900124 877 (0.5- 3.2+)
830411 095 0.2+ 1.3+ 891231 413 1.1- 1.5-

(4372)* 1984 TB = 1969 TN5 = 1979 SB10

Discovered 1984 Oct. 3 at the Oak Ridge Observatory.

Id. S. Nakano (MPC 13158)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	62.41458		(1950.0)		P		Q
n	0.19624218	Peri.	15.95075		+0.86106024		-0.50845915
a	2.9327461	Node	14.61615		+0.46357923		+0.77952732
e	0.1239711	Incl.	1.51586		+0.20897264		+0.36579564
P	5.02	H	12.9	G	0.25		

Residuals in seconds of arc

691015 095 0.7- 1.1- 841019 801 0.5+ 2.4+ 891101 888 0.1- 0.1-
691017 095 1.7+ 1.0- 841021 801 0.1- 0.9+ 891101 888 0.0 1.2-
790928 095 0.2+ 1.0- 891002 807 0.1+ 0.4- 891102 888 0.5- 0.5+
840927 033 0.6- 0.8- 891004 807 0.2- 0.4- 891102 888 0.4- 1.0+
840927 033 1.2- 0.6- 891028 807 0.6+ 0.4+
841003 801 0.4+ 0.5+ 891031 807 0.3+ 0.9+

(4373)* 1985 PB = 1975 RR = 1989 YL

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

Id. W. Landgraf (MPC 10166), T. Kobayashi

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	153.18624		(1950.0)		P		Q
n	0.29578566	Peri.	239.67182		+0.83090175		-0.55512305
a	2.2309233	Node	153.99015		+0.53558251		+0.07943043
e	0.1760869	Incl.	4.96541		+0.15084316		+0.29039042
P	3.33	H	13.9	G	0.25		

Residuals in seconds of arc

750903 095 1.8- 2.1+ 850819 071 0.7+ 0.9+ 850912 688 0.7- 1.0-
750906 095 2.6- 1.6+ 850820 688 0.1+ 0.0 870225 801 0.6+ 1.5+
750909 808 2.4+ 0.6- 850820 688 0.5+ 0.2+ 891224 372 1.4+ 0.5+
750909 808 1.1+ 0.9+ 850820 071 0.7+ 1.5+ 891227 372 0.5- 0.7+
850814 688 2.5- 0.6- 850822 688 0.4- 0.3+ 891227 372 0.7- 0.8-
850814 688 0.9- 0.2- 850822 688 1.3+ 2.2- 891231 372 0.7+ 0.3-
850819 071 0.6+ 0.7+ 850912 688 1.1+ 1.9- 891231 372 0.8- 0.8+

(4374)* 1987 BJ = 1969 VX = 1979 YV3
Discovered 1987 Jan. 31 by K. Suzuki and T. Urata at Toyota.
Id. T. Kobayashi (MPC 11744)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 52.90630	(1950.0)	P	Q	
n 0.29745163	Peri. 338.70421	-0.65431907	-0.75518539	
a 2.2225855	Node 152.11782	+0.70542189	-0.62836214	
e 0.1707753	Incl. 4.84727	+0.27248214	-0.18669773	
P 3.31	H 13.1	G 0.25		

Residuals in seconds of arc

691111	095	(3.2-	7.5-)	870221	894	2.7+	2.1-	891120	881	0.4-	0.3+
691113	095	0.4-	2.5-	870221	894	(1.4+	3.4-)	891121	881	0.6-	2.4+
691115	095	1.0+	2.7-	870225	220	(3.3+	1.2-)Y	891121	881	0.5-	0.8+
791218	095	0.7+	1.3+	870227	881	0.5-	0.6+	891125	881	(4.0+	2.3+)
820927	095	1.1+	0.1-	870227	881	0.4-	1.6+	891125	881	0.8+	1.5+
870131	881	1.1-	2.8- Y	870227	881	0.4-	0.9+	891126	894	1.6+	0.1-
870131	881	1.3-	0.7- Y	870227	220	1.7+	1.6- Y	891127	881	2.1-	0.4-
870204	883	0.5-	2.5+	870302	220	(3.5+	2.4+)Y	891127	881	1.1-	0.6+
870204	883	0.5-	2.0+	870302	220	0.2+	1.6-	891129	801	0.8+	0.2+
870205	376	(4.1+	2.6+)	870303	220	(5.3+	4.7-)Y	891201	046	(2.0+	5.2-)
870205	376	(3.9-	2.6-)	870304	220	1.0-	0.9+ Y	891201	046	(0.0	3.6-)
870205	888	1.2+	0.1-	870320	881	0.6+	0.4+	891218	881	(5.1-	1.1-)
870205	888	0.4+	0.9-	870320	881	0.4-	0.5+	891218	881	0.7+	0.7-
870207	881	0.6-	0.2-	880714	801	0.6-	0.4+	891228	894	0.6-	0.2-
870207	881	0.0	0.2+	891102	881	0.6+	0.0	891228	894	0.5-	0.3-
870220	894	0.2-	0.8-	891102	881	0.1+	0.1-				
870220	894	(1.2+	4.3-)	891120	881	0.4-	0.4+				

(4375)* 1987 DQ = 1942 FC = 1970 GL2
Discovered 1987 Feb. 28 by T. Niijima and T. Urata at Ojima.
Id. T. Kobayashi (MPC 11744)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 334.69463	(1950.0)	P	Q	
n 0.28384546	Peri. 69.24943	-0.89270726	+0.44523207	
a 2.2930565	Node 137.10793	-0.44205945	-0.83522705	
e 0.1037109	Incl. 5.86809	-0.08750534	-0.32274477	
P 3.47	H 11.7	G 0.25		

Residuals in seconds of arc

420317	062	0.6-	0.3-	870303	887	0.4+	0.0	891130	887	2.2-	0.5+
420317	062	0.4+	1.4-	870303	887	0.5+	0.7+	891130	887	0.9+	0.6-
420318	062	0.4-	1.3+	870303	887	0.7-	0.1-	891201	801	0.3-	0.2+
700413	805	0.6+	0.3+	870305	887	0.1+	0.1+	891201	801	0.3-	0.0
700413	805	0.6+	0.1+	870305	887	0.8-	0.2+	891220	887	1.3+	1.2-
700413	805	0.1+	0.4-	870318	887	1.1-	0.6-	891220	887	2.0+	0.8-
870228	887	1.4+	0.4-	870318	887	0.3-	0.0	891229	046	1.0+	0.8+
870228	887	1.4+	0.4-	870320	887	0.8-	1.2-	891229	046	(4.3+	0.4+)
870302	887	0.2-	1.6+	870320	887	1.1-	0.7-	900101	887	1.6-	0.2+
870302	887	0.0	0.9+	880810	801	0.7-	0.1-	900101	887	0.2+	1.0+

(4376)* 1987 FA = 1972 TK8 = 1975 RD2 = 1980 AK = 1982 UV5
Discovered 1987 Mar. 20 by T. Niijima and T. Urata at Ojima.
Id. T. Kobayashi (MPC 11745)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 130.73724	(1950.0)	P	Q	
n 0.29572769	Peri. 192.67580	+0.58261802	-0.81268303	
a 2.2312148	Node 221.69050	+0.74696621	+0.54033204	
e 0.1582299	Incl. 0.87230	+0.32030880	+0.21814577	
P 3.33	H 13.6	G 0.25		

Residuals in seconds of arc

721006	095	0.8-	2.2+		870225	809	0.1+	0.7-		870306	809	0.5-	0.4+
721013	095	1.8+	0.2+		870227	809	0.3-	0.6-		870306	809	0.4-	0.4+
750904	808	0.4-	0.1+		870227	809	0.0	0.5-		870308	809	0.4-	0.2-
750904	808	0.4+	0.0		870227	809	0.2+	0.5-		870308	809	0.2-	0.0
750909	808	0.1-	1.2-		870228	809	0.1+	0.9-		870308	809	0.1+	0.0
750909	808	1.0-	2.2-		870228	809	0.4+	0.9-		870320	887	1.8+	1.1+
800115	330	2.6-	0.7-		870228	809	0.5+	0.8-		870320	887	0.7-	0.3+
821020	095	1.4+	1.2-		870302	809	0.4+	0.8-		870320	887	(3.7-	0.4+)
821108	095	0.3+	0.6-		870302	809	0.6+	0.8-		870324	887	0.1+	0.5+
870222	809	0.4-	0.3+		870302	809	0.9+	0.8-		870324	887	(4.3+	2.4+)
870222	809	0.2-	0.2+		870303	809	0.6+	0.5-		870331	887	0.4-	1.5+
870222	809	0.1+	0.2+		870303	809	0.4+	0.5-		870331	887	0.5-	1.2+
870223	809	0.2-	0.7+		870303	809	0.6+	0.5-		900104	888	1.3-	0.1-
870223	809	0.1-	0.6+		870304	809	0.8-	0.4+		900104	888	0.8+	0.3+
870223	809	0.3-	0.3+		870304	809	0.4-	0.3+		900105	888	0.7-	1.5+
870224	809	0.1-	0.6-		870304	809	0.1-	0.1+		900105	888	0.1-	1.0+
870224	809	0.1-	0.5-		870305	809	0.0	0.2-		900121	887	0.8+	0.3-
870224	809	0.3-	0.6-		870305	809	0.1+	0.1-		900121	887	0.1+	0.9-
870225	809	0.1+	0.6-		870305	809	0.6+	0.1-		900121	888	0.5-	0.4-
870225	809	0.1-	0.6-		870306	809	0.1-	0.3+		900121	888	0.5-	0.6-

(4377)* 1987 GD = 1976 GC6 = 1988 SF1

Discovered 1987 Apr. 4 by T. Niijima and T. Urata at Ojima.

Id. T. Kobayashi (MPC 15067), L. D. Schmadel (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	347.70798	(1950.0)	P	Q
n	0.26913054	Peri. 333.03989	-0.93736223	+0.34676308
a	2.3758958	Node 227.29063	-0.31086985	-0.87577622
e	0.0741132	Incl. 2.59570	-0.15720045	-0.33581451
P	3.66	H 13.3	G 0.25	

Residuals in seconds of arc

760402	095	1.4-	4.1-		870424	887	0.9+	0.9-		880919	809	0.2+	0.4-
870327	688	0.3+	0.1-		880918	809	0.3-	0.0		880920	809	0.2-	0.5-
870327	688	0.9+	0.1+		880918	809	0.2-	0.4+		880920	809	0.2-	0.6-
870331	887	0.2-	0.4+		880918	809	0.0	0.4+		880920	809	0.0	0.6-
870331	887	0.1+	1.0+		880919	809	0.7+	0.1+		891220	887	3.1-	0.3-
870404	887	0.7-	2.0+		880919	809	0.8+	0.0		891220	887	1.7+	1.7-
870404	887	1.8-	0.9+		880919	809	1.2+	0.1+		891220	887	0.0	0.3-
870424	887	2.7+	1.4-		880919	809	0.3+	0.5-		900120	887	0.5+	1.0-
870424	887	0.3+	0.9-		880919	809	0.4+	0.2-		900120	887	1.5+	2.0+

(4378)* 1988 JF = A913 HB = 1944 ME = 1952 BY1 = 1987 DK

Discovered 1988 May 14 by W. Landgraf at the European Southern Observatory.

Id. S. Nakano (MPC 13162; unpublished)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	238.42533	(1950.0)	P	Q
n	0.22466604	Peri. 126.56132	-0.69389278	+0.69512643
a	2.6798537	Node 98.33724	-0.70632804	-0.60630204
e	0.2421197	Incl. 10.94824	-0.14004823	-0.38626037
P	4.39	H 11.4	G 0.25	

Residuals in seconds of arc

130428	094	0.1-	2.2-		870223	054	2.2-	0.7+		880525	809	0.3+	1.3-
130504	094	0.3+	5.4+		870301	054	0.0	1.5+		880525	809	0.3+	1.3-
440623	078(79.3-	11.0-)X			880514	809	1.0-	0.5+		890605	809	1.1-	1.0+
520129	711 (4.9-	65.9+)Y			880515	809	0.7+	0.7+		890605	809	1.4-	1.7+
520131	711	3.0+	5.9-	Y	880516	809	0.8+	0.7-					
870222	054	0.8-	0.7+		880519	809	0.3+	2.4-					

(4379)* 1988 PT1 = 1975 GX = 1983 UM1
Discovered 1988 Aug. 13 by C. S. Shoemaker at Palomar.
Id. S. Nakano (MPC 14198)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 95.42809 (1950.0) P Q
n 0.17471077 Peri. 175.96888 +0.88998552 -0.41492536
a 3.1690050 Node 210.83855 +0.40734532 +0.90983202
e 0.1159080 Incl. 21.64834 +0.20492818 -0.00653035
P 5.64 H 12.0 G 0.25
Residuals in seconds of arc

750415	805	0.3+	0.3-	880817	675	2.4+	1.6-	891028	801	0.7-	0.2-
750420	805	0.3-	0.6-	880908	033	1.8-	0.4-	891028	801	0.7-	0.5-
831030	675	0.2+	0.6+	880908	033	0.5-	1.0+	891030	675	1.3+	0.9-
831104	675	0.0	0.7+	880908	033	1.7-	0.8-	891105	675	0.2-	0.7-
880813	675	1.5+	0.5-	880908	033	0.4+	1.1+				

(4380)* 1988 PB2 = 1935 UV = 1975 EX4 = 1980 EO
Discovered 1988 Aug. 14 by E. W. Elst at Haute Provence.
Id. S. Nakano (MPC 15559)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 109.43410 (1950.0) P Q
n 0.18612258 Peri. 50.73551 +0.80324487 -0.59410375
a 3.0381089 Node 345.54618 +0.47975580 +0.68794573
e 0.0707890 Incl. 9.89146 +0.35303266 +0.41685899
P 5.30 H 11.7 G 0.25
Residuals in seconds of arc

351020	754	0.2-	0.2+	880814	511	0.9+	0.8+	891228	511	0.2-	0.0
750315	095	0.3-	0.3-	880814	511	1.4-	2.0+	891228	511	0.7+	0.3-
800315	095	0.6+	0.8+	880818	511	0.2+	0.7-	891229	511	(4.5+	0.0)
880813	511	0.1+	1.3-	880818	511	0.3-	0.3-	891229	511	0.6-	0.2-
880813	511	1.2+	1.1-	880917	095	0.6-	0.6+				

(4381)* 1989 WD1 = 1952 UF = 1954 CD = 1955 HS = 1960 HB = 1976 HN
= 1978 TO4 = 1979 YQ8 = 1983 TD1
Discovered 1989 Nov. 22 by N. Kawasato at Uenohara.
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 140.11728 (1950.0) P Q
n 0.18656834 Peri. 233.33514 +0.93190002 +0.31175699
a 3.0332678 Node 107.84212 -0.23816228 +0.91143168
e 0.0735247 Incl. 11.23061 -0.27357099 +0.26851418
P 5.28 H 11.3 G 0.25
Residuals in seconds of arc

521021	760	0.2+	0.6-	791223	095	0.1-	1.2+	891129	376	1.0-	1.0+
540209	760	1.0+	0.9+	831009	688	0.6+	0.1-	891201	046	1.5+	0.4+
540209	760	0.1+	1.2-	831012	688	1.2+	0.9-	891201	046	0.3+	0.4-
550430	760	2.2-	1.3-	831012	688	1.0+	1.2-	891204	376	0.1-	1.1-
550430	760	0.4-	1.6-	891122	376	(12.7+	3.1-)	891204	376	1.7+	0.7-
600419	760	0.4+	0.1+	891122	376	(11.0+	4.8-)	891228	376	0.3-	1.3-
600419	760	0.1+	0.4-	891125	376	1.5-	0.2+	891228	376	0.1-	2.3-
760423	095	0.6+	1.5+	891125	376	0.3-	1.3+				
781004	095	2.5-	1.8+	891129	376	(4.2-	1.2-)				

(4382)* 1989 WQ3 = 1968 QK1 = 1979 HG4 = 1980 PR2 = 1980 RC4 = 1986 AC1
Discovered 1989 Nov. 29 by F. Borngen at Tautenburg.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 151.31576		(1950.0)	P	Q
n 0.24324653	Peri.	251.57592	+0.97296630	-0.21113166
a 2.5415868	Node	120.51831	+0.23061734	+0.90986442
e 0.1945181	Incl.	6.23726	-0.01233735	+0.35716966
P 4.05	H	12.1	G 0.25	

Residuals in seconds of arc

680828 095	0.8-	1.2+	860111 688	2.6+	1.2-	900101 400	(0.3-	6.0-)
790430 095	0.9-	1.2-	860111 688	0.3-	1.1-	900101 400	0.0	0.9-
800815 323	1.7-	1.2-	891129 033	1.2-	0.0	900102 400	0.1-	0.2+
800815 323	0.2-	1.1+	891129 033	1.6-	0.0	900102 400	1.3+	0.1+
800907 095	3.3+	3.9-	891202 033	1.4-	0.1-			

(4383)* 1989 XP = 1979 BE2 = 1981 UD10 = 1983 DN = 1985 UL4 = 1985 VB4

Discovered 1989 Dec. 1 by Y. Oshima at Gekko.

Id. H. Oishi, N. S. Chernykh (d)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Oishi

M 113.10304		(1950.0)	P	Q
n 0.26104648	Peri.	317.27879	+0.69772688	-0.70548952
a 2.4246971	Node	88.05340	+0.68622498	+0.60840772
e 0.0635999	Incl.	7.14709	+0.20560274	+0.36348945
P 3.78	H	13.1	G 0.25	

Residuals in seconds of arc

790124 095	0.7-	2.8-	851021 095	0.8+	1.3-	891226 888	(3.3+	0.1+)
811025 413	1.2+	0.4+	851111 095	1.0-	1.2+	891229 888	0.8+	0.4+
811025 413	0.1-	0.5-	891201 888	(3.0+	2.3+)	891229 888	0.5-	0.7+
811025 413	0.9+	1.7-	891201 888	0.2+	1.9+	900101 888	0.7-	0.1+
811025 413	0.2-	1.7-	891202 888	(3.5+	0.7+)	900101 888	0.8-	0.1+
830219 688	0.1+	1.8-	891202 888	(8.7+	2.5+)			
830219 688	0.3-	0.1+	891226 888	0.2-	0.8+			

(4384)* 1990 AA = 1933 QT = 1950 QD1 = 1982 BY3 = 1984 QM1 = 1986 AO1

Discovered 1990 Jan. 3 by T. Hioki and S. Hayakawa at Okutama.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 154.27889		(1950.0)	P	Q
n 0.23244281	Peri.	44.26357	+0.98700122	-0.01692857
a 2.6197427	Node	315.94258	-0.07284243	+0.83930477
e 0.1799882	Incl.	13.28704	+0.14325703	+0.54339758
P 4.24	H	12.0	G 0.25	

Residuals in seconds of arc

330826 024	2.6+	2.3+	840831 026	2.3+	0.5-	900106 877	1.5+	0.5-
500819 711	6.2-	2.1- Y	860111 688	0.5-	0.1+	900106 877	1.0-	0.6+
500909 711	2.6+	1.7- Y	860111 688	2.1+	0.2+	900108 877	0.4+	0.8+
820120 033	1.4-	0.7-	900103 877	0.2-	0.2-	900118 877	1.5+	0.4+
820120 033	0.7-	1.5-	900103 877	2.0-	0.2-	900118 877	2.4+	2.1-
820121 033	1.3-	0.7-	900104 877	0.0	1.0+			
820121 033	0.6-	0.9-	900106 877	0.3+	0.3-			

(4385)* 2534 P-L = 1977 QE2 = 1977 RZ2 = 1987 KA5

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 12689)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 96.52270		(1950.0)	P	Q
n 0.17318082	Peri.	312.85486	+0.97139337	-0.23731069
a 3.1876419	Node	60.87481	+0.22072206	+0.88846094
e 0.1689508	Incl.	0.58137	+0.08761677	+0.39283686
P 5.69	H	12.2	G 0.25	

Residuals in seconds of arc

600924	675	0.0	0.4-	601026	675	0.3-	0.6-	891121	399	0.9-	0.9-
600926	675	0.2+	0.1-	770820	095	0.7+	0.3+	891121	399	0.9-	0.6-
600928	675	0.3+	0.7+	770909	095	1.2-	0.1-	891122	399	0.1-	0.8-
601017	675	0.5-	0.2+	870530	413	0.2-	1.5-	891122	399	1.2-	1.0-
601022	675	0.2-	0.0	870530	413	0.8-	1.4-	891122	399	1.5-	0.7-
601025	675	0.1-	1.1-	891121	399	1.8+	1.0+				

(4386)* 6829 P-L = 3279 T-3 = 1974 FO1

Discovered 1960 Sept. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. K. Hurukawa (k, MPC 12803), H. Oishi (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Oishi

M	18.56682	(1950.0)	P	Q	
n	0.17717311	Peri.	123.71755	-0.84747017	-0.52417241
a	3.1395749	Node	24.98365	+0.39709340	-0.73085621
e	0.2108963	Incl.	11.45646	+0.35229412	-0.43714127
P	5.56	H	12.8	G 0.25	

Residuals in seconds of arc

600926	675	0.1-	0.4+	771012	675	0.5+	0.7-	771022	675	1.7+	1.0-
600927	675	0.6-	0.7+	771012	675	0.4+	1.5-	771022	675	1.9+	0.6-
600928	675	0.3+	0.7+	771016	675	0.7+	1.7+	891129	888	0.1+	0.0
601017	675	0.3-	0.5-	771016	675	0.6+	0.3-	891129	888	0.5-	0.2-
740321	095	0.2-	0.2-	771017	675	0.4+	0.6+	891221	888	0.6+	0.1-
771007	675	0.1-	0.1+	771017	675	1.5-	0.9+	891221	888	0.4+	0.1-
771011	675	0.8-	0.7+	771021	675	1.1-	1.5-	900104	888	0.1-	0.3+
771011	675	1.4-	0.8+	771021	675	0.5-	1.1-	900104	888	0.5-	0.7+

(4387)* 4829 T-2 = 1975 BS = 1979 FX2 = 1981 UM10 = 1983 EO3 = 1988 RZ1

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

Id. D. W. E. Green (MPC 14970)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Green

M	40.00345	(1950.0)	P	Q	
n	0.25891613	Peri.	21.37242	-0.78613403	-0.61472170
a	2.4379791	Node	120.53406	+0.55568797	-0.74840298
e	0.0141558	Incl.	4.26879	+0.27056269	-0.24901849
P	3.81	H	13.0	G 0.25	

Residuals in seconds of arc

730919	675	0.0	0.1+	750117	095	0.0	0.1+	880909	046	0.3+	0.1-
730919	675	0.7-	1.0-	790331	095	2.2-	0.8-	880910	046	0.6+	1.8-
730920	675	0.9-	0.5+	811025	330	3.3+	0.4-	880910	046	0.2-	2.0-
730924	675	0.8-	1.3+	830314	095	1.3+	2.2-	891229	511	0.5-	0.5+
730924	675	0.1+	0.2+	880908	046	(3.5-	2.4-)	891229	511	0.9-	0.1-
730925	675	0.2+	0.6-	880908	046	0.3+	0.4+	891230	511	0.9-	0.3-
730925	675	0.7+	0.1+	880909	046	0.4-	0.6-	891230	511	0.7+	0.8+

A917 SG = 1949 QZ1 = 1949 SX = 1972 TW4 = 1986 VG6

Id. A. Patry (MPC 1450), O. Kippes (d, NAZ 12, 22), T. Kobayashi

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	337.52657	(1950.0)	P	Q	
n	0.21474804	Peri.	174.75926	+0.99967541	+0.02162767
a	2.7617429	Node	184.07494	-0.02403804	+0.97581685
e	0.2726458	Incl.	10.92320	+0.00844105	+0.21751719
P	4.59	H	11.9	G 0.25	

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

170923	094	0.1+	0.2-	490825	094	(0.00-	0.03+)X	
170925	094	(8.3+	2.5-)	490831	094	(0.03+	0.03+)X	
171011	094	0.3-	0.3-	490921	760	7.8+	2.6+	
171015	094	0.9+	0.3-	490921	760	8.2+	3.5+	

721006	095	1.6+	1.9-					
861106	688	1.5+	0.2+					
861106	688	2.2+	0.2+					

1931 UD = 1986 PR5 = 1986 PR6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	327.98805	(1950.0)		P	Q
n	0.23178830	Peri.	37.51574	+0.95560682	-0.28299863
a	2.6246721	Node	338.48387	+0.18552311	+0.79417540
e	0.1790167	Incl.	12.92255	+0.22890343	+0.53777060
P	4.25	H	11.9	G 0.25	

Residuals in seconds of arc

311018	024	1.6+	1.3+	311108	024	1.0+	1.9+	
311020	024	0.8-	1.8-	311113	024	1.0-	1.3-	
311022	024	0.9-	0.2-	860809	095	0.4-	1.0-	

860812	095	0.4+	1.0+					

1938 HA = 1989 OE

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	82.12881	(1950.0)		P	Q
n	0.17683962	Peri.	219.41734	-0.20272907	+0.97145792
a	3.1435208	Node	39.33459	-0.84213349	-0.10877394
e	0.2105291	Incl.	11.20491	-0.49971202	-0.21080259
P	5.57	H	10.8	G 0.25	

Residuals in seconds of arc

380419	029	1.3+	1.8+	380426	029	(5.5-	0.1-)	
380419	029	0.7+	1.6+	380427	029	0.5+	0.7-	
380420	029	1.0+	0.9+	380427	029	1.1-	0.1-	
380420	029	1.2+	0.8+	380428	029	1.4-	0.1-	
380421	029	0.5+	0.8+	380501	029	0.5-	1.1-	
380423	029	0.3+	0.5-	380501	029	0.3-	0.7-	
380424	029	1.0+	0.2+	380502	029	0.1-	0.1-	

380522	029	2.7-	1.2-					
380522	029	3.1-	1.3-					
890721	413	1.3+	2.2+					
890725	413	(6.8+	0.8-)					
890802	413	0.5-	0.7-					
890802	413	2.1-	0.1-					

1943 DL = 1964 FF = 1989 CS

Id. S. Nakano (MPC 14341); 1943 DL = 1987 SD6 is invalid

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	179.26832	(1950.0)		P	Q
n	0.23540997	Peri.	111.22891	-0.26247038	-0.96466441
a	2.5976829	Node	353.84883	+0.78610030	-0.19990294
e	0.1311098	Incl.	12.42910	+0.55960309	-0.17164321
P	4.19	H	12.5	G 0.25	

Residuals in seconds of arc

430226	062	2.7-	3.1+	890205	385	1.3+	0.1-	
430226	062	0.2+	2.6+	890207	385	0.5+	1.5-	
430301	062	3.0-	5.1+	890207	385	0.7+	1.0-	
430312	062	1.0-	2.9+	890207	385	2.2+	0.8-	
640316	760	0.8-	0.9+	890213	385	0.1+	0.1+	
640316	760	0.0	1.6-	890213	385	5.0+	1.8-	
890205	385	1.3-	1.2-	890301	372	3.0+	1.7-	

890301	372	5.3+	0.6-					
890306	372	0.7+	3.8-					
890308	372	1.1+	1.8-					
890308	372	1.6+	0.8-					
890310	372	0.7-	1.5-					

1973 SB6 = 1988 RU5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	188.15303	(1950.0)		P	Q
n	0.26087600	Peri.	219.49253	+0.99943344	-0.02761541
a	2.4257533	Node	142.07659	+0.03281805	+0.92643131
e	0.1975884	Incl.	1.79393	-0.00746813	+0.37544961
P	3.78	H	14.6	G 0.25	

Residuals in seconds of arc

730919	675	0.3+	0.9+	880903	809	0.0	1.5+	880909	809	0.2+	0.4+
730919	675	0.1+	0.8+	880903	809	0.5+	1.6+	880909	809	0.6+	0.4+
730920	675	1.2+	0.5+	880906	809	0.9-	0.2-	880912	809	1.1+	0.8-
730924	675	1.6-	0.2+	880906	809	0.7-	0.1-	880912	809	1.1+	0.7-
730924	675	1.9-	0.4+	880906	809	0.5-	0.0	880912	809	1.0+	0.9-
730925	675	0.1+	0.7-	880908	809	0.5-	0.3-	880916	809	0.2-	0.9-
730925	675	0.6+	1.9-	880908	809	0.4-	0.4-	880916	809	0.2-	1.0-
730928	095	0.8+	0.7+	880908	809	0.3-	0.4-	880916	809	0.2-	1.2-
880903	809	0.5-	1.5+	880909	809	0.4+	0.4+				

1973 SD6 = 1962 WU = 1971 DQ = 1986 EP

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	139.70656	(1950.0)	P	Q	
n	0.26281737	Peri.	102.47222	+0.17135199	-0.98512351
a	2.4137929	Node	337.64863	+0.89001912	+0.16046058
e	0.1526109	Incl.	1.96579	+0.42249789	+0.06151484
P	3.75	H	13.3	G 0.25	

Residuals in seconds of arc

621126	760	0.8+	0.9+	730924	675	0.3-	0.6+	731004	675	1.4+	0.2-
621126	760	1.1-	1.0+	730925	675	0.0	0.4+	731004	675	1.3+	1.0-
710218	095	0.0	0.5-	730928	095	(3.7+ | 2.2+)	731005	675	0.1+	1.1+
730919	675	0.1+	0.6-	730929	675	0.3+	0.1-	731005	675	0.9-	0.0
730919	675	1.0+	1.3-	730929	675	1.6+	0.3-	860305	688	1.1+	1.5-
730920	675	0.3+	1.1-	730930	675	0.5-	0.6+	860305	688	1.7-	0.7-
730924	675	0.1-	0.2-	730930	675	0.8-	0.2+				

1974 ME = 1929 WT = 1952 DF2 = 1984 JK2 = 1987 YJ5

Id. H. Kaneda; 1974 ME = 1970 UA (NOC 1053) is invalid

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	55.63569	(1950.0)	P	Q	
n	0.18907460	Peri.	174.80765	-0.15483963	+0.96921107
a	3.0064034	Node	86.18753	-0.91314147	-0.06643456
e	0.0543017	Incl.	11.06243	-0.37709062	-0.23709986
P	5.21	H	11.4	G 0.25	

Residuals in seconds of arc

291127	690(12.6-	38.0-)Y	740622	808	0.0	0.2+	740717	808	0.9+	0.1-
291203	690(12.3-	39.5-)Y	740622	808	0.1-	0.9+	840504	095	0.2-	0.5-
520226	711	0.3+	0.7+ Y	740716	808	0.5-	0.3-	871224	010	1.0-	0.3-
740620	808	0.3+	0.5-	740716	808	0.8-	0.1+	871224	010	0.6+	0.7-
740620	808	0.8+	0.0	740717	808	0.9-	0.4-	871224	010	0.3+	0.1+

1975 TM2 = 1975 VQ = 1989 YS5

Id. H. Oishi (d, JAM 1265), D. W. E. Green

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

M	168.49073	(1950.0)	P	Q	
n	0.29023765	Peri.	193.66955	+0.99742193	-0.07147372
a	2.2592680	Node	170.42221	+0.06892302	+0.92932593
e	0.1344751	Incl.	2.20556	+0.01997780	+0.36227728
P	3.40	H	14.0	G 0.25	

Residuals in seconds of arc

751003	095	1.1+	0.1+	751016	675	0.8-	0.7-	891229	511	0.7+	0.2-
751013	095	1.0-	0.2-	751101	095	0.2-	0.8+	891230	511	0.3+	0.5+
751015	675	0.8+	1.1+	891229	511	0.9-	2.2+	891230	511	0.3+	0.3-

1976 SA6 = 1976 UT8 = 1983 VB5 = 1986 SU
Id. H. Oishi (d, JAM 1664), T. Kobayashi
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	169.31557	(1950.0)		P	Q
n	0.29284419	Peri.	236.12474	-0.03438683	+0.99912926
a	2.2458374	Node	31.92978	-0.90150465	-0.02080448
e	0.1083341	Incl.	2.56054	-0.43140110	-0.03616486
P	3.37	H	14.1	G 0.25	

Residuals in seconds of arc

760924	095	0.5+	0.7-	860930	046	0.1-	1.9-	861003	046	1.9+	0.7-
761022	381	0.3-	0.1-	860930	046	1.9-	0.9-	861004	046	1.0+	3.3+
761022	381	0.3+	0.1+	861001	046	2.9-	1.4-	861004	046	2.8-	0.1-
761024	381	1.1-	0.5-	861001	046	3.4-	2.5-	861005	046	1.6+	2.0+
831108	381	0.2-	0.1-	861003	046	1.0+	1.6-	861005	046	3.0+	3.3+

1977 RZ8 = 1987 SS19
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Lowe

M	301.11850	(1950.0)		P	Q
n	0.19952047	Peri.	278.00808	-0.18713057	+0.97839015
a	2.9005325	Node	340.52373	-0.76485691	-0.20129725
e	0.1589690	Incl.	15.29438	-0.61642198	-0.04724541
P	4.94	H	12.6	G 0.25	

Residuals in seconds of arc

770908	675	0.2-	0.8+	870917	095	0.2+	0.1-				
770909	675	0.2+	0.8-	870923	095	0.2-	0.1+				

1978 NQ1 = 1978 OC = 1962 PC = 1989 YC4
Id. B. G. Marsden (d, MPC 9203), S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	326.40709	(1950.0)		P	Q
n	0.30835869	Peri.	345.40406	-0.05664595	+0.99611103
a	2.1698654	Node	281.31500	-0.90892518	-0.07941860
e	0.2258404	Incl.	3.94629	-0.41309351	+0.03815094
P	3.20	H	14.5	G 0.25	

Residuals in seconds of arc

620801	760	0.6-	3.6-	780730	414	0.1-	2.6+	891231	413	0.5+	0.2-
620801	760	2.3+	2.6-	780730	414	0.7-	2.3+	891231	413	1.0+	0.3-
780704	095	0.1-	0.9-	891230	413	1.7-	1.1-				
780708	095	0.9-	1.2+	891230	413	0.3-	0.3+				

1978 RZ9 = 1978 RM16 = 1989 RA1
Id. H. Oishi (d, JAM 2043), T. Kobayashi
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	167.13661	(1950.0)		P	Q
n	0.26988509	Peri.	108.77849	+0.04337139	+0.99200381
a	2.3714653	Node	162.39444	-0.99864623	+0.04645723
e	0.2181878	Incl.	23.07001	-0.02871628	-0.11734636
P	3.65	H	13.9	G 0.25	

Residuals in seconds of arc

780902	809	0.8+	0.4-	780910	809	0.1+	0.9+	890908	675	1.8+	1.3+
780902	809	2.8+	0.9+	780910	809	0.5-	0.1-	891001	675	1.5-	0.8-
780902	809	0.7-	2.0-	890903	511	1.2-	1.1+	891001	675	1.4-	2.2-
780902	809	0.7-	1.4-	890903	511	0.8-	0.4-	891004	675	0.1+	0.6-
780906	809	0.8-	0.2-	890906	675	0.7+	1.5+	891004	675	0.6+	1.7+
780910	809	1.1-	1.7+	890906	675	0.6-	0.6+				
780910	809	0.1-	0.9-	890908	675	2.1+	0.9-				

1978 TA7 = 1976 JR2 = 1989 YW5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Green

M	85.73610	(1950.0)	P	Q
n	0.19173170	Peri. 317.93256	+0.29782983	-0.94395752
a	2.9785688	Node 114.29031	+0.91214236	+0.23743695
e	0.0772739	Incl. 8.98009	+0.28159139	+0.22927691
P	5.14	H 12.0	G 0.25	

Residuals in seconds of arc

760502 095	0.2+	0.2-	781101 095	0.0	0.0	891230 511	0.2-	0.0
781002 095	0.4+	0.6+	891229 511	0.5-	1.0+	891230 511	1.7+	0.1-
781008 095	0.3-	0.6-	891229 511	0.9-	1.6+			

1978 VC6 = 1982 TG3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	340.52772	(1950.0)	P	Q
n	0.23046668	Peri. 89.61206	+0.87826931	+0.45456881
a	2.6346967	Node 243.34535	-0.47745179	+0.81672391
e	0.3399168	Incl. 9.55532	-0.02613056	+0.35542826
P	4.28	H 14.6	G 0.25	

Residuals in seconds of arc

781105 675	0.7+	0.3+	781108 675	0.8-	0.7-	821015 095	0.8+	2.2-
781106 675	0.8+	0.2+	781129 675	0.5-	0.1+	821024 095	0.8-	2.3+
781107 675	0.8+	0.9+	781130 675	0.8-	0.9-			

1978 VT10 = 1977 LF = 1980 FC2 = 1985 SO6
Id. R. P. Binzel, T. Kobayashi, E. Bowell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	171.04568	(1950.0)	P	Q
n	0.26711165	Peri. 91.78852	+0.85845513	+0.51224154
a	2.3878525	Node 237.39905	-0.48186572	+0.78831204
e	0.1301706	Incl. 1.75200	-0.17567077	+0.34084121
P	3.69	H 15.5	G 0.25	

Residuals in seconds of arc

770612 675	0.8+	0.1-	781108 675	0.9-	0.0	800317 809	0.3+	1.4+
770612 675	2.2-	0.2+	781129 675	0.7+	0.1-	800317 809	0.2-	0.3-
770613 675	0.1+	0.0	781130 675	3.0+	1.5+	800317 809	0.3-	0.2+
770613 675	1.5+	1.2+	800316 809	0.2+	0.7+	800317 809	0.0	0.7-
781105 675	2.0-	0.6-	800316 809	0.1-	0.3-	850922 095	0.0	0.2+
781106 675	1.2+	0.3+	800316 809	0.2-	0.3+			
781107 675	2.3-	0.5+	800316 809	0.7+	0.9-			

1978 VU10 = 1971 UL = 1981 RO3 = 1981 SK4
Id. N. S. Chernykh (d), H. Kaneda
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	272.97411	(1950.0)	P	Q
n	0.29146176	Peri. 66.10555	+0.79573635	+0.60471277
a	2.2529333	Node 256.66941	-0.56743158	+0.72501640
e	0.2099761	Incl. 1.97635	-0.21171929	+0.32965693
P	3.38	H 15.6	G 0.25	

Residuals in seconds of arc

711026 029	0.3-	2.5-	781106 675	2.4+	1.0+	781130 675	0.5+	0.7+
711026 029	1.1+	2.0-	781107 675	1.1-	1.9+	810902 095	0.7+	0.5+
711030 029	0.6+	0.0	781108 675	1.7-	0.7-	810925 095	1.8-	1.8+
781105 675	0.7-	0.1+	781129 675	0.2+	0.4+			

1979 HE5 = 1985 DK = 1988 CT1
Id. T. Kobayashi (MPC 13151), E. Goffin
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 213.40099		(1950.0)	P	Q
n 0.30829127	Peri.	118.64732	-0.68725293	+0.72224716
a 2.1701774	Node	107.71932	-0.69169064	-0.61794944
e 0.0605251	Incl.	4.68081	-0.22191772	-0.31064051
P 3.20	H	14.0	G 0.25	

Residuals in seconds of arc

790425	095	0.4-	0.3-	880211	809	2.3+	0.4-	880221	809	0.1-	0.6-
790428	095	2.1-	0.0	880215	809	0.3+	0.3-	880221	809	0.2-	0.7-
790430	095	2.2+	0.2+	880216	809	1.0-	0.4-	880223	809	0.3+	0.3-
850216	046	3.2+	0.7-	880216	809	1.0-	0.4-	880223	809	0.7-	0.7-
850216	046	3.4+	0.9-	880216	809	1.4-	0.2-	880223	809	0.1-	0.6-
850220	046	0.9-	0.2+	880217	809	0.3-	0.7-	890801	675	0.7+	2.5-
850220	046	2.5-	1.3+	880217	809	0.8+	1.1-	890801	675	0.1+	2.5-
850220	046	0.8-	0.2+	880217	809	0.1+	0.4-				
850220	046	1.2-	0.9+	880221	809	0.3-	0.0				

1979 KO1 = 1983 NA1 = 1983 OK
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell

M 340.04141		(1950.0)	P	Q
n 0.25868670	Peri.	5.36888	+0.04727452	+0.99086505
a 2.4394252	Node	267.38379	-0.92105381	-0.00568984
e 0.2261091	Incl.	7.26342	-0.38655529	+0.13473704
P 3.81	H	14.5	G 0.25	

Residuals in seconds of arc

790524	323	0.1+	0.4-	790629	323	0.4+	1.9-	830714	808	0.4+	0.7+
790524	323	0.2-	1.6+	790702	323	0.8+	0.3+	830716	808	0.2-	0.3-
790530	323	2.0+	0.1+	790720	323	0.2+	1.7+	830716	808	0.2-	0.2-
790605	323	1.8-	1.0+	830714	808	0.3+	1.1+				

1979 QT8 = 1979 QO9 = 1979 SJ5 = 1986 TY12
Id. T. Furuta (d, JAM 2030), S. Nakano (MPC 14781)
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M 347.63890		(1950.0)	P	Q
n 0.28822106	Peri.	1.48713	+0.93485603	+0.35461915
a 2.2697940	Node	337.71936	-0.32617654	+0.83897734
e 0.1608199	Incl.	2.57193	-0.14018939	+0.41274966
P 3.42	H	14.5	G 0.25	

Residuals in seconds of arc

790820	095	1.9+	0.0	861005	095	2.9-	2.3+	890802	675	0.9-	2.4+
790828	095	0.7+	1.8-	861011	095	2.4+	1.1-				
790923	095	1.7-	0.3+	890802	675	0.7+	1.2-				

1979 UH = 1927 BG = 1952 SF
Id. C. M. Bardwell, S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 158.15625		(1950.0)	P	Q
n 0.22218980	Peri.	306.29242	+0.19414424	-0.97285214
a 2.6997277	Node	132.00612	+0.94557167	+0.15140430
e 0.2979459	Incl.	9.75971	+0.26115555	+0.17502986
P 4.44	H	13.5	G 0.25	

Residuals in seconds of arc

270126	389	1.9-	2.6- Y	520916	760	0.4+	1.3-	791122	688	0.8-	0.8+
270128	389	7.1-	5.2+ Y	791017	688	1.1-	0.1-	791208	688	1.6+	0.6-
270129	389	9.0+	3.4- Y	791028	688	0.1-	0.7+				

1979 UD2 = 1955 MN = 1955 MH1 = 1967 RU = 1973 AW1 = 1983 YU = 1987 WY4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 21.57070		(1950.0)	P	Q
n 0.25357223	Peri.	36.14941	+0.49901751	+0.86456285
a 2.4721126	Node	263.85459	-0.80837952	+0.43976342
e 0.1428578	Incl.	3.41742	-0.31225642	+0.24318557
P 3.89	H 12.6		G 0.25	

Residuals in seconds of arc

550623 076	1.2-	6.7-	791017 095	3.8-	0.6-	831229 033	1.1+	0.5-
550628 760	0.5+	1.7+	791021 330	1.0-	1.5-	871119 054	1.0+	0.1-
550628 760	0.3+	1.9+	791027 330(27.0+		8.1+)	871119 054	0.2-	0.0
670911 095	2.1+	2.1+	831228 033	0.8+	0.3-			
730101 095	0.1+	1.9-	831229 033	0.7+	0.2+			

1980 RU = 1984 UG2 = 1989 YV
Id. T. Kobayashi; 1980 RU = 1970 EN3 = 1982 BP5 (MPC 7601) are invalid
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 138.70371		(1950.0)	P	Q
n 0.23834587	Peri.	30.02985	+0.96428508	-0.25499078
a 2.5763071	Node	344.24984	+0.15805679	+0.77104819
e 0.1428323	Incl.	15.30554	+0.21253785	+0.58349327
P 4.14	H 12.9		G 0.25	

Residuals in seconds of arc

800904 095	0.3-	0.8+	801008 688	0.5-	2.4-	900103 897	0.1+	0.3-
800907 688	0.4+	1.1-	841018 801	0.7-	1.2+	900103 897	2.2+	0.7+
801002 688	0.6+	0.6-	891231 897	1.8-	1.6-			
801004 688	0.5+	2.5+	891231 897	0.4-	1.4+			

1981 DM1 = 1979 YR3
Id. T. Kobayashi, K. Hurukawa (JAM 1901), L. D. Schmadel
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 80.68193		(1950.0)	P	Q
n 0.22411856	Peri.	316.46201	-0.96516702	-0.24359267
a 2.6842162	Node	209.83496	+0.25973832	-0.93595218
e 0.1360190	Incl.	11.06402	-0.03144239	-0.25427570
P 4.40	H 12.0		G 0.25	

Residuals in seconds of arc

791218 095	0.3+	2.1-	810308 413	0.2+	0.7+	810408 413	0.6+	0.2+
810209 413	0.4-	0.6+	810308 413	0.8+	0.1+	810409 413	0.4+	0.5+
810212 413	0.3-	0.5-	810312 413	0.5-	0.1+	810409 413	0.3+	0.2-
810228 413	0.7-	0.1-	810312 413	0.0	0.7-	810501 413	0.1+	0.8-
810228 413	0.2-	0.8-	810406 413	0.0	0.0	860609 046	0.5+	0.8-
810306 413	0.3-	0.8+	810406 413	0.1+	0.7-	860609 046	0.3-	1.0-
810306 413	0.4-	1.0-	810408 413	0.2+	0.9+			

1981 EK4 = 1987 QV2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 220.74698		(1950.0)	P	Q
n 0.22793176	Peri.	67.04824	+0.86809812	-0.47883074
a 2.6541950	Node	321.20965	+0.34328751	+0.76953775
e 0.1926678	Incl.	12.05782	+0.35855174	+0.42253139
P 4.32	H 13.8		G 0.25	

Residuals in seconds of arc

810214 413	0.5-	1.0-	810310 413	1.8+	0.2-	870822 809	0.8+	0.3-
810302 413	2.9-	0.6+	810312 413	1.0+	0.2-	870822 809	0.2-	0.1+
810302 413	2.4+	0.2+	810409 413	1.1-	0.1-	870825 809	0.6-	0.1-
810307 413	0.6-	1.0+	810409 413	0.4+	0.7-	870825 809	0.1+	0.0
810307 413	2.0+	0.3+	810429 413	0.9-	0.6-	870825 809	0.2-	0.9+
810310 413	1.5-	0.9+	870822 809	0.2-	0.4-			

1981 EK7 = 1989 UG7
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 158.80512 (1950.0) P Q
n 0.17637866 Peri. 72.21128 +0.40611649 +0.91243511
a 3.1490017 Node 221.86327 -0.86434608 +0.36567507
e 0.1494781 Incl. 4.32387 -0.29660622 +0.18369517
P 5.59 H 14.0 G 0.25
Residuals in seconds of arc

810209	413	0.8-	1.9+	810405	413	1.6-	0.7-	810430 413 2.9+ 2.6-
810301	413	1.6+	0.4+	810405	413	0.4-	1.2-	810502 413 1.8- 0.5-
810307	413	1.8+	0.9+	810406	413	2.4-	1.2+	891023 033 1.3+ 1.4-
810307	413	1.4+	0.2+	810406	413	0.1-	0.5-	891023 033 0.1- 0.4+
810311	413	1.4-	1.1+	810407	413	1.5-	1.1+	891025 033 0.2+ 0.4+
810311	413	0.2+	0.0	810407	413	0.2+	0.5+	891025 033 0.1+ 0.5+
810315	413	0.9-	0.4-	810412	413	0.8-	1.1+	891027 033 1.3- 0.7-
810315	413	0.8+	1.3-	810412	413	2.6+	1.7-	

1981 ES9
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 207.08289 (1950.0) P Q
n 0.17526207 Peri. 30.92747 -0.62876155 +0.77568128
a 3.1623560 Node 200.27723 -0.74172100 -0.61934212
e 0.0424552 Incl. 9.05889 -0.23347135 -0.12138325
P 5.62 H 14.0 G 0.25
Residuals in seconds of arc

810202	413	0.2-	0.9+	810315	413	0.7-	0.1+	810412 413 0.2- 0.7+
810213	413	(0.9+	1.5-)	810315	413	0.0	0.5-	810502 413 0.3+ 0.3+
810214	413	0.2+	0.6+	810405	413	0.5+	1.2-	810503 413 0.2+ 0.2+
810301	413	(1.6-	1.9+)	810405	413	0.4+	0.8-	891002 807 0.7+ 0.4+
810301	413	0.9+	0.5-	810406	413	(2.5-	1.8+)	891004 807 0.2+ 0.1-
810307	413	0.0	0.4-	810406	413	0.3-	0.1+	891028 807 0.4- 0.6-
810307	413	0.2-	0.1+	810407	413	0.1-	0.9-	891031 807 0.5- 0.0
810311	413	0.7-	0.5+	810407	413	(0.7+	2.1-)	
810311	413	(1.3+	0.7-)	810412	413	0.2-	0.7+	

1981 EN17
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 86.70164 (1950.0) P Q
n 0.28364664 Peri. 157.57746 +0.98910675 -0.14147838
a 2.2941324 Node 210.64278 +0.12003104 +0.93501533
e 0.1727422 Incl. 4.57351 +0.08520792 +0.32516182
P 3.47 H 14.0 G 0.25
Residuals in seconds of arc

780509	675	0.8-	0.1-	810308	413	2.5-	0.1-	810405 413 (4.2+ 1.9-)
780510	675	0.8+	0.1+	810308	413	0.1-	1.3-	810406 413 0.5+ 0.6-
810212	413	2.1+	0.6-	810311	413	0.7+	0.4-	810410 413 0.6+ 1.4+
810212	413	0.5-	0.7+	810311	413	1.8+	0.9-	810502 413 0.1- 0.2+
810301	413	1.1-	1.1+	810312	413	1.6-	1.4+	810503 413 0.3- 0.3-
810301	413	0.1+	0.5-	810312	413	1.7+	1.4-	890801 675 0.8- 0.0
810306	413	1.7-	1.3+	810315	413	(2.9-	1.5+)	890801 675 0.8+ 0.0
810306	413	1.1+	0.5-	810405	413	0.6-	0.5+	

1981 EW24 = 1989 WO3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 168.44696 (1950.0) P Q
n 0.20101538 Peri. 195.34750 +0.99847299 +0.05369015
a 2.8861400 Node 161.56000 -0.04535987 +0.93116312
e 0.0764148 Incl. 2.35578 -0.03153035 +0.36062808
P 4.90 H 13.0 G 0.25
Residuals in seconds of arc

810209	413	1.6+	0.6+	810315	413	1.4+	1.1-	810410	413	0.2-	0.9+
810213	413	0.9-	0.6-	810405	413	0.8-	1.1+	810410	413	0.4-	0.5+
810302	413	1.8-	0.3+	810405	413	2.1+	0.9-	810426	413	2.3+	0.4-
810306	413	1.7-	0.1-	810406	413	1.5-	0.4+	810501	413	0.7+	1.5+
810306	413	0.2+	0.3-	810406	413	0.8-	1.3-	891129	033	0.2+	0.6+
810311	413	2.2-	0.4+	810407	413	1.6-	1.5+	891129	033	0.3-	0.5-
810311	413	0.9+	1.0-	810407	413	3.0+	1.4-	891202	033	0.1+	0.3+

1981 EK26 = 1978 RS9
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 56.76900 (1950.0) P Q
n 0.24256280 Peri. 106.00967 -0.02019538 +0.99968524
a 2.5463607 Node 162.81248 -0.93543892 -0.01363793
e 0.1177847 Incl. 2.88742 -0.35291101 -0.02105792
P 4.06 H 15.5 G 0.25
Residuals in seconds of arc

780902	809	0.0	0.6-	810209	413	1.0+	0.1+	810311	413	1.8+	2.0-
780902	809	0.7+	1.1+	810212	413	1.4+	1.1-	810315	413	0.5-	0.0
780902	809	0.8-	0.1+	810213	413	1.0+	0.7+	810406	413	2.9-	1.7+
780902	809	0.7+	0.1+	810302	413	0.5+	1.6-	810406	413	1.4-	0.5+
780902	809	1.3-	0.7-	810306	413	3.0-	1.2+	810426	413	2.9+	0.9-
780906	809	1.1+	0.7-	810311	413	0.9-	0.1-	810501	413	0.6+	0.7+

1981 EM26
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 177.56353 (1950.0) P Q
n 0.17452550 Peri. 253.93326 -0.17241973 +0.98493711
a 3.1712474 Node 6.18256 -0.85102827 -0.14228040
e 0.0324958 Incl. 6.96019 -0.49600638 -0.09826073
P 5.65 H 13.8 G 0.25
Residuals in seconds of arc

810209	413	0.0	1.1-	810311	413	(2.9+	0.2-)	810501	413	1.1+	0.4-
810212	413	0.3+	0.3-	810315	413	0.4-	0.6+	810501	413	(1.8-	0.3-)
810213	413	0.9-	0.8+	810405	413	(0.8-	2.5+)	810503	413	0.5-	0.4-
810302	413	(2.5-	1.5+)	810405	413	(7.0+	0.7-)	891002	807	0.1-	0.4-
810302	413	1.5+	0.4+	810406	413	(2.0-	2.1+)	891004	807	0.3+	0.5-
810306	413	1.2-	0.4-	810406	413	(4.3+	0.8-)	891028	807	0.2-	0.5+
810311	413	0.1-	0.5+	810426	413	(3.1+	0.8-)	891031	807	0.1+	0.2+

1981 EA28 = 1979 VO1 = 1986 VX8
Id. T. Kobayashi, L. D. Schmadel; 1981 EA28 = 1973 AR (JAM 1901) is invalid
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 54.80346 (1950.0) P Q
n 0.27187889 Peri. 355.09656 +0.99932550 -0.03318999
a 2.3598572 Node 6.86470 +0.03654556 +0.85690007
e 0.1350142 Incl. 7.55502 +0.00359966 +0.51441296
P 3.63 H 12.9 G 0.25

Residuals in seconds of arc

791114 095	0.4-	1.6+	810311 413	0.1+	1.2-	810410 413	0.0	1.3+
810212 413	0.5+	0.1+	810311 413	0.3+	0.3-	810410 413	2.1+	1.1-
810213 413	1.1-	0.4+	810315 413	1.0-	0.4-	810426 413	3.4+	0.8-
810302 413	1.9-	1.0-	810315 413	0.2+	0.6+	810501 413	0.1+	0.1+
810302 413	0.9-	0.1-	810405 413	(5.3+	0.6-)	810501 413	0.3+	0.2+
810306 413	2.0-	0.2-	810406 413	0.8-	0.6+	810503 413	0.2-	0.1+
810306 413	0.5-	0.6+	810406 413	0.8+	0.2-	861104 095	1.3+	2.0-

1981 EK41
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 168.39522		(1950.0)		P		Q		
n 0.29061556	Peri.	125.01186		+0.72608646		+0.68728337		
a 2.2573045	Node	191.62223		-0.65989371		+0.68792850		
e 0.0334867	Incl.	5.97668		-0.19323235		+0.23322937		
P 3.39	H	14.4	G	0.25				

Residuals in seconds of arc

810212 413	1.2-	1.3+	810311 413	1.5+	1.1-	810407 413	(3.4+	4.0-)
810212 413	0.3+	1.1+	810315 413	1.1+	0.6-	810426 413	(1.2+	3.2-)
810302 413	0.2+	0.1-	810405 413	1.4-	0.9+	810501 413	1.6+	1.9-
810302 413	0.2-	0.2-	810405 413	(5.1+	4.4-)	891029 807	0.3+	0.9-
810306 413	0.9-	0.9+	810406 413	0.3-	0.4+	891101 807	0.2+	0.7-
810306 413	0.5-	0.1+	810406 413	1.0+	1.5-			
810311 413	0.3-	0.3-	810407 413	1.3-	0.2-			

1981 TJ3 = 1981 WK = 1941 UE
Id. L. D. Schmadel (d, MPC 10022), K. Hurukawa (ibid.), W. Landgraf, S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M 211.15511		(1950.0)		P		Q		
n 0.17260318	Peri.	283.33730		+0.81134300		-0.58271675		
a 3.1947562	Node	112.32359		+0.55389224		+0.74088708		
e 0.2241489	Incl.	2.88231		+0.18688478		+0.33395736		
P 5.71	H	13.0	G	0.25				

Residuals in seconds of arc

411016 053	(32.8+	60.3+)X	811022 095	1.9+	0.8+	811120 688	1.9-	1.9+
411019 053	0.2-	0.4+ X	811027 095	1.3+	0.7-	811202 688	0.9+	1.7-
411027 053	(59.6+	5.2-)X	811028 095	0.7-	0.4-	811202 688	0.9+	0.5+
811007 095	0.3-	0.8-	811120 688	2.0-	0.2-			

1981 US14 = 1981 VM = 1985 WP = 1989 YE5
Id. S. Nakano (d, MPC 10752), D. W. E. Green
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Green

M 153.51709		(1950.0)		P		Q		
n 0.25688998	Peri.	283.51046		+0.99853627		-0.02978087		
a 2.4507865	Node	78.21006		+0.04558254		+0.91268952		
e 0.1423743	Incl.	2.64353		-0.02911282		+0.40756710		
P 3.84	H	14.0	G	0.25				

Residuals in seconds of arc

811023 095	0.2-	1.1-	811105 688	1.6-	0.1-	891229 511	1.7-	0.6-
811102 688	1.8+	1.3+	851120 095	0.4-	0.8+	891229 511	1.2+	0.1-
811102 688	0.7-	1.6-	891228 511	1.2+	1.5-			
811105 688	0.9+	0.1+	891229 511	0.4-	0.3+			

1982 OF = 1986 TE2 = 1986 VZ8
Id. T. Kobayashi, H. Kaneda
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 44.90556	(1950.0)	P	Q
n 0.25945432	Peri. 45.81256	+0.97939258	+0.19403704
a 2.4346065	Node 302.92274	-0.19905703	+0.88047469
e 0.2275333	Incl. 3.82759	-0.03415372	+0.43256670

P 3.80 H 13.6 G 0.25
Residuals in seconds of arc

820724 688	1.5+	1.4-	820815 095	2.3-	2.4+	861007 688	0.6+	0.1+
820724 688	1.5+	1.6-	820911 095	1.4+	1.3+	861007 688	1.1-	0.0
820813 095	0.1+	0.2+	820919 095	1.3-	0.7-	861104 095	1.2+	0.7-

1982 TD2 = 1987 DJ2 = 1989 YE
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M 160.61510	(1950.0)	P	Q
n 0.29119176	Peri. 91.97667	+0.99709175	-0.05182592
a 2.2543302	Node 270.99716	+0.02534941	+0.91696929
e 0.1509777	Incl. 3.20361	+0.07187107	+0.39557730

P 3.38 H 13.5 G 0.25
Residuals in seconds of arc

821014 095	1.0+	0.4+	821109 095	0.1-	1.2+	870223 010	1.6+	0.1+
821020 095	1.1+	0.2+	821114 095	0.7-	1.0+	891225 494	0.7-	1.2-
821022 095	2.4-	1.0-	870223 010	1.9-	0.6+	891228 494	0.6+	0.1+
821025 095	0.8+	1.0-	870223 010	0.6+	0.1-			

1982 UT5 = 1972 TC1 = 1984 FP
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 121.60628	(1950.0)	P	Q
n 0.29696222	Peri. 202.48354	+0.40707455	-0.91248899
a 2.2250268	Node 223.52410	+0.84671223	+0.39368282
e 0.0904092	Incl. 3.38578	+0.34259116	+0.11125502

P 3.32 H 13.9 G 0.25
Residuals in seconds of arc

721007 095	0.0	0.1-	821024 095	0.2-	0.4-	840331 688	0.6-	0.5+
821020 095	0.8-	1.0-	821108 095	1.1+	1.0+	840331 688	0.4+	1.0-

1982 UM6 = 1978 RA4 = 1978 RH15 = 1978 SM3 = 1981 GB1
Id. W. Landgraf, H. Kaneda
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 108.51981	(1950.0)	P	Q
n 0.26548076	Peri. 335.11216	+0.86783488	+0.49684121
a 2.3976218	Node 355.09260	-0.44895540	+0.78124020
e 0.2144207	Incl. 2.26579	-0.21284191	+0.37790550

P 3.71 H 14.5 G 0.25
Residuals in seconds of arc

780903 095	1.1-	1.1+	810411 801	0.7+	1.7+	821109 095	0.5+	0.7+
780906 809	1.7+	0.2+	821020 095	1.4-	0.8-	821114 095	0.7-	0.7+
780927 095	0.8-	0.9-	821025 095	1.1+	0.7+			

1982 UE7 = 1987 SR28
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 184.68783	(1950.0)	P	Q
n 0.18192246	Peri. 223.05577	+0.81311671	-0.58209295
a 3.0846922	Node 172.54032	+0.54012542	+0.75254992
e 0.1876008	Incl. 1.32499	+0.21703859	+0.30795521

P 5.42 H 12.7 G 0.25

Residuals in seconds of arc

821021 095	2.2+	0.5+	821112 095	0.5+	1.1-	870927 095	0.1+	0.4+
821023 095	2.6-	0.8+	870924 095	0.0	0.5-			

1983 AA = 1989 YF4
Id. R. H. McNaught
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams

M	73.98718	(1950.0)		P	Q
n	0.28328687	Peri.	202.56394	-0.70743992	-0.60120085
a	2.2960744	Node	294.99869	+0.69474874	-0.49495722
e	0.2425726	Incl.	24.20549	+0.12981886	-0.62735547
P	3.48	H	14.5	G 0.25	

Residuals in seconds of arc

830109 688	(0.3-	4.9-)	830112 675	1.0+	2.5+	891231 413	1.7-	2.5-
830109 688	2.0+	2.2+	830116 688	0.7+	1.5-	891231 413	0.3-	1.2+
830110 675	0.4-	0.0	830116 688	0.2+	1.2-	900122 675	0.4+	0.3+
830110 675	0.3-	0.9+	830121 688	0.6+	0.3-	900122 675	0.8-	1.0+
830111 675	0.1-	0.4+	830121 688	1.0-	2.3-	900125 675	0.8+	0.9-
830111 675	1.1-	0.4+	891230 413	1.1-	1.7-	900125 675	1.3+	0.4+
830112 675	0.3-	0.7+	891230 413	0.6-	0.4+			

1983 SB = 1957 YE = 1973 SE2 = 1976 KR2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	59.29184	(1950.0)		P	Q
n	0.29795236	Peri.	126.54486	+0.98482755	+0.16987888
a	2.2200991	Node	223.70584	-0.17104975	+0.91581897
e	0.1608765	Incl.	2.93991	-0.02926917	+0.36389115
P	3.31	H	14.5	G 0.25	

Residuals in seconds of arc

571222 330	0.1-	0.1-	830928 071	(5.9+	0.7-)	830930 071	1.5-	0.7-
730922 095	1.6-	4.6+	830928 071	0.2-	0.1-	830930 071	1.0-	0.3+
760529 413	0.2-	0.9-	830929 071	(3.8-	2.6-)	830930 071	0.2-	0.4-
760529 413	0.3-	0.0	830929 071	2.3-	1.3-	830930 071	1.5+	0.4-
760530 413	0.3-	0.5-	830929 071	2.8+	0.8-	831005 071	1.4-	0.8-
760530 413	0.9+	0.0	830929 071	1.6+	0.2+	831005 071	1.5+	1.0+
830903 095	(1.4-	4.7+)	830929 071	2.1-	2.4-	831109 071	2.3+	0.6-
830912 675	1.8+	0.9+	830929 071	0.1+	0.9-	831109 071	(5.0+	6.2+)
830913 675	1.7+	1.3+	830930 071	1.2-	0.4-	831110 071	1.6+	2.2+
830928 071	2.5-	1.6-	830930 071	1.9+	2.0+			
830928 071	1.7-	1.2-	830930 071	(21.3-	8.3+)			

1983 TU = 1973 YV2 = 1987 YG5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	55.61114	(1950.0)		P	Q
n	0.28930222	Peri.	298.11884	+0.94016084	+0.33365277
a	2.2641310	Node	42.49197	-0.26555176	+0.84455260
e	0.1943368	Incl.	5.87058	-0.21349440	+0.41881586
P	3.41	H	14.1	G 0.25	

Residuals in seconds of arc

731221 095	0.1-	0.4+	831016 046	0.2-	0.4+	831106 046	0.2-	0.5+
831007 046	0.1-	0.8-	831016 046	0.7-	0.1+	831107 046	0.5-	0.1-
831008 046	(4.1-	0.1-)	831102 046	2.5-	1.0-	831107 046	0.4-	0.5-
831011 688	1.2+	0.4+	831102 046	2.2-	1.2-	871224 010	0.4-	0.3-
831011 688	1.8+	0.4+	831104 688	0.3+	0.1+	871224 010	0.3+	0.1+
831012 688	2.4+	0.5-	831104 688	0.5+	0.5+	871224 010	0.1-	0.6-
831012 688	0.4+	0.4+	831106 046	0.1-	0.9+			

1984 UB3 = 1989 TQ11
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 59.22496	(1950.0)	P	Q	
n 0.19087963	Peri. 137.54369	+0.84500051	-0.53458159	
a 2.9874203	Node 254.77695	+0.48662766	+0.77954538	
e 0.0956670	Incl. 0.83273	+0.22173780	+0.32639168	
P 5.16	H 12.6	G 0.25		

Residuals in seconds of arc

841026 688	0.2+	0.8+	841029 046	0.2-	0.4+	891002 807	0.2+	0.2-
841026 688	1.4+	0.2-	841029 046	1.2-	0.3-	891004 807	0.1-	0.2-
841028 046	0.3-	0.3-	841030 046	0.0	0.6-	891028 807	0.1-	0.4+
841028 046	0.0	0.8+	841030 046	0.2+	0.8-	891031 807	0.1-	0.3+

1984 UT3 = 1950 TP = 1957 WP = 1989 ER6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 298.42139	(1950.0)	P	Q	
n 0.29055741	Peri. 35.02708	+0.99769397	-0.04051632	
a 2.2576056	Node 327.16625	+0.00993961	+0.88085148	
e 0.1968414	Incl. 5.76393	+0.06714128	+0.47165569	
P 3.39	H 13.7	G 0.25		

Residuals in seconds of arc

501006 024	0.5+	1.0-	840927 675	0.9-	0.5+	841027 675	0.3-	0.6-
571126 760	0.4+	0.9+	840927 675	1.1+	0.8+	890305 033	0.3+	0.5-
571126 760	0.4-	0.8-	841023 675	0.2-	0.2+	890305 033	0.4-	0.3+

1985 GM1 = 1959 GO = 1987 SZ25 = 1987 UC
Id. S. Nakano (d), H. Kaneda
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 46.33474	(1950.0)	P	Q	
n 0.19017835	Peri. 355.91640	-0.96301463	+0.26288960	
a 2.9947599	Node 199.63559	-0.24195293	-0.94020621	
e 0.0396764	Incl. 10.12813	-0.11858159	-0.21656716	
P 5.18	H 12.3	G 0.25		

Residuals in seconds of arc

590416 760	2.2-	0.9-	850415 688	1.2+	1.8+	870924 095	0.4-	2.0-
590416 760	1.7+	2.4-	850513 675	2.2-	0.8+	871020 688	1.0-	0.2-
850415 688	0.5+	1.3+	850515 675	0.8+	1.5-	871020 688	1.6+	1.0+

1985 RQ = 2415 T-2 = 1981 SE6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 105.21334	(1950.0)	P	Q	
n 0.24547546	Peri. 329.44221	+0.97494623	+0.21980013	
a 2.5261782	Node 17.95656	-0.17499578	+0.85272946	
e 0.2937767	Incl. 6.36392	-0.13731837	+0.47385690	
P 4.02	H 14.9	G 0.25		

Residuals in seconds of arc

730930 675	1.3+	0.7-	731005 675	0.9+	0.3+	850918 688	0.1+	0.1-
730930 675	0.5+	1.7-	810928 095	0.2-	1.0+	851012 688	0.5+	0.7+
731004 675	0.7-	1.2+	850914 688	1.6+	0.2+	851012 688	0.4-	2.3-
731004 675	1.3-	1.0+	850914 688	2.1+	0.7+			
731005 675	0.3-	0.1-	850918 688	0.7+	0.6+			

1985 UF5 = 1981 UB11 = 1989 YU
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	105.32265	(1950.0)	P	Q
n	0.26240756	Peri. 224.02039	+0.36449236	-0.93072278
a	2.4163102	Node 204.64947	+0.87298407	+0.35274107
e	0.1989634	Incl. 4.12590	+0.32410512	+0.09658596
P	3.76	H 14.0	G 0.25	

Residuals in seconds of arc

811022 095	0.1+	0.2-	851120 095	2.0+	1.5+	891230 896	0.3-	1.2+
851022 095	0.7+	0.4-	891227 896	0.0	0.0	891231 511	0.2+	0.7+
851109 095	1.6-	0.8-	891229 511	0.0	1.5-	891231 511	0.6+	0.5+
851111 095	1.1-	0.0	891229 511	0.7-	1.3-			

1985 VF1 = 1974 SO = 1990 BL
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	116.89266	(1950.0)	P	Q
n	0.27209620	Peri. 151.22857	+0.45977097	-0.88778423
a	2.3586052	Node 271.39212	+0.81060176	+0.42931362
e	0.2146038	Incl. 1.21562	+0.36267816	+0.16591856
P	3.62	H 14.5	G 0.25	

Residuals in seconds of arc

740919 095	0.3-	0.7+	851107 688	1.1-	0.9-	900121 374	2.7+	0.8+
850921 095	0.2+	0.7+	851112 095	3.5+	1.0-	900121 374	2.6-	0.8+
851018 095	0.4+	1.6+	900117 374	0.1-	0.0			
851107 688	2.6-	1.0-	900117 374	0.2+	0.7-			

1986 QO = 1971 SW2 = 1989 GO7
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	45.05409	(1950.0)	P	Q
n	0.25984324	Peri. 51.80475	+0.70117728	+0.71234864
a	2.4321766	Node 262.74576	-0.66326124	+0.63616889
e	0.1761659	Incl. 1.74245	-0.26160075	+0.29639255
P	3.79	H 13.8	G 0.25	

Residuals in seconds of arc

710927 095	0.1-	0.3+	860828 809	0.4+	0.3-	860831 809	0.5-	0.3-
860808 095	0.9-	1.6+	860828 809	0.8+	0.2-	860831 809	0.3+	0.5-
860813 095	1.0-	0.6+	860830 809	0.8-	1.1-	860907 095	0.1-	0.7+
860826 809	0.2-	0.2+	860830 809	0.1-	1.0-	890409 809	1.3-	0.9-
860826 809	0.5+	0.0	860830 809	0.3+	1.1-	890409 809	0.3+	0.6+
860826 809	1.5+	0.1+	860830 095	0.1+	1.0+	890409 809	0.9+	0.0
860828 809	0.1+	0.1-	860831 809	0.3-	0.1-			

1986 RU2 = 1969 TV2 = 1976 UY4 = 1988 FY2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	43.64033	(1950.0)	P	Q
n	0.28997396	Peri. 61.86791	+0.72394036	-0.68971445
a	2.2606329	Node 341.72744	+0.61583306	+0.65545338
e	0.1484389	Incl. 2.61304	+0.31090190	+0.30769277
P	3.40	H 13.6	G 0.25	

Residuals in seconds of arc

691009 095	1.7+	3.3-	860906 095	(8.5+	5.3+)	861008 095	3.8-	0.8+
761030 095	0.3+	0.1-	860912 688	1.8+	1.4-	861010 095	(5.8-	0.6-)
860906 688	2.6-	0.4-	860912 688	2.9+	0.7+	880317 809	0.9-	1.2-
860906 688	0.4+	0.1+	861002 095	1.3+	2.0+	880317 809	0.1-	1.2-

1986 TL = 1969 PD
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 287.85736 (1950.0) P Q
n 0.17727191 Peri. 36.16357 +0.92029801 +0.36751463
a 3.1384082 Node 301.74379 -0.38564173 +0.79454418
e 0.2223089 Incl. 9.07322 -0.06581820 +0.48335550
P 5.56 H 12.1 G 0.25
Residuals in seconds of arc

690811	095	1.3+	0.1+	861003	054	0.0	0.9+	861031 054 0.3+ 0.5-
690813	095	(1.9+	10.6+)	861004	054	0.9-	0.6-	
690821	095	1.3-	0.3-	861008	054	0.6+	0.2+	

1986 TK1 = 1959 VK = 1969 RS
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 112.35194 (1950.0) P Q
n 0.29215065 Peri. 51.26511 +0.85184885 +0.51713301
a 2.2493903 Node 277.44807 -0.50282417 +0.76286218
e 0.2000037 Incl. 4.81488 -0.14670167 +0.38809114
P 3.37 H 13.6 G 0.25
Residuals in seconds of arc

591103	760	2.4-	0.7-	861004	688	(7.8+	2.7+)	861105 688 0.5- 1.1-
591103	760	2.1+	1.4+	861004	688	(9.0+	4.0+)	861105 688 0.9+ 0.6-
690910	095	0.2+	0.4-	861007	095	1.0-	0.6+	
861003	095	0.3+	1.0+	861011	095	0.6+	0.1-	

1987 DM6 = 1989 WJ4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 57.05924 (1950.0) P Q
n 0.28710303 Peri. 286.01890 -0.46408534 -0.88568616
a 2.2756828 Node 191.66060 +0.83621282 -0.43299637
e 0.1515376 Incl. 3.85677 +0.29218644 -0.16755345
P 3.43 H 14.0 G 0.25
Residuals in seconds of arc

870223	809	0.3+	0.7+	870303	809	0.2+	0.4-	870307 809 0.0 0.4+
870223	809	0.5+	0.7+	870303	809	0.1+	0.1-	870307 809 0.0 0.5+
870223	809	0.6+	0.7+	870303	809	0.6+	0.3-	870307 809 0.6+ 0.6+
870224	809	0.3-	0.1-	870304	809	0.6-	0.4-	891123 372 2.2- 2.4-
870224	809	0.0	0.2-	870304	809	0.3-	0.1-	891123 372 (4.0+ 1.7-)
870224	809	0.5+	0.1-	870304	809	0.1+	0.4-	891124 372 1.6+ 2.0+
870227	809	0.3-	0.0	870305	809	0.0	0.3-	891124 372 1.1- 2.0+
870227	809	0.2-	0.3-	870305	809	0.1+	0.1-	891126 372 0.4+ 0.4+
870227	809	0.1-	0.2-	870305	809	0.3+	0.1-	891126 372 1.1+ 0.3+
870301	809	0.5-	0.2+	870306	809	0.8-	0.5+	891128 372 0.6+ 0.6-
870301	809	0.3-	0.3-	870306	809	0.6-	0.5+	891128 372 2.2+ 2.2-
870301	809	0.0	0.0	870306	809	0.3-	0.5+	891202 372 (3.2- 1.1-)
870302	809	0.6-	0.6-	870306	809	0.0	0.2+	891202 372 1.3- 0.1+
870302	809	0.0	1.2-	870306	809	0.3+	0.1+	891204 372 1.3- 0.3+
870302	809	0.4+	0.7-	870306	809	0.6+	0.1+	

1987 HA = 1989 XQ
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 39.59438 (1950.0) P Q
n 0.28634039 Peri. 70.98432 -0.71355522 -0.59374539
a 2.2797217 Node 70.80108 +0.39635310 -0.77982440
e 0.3052889 Incl. 23.19092 +0.57770509 -0.19834394
P 3.44 H 14.5 G 0.25

Residuals in seconds of arc

870423	675	0.2-	0.0	870601	675	0.3+	0.9-	891202	809	0.6+	0.4-
870423	675	0.2+	0.0	891202	809	1.4+	0.6+	891203	809	1.0-	0.3+
870530	675	0.2-	0.8+	891202	809	0.9-	1.2+	891203	809	0.7-	0.2-
870531	675	0.1+	0.2+	891202	809	1.0+	0.8-	891203	809	0.4-	0.6-

1987 QR = 1969 TS

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 317.20111		(1950.0)		P	Q
n 0.27277544	Peri.	152.38869	+0.96071193		+0.27734696
a 2.3546835	Node	191.52411	-0.26337642		+0.89901376
e 0.2219416	Incl.	3.02630	-0.08755250		+0.33889958
P 3.61	H	13.9	G	0.25	

Residuals in seconds of arc

691007	095	0.2+	0.8-	870822	033	0.5-	0.0	870917	095	1.2+	1.1-
691016	095	0.5-	0.6+	870823	033	0.3-	0.3-	870923	095	1.2-	0.3+
870821	033	0.1-	0.2+	870916	095	0.5-	0.5+				

1987 RZ = 1981 NJ1 = 1982 UK10

Id. H. Kaneda, T. Kobayashi

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kaneda	
M 186.98544		(1950.0)		P	Q
n 0.17216796	Peri.	227.48291	+0.99116611		+0.12940798
a 3.2001315	Node	125.06159	-0.10888314		+0.91899640
e 0.2057371	Incl.	2.03316	-0.07572455		+0.37242341
P 5.72	H	13.7	G	0.25	

Residuals in seconds of arc

810702	805	0.2+	0.7+	870915	809	1.1-	0.9-	870924	809	0.4-	1.0+
810702	805	0.3-	0.6-	870915	809	1.2-	0.9-	870924	095	0.4+	1.0-
821023	095	0.1+	0.4-	870915	809	1.2-	1.0-	870926	809	0.3+	1.2+
870828	095	1.3+	0.2-	870919	809	0.2+	0.3-	870926	809	0.3+	1.0+
870831	095	1.3+	1.5+	870919	809	0.0	0.0	870926	809	0.1-	1.2+
870912	809	0.4+	2.2-	870919	809	0.3-	0.1+	870927	809	0.4-	0.8+
870912	809	0.9-	2.1-	870924	809	1.0+	1.0+	870927	809	0.3-	0.9+
870912	809	0.3+	1.9-	870924	809	0.4+	1.1+	870927	809	0.2-	0.9+

1987 RB6 = 1981 XW1 = 1983 EN1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kaneda	
M 54.69214		(1950.0)		P	Q
n 0.30554138	Peri.	217.33911	+0.13176044		+0.99013876
a 2.1831791	Node	60.27796	-0.89570363		+0.13948492
e 0.1381591	Incl.	3.14108	-0.42468127		+0.01300732
P 3.23	H	14.0	G	0.25	

Residuals in seconds of arc

811204	511	0.4+	0.0	830311	381	0.8+	0.9-	870927	095	1.1-	0.1+
811204	511	0.5-	0.2-	870904	095	0.2+	0.7-				
830311	381	1.0-	1.0+	870924	095	0.7+	0.7+				

1987 SG2 = 1975 VX4 = 1989 EK8

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 210.97448		(1950.0)		P	Q
n 0.23958694	Peri.	277.06826	+0.10894521		-0.99366517
a 2.5674025	Node	166.58315	+0.95246189		+0.09640717
e 0.1674219	Incl.	6.82560	+0.28451239		+0.05775112
P 4.11	H	13.4	G	0.25	

Residuals in seconds of arc

751102 095	0.1+	0.7-	870920 071	3.5-	2.2-	870927 095	2.8+	2.7+
870904 095	1.1-	1.0-	870921 071	2.5-	0.9-	890310 881	1.2-	1.5+
870919 071	3.5-	0.5-	870921 071	0.4-	1.3+	890310 881	0.9+	0.6+
870919 071	0.6-	2.5+	870922 071	1.1+	0.2-			
870919 071	0.8+	0.8-	870924 095	2.6+	0.3+			

1987 SJ3 = 1955 BF1 = 1973 UH
Id. T. Kobayashi, C. M. Bardwell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 54.26890		(1950.0)		P	Q
n 0.35215863	Peri.	331.65408	+0.96009085		+0.25961791
a 1.9859904	Node	14.47928	-0.10302166		+0.67409418
e 0.0974300	Incl.	24.58899	-0.26002327		+0.69151687
P 2.80	H	13.8	G	0.25	

Residuals in seconds of arc

550129 675	2.3-	0.4+	870929 675	1.4-	0.4-	871020 675	0.3+	0.9+
550129 675	1.9+	0.5-	870929 675	0.7-	0.1+	871123 675	0.3-	0.8-
731026 095	4.8-	4.7+	870930 675	0.3+	0.7+	871123 675	0.5-	1.1-
870923 071	(0.6-	7.1+)	870930 675	0.6+	0.4-	890404 391	5.0+	4.3+
870923 071	(2.4-	17.7+)	871017 675	1.0+	0.4-	890404 391	(10.4+	3.4+)
870927 675	0.1-	0.2-	871018 675	0.9+	0.4-			
870927 675	0.3-	0.3+	871019 675	0.4+	0.5+			

1987 SR12 = 1976 GM3 = 1980 RB3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 12.57489		(1950.0)		P	Q
n 0.28651979	Peri.	116.46433	+0.39702460		+0.91779919
a 2.2787655	Node	176.91958	-0.86640440		+0.37622834
e 0.1569879	Incl.	4.28481	-0.30284465		+0.12687352
P 3.44	H	14.1	G	0.25	

Residuals in seconds of arc

760401 095	0.6+	2.1+	870918 809	0.6-	0.4+	870924 809	0.0	0.2-
800904 095	0.5+	1.7-	870918 809	0.5-	0.4+	870927 809	0.3+	0.9+
870828 095	0.7-	1.2-	870919 809	0.4-	0.2-	870927 809	0.4+	0.8+
870916 809	0.6-	0.9+	870919 809	0.3-	0.3-	870927 809	0.3+	0.9+
870916 809	0.2-	0.6+	870919 809	0.3-	0.3-	870928 809	0.7+	1.0+
870916 809	0.1-	0.7+	870920 095	(6.4+	1.0+)	870928 809	0.9+	1.1+
870916 095	0.0	2.9-	870924 809	0.2-	0.3-	870928 809	1.0+	1.0+
870918 809	0.6-	0.5+	870924 809	0.0	0.4-			

1987 VC1 = 1972 BV = 1979 YQ9 = 1989 EH8
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 269.98261		(1950.0)		P	Q
n 0.23659117	Peri.	5.48699	+0.81546096		-0.57723657
a 2.5890296	Node	29.89736	+0.52771301		+0.71115551
e 0.0814781	Incl.	4.91171	+0.23778646		+0.40131756
P 4.17	H	13.4	G	0.25	

Residuals in seconds of arc

720120 033	1.2-	3.3+	871115 046	0.0	0.7-	871125 046	0.7+	0.5-
720120 033	3.4+	2.6+	871115 046	2.4+	0.2+	871125 046	0.3-	2.4-
791225 095	0.1-	0.4+	871123 046	0.2+	0.8+	890308 372	1.3-	4.1-
871028 095	1.9-	2.0-	871123 046	0.5+	0.3+	890308 372	2.2-	2.4-

1988 CX4 = 3021 T-3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 341.95408 (1950.0) P Q
n 0.22457136 Peri. 198.88103 +0.85814569 -0.51241931
a 2.6806070 Node 192.09758 +0.48840431 +0.83389089
e 0.0070104 Incl. 8.73257 +0.15826308 +0.20506689
P 4.39 H 14.9 G 0.25
Residuals in seconds of arc

771016 675	0.2-	0.3-	880213 809	0.5+	0.0	880221 809	0.7-	0.1-
771016 675	(3.1+	0.7-)	880215 809	1.3+	0.6-	880221 809	0.3+	0.7+
771017 675	0.2-	0.9+	880216 809	1.1-	0.6+	880223 809	(4.7-	1.1+)
771017 675	0.8-	0.2-	880216 809	0.3+	0.2-	880223 809	(4.1-	1.0+)
771021 675	1.7+	0.7+	880216 809	0.4-	0.5-	880223 809	(4.1-	1.4+)
771021 675	0.5-	1.0-	880221 809	0.5-	0.4+			

1988 EM1 = 1975 EU5 = 1986 VY1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 245.26511 (1950.0) P Q
n 0.22794452 Peri. 328.94739 -0.81614282 -0.57764498
a 2.6540959 Node 175.67199 +0.56315349 -0.80107542
e 0.1981095 Incl. 11.77506 +0.12949534 -0.15685804
P 4.32 H 13.0 G 0.25
Residuals in seconds of arc

750315 095	0.9+	4.0+	880313 054	1.1-	1.1-	880409 054	0.1+	0.3+
861103 010	1.1-	0.5-	880314 054	0.3-	1.0-	880409 054	0.9-	0.8-
861103 010	0.1-	0.3-	880318 054	0.4+	1.3-	880414 054	0.5+	0.3+
861103 010	1.3+	0.2+	880318 054	0.7-	0.8-	880415 054	1.2+	0.1-

1988 LH = 1983 OQ = 1987 DS4
Id. C. M. Bardwell, K. Ichikawa, H. Kaneda
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell
M 207.93994 (1950.0) P Q
n 0.18780733 Peri. 321.89332 -0.94287639 +0.32194611
a 3.0199184 Node 237.09602 -0.27508398 -0.89739988
e 0.2166710 Incl. 5.85478 -0.18791732 -0.30170212
P 5.25 H 13.5 G 0.25
Residuals in seconds of arc

830716 808	0.3+	0.0	880614 474	1.0+	0.5-	880619 474	0.4-	0.0
830716 808	0.4-	0.4-	880614 474	0.4+	0.2-	880713 474	1.2-	0.6-
870228 010	0.5-	1.2+	880615 474	0.6-	0.1-	880713 474	0.8+	0.9-
870228 010	0.2+	0.7-	880615 474	0.5-	0.6-			
870228 010	0.5-	0.6+	880619 474	0.4-	0.6-			

1988 PM1 = 1989 YL3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 219.35675 (1950.0) P Q
n 0.26997596 Peri. 164.53492 +0.86938438 +0.49402621
a 2.3709379 Node 165.84538 -0.45774626 +0.81313411
e 0.2287943 Incl. 2.44576 -0.18611598 +0.30781655
P 3.65 H 14.0 G 0.25
Residuals in seconds of arc

880808 095	(6.3+	1.5-)	880814 511	1.2-	0.5-	880902 809	0.2-	0.3+
880809 095	1.5+	0.3+	880814 511	0.1+	0.8+	880904 809	0.8+	0.7+
880809 095	(3.6+	1.8+)	880818 511	1.0-	1.8+	880904 809	1.3+	0.5+
880809 095	(1.2-	7.6+)	880819 511	0.8-	0.7+	880904 809	1.1+	0.4+
880812 511	0.6-	1.0+	880819 511	1.2-	1.1-	880905 809	0.6+	0.4+
880813 511	0.0	0.7+	880902 809	1.2-	0.3+	880905 809	0.7+	0.4+
880813 511	0.7-	0.3-	880902 809	0.7-	0.3+	880905 809	0.6+	0.4+

880906 809 1.3+ 0.1- 880914 095 0.1- 1.0+ 880919 809 0.1+ 0.6-
880906 809 1.3+ 0.1- 880914 095 1.8+ 0.4- 880920 809 0.1- 0.7-
880906 809 1.7+ 0.3- 880914 511 1.4- 1.5- 880920 809 0.4+ 0.5-
880907 809 0.4- 0.5+ 880914 511 1.5- 0.2+ 880920 809 0.6+ 0.4-
880907 809 0.2- 0.2+ 880915 807 0.8+ 0.2+ 881004 807 0.4+ 0.1+
880907 809 0.3- 0.2+ 880915 809 1.1- 0.1- 881005 807 0.3+ 0.4+
880910 809 1.0- 0.4+ 880915 809 0.8- 0.4- 881007 807 0.6+ 0.0
880910 809 0.7- 0.3+ 880915 809 0.3- 0.3- 881008 807 0.2+ 0.9-
880910 809 0.5- 0.3+ 880916 807 0.9+ 0.3+ 881008 807 0.4+ 0.0
880913 511 (3.2- 5.1-) 880916 809 0.7- 0.4- 881104 807 0.1- 0.3+
880913 511 (1.4- 3.1-) 880916 809 0.5- 0.5- 881106 807 1.5- 0.0
880913 511 0.9+ 2.6- 880916 809 0.1- 0.5- 891230 413 0.5- 1.2+
880914 807 0.3+ 0.0 880916 095 (5.0+ 1.4+) 891230 413 0.3+ 1.7+
880914 809 1.1- 0.3- 880916 095 1.8+ 0.5+ 891231 413 0.9+ 1.3-
880914 809 1.0- 0.4+ 880919 809 0.2+ 0.3- 891231 413 0.0 1.1+
880914 809 0.9- 0.2+ 880919 809 0.1+ 0.4-

1988 PX2 = 1978 TH2
Id. T. Kobayashi; 1988 PX2 = 1976 JA3 (MPC 15417) is invalid
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams
M 104.51518 (1950.0) P Q
n 0.18928127 Peri. 209.90796 +0.85749862 -0.51447482
a 3.0042206 Node 181.07279 +0.50087384 +0.83631692
e 0.0752721 Incl. 10.56612 +0.11756497 +0.18944571
P 5.21 H 13.0 G 0.25
Residuals in seconds of arc
781003 095 0.2+ 2.7- 880815 511 0.2+ 0.6- 891228 511 0.5+ 0.7+
781007 095 0.2- 2.7+ 880818 511 0.2- 0.8- 891228 511 0.2- 1.2+
880812 511 1.5- 0.2- 880818 511 0.2- 0.5- 891229 511 1.3- 0.8-
880812 511 0.1- 0.1+ 880818 511 2.4+ 1.3+ 891229 511 2.6+ 0.4-
880814 511 0.8- 0.6+ 891228 511 2.0- 0.3- 891230 511 0.3+ 0.4-

1988 RG10
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 55.21875 (1950.0) P Q
n 0.08381197 Peri. 7.37486 +0.98191127 +0.18836399
a 5.1712873 Node 341.73370 -0.17669006 +0.87509417
e 0.0478484 Incl. 3.51491 -0.06805054 +0.44579053
P 11.76 H 11.8 G 0.25
Residuals in seconds of arc
880914 807 0.9- 0.2- 881007 807 0.0 0.2+ 891002 807 0.5+ 0.4-
880915 807 0.1+ 0.1+ 881008 807 0.4+ 0.7- 891004 807 0.2+ 0.0
880916 807 0.5+ 0.1+ 881008 807 0.6- 0.4+ 891028 807 0.8- 0.3+
881004 807 0.1+ 0.3+ 881103 807 0.4+ 0.1- 891031 807 0.0 0.1+
881005 807 0.3- 0.6+ 881105 807 0.4+ 0.7-

1988 RL10 = 1983 HN1
Id. S. J. Bus (1989 obs.), S. Nakano
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 218.48682 (1950.0) P Q
n 0.08360280 Peri. 41.31985 -0.99774336 +0.05643265
a 5.1799093 Node 141.86899 -0.06568504 -0.93268138
e 0.0444975 Incl. 3.37781 +0.01391658 -0.35625946
P 11.79 H 12.5 G 0.25

Residuals in seconds of arc

830416 033	0.1+	0.2+	881005 807	0.1-	0.2+	881105 807	0.2+	0.4-
880914 807	0.5-	0.1+	881007 807	0.0	0.1+	891001 807	0.3+	0.5-
880915 807	0.1-	0.4+	881008 807	0.1+	0.4-	891003 807	0.2+	0.1-
880916 807	0.1+	0.3+	881008 807	0.1+	0.1-	891029 807	0.1+	0.3+
881004 807	0.1+	0.1-	881103 807	0.2+	0.0	891101 807	0.7-	0.5+

1988 RN10
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 171.72328		(1950.0)	P	Q
n 0.08412895	Peri.	76.57466	-0.63022580	+0.76553996
a 5.1582900	Node	152.99223	-0.77566228	-0.61347465
e 0.0324558	Incl.	16.56598	-0.03410967	-0.19390056
P 11.72	H	12.8	G 0.25	

Residuals in seconds of arc

880914 807	1.2-	0.7-	881007 807	0.8+	0.2-	891003 807	0.9+	0.8-
880915 807	0.1+	0.0	881008 807	0.0	0.4+	891005 807	0.6+	0.4+
880916 807	0.5+	0.5-	881103 807	0.3+	0.8+	891030 807	0.8-	0.3-
881004 807	0.9-	0.8+	881105 807	0.5+	0.4-	891031 807	0.7-	0.6+

1988 RO10
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 118.96333		(1950.0)	P	Q
n 0.08300604	Peri.	121.53779	+0.21886690	+0.96569566
a 5.2047067	Node	159.64223	-0.97450120	+0.22358958
e 0.0470718	Incl.	23.68502	-0.04944374	-0.13205902
P 11.87	H	13.4	G 0.25	

Residuals in seconds of arc

880914 807	0.0	0.7-	881008 807	0.6+	0.3-	891005 807	0.5+	0.7+
880915 807	0.2-	0.7+	881008 807	0.2+	0.0	891030 807	0.2+	0.1-
880916 807	0.1+	0.9+	881103 807	0.2+	0.3+	891031 807	0.1+	0.5-
881004 807	0.5-	1.2-	881105 807	0.4-	0.0			
881007 807	0.0	0.1+	891003 807	0.8-	0.0			

1988 RS10
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 190.28615		(1950.0)	P	Q
n 0.08264128	Peri.	84.66531	-0.85610631	+0.51522454
a 5.2200102	Node	126.34088	-0.49175098	-0.78813420
e 0.0316236	Incl.	2.86913	-0.15894324	-0.33673158
P 11.93	H	12.4	G 0.25	

Residuals in seconds of arc

880914 807	0.2-	0.3-	881007 807	0.2-	0.1-	891001 807	0.5-	0.4-
880915 807	0.2+	0.4+	881008 807	0.2-	0.5-	891003 807	0.0	0.0
880916 807	0.7+	0.0	881008 807	0.5+	0.3-	891029 807	0.0	0.0
881004 807	0.2-	0.3+	881103 807	0.4-	0.1+	891101 807	0.6+	0.4+
881005 807	0.3-	0.8+	881105 807	0.1-	0.3-			

1988 RN11
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 170.32306		(1950.0)	P	Q
n 0.08100420	Peri.	55.26878	-0.69412735	+0.71984124
a 5.2901060	Node	170.77028	-0.66825847	-0.64231467
e 0.0953648	Incl.	1.42011	-0.26761509	-0.26317381
P 12.17	H	12.4	G 0.25	

Residuals in seconds of arc

880914	807	0.4-	0.2-	881104	807	0.5- 0.4+	891028	807 0.4- 0.2+
880915	807	0.4+	0.3+	881106	807	0.3+ 0.0	891029	807 0.1+ 0.2+
881006	807	0.3+	0.2+	891002	807	0.2+ 0.5-	891031	807 0.0 0.3+
881007	807	0.1-	0.6-	891004	807	0.3+ 0.5-	891101	807 0.1- 0.3+

1988 RY11
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 17.81883		(1950.0)	P	Q
n 0.08168520	Peri.	232.57273	+0.78517839	-0.60822477
a 5.2606630	Node	163.78118	+0.61186345	+0.79094374
e 0.0624399	Incl.	24.63764	-0.09548832	+0.06686278
P 12.07	H	12.8	G 0.25	

Residuals in seconds of arc

880914	807	0.2+	0.0	881007	807	0.1- 1.4-	891002	807 0.4- 0.9-
880915	807	0.1-	0.4+	881104	807	0.2- 0.4+	891004	807 0.3+ 0.1+
881006	807	0.6+	0.2+	881106	807	0.5- 0.5+	891029	807 0.1+ 0.7+

1988 SG3
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 96.08077		(1950.0)	P	Q
n 0.08272457	Peri.	231.32628	+0.62202028	+0.70983580
a 5.2165057	Node	80.47429	-0.57297084	+0.70031277
e 0.0851422	Incl.	19.57929	-0.53366205	+0.07546624
P 11.91	H	12.4	G 0.25	

Residuals in seconds of arc

880916	807	0.2-	0.0	881005	807	1.1+ 0.2+	891002	807 1.2- 0.9+
880918	807	0.0	0.8+	881007	807	1.1- 0.0	891029	807 0.7+ 0.7-
880919	807	0.2+	0.1+	881104	807	0.8- 0.4-	891030	807 0.5+ 0.0
881004	807	0.7+	0.7-	881107	807	0.0 0.2-		

1988 SJ3
Id. S. J. Bus (1989 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 35.16944		(1950.0)	P	Q
n 0.08137497	Peri.	293.08702	+0.87122797	-0.33621783
a 5.2740247	Node	88.14654	+0.46505311	+0.79855202
e 0.0607162	Incl.	20.96793	-0.15712231	+0.49927171
P 12.11	H	12.3	G 0.25	

Residuals in seconds of arc

880916	807	0.0	0.2+	881005	807	0.8+ 0.4-	891002	807 1.2- 0.6+
880918	807	0.1-	0.7+	881007	807	0.6- 0.4-	891029	807 0.5+ 0.0
880919	807	0.4+	0.3+	881104	807	0.3- 0.4-	891030	807 0.7+ 0.4-
881004	807	0.1+	0.0	881107	807	0.4- 0.2-		

1988 TU2 = 1954 UM1 = 1977 UT2
Id. C. S. Shoemaker (k, 1989 obs.), B. G. Marsden
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P Bardwell

M 82.61228		(1950.0)	P	Q
n 0.08448855	Peri.	93.02535	+0.87556481	+0.25167183
a 5.1436531	Node	252.69061	-0.37123689	+0.89673093
e 0.0219571	Incl.	25.59007	+0.30914307	+0.36405347
P 11.67	H	9.0	G 0.25	

Residuals in seconds of arc

541024 760	1.2+	0.9+	771018 033	0.3-	0.2-	891104 675	0.7-	0.3-
541024 760	1.4-	1.4+	880914 675	0.0	0.6+	891104 675	0.9-	0.2-
771018 033	0.2-	0.1-	880914 675	0.7-	0.8-	891122 675	0.4+	0.6-
771018 033	0.2+	0.5-	881012 675	0.4+	0.3-	891122 675	1.2+	0.5-
771018 033	0.3-	0.1-	881012 675	0.7+	0.0			

1988 TA3 = 1988 RJ1 = 1989 TO2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 167.74774		(1950.0)		P	Q
n 0.08084797	Peri.	90.35670		-0.40360882	+0.91154162
a 5.2969185	Node	155.36908		-0.89644611	-0.37678804
e 0.1058151	Incl.	10.88297		-0.18298714	-0.16468953
P 12.19	H	9.8	G	0.25	

Residuals in seconds of arc

880910 675	0.9-	1.0+	891003 807	0.2+	0.6+	891101 807	0.4-	0.2-
881010 675	1.3+	1.1-	891006 807	0.0	0.3-			
881012 675	0.6-	0.0	891030 807	0.1+	0.1-			

1989 AX1 = 1941 WO = 1954 PA = 1984 QF1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 278.04009		(1950.0)		P	Q
n 0.29579586	Peri.	20.25158		+0.95045443	-0.31083514
a 2.2308720	Node	357.84450		+0.26746660	+0.82462674
e 0.1704767	Incl.	6.45654		+0.15842346	+0.47262274
P 3.33	H	13.1	G	0.25	

Residuals in seconds of arc

411116 062	0.4-	0.9+	840831 688	0.9+	1.2-	890130 400	0.1-	0.3+
411116 062	0.9-	2.3+	890113 400	(0.8-	4.9-)	890130 400	0.3-	1.9-
540807 760	0.5-	1.5-	890113 400	(1.4-	5.8-)	890130 400	1.6-	1.0-
540807 760	1.6+	0.8+	890115 400	(1.5-	7.4-)	890207 400	0.7-	1.8-
840831 688	0.0	2.5-	890115 400	(3.2-	8.9-)	890207 400	0.6+	3.9-
840831 688	1.2+	1.4-	890115 400	(0.1-	9.6-)			

1989 AO3 = 1931 WA = 1987 SR26

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 173.77734		(1950.0)		P	Q
n 0.17516875	Peri.	89.94638		+0.66953921	-0.73878167
a 3.1634790	Node	317.68100		+0.62787172	+0.61825934
e 0.1740729	Incl.	6.56162		+0.39685557	+0.26824806
P 5.63	H	11.7	G	0.25	

Residuals in seconds of arc

311212 024	0.0	0.1+	890104 413	1.6-	0.9-	890111 033	0.2+	1.4+
870926 095	0.0	0.1-	890104 413	1.0+	0.4-	890202 033	0.1+	0.5+
881229 413	2.2-	0.8-	890110 413	1.1-	0.9-			
881229 413	1.3+	1.9+	890110 413	1.3+	0.5-			

1989 AL5 = 1981 UR3 = 1986 RJ15

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 292.53469		(1950.0)		P	Q
n 0.17267929	Peri.	281.09563		+0.59943055	+0.80035669
a 3.1938110	Node	25.74256		-0.72449104	+0.54814139
e 0.1429598	Incl.	1.39741		-0.34028775	+0.24283779
P 5.71	H	12.1	G	0.25	

Residuals in seconds of arc

811030 381	0.3-	0.1+	890104 413	0.1-	0.2+	890203 033	0.3+	0.2+
811030 381	0.5+	0.7-	890110 413	1.8-	0.4-	890205 033	2.8+	0.5-
860912 095	0.3-	0.8+	890110 413	0.6-	0.5+			
890104 413	0.1-	0.5+	890202 033	0.2-	0.3+			

1989 AP6 = 1972 YO = 1982 VW12

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Kobayashi	
M 239.55198		(1950.0)	P	Q
n 0.18787477	Peri.	240.52121	+0.98574759	-0.01589401
a 3.0191897	Node	119.92884	+0.06663079	+0.95100039
e 0.1103768	Incl.	11.14246	-0.15447337	+0.30878089
P 5.25	H	12.3	G 0.25	

Residuals in seconds of arc

721229 095	0.2-	0.1-	890111 033	0.6-	0.3+	890203 033	0.5+	0.1+
821114 095	0.1-	0.0	890114 033	0.3+	0.6+	890205 033	1.0+	0.5-
890111 033	0.9-	0.4-	890202 033	0.0	0.1-			

1989 AE7 = 1982 SQ10 = 1987 SJ21

Id. H. Kaneda, T. Kobayashi

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Kaneda	
M 169.53530		(1950.0)	P	Q
n 0.20575275	Peri.	138.20349	-0.03659640	-0.99859320
a 2.8416611	Node	313.85476	+0.90213407	-0.01649486
e 0.1120731	Incl.	3.05024	+0.42990094	-0.05039379
P 4.79	H	12.8	G 0.25	

Residuals in seconds of arc

820926 095	1.2-	2.5+	890111 033	0.0	0.2+	890204 033	0.4+	0.2-
870918 095	0.9+	2.2-	890112 033	0.2+	0.4+	890210 033	0.0	0.4-
890110 033	0.2-	0.5+	890202 033	0.0	0.3+	890210 033	0.1-	0.1+

1989 BG = 1937 BJ = 1987 RA5 = 1987 SL26

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Kaneda	
M 71.49675		(1950.0)	P	Q
n 0.28452048	Peri.	279.55678	-0.34788730	+0.93519503
a 2.2894282	Node	329.82087	-0.80015318	-0.33297599
e 0.0647794	Incl.	7.56907	-0.48859933	-0.12057052
P 3.46	H	13.2	G 0.25	

Residuals in seconds of arc

370121 020	2.2-	4.2-	890130 552	1.0-	0.1+	890207 552	1.2+	0.1-
370121 020	3.1+	6.3+	890130 552	1.1-	1.1-	890207 552	1.3+	2.0+
870902 095	2.5+	1.4-	890201 552	0.2-	0.9+	890208 552	0.7-	1.6-
870926 095	2.0-	0.7+	890201 552	0.1+	2.1+	890208 552	0.3-	0.9-
890129 552	1.1-	1.6-	890204 872	1.6+	0.3+	890304 552	1.4-	0.3+
890129 552	0.5-	1.3-	890204 872	2.9+	1.2-	890304 552	2.2-	0.7-

1989 EC3 = 1977 FE1 = 1977 GS = 1979 UE1

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Kaneda	
M 178.05963		(1950.0)	P	Q
n 0.23877301	Peri.	278.34774	-0.21373514	-0.97683465
a 2.5732337	Node	184.03972	+0.94483045	-0.20396365
e 0.1218044	Incl.	8.61487	+0.24821910	-0.06475257
P 4.13	H	14.2	G 0.25	

Residuals in seconds of arc

770325 095	0.8+	1.3+	791026 033	0.6-	0.3+	890302 809	1.0-	0.1+
770410 381	0.3-	0.1+	890204 809	1.6+	0.1-	890302 809	1.4-	0.1+
770410 381	0.1-	0.3+	890204 809	1.7+	0.2-	890303 809	0.5-	0.2+
791026 033	0.1+	0.7+	890204 809	2.4+	0.6-	890303 809	1.0-	0.1-
791026 033	0.1+	0.1+	890302 809	1.2-	0.5+	890303 809	1.4-	0.5-

1989 RC
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 125.80873 (1950.0) P Q
n 0.27960477 Peri. 180.75278 +0.77129590 +0.63105455
a 2.3161837 Node 139.72394 -0.58325488 +0.75292015
e 0.5126038 Incl. 7.36779 -0.25478693 +0.18676561
P 3.53 H 17.2 G 0.25
From 14 observations 1989 Aug. 9-Nov. 29, mean residual 0".57.

1989 RZ = 1959 RH = 1959 RQ
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 79.35137 (1950.0) P Q
n 0.26366947 Peri. 81.62992 +0.44548833 -0.88714929
a 2.4085897 Node 340.48395 +0.61144863 +0.39975336
e 0.3396069 Incl. 21.13264 +0.65396538 +0.23057186
P 3.74 H 13.0 G 0.25
Residuals in seconds of arc

590901	024	0.2+	0.5-	890908	675	0.7-	0.2-	891004 675 0.2+ 0.3+
590907	760	0.6+	0.5-	890908	675	1.2-	0.8-	891026 675 0.3+ 0.4-
590907	760	1.0-	0.2+	891001	675	0.5+	0.0	891026 675 0.8- 0.3+
890905	675	0.0	1.1+	891001	675	1.2+	0.6+	
890905	675	(1.8+	5.1+)	891004	675	0.0	0.5-	

1989 RS1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 115.04039 (1950.0) P Q
n 0.28137165 Peri. 180.88257 +0.99607280 +0.08758483
a 2.3064772 Node 174.04603 -0.08044335 +0.95639321
e 0.4803864 Incl. 7.17555 -0.03698445 +0.27864122
P 3.50 H 18.1 G 0.25
From 14 observations 1989 July 7-Nov. 29, mean residual 0".63.

1989 SZ = 1988 RN1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
M 160.04041 (1950.0) P Q
n 0.08392649 Peri. 275.87134 -0.28855582 +0.93711764
a 5.1665926 Node 334.51311 -0.59286270 -0.33589240
e 0.0161128 Incl. 27.14615 -0.75183067 -0.09479883
P 11.74 H 9.5 G 0.25
Residuals in seconds of arc

880910	675	0.0	0.5-	890927	675	0.3+	0.3-	891124 675 1.0- 2.9+
880912	675	0.1-	0.6+	890930	675	0.5+	0.4-	891125 675 0.1+ 0.2+
890831	675	0.2-	0.8+	891101	675	0.3+	2.4-	
890901	675	0.1+	0.1+	891102	675	0.1-	0.9-	

1989 SA3 = 1984 YQ3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 28.91504 (1950.0) P Q
n 0.17271146 Peri. 5.12064 +0.40673081 -0.90557832
a 3.1934144 Node 60.92637 +0.83315444 +0.31363753
e 0.1092823 Incl. 7.91863 +0.37473154 +0.28558606
P 5.71 H 13.0 G 0.25
Residuals in seconds of arc

841227	095	0.6+	1.1-	890928	809	0.8+	0.1+	891008 809 0.0 3.0-
841231	095	0.6-	1.1+	890928	809	0.5-	0.1-	891008 809 0.5+ 2.5-
890926	809	0.8-	0.2-	891007	809	0.2+	1.6+	891008 809 1.6+ 1.5+
890926	809	1.1-	0.4-	891007	809	1.2-	1.4+	891008 809 0.6+ 1.8+
890926	809	0.3-	0.3-	891007	809	1.8-	1.7+	891008 809 0.2+ 1.6+
890928	809	0.9+	0.7-	891008	809	0.8+	2.4-	

1989 TR11 = 1979 GK
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
M 112.92667 (1950.0) P Q
n 0.22846986 Peri. 324.29929 +0.92549102 +0.37499755
a 2.6500311 Node 13.97537 -0.27551118 +0.76308902
e 0.1950881 Incl. 12.75544 -0.25992300 +0.52637627
P 4.31 H 13.5 G 0.25
Residuals in seconds of arc
790401 809 0.4+ 0.0 891002 807 0.4+ 0.2+ 891028 807 0.1- 0.1+
790402 809 0.5- 0.1- 891004 807 0.3- 0.3- 891031 807 0.0 0.1-

1989 TT11 = 1974 RH = 1979 SU5 = 1979 UV2
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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 74.06766 (1950.0) P Q
n 0.20020637 Peri. 176.94953 +0.94558216 -0.32522626
a 2.8939098 Node 202.03800 +0.29794523 +0.87791861
e 0.0743815 Incl. 1.54441 +0.13077854 +0.35140689
P 4.92 H 12.5 G 0.25
Residuals in seconds of arc
740911 095 0.7- 0.7+ 891002 807 1.6+ 0.4- 891031 807 1.1- 0.5+
790923 095 1.5+ 0.2+ 891004 807 0.6+ 0.6-
791016 095 0.7- 0.8- 891028 807 1.4- 0.5+

1989 UA = 1981 UN18
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 78.76139 (1950.0) P Q
n 0.24256318 Peri. 7.98340 +0.60284889 -0.78679553
a 2.5463580 Node 45.06685 +0.72126021 +0.46648045
e 0.1002317 Incl. 10.77798 +0.34111131 +0.40416431
P 4.06 H 12.8 G 0.25
Residuals in seconds of arc
811025 095 0.3+ 0.7- 891020 403 0.1- 0.3+ Y 891026 403 0.5- 0.6+
811028 095 0.2- 0.6+ 891023 403 1.2+ 0.7- Y 891026 403 1.0- 0.1+
891020 403 0.6+ 1.2+ Y 891023 403 0.0 1.4-

1989 UQ
Epoch 1989 Nov. 10.0 ET = JDE 2447840.5 Marsden
M 226.47098 (1950.0) P Q
n 1.12573381 Peri. 14.87787 -0.97455470 +0.22414854
a 0.9151921 Node 178.07446 -0.20787228 -0.90251730
e 0.2666748 Incl. 1.28847 -0.08385856 -0.36772266
P 0.88 H 19.0 G 0.25
From 15 observations 1989 Oct. 26-Nov. 29.

1989 UG3 = 1982 BL3 = 1985 YM1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 77.74563 (1950.0) P Q
n 0.23367740 Peri. 320.51757 +0.66886321 -0.73843790
a 2.6105125 Node 87.32261 +0.70185947 +0.58933953
e 0.1635457 Incl. 4.91729 +0.24498017 +0.32770168
P 4.22 H 13.5 G 0.25
Residuals in seconds of arc
820118 033 0.3+ 1.5+ 891025 046 (6.7+ 1.6+) 891029 872 2.1- 0.8+ Y
820118 033 0.3- 1.1+ 891025 046 (5.4+ 2.8+) 891101 807 0.5+ 0.6-
851217 010 0.1- 3.0- 891025 046 (6.8+ 2.2+) 891102 872 0.4- 1.8+ Y
851217 010 1.2+ 0.6- 891026 046 1.0- 1.4+ 891102 872 0.5- 0.3- Y
891003 807 0.5- 0.6- 891026 046 0.2+ 0.5+ 891102 046 0.2+ 1.0-
891025 046 (4.6+ 2.8+) 891029 807 0.0 0.7- 891102 046 2.7+ 0.4+

1989 UE7
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Green
M 88.00034 (1950.0) P Q
n 0.17730695 Peri. 196.24648 +0.98186327 -0.18958018
a 3.1380009 Node 174.68063 +0.17621459 +0.90871334
e 0.1783062 Incl. 1.21621 +0.06994951 +0.37188630
P 5.56 H 12.5 G 0.25
From 9 observations 1989 Sept. 7-Dec. 4.

1989 WM
Epoch 1989 Dec. 20.0 ET = JDE 2447880.5 Marsden
M 353.58253 (1950.0) P Q
n 0.21853063 Peri. 72.44513 -0.50993442 -0.85957152
a 2.7297812 Node 48.26133 +0.77134042 -0.47400562
e 0.5192488 Incl. 2.55178 +0.38078977 -0.19093318
P 4.51 H 15.5 G 0.25
From 21 observations 1989 Nov. 28-1990 Jan. 21.

1989 WE1 = 1976 HJ = 1978 TG
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 100.89902 (1950.0) P Q
n 0.18862472 Peri. 288.81728 +0.91327943 -0.36208085
a 3.0111878 Node 92.75980 +0.40701032 +0.82942214
e 0.1055155 Incl. 10.76685 -0.01622602 +0.42538966
P 5.23 H 11.5 G 0.25
Residuals in seconds of arc

760423	095	0.3-	0.7-	891129	376	0.1+	0.9-	891206	399	1.6+	0.2-
781003	095	0.3+	0.8-	891129	376	0.4-	0.2+	891206	399	2.2+	0.3-
891122	376	(3.8-	2.6-)	891201	399	1.6+	0.8+	891206	399	0.8+	0.2+
891122	376	(6.0-	0.3+)	891201	399	1.8-	0.3-	891223	399	1.5+	0.1+
891125	376	0.3-	1.3+	891201	399	0.5+	2.5-	891223	399	0.2+	0.3-
891125	376	1.1+	2.3+	891202	033	0.1+	1.2+	891223	399	(2.9+	1.0-)
891125	872	0.9+	1.0+	891203	033	(3.6+	0.6+)	891228	376	2.1-	1.2-
891125	872	2.1-	2.1-	891203	033	2.0+	0.5+	891228	376	1.8-	1.7-
891128	033	2.0-	1.2+	891204	376	1.3-	0.1+				
891129	033	(3.2+	0.3+)	891204	376	0.9-	0.6+				

1989 WK4 = 1973 AX = 1980 BO4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 19.62569 (1950.0) P Q
n 0.28502120 Peri. 45.08444 -0.88348217 -0.46059426
a 2.2867461 Node 107.31507 +0.40059190 -0.83742027
e 0.1012198 Incl. 5.13889 +0.24286906 -0.29424515
P 3.46 H 14.9 G 0.25
Residuals in seconds of arc

730101	095	0.5-	0.3+	891124	372	1.9+	1.2-	891130	372	2.0-	0.6-
800122	095	1.4-	2.3+	891124	372	4.5+	0.9-	891204	372	2.9-	1.0-
800123	095	0.3+	2.4-	891126	372	3.2-	0.4+	891204	372	1.3+	1.4+
891123	372	2.6-	1.8+	891126	372	1.3+	0.1-				
891123	372	1.9-	0.5-	891130	372	0.2+	0.4-				

1989 XA = 1969 UL = 1981 EG49 = 1982 KQ
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 266.82791 (1950.0) P Q
n 0.19899809 Peri. 181.41201 -0.67831978 +0.73385730
a 2.9056064 Node 45.87730 -0.67360208 -0.60121539
e 0.0331801 Incl. 2.91835 -0.29350046 -0.31621751
P 4.95 H 12.4 G 0.25

Residuals in seconds of arc

691016	095	0.5+	1.5-	891202	567	0.1+	1.3-	891225	567	1.9-	1.9+
810308	095	0.4-	1.1-	891202	567	0.2+	1.3-	891227	567	0.1-	1.6+
820521	688	0.2-	0.9-	891202	567	0.0	1.4-	891227	567	0.0	1.1+
820521	688	0.3-	1.0-	891203	567	0.0	0.4+	891229	567	0.0	0.3+
891121	399	2.3+	1.4-	891203	567	0.2-	0.2+	891229	567	1.3+	0.2-
891121	399	0.2-	1.3-	891223	567	1.3-	0.7+	891230	567	1.3+	0.3-
891122	399	1.5+	0.2+	891223	567	2.0-	1.2+	891230	567	0.9+	0.3-
891122	399	0.2+	1.5-	891223	567	2.6-	1.8+	900101	567	1.3+	1.1-
891201	567	0.6+	0.6-	891225	567	1.2-	1.3+	900101	567	0.7+	1.0-
891201	567	0.2+	0.8-	891225	567	1.2-	1.6+				

1989 XB = 1978 YD2 = 1983 CN2

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

M	88.04017	(1950.0)	P	Q	
n	0.26776881	Peri.	295.74723	+0.32432910	-0.94193294
a	2.3839488	Node	135.03414	+0.90598937	+0.28285826
e	0.2221099	Incl.	7.07348	+0.27201820	+0.18097938
P	3.68	H	14.0	G 0.25	

Residuals in seconds of arc

781231	095	0.0	0.2+	891204	376	0.6-	0.6-	891220	376	0.6+	0.6-
830215	688	0.7+	0.3+	891204	376	0.8+	1.4-	891228	376	0.3-	1.5-
830215	688	0.7-	0.3-	891207	376	0.3+	0.7+	891228	376	0.1-	0.8+
891202	376	(3.4-	8.8+)	891207	376	1.4-	2.1+				
891202	376	(0.8-	6.2+)	891220	376	0.7+	0.2+				

1989 XM = 1988 RJ5

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

M	151.95374	(1950.0)	P	Q	
n	0.19633143	Peri.	280.68680	+0.93140894	+0.36142413
a	2.9318632	Node	58.13794	-0.31098778	+0.85163969
e	0.0320482	Incl.	2.90282	-0.18911368	+0.37958192
P	5.02	H	12.6	G 0.25	

Residuals in seconds of arc

880902	809	0.6+	0.2+	880910	809	(0.2-	2.3-)	891202	888	0.9-	1.3+
880902	809	0.5+	0.0	880910	809	(0.4-	2.6-)	891202	888	1.2-	1.2+
880902	809	0.4+	0.1+	880910	809	(0.5-	2.8-)	891203	888	0.4+	0.3+
880905	809	0.6-	0.2+	880911	809	(0.2-	3.4-)	891203	888	0.0	0.0
880905	809	1.0-	0.2+	880911	809	(0.4-	3.7-)	891220	888	0.8+	0.3+
880905	809	0.8-	0.1+	880911	809	(0.8-	4.3-)	891220	888	(3.4-	0.3-)
880907	809	0.5+	0.4-	891129	888	0.8+	1.5-	891229	888	0.2+	0.8-
880907	809	0.6+	0.3-	891129	888	0.4+	1.2-	891229	888	0.5-	0.4+

1989 XO = 1985 TA4

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	89.56608	(1950.0)	P	Q	
n	0.26861383	Peri.	150.51881	+0.21658359	-0.97031068
a	2.3789417	Node	286.79731	+0.87220172	+0.24185514
e	0.0494059	Incl.	6.45650	+0.43858376	-0.00180832
P	3.67	H	13.0	G 0.25	

Residuals in seconds of arc

851011	675	0.5-	0.1+	891205	400	2.5+	0.3+	891224	400	1.4-	0.8-
851013	675	(36.4-	9.0-)	891205	400	1.7-	0.1+	891224	400	2.1-	0.5-
851107	675	1.1+	0.7-	891218	400	1.1+	0.5+	891228	400	0.5+	0.7-
851107	675	0.6-	0.5+	891218	400	0.6+	0.4+	891228	400	0.6+	0.7+

1989 YB = 1981 WL1 = 1982 BH12 = 1985 VT5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 111.34632 (1950.0) P Q
n 0.24284242 Peri. 101.43089 +0.94729007 -0.29936979
a 2.5444056 Node 276.06705 +0.23047021 +0.88416015
e 0.3014470 Incl. 6.58890 +0.22254215 +0.35866217
P 4.06 H 13.0 G 0.25
Residuals in seconds of arc

811124	688	0.1+	1.1-	891218	400	(8.3+	9.0-)	891231	400	0.7+	1.3+
811124	688	1.4+	0.0	891218	400	(8.6+	8.5-)	891231	400	0.7+	0.0
811220	688	0.4-	1.6-	891224	400	1.7-	1.2-	900105	400	(8.1+	0.1-)
811220	688	0.4-	1.6-	891224	400	1.3-	0.6+	900105	400	(8.5+	0.1-)
820123	095	0.3-	2.6+	891228	400	0.8+	0.9-	900105	400	(7.2+	1.6-)
851112	095	1.6-	1.4+	891228	400	1.7+	1.1+				

1989 YH = 1984 YF1 = 1984 YD3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 129.15425 (1950.0) P Q
n 0.21350201 Peri. 88.52458 +0.79251667 -0.60004286
a 2.7724778 Node 308.33437 +0.48957444 +0.73249006
e 0.1645412 Incl. 7.98250 +0.36364021 +0.32156940
P 4.62 H 12.7 G 0.25
Residuals in seconds of arc

841217	095	0.2-	0.2-	891224	372	0.9+	0.7+	891231	413	0.0	0.3-
841227	095	0.2+	0.2+	891229	372	1.7-	0.5-	891231	413	2.0+	0.1+
891220	372	0.1-	0.0	891229	372	0.6-	0.0	900103	372	0.1-	0.5+
891220	372	0.2+	0.0	891230	413	1.7-	0.2-	900103	372	0.1-	0.3+
891224	372	0.3-	0.2+	891230	413	1.3+	0.7-				

1989 YK = 1973 AV1 = 1982 VD1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 136.71875 (1950.0) P Q
n 0.28903403 Peri. 184.69168 +0.77241374 -0.63460957
a 2.2655358 Node 214.74138 +0.58412603 +0.72555811
e 0.1611464 Incl. 2.55964 +0.24934674 +0.26615056
P 3.41 H 13.5 G 0.25
Residuals in seconds of arc

730101	095	0.7-	3.5-	891227	896	0.8+	0.3-	900104	403	0.1-	0.4+
821115	688	2.2-	1.5-	891228	896	0.2-	0.8-	900104	403	0.0	0.9-
821115	688	0.9+	0.4+	891228	896	1.0-	2.6+	900106	896	3.2+	1.2+
821117	330	1.4+	0.5+	891231	403	3.0-	1.5+ Y				
891222	896	1.9+	0.6- Y	891231	403	1.0-	0.6+				

1989 YN = 1948 UD = 1981 SQ3 = 1983 EL
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 114.01672 (1950.0) P Q
n 0.26709829 Peri. 163.51063 +0.47658957 -0.87611251
a 2.3879369 Node 257.97637 +0.79791257 +0.46580768
e 0.1606747 Incl. 4.26436 +0.36905001 +0.12429828
P 3.69 H 13.0 G 0.25
Residuals in seconds of arc

481028	062	0.1+	0.7-	830313	046	0.1+	1.1-	900103	896	0.7-	1.2+
481028	062	0.2+	0.1-	891227	896	1.8-	0.3+	900106	896	0.4-	1.6+
810925	095	0.1+	0.2-	891230	896	0.0	2.3-	900106	896	0.8+	1.3+
830312	046	(1.5+	3.4+)	900102	896	0.5+	1.0-	900117	896	0.2+	1.5- Y
830312	046	0.6-	0.0	900102	896	0.8+	0.1+	900117	896	0.6-	0.6-
830313	046	(3.1+	2.8-)	900103	896	1.4+	1.4+				

1989 YR = 1985 VW3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 85.91205 (1950.0) P Q
n 0.26420142 Peri. 334.59655 -0.00573922 -0.99858385
a 2.4053603 Node 115.69410 +0.92714920 -0.02512958
e 0.1670573 Incl. 3.36483 +0.37464840 +0.04689137
P 3.73 H 13.5 G 0.25
Residuals in seconds of arc
851111 095 0.8- 1.6+ 891220 887 0.5- 1.4- 900114 887 0.2- 0.8+
860111 801 1.0+ 1.8- 900101 887 0.2- 0.3- 900120 887 1.0- 0.4+
891220 887 2.1+ 1.9- 900101 887 0.1- 0.2- 900120 887 0.0 0.6+
891220 887 (4.6+ 3.2-)Y 900114 887 0.3- 2.3+

1989 YA2 = 1980 PZ1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 73.15308 (1950.0) P Q
n 0.24494733 Peri. 200.53337 -0.49688943 -0.86298515
a 2.5298131 Node 279.35938 +0.80853649 -0.42210674
e 0.1771844 Incl. 5.31624 +0.31522950 -0.27763740
P 4.02 H 14.0 G 0.25
Residuals in seconds of arc
800806 809 0.5+ 0.2+ 891231 413 0.0 0.3- 900121 399 0.0 0.1-
800807 809 0.6+ 0.3- 891231 413 0.3+ 0.3+ 900123 399 0.0 0.1+
800810 809 0.9- 0.0 900121 399 0.4+ 0.2- 900123 399 1.0- 0.5+
891230 413 0.4+ 0.3+ 900121 399 2.8- 1.1- 900123 399 2.6+ 0.3+

1990 AF = 1973 YL3 = 1976 YP = 1979 TU2 = 1979 WZ7 = 1982 SF3
Id. T. Kobayashi; 1972 NS = 1973 YL3 (NOC 976) is invalid
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 108.15561 (1950.0) P Q
n 0.30902678 Peri. 9.98693 -0.13934904 -0.98946094
a 2.1667325 Node 88.03103 +0.90574698 -0.14342219
e 0.0925548 Incl. 2.25684 +0.40025524 -0.01992784
P 3.19 H 14.1 G 0.25
Residuals in seconds of arc
731225 095 0.4- 1.3+ 791122 095 0.7- 0.2+ 900105 372 1.1- 1.2-
761216 095 (5.8- 1.5-) 820924 033 0.8+ 1.2- 900117 372 1.2+ 0.5-
761218 095 0.3- 0.1- 820924 033 1.0+ 0.7- 900117 372 (6.4- 2.4+)
761220 095 2.0+ 0.1+ 900103 372 0.9+ 0.1+
791014 095 2.0- 1.1+ 900105 372 1.6- 0.4-

1990 BA
Epoch 1990 Jan. 9.0 ET = JDE 2447900.5 Marsden
M 352.08447 (1950.0) P Q
n 0.45294530 Peri. 170.16598 -0.52407797 -0.85130766
a 1.6792120 Node 311.43548 +0.77908399 -0.46742035
e 0.3186220 Incl. 1.89954 +0.34405003 -0.23831383
P 2.18 H 17.5 G 0.25
From 12 observations 1990 Jan. 21-25.

1990 BG
Epoch 1990 Jan. 9.0 ET = JDE 2447900.5 Marsden
M 290.47701 (1950.0) P Q
n 0.53847732 Peri. 135.24322 -0.29468664 +0.77880345
a 1.4963198 Node 109.82187 -0.95485276 -0.26280010
e 0.5729257 Incl. 36.05855 +0.03762964 -0.56956237
P 1.83 H 14.5 G 0.25
From 5 observations 1990 Jan. 21-25.

2012 P-L = 1987 SN6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 241.04967 (1950.0) P Q
n 0.21923163 Peri. 24.59268 +0.93320315 -0.35923837
a 2.7239590 Node 356.42491 +0.30141773 +0.79604122
e 0.3067586 Incl. 8.22945 +0.19565077 +0.48709976
P 4.50 H 14.9 G 0.25
Residuals in seconds of arc

600924	675	0.3+	1.1+	601017	675	0.1+	0.4+	870921 046 (3.6- 3.3+)
600926	675	0.1-	0.4-	601022	675	0.0	0.4+	870922 046 2.7- 0.8-
600928	675	0.1-	0.7-	601025	675	0.1-	0.4-	870923 095 2.6+ 0.9+
600929	675	0.4+	0.1-	601026	675	0.2+	0.0	

2019 P-L = 1983 EP = 1983 GK1
Id. H. Kaneda, T. Kobayashi
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 107.61472 (1950.0) P Q
n 0.28191014 Peri. 272.16007 -0.67360469 -0.73819316
a 2.3035391 Node 220.26549 +0.69851172 -0.61973559
e 0.1189616 Incl. 3.23168 +0.24153282 -0.26645572
P 3.50 H 14.1 G 0.25
Residuals in seconds of arc

600924	675	0.4-	1.9-	601022	675	0.6-	0.4-	601026 675 0.5+ 0.8+
600928	675	0.7-	0.0	601025	675	0.4+	0.7+	830309 688 1.3+ 0.3-
600929	675	1.0+	0.6+	601026	675	0.5-	0.0	830309 688 1.2- 0.9-
601017	675	0.5-	0.1+	601026	675	0.6+	0.7+	830409 095 0.1+ 1.6+

2562 P-L = 1941 DE = 1957 WU = 1990 BD
Id. T. Kobayashi (k), C. M. Bardwell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell
M 38.17309 (1950.0) P Q
n 0.28096094 Peri. 139.60037 -0.99816907 +0.05778791
a 2.3087290 Node 43.72257 -0.05998593 -0.90789512
e 0.1560000 Incl. 1.48089 -0.00775820 -0.41519514
P 3.51 H 13.0 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

410224	053(0.17- 0.08+)X			600926	675	0.1-	0.3-	900120 391 1.4+ 2.4-
410225	053(0.17- 0.06+)X			600928	675	1.0-	0.2+	900120 391 0.1- 1.7-
410226	053(0.17- 0.05+)X			600929	675	0.7+	0.3+	900121 391 (6.3- 0.1-)
571126	760	1.0-	1.8+	601017	675	0.1+	1.7+	900124 391 2.4- 1.7+
571126	760	1.2+	2.4-	601022	675	0.7-	0.8-	900124 391 1.3+ 3.1+
600924	675	0.3+	1.0-	601026	675	0.4+	0.6+	

2716 P-L = 1989 TX3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 138.85645 (1950.0) P Q
n 0.27201341 Peri. 171.33718 +0.87097812 +0.49105223
a 2.3590791 Node 159.22876 -0.45346207 +0.81617162
e 0.2081610 Incl. 2.63001 -0.18912763 +0.30451862
P 3.62 H 16.7 G 0.25
Residuals in seconds of arc

600924	675	0.1+	0.6-	601017	675	0.9-	0.5-	891007 809 0.2+ 0.2-
600926	675	0.0	0.1+	601025	675	0.7+	0.3-	891008 809 0.8+ 1.1+
600928	675	0.4+	0.0	891007	809	1.2-	0.4-	891008 809 0.6+ 1.5+
600929	675	0.2-	0.8+	891007	809	0.1+	1.3-	891008 809 1.4+ 0.5+

2768 P-L = 3188 T-3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 166.61080 (1950.0) P Q
n 0.23328557 Peri. 110.12127 -0.55441661 +0.83131238
a 2.6134296 Node 126.14641 -0.78054428 -0.50302957
e 0.1234814 Incl. 2.78727 -0.28874356 -0.23639157
P 4.22 H 14.7 G 0.25
Residuals in seconds of arc

600924 675	0.1+	0.1+	771012 675	0.8-	0.9+	771017 675	1.1+	1.5+
600926 675	0.7+	0.2+	771012 675	0.6-	1.5+	771017 675	0.5-	1.4+
600928 675	0.1-	0.5-	771016 675	1.0+	1.9-	771017 675	0.7-	0.2-
600929 675	0.0	1.0-	771016 675	0.3-	0.4+	771021 675	0.7+	2.6-
771007 675	1.2+	1.4-	771016 675	1.0+	0.1+	771021 675	1.7+	2.3-
771011 675	1.1-	3.1+	771016 675	0.4+	1.9+	771022 675	1.0+	3.5-
771011 675	1.2-	2.2+	771017 675	0.6+	1.7+			

2796 P-L = 4346 T-3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 25.60889 (1950.0) P Q
n 0.23246841 Peri. 246.82665 +0.88462025 -0.46490622
a 2.6195504 Node 140.85108 +0.44603596 +0.82097179
e 0.2214144 Incl. 3.28553 +0.13601082 +0.33146271
P 4.24 H 15.8 G 0.25
Residuals in seconds of arc

600926 675	1.1+	0.7-	771016 675	0.5+	0.0	771021 675	2.0+	1.3-
600928 675	0.3-	0.4+	771016 675	0.3-	0.4-	771022 675	1.5-	1.5+
600929 675	0.9-	0.7+	771017 675	0.0	0.1+	771022 675	0.1-	1.9+
771012 675	0.2+	0.3-	771017 675	0.2+	0.2-			
771012 675	0.4-	0.7-	771021 675	0.4-	1.0-			

3016 P-L = 5465 T-2 = 1976 JF8 = 1982 XB4 = 1984 EF2
Id. T. Kobayashi, C. J. van Houten
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 333.93406 (1950.0) P Q
n 0.22788263 Peri. 147.32082 +0.92933625 -0.33654115
a 2.6545765 Node 233.09295 +0.28460524 +0.91499654
e 0.0949857 Incl. 10.95102 +0.23523180 +0.22253403
P 4.33 H 14.0 G 0.25
Residuals in seconds of arc

600924 675	0.8-	0.4-	600927 675	0.0	0.4-	731004 675	0.2-	0.2-
600924 675	0.2+	1.7+	600928 675	1.2+	0.5-	731005 675	0.7+	0.5-
600924 675	0.6+	0.9+	600928 675	0.0	0.9+	731005 675	1.1+	0.5+
600925 675	1.6+	0.7-	600929 675	0.9-	1.2+	760502 809	0.2+	1.1+
600925 675	0.1+	1.2+	600929 675	0.7-	0.0	821213 381	0.2+	1.8+
600925 675	1.2-	0.2-	730929 675	0.9-	1.6-	821214 381	0.1-	0.9-
600926 675	1.3-	0.5-	730929 675	2.1-	0.9-	821214 381	0.0	0.5+
600926 675	0.2-	0.8+	730930 675	0.9+	0.8-	840307 413	1.1-	0.4+
600926 675	0.2+	0.5+	730930 675	0.6+	0.6-	840307 413	0.8+	1.1-
600927 675	0.2+	0.8-	731004 675	0.7+	0.1-			

3083 P-L = 1982 KY = 1989 EZ8
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 78.63983 (1950.0) P Q
n 0.26093637 Peri. 348.51796 -0.16244660 +0.97972529
a 2.4253791 Node 272.05331 -0.89570420 -0.19626814
e 0.1450809 Incl. 6.73823 -0.41391435 +0.04021401
P 3.78 H 13.8 G 0.25

Residuals in seconds of arc

600924	675	0.7-	0.2+	600928	675	0.7-	0.1-	820526	688	1.6-	0.8+
600925	675	0.7+	0.1+	600928	675	0.2+	0.0	820526	688	1.8+	1.5-
600925	675	0.4+	0.5+	600929	675	0.2-	0.8-	890307	413	1.4-	0.1-
600926	675	0.1-	0.9+	601017	675	0.8+	0.8-	890307	413	1.1+	1.1-
600927	675	0.2-	0.2-	601022	675	0.5+	1.0-				

3509 P-L = 1988 EA

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	4.88451		(1950.0)	P	Q
n	0.37566009	Peri.	174.77385	-0.99894761	-0.04002513
a	1.9022723	Node	3.20008	+0.01088340	-0.68123987
e	0.0343884	Incl.	23.65509	+0.04455587	-0.73096528
P	2.62	H	15.6	G 0.25	

Residuals in seconds of arc

601017	675	1.0-	0.2+	601025	675	0.8-	0.2+	880318	054	0.6+	1.2+
601017	675	0.4-	0.4+	601025	675	1.2+	0.2-	880318	054	1.4+	0.3+
601017	675	0.4+	0.8+	601026	675	0.4+	0.2-	880324	809	0.4-	0.1-
601022	675	0.2-	0.1+	601026	675	0.1+	1.2-	880324	809	0.9-	0.0
601022	675	1.0-	0.1+	880313	054	0.5+	0.9-	880325	809	0.0	0.5-
601022	675	0.5+	0.2-	880313	054	0.4+	0.3-	880325	809	1.9-	0.2+
601024	675	0.6+	0.1+	880314	054	(4.0-	0.2-)	880413	054	0.6+	0.2+

4027 P-L = 1987 SU18 = 1989 YX1

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

M	314.11015		(1950.0)	P	Q
n	0.18113549	Peri.	323.71659	-0.55709256	+0.82823846
a	3.0936265	Node	272.35338	-0.74690050	-0.53159456
e	0.1212048	Incl.	3.47556	-0.36302551	-0.17728023
P	5.44	H	12.0	G 0.25	

Residuals in seconds of arc

600924	675	0.4+	0.9-	601022	675	0.0	0.5+	891230	413	0.6-	0.2-
600925	675	0.9-	0.0	601024	675	0.2+	1.2+	891231	413	0.6+	0.3+
600926	675	0.1-	1.4-	601026	675	0.2+	0.3-	891231	413	0.7+	0.5+
600928	675	0.1+	0.9-	870916	095	1.0-	2.4+				
601017	675	1.0+	0.2-	891230	413	0.6-	0.1-				

4041 P-L = 1982 VF11

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	82.77748		(1950.0)	P	Q
n	0.27075434	Peri.	96.65589	+0.87965881	-0.47464332
a	2.3663870	Node	291.68395	+0.42247102	+0.80900110
e	0.1710489	Incl.	1.86452	+0.21844589	+0.34674334
P	3.64	H	15.4	G 0.25	

Residuals in seconds of arc

600924	675	0.3-	0.1-	601017	675	0.5-	0.5-	821109	095	0.4-	1.2+
600925	675	0.4-	0.5+	601022	675	0.7+	0.8-	821114	095	0.2+	0.5-
600926	675	0.1-	0.3+	601024	675	0.5+	0.4-				
600928	675	0.2+	1.3+	601026	675	0.2+	0.8-				

4089 P-L = 1987 QX3 = 1987 SM20

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	247.73041		(1950.0)	P	Q
n	0.21910741	Peri.	161.67299	+0.99362634	-0.09479683
a	2.7249885	Node	204.01779	+0.07520001	+0.96053275
e	0.1814571	Incl.	8.61852	+0.08397419	+0.26151558
P	4.50	H	14.0	G 0.25	

Residuals in seconds of arc

600924	675	0.4+	0.5-	601022	675	0.7-	0.4-	870831	010	0.0	0.4-
600925	675	0.0	0.0	601024	675	0.1+	0.6+	870902	095	1.3+	0.7-
600926	675	0.4+	0.4-	601026	675	0.0	0.3+	870917	095	0.7+	0.1-
600928	675	0.0	0.3+	870831	010	1.9-	0.7+				
601017	675	0.3-	0.3-	870831	010	0.3-	0.9+				

4511 P-L = 4194 T-3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	295.02854	(1950.0)		P	Q
n	0.29098760	Peri.	233.72143	+0.78200007	-0.62273590
a	2.2553800	Node	164.73903	+0.59881408	+0.73908040
e	0.1597039	Incl.	5.66836	+0.17290919	+0.25682711
P	3.39	H	17.4	G 0.25	

Residuals in seconds of arc

600924	675	0.6-	0.3-	600928	675	0.2-	0.8+	771016	675	0.8-	1.0+
600924	675	0.3+	0.7-	771011	675	0.2+	0.6+	771017	675	1.3+	0.0
600926	675	0.6+	0.7+	771011	675	1.1-	0.7-	771017	675	0.1-	0.1-
600927	675	0.4+	1.4+	771012	675	1.1+	0.3-	771021	675	1.9+	0.0
600927	675	0.1+	0.9-	771012	675	0.3-	1.5-	771021	675	1.9-	0.3-
600928	675	0.8-	0.8-	771016	675	0.5-	1.0+				

4530 P-L = 1979 TP1 = 1981 EX47

Id. K. Hurukawa (MPC 10030), O. Kippes (ibid.), H. Oishi

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Oishi

M	184.45232	(1950.0)		P	Q
n	0.31197514	Peri.	163.07595	+0.98200043	-0.18863580
a	2.1530596	Node	207.80272	+0.17081969	+0.90860067
e	0.1728398	Incl.	1.17634	+0.08059646	+0.37264106
P	3.16	H	15.6	G 0.25	

Residuals in seconds of arc

600924	675	0.3+	0.0	601022	675	0.0	0.8+	810311	413	1.2+	1.7-
600926	675	0.4+	1.0-	601024	675	0.3-	0.5+	810315	413	0.3+	1.0-
600927	675	0.1-	0.4-	601026	675	0.2-	0.4-	810410	413	1.6-	0.1-
600928	675	0.0	1.3-	791014	095	0.1+	0.1-	810501	413	(2.4-	0.8-)
601017	675	0.9+	0.6-	810302	413	0.0	0.5-	810503	413	1.8-	0.6-

4667 P-L = 1987 RM6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	270.65015	(1950.0)		P	Q
n	0.21911075	Peri.	301.92337	+0.85385325	+0.51754947
a	2.7249608	Node	27.02887	-0.42676060	+0.75708898
e	0.2101710	Incl.	7.01143	-0.29801009	+0.39869640
P	4.50	H	13.6	G 0.25	

Residuals in seconds of arc

600926	675	0.7-	1.0+	601022	675	0.5+	0.3-	601026	675	1.3+	0.2-
600927	675	0.1-	0.8+	601025	675	1.5-	0.6-	870904	095	0.3-	0.5-
600928	675	0.3-	1.5+	601025	675	0.8+	0.2+	870924	095	1.2+	1.9-
601017	675	0.1-	0.0	601026	675	1.5-	0.4+	870927	095	0.6+	0.4-

4817 P-L = 1981 EE41

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	304.73867	(1950.0)		P	Q
n	0.26128264	Peri.	241.17074	+0.45391186	-0.89103718
a	2.4232358	Node	181.84902	+0.85532856	+0.43700014
e	0.0972276	Incl.	7.29138	+0.24975404	+0.12281541
P	3.77	H	15.8	G 0.25	

Residuals in seconds of arc

600924	675	0.6-	0.5-		601022	675	1.3+	1.0+		810311	413	0.4+	1.3-
600926	675	0.1+	1.4-		810212	413	0.5-	1.0+		810315	413	1.6-	0.4+
600927	675	0.4+	0.1+		810212	413	2.1-	0.4-		810315	413	1.0-	0.2+
600928	675	0.3+	0.2+		810213	413	1.1+	1.9+		810426	413	2.3+	2.9-
601017	675	0.7-	1.9-		810302	413	0.8+	1.8-					

5023 P-L = 1985 QK2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	183.19666		(1950.0)	P	Q
n	0.27297114	Peri.	76.85241	+0.44725096	+0.89141170
a	2.3535579	Node	219.97600	-0.85835126	+0.40479254
e	0.1179935	Incl.	6.53828	-0.25139550	+0.20378465
P	3.61	H	15.5	G 0.25	

Residuals in seconds of arc

600924	675	0.1+	1.2+		601026	675	0.4-	0.3-		850817	675	(6.1+	0.9+)
600926	675	0.4-	0.3-		850816	675	2.2-	0.3+		850823	675	1.8+	0.8+
601017	675	1.3+	2.0-		850816	675	2.7+	2.7+		850823	675	2.0-	1.2-
601025	675	0.6-	1.5+		850817	675	0.4-	2.7-					

5565 P-L = 1989 SB2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	111.45705		(1950.0)	P	Q
n	0.30618758	Peri.	353.83471	+0.87375766	-0.48227452
a	2.1801063	Node	35.22342	+0.45073813	+0.75435599
e	0.1814774	Incl.	6.26285	+0.18270933	+0.44537437
P	3.22	H	14.5	G 0.25	

Residuals in seconds of arc

601017	675	0.5-	0.8-		890926	809	0.7+	0.4-		891002	807	0.8+	0.5-
601022	675	0.6+	0.9+		890926	809	0.7+	0.5-		891006	807	0.8+	0.0
601025	675	0.3-	0.0		890928	809	0.8-	1.5+		891009	391	2.9+	0.7-
601026	675	0.4+	0.2-		890928	809	1.1-	1.2+		891009	391	2.5-	1.0-
890926	809	1.3+	0.2-		890928	809	2.3-	0.3+		891028	807	0.4-	0.7+

6217 P-L = 1980 GG1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	332.41188		(1950.0)	P	Q
n	0.17946004	Peri.	7.21759	-0.91961884	+0.38528651
a	3.1128453	Node	196.10840	-0.37276210	-0.91740273
e	0.1311299	Incl.	16.00949	-0.12389357	-0.09963198
P	5.49	H	14.6	G 0.25	

Residuals in seconds of arc

600924	675	0.1+	1.0+		601022	675	0.3+	0.0		800415	805	0.7+	2.3-
600925	675	0.5+	0.0		601024	675	0.1-	0.8+		800416	805	0.8+	0.8+
600926	675	0.2-	0.4-		601026	675	0.2-	0.7-					
600928	675	0.3-	0.7-		800414	805	1.5-	1.5+					

6837 P-L = 1989 TT3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	93.62300		(1950.0)	P	Q
n	0.20500413	Peri.	276.31790	+0.99686099	-0.05663956
a	2.8485749	Node	86.93873	+0.07410054	+0.91352155
e	0.0919062	Incl.	3.17566	-0.02787957	+0.40282793
P	4.81	H	15.4	G 0.25	

Residuals in seconds of arc

600924	675	0.1-	0.2+	600927	675	0.3-	0.6+	891007	809	0.3-	0.9-
600924	675	0.6+	1.0-	600928	675	0.9-	0.9+	891008	809	0.4-	0.5+
600926	675	0.1-	0.6+	600928	675	0.4+	0.7-	891008	809	0.7-	0.3+
600926	675	1.5+	0.2-	891007	809	2.2+	0.3-	891008	809	1.3-	0.6+
600927	675	0.8-	0.2-	891007	809	0.7+	0.3-				

1010 T-2 = 1989 XG

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 301.31565		(1950.0)	P	Q	
n	0.18901476	Peri.	321.23271	-0.96087691	-0.26910073
a	3.0070379	Node	203.40915	+0.27687625	-0.92687618
e	0.0918115	Incl.	9.50068	+0.00742338	-0.26169706
P	5.21	H	11.1	G 0.25	

Residuals in seconds of arc

730929	675	0.3-	0.5-	731004	675	1.7+	2.2-	891202	010	0.9-	0.1+
730929	675	1.1+	0.0	731004	675	2.0+	2.0-	891202	010	1.2+	1.1+
730930	675	0.8-	1.0+	731005	675	1.2-	1.9+	891202	010	0.1+	0.5-
730930	675	0.8-	0.6+	731005	675	1.6-	1.2+	891203	010	0.4-	0.7-

1169 T-2 = 1989 YC2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M	6.97034	(1950.0)	P	Q	
n	0.20342287	Peri.	208.56327	-0.99208323	+0.12480326
a	2.8633234	Node	338.59257	-0.10670632	-0.89637175
e	0.1230838	Incl.	2.19265	-0.06621653	-0.42537258
P	4.85	H	14.0	G 0.25	

Residuals in seconds of arc

730919	675	1.4-	0.7+	730929	675	0.9+	0.9+	731005	675	1.3-	1.5-
730919	675	1.7-	0.3-	730930	675	0.9+	1.5+	891230	413	0.3-	2.6+
730924	675	1.9+	0.5+	730930	675	0.4+	0.1-	891230	413	0.9+	0.4+
730924	675	1.3+	1.5+	731004	675	0.6-	2.7-	891231	413	1.9-	1.5-
730925	675	0.7+	0.0	731004	675	1.5-	0.4-	891231	413	1.4+	1.4-
730929	675	2.1+	1.6+	731005	675	1.9-	1.6-				

2314 T-2 = 1989 GP3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Kobayashi	
M 111.08125		(1950.0)	P	Q	
n	0.28942441	Peri.	96.92409	-0.21648755	+0.97607340
a	2.2634936	Node	160.53687	-0.91806816	-0.19644577
e	0.0659625	Incl.	3.50039	-0.33209033	-0.09321901
P	3.41	H	14.7	G 0.25	

Residuals in seconds of arc

730929	675	0.0	0.7+	731004	675	1.0-	0.9+	890403	809	1.7-	0.3+
730929	675	0.4+	0.2-	731004	675	0.7+	0.1-	890403	809	0.1+	0.2-
730930	675	2.0+	2.7-	731004	675	0.8-	0.0	890403	809	0.9-	0.2+
730930	675	2.1-	2.8+	731005	675	1.7+	0.7-	890406	809	0.1+	0.3-
730930	675	2.0+	2.1-	731005	675	2.2-	0.5+	890406	809	0.9+	0.7-
730930	675	1.5-	1.9+	731005	675	2.4+	0.8-	890406	809	1.4+	0.6+
731004	675	0.6+	1.3-	731005	675	2.2-	0.8+				

4053 T-2 = 1976 GY7 = 1989 YP3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano	
M 100.45344		(1950.0)	P	Q	
n	0.20098611	Peri.	301.86544	+0.15035601	-0.98811203
a	2.8864202	Node	139.44808	+0.92285560	+0.12864863
e	0.0245973	Incl.	2.82633	+0.35458511	+0.08416732
P	4.90	H	13.0	G 0.25	

Residuals in seconds of arc

730919 675	0.4+	1.5-	730929 675	(1.1+	3.8-)	731005 675	0.5-	0.9-
730919 675	0.5-	1.2-	730930 675	0.6+	1.3+	731005 675	0.4-	0.9+
730920 675	1.1-	1.6-	730930 675	0.8+	0.5-	731005 675	0.1-	0.2+
730924 675	0.2-	1.8+	730930 675	0.2-	0.7+	760404 095	0.1-	0.4-
730924 675	0.1-	0.6+	730930 675	1.4+	0.7-	891230 413	0.4-	0.0
730925 675	0.6+	0.6-	731004 675	1.3-	0.2-	891230 413	0.4+	0.3+
730925 675	0.2-	0.1+	731004 675	0.7-	0.1-	891231 413	0.3+	1.0-
730929 675	(1.6+	3.7-)	731005 675	1.3+	1.3+	891231 413	0.4-	0.5+

5162 T-2 = 1989 RR3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano
M 121.59743		(1950.0)	P	Q
n 0.18371719	Peri.	350.37698	+0.59469861	+0.79703659
a 3.0645759	Node	316.01875	-0.72713061	+0.47743208
e 0.0762270	Incl.	8.71312	-0.34294991	+0.36985305
P 5.36	H	12.0	G 0.25	

Residuals in seconds of arc

730920 675	2.7+	1.6-	730929 675	1.3-	1.1+	731005 675	0.6+	0.1+
730920 675	(4.5+	3.0-)	730929 675	1.2-	0.8+	731005 675	0.2-	0.6-
730924 675	0.5+	0.9+	730930 675	0.1-	0.2-	890909 046	0.4+	0.5+
730924 675	0.4+	0.2+	730930 675	0.1+	0.2+	890909 046	2.2-	0.9+
730925 675	0.2+	0.6-	731004 675	1.1-	0.1+	890922 046	0.7-	0.4-
730925 675	0.3+	0.4-	731004 675	0.7-	0.1+	890922 046	2.5+	0.9-

1142 T-3 = 1989 YH3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano
M 254.30248		(1950.0)	P	Q
n 0.26664092	Peri.	9.64059	+0.59608317	+0.79627307
a 2.3906668	Node	297.02089	-0.74412939	+0.49961911
e 0.1004495	Incl.	6.64732	-0.30158964	+0.34107175
P 3.70	H	13.5	G 0.25	

Residuals in seconds of arc

771007 675	0.3+	2.4-	771016 675	1.4-	1.4-	771022 675	1.9+	0.6-
771011 675	1.3+	0.2+	771016 675	1.5-	0.1+	891230 413	(5.9+	0.4+)
771011 675	0.9+	0.5+	771017 675	0.1-	1.1+	891230 413	0.5-	0.6+
771012 675	0.8-	0.4+	771017 675	0.4-	1.0+	891231 413	0.5+	0.6-
771012 675	0.6+	1.5+	771022 675	0.9-	0.5-			

2400 T-3 = 1989 YE1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Nakano
M 348.23940		(1950.0)	P	Q
n 0.26347106	Peri.	252.45076	-0.86835243	+0.49415504
a 2.4098035	Node	317.13734	-0.42826916	-0.78998151
e 0.0028014	Incl.	3.55074	-0.25009916	-0.36296006
P 3.74	H	13.5	G 0.25	

Residuals in seconds of arc

771012 675	1.4-	0.7+	771021 675	2.9+	0.4-	891231 413	1.3-	0.6+
771012 675	0.7-	0.0	771021 675	1.7+	1.1-	891231 413	2.3+	0.5+
771016 675	0.2-	2.2-	771022 675	0.5-	2.0+	900121 887	(5.8+	33.0-)Y
771016 675	0.3+	1.6-	771022 675	0.9+	1.4+	900121 887	0.4-	0.9+ Y
771017 675	2.1-	0.3+	891230 413	0.8-	0.2+	900124 887	0.3-	0.6-
771017 675	1.0-	0.9+	891230 413	0.0	1.3-	900124 887	0.5+	0.3-

3108 T-3 = 1941 UB = 1978 TB9 = 1989 UM5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi
M 115.61592 (1950.0) P Q
n 0.08252613 Peri. 255.89672 +0.35533293 +0.93458239
a 5.2248649 Node 34.93241 -0.84559033 +0.32921091
e 0.0756386 Incl. 1.71668 -0.39839114 +0.13481812
P 11.94 H 9.7 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

411024	012(0.11+	0.04+)X	771016 675	1.5+	1.2-	771022 675	1.9-	1.0+
771007 675	1.6+	1.9-	771016 675	0.6+	0.4-	771022 675	0.3+	0.4+
771011 675	2.0-	1.7-	771017 675	0.2-	0.0	781009 095	0.1+	0.6-
771011 675	0.7-	1.0-	771017 675	0.8+	1.2+	891030 807	0.7-	2.3+
771012 675	1.0+	1.3-	771021 675	0.1+	0.5+	891101 807	1.2-	1.9+
771012 675	0.3+	1.4-	771021 675	0.1+	1.9+			

3197 T-3 = 1988 VE5 = 1988 VK10 = 1989 YL4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 138.73184 (1950.0) P Q
n 0.18032722 Peri. 308.05249 +0.94717462 -0.31717740
a 3.1028638 Node 70.48448 +0.30777329 +0.85723277
e 0.1864919 Incl. 2.89025 +0.09019892 +0.40564820
P 5.47 H 13.0 G 0.25
Residuals in seconds of arc

771007 675	0.5-	0.8-	771017 675	0.4-	0.2+	881110 046	1.4+	0.4+
771011 675	1.6-	1.3+	771021 675	1.0-	1.4+	881110 046	1.8-	1.5+
771011 675	0.3+	1.2+	771021 675	1.4-	1.0+	891230 413	1.5-	0.2-
771012 675	1.5-	0.1+	771022 675	1.1+	0.4-	891230 413	1.0+	1.6+
771012 675	0.1+	0.4-	771022 675	1.3+	1.1-	891231 413	0.0	2.2-
771016 675	1.8+	0.6-	881104 046	0.2-	0.9-	891231 413	0.5+	0.9+
771016 675	1.5+	0.8-	881104 046	1.0+	1.6-			
771017 675	0.0	0.5-	881105 046	(7.9-	42.1-)			

4045 T-3 = 1990 BP
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 344.74779 (1950.0) P Q
n 0.26816923 Peri. 110.91357 -0.68974365 +0.71843799
a 2.3815751 Node 115.14414 -0.69573915 -0.62320873
e 0.1080989 Incl. 5.70602 -0.20050121 -0.30896235
P 3.68 H 13.5 G 0.25
Residuals in seconds of arc

771007 675	2.1+	1.2+	771017 675	0.0	1.4+	900121 887	0.4+	0.4-	Y
771011 675	0.3-	1.6-	771017 675	0.7-	0.6+	900121 887	1.1-	0.1+	Y
771011 675	0.3+	0.8-	771021 675	1.2+	0.3+	900121 887	1.1-	0.1+	Y
771012 675	0.6-	0.4-	771021 675	1.2+	0.4+	900124 887	0.4-	1.1+	
771012 675	0.4-	1.4-	771022 675	0.5-	1.0-	900124 887	1.9+	0.5-	
771016 675	1.8-	1.7+	771022 675	0.8+	1.6-				
771016 675	1.3-	1.2+	900121 887	0.4+	0.4-	Y			

4074 T-3 = 1989 YV1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 18.32691 (1950.0) P Q
n 0.26568423 Peri. 94.14137 -0.98419048 +0.16748990
a 2.3964023 Node 95.50754 -0.17658366 -0.90280655
e 0.0856422 Incl. 3.31664 -0.01368648 -0.39609023
P 3.71 H 14.5 G 0.25

Residuals in seconds of arc

771007	675	1.0+	2.6-	771016	675	1.0-	0.7+	771021	675	1.2+	1.3-
771011	675	0.3+	1.2+	771016	675	0.9-	1.6+	771022	675	0.8+	1.3-
771011	675	0.6-	0.2+	771017	675	0.5-	0.5+	891230	413	1.9-	0.5-
771012	675	1.4-	0.0	771017	675	0.7-	0.1+	891230	413	1.9+	0.3-
771012	675	0.1-	0.2+	771021	675	2.0+	0.7+	891231	413	0.1+	0.7+

4094 T-3 = 1989 SB5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	131.28463		(1950.0)	P	Q
n	0.24676924	Peri.	280.90175	+0.94273749	+0.32500842
a	2.5173409	Node	60.16932	-0.26218716	+0.86100060
e	0.0728982	Incl.	4.95555	-0.20616480	+0.39121284
P	3.99	H	15.3	G 0.25	

Residuals in seconds of arc

771007	675	0.6-	0.9-	771021	675	2.1+	0.4+	890928	809	0.4+	1.0+
771011	675	0.6+	0.5+	771021	675	2.6+	0.3-	891007	809	1.1+	0.3+
771011	675	0.3-	0.2-	771022	675	0.8+	1.0-	891007	809	0.2-	0.7-
771012	675	0.3-	0.2+	771022	675	1.6+	1.8-	891007	809	0.7+	0.7+
771012	675	1.1-	0.1+	890926	809	0.9-	1.1-	891008	809	0.5-	0.7+
771016	675	0.6-	0.8+	890926	809	0.5-	1.5-	891008	809	1.2-	0.8+
771016	675	1.9-	2.0+	890926	809	0.6+	1.0-	891008	809	2.1-	1.1+
771017	675	0.3-	0.2-	890928	809	0.3+	0.1+				
771017	675	0.3-	0.0	890928	809	0.9+	0.3+				

4101 T-3 = 1989 TF6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	28.02099		(1950.0)	P	Q
n	0.08172067	Peri.	351.04563	+0.93423604	-0.29796247
a	5.2591404	Node	28.78022	+0.34721594	+0.63423168
e	0.0125522	Incl.	24.02475	+0.08151145	+0.71342031
P	12.06	H	11.5	G 0.25	

Residuals in seconds of arc

771007	675	0.4+	1.3-	771017	675	0.1-	0.1+	891007	809	0.2+	0.4-
771011	675	0.5+	1.1+	771017	675	1.3-	0.3-	891007	809	0.6-	0.7-
771011	675	0.4-	0.5-	771021	675	1.2+	0.2-	891008	809	0.9+	0.5+
771012	675	0.0	0.3-	771021	675	0.3+	0.3-	891008	809	0.4+	0.1-
771012	675	0.9-	0.1-	771022	675	0.9-	0.7-	891008	809	1.5-	0.1+
771016	675	0.4+	0.7+	771022	675	0.5+	0.1+				
771016	675	0.2-	1.0+	891007	809	0.4+	0.5+				

4179 T-3 = 1989 UB6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M	326.72433		(1950.0)	P	Q
n	0.08356983	Peri.	18.99590	-0.08996116	-0.99214421
a	5.1812719	Node	76.23847	+0.90173492	-0.11819668
e	0.0159961	Incl.	5.13480	+0.42282516	+0.04098060
P	11.79	H	11.8	G 0.25	

Residuals in seconds of arc

771007	675	1.1+	2.9-	771016	675	0.6-	2.0+	771022	675	3.5+	0.7+
771011	675	1.0+	0.6+	771017	675	0.8+	0.9-	891004	807	0.4+	0.1+
771011	675	1.3+	1.8+	771017	675	0.6-	0.6-	891030	807	0.2+	0.2+
771012	675	0.1-	1.2-	771021	675	0.7+	0.1-	891101	807	0.6+	0.1-
771012	675	0.2+	0.3-	771021	675	0.3-	0.4+	891129	688	0.2+	0.2+
771016	675	0.1-	3.1+	771022	675	1.1-	0.3+	891129	688	0.3+	0.1+

5166 T-3 = 1985 QA
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 119.33220	(1950.0)	P	Q	
n 0.23568518	Peri. 124.26563	+0.30632090	+0.94972600	
a 2.5956604	Node 163.20722	-0.93031661	+0.31307774	
e 0.1656324	Incl. 12.94385	-0.20168914	-0.00168821	
P 4.18	H 13.9	G 0.25		

Residuals in seconds of arc

771011 675	1.3-	1.6+	771017 675	1.0+	1.1-	850820 688	0.6-	0.0
771011 675	1.4-	1.2+	771017 675	0.6+	1.4-	850820 688	0.8+	1.1+
771012 675	0.0	0.5-	771021 675	0.3-	1.2+	850822 688	1.3+	0.7+
771012 675	0.2-	0.8-	771021 675	0.9-	1.3+	850822 688	1.6-	2.0-
771016 675	1.0+	1.9-	771022 675	0.3-	0.9+	850912 688	(4.9-	2.5-)
771016 675	1.4+	0.7-	771022 675	0.3+	0.3+	850912 688	0.2+	0.1+

5174 T-3 = 1970 KE = 1989 WL4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kobayashi

M 233.91233	(1950.0)	P	Q	
n 0.17466895	Peri. 162.71892	-0.39928552	+0.88917690	
a 3.1695109	Node 83.27392	-0.86548733	-0.28514252	
e 0.1902982	Incl. 13.00354	-0.30249423	-0.35785218	
P 5.64	H 12.2	G 0.25		

Residuals in seconds of arc

700531 095	0.6-	0.1-	771017 675	1.4+	1.1+	891126 372	(4.7-	0.9-)
771012 675	2.0-	0.4-	771021 675	0.2+	1.1-	891126 372	0.2+	0.4+
771012 675	2.3-	0.2+	771021 675	0.6-	0.5+	891130 372	0.2-	1.0+
771016 675	0.5+	0.0	771022 675	2.0+	0.6-	891130 372	2.7+	0.9+
771016 675	0.4+	0.5-	891124 372	0.5+	1.4-			
771017 675	0.0	0.5+	891124 372	(11.0-	2.2+)			

* * * * *

EPHEMERIDES.

Comet Austin (1989c1) Elements MPC 15857

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990 01 29	00 38.67	-38 38.1	1.961	1.608	54.7	30.0	8.0
1990 02 08	00 47.23	-32 46.3					
1990 02 18	00 57.68	-26 18.0	1.771	1.254	43.5	32.8	6.7
1990 02 28	01 09.63	-19 01.5					
1990 03 10	01 22.62	-10 39.1	1.544	0.868	31.5	36.6	4.8
1990 03 20	01 35.65	-00 42.7					
1990 03 30	01 45.60	+11 24.8	1.253	0.466	20.1	47.5	1.7

Comet McKenzie-Russell (1989f1) Elements MPC 15857

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990 01 29	02 41.97	-01 44.1	1.994	2.213	89.3	26.4	14.4
1990 02 08	02 31.40	-01 40.9					
1990 02 18	02 25.48	-01 28.7	2.550	2.329	65.9	22.8	15.2
1990 02 28	02 22.71	-01 11.9					
1990 03 10	02 22.11	-00 53.7	3.042	2.460	46.1	16.9	15.8
1990 03 20	02 23.00	-00 35.9					
1990 03 30	02 24.92	-00 20.2	3.435	2.603	28.7	10.6	16.3
1990 04 09	02 27.50	-00 07.6					
1990 04 19	02 30.48	+00 00.8	3.709	2.755	15.7	5.7	16.7
1990 04 29	02 33.62	+00 04.0					
1990 05 09	02 36.72	+00 01.0	3.857	2.914	18.0	6.2	17.1
1990 05 19	02 39.59	-00 09.1					
1990 05 29	02 42.04	-00 27.3	3.886	3.078	32.4	10.2	17.3

1990 06 08	02 43.88	-00 55.0					
1990 06 18	02 44.88	-01 33.1	3.807	3.246	49.8	13.8	17.5

Periodic Comet Helin-Roman-Alu (1989y) Elements MPC 15857

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990 01 29	03 34.53	+10 40.3	1.592	2.084	105.5	27.1	17.2
1990 02 08	03 48.13	+11 41.6					
1990 02 18	04 03.10	+12 43.3	1.868	2.155	92.7	27.3	17.7
1990 02 28	04 19.17	+13 42.4					
1990 03 10	04 36.12	+14 36.8	2.162	2.235	81.0	26.0	18.2
1990 03 20	04 53.74	+15 24.6					
1990 03 30	05 11.86	+16 04.5	2.465	2.322	70.0	23.8	18.6
1990 04 09	05 30.32	+16 35.7					
1990 04 19	05 48.97	+16 57.5	2.766	2.415	59.4	21.0	19.0
1990 04 29	06 07.71	+17 09.7					
1990 05 09	06 26.41	+17 12.3	3.056	2.513	49.1	17.7	19.4
1990 05 19	06 44.98	+17 05.5					
1990 05 29	07 03.34	+16 49.7	3.326	2.614	38.8	14.0	19.8
1990 06 08	07 21.41	+16 25.3					
1990 06 18	07 39.14	+15 52.9	3.567	2.717	28.4	10.3	20.1

1990 BG a,e,i = 1.50, 0.57, 36 Elements MPC 15900

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	06 38.71	+36 47.5	0.596	1.520	147.1	20.6	15.2
1990 02 08	05 56.12	+42 39.6					
1990 02 18	05 17.25	+46 55.3	0.630	1.353	111.4	42.9	15.6
1990 02 28	04 46.33	+49 58.6					
1990 03 10	04 23.54	+52 26.1	0.702	1.169	85.4	57.9	16.0
1990 03 20	04 06.27	+54 41.4					
1990 03 30	03 50.85	+56 52.1	0.734	0.974	66.4	69.9	16.0

1990 BA a,e,i = 1.68, 0.32, 2 Elements MPC 15900

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	06 41.30	+24 43.3	0.178	1.144	151.1	24.6	15.1
1990 02 03	06 52.19	+23 31.4					
1990 02 08	07 04.12	+22 18.0	0.190	1.150	146.4	28.3	15.3
1990 02 13	07 16.82	+21 04.3					
1990 02 18	07 30.01	+19 51.4	0.210	1.162	142.6	31.1	15.6
1990 02 23	07 43.50	+18 39.8					
1990 02 28	07 57.15	+17 30.1	0.238	1.181	139.2	33.2	16.0
1990 03 05	08 10.83	+16 22.1					
1990 03 10	08 24.43	+15 16.0	0.275	1.206	136.0	34.9	16.4
1990 03 15	08 37.82	+14 11.8					
1990 03 20	08 50.96	+13 09.4	0.320	1.236	132.8	36.2	16.8
1990 03 25	09 03.83	+12 08.6					
1990 03 30	09 16.45	+11 08.9	0.374	1.270	129.5	37.4	17.2

1989 WM a,e,i = 2.73, 0.52, 3 Elements MPC 15897

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	09 11.30	+26 37.1	0.337	1.317	169.3	8.0	14.2
1990 02 08	09 17.67	+26 01.0					
1990 02 18	09 23.63	+24 57.1	0.375	1.353	164.1	11.5	14.6
1990 02 28	09 30.34	+23 29.2					
1990 03 10	09 38.63	+21 43.4	0.468	1.419	150.4	20.2	15.5
1990 03 20	09 48.66	+19 46.6					
1990 03 30	10 00.24	+17 43.8	0.615	1.509	137.2	26.7	16.4
1990 04 09	10 13.16	+15 37.9					
1990 04 19	10 27.04	+13 31.2	0.812	1.616	125.3	30.5	17.3
1990 04 29	10 41.60	+11 24.5					

1990 05 09	10 56.68	+09 18.4	1.054	1.733	114.3	32.1	18.0
1990 05 19	11 12.05	+07 13.5					
1990 05 29	11 27.63	+05 10.0	1.334	1.857	103.7	32.0	18.7
1990 06 08	11 43.35	+03 08.0					
1990 06 18	11 59.14	+01 08.1	1.644	1.983	93.4	30.8	19.2

1983 XF a,e,i = 3.12, 0.53, 4 Elements MPC 13677

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	15 30.54	-15 56.5	2.052	2.017	74.0	28.0	19.2
1990 02 08	15 44.52	-16 45.0					
1990 02 18	15 56.25	-17 22.6	1.932	2.139	87.9	27.5	19.2
1990 02 28	16 05.42	-17 50.2					
1990 03 10	16 11.71	-18 08.8	1.802	2.261	104.2	25.2	19.1
1990 03 20	16 14.87	-18 19.6					
1990 03 30	16 14.68	-18 23.0	1.684	2.384	123.3	20.5	18.9
1990 04 09	16 11.13	-18 19.5					
1990 04 19	16 04.53	-18 09.6	1.612	2.505	145.4	13.2	18.7
1990 04 29	15 55.47	-17 53.9					
1990 05 09	15 44.96	-17 34.2	1.625	2.624	169.3	4.1	18.5
1990 05 19	15 34.18	-17 13.0					
1990 05 29	15 24.26	-16 53.5	1.746	2.740	166.1	5.1	18.8
1990 06 08	15 16.10	-16 38.9					
1990 06 18	15 10.24	-16 31.4	1.971	2.854	143.7	12.2	19.4
1990 06 28	15 06.86	-16 32.3					
1990 07 08	15 05.95	-16 41.6	2.277	2.964	123.7	16.6	19.9
1990 07 18	15 07.29	-16 58.6					
1990 07 28	15 10.64	-17 22.3	2.634	3.072	105.9	18.5	20.4

1977 RZ8 a,e,i = 2.90, 0.16, 15 Elements MPC 15875

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	09 04.92	+28 49.6	2.177	3.148	168.2	3.7	17.1
1990 02 08	08 54.41	+28 54.5					
1990 02 18	08 44.44	+28 45.8	2.197	3.122	155.2	7.6	17.3
1990 02 28	08 35.95	+28 23.4					
1990 03 10	08 29.67	+27 49.0	2.325	3.096	133.7	13.4	17.6
1990 03 20	08 25.96	+27 05.0					
1990 03 30	08 24.89	+26 13.8	2.528	3.068	113.6	17.4	17.9

1973 SB6 a,e,i = 2.43, 0.20, 2 Elements MPC 15873

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	09 24.19	+14 53.1	1.722	2.697	169.5	3.8	18.2
1990 02 08	09 14.19	+15 45.5					
1990 02 18	09 04.48	+16 34.6	1.761	2.728	165.2	5.3	18.4
1990 02 28	08 56.13	+17 16.0					
1990 03 10	08 49.97	+17 46.6	1.910	2.757	141.4	13.0	18.9
1990 03 20	08 46.42	+18 05.8					
1990 03 30	08 45.58	+18 13.5	2.141	2.784	120.4	18.0	19.3

1979 KO1 a,e,i = 2.44, 0.23, 7 Elements MPC 15877

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 01 29	11 08.97	-05 13.1	1.772	2.581	137.0	15.1	18.5
1990 02 08	11 03.60	-05 22.7					
1990 02 18	10 55.93	-05 12.0	1.590	2.535	158.3	8.3	18.0
1990 02 28	10 46.63	-04 41.0					
1990 03 10	10 36.76	-03 53.5	1.510	2.487	166.7	5.3	17.8
1990 03 20	10 27.50	-02 55.5					
1990 03 30	10 19.95	-01 54.7	1.537	2.438	147.2	12.8	18.0
1990 04 09	10 14.93	-00 58.6					
1990 04 19	10 12.82	-00 12.6	1.651	2.387	126.4	19.8	18.4

1987 RR3 a,e,i = 3.01, 0.03, 9 Elements MPC 15248

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	11 50.57	-10 02.0	2.241	2.928	125.7	15.8	15.8
1990	02 08	11 48.45	-10 07.5					
1990	02 18	11 44.25	-09 54.0	2.052	2.928	146.6	10.7	15.5
1990	02 28	11 38.33	-09 21.4					
1990	03 10	11 31.29	-08 31.4	1.954	2.929	166.6	4.5	15.1
1990	03 20	11 23.93	-07 28.4					
1990	03 30	11 17.10	-06 18.3	1.967	2.930	161.3	6.3	15.2
1990	04 09	11 11.56	-05 08.2					
1990	04 19	11 07.86	-04 04.1	2.086	2.932	140.6	12.5	15.6

1973 SD6 a,e,i = 2.41, 0.15, 2 Elements MPC 15874

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 13.66	-01 46.8	1.612	2.316	124.4	20.5	17.1
1990	02 08	12 12.30	-01 48.7					
1990	02 18	12 07.97	-01 31.9	1.464	2.350	146.1	13.6	16.7
1990	02 28	12 01.00	-00 58.0					
1990	03 10	11 52.15	-00 11.6	1.399	2.384	170.3	4.0	16.2
1990	03 20	11 42.56	+00 40.9					
1990	03 30	11 33.46	+01 31.8	1.440	2.418	164.8	6.2	16.4
1990	04 09	11 25.98	+02 13.9					
1990	04 19	11 20.85	+02 42.8	1.582	2.451	141.8	14.7	17.0

4667 P-L a,e,i = 2.72, 0.21, 7 Elements MPC 15904

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	01 29	12 21.07	+03 40.0	2.583	3.247	124.7	14.4	18.9
1990	02 08	12 18.92	+03 58.1					
1990	02 18	12 14.65	+04 27.1	2.360	3.231	146.5	9.7	18.6
1990	02 28	12 08.44	+05 04.6					
1990	03 10	12 00.76	+05 46.8	2.231	3.212	169.3	3.3	18.2
1990	03 20	11 52.25	+06 29.0					
1990	03 30	11 43.69	+07 06.3	2.219	3.191	164.2	4.9	18.2
1990	04 09	11 35.90	+07 34.5					
1990	04 19	11 29.53	+07 50.8	2.320	3.169	141.6	11.4	18.5

1986 EO a,e,i = 2.55, 0.08, 17 Elements MPC 10768

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 20.39	+27 14.6	1.496	2.370	144.3	14.1	15.5
1990	02 28	12 14.25	+28 54.4					
1990	03 10	12 05.78	+30 14.7	1.458	2.380	151.9	11.3	15.3
1990	03 20	11 56.15	+31 04.8					
1990	03 30	11 46.71	+31 18.7	1.513	2.392	143.8	14.3	15.5
1990	04 09	11 38.78	+30 55.9					
1990	04 19	11 33.24	+30 00.9	1.649	2.405	128.4	19.1	15.8
1990	04 29	11 30.51	+28 39.9					
1990	05 09	11 30.63	+26 59.2	1.843	2.419	112.7	22.6	16.2

(4153) 1985 JT1 a,e,i = 3.15, 0.16, 1 Elements MPC 14939

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 14.78	+00 26.3	2.319	3.181	145.2	10.2	16.9
1990	02 28	12 09.79	+01 01.6					
1990	03 10	12 03.31	+01 45.2	2.170	3.149	168.4	3.6	16.5
1990	03 20	11 55.93	+02 32.9					
1990	03 30	11 48.40	+03 19.6	2.135	3.117	167.4	4.0	16.4
1990	04 09	11 41.51	+04 00.4					
1990	04 19	11 35.92	+04 31.2	2.212	3.085	144.5	10.9	16.8
1990	04 29	11 32.10	+04 49.6					
1990	05 09	11 30.34	+04 54.2	2.375	3.053	123.7	16.0	17.1

1987 RG6 a,e,i = 2.87, 0.04, 3 Elements MPC 15558

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 17.08	+02 55.2	2.095	2.963	145.5	10.9	17.6
1990	02 28	12 11.92	+03 43.7					
1990	03 10	12 05.16	+04 39.1	1.978	2.957	168.3	3.9	17.2
1990	03 20	11 57.47	+05 36.0					
1990	03 30	11 49.69	+06 28.4	1.972	2.951	165.7	4.8	17.2
1990	04 09	11 42.68	+07 10.8					
1990	04 19	11 37.13	+07 39.5	2.076	2.944	143.3	11.8	17.6
1990	04 29	11 33.51	+07 52.8					
1990	05 09	11 32.05	+07 50.5	2.264	2.936	122.8	16.8	17.9

1988 TK1 a,e,i = 2.34, 0.12, 2 Elements MPC 13861

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 19.32	-05 54.7	1.210	2.077	141.6	17.2	15.8
1990	02 28	12 14.35	-05 44.3					
1990	03 10	12 06.78	-05 13.3	1.114	2.088	164.4	7.3	15.3
1990	03 20	11 57.71	-04 26.6					
1990	03 30	11 48.55	-03 32.0	1.112	2.102	169.4	5.0	15.2
1990	04 09	11 40.77	-02 39.4					
1990	04 19	11 35.44	-01 56.8	1.205	2.118	146.8	15.1	15.8
1990	04 29	11 33.10	-01 29.7					
1990	05 09	11 33.90	-01 20.7	1.373	2.137	126.9	22.2	16.3

1983 WJ a,e,i = 2.89, 0.09, 3 Elements MPC 14348

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 18.61	+02 52.1	2.095	2.960	145.1	11.0	17.1
1990	02 28	12 13.24	+03 39.2					
1990	03 10	12 06.31	+04 32.6	1.999	2.977	168.0	4.0	16.7
1990	03 20	11 58.53	+05 26.9					
1990	03 30	11 50.73	+06 16.3	2.015	2.994	166.1	4.6	16.8
1990	04 09	11 43.75	+06 55.7					
1990	04 19	11 38.25	+07 21.7	2.141	3.010	143.7	11.4	17.2
1990	04 29	11 34.65	+07 32.9					
1990	05 09	11 33.17	+07 29.2	2.353	3.026	123.2	16.2	17.5

1987 WU2 a,e,i = 2.86, 0.29, 9 Elements MPC 15251

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 19.46	-12 40.5	2.872	3.667	138.0	10.4	18.2
1990	02 28	12 13.68	-12 33.7					
1990	03 10	12 06.61	-12 13.3	2.726	3.672	159.4	5.5	17.9
1990	03 20	11 58.79	-11 40.9					
1990	03 30	11 50.86	-10 59.3	2.692	3.674	167.4	3.4	17.8
1990	04 09	11 43.48	-10 12.7					
1990	04 19	11 37.22	-09 25.5	2.778	3.673	148.7	8.2	18.0
1990	04 29	11 32.49	-08 41.9					
1990	05 09	11 29.53	-08 05.3	2.962	3.670	127.9	12.5	18.3

1981 EL21 a,e,i = 2.72, 0.10, 2 Elements MPC 10308

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 19.22	-03 58.7	2.123	2.969	142.5	11.7	17.1
1990	02 28	12 13.92	-03 23.5					
1990	03 10	12 06.98	-02 35.9	1.991	2.964	165.9	4.7	16.7
1990	03 20	11 59.06	-01 40.1					
1990	03 30	11 50.99	-00 41.5	1.970	2.958	169.6	3.5	16.6
1990	04 09	11 43.65	+00 13.7					
1990	04 19	11 37.75	+01 00.5	2.061	2.950	146.4	10.9	17.0
1990	04 29	11 33.77	+01 35.0					
1990	05 09	11 31.98	+01 55.4	2.241	2.941	125.2	16.3	17.4

1985 UA a,e,i = 2.18, 0.11, 3 Elements MPC 14195

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 25.08	-04 51.8	1.240	2.101	140.8	17.3	16.9
1990	02 28	12 18.98	-04 39.2					
1990	03 10	12 10.22	-04 07.9	1.153	2.126	164.4	7.2	16.4
1990	03 20	11 59.95	-03 23.1					
1990	03 30	11 49.63	-02 32.7	1.162	2.151	169.6	4.8	16.3
1990	04 09	11 40.77	-01 45.7					
1990	04 19	11 34.42	-01 09.5	1.269	2.177	146.3	14.8	16.9
1990	04 29	11 31.12	-00 48.7					
1990	05 09	11 30.98	-00 45.1	1.452	2.203	126.0	21.8	17.5

1987 MK a,e,i = 2.70, 0.18, 12 Elements MPC 12322

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 22.56	-10 57.1	2.384	3.191	138.4	11.9	18.0
1990	02 28	12 16.29	-11 03.1					
1990	03 10	12 08.38	-10 54.6	2.239	3.190	160.1	6.1	17.7
1990	03 20	11 59.50	-10 33.1					
1990	03 30	11 50.44	-10 01.6	2.204	3.187	167.9	3.8	17.5
1990	04 09	11 42.04	-09 24.6					
1990	04 19	11 35.01	-08 47.2	2.285	3.182	148.1	9.6	17.9
1990	04 29	11 29.85	-08 13.8					
1990	05 09	11 26.83	-07 48.2	2.461	3.175	127.2	14.7	18.2

1939 BM a,e,i = 2.77, 0.21, 10 Elements MPC 14182

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 20.28	+11 19.8	1.472	2.359	146.3	13.4	15.4
1990	02 28	12 15.58	+12 54.2					
1990	03 10	12 08.83	+14 27.2	1.425	2.395	164.0	6.6	15.1
1990	03 20	12 01.00	+15 48.0					
1990	03 30	11 53.24	+16 48.1	1.479	2.433	157.8	8.9	15.3
1990	04 09	11 46.65	+17 22.2					
1990	04 19	11 42.04	+17 29.7	1.629	2.473	138.6	15.6	15.8
1990	04 29	11 39.81	+17 12.7					
1990	05 09	11 40.09	+16 34.8	1.849	2.514	120.3	20.3	16.2

(4244) 1981 TO3 a,e,i = 3.20, 0.17, 2 Elements MPC 15392

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 18.73	+00 27.9	2.898	3.746	144.3	8.9	18.0
1990	02 28	12 13.73	+01 04.5					
1990	03 10	12 07.54	+01 47.4	2.772	3.747	167.4	3.3	17.7
1990	03 20	12 00.67	+02 33.0					
1990	03 30	11 53.71	+03 17.4	2.763	3.747	168.5	3.0	17.6
1990	04 09	11 47.25	+03 56.7					
1990	04 19	11 41.81	+04 27.9	2.872	3.746	145.9	8.7	18.0
1990	04 29	11 37.78	+04 48.8					
1990	05 09	11 35.37	+04 58.6	3.074	3.743	124.8	12.8	18.3

(4060) Deipylos a,e,i = 5.25, 0.16, 16 Elements MPC 14468

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 12.86	+01 41.7	3.927	4.780	146.1	6.6	15.8
1990	02 28	12 09.42	+02 29.5					
1990	03 10	12 05.21	+03 21.2	3.825	4.801	168.2	2.4	15.6
1990	03 20	12 00.59	+04 14.0					
1990	03 30	11 55.93	+05 04.9	3.842	4.823	167.8	2.5	15.6
1990	04 09	11 51.61	+05 50.7					
1990	04 19	11 47.98	+06 29.4	3.978	4.845	146.2	6.6	15.9
1990	04 29	11 45.29	+06 59.4					
1990	05 09	11 43.72	+07 19.7	4.210	4.868	125.6	9.7	16.1

(4212) 1987 SB2 a,e,i = 3.14, 0.25, 15 Elements MPC 15233

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 21.59	+07 35.5	3.046	3.901	145.5	8.2	17.2
1990	02 28	12 15.74	+08 06.5					
1990	03 10	12 08.72	+08 38.7	2.939	3.912	166.8	3.3	16.9
1990	03 20	12 01.06	+09 08.5					
1990	03 30	11 53.34	+09 32.6	2.951	3.921	164.0	4.0	16.9
1990	04 09	11 46.17	+09 48.1					
1990	04 19	11 40.05	+09 53.4	3.081	3.928	142.8	8.9	17.2
1990	04 29	11 35.33	+09 47.9					
1990	05 09	11 32.25	+09 31.7	3.303	3.933	122.1	12.6	17.5

1974 XT a,e,i = 2.36, 0.30, 23 Elements MPC 13462

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 27.65	+22 30.9	1.725	2.590	143.9	13.0	17.9
1990	02 28	12 21.11	+24 56.0					
1990	03 10	12 12.51	+27 06.1	1.719	2.647	153.9	9.5	17.8
1990	03 20	12 02.86	+28 49.9					
1990	03 30	11 53.33	+30 00.3	1.818	2.701	145.4	12.1	18.1
1990	04 09	11 45.03	+30 35.5					
1990	04 19	11 38.77	+30 38.1	2.009	2.751	128.7	16.5	18.5
1990	04 29	11 34.96	+30 13.3					
1990	05 09	11 33.71	+29 26.8	2.261	2.798	111.8	19.6	18.9

1987 SM12 a,e,i = 2.90, 0.08, 1 Elements MPC 13692

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 22.05	-02 50.9	2.259	3.101	142.3	11.2	17.8
1990	02 28	12 16.82	-02 21.5					
1990	03 10	12 10.04	-01 41.7	2.136	3.108	165.6	4.6	17.5
1990	03 20	12 02.35	-00 55.5					
1990	03 30	11 54.51	-00 07.6	2.125	3.114	170.3	3.1	17.4
1990	04 09	11 47.33	+00 36.5					
1990	04 19	11 41.47	+01 12.6	2.228	3.120	147.1	10.1	17.8
1990	04 29	11 37.40	+01 37.8					
1990	05 09	11 35.36	+01 50.3	2.422	3.125	126.1	15.1	18.1

1969 TD5 a,e,i = 2.44, 0.13, 3 Elements MPC 11145

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 25.67	+02 22.8	1.358	2.230	143.3	15.4	17.1
1990	02 28	12 20.22	+03 02.2					
1990	03 10	12 12.36	+03 51.1	1.277	2.255	166.4	5.9	16.7
1990	03 20	12 03.14	+04 41.8					
1990	03 30	11 53.85	+05 26.3	1.297	2.281	167.2	5.6	16.7
1990	04 09	11 45.78	+05 57.3					
1990	04 19	11 39.91	+06 11.0	1.415	2.309	144.7	14.6	17.3
1990	04 29	11 36.74	+06 06.2					
1990	05 09	11 36.41	+05 43.6	1.610	2.337	124.7	20.8	17.8

1986 CQ1 a,e,i = 2.35, 0.08, 5 Elements MPC 13857

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 25.06	-08 22.3	1.588	2.423	139.2	15.5	16.7
1990	02 28	12 19.84	-07 50.6					
1990	03 10	12 12.41	-06 58.7	1.474	2.438	162.2	7.1	16.2
1990	03 20	12 03.65	-05 51.0					
1990	03 30	11 54.67	-04 34.8	1.461	2.452	170.8	3.7	16.1
1990	04 09	11 46.65	-03 19.2					
1990	04 19	11 40.53	-02 12.3	1.555	2.466	148.1	12.4	16.6
1990	04 29	11 36.86	-01 19.8					
1990	05 09	11 35.87	-00 45.1	1.734	2.478	127.1	19.0	17.0

1981 QC a,e,i = 2.34, 0.22, 26 Elements MPC 8144

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 39.53	+39 03.3	1.721	2.527	136.0	15.8	17.4
1990	02 28	12 30.41	+40 36.5					
1990	03 10	12 18.65	+41 39.8	1.723	2.567	140.5	14.3	17.4
1990	03 20	12 05.65	+42 04.5					
1990	03 30	11 53.01	+41 47.6	1.811	2.606	134.0	16.0	17.6
1990	04 09	11 42.21	+40 51.7					
1990	04 19	11 34.17	+39 24.1	1.976	2.642	121.4	18.9	17.9
1990	04 29	11 29.24	+37 32.6					
1990	05 09	11 27.39	+35 25.0	2.196	2.675	107.2	21.1	18.3

(4073) 1981 UE10 a,e,i = 3.17, 0.18, 2 Elements MPC 14599

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 21.57	-00 46.7	2.858	3.698	143.2	9.2	17.5
1990	02 28	12 16.77	-00 09.6					
1990	03 10	12 10.72	+00 35.1	2.713	3.685	166.3	3.7	17.1
1990	03 20	12 03.90	+01 23.7					
1990	03 30	11 56.89	+02 12.4	2.685	3.672	169.8	2.8	17.0
1990	04 09	11 50.33	+02 56.7					
1990	04 19	11 44.75	+03 33.3	2.774	3.657	146.9	8.6	17.3
1990	04 29	11 40.57	+03 59.8					
1990	05 09	11 38.04	+04 14.8	2.958	3.640	125.7	13.0	17.6

1978 RH1 a,e,i = 2.18, 0.11, 3 Elements MPC 13056

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 24.45	-03 55.6	1.305	2.167	141.3	16.6	17.0
1990	02 28	12 20.13	-03 11.6					
1990	03 10	12 13.09	-02 06.6	1.166	2.140	164.7	7.0	16.4
1990	03 20	12 04.18	-00 46.8					
1990	03 30	11 54.70	+00 38.2	1.123	2.113	170.1	4.7	16.2
1990	04 09	11 46.12	+01 57.0					
1990	04 19	11 39.70	+03 00.0	1.177	2.087	146.0	15.6	16.7
1990	04 29	11 36.22	+03 41.4					
1990	05 09	11 36.00	+03 58.9	1.306	2.062	125.3	23.5	17.1

(3965) 1975 VA9 a,e,i = 2.65, 0.16, 13 Elements MPC 14168

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 27.80	-21 25.8	2.089	2.838	131.1	15.2	17.0
1990	02 28	12 22.06	-21 47.4					
1990	03 10	12 14.40	-21 45.7	1.960	2.866	150.3	9.9	16.7
1990	03 20	12 05.55	-21 20.4					
1990	03 30	11 56.45	-20 33.8	1.929	2.891	160.8	6.5	16.6
1990	04 09	11 48.10	-19 31.6					
1990	04 19	11 41.32	-18 21.3	2.006	2.915	149.3	10.1	16.8
1990	04 29	11 36.67	-17 10.5					
1990	05 09	11 34.40	-16 05.9	2.177	2.938	130.8	15.1	17.2

(3956) 1988 VL1 a,e,i = 2.24, 0.18, 5 Elements MPC 14011

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 29.75	-10 37.3	1.829	2.639	137.0	14.8	17.3
1990	02 28	12 23.96	-10 17.9					
1990	03 10	12 16.02	-09 38.7	1.688	2.642	159.8	7.5	16.9
1990	03 20	12 06.70	-08 42.5					
1990	03 30	11 57.00	-07 34.7	1.652	2.642	170.5	3.6	16.7
1990	04 09	11 48.06	-06 22.8					
1990	04 19	11 40.79	-05 14.8	1.727	2.639	148.9	11.3	17.1
1990	04 29	11 35.83	-04 17.0					
1990	05 09	11 33.46	-03 33.7	1.893	2.632	127.5	17.7	17.5

1988 XM1 a,e,i = 2.81, 0.06, 5 Elements MPC 14203

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 24.66	-01 16.6	1.853	2.704	142.3	12.9	16.7
1990	02 28	12 20.23	-00 26.2					
1990	03 10	12 13.94	+00 36.0	1.740	2.713	165.5	5.3	16.2
1990	03 20	12 06.51	+01 44.3					
1990	03 30	11 58.84	+02 51.6	1.733	2.722	169.8	3.7	16.2
1990	04 09	11 51.89	+03 51.0					
1990	04 19	11 46.44	+04 37.1	1.835	2.732	146.8	11.6	16.6
1990	04 29	11 43.01	+05 06.8					
1990	05 09	11 41.85	+05 19.1	2.023	2.742	126.1	17.3	17.0

1969 LB a,e,i = 3.11, 0.08, 5 Elements MPC 15239

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 25.51	-06 27.6	2.450	3.269	140.0	11.2	17.1
1990	02 28	12 20.47	-06 13.5					
1990	03 10	12 13.95	-05 47.8	2.318	3.280	162.7	5.2	16.8
1990	03 20	12 06.51	-05 13.2					
1990	03 30	11 58.86	-04 33.6	2.298	3.289	171.9	2.5	16.6
1990	04 09	11 51.76	-03 53.5					
1990	04 19	11 45.83	-03 17.3	2.392	3.298	149.6	8.9	17.0
1990	04 29	11 41.52	-02 48.6					
1990	05 09	11 39.12	-02 29.8	2.582	3.307	128.5	13.8	17.4

1978 TW2 a,e,i = 2.26, 0.10, 2 Elements MPC 14013

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 30.25	-01 56.7	1.293	2.151	140.8	16.9	17.0
1990	02 28	12 25.54	-01 07.5					
1990	03 10	12 18.20	-00 01.8	1.200	2.172	164.3	7.1	16.5
1990	03 20	12 09.23	+01 12.5					
1990	03 30	11 59.94	+02 25.9	1.203	2.194	170.3	4.4	16.4
1990	04 09	11 51.73	+03 28.2					
1990	04 19	11 45.66	+04 12.6	1.307	2.217	146.8	14.3	17.0
1990	04 29	11 42.35	+04 36.0					
1990	05 09	11 42.00	+04 37.9	1.487	2.239	126.4	21.3	17.5

1966 PK a,e,i = 2.98, 0.22, 2 Elements MPC 13583

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 27.57	-00 01.4	2.785	3.616	142.1	9.7	18.6
1990	02 28	12 22.51	+00 35.4					
1990	03 10	12 16.13	+01 19.1	2.655	3.624	165.2	4.0	18.2
1990	03 20	12 08.92	+02 06.1					
1990	03 30	12 01.51	+02 52.3	2.641	3.630	170.3	2.6	18.2
1990	04 09	11 54.55	+03 33.4					
1990	04 19	11 48.58	+04 06.2	2.746	3.634	147.5	8.5	18.5
1990	04 29	11 44.05	+04 28.5					
1990	05 09	11 41.19	+04 39.1	2.946	3.636	126.2	12.9	18.8

1989 AG1 a,e,i = 3.00, 0.13, 9 Elements MPC 14357

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 28.82	-15 31.0	2.605	3.373	134.6	12.1	16.9
1990	02 28	12 23.98	-15 31.3					
1990	03 10	12 17.58	-15 15.4	2.440	3.368	155.3	7.1	16.5
1990	03 20	12 10.18	-14 44.2					
1990	03 30	12 02.42	-14 00.2	2.381	3.362	167.2	3.8	16.3
1990	04 09	11 55.08	-13 07.7					
1990	04 19	11 48.81	-12 12.1	2.437	3.355	151.6	8.2	16.6
1990	04 29	11 44.10	-11 18.5					
1990	05 09	11 41.29	-10 31.5	2.593	3.346	131.3	13.1	16.9

1971 SS1 a,e,i = 3.12, 0.20, 2 Elements MPC 15401

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 30.00	-01 02.3	2.397	3.226	141.2	11.1	17.4
1990	02 28	12 25.02	-00 27.1					
1990	03 10	12 18.55	+00 16.2	2.296	3.264	164.3	4.7	17.1
1990	03 20	12 11.20	+01 03.6					
1990	03 30	12 03.67	+01 50.4	2.309	3.300	171.4	2.6	17.1
1990	04 09	11 56.70	+02 31.8					
1990	04 19	11 50.90	+03 04.3	2.437	3.335	148.5	9.0	17.5
1990	04 29	11 46.70	+03 25.4					
1990	05 09	11 44.35	+03 34.0	2.659	3.369	127.4	13.8	17.9

1988 VR a,e,i = 2.38, 0.16, 8 Elements MPC 14025

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 36.20	+07 45.3	1.842	2.690	142.0	13.1	17.6
1990	02 28	12 30.19	+08 40.0					
1990	03 10	12 22.07	+09 37.9	1.742	2.709	163.3	6.0	17.3
1990	03 20	12 12.64	+10 31.8					
1990	03 30	12 02.90	+11 14.9	1.751	2.725	163.8	5.9	17.3
1990	04 09	11 53.94	+11 41.8					
1990	04 19	11 46.62	+11 50.1	1.869	2.738	143.0	12.8	17.7
1990	04 29	11 41.50	+11 39.7					
1990	05 09	11 38.85	+11 12.2	2.069	2.750	122.7	18.0	18.1

1986 QP2 a,e,i = 3.15, 0.19, 2 Elements MPC 14787

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 28.82	-00 37.5	2.750	3.577	141.6	9.9	18.5
1990	02 28	12 24.32	-00 00.5					
1990	03 10	12 18.42	+00 44.5	2.588	3.554	164.5	4.3	18.2
1990	03 20	12 11.58	+01 33.9					
1990	03 30	12 04.40	+02 23.5	2.540	3.530	171.2	2.5	18.0
1990	04 09	11 57.56	+03 08.8					
1990	04 19	11 51.65	+03 46.1	2.610	3.505	148.4	8.6	18.3
1990	04 29	11 47.13	+04 12.7					
1990	05 09	11 44.32	+04 27.1	2.775	3.478	127.0	13.4	18.6

1987 SJ a,e,i = 2.57, 0.31, 5 Elements MPC 12455

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 32.62	-05 26.0	2.415	3.225	138.8	11.6	18.2
1990	02 28	12 27.63	-04 47.7					
1990	03 10	12 20.90	-03 56.2	2.232	3.192	162.2	5.5	17.8
1990	03 20	12 12.97	-02 54.8					
1990	03 30	12 04.53	-01 48.4	2.161	3.155	173.2	2.2	17.5
1990	04 09	11 56.43	-00 42.7					
1990	04 19	11 49.40	+00 16.5	2.208	3.115	149.3	9.5	17.8
1990	04 29	11 44.02	+01 05.0					
1990	05 09	11 40.66	+01 39.8	2.353	3.072	127.3	15.1	18.1

1986 GU a,e,i = 2.64, 0.27, 31 Elements MPC 14618

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 45.06	+56 47.8	1.200	1.948	125.5	24.4	14.8
1990	02 28	12 39.90	+58 39.7					
1990	03 10	12 29.78	+59 38.1	1.239	1.967	123.2	25.0	15.0
1990	03 20	12 17.06	+59 35.5					
1990	03 30	12 04.62	+58 30.9	1.320	1.994	117.9	26.3	15.2
1990	04 09	11 54.97	+56 30.7					
1990	04 19	11 49.28	+53 46.0	1.438	2.027	111.0	27.6	15.4
1990	04 29	11 47.68	+50 28.2					
1990	05 09	11 49.71	+46 47.9	1.589	2.067	103.1	28.4	15.7

(3958) 1953 TC a,e,i = 2.47, 0.21, 5 Elements MPC 14166

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 37.08	-01 59.2	1.964	2.788	139.2	13.4	16.8
1990	02 28	12 31.16	-01 31.6					
1990	03 10	12 23.26	-00 53.2	1.854	2.819	162.8	6.0	16.4
1990	03 20	12 14.13	-00 08.6					
1990	03 30	12 04.69	+00 36.7	1.854	2.847	172.3	2.7	16.3
1990	04 09	11 55.93	+01 17.0					
1990	04 19	11 48.68	+01 47.7	1.968	2.873	148.6	10.5	16.7
1990	04 29	11 43.47	+02 05.9					
1990	05 09	11 40.58	+02 10.4	2.172	2.896	127.1	16.1	17.2

1980 SG a,e,i = 2.45, 0.16, 7 Elements MPC 9296

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 36.86	+00 52.5	1.997	2.828	140.2	12.9	18.4
1990	02 28	12 31.05	+01 21.6					
1990	03 10	12 23.21	+01 59.2	1.867	2.833	163.5	5.7	18.0
1990	03 20	12 14.04	+02 40.5					
1990	03 30	12 04.45	+03 20.3	1.846	2.836	170.6	3.3	17.9
1990	04 09	11 55.45	+03 52.8					
1990	04 19	11 47.90	+04 14.1	1.939	2.837	147.3	11.0	18.3
1990	04 29	11 42.38	+04 21.8					
1990	05 09	11 39.23	+04 15.2	2.122	2.835	126.0	16.8	18.7

(3970) 1979 ME9 a,e,i = 2.56, 0.13, 15 Elements MPC 14170

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 38.73	+06 55.0	2.007	2.845	141.2	12.6	17.0
1990	02 28	12 32.50	+07 18.7					
1990	03 10	12 24.14	+07 45.4	1.865	2.831	163.3	5.8	16.6
1990	03 20	12 14.34	+08 10.0					
1990	03 30	12 04.03	+08 27.1	1.835	2.815	166.4	4.8	16.5
1990	04 09	11 54.29	+08 32.3					
1990	04 19	11 46.02	+08 23.2	1.916	2.797	144.8	11.9	16.9
1990	04 29	11 39.86	+07 59.4					
1990	05 09	11 36.17	+07 21.5	2.085	2.778	123.9	17.5	17.2

1984 UX a,e,i = 2.53, 0.32, 7 Elements MPC 13857

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 38.11	-01 54.3	2.275	3.089	139.0	12.1	18.4
1990	02 28	12 31.93	-01 26.5					
1990	03 10	12 24.04	-00 49.5	2.167	3.129	162.7	5.4	18.0
1990	03 20	12 15.08	-00 07.2					
1990	03 30	12 05.86	+00 35.6	2.172	3.165	172.6	2.3	17.9
1990	04 09	11 57.24	+01 13.9					
1990	04 19	11 49.93	+01 43.9	2.295	3.197	148.9	9.3	18.4
1990	04 29	11 44.43	+02 03.0					
1990	05 09	11 41.00	+02 09.9	2.514	3.227	127.2	14.4	18.8

1976 SW3 a,e,i = 3.13, 0.17, 5 Elements MPC 13584

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 31.79	-02 47.5	2.735	3.550	140.1	10.3	18.0
1990	02 28	12 27.32	-02 06.6					
1990	03 10	12 21.49	-01 16.7	2.607	3.569	163.1	4.6	17.7
1990	03 20	12 14.79	-00 21.5					
1990	03 30	12 07.83	+00 34.7	2.592	3.585	173.0	2.0	17.5
1990	04 09	12 01.24	+01 27.3					
1990	04 19	11 55.60	+02 12.3	2.696	3.601	150.0	8.0	17.9
1990	04 29	11 51.32	+02 47.0					
1990	05 09	11 48.68	+03 09.6	2.898	3.614	128.6	12.6	18.3

(4077) 1982 XV1 a,e,i = 3.02, 0.09, 11 Elements MPC 14601

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 34.41	+12 52.2	2.381	3.225	143.0	10.6	16.4
1990	02 28	12 29.55	+13 48.3					
1990	03 10	12 22.99	+14 43.7	2.258	3.213	161.0	5.8	16.1
1990	03 20	12 15.33	+15 32.6					
1990	03 30	12 07.28	+16 09.5	2.245	3.201	159.6	6.2	16.1
1990	04 09	11 59.67	+16 30.0					
1990	04 19	11 53.20	+16 32.7	2.342	3.187	141.2	11.4	16.4
1990	04 29	11 48.38	+16 17.4					
1990	05 09	11 45.55	+15 45.7	2.523	3.173	121.8	15.7	16.7

1982 TT a,e,i = 3.04, 0.13, 11 Elements MPC 12445

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 32.68	-17 40.3	2.619	3.367	132.6	12.5	17.4
1990	02 28	12 28.19	-17 35.1					
1990	03 10	12 22.15	-17 12.4	2.463	3.378	153.1	7.6	17.1
1990	03 20	12 15.10	-16 33.1					
1990	03 30	12 07.68	-15 39.7	2.409	3.388	166.4	4.0	16.9
1990	04 09	12 00.63	-14 37.0					
1990	04 19	11 54.62	-13 30.4	2.471	3.397	153.0	7.7	17.1
1990	04 29	11 50.11	-12 25.6					
1990	05 09	11 47.42	-11 27.4	2.635	3.405	133.0	12.5	17.4

1989 AM2 a,e,i = 5.24, 0.14, 28 Elements MPC 14954

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 30.51	+34 16.1	4.486	5.279	139.7	7.0	16.8
1990	02 28	12 26.22	+35 07.1					
1990	03 10	12 20.98	+35 48.7	4.451	5.299	145.5	6.1	16.8
1990	03 20	12 15.17	+36 17.8					
1990	03 30	12 09.22	+36 32.4	4.518	5.319	139.8	7.0	16.9
1990	04 09	12 03.58	+36 31.5					
1990	04 19	11 58.65	+36 15.4	4.678	5.339	126.7	8.7	17.0
1990	04 29	11 54.70	+35 45.4					
1990	05 09	11 51.97	+35 03.2	4.909	5.359	111.4	10.1	17.2

(3943) Silbermann a,e,i = 2.27, 0.19, 6 Elements MPC 14006

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 40.85	-02 35.3	1.886	2.704	138.1	14.1	18.4
1990	02 28	12 34.98	-02 14.4					
1990	03 10	12 26.85	-01 41.6	1.744	2.705	161.7	6.6	18.0
1990	03 20	12 17.17	-01 00.8					
1990	03 30	12 06.92	-00 17.4	1.709	2.703	173.2	2.5	17.8
1990	04 09	11 57.21	+00 22.3					
1990	04 19	11 48.99	+00 53.3	1.788	2.699	149.0	11.0	18.2
1990	04 29	11 42.96	+01 11.9					
1990	05 09	11 39.45	+01 16.2	1.957	2.691	127.2	17.4	18.6

(4162) 1940 WA a,e,i = 2.83, 0.14, 14 Elements MPC 15054

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 35.72	-23 11.4	2.348	3.064	128.6	14.6	16.7
1990	02 28	12 31.15	-23 19.3					
1990	03 10	12 24.75	-23 05.2	2.197	3.084	148.0	9.8	16.4
1990	03 20	12 17.14	-22 28.6					
1990	03 30	12 09.07	-21 31.5	2.141	3.103	161.1	6.0	16.2
1990	04 09	12 01.45	-20 18.9					
1990	04 19	11 55.02	-18 57.6	2.196	3.121	152.4	8.6	16.4
1990	04 29	11 50.34	-17 35.0					
1990	05 09	11 47.75	-16 17.6	2.351	3.137	134.0	13.4	16.7

1988 VP a,e,i = 2.54, 0.07, 14 Elements MPC 14025

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 44.10	+16 04.0	1.804	2.644	140.7	13.7	16.6
1990	02 28	12 38.35	+17 02.2					
1990	03 10	12 30.26	+17 56.2	1.708	2.654	157.8	8.1	16.3
1990	03 20	12 20.64	+18 37.6					
1990	03 30	12 10.54	+18 59.6	1.715	2.664	157.1	8.4	16.3
1990	04 09	12 01.12	+18 58.1					
1990	04 19	11 53.34	+18 32.9	1.825	2.673	139.8	14.0	16.6
1990	04 29	11 47.82	+17 46.2					
1990	05 09	11 44.86	+16 41.7	2.015	2.681	121.2	18.8	17.0

1975 VN2 a,e,i = 2.64, 0.15, 14 Elements MPC 13852

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 45.12	+10 11.0	1.801	2.637	140.1	13.9	16.1
1990	02 28	12 38.99	+10 43.7					
1990	03 10	12 30.62	+11 16.5	1.710	2.668	160.8	7.0	15.8
1990	03 20	12 20.82	+11 42.7					
1990	03 30	12 10.63	+11 56.8	1.726	2.699	163.9	5.9	15.7
1990	04 09	12 01.18	+11 54.6					
1990	04 19	11 53.37	+11 35.1	1.849	2.729	144.5	12.3	16.2
1990	04 29	11 47.79	+10 59.2					
1990	05 09	11 44.70	+10 08.9	2.058	2.759	124.5	17.5	16.6

1988 VD3 a,e,i = 2.38, 0.22, 2 Elements MPC 14028

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 42.07	-05 22.5	2.036	2.838	136.7	13.8	18.5
1990	02 28	12 36.67	-04 55.5					
1990	03 10	12 29.23	-04 15.0	1.902	2.856	160.2	6.8	18.1
1990	03 20	12 20.40	-03 24.6					
1990	03 30	12 11.06	-02 29.4	1.875	2.871	174.9	1.8	17.8
1990	04 09	12 02.20	-01 35.8					
1990	04 19	11 54.66	-00 49.3	1.964	2.883	151.0	9.7	18.3
1990	04 29	11 49.06	-00 14.2					
1990	05 09	11 45.73	+00 07.2	2.147	2.892	129.1	15.7	18.7

(4046) 1953 TV a,e,i = 2.63, 0.07, 8 Elements MPC 14463

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 36.29	-09 59.8	1.877	2.677	135.9	14.9	16.5
1990	02 28	12 32.65	-09 28.4					
1990	03 10	12 26.89	-08 37.3	1.715	2.663	158.4	7.9	16.1
1990	03 20	12 19.61	-07 29.4					
1990	03 30	12 11.66	-06 10.2	1.653	2.649	174.4	2.1	15.7
1990	04 09	12 04.07	-04 47.6					
1990	04 19	11 57.73	-03 29.6	1.702	2.635	152.6	10.1	16.1
1990	04 29	11 53.35	-02 23.0					
1990	05 09	11 51.32	-01 32.5	1.844	2.620	131.0	16.9	16.5

4523 P-L a,e,i = 5.20, 0.05, 1 Elements MPC 14206

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 30.47	-03 49.3	4.576	5.371	140.0	6.8	17.9
1990	02 28	12 27.26	-03 28.4					
1990	03 10	12 23.25	-03 02.1	4.413	5.366	162.1	3.3	17.7
1990	03 20	12 18.71	-02 32.1					
1990	03 30	12 13.96	-02 00.3	4.365	5.361	175.5	0.8	17.5
1990	04 09	12 09.34	-01 29.2					
1990	04 19	12 05.17	-01 00.9	4.439	5.356	153.5	4.8	17.7
1990	04 29	12 01.74	-00 37.1					
1990	05 09	11 59.24	-00 19.3	4.618	5.351	132.4	8.0	18.0

(4143) 1981 QN1 a,e,i = 3.08, 0.19, 2 Elements MPC 14935

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 37.98	-01 20.3	2.862	3.668	139.2	10.1	18.2
1990	02 28	12 33.61	-00 46.0					
1990	03 10	12 27.82	-00 03.7	2.703	3.660	162.0	4.8	17.8
1990	03 20	12 21.04	+00 43.1					
1990	03 30	12 13.85	+01 30.7	2.657	3.651	173.5	1.8	17.6
1990	04 09	12 06.89	+02 14.8					
1990	04 19	12 00.73	+02 51.7	2.730	3.640	150.8	7.7	18.0
1990	04 29	11 55.85	+03 18.8					
1990	05 09	11 52.56	+03 34.3	2.903	3.627	129.3	12.4	18.3

1984 SM a,e,i = 2.29, 0.14, 6 Elements MPC 15554

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 42.32	-13 48.3	1.743	2.520	132.8	16.7	17.0
1990	02 28	12 38.03	-13 52.5					
1990	03 10	12 31.20	-13 35.0	1.565	2.498	154.4	9.9	16.5
1990	03 20	12 22.43	-12 56.0					
1990	03 30	12 12.70	-11 58.5	1.483	2.473	170.3	3.9	16.1
1990	04 09	12 03.22	-10 49.2					
1990	04 19	11 55.13	-09 36.7	1.509	2.447	153.1	10.7	16.4
1990	04 29	11 49.31	-08 29.4					
1990	05 09	11 46.25	-07 34.2	1.627	2.419	131.8	18.1	16.8

1986 PN4 a,e,i = 3.07, 0.19, 15 Elements MPC 14786

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 40.89	-21 57.5	2.755	3.457	128.4	12.9	17.6
1990	02 28	12 36.17	-22 29.1					
1990	03 10	12 29.68	-22 43.9	2.550	3.430	147.6	8.9	17.2
1990	03 20	12 21.88	-22 40.8					
1990	03 30	12 13.40	-22 20.0	2.445	3.402	160.5	5.6	17.0
1990	04 09	12 05.04	-21 43.8					
1990	04 19	11 57.55	-20 56.9	2.451	3.373	152.4	7.9	17.1
1990	04 29	11 51.55	-20 04.5					
1990	05 09	11 47.46	-19 12.5	2.559	3.343	134.3	12.5	17.3

1936 QV a,e,i = 2.28, 0.11, 3 Elements MPC 10153

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 42.61	-05 44.3	1.722	2.532	136.5	15.6	17.8
1990	02 28	12 38.13	-05 07.5					
1990	03 10	12 31.25	-04 13.6	1.578	2.533	159.7	7.8	17.4
1990	03 20	12 22.67	-03 06.7					
1990	03 30	12 13.34	-01 53.6	1.536	2.532	175.3	1.8	17.0
1990	04 09	12 04.43	-00 42.6					
1990	04 19	11 56.97	+00 18.8	1.603	2.529	151.1	11.1	17.5
1990	04 29	11 51.69	+01 05.1					
1990	05 09	11 48.99	+01 33.3	1.761	2.524	129.3	18.0	18.0

1982 VZ a,e,i = 3.18, 0.19, 2 Elements MPC 9360

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 38.99	-02 10.1	2.494	3.301	138.7	11.4	17.7
1990	02 28	12 34.60	-01 35.0					
1990	03 10	12 28.68	-00 51.0	2.378	3.335	161.6	5.4	17.4
1990	03 20	12 21.75	-00 01.8					
1990	03 30	12 14.46	+00 48.0	2.373	3.367	174.1	1.7	17.2
1990	04 09	12 07.54	+01 33.5					
1990	04 19	12 01.60	+02 11.0	2.484	3.399	151.3	8.2	17.6
1990	04 29	11 57.12	+02 37.7					
1990	05 09	11 54.37	+02 52.1	2.693	3.430	130.0	13.0	18.0

1987 QF7 a,e,i = 2.74, 0.24, 7 Elements MPC 12439

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 40.12	-11 24.7	2.640	3.406	134.4	12.0	18.4
1990 02 28	12 35.57	-11 02.9					
1990 03 10	12 29.39	-10 26.6	2.470	3.405	156.8	6.6	18.1
1990 03 20	12 22.09	-09 37.6					
1990 03 30	12 14.30	-08 39.5	2.407	3.401	173.3	2.0	17.8
1990 04 09	12 06.75	-07 36.9					
1990 04 19	12 00.11	-06 35.3	2.464	3.395	153.9	7.5	18.1
1990 04 29	11 54.90	-05 39.3					
1990 05 09	11 51.48	-04 52.9	2.624	3.386	132.2	12.8	18.4

1987 SB1 a,e,i = 2.66, 0.17, 14 Elements MPC 15711

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 38.78	-01 31.2	2.174	2.991	138.9	12.5	17.7
1990 02 28	12 34.96	-00 21.0					
1990 03 10	12 29.25	+01 02.5	2.007	2.967	161.9	6.0	17.3
1990 03 20	12 22.19	+02 33.8					
1990 03 30	12 14.49	+04 06.0	1.951	2.942	171.5	2.9	17.1
1990 04 09	12 07.02	+05 31.3					
1990 04 19	12 00.58	+06 43.3	2.010	2.916	148.8	10.3	17.4
1990 04 29	11 55.79	+07 37.9					
1990 05 09	11 53.05	+08 13.1	2.162	2.887	127.3	16.2	17.7

1974 SW a,e,i = 2.67, 0.21, 3 Elements MPC 12695

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 42.53	-07 25.2	2.433	3.216	135.8	12.4	18.6
1990 02 28	12 38.06	-06 58.9					
1990 03 10	12 31.81	-06 19.2	2.260	3.205	158.6	6.5	18.2
1990 03 20	12 24.28	-05 28.8					
1990 03 30	12 16.15	-04 31.7	2.194	3.191	176.1	1.2	17.9
1990 04 09	12 08.23	-03 33.2					
1990 04 19	12 01.24	-02 38.7	2.247	3.175	153.1	8.2	18.3
1990 04 29	11 55.78	-01 52.8					
1990 05 09	11 52.23	-01 18.6	2.400	3.157	131.2	13.9	18.6

1973 SG4 a,e,i = 2.42, 0.23, 10 Elements MPC 13852

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 44.49	-07 33.6	1.894	2.687	135.3	15.0	17.3
1990 02 28	12 39.85	-06 39.7					
1990 03 10	12 33.10	-05 28.4	1.777	2.727	158.8	7.6	16.9
1990 03 20	12 24.94	-04 04.8					
1990 03 30	12 16.27	-02 35.8	1.766	2.763	176.2	1.4	16.6
1990 04 09	12 08.07	-01 09.6					
1990 04 19	12 01.22	+00 06.3	1.870	2.798	152.1	9.7	17.1
1990 04 29	11 56.30	+01 07.1					
1990 05 09	11 53.63	+01 49.9	2.070	2.829	130.2	15.8	17.6

1986 PW4 a,e,i = 3.10, 0.17, 1 Elements MPC 14618

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 40.91	-04 42.9	2.559	3.353	137.3	11.5	17.8
1990 02 28	12 37.00	-04 16.0					
1990 03 10	12 31.43	-03 38.0	2.376	3.326	159.9	5.9	17.4
1990 03 20	12 24.66	-02 51.8					
1990 03 30	12 17.29	-02 01.3	2.301	3.298	176.3	1.1	17.0
1990 04 09	12 10.05	-01 11.3					
1990 04 19	12 03.64	-00 26.6	2.343	3.269	152.9	8.0	17.4
1990 04 29	11 58.61	+00 09.1					
1990 05 09	11 55.36	+00 33.0	2.485	3.239	131.2	13.6	17.7

1974 SX1 a,e,i = 2.27, 0.16, 6 Elements MPC 11057

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 50.34	-03 14.2	1.844	2.643	135.6	15.2	18.4
1990 02 28	12 45.17	-02 57.6					
1990 03 10	12 37.55	-02 28.4	1.692	2.643	158.9	7.8	17.9
1990 03 20	12 28.15	-01 50.3					
1990 03 30	12 17.89	-01 08.2	1.644	2.641	176.0	1.5	17.6
1990 04 09	12 07.91	-00 28.5					
1990 04 19	11 59.27	+00 03.1	1.708	2.636	151.7	10.4	18.0
1990 04 29	11 52.73	+00 22.8					
1990 05 09	11 48.74	+00 28.0	1.866	2.628	129.7	17.2	18.4

1989 AQ a,e,i = 3.19, 0.17, 2 Elements MPC 15418

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 44.07	-01 58.3	2.608	3.403	137.5	11.3	17.0
1990 02 28	12 39.86	-01 26.5					
1990 03 10	12 34.10	-00 46.2	2.480	3.431	160.3	5.6	16.6
1990 03 20	12 27.28	-00 01.0					
1990 03 30	12 20.02	+00 45.0	2.462	3.458	175.0	1.4	16.4
1990 04 09	12 13.01	+01 27.4					
1990 04 19	12 06.88	+02 02.2	2.562	3.484	152.5	7.6	16.8
1990 04 29	12 02.09	+02 26.9					
1990 05 09	11 58.96	+02 39.9	2.761	3.509	131.1	12.5	17.2

1987 ST1 a,e,i = 3.12, 0.23, 8 Elements MPC 14476

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 44.48	-15 38.7	3.013	3.740	131.3	11.4	18.4
1990 02 28	12 40.07	-15 37.1					
1990 03 10	12 34.20	-15 21.8	2.850	3.759	152.6	7.0	18.1
1990 03 20	12 27.31	-14 53.5					
1990 03 30	12 19.96	-14 14.2	2.792	3.776	168.8	2.9	17.9
1990 04 09	12 12.78	-13 27.4					
1990 04 19	12 06.36	-12 37.3	2.853	3.792	155.9	6.2	18.1
1990 04 29	12 01.17	-11 48.4					
1990 05 09	11 57.53	-11 04.4	3.021	3.806	135.4	10.7	18.4

(4365) a,e,i = 2.85, 0.05, 1 Elements MPC 15865

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 45.65	-06 18.3	2.133	2.921	135.5	13.7	17.2
1990 02 28	12 41.98	-05 57.3					
1990 03 10	12 36.30	-05 22.6	1.967	2.912	158.1	7.3	16.8
1990 03 20	12 29.16	-04 37.1					
1990 03 30	12 21.26	-03 45.0	1.904	2.902	177.5	0.9	16.3
1990 04 09	12 13.51	-02 52.3					
1990 04 19	12 06.74	-02 04.5	1.954	2.892	154.2	8.7	16.8
1990 04 29	12 01.60	-01 26.4					
1990 05 09	11 58.54	-01 01.2	2.101	2.881	132.5	15.0	17.1

1988 RP1 a,e,i = 2.25, 0.15, 6 Elements MPC 13693

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 02 18	12 53.97	-02 31.0	1.612	2.414	135.0	16.8	16.7
1990 02 28	12 48.87	-02 12.9					
1990 03 10	12 41.10	-01 41.9	1.492	2.443	158.3	8.6	16.3
1990 03 20	12 31.41	-01 02.3					
1990 03 30	12 20.89	-00 20.1	1.471	2.469	176.0	1.6	16.0
1990 04 09	12 10.81	+00 17.8					
1990 04 19	12 02.29	+00 45.6	1.561	2.493	152.1	10.9	16.5
1990 04 29	11 56.09	+00 59.7					
1990 05 09	11 52.62	+00 58.4	1.740	2.515	130.4	17.8	17.0

1989 AL5 a,e,i = 3.19, 0.14, 1 Elements MPC 15893

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 44.96	-03 59.3	2.632	3.419	136.6	11.5	17.5
1990	02 28	12 41.16	-03 36.2					
1990	03 10	12 35.72	-03 03.1	2.449	3.396	159.2	6.0	17.1
1990	03 20	12 29.06	-02 22.7					
1990	03 30	12 21.78	-01 38.6	2.374	3.372	177.1	0.9	16.7
1990	04 09	12 14.57	-00 55.5					
1990	04 19	12 08.11	-00 17.6	2.417	3.348	153.9	7.6	17.1
1990	04 29	12 02.95	+00 11.8					
1990	05 09	11 59.49	+00 30.0	2.560	3.323	132.1	13.0	17.4

1975 SV a,e,i = 2.16, 0.18, 4 Elements MPC 13474

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 54.82	-01 55.9	1.608	2.411	135.0	16.8	17.2
1990	02 28	12 50.76	-01 31.8					
1990	03 10	12 43.82	-00 53.4	1.433	2.382	157.9	9.0	16.7
1990	03 20	12 34.55	-00 05.0					
1990	03 30	12 23.93	+00 47.1	1.354	2.351	175.5	1.9	16.2
1990	04 09	12 13.27	+01 35.0					
1990	04 19	12 03.88	+02 11.5	1.384	2.318	151.8	11.8	16.7
1990	04 29	11 56.77	+02 31.6					
1990	05 09	11 52.57	+02 33.0	1.501	2.282	129.7	19.9	17.0

(4071) 1981 RD2 a,e,i = 3.19, 0.17, 11 Elements MPC 14599

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 48.80	-19 54.9	2.946	3.640	128.1	12.3	18.0
1990	02 28	12 44.85	-19 59.7					
1990	03 10	12 39.34	-19 48.8	2.773	3.656	148.5	8.2	17.7
1990	03 20	12 32.70	-19 22.1					
1990	03 30	12 25.47	-18 41.2	2.699	3.671	164.6	4.1	17.5
1990	04 09	12 18.34	-17 49.2					
1990	04 19	12 11.93	-16 50.8	2.741	3.685	156.8	6.2	17.6
1990	04 29	12 06.73	-15 50.8					
1990	05 09	12 03.12	-14 54.2	2.890	3.697	137.4	10.6	17.9

(4018) 1980 YM a,e,i = 2.58, 0.17, 3 Elements MPC 14331

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 52.83	-10 28.1	2.063	2.823	132.1	15.0	18.0
1990	02 28	12 48.68	-10 11.9					
1990	03 10	12 42.42	-09 39.2	1.920	2.849	154.7	8.6	17.6
1990	03 20	12 34.59	-08 52.1					
1990	03 30	12 26.01	-07 54.8	1.877	2.873	175.3	1.6	17.2
1990	04 09	12 17.61	-06 53.1					
1990	04 19	12 10.28	-05 53.7	1.948	2.896	156.2	8.0	17.7
1990	04 29	12 04.66	-05 02.1					
1990	05 09	12 01.17	-04 22.4	2.120	2.916	134.3	14.3	18.1

1984 ER1 a,e,i = 3.19, 0.18, 2 Elements MPC 13606

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 49.90	-03 41.2	2.326	3.110	135.6	12.9	18.0
1990	02 28	12 46.19	-03 08.3					
1990	03 10	12 40.72	-02 24.9	2.201	3.145	158.2	6.7	17.6
1990	03 20	12 34.00	-01 34.4					
1990	03 30	12 26.70	-00 41.7	2.183	3.181	177.1	0.9	17.3
1990	04 09	12 19.60	+00 08.0					
1990	04 19	12 13.39	+00 50.1	2.280	3.216	154.5	7.7	17.8
1990	04 29	12 08.61	+01 21.3					
1990	05 09	12 05.61	+01 39.6	2.476	3.250	133.0	13.1	18.2

1935 SP1 a,e,i = 2.40, 0.25, 23 Elements MPC 12442

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 04.48	-07 35.5	1.834	2.590	130.7	16.8	16.7
1990	02 28	12 59.04	-08 28.1					
1990	03 10	12 50.53	-09 11.4	1.613	2.539	153.2	10.2	16.1
1990	03 20	12 39.36	-09 44.6					
1990	03 30	12 26.40	-10 07.4	1.492	2.486	173.1	2.8	15.6
1990	04 09	12 12.95	-10 21.7					
1990	04 19	12 00.44	-10 30.8	1.487	2.432	154.4	10.3	15.9
1990	04 29	11 50.10	-10 39.4					
1990	05 09	11 42.76	-10 52.5	1.580	2.375	131.8	18.5	16.2

1977 DR1 a,e,i = 2.60, 0.16, 12 Elements MPC 13454

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 56.27	-14 50.1	1.794	2.538	129.3	17.5	17.1
1990	02 28	12 52.74	-15 41.6					
1990	03 10	12 46.45	-16 16.8	1.594	2.502	149.8	11.5	16.6
1990	03 20	12 37.85	-16 33.7					
1990	03 30	12 27.74	-16 31.4	1.484	2.467	166.8	5.3	16.2
1990	04 09	12 17.33	-16 12.3					
1990	04 19	12 07.89	-15 42.0	1.480	2.432	156.0	9.7	16.3
1990	04 29	12 00.49	-15 07.4					
1990	05 09	11 55.84	-14 36.0	1.570	2.398	135.6	17.1	16.7

(4012) 1978 VK9 a,e,i = 2.25, 0.16, 5 Elements MPC 14328

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 56.45	-12 17.5	1.840	2.593	130.5	16.8	17.6
1990	02 28	12 52.43	-12 05.3					
1990	03 10	12 45.90	-11 33.0	1.679	2.602	152.9	10.0	17.2
1990	03 20	12 37.44	-10 42.2					
1990	03 30	12 27.93	-09 36.7	1.614	2.609	173.7	2.4	16.8
1990	04 09	12 18.50	-08 23.5					
1990	04 19	12 10.21	-07 10.7	1.661	2.613	156.5	8.8	17.1
1990	04 29	12 03.88	-06 05.6					
1990	05 09	12 00.01	-05 13.8	1.807	2.614	134.3	16.0	17.5

2019 P-L a,e,i = 2.30, 0.12, 3 Elements MPC 15901

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 52.83	-09 39.4	1.290	2.089	132.5	20.4	17.1
1990	02 28	12 50.60	-09 24.9					
1990	03 10	12 45.31	-08 46.4	1.169	2.109	154.5	11.7	16.7
1990	03 20	12 37.66	-07 47.2					
1990	03 30	12 28.78	-06 33.7	1.133	2.131	176.7	1.5	16.2
1990	04 09	12 20.11	-05 16.2					
1990	04 19	12 12.97	-04 05.1	1.196	2.154	156.4	10.8	16.7
1990	04 29	12 08.28	-03 08.7					
1990	05 09	12 06.51	-02 31.9	1.346	2.179	134.9	19.2	17.3

1981 SU2 a,e,i = 2.27, 0.13, 2 Elements MPC 10528

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 58.23	-08 39.0	1.727	2.496	131.7	17.2	18.5
1990	02 28	12 54.14	-08 27.4					
1990	03 10	12 47.44	-07 58.1	1.581	2.514	154.5	9.8	18.1
1990	03 20	12 38.73	-07 13.5					
1990	03 30	12 28.96	-06 18.3	1.532	2.529	177.0	1.2	17.6
1990	04 09	12 19.30	-05 19.5					
1990	04 19	12 10.87	-04 24.5	1.592	2.543	156.0	9.3	18.1
1990	04 29	12 04.50	-03 39.5					
1990	05 09	12 00.68	-03 08.9	1.749	2.553	133.8	16.6	18.5

(3996) 1988 XG1 a,e,i = 2.26, 0.10, 2 Elements MPC 14179

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 53.64	-01 46.7	1.348	2.166	135.4	18.7	16.1
1990	02 28	12 51.43	-01 16.5					
1990	03 10	12 46.14	-00 29.4	1.192	2.144	157.4	10.2	15.5
1990	03 20	12 38.33	+00 29.2					
1990	03 30	12 29.00	+01 31.6	1.126	2.123	175.1	2.3	15.0
1990	04 09	12 19.58	+02 27.8					
1990	04 19	12 11.50	+03 09.2	1.158	2.103	153.0	12.5	15.5
1990	04 29	12 05.82	+03 30.3					
1990	05 09	12 03.21	+03 28.9	1.272	2.085	131.7	21.2	15.9

1987 WS a,e,i = 3.08, 0.08, 12 Elements MPC 12800

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 58.81	-00 54.6	2.479	3.249	134.4	12.6	16.7
1990	02 28	12 54.76	-00 45.4					
1990	03 10	12 48.81	-00 28.7	2.300	3.237	156.8	6.9	16.3
1990	03 20	12 41.39	-00 07.2					
1990	03 30	12 33.11	+00 15.6	2.227	3.224	176.3	1.1	15.9
1990	04 09	12 24.76	+00 35.7					
1990	04 19	12 17.10	+00 49.6	2.271	3.211	155.4	7.5	16.3
1990	04 29	12 10.77	+00 54.5					
1990	05 09	12 06.24	+00 48.6	2.417	3.197	133.5	13.2	16.6

1982 BS1 a,e,i = 2.45, 0.15, 7 Elements MPC 10832

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 58.06	-01 08.7	1.606	2.404	134.5	17.0	17.2
1990	02 28	12 55.03	-00 04.7					
1990	03 10	12 49.40	+01 13.5	1.493	2.438	157.0	9.2	16.8
1990	03 20	12 41.85	+02 39.1					
1990	03 30	12 33.29	+04 03.2	1.478	2.471	172.6	3.0	16.6
1990	04 09	12 24.91	+05 16.6					
1990	04 19	12 17.72	+06 12.5	1.570	2.504	152.5	10.7	17.1
1990	04 29	12 12.52	+06 47.1					
1990	05 09	12 09.72	+06 59.8	1.752	2.536	131.4	17.4	17.5

1988 XC a,e,i = 3.08, 0.29, 4 Elements MPC 14202

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 00.41	-05 36.4	2.433	3.184	132.4	13.2	18.1
1990	02 28	12 56.26	-05 18.1					
1990	03 10	12 50.29	-04 49.1	2.309	3.237	155.1	7.4	17.8
1990	03 20	12 43.00	-04 12.1					
1990	03 30	12 35.05	-03 31.0	2.291	3.289	179.0	0.3	17.4
1990	04 09	12 27.20	-02 50.2					
1990	04 19	12 20.17	-02 14.1	2.390	3.340	157.4	6.6	18.0
1990	04 29	12 14.50	-01 46.1					
1990	05 09	12 10.57	-01 28.5	2.595	3.389	135.5	12.1	18.4

1107 T-2 a,e,i = 2.75, 0.19, 2 Elements MPC 15256

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 58.89	-09 27.8	2.249	2.994	131.2	14.4	18.9
1990	02 28	12 55.73	-09 17.8					
1990	03 10	12 50.45	-08 53.0	2.041	2.962	153.4	8.6	18.4
1990	03 20	12 43.43	-08 14.8					
1990	03 30	12 35.30	-07 26.2	1.931	2.928	175.8	1.4	17.9
1990	04 09	12 26.93	-06 32.1					
1990	04 19	12 19.20	-05 38.3	1.936	2.893	158.3	7.4	18.2
1990	04 29	12 12.88	-04 50.5					
1990	05 09	12 08.54	-04 13.2	2.044	2.857	136.0	14.2	18.5

1976 GP3 a,e,i = 2.32, 0.10, 7 Elements MPC 12695

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	12 57.37	-04 15.9	1.492	2.289	133.6	18.2	17.0
1990	02 28	12 55.80	-03 22.7					
1990	03 10	12 51.40	-02 09.0	1.324	2.267	155.7	10.4	16.5
1990	03 20	12 44.64	-00 39.5					
1990	03 30	12 36.37	+00 57.2	1.247	2.244	175.5	2.0	15.9
1990	04 09	12 27.82	+02 30.1					
1990	04 19	12 20.26	+03 48.7	1.274	2.223	154.5	11.2	16.4
1990	04 29	12 14.72	+04 45.7					
1990	05 09	12 11.88	+05 17.5	1.388	2.202	132.8	19.7	16.8

1981 EB37 a,e,i = 2.69, 0.03, 8 Elements MPC 12785

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 04.43	-07 45.7	1.979	2.728	130.7	15.9	18.9
1990	02 28	13 01.05	-07 56.7					
1990	03 10	12 55.24	-07 54.6	1.801	2.722	152.8	9.6	18.5
1990	03 20	12 47.45	-07 40.7					
1990	03 30	12 38.42	-07 17.4	1.720	2.716	175.7	1.6	18.0
1990	04 09	12 29.15	-06 49.3					
1990	04 19	12 20.68	-06 21.4	1.749	2.710	158.8	7.7	18.4
1990	04 29	12 13.84	-05 58.9					
1990	05 09	12 09.23	-05 45.7	1.879	2.704	136.7	14.8	18.8

1971 QP1 a,e,i = 3.02, 0.11, 9 Elements MPC 9469

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 00.79	-15 37.6	2.616	3.317	128.0	13.6	17.9
1990	02 28	12 57.11	-15 51.8					
1990	03 10	12 51.56	-15 51.7	2.433	3.325	149.2	8.8	17.6
1990	03 20	12 44.55	-15 37.1					
1990	03 30	12 36.66	-15 09.4	2.348	3.332	168.1	3.5	17.3
1990	04 09	12 28.66	-14 31.7					
1990	04 19	12 21.29	-13 48.5	2.378	3.338	159.5	6.1	17.4
1990	04 29	12 15.17	-13 04.5					
1990	05 09	12 10.78	-12 24.6	2.516	3.342	138.8	11.5	17.7

3285 T-2 a,e,i = 2.38, 0.23, 4 Elements MPC 15257

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 06.11	-02 35.7	2.147	2.904	132.1	14.6	18.7
1990	02 28	13 01.99	-02 03.9					
1990	03 10	12 55.63	-01 20.7	1.985	2.915	154.9	8.3	18.3
1990	03 20	12 47.51	-00 29.9					
1990	03 30	12 38.36	+00 23.6	1.926	2.923	175.8	1.4	17.9
1990	04 09	12 29.10	+01 13.7					
1990	04 19	12 20.65	+01 55.1	1.983	2.927	155.6	8.2	18.3
1990	04 29	12 13.75	+02 23.9					
1990	05 09	12 08.91	+02 37.9	2.143	2.929	133.3	14.5	18.7

(4161) 6627 P-L a,e,i = 3.06, 0.10, 3 Elements MPC 14941

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 00.10	-05 33.4	2.567	3.316	132.5	12.7	18.4
1990	02 28	12 56.94	-05 04.0					
1990	03 10	12 52.00	-04 23.4	2.400	3.327	154.9	7.3	18.1
1990	03 20	12 45.70	-03 34.3					
1990	03 30	12 38.61	-02 40.6	2.338	3.336	178.0	0.6	17.7
1990	04 09	12 31.43	-01 47.2					
1990	04 19	12 24.85	-00 58.8	2.392	3.344	157.9	6.5	18.0
1990	04 29	12 19.45	-00 19.4					
1990	05 09	12 15.65	+00 08.4	2.552	3.352	135.9	12.1	18.4

1981 RR3 a,e,i = 2.23, 0.21, 6 Elements MPC 10023

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 05.58	-05 12.2	1.936	2.694	131.4	16.0	18.8
1990	02 28	13 02.32	-04 27.3					
1990	03 10	12 56.58	-03 26.0	1.754	2.683	154.1	9.3	18.4
1990	03 20	12 48.81	-02 12.1					
1990	03 30	12 39.75	-00 51.4	1.671	2.669	176.7	1.2	17.9
1990	04 09	12 30.42	+00 28.0					
1990	04 19	12 21.86	+01 38.4	1.702	2.652	156.0	8.9	18.3
1990	04 29	12 14.94	+02 33.9					
1990	05 09	12 10.28	+03 10.7	1.833	2.631	133.4	16.2	18.7

1977 RD2 a,e,i = 2.94, 0.19, 3 Elements MPC 15240

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 03.28	-03 31.9	2.683	3.429	132.5	12.3	18.0
1990	02 28	12 59.60	-03 06.3					
1990	03 10	12 54.17	-02 31.3	2.519	3.444	155.0	7.0	17.6
1990	03 20	12 47.41	-01 49.9					
1990	03 30	12 39.86	-01 05.6	2.460	3.458	176.9	0.9	17.3
1990	04 09	12 32.22	-00 22.9					
1990	04 19	12 25.16	+00 14.2	2.520	3.469	157.4	6.4	17.6
1990	04 29	12 19.26	+00 42.4					
1990	05 09	12 14.93	+00 59.5	2.687	3.479	135.4	11.8	18.0

(3951) Zichichi a,e,i = 2.34, 0.17, 5 Elements MPC 14009

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 07.93	-15 26.1	1.779	2.498	126.6	18.5	17.2
1990	02 28	13 04.60	-15 32.1					
1990	03 10	12 58.58	-15 17.1	1.632	2.531	148.2	11.9	16.8
1990	03 20	12 50.42	-14 41.2					
1990	03 30	12 40.99	-13 47.0	1.574	2.562	169.3	4.2	16.5
1990	04 09	12 31.44	-12 40.4					
1990	04 19	12 22.89	-11 29.3	1.624	2.590	160.0	7.6	16.7
1990	04 29	12 16.22	-10 21.7					
1990	05 09	12 11.99	-09 24.5	1.775	2.617	138.4	14.8	17.2

1981 EZ18 a,e,i = 2.69, 0.05, 2 Elements MPC 11045

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 04.37	-09 12.3	2.059	2.800	130.1	15.7	18.6
1990	02 28	13 01.59	-09 03.3					
1990	03 10	12 56.53	-08 39.0	1.878	2.795	152.1	9.6	18.2
1990	03 20	12 49.60	-08 01.0					
1990	03 30	12 41.49	-07 12.7	1.792	2.789	175.4	1.7	17.7
1990	04 09	12 33.11	-06 19.4					
1990	04 19	12 25.41	-05 27.3	1.819	2.783	159.7	7.2	18.0
1990	04 29	12 19.19	-04 42.2					
1990	05 09	12 15.02	-04 08.5	1.947	2.776	137.5	14.2	18.4

6045 P-L a,e,i = 2.77, 0.20, 7 Elements MPC 14360

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 04.31	-10 50.1	2.010	2.746	129.4	16.1	17.5
1990	02 28	13 01.44	-10 20.9					
1990	03 10	12 56.35	-09 34.3	1.872	2.787	151.8	9.7	17.1
1990	03 20	12 49.53	-08 32.7					
1990	03 30	12 41.74	-07 20.9	1.831	2.827	175.2	1.7	16.8
1990	04 09	12 33.90	-06 05.6					
1990	04 19	12 26.89	-04 53.7	1.903	2.867	159.9	6.9	17.1
1990	04 29	12 21.40	-03 51.4					
1990	05 09	12 17.89	-03 03.0	2.078	2.905	137.7	13.5	17.6

1981 ED1 a,e,i = 2.68, 0.15, 13 Elements MPC 14187

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 11.37	-09 07.2	2.093	2.817	128.6	15.9	18.1
1990	02 28	13 07.27	-09 26.7					
1990	03 10	13 00.79	-09 33.4	1.936	2.844	150.8	9.8	17.8
1990	03 20	12 52.40	-09 28.1					
1990	03 30	12 42.87	-09 12.9	1.876	2.870	173.5	2.3	17.4
1990	04 09	12 33.16	-08 51.5					
1990	04 19	12 24.25	-08 28.5	1.930	2.894	160.1	6.8	17.7
1990	04 29	12 16.93	-08 08.4					
1990	05 09	12 11.74	-07 55.3	2.089	2.918	137.9	13.4	18.1

1982 UE7 a,e,i = 3.08, 0.19, 1 Elements MPC 15882

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 04.70	-06 29.4	2.823	3.551	131.1	12.1	18.3
1990	02 28	13 01.36	-06 05.3					
1990	03 10	12 56.37	-05 30.8	2.653	3.569	153.5	7.1	18.0
1990	03 20	12 50.08	-04 48.1					
1990	03 30	12 43.03	-04 00.6	2.588	3.586	177.0	0.8	17.7
1990	04 09	12 35.85	-03 12.3					
1990	04 19	12 29.17	-02 27.4	2.643	3.601	159.5	5.6	18.0
1990	04 29	12 23.53	-01 49.6					
1990	05 09	12 19.35	-01 21.6	2.806	3.614	137.4	10.9	18.3

1988 VF1 a,e,i = 2.17, 0.19, 3 Elements MPC 14026

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 13.43	-11 52.8	1.866	2.584	127.0	17.8	18.2
1990	02 28	13 10.34	-11 43.2					
1990	03 10	13 04.56	-11 14.8	1.685	2.588	149.2	11.3	17.8
1990	03 20	12 56.51	-10 28.4					
1990	03 30	12 46.94	-09 27.1	1.595	2.588	172.7	2.8	17.3
1990	04 09	12 36.96	-08 17.2					
1990	04 19	12 27.69	-07 06.2	1.616	2.585	160.7	7.4	17.6
1990	04 29	12 20.10	-06 01.9					
1990	05 09	12 14.87	-05 10.4	1.740	2.579	137.8	15.2	18.0

(4075) 1982 TL1 a,e,i = 3.03, 0.05, 8 Elements MPC 14600

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 11.33	-06 18.7	2.321	3.048	129.6	14.5	17.3
1990	02 28	13 08.27	-06 18.7					
1990	03 10	13 03.12	-06 07.7	2.147	3.057	151.7	8.9	16.9
1990	03 20	12 56.26	-05 47.7					
1990	03 30	12 48.29	-05 21.3	2.070	3.066	175.3	1.5	16.5
1990	04 09	12 40.03	-04 52.6					
1990	04 19	12 32.29	-04 26.1	2.107	3.075	161.0	6.1	16.8
1990	04 29	12 25.80	-04 05.5					
1990	05 09	12 21.08	-03 53.9	2.251	3.083	138.8	12.5	17.2

1985 CP1 a,e,i = 2.76, 0.10, 5 Elements MPC 15555

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 06.19	-03 50.2	1.753	2.521	131.7	17.0	16.5
1990	02 28	13 04.98	-03 10.8					
1990	03 10	13 01.26	-02 15.5	1.584	2.511	153.3	10.2	16.1
1990	03 20	12 55.43	-01 08.5					
1990	03 30	12 48.17	+00 04.0	1.507	2.503	174.5	2.2	15.6
1990	04 09	12 40.49	+01 13.8					
1990	04 19	12 33.44	+02 13.2	1.536	2.496	158.0	8.7	15.9
1990	04 29	12 27.90	+02 56.3					
1990	05 09	12 24.53	+03 19.9	1.660	2.491	136.5	16.2	16.3

1986 PB5 a,e,i = 3.09, 0.17, 3 Elements MPC 14475

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 10.33	-04 16.2	2.584	3.313	130.6	13.1	17.2
1990	02 28	13 07.89	-03 48.9					
1990	03 10	13 03.56	-03 10.6	2.371	3.284	152.5	8.0	16.9
1990	03 20	12 57.63	-02 23.9					
1990	03 30	12 50.62	-01 32.5	2.258	3.254	174.8	1.6	16.4
1990	04 09	12 43.19	-00 41.2					
1990	04 19	12 36.09	+00 05.2	2.262	3.223	159.8	6.2	16.6
1990	04 29	12 29.97	+00 42.4					
1990	05 09	12 25.39	+01 07.4	2.372	3.192	137.7	12.3	16.9

1989 AK1 a,e,i = 3.00, 0.02, 10 Elements MPC 14357

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 13.00	-19 25.7	2.391	3.051	123.6	15.7	17.1
1990	02 28	13 10.44	-19 56.9					
1990	03 10	13 05.69	-20 12.1	2.196	3.054	143.8	11.1	16.7
1990	03 20	12 59.09	-20 10.0					
1990	03 30	12 51.24	-19 50.5	2.088	3.057	162.8	5.5	16.4
1990	04 09	12 42.93	-19 15.7					
1990	04 19	12 35.06	-18 30.0	2.090	3.059	161.5	6.0	16.4
1990	04 29	12 28.38	-17 38.9					
1990	05 09	12 23.52	-16 48.6	2.198	3.061	142.5	11.6	16.8

1989 AO3 a,e,i = 3.16, 0.17, 7 Elements MPC 15893

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 13.02	-14 36.4	2.884	3.555	125.9	13.0	17.4
1990	02 28	13 09.88	-14 42.1					
1990	03 10	13 04.99	-14 35.3	2.699	3.575	147.3	8.6	17.1
1990	03 20	12 58.67	-14 16.1					
1990	03 30	12 51.42	-13 46.0	2.610	3.594	168.4	3.2	16.8
1990	04 09	12 43.90	-13 07.9					
1990	04 19	12 36.76	-12 25.7	2.638	3.612	163.3	4.6	16.9
1990	04 29	12 30.59	-11 43.4					
1990	05 09	12 25.85	-11 05.2	2.778	3.628	142.1	9.8	17.3

1989 BQ a,e,i = 5.17, 0.25, 20 Elements MPC 14794

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1990	02 18	13 07.60	+14 31.7	3.601	4.356	-0.41	+2.2	16.5
1990	02 28	13 05.39	+15 35.2					
1990	03 10	13 01.91	+16 38.4	3.491	4.392	-0.42	+2.4	16.3
1990	03 20	12 57.43	+17 37.0					
1990	03 30	12 52.36	+18 27.0	3.489	4.428	-0.42	+2.3	16.3
1990	04 09	12 47.13	+19 05.3					
1990	04 19	12 42.21	+19 29.6	3.597	4.465	-0.41	+2.1	16.5
1990	04 29	12 37.97	+19 39.1					
1990	05 09	12 34.76	+19 34.2	3.801	4.503	-0.40	+1.9	16.7

1962 SR a,e,i = 2.62, 0.16, 9 Elements MPC 15549

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 17.03	-20 12.6	2.326	2.975	122.4	16.3	17.5
1990	02 28	13 14.57	-20 37.8					
1990	03 10	13 09.78	-20 45.9	2.108	2.959	142.7	11.7	17.1
1990	03 20	13 02.95	-20 35.1					
1990	03 30	12 54.64	-20 05.1	1.975	2.942	162.3	5.9	16.7
1990	04 09	12 45.70	-19 17.9					
1990	04 19	12 37.09	-18 18.2	1.951	2.923	162.1	6.1	16.7
1990	04 29	12 29.67	-17 12.4					
1990	05 09	12 24.14	-16 07.7	2.034	2.902	142.6	12.2	17.0

1982 VK12 a,e,i = 3.18, 0.16, 2 Elements MPC 13595

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 17.09	-04 56.8	2.662	3.371	128.8	13.2	17.4
1990	02 28	13 14.47	-04 32.5					
1990	03 10	13 10.02	-03 58.2	2.495	3.396	150.8	8.2	17.1
1990	03 20	13 04.09	-03 16.4					
1990	03 30	12 57.16	-02 30.6	2.427	3.421	173.4	1.9	16.8
1990	04 09	12 49.92	-01 45.1					
1990	04 19	12 43.03	-01 04.2	2.476	3.445	161.9	5.2	17.0
1990	04 29	12 37.09	-00 31.4					
1990	05 09	12 32.57	-00 09.4	2.635	3.468	139.9	10.8	17.4

1977 QD2 a,e,i = 2.30, 0.19, 6 Elements MPC 9213

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 24.05	-11 09.1	2.026	2.715	124.9	17.4	19.0
1990	02 28	13 21.46	-11 18.8					
1990	03 10	13 16.22	-11 13.6	1.816	2.701	146.7	11.7	18.6
1990	03 20	13 08.61	-10 53.7					
1990	03 30	12 59.23	-10 20.4	1.694	2.684	170.1	3.7	18.1
1990	04 09	12 49.05	-09 37.8					
1990	04 19	12 39.16	-08 51.5	1.684	2.664	163.8	6.0	18.2
1990	04 29	12 30.59	-08 07.8					
1990	05 09	12 24.15	-07 32.3	1.781	2.641	140.7	14.0	18.6

1989 AZ1 a,e,i = 2.59, 0.20, 13 Elements MPC 14358

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 22.79	+08 18.3	2.362	3.098	130.7	14.0	17.0
1990	02 28	13 20.11	+09 29.3					
1990	03 10	13 15.25	+10 46.0	2.203	3.105	150.3	9.1	16.7
1990	03 20	13 08.57	+12 02.4					
1990	03 30	13 00.64	+13 11.6	2.143	3.108	161.9	5.7	16.5
1990	04 09	12 52.22	+14 06.9					
1990	04 19	12 44.17	+14 43.8	2.196	3.109	150.4	9.2	16.7
1990	04 29	12 37.20	+14 59.9					
1990	05 09	12 31.90	+14 55.3	2.347	3.108	131.4	14.1	17.0

1978 VE5 a,e,i = 2.78, 0.24, 8 Elements MPC 15405

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 22.86	+01 19.5	2.693	3.406	129.2	13.0	18.0
1990	02 28	13 19.96	+01 53.9					
1990	03 10	13 15.10	+02 35.9	2.491	3.393	150.7	8.2	17.6
1990	03 20	13 08.59	+03 22.1					
1990	03 30	13 00.90	+04 08.2	2.390	3.377	169.4	3.1	17.3
1990	04 09	12 52.71	+04 49.4					
1990	04 19	12 44.73	+05 21.4	2.407	3.359	158.0	6.4	17.5
1990	04 29	12 37.65	+05 41.2					
1990	05 09	12 32.01	+05 47.1	2.531	3.339	136.8	11.9	17.8

1988 ND a,e,i = 1.93, 0.09, 26 Elements MPC 14793

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 24.69	+20 44.4	1.251	2.040	130.9	21.5	16.0
1990	02 28	13 24.91	+24 27.6					
1990	03 10	13 21.34	+28 10.4	1.179	2.057	142.4	17.2	15.7
1990	03 20	13 14.34	+31 32.0					
1990	03 30	13 04.85	+34 12.5	1.193	2.071	141.6	17.4	15.8
1990	04 09	12 54.44	+35 58.1					
1990	04 19	12 44.81	+36 45.6	1.287	2.083	130.4	21.5	16.1
1990	04 29	12 37.35	+36 39.1					
1990	05 09	12 32.94	+35 47.9	1.436	2.093	116.7	25.5	16.4

1978 RM2 a,e,i = 2.74, 0.01, 5 Elements MPC 11142

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 21.91	-09 14.6	2.065	2.766	126.1	16.8	17.8
1990	02 28	13 20.75	-08 53.1					
1990	03 10	13 17.22	-08 15.6	1.874	2.765	147.7	11.1	17.4
1990	03 20	13 11.61	-07 23.9					
1990	03 30	13 04.48	-06 21.5	1.773	2.764	171.2	3.2	16.9
1990	04 09	12 56.66	-05 14.3					
1990	04 19	12 49.07	-04 08.9	1.781	2.763	164.7	5.5	17.1
1990	04 29	12 42.58	-03 11.6					
1990	05 09	12 37.87	-02 27.5	1.895	2.762	142.1	13.0	17.5

1982 BP2 a,e,i = 2.37, 0.14, 3 Elements MPC 12308

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 27.51	-12 45.0	1.984	2.660	123.5	18.1	18.4
1990	02 28	13 25.66	-12 42.3					
1990	03 10	13 21.19	-12 22.5	1.797	2.672	145.1	12.3	18.1
1990	03 20	13 14.42	-11 46.0					
1990	03 30	13 05.94	-10 54.9	1.696	2.682	168.5	4.2	17.6
1990	04 09	12 56.69	-09 54.0					
1990	04 19	12 47.73	-08 49.8	1.705	2.690	165.9	5.2	17.7
1990	04 29	12 40.03	-07 49.4					
1990	05 09	12 34.31	-06 58.9	1.821	2.696	143.0	13.0	18.1

1977 NN a,e,i = 2.26, 0.18, 5 Elements MPC 9754

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 26.71	-14 34.9	1.752	2.435	122.9	19.9	18.0
1990	02 28	13 25.80	-15 04.4					
1990	03 10	13 21.92	-15 17.0	1.527	2.399	143.5	14.3	17.5
1990	03 20	13 15.18	-15 11.0					
1990	03 30	13 06.11	-14 45.5	1.381	2.362	165.7	6.0	17.0
1990	04 09	12 55.72	-14 03.0					
1990	04 19	12 45.30	-13 09.2	1.338	2.323	165.3	6.3	16.9
1990	04 29	12 36.19	-12 11.9					
1990	05 09	12 29.45	-11 19.9	1.394	2.283	143.0	15.4	17.3

1981 QH2 a,e,i = 2.21, 0.19, 4 Elements MPC 12122

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 28.17	-05 57.4	1.922	2.626	125.8	17.8	18.9
1990	02 28	13 26.50	-05 22.9					
1990	03 10	13 22.14	-04 32.1	1.720	2.614	147.7	11.7	18.5
1990	03 20	13 15.36	-03 27.7					
1990	03 30	13 06.72	-02 14.4	1.608	2.599	171.0	3.4	18.0
1990	04 09	12 57.17	-00 59.6					
1990	04 19	12 47.81	+00 09.1	1.607	2.581	162.2	6.8	18.1
1990	04 29	12 39.65	+01 04.7					
1990	05 09	12 33.53	+01 42.4	1.709	2.560	139.2	14.9	18.5

1982 SG4 a,e,i = 3.00, 0.08, 10 Elements MPC 15244

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 22.61	-12 44.8	2.333	3.006	124.6	15.7	17.0
1990	02 28	13 21.27	-12 22.5					
1990	03 10	13 17.79	-11 43.9	2.147	3.022	146.1	10.6	16.6
1990	03 20	13 12.49	-10 50.5					
1990	03 30	13 05.89	-09 45.0	2.051	3.038	169.3	3.5	16.3
1990	04 09	12 58.72	-08 32.5					
1990	04 19	12 51.77	-07 19.0	2.068	3.054	166.5	4.4	16.3
1990	04 29	12 45.79	-06 10.6					
1990	05 09	12 41.34	-05 12.5	2.195	3.069	144.0	11.2	16.7

2538 P-L a,e,i = 2.29, 0.06, 8 Elements MPC 11338

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 30.32	-03 44.5	1.448	2.181	126.0	21.5	17.3
1990	02 28	13 29.81	-04 00.9					
1990	03 10	13 25.95	-04 05.1	1.270	2.171	146.9	14.5	16.8
1990	03 20	13 18.93	-03 59.1					
1990	03 30	13 09.41	-03 46.1	1.171	2.162	170.4	4.4	16.3
1990	04 09	12 58.61	-03 31.8					
1990	04 19	12 48.02	-03 21.9	1.171	2.155	164.2	7.3	16.4
1990	04 29	12 39.05	-03 21.8					
1990	05 09	12 32.75	-03 35.2	1.266	2.149	141.4	17.1	16.9

1988 VY1 a,e,i = 2.67, 0.17, 6 Elements MPC 14027

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 23.58	-17 28.6	1.598	2.284	122.3	21.5	15.2
1990	02 28	13 23.90	-17 46.9					
1990	03 10	13 21.27	-17 42.8	1.441	2.308	142.3	15.2	14.8
1990	03 20	13 16.00	-17 15.3					
1990	03 30	13 08.76	-16 25.2	1.359	2.335	164.0	6.8	14.5
1990	04 09	13 00.63	-15 17.5					
1990	04 19	12 52.83	-14 00.0	1.375	2.364	167.0	5.5	14.5
1990	04 29	12 46.45	-12 42.0					
1990	05 09	12 42.29	-11 32.5	1.491	2.396	146.1	13.6	15.0

1969 TT1 a,e,i = 2.41, 0.18, 2 Elements MPC 9291

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 32.62	-08 38.0	2.162	2.834	123.9	16.8	18.7
1990	02 28	13 30.49	-08 28.7					
1990	03 10	13 25.87	-08 05.7	1.966	2.842	145.7	11.3	18.4
1990	03 20	13 19.06	-07 30.4					
1990	03 30	13 10.60	-06 45.5	1.860	2.848	169.6	3.6	17.9
1990	04 09	13 01.33	-05 55.8					
1990	04 19	12 52.22	-05 06.8	1.866	2.851	165.9	4.9	18.0
1990	04 29	12 44.16	-04 24.0					
1990	05 09	12 37.90	-03 52.1	1.982	2.851	142.7	12.4	18.4

1988 BX1 a,e,i = 5.27, 0.07, 31 Elements MPC 13171

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1990	02 18	13 25.51	+30 28.7	4.704	5.389	0.03	+3.3	17.0
1990	02 28	13 22.85	+31 22.1					
1990	03 10	13 18.95	+32 10.4	4.595	5.398	0.04	+3.3	16.9
1990	03 20	13 14.04	+32 50.1					
1990	03 30	13 08.46	+33 17.9	4.582	5.407	0.04	+3.2	16.9
1990	04 09	13 02.59	+33 31.6					
1990	04 19	12 56.85	+33 30.0	4.667	5.416	0.02	+3.0	17.0
1990	04 29	12 51.63	+33 13.0					
1990	05 09	12 47.24	+32 41.7	4.836	5.424	0.00	+2.8	17.1

3262 T-2 a,e,i = 2.31, 0.27, 3 Elements MPC 15085

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 29.47	-06 02.7	1.674	2.388	125.5	19.7	17.9
1990	02 28	13 29.32	-05 59.8					
1990	03 10	13 26.17	-05 41.6	1.436	2.329	146.4	13.6	17.3
1990	03 20	13 20.07	-05 09.2					
1990	03 30	13 11.42	-04 25.4	1.279	2.269	169.9	4.4	16.7
1990	04 09	13 01.18	-03 36.2					
1990	04 19	12 50.62	-02 48.9	1.223	2.207	164.4	7.0	16.6
1990	04 29	12 41.16	-02 11.4					
1990	05 09	12 33.98	-01 50.1	1.265	2.145	140.9	17.3	17.0

(4336) 1984 QE1 a,e,i = 2.33, 0.23, 8 Elements MPC 15690

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 36.34	-14 15.5	2.210	2.847	120.9	17.3	18.6
1990	02 28	13 33.88	-14 35.6					
1990	03 10	13 28.84	-14 41.6	2.002	2.854	142.3	12.3	18.2
1990	03 20	13 21.48	-14 32.7					
1990	03 30	13 12.32	-14 09.4	1.881	2.857	165.2	5.1	17.8
1990	04 09	13 02.23	-13 34.2					
1990	04 19	12 52.23	-12 51.5	1.870	2.858	167.1	4.5	17.8
1990	04 29	12 43.28	-12 07.1					
1990	05 09	12 36.18	-11 26.7	1.971	2.855	144.7	11.8	18.2

1988 XP a,e,i = 2.44, 0.21, 9 Elements MPC 14202

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 32.17	-00 18.3	2.188	2.888	126.6	15.9	18.3
1990	02 28	13 30.15	+00 36.9					
1990	03 10	13 25.78	+01 43.6	2.015	2.906	148.0	10.4	17.9
1990	03 20	13 19.35	+02 57.3					
1990	03 30	13 11.40	+04 11.9	1.937	2.920	167.4	4.3	17.6
1990	04 09	13 02.76	+05 20.4					
1990	04 19	12 54.32	+06 16.5	1.973	2.932	158.8	7.1	17.8
1990	04 29	12 46.90	+06 56.0					
1990	05 09	12 41.16	+07 16.5	2.113	2.941	137.9	13.3	18.1

1987 OQ a,e,i = 2.65, 0.18, 12 Elements MPC 12322

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 29.84	-21 29.5	2.513	3.116	119.1	16.1	18.2
1990	02 28	13 28.11	-21 37.0					
1990	03 10	13 24.16	-21 27.2	2.293	3.117	139.7	11.9	17.9
1990	03 20	13 18.22	-20 58.8					
1990	03 30	13 10.80	-20 11.8	2.157	3.117	160.6	6.1	17.6
1990	04 09	13 02.61	-19 08.4					
1990	04 19	12 54.50	-17 53.4	2.130	3.114	166.0	4.5	17.5
1990	04 29	12 47.28	-16 33.0					
1990	05 09	12 41.62	-15 14.3	2.216	3.109	146.7	10.3	17.8

(4112) 1981 ST a,e,i = 3.12, 0.05, 17 Elements MPC 14771

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 26.06	-04 11.1	2.579	3.269	126.9	14.0	16.6
1990	02 28	13 24.89	-03 12.4					
1990	03 10	13 21.80	-02 00.8	2.379	3.267	148.4	9.2	16.3
1990	03 20	13 17.03	-00 39.8					
1990	03 30	13 11.01	+00 45.9	2.278	3.264	169.2	3.3	15.9
1990	04 09	13 04.38	+02 10.0					
1990	04 19	12 57.82	+03 26.5	2.292	3.261	161.6	5.6	16.1
1990	04 29	12 51.99	+04 30.4					
1990	05 09	12 47.45	+05 18.2	2.416	3.257	140.3	11.4	16.4

1987 QL1 a,e,i = 2.38, 0.24, 4 Elements MPC 15247

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	02 18	13 33.05	-15 13.4	2.025	2.674	121.2	18.4	18.0
1990	02 28	13 32.10	-15 34.2					
1990	03 10	13 28.44	-15 39.2	1.777	2.631	142.0	13.4	17.5
1990	03 20	13 22.18	-15 27.0					
1990	03 30	13 13.74	-14 57.0	1.610	2.586	164.4	6.0	17.0
1990	04 09	13 03.95	-14 11.4					
1990	04 19	12 53.92	-13 15.0	1.548	2.538	167.4	5.0	16.8
1990	04 29	12 44.79	-12 14.6					
1990	05 09	12 37.59	-11 18.0	1.593	2.488	145.0	13.5	17.2