The MINOR PLANET CIRCULARS/MINOR PLANETS AND COMETS are published, on behalf of Commission 20 of the International Astronomical Union, usually in batches on the date of each full moon, by:

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

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N Obs.
1989 CF1	1989 02	12.37257	09 25 53.50	+21 18 15.2	MPC14291		1 675
1989 CE2	1989 03	01.23611	09 28 15.34	+05 53 18.8	MPC14291	17.0	675
1989 CE2	1989 03	01.26806	09 28 12.44	+05 53 07.8	MPC14291		675

Note 1: time corrected.

* * * * *

DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Obs.
1988 XW *	1988 12	09.98611	03 44 29.38	+19 56 16.0	MPC14088	010
1988 XW	1988 12	10.04410	03 44 26.00	+19 55 01.3	MPC14088	010

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 14231.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1970 NM *	1970 07	11.88455	17 20 31.72	-12 02 59.9	1970 LC	16.5	095
1979 PM *	1979 08	01.91155	19 23 16.25	-05 05 50.0	1979 OO1	16.5	095
1981 TQ4 *	1981 10	07.99303	02 07 40.31	+08 27 45.4	1981 SK5	17.0	095
1982 DW6 *	1982 02	27.97367	10 50 22.14	+08 11 32.5	1982 DD5		010

* * * * *

IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 14231.

	Note		Note
1939 GV = (2084)	1	1988 XB1 = (3908)	2

Note 1: identification by G. Williams. 2: identification by F. N. Bowman.

IDENTIFICATIONS WITH COMETS.

S. Nakano has shown that the following objects given minor-planet designations can be identified with comets (cf. MPC 12853):

1982 YG3 = P/Smirnova-Chernykh
1986 TF = P/Parker-Hartley

Note: further observations of P/Parker-Hartley, a new comet given the preliminary designation 1989i, appear on MPC 14386-14387. The comet has also been given the Roman numeral designation 1987 XXXVI (see also the list of Roman numerals for 1987 on MPC 13925-13926).

* * * * *

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

010 Caussols. 0.9-m Schmidt. Observer A. Maury. Measured by R. Chemin.
026 Zimmerwald. 0.4-m Schmidt. Observer P. Wild.
046 Klet. Observers A. Mrkos and Z. Vavrova.
061 Uzhgorod. 0.42-m astrograph. Observers I. I. Goroshchak, T. Yu. Galas and E. I. Skrip. From Kiev Komet. Tsirk.
084 Pulkovo. Observers A. A. Kiselev, O. P. Bykov, T. P. Kiseleva, O. A. Kalinichenko, A. E. Evtsokimov, N. M. Bronnikova and V. V. Bobylev. From Kiev Komet. Tsirk.
086 Odessa. Observers L. Ya. Skoblikova, Yu. M. Gorbanev and B. F. Lemeshchenko. From Kiev Komet. Tsirk.
101 Kharkov. 0.16-m f/4.5 astrograph and 0.20-m f/15 refractor. Observers P. P. Pavlenko, R. V. Ponomarenko, V. V. Usenko, I. Yu. Kolesnikova, G. V. Krishtal’ and E. V. Puban. From Kiev Komet. Tsirk.
105 Moscow. 0.23-m astrograph. Observers B. S. Vozdvizhenskij and V. A. Eliseev. From Kiev Komet. Tsirk.
136 Engelhardt Observatory, Kasan. 0.35-m telescope. Observers S. S. Tokhtas’ev, S. K. Fomin and I. A. Dubyago. From Kiev Komet. Tsirk.
391 Sendai Observatory, Ayashi Station. 0.20-m reflector. Observer M. Koishikawa.
402 Dynic Astronomical Observatory. Observer A. Sugie.
405 Kamihoriguchi. O.30-m f/3.8 reflector. Observers H. Shimoda and K. Kanai. Measured by K. Kanai.
413 Siding Spring. U.K. Schmidt and Uppsala Southern Schmidt. Observers M. Hartley, R. H. McNaught, D. Olsson-Steel and Q. A. Parker. Measured by R. H. McNaught.
474 Mount John University Observatory. 0.6-m reflector. Observers A. C. Gilmore and P. M. Kilmartin.
503 Cambridge. Observer J. D. Shanklin.
675 Palomar. 0.46-m Schmidt. Observers E. Helin, H. E. Holt, B. Roman, C. S. Shoemaker and E. M. Shoemaker.
801 Oak Ridge Observatory. Observers R. E. McCrosky and C.-Y. Shao.
809 European Southern Observatory. Observer R. M. West.
887 Ojima. 0.30-m f/5.8 reflector. Observers T. Niijima and K. Kanai. Measured by K. Kanai.
892 YGCO Nagano Station. 0.25-m f/4.0 reflector. Observer S. Hayakawa.
897 YGCO Chiyoda Observatory. 0.25-m f/3.4 Wright-Schmidt camera. Observer T. Kojima.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Comet Shoemaker (1985 XII)					
/1985 XII	1984	09 24.99918	15 21 47.72	-01 40 58.0			801
		Periodic Comet Halley					
/1986 III	1989	01 01.21377	09 59 31.96	-07 50 54.1			809
/1986 III	1989	01 04.30458	09 58 30.78	-07 50 21.5			809
/1986 III	1989	01 04.32652	09 58 30.33	-07 50 21.1			809
/1986 III	1989	01 06.18317	09 57 52.13	-07 49 45.9			809
/1986 III	1989	01 06.20453	09 57 51.70	-07 49 44.6			809
/1986 III	1989	01 06.26858	09 57 50.34	-07 49 43.5			809
/1986 III	1989	01 06.33264	09 57 49.01	-07 49 42.3			809
/1986 III	1989	01 06.35080	09 57 48.63	-07 49 41.9			809
/1986 III	1989	01 07.17345	09 57 31.27	-07 49 21.9			809
/1986 III	1989	01 07.19488	09 57 30.82	-07 49 21.8			809
/1986 III	1989	01 07.24877	09 57 29.67	-07 49 20.4			809
/1986 III	1989	01 07.31653	09 57 28.25	-07 49 19.2			809
/1986 III	1989	01 07.34334	09 57 27.72	-07 49 18.8			809
/1986 III	1989	01 08.16318	09 57 10.15	-07 48 55.7			809
/1986 III	1989	01 08.18503	09 57 09.65	-07 48 55.0			809
/1986 III	1989	01 08.25561	09 57 08.13	-07 48 53.3			809
/1986 III	1989	01 08.32042	09 57 06.72	-07 48 51.1			809
/1986 III	1989	01 08.34203	09 57 06.25	-07 48 50.9			809
/1986 III	1989	01 09.27847	09 56 45.95	-07 48 22.5			809
		Comet Bradfield (1987 XXIX)					
/1987 XXIX	1987	10 09.68598	16 13 40.37	-08 49 57.9			061
/1987 XXIX	1987	10 09.69215	16 13 40.87	-08 49 50.5			061
/1987 XXIX	1987	10 09.69668	16 13 42.36	-08 49 42.5			061
/1987 XXIX	1987	10 10.67860	16 16 36.20	-08 30 55.7			061
/1987 XXIX	1987	10 10.68465	16 16 37.25	-08 30 55.1			061
/1987 XXIX	1987	10 10.69063	16 16 38.46	-08 30 43.7			061
/1987 XXIX	1987	10 10.69617	16 16 39.75	-08 30 40.5			061
/1987 XXIX	1987	10 19.66830	16 44 36.91	-05 25 10.7			061
/1987 XXIX	1987	10 19.67344	16 44 38.44	-05 24 58.6			061
/1987 XXIX	1987	10 19.68191	16 44 39.39	-05 24 59.0			061
/1987 XXIX	1987	10 21.67022	16 51 14.01	-04 39 55.3			061
/1987 XXIX	1987	10 21.67694	16 51 14.91	-04 39 40.8			061
/1987 XXIX	1987	10 21.68226	16 51 16.06	-04 39 30.8			061
/1987 XXIX	1987	12 09.71398	20 47 52.36	+19 54 19.3			061
/1987 XXIX	1987	12 09.71642	20 47 53.74	+19 54 20.7			061
/1987 XXIX	1987	12 09.71757	20 47 53.55	+19 54 22.7			061
/1987 XXIX	1987	12 09.71855	20 47 54.29	+19 54 25.3			061
/1987 XXIX	1987	12 10.67787	20 54 37.05	+20 21 29.6			061
/1987 XXIX	1987	12 10.67865	20 54 37.23	+20 21 32.4			061
/1987 XXIX	1987	12 10.67948	20 54 37.60	+20 21 33.6			061
/1987 XXIX	1987	12 10.68027	20 54 37.90	+20 21 35.6			061
/1987 XXIX	1987	12 15.60312	21 29 58.92	+22 26 50.0			136
/1987 XXIX	1987	12 18.60208	21 51 59.25	+23 30 11.5			136
/1987 XXIX	1987	12 23.68204	22 29 13.27	+24 52 52.2			086
/1987 XXIX	1987	12 23.71381	22 29 26.87	+24 53 15.5			086
/1987 XXIX	1987	12 23.72983	22 29 34.28	+24 53 32.6			061
/1987 XXIX	1987	12 23.73957	22 29 38.13	+24 53 42.6			061
/1987 XXIX	1987	12 23.74390	22 29 40.29	+24 53 42.6			061
/1987 XXIX	1987	12 23.74726	22 29 41.79	+24 53 42.9			061
/1987 XXIX	1987	12 23.75062	22 29 43.04	+24 53 50.1			061
/1987 XXIX	1987	12 23.77829	22 29 55.29	+24 54 03.9			086
/1987 XXIX	1987	12 23.82359	22 30 14.74	+24 54 39.1			086

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/1987 XXIX 1987 12 24.70863  22 36 39.24  +25 05 44.3                    086
/1987 XXIX 1987 12 24.74140  22 36 53.14  +25 06 07.6                    086
/1987 XXIX 1987 12 24.79433  22 37 16.00  +25 06 43.7                    086
/1987 XXIX 1987 12 24.85024  22 37 39.77  +25 07 19.2                    086
/1987 XXIX 1987 12 25.72480  22 43 56.54  +25 17 12.1                    086
/1987 XXIX 1987 12 25.76905  22 44 15.88  +25 17 40.4                    086
/1987 XXIX 1987 12 25.80386  22 44 30.47  +25 18 00.2                    086
/1987 XXIX 1987 12 25.86969  22 44 58.34  +25 18 38.5                    086
/1987 XXIX 1987 12 29.68938  23 11 44.45  +25 50 44.0                    086
/1987 XXIX 1987 12 29.76201  23 12 14.22  +25 51 12.0                    086
/1987 XXIX 1987 12 29.80406  23 12 31.37  +25 51 26.1                    086
/1987 XXIX 1987 12 31.77938  23 25 51.51  +26 01 32.8                    086
/1987 XXIX 1987 12 31.80924  23 26 03.21  +26 01 44.5                    086
/1987 XXIX 1987 12 31.84172  23 26 15.81  +26 01 50.3                    086
/1987 XXIX 1988 01 07.73038  00 09 29.33  +26 11 27.4                    086
/1987 XXIX 1988 01 07.77456  00 09 44.72  +26 11 26.0                    086
/1987 XXIX 1988 01 07.80384  00 09 55.30  +26 11 19.5                    086
/1987 XXIX 1988 01 08.61845  00 14 40.84  +26 10 18.9                    084
/1987 XXIX 1988 01 08.62330  00 14 42.27  +26 10 17.3                    084
/1987 XXIX 1988 01 08.64165  00 14 48.15  +26 10 16.7                    084
/1987 XXIX 1988 01 15.74988  00 53 01.08  +25 48 40.0                    086
/1987 XXIX 1988 01 15.79430  00 53 14.29  +25 48 30.1                    086
/1987 XXIX 1988 01 16.71630  00 57 46.52  +25 44 32.7                    086
/1987 XXIX 1988 01 16.73950  00 57 54.60  +25 44 27.3                    086
/1987 XXIX 1988 01 17.64720  01 02 16.67  +25 40 20.6                    136
/1987 XXIX 1988 01 20.73264  01 16 33.23  +25 25 25.1                    061
/1987 XXIX 1988 01 20.73420  01 16 33.65  +25 25 25.0                    061
/1987 XXIX 1988 01 20.74005  01 16 35.16  +25 25 24.5                    061
/1987 XXIX 1988 01 25.65558  01 37 29.39  +24 59 47.0                    084
/1987 XXIX 1988 01 25.66320  01 37 31.06  +24 59 46.5                    084
/1987 XXIX 1988 01 27.66189  01 45 25.52  +24 49 06.2                    084
/1987 XXIX 1988 01 30.68205  01 56 47.39  +24 33 07.0                    084
/1987 XXIX 1988 01 30.68793  01 56 49.17  +24 33 05.8                    084
/1987 XXIX 1988 02 11.66007  02 36 05.54  +23 34 21.6                    136
/1987 XXIX 1988 02 14.67056  02 44 47.76  +23 21 16.1                    136
/1987 XXIX 1988 02 21.73619  03 03 48.20  +22 53 27.7                    086
/1987 XXIX 1988 02 21.74808  03 03 49.87  +22 53 24.8                    086
/1987 XXIX 1988 02 21.77778  03 03 54.70  +22 53 14.4                    086
/1987 XXIX 1988 02 21.79833  03 03 57.60  +22 53 09.6                    086
/1987 XXIX 1988 02 21.82104  03 04 01.09  +22 53 10.8                    086
/1987 XXIX 1988 02 22.83883  03 06 36.29  +22 49 33.7                    086
/1987 XXIX 1988 02 22.85521  03 06 38.96  +22 49 26.0                    086
/1987 XXIX 1988 03 09.70799  03 43 19.54  +22 00 20.7                    136
/1987 XXIX 1988 03 10.71042  03 45 27.02  +21 57 42.0                    136
/1987 XXIX 1988 03 13.80758  03 51 54.44  +21 49 41.6                    086
/1987 XXIX 1988 03 13.82518  03 51 56.71  +21 49 41.3                    086
/1987 XXIX 1988 03 19.72569  04 03 47.81  +21 35 17.6                    136

                Comet McNaught (1987 XXXII)
/1987 XXXII1988 02 22.77948  21 07 28.53  +52 04 48.0                    086
/1987 XXXII1988 02 22.79545  21 07 34.15  +52 05 29.6                    086

                Periodic Comet Parker-Hartley
/1987 XXXVI1989 02 11.63317  10 52 05.32  -00 04 23.6                    413
/1987 XXXVI1989 02 11.75817  10 52 02.52  -00 04 11.3                    413
/1987 XXXVI1989 03 02.53721  10 40 44.30  +01 00 49.3          16.5T     413
/1987 XXXVI1989 03 02.58929  10 40 42.33  +01 01 01.2                    413
/1987 XXXVI1989 03 03.45745  10 40 10.36  +01 04 29.1          17  N     474
/1987 XXXVI1989 03 03.50497  10 40 08.45  +01 04 41.2                    474
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/1987	XXXVI	1989	03	04.50549	10	39	31.78	+01	08	37.9		474
/1987	XXXVI	1989	03	04.53384	10	39	30.72	+01	08	44.6		474
/1987	XXXVI	1989	03	04.69412	10	39	24.72	+01	09	22.5		413
/1987	XXXVI	1989	03	05.58784	10	38	52.07	+01	12	57.4	18 T	413
/1987	XXXVI	1989	03	06.04306	10	38	35.31	+01	14	47.1		010
/1987	XXXVI	1989	03	06.06389	10	38	34.72	+01	14	50.3		010
/1987	XXXVI	1989	03	08.60203	10	37	02.97	+01	25	05.6	17 T	897
/1987	XXXVI	1989	03	08.64375	10	37	00.87	+01	25	19.3		897

Periodic Comet Shoemaker-Holt 1

/1987z		1987	12	21.83542	00	56	59.72	+06	11	21.7		026

Comet Liller (1988a)

/1988a		1988	04	25.82416	01	58	50.67	+61	00	40.8		105
/1988a		1988	04	25.82563	01	58	51.26	+61	00	46.1		105
/1988a		1988	04	25.83175	01	58	53.48	+61	01	10.2		105
/1988a		1988	04	25.83259	01	58	53.77	+61	01	13.9		105
/1988a		1988	04	25.83329	01	58	53.91	+61	01	17.0		105
/1988a		1988	04	25.83399	01	58	54.28	+61	01	20.0		105
/1988a		1988	04	25.83493	01	58	54.65	+61	01	24.0		105
/1988a		1988	04	25.83715	01	58	55.12	+61	01	32.5		105
/1988a		1988	04	25.83795	01	58	55.85	+61	01	36.8		105
/1988a		1988	04	25.83875	01	58	56.20	+61	01	42.8		105
/1988a		1988	04	25.83954	01	58	56.51	+61	01	44.1		105
/1988a		1988	04	25.84031	01	58	56.82	+61	01	45.8		105
/1988a		1988	04	25.84112	01	58	56.92	+61	01	50.3		105
/1988a		1988	04	25.84194	01	58	57.25	+61	01	53.4		105
/1988a		1988	04	27.83150	02	11	49.15	+63	19	06.0		105
/1988a		1988	04	27.83264	02	11	49.82	+63	19	11.6		105
/1988a		1988	04	27.83397	02	11	50.35	+63	19	16.0		105
/1988a		1988	04	27.83515	02	11	50.84	+63	19	20.2		105
/1988a		1988	04	29.81850	02	27	13.11	+65	33	56.4		105
/1988a		1988	04	29.81956	02	27	13.56	+65	34	02.2		105
/1988a		1988	04	29.82059	02	27	14.04	+65	34	03.6		105
/1988a		1988	04	29.82161	02	27	14.93	+65	34	08.5		105
/1988a		1988	04	29.82263	02	27	15.50	+65	34	11.3		105
/1988a		1988	04	29.82583	02	27	17.22	+65	34	27.2		105
/1988a		1988	04	29.82829	02	27	18.24	+65	34	35.5		105
/1988a		1988	04	29.82932	02	27	18.80	+65	34	39.7		105
/1988a		1988	04	29.83036	02	27	19.44	+65	34	44.5		105
/1988a		1988	04	29.83137	02	27	19.99	+65	34	48.0		105
/1988a		1988	04	29.83240	02	27	20.47	+65	34	51.2		105
/1988a		1988	04	29.83341	02	27	20.93	+65	34	56.2		105
/1988a		1988	04	29.83614	02	27	22.19	+65	35	07.9		105
/1988a		1988	04	29.83715	02	27	22.72	+65	35	10.3		105
/1988a		1988	04	29.83817	02	27	23.40	+65	35	15.8		105
/1988a		1988	04	29.83920	02	27	23.93	+65	35	17.8		105
/1988a		1988	04	29.84024	02	27	24.29	+65	35	23.9		105
/1988a		1988	04	29.84126	02	27	25.26	+65	35	27.3		105
/1988a		1988	04	29.84283	02	27	25.76	+65	35	28.3		105
/1988a		1988	04	29.93652	02	28	14.35	+65	41	48.8		084
/1988a		1988	04	29.94287	02	28	17.56	+65	42	13.3		084
/1988a		1988	04	29.95153	02	28	22.14	+65	42	49.0		084
/1988a		1988	04	29.95510	02	28	23.98	+65	43	03.3		084
/1988a		1988	04	29.96018	02	28	26.66	+65	43	23.7		084
/1988a		1988	04	29.97079	02	28	32.07	+65	44	05.6		084
/1988a		1988	04	30.81738	02	36	08.70	+66	40	13.7		105
/1988a		1988	04	30.81874	02	36	09.26	+66	40	19.0		105
/1988a		1988	04	30.82146	02	36	10.98	+66	40	30.3		105

/1988a	1988	04	30.82422	02	36	12.52	+66	40	38.9	105
/1988a	1988	04	30.82665	02	36	14.05	+66	40	50.8	105
/1988a	1988	04	30.82982	02	36	15.72	+66	41	02.7	105
/1988a	1988	04	30.83228	02	36	17.15	+66	41	11.8	105
/1988a	1988	04	30.83424	02	36	18.23	+66	41	20.4	105
/1988a	1988	04	30.83729	02	36	19.91	+66	41	32.1	105
/1988a	1988	04	30.83833	02	36	20.49	+66	41	35.6	105
/1988a	1988	04	30.83934	02	36	20.91	+66	41	38.9	105
/1988a	1988	04	30.84041	02	36	21.61	+66	41	42.5	105
/1988a	1988	04	30.84153	02	36	22.50	+66	41	49.0	105
/1988a	1988	04	30.84252	02	36	23.06	+66	41	54.1	105
/1988a	1988	04	30.84350	02	36	23.56	+66	41	56.2	105
/1988a	1988	05	01.90686	02	46	56.09	+67	50	52.9	084
/1988a	1988	05	01.90893	02	46	57.34	+67	51	00.8	084
/1988a	1988	05	01.91101	02	46	58.66	+67	51	09.7	084
/1988a	1988	05	01.91309	02	46	59.98	+67	51	16.9	084
/1988a	1988	05	01.92175	02	47	05.51	+67	51	51.0	084
/1988a	1988	05	03.83360	03	09	09.36	+69	49	58.0	086
/1988a	1988	05	03.85441	03	09	26.41	+69	51	13.1	086
/1988a	1988	05	03.88900	03	09	52.21	+69	53	19.2	086
/1988a	1988	05	04.79901	03	22	02.67	+70	45	55.0	105
/1988a	1988	05	04.80058	03	22	04.01	+70	45	59.1	105
/1988a	1988	05	04.80143	03	22	05.44	+70	46	03.4	105
/1988a	1988	05	04.80295	03	22	07.25	+70	46	09.6	105
/1988a	1988	05	04.80696	03	22	09.57	+70	46	19.5	105
/1988a	1988	05	04.80852	03	22	10.80	+70	46	26.0	105
/1988a	1988	05	04.81004	03	22	11.76	+70	46	30.1	105
/1988a	1988	05	04.81158	03	22	13.69	+70	46	37.3	105
/1988a	1988	05	04.81305	03	22	15.02	+70	46	40.9	105
/1988a	1988	05	04.81807	03	22	18.80	+70	46	56.3	105
/1988a	1988	05	04.81966	03	22	20.25	+70	47	00.8	105
/1988a	1988	05	04.82122	03	22	21.68	+70	47	07.9	105
/1988a	1988	05	04.82271	03	22	22.94	+70	47	12.1	105
/1988a	1988	05	06.81626	03	53	22.99	+72	31	16.3	086
/1988a	1988	05	06.87374	03	54	21.81	+72	33	58.1	084
/1988a	1988	05	06.88138	03	54	29.77	+72	34	19.5	084
/1988a	1988	05	06.88346	03	54	31.92	+72	34	24.9	084
/1988a	1988	05	06.88623	03	54	34.72	+72	34	32.9	084
/1988a	1988	05	06.88831	03	54	36.95	+72	34	38.7	084
/1988a	1988	05	06.89355	03	54	42.59	+72	34	54.7	086
/1988a	1988	05	06.96663	03	55	58.15	+72	38	18.5	086
/1988a	1988	05	09.97007	04	55	16.14	+74	31	23.5	086
/1988a	1988	05	10.01242	04	56	11.52	+74	32	31.3	086
/1988a	1988	05	10.80413	05	14	01.25	+74	51	09.4	105
/1988a	1988	05	10.80570	05	14	03.45	+74	51	10.7	105
/1988a	1988	05	10.80723	05	14	05.49	+74	51	10.4	105
/1988a	1988	05	10.80874	05	14	07.35	+74	51	13.8	105
/1988a	1988	05	10.81025	05	14	09.06	+74	51	15.0	105
/1988a	1988	05	10.81234	05	14	12.16	+74	51	19.1	105
/1988a	1988	05	11.88202	05	39	21.15	+75	07	46.9	084
/1988a	1988	05	11.88548	05	39	25.12	+75	07	48.8	084
/1988a	1988	05	11.88756	05	39	29.15	+75	07	50.4	084
/1988a	1988	05	11.89033	05	39	33.04	+75	07	52.2	084
/1988a	1988	05	11.90245	05	39	50.69	+75	07	59.4	084
/1988a	1988	05	12.80156	06	01	32.02	+75	13	41.4	105
/1988a	1988	05	12.80304	06	01	35.07	+75	13	43.7	105
/1988a	1988	05	12.80482	06	01	37.25	+75	13	42.8	105
/1988a	1988	05	12.80781	06	01	41.73	+75	13	45.8	105
/1988a	1988	05	12.81124	06	01	45.93	+75	13	43.6	105

/1988a	1988	05	12.81271	06	01	48.52	+75	13	43.4	105
/1988a	1988	05	12.81419	06	01	50.34	+75	13	43.1	105
/1988a	1988	05	12.81566	06	01	52.88	+75	13	43.0	105
/1988a	1988	05	12.81743	06	01	55.13	+75	13	43.5	105
/1988a	1988	05	12.81861	06	01	57.03	+75	13	43.1	105
/1988a	1988	05	12.89154	06	03	43.54	+75	13	49.4	084
/1988a	1988	05	12.89916	06	03	54.65	+75	13	49.6	084
/1988a	1988	05	12.90677	06	04	05.83	+75	13	49.8	084
/1988a	1988	05	12.91024	06	04	10.83	+75	13	50.0	084
/1988a	1988	05	12.93455	06	04	46.19	+75	13	50.8	105
/1988a	1988	05	12.93585	06	04	48.28	+75	13	49.0	105
/1988a	1988	05	12.93776	06	04	51.03	+75	13	51.6	105
/1988a	1988	05	12.93937	06	04	53.72	+75	13	51.2	105
/1988a	1988	05	12.94120	06	04	56.78	+75	13	52.2	105
/1988a	1988	05	12.94855	06	05	08.17	+75	13	50.4	105
/1988a	1988	05	12.95006	06	05	09.79	+75	13	52.6	105
/1988a	1988	05	12.95144	06	05	10.59	+75	13	49.7	105
/1988a	1988	05	12.95259	06	05	12.90	+75	13	50.0	105
/1988a	1988	05	12.95432	06	05	15.41	+75	13	52.5	105
/1988a	1988	05	13.95359	06	29	31.91	+75	09	52.7	086
/1988a	1988	05	13.98745	06	30	20.10	+75	09	42.3	086
/1988a	1988	05	14.02096	06	31	07.71	+75	09	16.2	086
/1988a	1988	05	14.81013	06	49	55.56	+74	59	10.5	105
/1988a	1988	05	14.81172	06	49	57.97	+74	59	08.1	105
/1988a	1988	05	14.81326	06	50	00.20	+74	59	06.7	105
/1988a	1988	05	14.81777	06	50	06.27	+74	59	02.6	105
/1988a	1988	05	14.81939	06	50	08.88	+74	59	00.2	105
/1988a	1988	05	14.82091	06	50	10.91	+74	58	59.1	105
/1988a	1988	05	14.82253	06	50	12.88	+74	58	58.1	105
/1988a	1988	05	14.88243	06	51	37.50	+74	57	56.6	084
/1988a	1988	05	14.88658	06	51	43.24	+74	57	52.8	084
/1988a	1988	05	14.89074	06	51	49.17	+74	57	48.1	084
/1988a	1988	05	14.89938	06	52	01.51	+74	57	38.8	084
/1988a	1988	05	15.00974	06	54	37.35	+74	55	39.2	086
/1988a	1988	05	15.02693	06	55	01.66	+74	55	21.9	086
/1988a	1988	05	15.89271	07	14	51.58	+74	36	15.4	084
/1988a	1988	05	15.90067	07	15	02.40	+74	36	03.5	084
/1988a	1988	05	15.90898	07	15	13.59	+74	35	50.2	084
/1988a	1988	05	16.81498	07	34	58.88	+74	09	09.5	105
/1988a	1988	05	16.81646	07	35	00.50	+74	09	05.6	105
/1988a	1988	05	16.81796	07	35	02.35	+74	09	02.5	105
/1988a	1988	05	16.81944	07	35	04.45	+74	09	00.1	105
/1988a	1988	05	16.82111	07	35	06.26	+74	08	56.1	105
/1988a	1988	05	16.82419	07	35	10.69	+74	08	50.3	105
/1988a	1988	05	16.82570	07	35	11.89	+74	08	48.5	105
/1988a	1988	05	16.82719	07	35	14.74	+74	08	45.4	105
/1988a	1988	05	16.82867	07	35	16.27	+74	08	42.0	105
/1988a	1988	05	16.83014	07	35	18.27	+74	08	39.5	105
/1988a	1988	05	16.83163	07	35	19.94	+74	08	35.9	105
/1988a	1988	05	16.91123	07	37	01.05	+74	05	54.9	084
/1988a	1988	05	16.91538	07	37	06.30	+74	05	46.5	084
/1988a	1988	05	16.91954	07	37	11.57	+74	05	37.9	084
/1988a	1988	05	16.92542	07	37	18.97	+74	05	25.9	084
/1988a	1988	05	28.83885	10	10	19.17	+62	24	00.8	101
/1988a	1988	05	28.84382	10	10	21.28	+62	23	40.4	101
/1988a	1988	05	28.84913	10	10	23.45	+62	23	14.1	101
/1988a	1988	05	30.83407	10	23	08.99	+60	04	16.0	101
/1988a	1988	05	30.84217	10	23	11.30	+60	03	40.5	101
/1988a	1988	06	02.82964	10	39	03.17	+56	35	35.6	101

/1988a	1988	06	02.83727	10	39	05.59	+56	35	01.7				101
/1988a	1988	06	02.84492	10	39	07.33	+56	34	29.4				101
/1988a	1988	06	02.85324	10	39	10.12	+56	33	58.9				101
			Comet Shoemaker-Holt-Rodriquez (1988h)										
/1988h	1989	03	09.78958	20	56	36.10	-33	55	25.8	13	T	1	413
/1988h	1989	03	19.78690	21	11	53.50	-36	14	16.1				413
			Comet Yanaka (1989a)										
/1989a	1989	01	30.99236	14	38	16.55	+20	21	35.7				046
/1989a	1989	01	30.99676	14	38	16.91	+20	21	42.2				046
/1989a	1989	01	31.98333	14	39	48.22	+20	47	17.4				046
/1989a	1989	01	31.98773	14	39	48.64	+20	47	26.0				046
/1989a	1989	02	07.96458	14	49	55.56	+23	52	12.2				046
/1989a	1989	02	07.96944	14	49	56.09	+23	52	20.6				046
/1989a	1989	03	06.99589	15	16	10.36	+35	55	00.3	15.6	T		046
/1989a	1989	03	07.00058	15	16	10.30	+35	55	07.2				046
/1989a	1989	03	07.98481	15	16	40.92	+36	19	50.9				046
/1989a	1989	03	07.98924	15	16	41.06	+36	19	57.0				046
/1989a	1989	03	10.74722	15	17	56.19	+37	27	59.2	15	T		897
/1989a	1989	03	10.78750	15	17	56.87	+37	28	57.9				897
/1989a	1989	03	10.37883	15	17	46.95	+37	19	01.0			2	801
/1989a	1989	03	11.36069	15	18	10.66	+37	42	52.0				801
			Periodic Comet Helin-Roman-Crockett										
/1989b	1989	01	25.79671	08	21	51.67	+22	39	05.7				046
/1989b	1989	01	25.81083	08	21	51.04	+22	39	08.5				046
/1989b	1989	01	26.82141	08	21	07.01	+22	42	19.4				046
/1989b	1989	01	26.83553	08	21	06.34	+22	42	23.3				046
/1989b	1989	01	27.80961	08	20	24.18	+22	45	23.1				046
/1989b	1989	01	27.82245	08	20	23.66	+22	45	26.6				046
/1989b	1989	01	31.84236	08	17	31.87	+22	57	28.9				046
/1989b	1989	02	01.81053	08	16	50.54	+23	00	20.9				046
/1989b	1989	02	01.82459	08	16	49.91	+23	00	25.2				046
/1989b	1989	02	25.77433	08	03	26.32	+23	48	37.2	15.9	T		046
/1989b	1989	02	25.78839	08	03	25.99	+23	48	38.9				046
/1989b	1989	03	01.24375	08	02	15.97	+23	52	05.7	17.0	T		675
/1989b	1989	03	03.08475	08	01	44.54	+23	53	34.9				801
/1989b	1989	03	05.17847	08	01	13.79	+23	54	54.6				675
/1989b	1989	03	05.85348	08	01	04.91	+23	55	17.2	16.2	T		046
/1989b	1989	03	05.86870	08	01	04.79	+23	55	17.6				046
/1989b	1989	03	08.50984	08	00	35.51	+23	56	26.0	16	T		897
/1989b	1989	03	10.05593	08	00	22.76	+23	56	51.6				801
			Periodic Comet Bradfield 2										
/1989c	1989	03	10.40249	01	17	27.71	-21	15	45.9			3	413
			Comet Shoemaker (1989e)										
/1989e	1989	02	02.86597	09	39	45.88	+33	13	54.6				046
/1989e	1989	02	02.87083	09	39	45.52	+33	14	07.8				046
/1989e	1989	02	07.91597	09	28	52.57	+36	41	33.8				046
/1989e	1989	02	07.92049	09	28	51.83	+36	41	45.8				046
/1989e	1989	02	08.89147	09	26	40.12	+37	20	21.4				046
/1989e	1989	02	08.89593	09	26	39.41	+37	20	34.6				046
/1989e	1989	02	25.81443	08	45	39.89	+46	49	24.4	16.4	T		046
/1989e	1989	02	25.82161	08	45	38.97	+46	49	32.8				046
/1989e	1989	03	01.47431	08	36	49.79	+48	22	36.2	15	T		897
/1989e	1989	03	01.49734	08	36	46.37	+48	23	11.5				897
/1989e	1989	03	05.82356	08	26	44.24	+49	59	41.9				046

/1989e	1989	03	05.83074	08	26	43.46	+49	59	47.4			046
/1989e	1989	03	08.48322	08	20	52.34	+50	52	07.9	15	T	897
/1989e	1989	03	10.22850	08	17	09.72	+51	23	53.4			801
/1989e	1989	03	11.95931	08	13	37.55	+51	53	21.4			503

Comet Shoemaker (1989f)

/1989f	1989	02	25.83370	08	51	25.91	+52	19	39.7	16.5	T	046
/1989f	1989	02	25.85135	08	51	25.89	+52	19	37.2			046
/1989f	1989	02	26.52442	08	51	23.37	+52	17	19.0	16	T	897
/1989f	1989	02	26.53993	08	51	23.25	+52	17	13.9	17	T	887
/1989f	1989	02	26.55208	08	51	23.24	+52	17	11.8			887
/1989f	1989	02	26.55486	08	51	23.38	+52	17	09.7			897
/1989f	1989	03	05.79301	08	51	46.09	+51	44	05.0			046
/1989f	1989	03	05.80713	08	51	46.19	+51	43	59.7			046

Periodic Comet Shoemaker-Holt 2

/1989j	1989	03	04.88889	10	48	27.38	+31	35	11.9	14	T 4	026
/1989j	1989	03	09.33680	10	45	22.88	+31	54	57.7			675
/1989j	1989	03	09.36892	10	45	21.55	+31	55	06.7	13	T	675
/1989j	1989	03	10.13321	10	44	50.88	+31	57	59.8		5	801
/1989j	1989	03	10.22847	10	44	47.31	+31	58	17.3			675
/1989j	1989	03	10.24942	10	44	46.02	+31	58	25.3		5	801
/1989j	1989	03	11.06285	10	44	13.56	+32	01	18.2		6	010
/1989j	1989	03	11.18400	10	44	09.02	+32	01	42.9		5	801
/1989j	1989	03	11.55914	10	43	54.33	+32	02	55.6	14	T	887
/1989j	1989	03	11.56898	10	43	53.82	+32	02	58.5			887
/1989j	1989	03	11.57836	10	43	53.49	+32	03	00.1			887
/1989j	1989	03	11.58698	10	43	53.20	+32	03	01.7	13	T	405
/1989j	1989	03	11.58819	10	43	53.07	+32	03	02.5			887
/1989j	1989	03	11.59583	10	43	52.93	+32	03	02.6			405
/1989j	1989	03	11.60347	10	43	52.60	+32	03	05.0			405
/1989j	1989	03	11.61146	10	43	52.26	+32	03	13.6	13	T	402
/1989j	1989	03	11.62465	10	43	51.59	+32	03	17.4	13	T	402
/1989j	1989	03	11.78507	10	43	45.03	+32	03	34.3	14	T	391
/1989j	1989	03	11.79444	10	43	44.64	+32	03	33.9			391
/1989j	1989	03	12.62301	10	43	12.65	+32	06	20.4	15	T 7	413
/1989j	1989	03	14.55000	10	41	59.62	+32	11	37.8			892
/1989j	1989	03	14.56319	10	41	59.23	+32	11	39.8			892
/1989j	1989	03	15.49583	10	41	25.10	+32	13	52.4			892
/1989j	1989	03	15.50972	10	41	24.36	+32	13	53.3			892
/1989j	1989	03	15.51597	10	41	24.48	+32	13	57.0			892
/1989j	1989	03	15.55417	10	41	23.18	+32	13	57.5	14	T	897
/1989j	1989	03	15.59358	10	41	21.53	+32	14	03.6			897

Note 1: comet strongly condensed; tail in p.a. 225 , curving to p.a. 280 at 5′ from head. 2: trailed image. 3: image very weak and totally diffuse; inkdot measured. 4: fanned tail 1′ long. 5: strongly condensed with coma; image slightly trailed. 6: faint tail 30" long between p.a. 217 and 290 . 7: diffuse with core, possibly trailed in p.a. 10 .

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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
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 outside reference star set
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						
Measurer R. Chemin						
0.9-m Schmidt telescope						
1989 BA1	1988 12	08.98611	03 44 29.38	+19 56 16.0	16.5V	010
1989 BA1	1988 12	09.02326	03 44 27.08	+19 55 19.5		010
1989 BA1	1988 12	09.04410	03 44 26.00	+19 55 01.3		010
1989 BA1	1988 12	09.06493	03 44 24.52	+19 54 43.1		010
1989 BA1	1988 12	13.86944	03 40 25.52	+18 13 41.5		010
1989 BA1	1988 12	13.91111	03 40 23.42	+18 12 50.5		010
026 Zimmerwald						
P. Wild, Astronomisches Institut der Universitat, Sidlerstrasse 5, CH-3012 Berne, Switzerland						
Observers P. Wild, T. Schildknecht						
Measurers P. Wild, U. Hugentobler						
0.4-m Schmidt telescope						
1986 SD	1986 09	27.89410	00 05 22.62	+02 56 35.3	16	026
1986 VG	1988 01	19.02153	09 36 12.50	+24 33 53.2	16	026
1988 RN7	1988 09	08.00000	23 21 23.29	-06 46 14.2	16.3	026
1988 RN7	1988 09	09.00625	23 20 26.61	-06 45 38.8	16.3	026
1988 RN7	1988 09	10.91458	23 18 39.14	-06 44 27.7	16.5	026
1988 SD	1988 09	09.00625	23 34 48.03	-07 24 36.2	15.8	026
1989 BA	1989 01	30.88681	08 47 49.06	+51 54 23.6	15.5	026

1989	BA	1989	01	31.97188	08	45	31.06	+51	34	16.9		16	026
1989	BA	1989	02	02.89861	08	41	32.79	+50	56	24.9			026
1989	BA	1989	02	03.03125	08	41	16.29	+50	53	44.7		15.8	026
1989	BA	1989	02	04.93021	08	37	31.46	+50	13	43.9			026
1989	BA	1989	02	07.03333	08	33	34.33	+49	26	45.6			026
1989	BA	1989	02	12.05972	08	25	10.94	+47	24	14.0		15.8	026
1989	BA	1989	03	04.83958	08	08	16.35	+37	38	47.0		16	026
1989	BA	1989	03	05.84444	08	08	08.56	+37	09	49.0		16	026
1989	BA	1989	03	26.84931	08	16	16.19	+27	42	12.5		16.5	026
1989	BA	1989	03	27.86146	08	17	04.92	+27	17	08.3		16.5	026
128		1988	02	14.07917	11	23	52.90	+13	41	20.4		12	026
279		1988	01	19.00208	06	05	45.57	+24	39	08.6		15.5	026
433		1988	10	14.87222	00	29	46.50	+38	42	05.1			026
433		1988	10	15.88715	00	27	38.58	+38	42	03.7			026
657		1988	01	19.00208	06	07	58.77	+27	54	00.6		15	026
876		1989	03	07.03125	12	55	29.70	+03	26	17.2		16	026
895		1988	09	06.84167	22	42	17.30	+32	10	45.8		14.3	026
895		1988	09	10.89722	22	38	53.94	+31	59	41.2		14.3	026
1031		1988	07	10.97326	18	11	16.32	-01	13	36.9		14	026
1052		1987	04	24.99097	12	19	43.04	+05	50	00.5		16	026
1052		1987	05	02.00000	12	15	36.06	+06	00	18.5		16.5	026
1112		1988	01	19.00208	06	08	40.38	+28	30	19.6		15	026
1222		1988	07	10.97326	18	23	17.25	-01	00	54.0		13.3	026
1222		1988	07	18.97083	18	17	04.30	-00	08	32.8		13.8	026
1275		1988	07	10.97326	18	08	44.69	-03	28	52.8		14.8	026
1334		1988	06	08.95208	14	24	22.94	+02	54	38.7		14.8	026
1351		1988	02	23.03750	10	50	56.85	+15	39	07.0		14.5	026
1422		1987	12	21.94722	05	31	22.94	+18	43	11.8		16	026
1494		1987	12	21.94722	05	45	05.58	+18	54	15.8		15	026
1571		1988	01	19.00208	06	04	58.13	+28	11	37.1		16.3	026
1582		1988	01	19.02153	09	36	41.59	+25	10	14.0		15.5	026
1685		1988	07	11.01319	22	27	10.39	+08	27	57.0			026
1685		1988	07	19.02778	22	54	22.22	+19	41	29.4		13.5	026
1685		1988	08	08.04826	02	09	32.45	+58	54	35.7			026
1687		1987	08	21.98194	21	10	05.78	-19	13	46.2		15.8	026
1687		1987	08	28.97118	21	04	59.49	-19	37	10.7		16	T 026
1748		1988	06	08.97153	16	37	03.45	-18	19	55.5		16	026
1748		1988	06	13.98681	16	33	30.28	-18	15	44.0			V 026
1748		1988	06	15.94271	16	32	09.63	-18	14	15.9		16.5	026
1768		1988	08	19.07396	00	35	20.96	+01	28	16.1		15.5	026
1768		1988	09	08.04514	00	28	02.88	+01	12	28.2		15	026
1768		1988	10	14.94444	23	57	18.71	-00	33	57.6		14.5	026
1776		1987	08	29.13333	23	00	14.65	-02	29	45.3		14.8	026
1776		1987	08	31.00208	22	58	59.99	-02	42	07.6		14.5	026
1883		1987	12	21.89722	03	26	45.12	+16	12	39.1		15	026
1938		1988	09	06.97118	22	50	42.27	-06	23	18.0		15.8	026
1938		1988	09	07.90903	22	49	49.41	-06	30	29.8		15.8	026
1938		1988	09	08.93472	22	48	51.88	-06	38	18.4		15.8	026
2001		1989	01	14.12083	09	47	27.11	+52	05	23.0		15.5	026
2001		1989	01	28.90139	09	18	09.34	+52	31	21.9			026
2001		1989	01	29.88472	09	15	56.15	+52	28	31.4		15	026
2001		1989	01	30.95278	09	13	30.45	+52	24	44.7			026
2001		1989	01	31.97188	09	11	11.06	+52	20	23.1			026
2001		1989	02	02.89861	09	06	47.93	+52	10	13.9			026
2001		1989	02	03.03125	09	06	29.15	+52	09	26.4		15.3	026
2001		1989	02	04.93021	09	02	11.20	+51	56	47.7			026
2001		1989	02	07.03333	08	57	28.90	+51	39	53.9			026
2001		1989	02	12.05972	08	46	46.31	+50	47	39.7		15.5	026
2002		1988	09	06.97118	22	47	44.26	-03	28	41.4		15.8	026

2002	1988	09	07.90903	22	46	58.00	-03	37	16.0	15.8		026
2002	1988	09	08.93472	22	46	07.33	-03	46	38.5	15.8		026
2029	1987	09	20.90174	23	15	40.12	+06	45	52.1	16.3		026
2038	1988	11	07.07569	04	10	10.77	+14	04	01.0	16		026
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2057	1988	09	08.00000	23	17	57.34	-05	45	34.2	15.8		026
2057	1988	09	09.00625	23	17	10.80	-05	49	52.8	15.8		026
2060	1987	12	21.94722	05	40	11.16	+17	03	47.4	17		026
2060	1988	01	08.83646	05	35	41.24	+17	01	54.8	17.5		026
2131	1988	09	07.85417	22	41	25.00	+53	48	47.9	14.8		026
2131	1988	09	10.88403	22	33	17.50	+54	30	47.9	14.8		026
2157	1986	09	27.89410	00	08	38.12	+04	36	52.2	16.3		026
2157	1986	09	29.92326	00	06	49.62	+04	30	48.3	16.5		026
2157	1986	10	01.95972	00	05	01.08	+04	24	37.0	16.3		026
2157	1986	10	04.01250	00	03	13.54	+04	18	21.2	16.3		026
2157	1986	10	06.86111	00	00	48.14	+04	09	40.7	16.5		026
2845	1988	09	08.00000	23	21	52.62	-08	57	09.4	16.3	d	026
2845	1988	09	09.00625	23	20	59.48	-09	06	37.9	16.3	d	026
2977	1988	09	08.04514	00	31	39.30	+00	58	56.9		F	026
2977	1988	09	09.04653	00	31	10.15	+00	49	45.5	15.5		026
3001	1989	01	14.07917	06	56	17.83	+28	45	02.7	14.8		026
3001	1989	02	02.91667	06	36	05.07	+25	31	38.1	15.3		026
3086	1989	01	14.07917	06	54	43.88	+31	27	31.9	15		026
3086	1989	02	02.91667	06	30	01.14	+26	58	04.4	15.5		026
3161	1988	09	08.00000	23	21	29.78	-06	02	39.1	16		026
3161	1988	09	09.00625	23	20	23.48	-06	03	08.5	16		026
3161	1988	10	04.91701	22	55	21.57	-05	59	34.6	16.3		026
3195	1988	09	07.90903	22	59	51.52	-05	01	57.6	16.5		026
3199	1988	09	06.90625	00	53	50.68	+46	11	19.6	14		026
3412	1988	09	06.97118	22	48	13.98	-04	07	03.4	16.3		026
3412	1988	09	07.90903	22	47	17.33	-04	11	23.7	16.3		026
3412	1988	09	08.93472	22	46	15.58	-04	16	08.6	16.3		026
3523	1988	02	17.89097	09	06	16.73	+33	53	47.7	15.5		026
3729	1987	08	20.06528	00	38	43.58	-02	01	57.8	15.5		026
3729	1987	08	29.11667	00	33	53.30	-01	34	33.6	15.5		026
3737	1988	01	19.00208	06	05	56.08	+26	27	17.0	15.8		026
3826	1988	02	14.96319	10	00	03.10	+03	36	29.8	16		026
3826	1988	02	17.04792	09	58	03.83	+03	50	24.7	16.5		026
3828	1988	02	14.96319	10	04	27.17	+02	41	09.4	16.3		026
3828	1988	02	17.04792	10	02	53.36	+02	50	15.2	16.3		026
3928	1988	09	08.02083	01	42	05.18	+15	16	47.3	16.8		026
3928	1988	09	09.06944	01	41	52.90	+15	17	02.8	16.8		026

033 Tautenburg
S. Marx, Karl Schwarzschild Observatorium, DDR-6901 Tautenburg,
Democratic Republic of Germany
Observer F. Borngen
1.3-m Schmidt telescope
SAOC

1988 VR1	1988	11	03.93715	03	19	11.97	+13	21	57.2	033
1988 VS1	1988	11	03.93715	03	22	23.47	+12	51	40.6	033
1988 VL7	1988	11	03.93715	03	16	14.65	+11	36	13.2	033
1988 VM7	1988	11	03.93715	03	16	32.31	+10	57	34.3	033
1988 VN7	1988	11	03.93715	03	18	17.85	+13	27	58.0	033
1988 VO7	1988	11	03.93715	03	20	20.23	+11	49	31.6	033
1988 VP7	1988	11	03.93715	03	23	14.18	+12	06	12.4	033
1988 VQ7	1988	11	03.93715	03	24	46.80	+12	03	06.4	033
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3394       1988 11 03.93715  03 22 00.10  +11 28 50.5                    033
```

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

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1952 HJ2   1989 01 29.89838  09 20 27.64  +17 00 33.1                    046
1952 HJ2   1989 01 29.91111  09 20 26.83  +17 00 35.9                    046
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1952 HJ2   1989 01 31.89132  09 18 50.64  +17 08 15.1                    046
1952 HJ2   1989 01 31.90370  09 18 49.99  +17 08 17.7                    046
1952 HJ2   1989 02 02.92917  09 17 09.79  +17 16 07.0                    046
1964 UC    1989 01 30.92361  09 29 15.22  +18 35 17.4                    046
1964 UC    1989 01 30.93652  09 29 14.09  +18 35 19.4                    046
1964 UC    1989 01 31.92297  09 28 06.68  +18 39 33.2                    046
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1964 UC    1989 02 01.87708  09 27 01.04  +18 43 42.1                    046
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1982	UD2	1989	01	31.92297	09	32	07.60	+18	36	12.5	046
1982	UD2	1989	01	31.93576	09	32	06.74	+18	36	16.0	046
1982	UD2	1989	02	01.87708	09	31	18.73	+18	40	12.5	046
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1985	GM	1989	01	27.80961	08	26	40.05	+22	12	10.9	046
1985	GM	1989	01	27.82245	08	26	39.36	+22	12	14.4	046
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1989	BH1	*	1989	01	26.85509	08	50	51.49	+11	04	27.6	16.7 046
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1989	BJ1		1989	01	30.82795	07	45	32.58	+18	46	02.5	046
1989	BJ1		1989	01	30.84068	07	45	31.87	+18	46	07.7	046
1989	BK1	*	1989	01	28.80729	07	54	26.16	+22	12	36.0	16.6 046
1989	BK1		1989	01	28.82141	07	54	25.26	+22	12	36.9	046
1989	BK1		1989	01	29.83380	07	53	35.31	+22	14	43.7	046
1989	BK1		1989	01	29.84653	07	53	34.71	+22	14	45.6	046
1989	BK1		1989	01	30.82795	07	52	46.34	+22	16	41.6	046

1989	BK1		1989	01	30.84068	07	52	45.90	+22	16	47.7		046
1989	BL1	*	1989	01	29.86620	08	54	10.31	+16	10	46.0	16.5	046
1989	BL1		1989	01	29.87905	08	54	09.41	+16	10	49.2		046
1989	BL1		1989	01	30.85920	08	53	07.08	+16	14	07.1		046
1989	BL1		1989	01	30.87332	08	53	06.39	+16	14	11.4		046
1989	BM1	*	1989	01	29.86620	08	54	15.54	+17	44	14.9	16.2	046
1989	BM1		1989	01	29.87905	08	54	14.82	+17	44	16.4		046
1989	BM1		1989	01	30.85920	08	53	08.10	+17	45	27.2		046
1989	BM1		1989	01	30.87332	08	53	07.15	+17	45	27.3		046
1989	BM1		1989	02	01.84375	08	50	53.53	+17	47	39.5		046
1989	BM1		1989	02	01.85648	08	50	52.43	+17	47	40.5		046
1989	BN1	*	1989	01	29.86620	08	55	27.46	+13	24	42.2	17.2	046
1989	BN1		1989	01	29.87905	08	55	26.77	+13	24	47.0		046
1989	BN1		1989	01	30.85920	08	54	34.01	+13	32	17.6		046
1989	BN1		1989	01	30.87332	08	54	33.30	+13	32	26.5		046
1989	BN1		1989	01	31.86042	08	53	40.29	+13	40	01.1		046
1989	BN1		1989	01	31.87315	08	53	39.51	+13	40	06.8		046
1989	BN1		1989	02	01.84375	08	52	47.20	+13	47	38.1		046
1989	BN1		1989	02	01.85648	08	52	46.45	+13	47	43.1		046
1989	BO1	*	1989	01	29.86620	08	55	39.02	+17	17	04.3	17.2	046
1989	BO1		1989	01	29.87905	08	55	38.19	+17	17	04.6		046
1989	BO1		1989	01	30.85920	08	54	34.82	+17	21	59.9		046
1989	BO1		1989	01	30.87332	08	54	34.18	+17	22	04.6		046
1989	BO1		1989	01	31.86042	08	53	30.12	+17	26	56.7		046
1989	BO1		1989	01	31.87315	08	53	29.26	+17	27	00.2		046
1989	BO1		1989	02	01.84375	08	52	25.68	+17	31	50.1		046
1989	BO1		1989	02	01.85648	08	52	24.81	+17	31	55.7		046
1989	BP1	*	1989	01	29.86620	08	56	26.98	+17	08	34.7	16.9	046
1989	BP1		1989	01	29.87905	08	56	26.06	+17	08	38.1		046
1989	BP1		1989	01	30.85920	08	55	28.51	+17	10	16.9		046
1989	BP1		1989	01	30.87332	08	55	27.73	+17	10	19.5		046
1989	BQ1	*	1989	01	29.86620	08	58	54.49	+17	03	44.7	17.0	046
1989	BQ1		1989	01	29.87905	08	58	53.95	+17	03	45.2		046
1989	BQ1		1989	01	30.85920	08	58	07.33	+17	07	35.5		046
1989	BQ1		1989	01	30.87332	08	58	06.62	+17	07	38.7		046
1989	BQ1		1989	01	31.86042	08	57	20.06	+17	11	24.2		046
1989	BQ1		1989	01	31.87315	08	57	19.39	+17	11	30.6		046
1989	BR1	*	1989	01	29.86620	09	00	13.47	+17	40	46.2	16.8	046
1989	BR1		1989	01	29.87905	09	00	12.90	+17	40	49.4		046
1989	BR1		1989	01	30.85920	08	59	25.17	+17	44	08.5		046
1989	BR1		1989	01	30.87332	08	59	24.50	+17	44	10.7		046
1989	BR1		1989	02	01.84375	08	57	49.18	+17	50	43.0		046
1989	BR1		1989	02	01.85648	08	57	48.43	+17	50	44.8		046
1989	BS1	*	1989	01	29.89838	09	15	17.68	+17	41	16.5	16.9	046
1989	BS1		1989	01	29.91111	09	15	16.94	+17	41	17.6		046
1989	BS1		1989	01	30.89109	09	14	13.32	+17	44	48.0		046
1989	BS1		1989	01	30.90399	09	14	12.52	+17	44	50.7		046
1989	BS1		1989	01	31.89132	09	13	08.07	+17	48	23.1		046
1989	BS1		1989	01	31.90370	09	13	07.32	+17	48	26.5		046
1989	BT1	*	1989	01	29.89838	09	17	46.87	+18	29	10.8	16.7	046
1989	BT1		1989	01	29.91111	09	17	46.15	+18	29	15.1		046
1989	BT1		1989	01	30.89109	09	16	55.55	+18	34	08.8		046
1989	BT1		1989	01	30.90399	09	16	54.89	+18	34	12.6		046
1989	BT1		1989	01	31.89132	09	16	03.58	+18	39	06.8		046
1989	BT1		1989	01	31.90370	09	16	02.94	+18	39	10.2		046
1989	BT1		1989	02	02.92917	09	14	16.32	+18	49	09.6		046
1989	BT1		1989	02	02.94190	09	14	15.64	+18	49	13.7		046
1989	BU1	*	1989	01	29.89838	09	20	36.76	+16	21	29.1	16.8	046
1989	BU1		1989	01	29.91111	09	20	36.02	+16	21	31.4		046

1989	BU1		1989	01	30.89109	09	19	47.58	+16	25	18.7	046
1989	BU1		1989	01	30.90399	09	19	47.00	+16	25	19.4	046
1989	BU1		1989	02	02.92917	09	17	15.64	+16	36	53.6	046
1989	BU1		1989	02	02.94190	09	17	15.17	+16	36	56.4	046
1989	BV1	*	1989	01	29.89838	09	23	57.82	+16	41	24.2	16.8 046
1989	BV1		1989	01	29.91111	09	23	57.09	+16	41	26.3	046
1989	BV1		1989	01	31.89132	09	22	01.04	+16	48	16.3	046
1989	BV1		1989	01	31.90370	09	22	00.44	+16	48	16.6	046
1989	BV1		1989	02	02.92917	09	19	58.81	+16	55	15.7	046
1989	BV1		1989	02	02.94190	09	19	58.03	+16	55	19.2	046
1989	BW1	*	1989	01	29.89838	09	24	25.11	+18	09	54.2	16.9 046
1989	BW1		1989	01	29.91111	09	24	24.50	+18	09	58.8	046
1989	BW1		1989	01	30.89109	09	23	27.77	+18	16	14.0	046
1989	BW1		1989	01	30.90399	09	23	27.26	+18	16	18.3	046
1989	BW1		1989	01	31.89132	09	22	29.26	+18	22	34.6	046
1989	BW1		1989	01	31.90370	09	22	28.52	+18	22	38.6	046
1989	BW1		1989	02	02.92917	09	20	28.20	+18	35	27.2	046
1989	BW1		1989	02	02.94190	09	20	27.50	+18	35	33.8	046
1989	BX1	*	1989	01	29.93142	09	20	00.22	+00	01	00.1	16.8 046
1989	BX1		1989	01	29.94416	09	19	59.54	+00	00	59.4	046
1989	BX1		1989	01	30.95469	09	19	03.76	+00	01	31.3	046
1989	BX1		1989	01	30.96742	09	19	03.11	+00	01	31.9	046
1989	BX1		1989	01	31.95295	09	18	08.26	+00	02	13.1	046
1989	BX1		1989	01	31.96574	09	18	07.60	+00	02	14.6	046
1989	BY1	*	1989	01	31.86042	08	47	57.35	+16	53	49.1	16.8 046
1989	BY1		1989	01	31.87315	08	47	56.73	+16	53	50.4	046
1989	BY1		1989	02	01.84375	08	46	46.38	+16	54	30.5	046
1989	BY1		1989	02	01.85648	08	46	45.51	+16	54	31.1	046
1989	BZ1	*	1989	01	31.86042	09	00	49.30	+15	33	35.1	046
1989	BZ1		1989	01	31.87315	09	00	48.19	+15	33	35.3	046
1989	BZ1		1989	02	01.84375	08	59	42.33	+15	34	50.6	046
1989	BZ1		1989	02	01.85648	08	59	41.42	+15	34	52.5	046
1989	CA		1989	02	02.89213	09	05	12.31	+13	06	27.7	16.4 046
1989	CA		1989	02	02.90799	09	05	11.38	+13	06	31.5	046
1989	CA		1989	02	03.92222	09	04	10.57	+13	11	11.7	046
1989	CA		1989	02	03.93507	09	04	09.94	+13	11	15.9	046
1989	CA		1989	02	07.88854	09	00	15.50	+13	29	37.5	046
1989	CA		1989	02	07.90139	09	00	14.66	+13	29	41.4	046
1989	CD		1989	01	30.88970	09	23	11.38	+17	27	11.2	046
1989	CD		1989	01	30.89109	09	23	12.13	+17	27	07.2	046
1989	CD		1989	01	31.89132	09	22	11.80	+17	32	54.0	046
1989	CD		1989	01	31.90370	09	22	11.13	+17	32	58.2	046
1989	CD		1989	02	02.92917	09	20	07.90	+17	44	37.5	046
1989	CD		1989	02	02.94190	09	20	06.93	+17	44	43.3	046
1989	CE		1989	01	29.89838	09	27	23.11	+19	11	10.8	16.8 046
1989	CE		1989	01	29.91111	09	27	22.24	+19	11	16.4	046
1989	CE		1989	01	30.89109	09	26	14.36	+19	14	21.3	046
1989	CE		1989	01	30.90399	09	26	13.50	+19	14	22.6	046
1989	CE		1989	01	31.89132	09	25	04.62	+19	17	25.0	046
1989	CE		1989	01	31.90370	09	25	03.77	+19	17	27.1	046
1989	CL		1989	01	29.89838	09	21	29.29	+15	17	45.7	046
1989	CL		1989	01	29.91111	09	21	28.77	+15	17	48.1	046
1989	CL		1989	01	30.88970	09	20	40.82	+15	22	34.5	046
1989	CL		1989	01	30.89109	09	20	41.48	+15	22	33.2	046
1989	CL		1989	01	31.89132	09	19	52.90	+15	27	25.7	046
1989	CL		1989	01	31.90370	09	19	52.41	+15	27	27.2	046
1989	CL		1989	02	02.92917	09	18	13.10	+15	37	19.7	046
1989	CL		1989	02	02.94190	09	18	12.40	+15	37	21.0	046
1989	CX1		1989	02	07.93507	10	02	36.37	+15	54	37.3	16.7 046

1989	CX1		1989	02	07.94792	10	02	35.80	+15	54	43.3		046
1989	CZ3	*	1989	02	02.89213	09	02	05.47	+14	08	16.0	16.7	046
1989	CZ3		1989	02	02.90799	09	02	04.54	+14	08	21.8		046
1989	CZ3		1989	02	03.92222	09	01	04.60	+14	14	48.9		046
1989	CZ3		1989	02	03.93507	09	01	03.85	+14	14	51.2		046
1989	CZ3		1989	02	07.88854	08	57	09.40	+14	40	14.4		046
1989	CZ3		1989	02	07.90139	08	57	08.72	+14	40	16.1		046
1989	CA4	*	1989	02	02.89213	09	07	29.74	+14	15	35.7	16.4	046
1989	CA4		1989	02	02.90799	09	07	28.94	+14	15	43.7		046
1989	CA4		1989	02	03.92222	09	06	34.76	+14	25	08.2		046
1989	CA4		1989	02	03.93507	09	06	33.99	+14	25	16.2		046
1989	CA4		1989	02	07.88854	09	03	04.15	+15	01	43.5		046
1989	CA4		1989	02	07.90139	09	03	03.53	+15	01	49.9		046
1989	CB4	*	1989	02	02.89213	09	07	55.38	+10	36	42.7	16.6	046
1989	CB4		1989	02	02.90799	09	07	54.46	+10	36	51.2		046
1989	CB4		1989	02	03.92222	09	06	58.13	+10	44	42.0		046
1989	CB4		1989	02	03.93507	09	06	57.49	+10	44	49.1		046
1989	CB4		1989	02	07.88854	09	03	19.95	+11	15	58.4		046
1989	CB4		1989	02	07.90139	09	03	19.22	+11	16	04.9		046
1989	CC4	*	1989	02	03.89051	08	38	49.67	+12	24	46.3	16.5	046
1989	CC4		1989	02	03.90324	08	38	48.50	+12	25	06.2		046
1989	CC4		1989	02	07.85347	08	34	29.56	+14	00	24.9	U	046
1989	CC4		1989	02	07.86620	08	34	28.80	+14	00	41.4		046
1989	CC4		1989	02	08.86398	08	33	25.06	+14	24	36.6	U	046
1989	CC4		1989	02	08.87671	08	33	24.39	+14	24	53.8		046
1989	EM		1989	03	06.96458	12	03	18.96	-02	42	03.0	16.6	046
1989	EM		1989	03	06.97940	12	03	18.48	-02	41	59.1		046
1989	EM		1989	03	08.00542	12	02	28.88	-02	37	37.7		046
1989	EM		1989	03	08.01954	12	02	28.36	-02	37	34.0		046
1989	EW1	*	1989	03	05.89122	09	45	03.21	+17	38	18.1		046
1989	EW1		1989	03	05.90534	09	45	02.59	+17	38	20.0		046
1989	EW1		1989	03	06.78860	09	44	17.10	+17	40	19.9		046
1989	EW1		1989	03	06.80312	09	44	16.48	+17	40	21.1		046
1989	EW1		1989	03	07.81319	09	43	25.91	+17	42	30.8		046
1989	EW1		1989	03	07.82731	09	43	25.28	+17	42	30.3		046
1989	EX1	*	1989	03	05.89122	09	46	41.39	+18	33	43.1		046
1989	EX1		1989	03	05.90534	09	46	40.75	+18	33	49.6		046
1989	EX1		1989	03	06.78860	09	45	59.83	+18	41	47.1	16.8	046
1989	EX1		1989	03	06.80312	09	45	59.19	+18	41	53.6		046
1989	EX1		1989	03	07.81319	09	45	13.50	+18	50	47.0		046
1989	EX1		1989	03	07.82731	09	45	12.76	+18	50	54.1		046
1989	EY1	*	1989	03	05.89122	09	52	47.78	+17	30	58.4	16.9	046
1989	EY1		1989	03	05.90534	09	52	47.12	+17	30	59.9		046
1989	EY1		1989	03	06.78860	09	52	07.74	+17	33	43.1		046
1989	EY1		1989	03	06.80312	09	52	07.16	+17	33	46.1		046
1989	EY1		1989	03	07.81319	09	51	23.00	+17	36	47.2		046
1989	EY1		1989	03	07.82731	09	51	22.32	+17	36	50.0		046
1989	EZ1	*	1989	03	05.96691	11	14	35.14	+08	49	18.5	16.9	046
1989	EZ1		1989	03	05.98433	11	14	34.46	+08	49	23.1		046
1989	EZ1		1989	03	06.86204	11	13	54.90	+08	53	46.6		046
1989	EZ1		1989	03	06.87697	11	13	53.99	+08	53	50.1		046
1989	EA2	*	1989	03	05.96691	11	19	30.03	+09	41	54.6	16.4	046
1989	EA2		1989	03	05.98433	11	19	28.97	+09	42	00.9		046
1989	EA2		1989	03	06.86204	11	18	43.39	+09	46	17.0		046
1989	EA2		1989	03	06.87697	11	18	42.48	+09	46	20.4		046
1989	EA2		1989	03	07.88424	11	17	49.82	+09	51	12.7		046
1989	EA2		1989	03	07.89836	11	17	48.99	+09	51	17.4		046
1989	EB2	*	1989	03	05.96691	11	19	53.26	+09	26	16.2	16.7	046
1989	EB2		1989	03	05.98433	11	19	52.43	+09	26	18.3		046

1989	EB2		1989	03	06.86204	11	19	10.10	+09	30	52.6		046
1989	EB2		1989	03	06.87697	11	19	09.25	+09	30	56.9		046
1989	EB2		1989	03	07.88424	11	18	20.31	+09	36	11.2		046
1989	EB2		1989	03	07.89836	11	18	19.51	+09	36	15.6		046
1989	EC2	*	1989	03	05.96691	11	23	32.14	+09	22	21.3	16.7	046
1989	EC2		1989	03	05.98433	11	23	31.05	+09	22	24.5		046
1989	EC2		1989	03	06.86204	11	22	49.00	+09	25	39.4		046
1989	EC2		1989	03	06.87697	11	22	48.34	+09	25	41.5		046
1989	EC2		1989	03	07.88424	11	21	59.63	+09	29	24.5		046
1989	EC2		1989	03	07.89836	11	21	58.98	+09	29	27.8		046
1989	ED2	*	1989	03	05.96691	11	25	07.10	+08	08	10.5	16.8	046
1989	ED2		1989	03	05.98433	11	25	06.27	+08	08	13.5		046
1989	ED2		1989	03	06.86204	11	24	26.49	+08	12	28.4		046
1989	ED2		1989	03	06.87697	11	24	25.71	+08	12	31.2		046
1989	ED2		1989	03	07.88424	11	23	39.60	+08	17	24.6		046
1989	ED2		1989	03	07.89836	11	23	38.95	+08	17	28.2		046
1989	EE2	*	1989	03	06.89497	11	25	50.64	+02	51	16.2	16.9	046
1989	EE2		1989	03	06.90920	11	25	49.92	+02	51	19.2		046
1989	EE2		1989	03	07.91873	11	25	06.43	+02	56	12.6		046
1989	EE2		1989	03	07.93302	11	25	05.48	+02	56	17.3		046
1989	EF2	*	1989	03	06.89497	11	28	10.22	+02	23	44.0		046
1989	EF2		1989	03	06.90920	11	28	09.49	+02	23	48.1		046
1989	EF2		1989	03	07.91873	11	27	14.53	+02	27	40.1		046
1989	EF2		1989	03	07.93302	11	27	13.64	+02	27	44.3		046
1989	EG2	*	1989	03	06.89497	11	32	20.25	+03	48	04.7	16.8	046
1989	EG2		1989	03	06.90920	11	32	19.43	+03	48	09.1		046
1989	EG2		1989	03	07.91873	11	31	24.89	+03	54	08.0		046
1989	EG2		1989	03	07.93302	11	31	24.21	+03	54	09.6		046
1989	EH2	*	1989	03	06.93003	11	30	14.97	-01	39	16.9	16.5	046
1989	EH2		1989	03	06.94491	11	30	14.36	-01	39	12.6		046
1989	EH2		1989	03	07.95235	11	29	31.88	-01	31	55.5		046
1989	EH2		1989	03	07.96647	11	29	31.37	-01	31	49.9		046
1989	EJ2	*	1989	03	06.93003	11	40	00.93	-03	29	45.2	17.0 d	046
1989	EJ2		1989	03	06.94491	11	39	59.99	-03	29	43.1		046
1989	EJ2		1989	03	07.95235	11	38	55.57	-03	22	54.2		046
1989	EJ2		1989	03	07.96647	11	38	54.53	-03	22	50.4		046
93			1989	03	05.96691	11	22	35.33	+08	13	34.5		046
93			1989	03	05.98433	11	22	34.28	+08	13	37.0		046
93			1989	03	06.86204	11	21	45.91	+08	16	24.1		046
93			1989	03	06.87697	11	21	45.06	+08	16	26.7		046
93			1989	03	07.88424	11	20	49.07	+08	19	37.9		046
93			1989	03	07.89836	11	20	48.26	+08	19	41.1		046
140			1989	01	26.78455	07	29	39.82	+22	30	41.8		046
140			1989	01	26.79861	07	29	38.96	+22	30	44.9		046
140			1989	01	27.77749	07	28	47.81	+22	33	08.8		046
140			1989	01	27.79028	07	28	47.12	+22	33	11.9		046
140			1989	01	28.77743	07	27	56.24	+22	35	32.2		046
140			1989	01	28.79022	07	27	55.55	+22	35	34.6		046
149			1989	01	29.86620	08	57	29.37	+16	22	10.5		046
149			1989	01	29.87905	08	57	28.49	+16	22	14.8		046
149			1989	01	30.85920	08	56	23.33	+16	27	16.1		046
149			1989	01	30.87332	08	56	22.35	+16	27	20.5		046
149			1989	01	31.86042	08	55	16.84	+16	32	21.4		046
149			1989	01	31.87315	08	55	15.93	+16	32	25.7		046
149			1989	02	01.84375	08	54	11.26	+16	37	23.4		046
149			1989	02	01.85648	08	54	10.44	+16	37	27.1		046
232			1989	01	26.85509	08	46	28.48	+13	37	10.6		046
232			1989	01	26.86777	08	46	27.75	+13	37	15.1		046
232			1989	01	27.84097	08	45	33.60	+13	43	27.3		046

232	1989	01	27.85370	08	45	32.07	+13	43	32.5	046
232	1989	01	28.87060	08	44	34.21	+13	50	04.8	046
232	1989	01	28.88333	08	44	33.46	+13	50	10.1	046
232	1989	02	03.89051	08	38	48.59	+14	29	56.3	046
232	1989	02	03.90324	08	38	47.87	+14	30	01.4	046
232	1989	02	07.85347	08	35	05.04	+14	56	42.7	046
232	1989	02	07.86620	08	35	04.28	+14	56	47.8	046
232	1989	02	08.86398	08	34	09.18	+15	03	30.9	046
232	1989	02	08.87671	08	34	08.44	+15	03	36.4	046
245	1989	03	05.92981	10	48	30.71	+15	22	08.2	046
245	1989	03	05.94394	10	48	30.23	+15	22	10.4	046
245	1989	03	06.82344	10	47	49.10	+15	25	45.6	046
245	1989	03	06.83762	10	47	48.28	+15	25	50.4	046
245	1989	03	07.84836	10	47	01.39	+15	29	51.8	046
245	1989	03	07.86277	10	47	00.66	+15	29	55.2	046
327	1989	03	06.96458	11	59	54.44	-00	06	38.9	046
327	1989	03	06.97940	11	59	53.70	-00	06	36.8	046
327	1989	03	08.00542	11	59	02.98	-00	03	37.7	046
327	1989	03	08.01954	11	59	02.26	-00	03	35.6	046
333	1989	03	06.89497	11	33	05.02	+03	12	50.5	046
333	1989	03	06.90920	11	33	04.41	+03	12	54.0	046
333	1989	03	07.91873	11	32	19.57	+03	16	54.9	046
333	1989	03	07.93302	11	32	18.98	+03	16	58.4	046
632	1989	02	07.93507	09	56	43.05	+14	34	24.4	046
632	1989	02	07.94792	09	56	42.23	+14	34	27.6	046
730	1989	01	30.92361	09	30	24.60	+20	05	35.4	046
730	1989	01	30.93652	09	30	23.75	+20	05	41.1	046
730	1989	01	31.92297	09	29	24.13	+20	13	10.3	046
730	1989	01	31.93576	09	29	23.47	+20	13	17.5	046
730	1989	02	01.87708	09	28	26.14	+20	20	23.6	046
730	1989	02	01.88987	09	28	25.26	+20	20	29.7	046
766	1989	03	05.96691	11	25	51.02	+09	30	20.4	046
766	1989	03	05.98433	11	25	49.94	+09	30	23.1	046
766	1989	03	06.86204	11	25	04.28	+09	32	41.6	046
766	1989	03	06.87697	11	25	03.48	+09	32	43.9	046
766	1989	03	07.88424	11	24	10.71	+09	35	21.1	046
766	1989	03	07.89836	11	24	09.91	+09	35	23.5	046
905	1989	03	05.92981	10	56	10.76	+14	41	37.3	046
905	1989	03	05.94394	10	56	09.77	+14	41	40.3	046
905	1989	03	06.82344	10	55	12.88	+14	45	47.8	046
905	1989	03	06.83762	10	55	11.92	+14	45	51.8	046
905	1989	03	07.84836	10	54	06.99	+14	50	26.9	046
905	1989	03	07.86277	10	54	06.01	+14	50	31.6	046
1034	1989	03	06.93003	11	38	55.78	-02	44	42.7	046
1034	1989	03	06.94491	11	38	54.94	-02	44	38.4	046
1034	1989	03	07.95235	11	37	56.53	-02	39	46.8	046
1034	1989	03	07.96647	11	37	55.71	-02	39	42.2	046
1104	1989	01	30.92361	09	35	16.21	+15	56	31.1	046
1104	1989	01	30.93652	09	35	15.46	+15	56	36.3	046
1104	1989	01	31.92297	09	34	16.99	+16	04	41.3	046
1104	1989	01	31.93576	09	34	16.23	+16	04	48.3	046
1104	1989	02	01.87708	09	33	20.06	+16	12	30.6	046
1104	1989	02	01.88987	09	33	19.25	+16	12	34.9	046
1120	1989	01	26.85509	08	46	38.76	+14	18	30.7	046
1120	1989	01	26.86777	08	46	37.79	+14	18	35.0	046
1120	1989	01	27.84097	08	45	34.14	+14	24	35.9	046
1120	1989	01	27.85370	08	45	33.26	+14	24	40.3	046
1120	1989	01	28.87060	08	44	26.48	+14	30	59.6	046
1120	1989	01	28.88333	08	44	25.62	+14	31	04.2	046

1120	1989	02	03.89051	08	37	54.97	+15	08	26.2	046
1120	1989	02	03.90324	08	37	54.16	+15	08	30.5	046
1120	1989	02	07.85347	08	33	47.98	+15	32	41.8	046
1120	1989	02	07.86620	08	33	47.21	+15	32	45.5	046
1120	1989	02	08.86398	08	32	47.12	+15	38	44.9	046
1120	1989	02	08.87671	08	32	46.33	+15	38	49.0	046
1143	1989	02	02.89213	09	06	29.51	+12	29	02.3	046
1143	1989	02	02.90799	09	06	29.05	+12	29	03.7	046
1143	1989	02	03.92222	09	05	55.86	+12	31	30.5	046
1143	1989	02	03.93507	09	05	55.50	+12	31	33.5	046
1143	1989	02	07.88854	09	03	46.93	+12	41	12.1	046
1143	1989	02	07.90139	09	03	46.48	+12	41	13.6	046
1411	1989	02	02.89213	09	01	01.77	+10	50	33.3	046
1411	1989	02	02.90799	09	01	00.92	+10	50	34.8	046
1411	1989	02	03.92222	09	00	07.58	+10	52	24.5	046
1411	1989	02	03.93507	09	00	06.87	+10	52	25.9	046
1411	1989	02	07.88854	08	56	40.44	+10	59	57.2	046
1411	1989	02	07.90139	08	56	39.73	+10	59	56.8	046
1496	1989	01	28.80729	07	50	00.56	+20	34	29.1	046
1496	1989	01	28.82141	07	49	59.59	+20	34	31.2	046
1496	1989	01	29.83380	07	48	52.49	+20	36	34.1	046
1496	1989	01	29.84653	07	48	51.53	+20	36	34.5	046
1496	1989	01	30.82795	07	47	47.24	+20	38	29.9	046
1496	1989	01	30.84068	07	47	46.47	+20	38	31.9	046
1516	1989	03	05.92981	10	55	16.59	+16	35	57.4	046
1516	1989	03	05.94394	10	55	15.80	+16	36	05.2	046
1516	1989	03	07.84836	10	53	41.21	+16	53	07.0	046
1516	1989	03	07.86277	10	53	40.43	+16	53	13.0	046
1632	1989	03	06.94458	12	03	23.17	-03	57	14.2	046
1632	1989	03	06.97940	12	03	22.54	-03	57	09.8	046
1632	1989	03	08.00542	12	02	37.03	-03	51	02.1	046
1632	1989	03	08.01954	12	02	36.45	-03	50	57.4	046
1645	1989	01	26.78455	07	31	06.89	+21	03	13.5	046
1645	1989	01	26.79861	07	31	06.16	+21	03	14.6	046
1645	1989	01	27.77749	07	30	18.43	+21	04	50.0	046
1645	1989	01	27.79028	07	30	17.85	+21	04	50.4	046
1645	1989	01	28.77743	07	29	30.72	+21	06	24.2	046
1645	1989	01	28.79022	07	29	29.84	+21	06	25.3	046
1662	1989	03	06.89497	11	29	29.06	+00	59	03.4	046
1662	1989	03	06.90920	11	29	28.26	+00	59	04.8	046
1662	1989	03	07.91873	11	28	36.52	+01	03	21.9	046
1662	1989	03	07.93302	11	28	35.79	+01	03	26.2	046
1699	1989	02	07.88854	09	08	40.73	+14	07	49.8	046
1699	1989	02	07.90139	09	08	39.90	+14	07	52.7	046
1775	1989	01	27.87350	08	13	21.84	+01	58	24.7	046
1775	1989	01	27.88767	08	13	21.01	+01	58	28.3	046
1775	1989	01	28.84149	08	12	29.84	+02	02	44.2	046
1775	1989	01	28.85301	08	12	29.22	+02	02	45.2	046
1804	1989	01	29.89838	09	27	30.09	+16	06	07.1	046
1804	1989	01	29.91111	09	27	29.35	+16	06	08.3	046
1804	1989	01	30.89109	09	26	29.84	+16	09	19.0	046
1804	1989	01	30.90399	09	26	29.12	+16	09	21.0	046
1804	1989	01	31.89132	09	25	28.47	+16	12	32.2	046
1804	1989	01	31.90370	09	25	27.66	+16	12	34.4	046
1804	1989	02	02.92917	09	23	21.80	+16	19	07.9	046
1804	1989	02	02.94190	09	23	20.94	+16	19	10.2	046
1832	1989	02	02.89213	09	05	20.47	+12	02	33.1	046
1832	1989	02	02.90799	09	05	19.73	+12	02	33.2	046
1832	1989	02	03.92222	09	04	25.07	+12	02	45.1	046

1832	1989	02	03.93507	09	04	24.41	+12	02	46.8	046
1832	1989	02	07.88854	09	00	53.03	+12	03	46.7	046
1832	1989	02	07.90139	09	00	52.37	+12	03	47.2	046
1908	1989	02	01.81053	08	21	05.76	+26	21	57.6	046
1908	1989	02	01.82459	08	21	04.95	+26	21	59.5	046
1955	1989	01	26.79861	07	29	24.90	+20	53	37.6	046
1955	1989	01	27.77749	07	28	35.00	+20	55	15.3	046
1955	1989	01	27.79028	07	28	34.38	+20	55	17.0	046
1955	1989	01	28.77743	07	27	45.03	+20	56	53.5	046
1955	1989	01	28.79022	07	27	44.20	+20	56	54.9	046
2032	1989	01	26.82141	08	18	29.95	+21	49	12.5	046
2032	1989	01	26.83553	08	18	29.09	+21	49	12.1	046
2032	1989	01	27.80961	08	17	39.27	+21	51	48.6	046
2032	1989	01	27.82245	08	17	38.59	+21	51	52.0	046
2169	1989	02	07.93507	09	59	41.18	+14	40	48.1	046
2169	1989	02	07.94792	09	59	40.54	+14	40	51.2	046
2437	1989	02	02.89213	09	08	03.39	+11	12	11.9	046
2437	1989	02	02.90799	09	08	02.33	+11	12	15.8	046
2437	1989	02	03.92222	09	06	55.21	+11	17	26.3	046
2437	1989	02	03.93507	09	06	54.38	+11	17	30.6	046
2437	1989	02	07.88854	09	02	34.76	+11	38	01.5	046
2437	1989	02	07.90139	09	02	33.93	+11	38	05.5	046
2448	1989	01	30.92361	09	30	22.07	+17	33	30.6	046
2448	1989	01	30.93652	09	30	21.43	+17	33	38.4	046
2448	1989	01	31.92297	09	29	34.59	+17	44	41.0	046
2448	1989	01	31.93576	09	29	34.02	+17	44	50.1	046
2448	1989	02	01.87708	09	28	48.69	+17	55	23.1	046
2448	1989	02	01.88987	09	28	47.98	+17	55	32.1	046
2459	1989	01	29.93142	09	15	14.72	+01	02	29.8	046
2459	1989	01	29.94416	09	15	14.16	+01	02	32.3	046
2459	1989	01	30.95469	09	14	26.58	+01	05	50.6	046
2459	1989	01	30.96742	09	14	25.96	+01	05	52.5	046
2459	1989	01	31.95295	09	13	39.24	+01	09	15.9	046
2459	1989	01	31.96574	09	13	38.66	+01	09	18.4	046
2473	1989	03	06.96458	12	05	11.55	-02	13	22.5	046
2473	1989	03	06.97940	12	05	10.83	-02	13	16.3	046
2473	1989	03	08.00542	12	04	17.46	-02	05	01.1	046
2473	1989	03	08.01954	12	04	16.70	-02	04	56.5	046
2519	1989	01	30.92361	09	30	54.39	+17	31	09.3	046
2519	1989	01	30.93652	09	30	53.85	+17	31	11.8	046
2519	1989	01	31.92297	09	30	08.94	+17	35	11.8	046
2519	1989	01	31.93576	09	30	08.35	+17	35	14.7	046
2519	1989	02	01.87708	09	29	25.16	+17	39	04.0	046
2519	1989	02	01.88987	09	29	24.66	+17	39	05.3	046
2533	1989	03	06.96458	12	06	33.20	-01	42	35.8	046
2533	1989	03	06.97940	12	06	32.50	-01	42	30.8	046
2533	1989	03	08.00542	12	05	49.80	-01	37	37.6	046
2533	1989	03	08.01954	12	05	49.19	-01	37	33.3	046
2553	1989	02	07.93507	10	07	59.10	+15	00	05.0	046
2553	1989	02	07.94792	10	07	58.56	+15	00	08.7	046
2553	1989	03	05.89122	09	48	26.76	+17	11	23.1	046
2553	1989	03	05.90534	09	48	26.34	+17	11	25.0	046
2553	1989	03	06.78860	09	47	50.78	+17	14	58.3	046
2553	1989	03	06.80312	09	47	50.21	+17	15	02.9	046
2553	1989	03	07.81319	09	47	10.38	+17	19	02.9	046
2553	1989	03	07.82731	09	47	09.79	+17	19	05.7	046
2554	1989	01	26.78455	07	33	00.61	+21	33	31.0	046
2554	1989	01	26.79861	07	32	59.73	+21	33	31.0	046
2554	1989	01	27.77749	07	31	55.39	+21	34	03.9	046

2554		1989	01	27.79028	07	31	54.56	+21	34	04.0	046
2575		1989	01	25.79671	08	29	48.82	+21	22	44.9	046
2575		1989	01	25.81083	08	29	47.79	+21	22	46.8	046
2575		1989	01	26.82141	08	28	35.25	+21	24	48.6	046
2575		1989	01	26.83553	08	28	34.30	+21	24	51.0	I 046
2575		1989	01	27.80961	08	27	24.26	+21	26	43.0	046
2575		1989	01	27.82245	08	27	23.30	+21	26	44.9	046
2575		1989	01	31.82963	08	22	37.04	+21	33	55.6	I 046
2575		1989	01	31.84236	08	22	36.29	+21	33	52.9	046
2579		1989	02	02.89213	08	59	51.52	+11	13	42.4	046
2579		1989	02	02.90799	08	59	50.47	+11	13	42.3	046
2579		1989	02	03.92222	08	58	41.17	+11	15	58.4	N 046
2579		1989	02	03.93507	08	58	40.21	+11	16	00.3	046
2776		1989	03	06.96458	11	56	52.37	-02	10	10.5	046
2776		1989	03	06.97940	11	56	51.79	-02	10	04.9	046
2776		1989	03	08.00542	11	56	06.90	-02	01	32.6	046
2776		1989	03	08.01954	11	56	06.33	-02	01	25.3	046
2828		1989	03	05.96691	11	27	29.57	+10	09	15.8	046
2828		1989	03	05.98433	11	27	28.28	+10	09	23.7	046
2828		1989	03	07.88424	11	25	34.83	+10	21	22.9	046
2828		1989	03	07.89836	11	25	34.12	+10	21	27.1	046
2863		1989	01	26.78455	07	34	30.63	+21	27	28.7	046
2863		1989	01	26.79861	07	34	30.15	+21	27	29.4	046
2863		1989	01	27.77749	07	33	43.94	+21	29	38.4	046
2863		1989	01	27.79028	07	33	43.19	+21	29	39.7	046
2863		1989	01	28.77743	07	32	57.47	+21	31	45.3	046
3032		1989	03	05.96691	11	25	22.57	+08	46	54.8	046
3032		1989	03	05.98433	11	25	21.70	+08	47	00.7	046
3032		1989	03	06.86204	11	24	40.26	+08	51	40.7	046
3032		1989	03	06.87697	11	24	39.57	+08	51	45.4	046
3032		1989	03	07.88424	11	23	51.70	+08	57	06.2	046
3032		1989	03	07.89836	11	23	51.04	+08	57	10.3	046
3043		1989	03	05.92981	10	55	25.91	+13	45	26.1	046
3043		1989	03	05.94394	10	55	24.53	+13	45	23.1	046
3043		1989	03	06.82344	10	53	55.62	+13	41	16.1	046
3043		1989	03	06.83762	10	53	54.08	+13	41	11.9	046
3043		1989	03	07.84836	10	52	12.58	+13	36	18.3	046
3043		1989	03	07.86277	10	52	11.07	+13	36	14.0	046
3063		1989	01	26.85509	08	42	22.71	+12	15	15.0	046
3063		1989	01	26.86777	08	42	22.23	+12	15	15.0	046
3063		1989	01	27.84097	08	41	48.02	+12	16	00.6	046
3063		1989	01	27.85370	08	41	47.58	+12	16	01.4	046
3063		1989	01	28.87060	08	41	11.73	+12	16	49.6	046
3063		1989	01	28.88333	08	41	11.25	+12	16	50.7	046
3063		1989	02	03.89051	08	37	40.81	+12	22	02.2	046
3063		1989	02	03.90324	08	37	40.31	+12	22	03.0	046
3095		1989	01	26.78455	07	33	59.98	+21	28	19.2	046
3095		1989	01	26.79861	07	33	59.24	+21	28	21.3	046
3095		1989	01	27.77749	07	33	15.24	+21	29	18.5	046
3095		1989	01	27.79028	07	33	14.70	+21	29	20.8	046
3095		1989	01	28.77743	07	32	30.80	+21	30	15.9	046
3095		1989	01	28.79022	07	32	30.18	+21	30	17.5	046
3179		1989	03	06.89497	11	27	51.63	+02	56	19.5	046
3179		1989	03	06.90920	11	27	50.92	+02	56	25.2	046
3179		1989	03	07.91873	11	27	04.96	+03	01	54.4	046
3179		1989	03	07.93302	11	27	04.41	+03	01	58.2	046
3187		1989	01	29.86620	08	51	37.70	+17	47	53.8	046
3187		1989	01	29.87905	08	51	36.83	+17	47	55.9	046
3187		1989	01	30.85920	08	50	31.32	+17	50	46.7	046

3187		1989	01	30.87332	08	50	30.35	+17	50	49.1			046
3187		1989	02	01.84375	08	48	18.60	+17	56	21.8			046
3187		1989	02	01.85648	08	48	17.67	+17	56	25.0			046
3221		1989	01	25.79671	08	26	08.13	+23	36	47.6			046
3221		1989	01	25.81083	08	26	07.18	+23	36	50.7			046
3221		1989	01	26.82141	08	24	56.95	+23	41	39.8			046
3221		1989	01	26.83553	08	24	55.94	+23	41	44.1			046
3221		1989	01	27.80961	08	23	48.29	+23	46	17.7			046
3221		1989	01	27.82245	08	23	47.60	+23	46	20.3			046
3221		1989	01	31.82963	08	19	12.04	+24	04	04.2			046
3221		1989	01	31.84236	08	19	11.13	+24	04	05.1			046
3221		1989	02	01.81053	08	18	05.53	+24	08	11.3			046
3221		1989	02	01.82459	08	18	04.50	+24	08	17.0			046
3250		1989	01	29.93142	09	19	13.03	+02	19	43.0		16.5	046
3250		1989	01	29.94416	09	19	12.53	+02	19	46.3			046
3250		1989	01	30.95469	09	18	25.66	+02	23	38.7			046
3250		1989	01	30.96742	09	18	25.05	+02	23	42.0			046
3250		1989	01	31.95295	09	17	39.29	+02	27	37.7			046
3250		1989	01	31.96574	09	17	38.64	+02	27	40.7			046
3492		1989	01	29.86620	08	53	25.61	+14	24	04.8			046
3492		1989	01	29.87905	08	53	24.95	+14	24	11.8			046
3492		1989	01	30.85920	08	52	31.33	+14	32	50.4			046
3492		1989	01	30.87332	08	52	30.60	+14	32	57.3			046
3492		1989	01	31.86042	08	51	36.37	+14	41	43.2			046
3492		1989	01	31.87315	08	51	35.66	+14	41	49.1			046
3492		1989	02	01.84375	08	50	42.03	+14	50	28.9			046
3492		1989	02	01.85648	08	50	41.34	+14	50	34.8			046
3502		1989	01	29.89838	09	24	37.75	+17	18	42.7			046
3502		1989	01	29.91111	09	24	37.22	+17	18	43.4			046
3626		1989	03	06.93003	11	32	37.91	-02	48	14.8			046
3626		1989	03	06.94491	11	32	36.96	-02	48	12.5			046
3626		1989	03	07.95235	11	31	53.68	-02	44	12.3			046
3626		1989	03	07.96647	11	31	52.98	-02	44	12.2			046
3655		1989	01	30.92361	09	35	34.73	+16	05	10.1			046
3655		1989	01	30.93652	09	35	34.16	+16	05	11.9			046
3655		1989	01	31.92297	09	34	55.30	+16	07	54.3			046
3655		1989	01	31.93576	09	34	54.69	+16	07	55.2			046
3732		1989	01	29.86620	08	56	23.82	+15	45	14.5		16.7	046
3732		1989	01	29.87905	08	56	22.91	+15	45	19.1			046
3732		1989	01	30.85920	08	55	15.66	+15	49	14.2			046
3732		1989	01	30.87332	08	55	14.86	+15	49	16.4			046
3732		1989	01	31.86042	08	54	07.32	+15	53	12.9			046
3732		1989	01	31.87315	08	54	06.37	+15	53	15.4			046
3732		1989	02	01.84375	08	52	59.51	+15	57	13.3			046
3732		1989	02	01.85648	08	52	58.71	+15	57	14.8			046
3766		1989	01	29.86620	09	00	45.38	+17	07	00.6			046
3766		1989	01	29.87905	09	00	44.66	+17	07	03.5			046
3766		1989	01	30.85920	08	59	56.83	+17	10	58.0			046
3766		1989	01	30.87332	08	59	56.12	+17	11	02.0			046
3766		1989	01	31.86042	08	59	08.22	+17	14	52.8			046
3766		1989	01	31.87315	08	59	07.55	+17	14	56.3			046
3766		1989	02	01.84375	08	58	20.20	+17	18	46.0			046
3766		1989	02	01.85648	08	58	19.60	+17	18	48.6			046
3787		1989	03	06.96458	12	04	59.99	-03	59	13.4			046
3787		1989	03	06.97940	12	04	59.49	-03	59	05.8			046
3787		1989	03	08.00542	12	04	20.02	-03	49	43.4			046
3787		1989	03	08.01954	12	04	19.56	-03	49	36.8			046
3788		1989	02	07.93507	10	02	19.05	+14	41	24.7			046
3788		1989	02	07.94792	10	02	18.37	+14	41	31.6			046

3820	1989 01 25.79671	08 18 39.09	+24 09 10.2					046
3820	1989 01 25.81083	08 18 38.26	+24 09 10.6					046
3820	1989 01 26.82141	08 17 38.95	+24 09 17.3					046
3820	1989 01 26.83553	08 17 38.07	+24 09 17.9					046
3820	1989 01 27.80961	08 16 41.38	+24 09 18.6					046
3820	1989 01 27.82245	08 16 40.59	+24 09 17.7					046
3820	1989 01 31.82963	08 12 50.75	+24 08 37.2					046
3820	1989 01 31.84236	08 12 50.03	+24 08 34.9					046
3839	1989 01 26.85509	08 54 16.90	+13 25 04.5					046
3839	1989 01 26.86777	08 54 16.16	+13 25 08.5					046
3839	1989 01 27.84097	08 53 18.24	+13 28 34.6					046
3839	1989 01 27.85370	08 53 17.59	+13 28 37.8					046
3839	1989 01 28.87060	08 52 16.30	+13 32 17.9					046
3839	1989 01 28.88333	08 52 15.77	+13 32 20.7					046
3896	1989 01 29.93142	09 17 57.55	+00 39 31.6					046
3896	1989 01 29.94416	09 17 57.00	+00 39 33.1					046
3896	1989 01 30.95469	09 17 08.81	+00 41 49.6					046
3896	1989 01 30.96742	09 17 08.18	+00 41 51.7					046
3896	1989 01 31.95295	09 16 20.99	+00 44 14.2					046
3896	1989 01 31.96574	09 16 20.32	+00 44 15.4					046
4038	1989 01 29.89838	09 22 03.40	+19 00 39.1				16.7	046
4038	1989 01 29.91111	09 22 02.71	+19 00 41.6					046
4038	1989 01 30.89109	09 20 57.83	+19 03 19.3					046
4038	1989 01 30.90399	09 20 56.91	+19 03 19.6					046
4038	1989 01 31.89132	09 19 50.49	+19 05 56.4					046
4038	1989 01 31.90370	09 19 49.71	+19 05 58.5					046
4038	1989 02 02.92917	09 17 33.58	+19 11 07.9					046
4038	1989 02 02.94190	09 17 32.69	+19 11 10.2					046

049 Kvistaberg
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S-75120 Uppsala, Sweden
Observers C.-I. Lagerkvist, T. Oja
AGK3

1984 QR	1989 02 05.94193	09 50 46.42	+13 23 32.0					049
1984 QR	1989 02 05.96478	09 50 44.27	+13 23 25.5					049
1984 QR	1989 02 13.08002	09 39 47.24	+12 47 00.1				15.5	049
1984 QR	1989 02 13.09941	09 39 45.44	+12 46 54.7					049

054 Brorfelde
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DK-4340 Tollose, Denmark
Observers K. Augustesen, P. Jensen
Measurer P. Jensen
0.45-m Schmidt

1989 DA	1989 03 06.93101	10 18 47.28	+18 17 49.8				15	054
1989 DA	1989 03 06.94351	10 18 52.88	+18 15 32.7					054

095 Crimean Astrophysical Observatory
N. S. Chernykh, Crimean Astrophysical Observatory, P.O. Nauchnyj,
Crimea 334413, U.S.S.R.
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Observers N. S. Chernykh, L. I. Chernykh, L. G. Karachkina,
T. M. Smirnova, L. V. Zhuravleva, B. Burnasheva

1982 QB1	1986 08 08.98957	22 32 25.10	-08 07 10.7				16.0V	095
1982 QB1	1986 08 31.89587	22 11 34.69	-07 56 47.8				16.0V	095
1982 QB1	1986 09 08.87521	22 04 11.60	-07 56 27.5				16.0V	095

1986	NA1		1986	08	07.93639	21	29	53.84	+07	20	46.4	15.0V	095
1986	NA1		1986	08	14.90626	21	24	16.86	+06	39	39.9	15.0V	095
1986	NA1		1986	08	31.82298	21	11	40.51	+04	21	23.4	15.3V	095
1986	NA1		1986	09	08.80588	21	07	09.83	+03	05	13.0	15.0V	095
1986	PV4	*	1986	08	06.96875	22	35	29.18	-05	30	03.5	16.0V	095
1986	PV4		1986	08	08.98957	22	33	57.75	-05	31	29.4	16.0V	095
1986	PV4		1986	08	31.89587	22	13	59.86	-06	11	45.0	15.5V	095
1986	PV4		1986	09	08.87521	22	07	16.23	-06	30	15.3	16.0V E	095
1986	PW4	*	1986	08	06.96875	22	36	14.38	-07	29	54.2	16.0V	095
1986	PW4		1986	08	08.98957	22	35	04.36	-07	37	10.1	16.0V	095
1986	PW4		1986	08	31.89587	22	18	57.70	-09	18	48.5	15.7V	095
1986	PW4		1986	09	08.87521	22	13	18.72	-09	55	03.6	15.7V	095
1986	PX4	*	1986	08	08.91666	21	21	07.44	-17	53	47.6	15.6V	095
1986	PX4		1986	08	13.88890	21	16	49.77	-18	11	42.6	15.5V	095
1986	PX4		1986	08	30.83331	21	03	58.86	-18	55	28.6	15.5V	095
1986	PY4	*	1986	08	08.98957	22	25	29.37	-05	54	38.6	16.2V	095
1986	PY4		1986	08	31.89587	22	10	28.32	-08	29	56.5	16.0V	095
1986	PY4		1986	09	08.87521	22	05	15.10	-09	26	35.7	16.0V	095
1986	PA5	*	1986	08	08.98957	22	48	06.57	-09	00	39.2	16.0V	095
1986	PA5		1986	08	31.89587	22	29	35.72	-10	21	29.8	15.7V	095
1986	PA5		1986	09	08.87521	22	22	19.84	-10	50	55.4	15.5V	095
1986	PB5	*	1986	08	13.96193	23	18	17.91	-06	35	16.8	16.0V	095
1986	PB5		1986	08	30.89424	23	07	57.52	-08	04	55.0	15.0V	095
1986	PB5		1986	09	07.87911	23	02	10.01	-08	50	14.2	15.0V	095
1986	PB5		1986	09	12.89567	22	58	32.04	-09	17	30.2	15.5V	095
1986	QZ3	*	1986	08	30.89424	23	00	44.26	-10	10	21.5	15.5V	095
1986	QZ3		1986	09	07.87911	22	55	10.19	-11	13	02.2	16.0V	095
1986	QZ3		1986	09	12.89567	22	51	40.08	-11	50	54.2	15.0V	095
1986	QA4	*	1986	08	30.89424	23	09	18.05	-07	23	00.2	16.0V	095
1986	QA4		1986	09	07.87911	23	03	26.12	-08	05	52.4	15.0V	095
1986	QA4		1986	09	12.89567	22	59	43.78	-08	32	03.2	16.0V	095
1986	QB4	*	1986	08	30.89424	23	26	15.22	-05	07	33.9	15.5V	095
1986	QB4		1986	09	07.87911	23	20	49.48	-05	49	20.8	15.5V	095
1986	QB4		1986	09	12.89567	23	17	15.06	-06	15	59.1	15.0V	095
1986	RT5	*	1986	09	07.95147	00	21	59.46	+10	02	02.6	15.5V	095
1986	RT5		1986	09	11.95554	00	19	14.71	+09	52	56.6	16.2V	095
1986	RT5		1986	10	05.91052	00	00	05.55	+08	10	57.5	16.2V E	095
1986	RT5		1986	10	10.83838	23	56	25.94	+07	44	43.7	16.5V	095
1986	RU5	*	1986	09	07.95147	00	31	58.19	+09	47	46.4	15.5V	095
1986	RU5		1986	09	11.95554	00	29	25.27	+09	17	51.6	15.0V	095
1986	RU5		1986	10	05.91052	00	11	36.06	+05	40	14.8	16.0V	095
1986	RU5		1986	10	10.83838	00	08	02.39	+04	52	42.0	16.8V	095
1986	RV5	*	1986	09	07.95147	00	35	52.52	+12	47	24.1	16.5V	095
1986	RV5		1986	09	11.95554	00	33	52.15	+12	37	05.6	16.0V	095
1986	RV5		1986	10	05.91052	00	16	15.54	+10	09	48.5	16.2V	095
1986	RW5	*	1986	09	07.95147	00	38	58.07	+09	17	10.0	16.0V	095
1986	RW5		1986	09	11.95554	00	36	59.20	+08	58	44.8	15.5V	095
1986	RW5		1986	10	05.91052	00	19	23.51	+06	00	35.8	16.0V	095
1986	RW5		1986	10	10.83838	00	15	45.58	+05	18	21.0	16.0V	095
1986	RX5	*	1986	09	07.95147	00	46	58.22	+06	40	37.4	16.8V	095
1986	RX5		1986	09	11.95554	00	44	22.20	+06	28	41.9	16.2V E	095
1986	RX5		1986	10	05.91052	00	22	48.53	+04	30	26.2	16.5V E	095
1986	RY5	*	1986	09	07.95147	00	48	42.02	+12	56	27.2	16.2V	095
1986	RY5		1986	09	11.95554	00	46	17.08	+12	38	11.5	16.0V	095
1986	RY5		1986	10	05.91052	00	26	49.16	+09	41	31.2	16.0V	095
1986	TR4		1986	09	07.95147	00	27	27.14	+10	46	07.4	15.5V	095
1986	TR4		1986	09	11.95554	00	25	02.28	+10	38	12.0	15.0V	095
1986	TR4		1986	10	05.91052	00	06	40.54	+08	50	50.4	14.5V	095
33			1985	09	21.99628	01	48	47.07	+11	36	03.3		095

33	1985	10	18.91663	01	29	57.98	+10	34	35.0	095
84	1985	09	19.93764	00	57	33.84	+19	54	48.9	095
94	1985	09	15.95150	01	25	06.15	+11	21	43.4	095
94	1985	09	20.96502	01	22	04.28	+11	19	09.3	095
94	1985	09	22.96814	01	20	44.40	+11	17	23.5	095
106	1985	05	23.85802	15	51	36.93	-20	00	37.8	E 095
117	1985	09	19.93764	00	43	32.54	+13	14	42.4	095
117	1985	09	21.93536	00	41	48.64	+13	15	11.2	095
117	1985	10	18.84030	00	17	30.70	+12	42	16.6	095
139	1985	08	14.96914	23	50	01.90	-05	39	41.0	095
139	1985	09	15.87222	23	25	31.28	-07	07	21.8	095
139	1985	09	20.89561	23	21	10.77	-07	20	53.5	095
153	1985	09	19.93764	00	58	31.94	+12	37	53.9	095
153	1985	09	21.93536	00	57	27.06	+12	30	07.4	095
172	1985	09	19.93764	00	42	51.70	+16	09	17.0	095
172	1985	09	21.93536	00	40	51.75	+16	11	13.4	095
172	1985	10	18.84030	00	13	10.64	+15	21	37.4	E 095
192	1985	08	16.96669	00	14	42.36	+01	39	31.2	E 095
192	1985	08	18.96152	00	14	29.21	+01	51	11.0	E 095
192	1985	08	23.90671	00	13	19.86	+02	17	35.3	095
209	1985	09	15.95150	01	25	36.84	+11	40	10.8	095
209	1985	09	20.96502	01	22	31.88	+11	33	31.0	095
209	1985	09	22.96814	01	21	11.86	+11	30	11.5	095
235	1985	09	19.86502	23	28	38.44	-18	06	26.5	E 095
235	1985	09	20.83145	23	27	50.96	-18	09	12.9	E 095
245	1985	05	23.85802	15	26	24.24	-18	07	17.4	095
278	1985	08	13.95098	23	35	54.82	-14	49	11.8	095
278	1985	08	24.94771	23	28	34.00	-15	50	12.1	E 095
278	1985	09	11.89236	23	13	46.55	-17	18	40.1	095
278	1985	09	19.86502	23	07	06.63	-17	46	32.2	095
278	1985	09	20.83145	23	06	20.06	-17	49	15.4	095
294	1985	08	13.95098	23	38	51.19	-06	49	02.8	E 095
294	1985	08	14.96914	23	38	32.63	-06	55	33.6	E 095
294	1985	08	15.94465	23	38	14.88	-07	01	30.6	095
294	1985	08	17.96531	23	37	32.50	-07	14	39.6	095
294	1985	08	19.96132	23	36	45.41	-07	28	07.8	095
294	1985	08	24.94771	23	34	26.60	-08	03	24.3	095
294	1985	09	11.89236	23	23	21.82	-10	16	13.2	095
294	1985	09	19.86502	23	18	04.75	-11	09	09.5	095
294	1985	09	20.83145	23	17	28.08	-11	14	59.8	095
310	1985	11	13.05627	05	21	06.18	+21	27	23.5	095
315	1985	08	14.96914	00	11	22.08	+01	09	35.0	095
315	1985	08	16.96669	00	11	16.96	+01	04	31.4	095
315	1985	08	18.96152	00	11	04.10	+00	58	32.8	095
315	1985	08	23.90671	00	09	57.04	+00	39	33.3	095
317	1985	11	13.05627	05	29	54.92	+20	23	07.7	095
319	1985	09	15.95150	01	44	47.88	+08	16	03.7	E 095
319	1985	09	20.96502	01	43	21.75	+07	42	14.4	E 095
319	1985	09	21.99628	01	42	59.76	+07	34	52.2	095
319	1985	10	18.91663	01	28	11.24	+03	51	52.4	095
319	1985	11	12.81951	01	14	41.16	+00	57	48.8	E 095
334	1985	09	21.99628	01	54	53.78	+05	39	50.0	E 095
334	1985	10	18.91663	01	39	50.67	+03	55	15.1	095
334	1985	11	12.81951	01	25	30.50	+02	38	32.4	095
342	1985	05	23.85802	15	23	15.54	-17	46	12.1	095
357	1985	08	13.95098	23	15	09.82	-12	45	42.6	095
357	1985	08	15.94465	23	14	13.75	-13	03	32.2	095
357	1985	08	17.96531	23	13	13.02	-13	21	53.6	095
357	1985	08	19.96132	23	12	09.31	-13	40	10.1	095

357	1985	08	24.94771	23	09	16.88	-14	26	13.6		095
357	1985	09	11.89236	22	57	25.56	-17	04	33.4		095
357	1985	09	19.86502	22	52	14.19	-18	03	40.9	E	095
357	1985	09	20.83145	22	51	38.60	-18	10	05.0	E	095
359	1985	09	15.95150	01	29	04.42	+10	28	18.6		095
359	1985	09	20.96502	01	25	49.68	+10	29	08.5		095
359	1985	09	22.96814	01	24	22.19	+10	28	35.0		095
363	1985	05	23.85802	15	53	52.00	-19	42	27.1	E	095
388	1985	09	15.95150	01	11	45.25	+10	36	09.0		095
388	1985	09	20.96502	01	08	21.72	+10	28	52.0		095
388	1985	09	21.93536	01	07	39.79	+10	27	06.6		095
388	1985	09	22.96814	01	06	54.15	+10	25	11.6		095
388	1985	10	18.84030	00	45	48.80	+09	11	05.8	E	095
414	1985	08	13.95098	23	30	09.40	-14	00	28.6		095
414	1985	08	15.94465	23	29	15.88	-14	12	09.4	E	095
414	1985	08	17.96531	23	28	18.03	-14	24	09.3	E	095
414	1985	08	19.96132	23	27	17.56	-14	36	06.4	E	095
414	1985	08	24.94771	23	24	34.06	-15	06	05.2	I	095
414	1985	09	11.89236	23	13	08.32	-16	47	55.9		095
414	1985	09	19.86502	23	07	53.25	-17	24	56.7		095
414	1985	09	20.83145	23	07	16.20	-17	28	54.8		095
420	1985	09	20.96502	01	06	29.66	+14	46	51.6		095
420	1985	09	21.93536	01	05	56.08	+14	43	17.2		095
420	1985	10	18.84030	00	48	06.09	+12	30	12.6	E	095
431	1985	09	15.95150	01	34	41.18	+06	58	57.6		095
431	1985	09	20.96502	01	32	07.02	+06	40	11.2		095
431	1985	09	22.96814	01	30	57.33	+06	32	01.8		095
431	1985	11	12.81951	00	57	24.55	+03	14	04.6	E	095
447	1985	05	23.85802	15	19	53.25	-16	16	32.2		095
452	1985	09	21.99628	01	52	08.38	+06	40	14.3		095
452	1985	10	18.91663	01	32	30.44	+04	44	06.5		095
452	1985	11	12.81951	01	14	24.52	+03	21	37.2		095
467	1985	09	19.93764	01	01	01.71	+14	39	30.4		095
467	1985	09	21.93536	00	59	35.89	+14	36	57.8		095
467	1985	10	18.84030	00	37	34.47	+13	12	34.0		095
481	1985	05	23.85802	15	54	37.10	-18	52	15.4	E	095
551	1985	08	14.96914	23	47	08.80	-01	37	24.8		095
551	1985	08	16.96669	23	46	17.20	-01	42	50.8		095
551	1985	08	18.96152	23	45	21.07	-01	48	46.0		095
551	1985	08	23.90671	23	42	43.34	-02	05	25.0		095
551	1985	09	15.87222	23	26	25.97	-03	47	41.7		095
551	1985	09	20.89561	23	22	32.35	-04	11	51.8		095
603	1985	08	14.96914	23	56	39.11	+00	30	39.5		095
603	1985	08	16.96669	23	55	35.08	+00	28	51.7		095
603	1985	08	18.96152	23	54	26.06	+00	26	38.8		095
603	1985	08	23.90671	23	51	14.22	+00	19	02.3		095
603	1985	09	15.87222	23	31	41.47	-00	45	40.1		095
603	1985	09	20.89561	23	26	58.94	-01	03	19.9		095
606	1985	08	16.96669	23	39	30.64	+04	27	17.2	N	095
659	1985	09	21.99628	01	54	23.36	+15	05	27.0	E	095
710	1985	08	19.96132	23	28	26.32	-04	30	00.4		095
738	1985	09	15.95150	01	38	09.83	+05	30	59.4	E	095
738	1985	09	20.96502	01	35	35.02	+05	09	39.4	E	095
738	1985	09	22.96814	01	34	26.32	+05	00	39.4		095
786	1985	11	13.05627	05	34	09.08	+18	26	03.8		095
790	1985	11	13.05627	05	20	59.92	+22	20	36.4		095
798	1985	05	23.85802	15	23	27.19	-13	19	04.9		095
830	1985	08	14.96914	23	54	34.93	+00	01	04.6		095
830	1985	08	16.96669	23	53	45.73	-00	01	46.0		095

830	1985	08	18.96152	23	52	52.25	-00	05	02.8		095
830	1985	08	23.90671	23	50	21.97	-00	15	03.9		095
830	1985	09	15.87222	23	34	46.34	-01	27	18.6		095
830	1985	09	20.89561	23	30	59.73	-01	45	54.0		095
835	1985	09	15.95150	01	26	20.02	+14	17	23.8	E	095
835	1985	09	20.96502	01	23	37.09	+14	09	29.3	E	095
847	1985	09	15.95150	01	12	50.26	+11	51	58.8		095
847	1985	09	19.93764	01	10	27.32	+11	40	13.8		095
847	1985	09	20.96502	01	09	47.28	+11	36	52.2		095
847	1985	09	21.93536	01	09	08.91	+11	33	29.7		095
857	1985	11	12.81951	01	22	09.07	+01	01	17.8	E	095
859	1985	10	18.91663	01	21	15.71	+03	03	59.9	E	095
859	1985	11	12.81951	01	02	21.16	+03	19	25.0		095
931	1985	08	13.95098	23	34	05.16	-15	55	56.4	E	095
941	1985	10	18.91663	01	37	18.10	+04	10	02.1		095
941	1985	11	12.81951	01	17	52.29	+04	08	21.0		095
946	1985	09	20.96502	01	35	13.19	+08	10	30.8		095
946	1985	09	22.96814	01	34	05.80	+08	03	51.6		095
946	1985	10	18.91663	01	15	32.67	+06	17	32.2	E	095
946	1985	11	12.81951	00	59	11.78	+04	49	51.2	E	095
962	1985	08	14.96914	23	41	32.17	-03	16	42.9		095
962	1985	08	16.96669	23	40	42.60	-03	24	45.8	E	095
962	1985	08	18.96152	23	39	48.34	-03	33	16.4	E	095
962	1985	09	15.87222	23	21	10.88	-06	06	28.3		095
962	1985	09	20.89561	23	17	25.92	-06	34	53.9		095
992	1985	09	15.95150	01	37	14.83	+14	07	13.6	E	095
992	1985	09	20.96502	01	34	45.93	+13	44	07.5		095
992	1985	09	22.96814	01	33	39.97	+13	34	00.6	E	095
992	1985	10	18.91663	01	16	03.23	+10	48	31.8	E	095
992	1985	11	12.81951	01	00	54.98	+08	04	01.8	E	095
1005	1985	09	19.93764	00	48	30.18	+16	53	01.7		095
1005	1985	09	21.93536	00	46	42.50	+16	58	05.2		095
1005	1985	10	18.84030	00	20	47.20	+17	11	34.4		095
1016	1985	08	13.95098	23	09	15.32	-12	18	20.0	E	095
1016	1985	08	15.94465	23	07	42.53	-12	24	57.0	E	095
1016	1985	08	17.96531	23	06	01.96	-12	31	53.6	E	095
1032	1985	05	23.85802	15	52	10.08	-15	59	15.3	E	095
1046	1985	08	14.96914	00	13	58.34	-02	57	45.7	E	095
1046	1985	08	16.96669	00	13	14.21	-03	00	04.6		095
1046	1985	08	18.96152	00	12	24.93	-03	02	42.5		095
1046	1985	08	23.90671	00	10	01.45	-03	10	53.6		095
1046	1985	09	15.87222	23	53	40.25	-04	08	57.1	E	095
1046	1985	09	20.89561	23	49	27.00	-04	22	57.2	E	095
1073	1985	08	15.94465	23	07	44.53	-08	08	19.5	E	095
1073	1985	08	17.96531	23	06	34.55	-08	15	40.2	E	095
1073	1985	08	24.94771	23	02	04.44	-08	43	01.3	E	095
1088	1985	05	23.85802	15	36	30.39	-20	30	02.3	E	095
1094	1985	08	14.96914	23	51	02.66	-06	47	57.8	E	095
1094	1985	09	19.86502	23	27	52.63	-12	58	39.0	E	095
1094	1985	09	20.83145	23	27	07.20	-13	08	07.7		095
1121	1985	09	15.95150	01	35	55.42	+12	46	36.9		095
1121	1985	09	20.96502	01	33	11.39	+12	53	45.2		095
1121	1985	09	22.96814	01	31	54.10	+12	55	33.4		095
1125	1985	09	21.99628	02	15	40.16	+09	13	29.2	E	095
1143	1985	09	15.95150	01	20	32.66	+10	09	01.2		095
1143	1985	09	20.96502	01	18	35.28	+09	56	27.9		095
1143	1985	09	22.96814	01	17	45.24	+09	51	05.0		095
1151	1985	09	19.93764	00	50	37.05	+15	31	38.0		095
1151	1985	09	21.93536	00	49	37.77	+15	16	44.0		095

1151	1985	10	18.84030	00	34	08.11	+10	36	12.6		095
1188	1985	09	15.87222	23	24	49.28	-06	38	45.3		095
1188	1985	09	20.89561	23	19	51.21	-06	43	13.2		095
1238	1985	05	23.85802	15	24	51.84	-20	38	50.8		095
1259	1985	09	15.95150	01	44	36.72	+07	56	37.4	E	095
1259	1985	09	20.96502	01	42	00.10	+07	40	40.3	E	095
1259	1985	09	21.99628	01	41	24.68	+07	37	09.9		095
1259	1985	09	22.96814	01	40	51.21	+07	33	46.8	E	095
1259	1985	10	18.91663	01	22	34.03	+05	50	10.4		095
1259	1985	11	12.81951	01	06	17.90	+04	27	33.8		095
1305	1985	05	23.85802	15	53	07.69	-20	08	10.2	N	095
1315	1985	09	19.93764	01	01	45.99	+14	02	34.2		095
1315	1985	09	21.93536	01	00	30.90	+13	54	04.4		095
1315	1985	10	18.84030	00	41	54.70	+11	24	06.6		095
1348	1985	05	23.85802	15	37	06.16	-14	19	04.7		095
1351	1985	08	13.95098	23	44	48.06	-08	21	22.2		095
1351	1985	08	15.94465	23	43	48.19	-08	25	24.2	E	095
1351	1985	08	17.96531	23	42	43.00	-08	29	45.4	E	095
1351	1985	08	19.96132	23	41	34.22	-08	34	17.6		095
1351	1985	08	24.94771	23	38	25.84	-08	46	20.8	E	095
1351	1985	09	11.89236	23	24	48.38	-09	32	07.8	E	095
1351	1985	09	19.86502	23	18	20.88	-09	49	10.1	E	095
1351	1985	09	20.83145	23	17	35.01	-09	50	53.6	E	095
1381	1985	08	15.94465	23	32	43.75	-05	03	55.2		095
1381	1985	08	17.96531	23	31	40.06	-05	05	28.8	E	095
1381	1985	08	19.96132	23	30	30.62	-05	07	34.4	E	095
1400	1985	09	19.93764	00	39	46.14	+15	10	17.9		095
1400	1985	09	21.93536	00	38	32.40	+14	50	44.7	E	095
1400	1985	10	18.84030	00	21	56.15	+09	44	25.1		095
1423	1985	11	13.05627	05	27	22.14	+24	12	29.9		095
1445	1985	08	13.95098	23	08	58.72	-09	06	22.8	E	095
1445	1985	08	15.94465	23	07	56.78	-09	15	07.6	E	095
1445	1985	08	17.96531	23	06	49.22	-09	24	15.1	E	095
1445	1985	08	19.96132	23	05	38.54	-09	33	32.8	E	095
1445	1985	08	24.94771	23	02	26.82	-09	57	40.2	E	095
1451	1985	09	21.99628	01	56	29.11	+08	32	33.7		095
1451	1985	10	18.91663	01	33	25.31	+05	12	52.4		095
1451	1985	11	12.81951	01	12	34.43	+02	39	32.9		095
1480	1985	08	13.95098	23	14	46.94	-13	38	19.2	P	095
1480	1985	08	24.94771	23	05	30.91	-14	49	48.5		095
1495	1985	09	11.89236	23	28	25.56	-13	30	09.6	E	095
1495	1985	09	19.86502	23	20	07.19	-13	28	02.8		095
1495	1985	09	20.83145	23	19	08.97	-13	27	09.5		095
1539	1985	11	13.05627	05	32	57.14	+20	53	56.1		095
1581	1985	08	14.96914	23	50	21.45	-04	19	45.5		095
1581	1985	08	16.96669	23	49	27.62	-04	27	18.8		095
1581	1985	08	18.96152	23	48	30.33	-04	35	10.2		095
1581	1985	08	23.90671	23	45	53.20	-04	55	55.0	E	095
1581	1985	09	15.87222	23	30	39.13	-06	44	24.2		095
1581	1985	09	20.89561	23	27	05.82	-07	07	36.2		095
1602	1985	10	18.91663	01	26	36.40	+02	59	39.3	E	095
1602	1985	11	12.81951	01	04	36.71	+01	43	11.0		095
1603	1985	08	13.95098	23	15	20.94	-11	19	48.2		095
1603	1985	08	15.94465	23	14	19.90	-11	35	30.6		095
1603	1985	08	17.96531	23	13	13.20	-11	51	46.6		095
1603	1985	08	19.96132	23	12	02.91	-12	08	05.2		095
1603	1985	08	24.94771	23	08	51.03	-12	49	36.5		095
1603	1985	09	11.89236	22	55	30.50	-15	13	37.7		095
1603	1985	09	19.86502	22	49	42.88	-16	06	21.6	E	095

1603	1985	09	20.83145	22	49	03.51	-16	11	57.3	E 095
1605	1985	08	14.96914	23	45	35.80	+00	35	41.2	095
1605	1985	08	16.96669	23	44	49.56	+00	25	31.2	095
1605	1985	08	23.90671	23	41	37.80	-00	14	18.6	E 095
1605	1985	09	15.87222	23	27	03.81	-03	00	16.7	095
1605	1985	09	20.89561	23	23	35.76	-03	39	09.7	095
1614	1985	08	14.96914	23	54	10.88	-02	26	14.4	095
1614	1985	08	16.96669	23	53	27.06	-02	39	00.9	095
1614	1985	08	18.96152	23	52	39.03	-02	52	21.0	095
1614	1985	08	23.90671	23	50	23.41	-03	27	20.6	095
1614	1985	09	15.87222	23	36	10.19	-06	31	56.4	095
1614	1985	09	20.89561	23	32	42.81	-07	12	43.4	095
1636	1985	08	14.96914	00	10	11.37	+01	39	03.0	095
1636	1985	08	16.96669	00	09	57.49	+01	31	58.0	095
1636	1985	08	18.96152	00	09	36.90	+01	24	01.7	095
1636	1985	08	23.90671	00	08	14.36	+01	00	12.4	095
1636	1985	09	15.87222	23	53	42.00	-01	53	00.3	E 095
1636	1985	09	20.89561	23	49	25.26	-02	38	36.4	E 095
1672	1985	09	21.99628	01	57	56.45	+11	29	41.4	095
1672	1985	10	18.91663	01	41	28.69	+09	43	34.6	095
1672	1985	11	12.81951	01	24	02.92	+07	53	11.9	095
1691	1985	11	13.05627	05	17	54.39	+21	33	14.5	E 095
1704	1985	09	15.95150	01	30	17.74	+10	59	26.0	095
1704	1985	09	20.96502	01	26	53.50	+10	40	34.6	095
1704	1985	09	22.96814	01	25	22.02	+10	31	56.2	095
1711	1985	08	13.95098	23	31	08.63	-10	42	07.0	095
1711	1985	08	15.94465	23	30	20.50	-10	58	00.7	095
1711	1985	08	17.96531	23	29	26.98	-11	14	27.9	095
1711	1985	08	19.96132	23	28	29.75	-11	31	03.0	095
1711	1985	08	24.94771	23	25	49.56	-12	13	34.1	095
1711	1985	09	11.89236	23	13	56.75	-14	45	13.6	095
1711	1985	09	19.86502	23	08	24.31	-15	43	42.9	095
1711	1985	09	20.83145	23	07	45.52	-15	50	07.9	095
1717	1985	09	15.95150	01	09	38.34	+12	59	03.9	E 095
1717	1985	09	19.93764	01	06	29.67	+13	00	06.6	095
1717	1985	09	20.96502	01	05	36.56	+12	59	56.0	E 095
1717	1985	09	21.93536	01	04	45.70	+12	59	31.4	095
1717	1985	09	22.96814	01	03	49.24	+12	58	59.3	E 095
1717	1985	10	18.84030	00	36	19.87	+11	49	45.2	095
1720	1985	08	14.96914	23	42	12.60	-02	40	27.6	095
1720	1985	08	16.96669	23	41	15.00	-02	47	54.7	E 095
1720	1985	08	18.96152	23	40	10.52	-02	56	03.0	E 095
1720	1985	09	15.87222	23	16	39.54	-05	40	23.4	E 095
1720	1985	09	20.89561	23	11	49.81	-06	12	19.9	E 095
1738	1985	09	21.99628	02	13	00.04	+08	31	01.6	095
1738	1985	10	18.91663	01	48	46.50	+07	56	07.6	095
1738	1985	11	12.81951	01	25	22.22	+07	36	42.2	095
1749	1985	08	14.96914	00	00	07.88	+01	48	37.4	095
1749	1985	08	16.96669	23	59	30.91	+01	46	20.0	095
1749	1985	08	18.96152	23	58	51.72	+01	43	53.8	095
1749	1985	08	23.90671	23	57	05.28	+01	36	41.4	095
1749	1985	09	15.87222	23	46	42.88	+00	47	50.8	095
1790	1985	08	16.96669	00	01	53.42	-02	14	17.2	095
1790	1985	08	18.96152	00	00	46.45	-02	18	35.0	095
1790	1985	08	23.90671	23	57	33.61	-02	31	31.3	095
1790	1985	09	15.87222	23	36	28.84	-04	00	09.2	095
1790	1985	09	20.89561	23	31	16.59	-04	21	21.4	095
1839	1985	11	12.81951	01	17	55.96	+02	16	32.9	095
1846	1985	08	23.90671	00	13	21.86	-01	19	38.0	095

1861	1985	08	13.95098	23	47	55.41	-12	32	40.6	E 095
1861	1985	08	17.96531	23	45	42.40	-12	44	52.8	N 095
1861	1985	08	19.96132	23	44	28.54	-12	51	04.0	E 095
1861	1985	08	24.94771	23	41	06.72	-13	06	50.6	E 095
1861	1985	09	11.89236	23	26	30.50	-13	57	50.2	095
1861	1985	09	19.86502	23	19	39.50	-14	12	16.0	095
1861	1985	09	20.83145	23	18	51.06	-14	13	29.4	095
1866	1985	05	23.85802	15	38	33.34	-11	11	56.4	E 095
1912	1985	09	21.99628	02	09	09.20	+08	52	48.2	095
1912	1985	10	18.91663	01	51	02.88	+07	19	55.4	095
1912	1985	11	12.81951	01	31	52.14	+06	02	36.3	095
1938	1985	09	21.99628	01	56	33.76	+09	24	05.6	095
1938	1985	10	18.91663	01	32	55.14	+06	29	02.2	095
1938	1985	11	12.81951	01	11	51.38	+04	09	01.4	095
1967	1985	09	21.99628	02	05	27.14	+07	28	50.8	095
1967	1985	10	18.91663	01	44	48.12	+06	19	43.2	095
1967	1985	11	12.81951	01	22	41.32	+05	40	44.2	095
2010	1985	08	15.94465	23	29	33.47	-05	11	24.6	E 095
2010	1985	08	17.96531	23	28	32.38	-05	17	01.2	E 095
2010	1985	08	19.96132	23	27	27.47	-05	22	56.4	E 095
2056	1985	09	21.99628	01	43	39.08	+15	02	31.6	E 095
2056	1985	10	18.91663	01	23	42.84	+11	57	37.6	E 095
2056	1985	11	12.81951	01	07	21.83	+08	44	06.6	095
2058	1985	09	21.99628	01	58	38.04	+08	28	11.4	095
2058	1985	10	18.91663	01	39	58.59	+06	40	15.0	095
2058	1985	11	12.81951	01	22	36.45	+05	14	14.8	095
2115	1985	09	19.93764	00	41	49.42	+15	31	08.1	095
2115	1985	09	21.93536	00	40	26.34	+15	21	47.4	095
2115	1985	10	18.84030	00	21	12.48	+12	34	29.9	095
2178	1985	08	13.95098	23	17	54.72	-08	41	45.4	095
2178	1985	08	15.94465	23	16	48.50	-08	46	35.4	095
2178	1985	08	17.96531	23	15	33.81	-08	51	54.4	095
2178	1985	08	19.96132	23	14	13.22	-08	57	36.2	095
2178	1985	08	24.94771	23	10	25.22	-09	13	08.8	095
2178	1985	09	11.89236	22	53	49.00	-10	10	57.2	E 095
2190	1985	09	20.96502	01	23	52.38	+10	06	03.9	095
2190	1985	09	22.96814	01	22	24.47	+09	57	39.0	095
2227	1985	08	14.96914	23	52	32.99	+01	43	54.6	095
2227	1985	08	16.96669	23	51	58.20	+01	36	07.7	095
2227	1985	08	18.96152	23	51	16.66	+01	27	27.6	095
2227	1985	08	23.90671	23	49	05.22	+01	01	50.3	095
2227	1985	09	15.87222	23	31	54.62	-01	58	33.8	095
2227	1985	09	20.89561	23	27	24.49	-02	45	20.6	095
2242	1985	08	14.96914	23	57	55.60	-00	16	02.8	095
2242	1985	08	16.96669	23	57	07.31	-00	18	23.9	095
2242	1985	08	18.96152	23	56	11.99	-00	21	24.0	095
2242	1985	08	23.90671	23	53	24.91	-00	31	50.6	095
2242	1985	09	15.87222	23	33	20.69	-02	03	08.4	095
2242	1985	09	20.89561	23	28	13.34	-02	27	47.0	095
2279	1985	10	18.91663	01	26	59.62	+04	43	32.6	095
2297	1985	11	13.05627	05	38	37.78	+21	26	57.7	095
2305	1985	09	21.99628	02	15	02.18	+13	06	30.4	E 095
2306	1985	11	13.05627	05	40	47.62	+21	34	31.3	095
2319	1985	09	21.99628	02	15	36.50	+08	53	14.0	E 095
2342	1985	09	15.95150	01	08	31.98	+07	18	57.6	E 095
2342	1985	09	20.96502	01	05	40.29	+07	00	49.4	E 095
2342	1985	09	22.96814	01	04	25.79	+06	52	56.1	095
2374	1985	09	19.93764	00	57	28.10	+16	47	36.8	095
2374	1985	09	21.93536	00	55	43.04	+16	55	02.6	I 095

2374	1985	10	18.84030	00	29	35.12	+17	28	46.3	095
2395	1985	09	20.96502	01	14	37.28	+07	25	44.0	095
2395	1985	09	22.96814	01	13	19.98	+07	17	50.1	095
2411	1985	08	14.96914	23	51	11.30	-02	30	12.8	095
2411	1985	08	16.96669	23	50	13.36	-02	39	00.0	I 095
2411	1985	08	18.96152	23	49	08.74	-02	48	31.0	095
2411	1985	08	23.90671	23	46	01.37	-03	14	52.0	095
2411	1985	09	15.87222	23	25	54.28	-05	46	17.0	095
2411	1985	09	20.89561	23	21	12.29	-06	19	01.4	095
2417	1985	11	12.81951	01	37	18.48	+06	18	02.7	E 095
2459	1985	05	23.85802	15	43	46.06	-14	14	45.5	095
2483	1985	11	13.05627	05	35	10.02	+23	09	21.0	095
2486	1985	09	15.95150	01	23	02.00	+11	35	35.8	095
2486	1985	09	20.96502	01	19	08.19	+11	39	46.6	095
2486	1985	09	22.96814	01	17	23.71	+11	40	26.7	095
2486	1985	10	18.84030	00	49	50.42	+11	04	15.5	E 095
2496	1985	09	15.95150	01	31	47.86	+08	48	15.3	095
2496	1985	09	20.96502	01	28	43.14	+08	26	35.0	095
2496	1985	09	22.96814	01	27	17.96	+08	16	47.0	095
2509	1985	09	15.95150	01	20	26.26	+10	51	01.8	095
2509	1985	09	20.96502	01	17	06.26	+10	43	28.4	095
2509	1985	09	21.93536	01	16	23.68	+10	41	25.8	E 095
2509	1985	09	22.96814	01	15	36.02	+10	39	17.1	095
2517	1985	09	21.99628	01	48	51.16	+07	38	00.4	095
2517	1985	10	18.91663	01	30	27.46	+06	03	03.2	095
2517	1985	11	12.81951	01	14	03.39	+04	57	08.8	095
2527	1985	09	21.99628	01	53	08.28	+10	48	55.5	095
2527	1985	10	18.91663	01	34	49.76	+08	06	41.0	095
2527	1985	11	12.81951	01	18	06.38	+05	51	32.6	095
2555	1985	09	15.87222	23	16	24.38	-03	14	33.0	E 095
2555	1985	09	20.89561	23	12	31.16	-03	38	53.5	E 095
2563	1985	08	23.90671	00	13	52.21	-01	03	22.6	E 095
2592	1985	08	16.96669	23	46	32.10	-00	16	21.6	095
2592	1985	08	18.96152	23	45	33.04	-00	22	49.7	095
2592	1985	08	23.90671	23	42	51.94	-00	40	36.7	095
2592	1985	09	15.87222	23	27	21.13	-02	25	14.6	095
2592	1985	09	20.89561	23	23	46.10	-02	49	50.8	095
2615	1985	09	21.93536	00	47	17.46	+10	11	38.1	E 095
2632	1985	09	15.95150	01	44	35.16	+10	07	22.2	E 095
2632	1985	09	20.96502	01	41	36.48	+10	08	28.4	E 095
2632	1985	09	21.99628	01	40	55.55	+10	08	26.0	E 095
2632	1985	09	22.96814	01	40	16.55	+10	08	18.0	E 095
2632	1985	10	18.91663	01	18	29.85	+09	40	36.4	095
2632	1985	11	12.81951	00	59	48.20	+09	10	33.1	E 095
2803	1985	11	13.05627	05	28	15.97	+24	48	15.6	095
2839	1985	09	19.86502	23	26	18.31	-11	50	50.1	E 095
2839	1985	09	20.83145	23	25	19.87	-11	54	05.1	E 095
2844	1985	09	21.99628	01	52	39.54	+06	31	39.2	095
2846	1985	08	13.95098	23	35	28.94	-07	57	26.7	095
2846	1985	08	15.94465	23	34	37.22	-08	10	15.8	095
2846	1985	08	17.96531	23	33	41.00	-08	23	38.6	095
2846	1985	08	19.96132	23	32	41.91	-08	37	01.7	095
2846	1985	08	24.94771	23	30	00.82	-09	11	36.9	095
2846	1985	09	11.89236	23	18	35.31	-11	18	22.2	095
2846	1985	09	19.86502	23	13	17.94	-12	10	06.2	095
2846	1985	09	20.83145	23	12	40.63	-12	15	55.8	095
2853	1985	11	13.05627	05	42	13.87	+18	08	01.1	095
2877	1985	08	13.95098	23	32	40.28	-06	53	46.3	E 095
2877	1985	08	15.94465	23	31	46.60	-07	01	35.2	095

2877	1985	08	17.96531	23	30	47.13	-07	09	53.5			095
2877	1985	08	19.96132	23	29	43.66	-07	18	29.8			095
2877	1985	08	24.94771	23	26	46.75	-07	41	11.4			095
2877	1985	09	11.89236	23	13	55.68	-09	07	36.6		E	095
2877	1985	09	19.86502	23	08	06.13	-09	41	33.3		E	095
2877	1985	09	20.83145	23	07	25.81	-09	45	13.8		E	095
2900	1985	08	13.95098	23	22	26.88	-15	15	02.4			095
2900	1985	08	24.94771	23	14	25.81	-15	46	29.4		E	095
2900	1985	09	11.89236	22	58	53.54	-16	23	13.0			095
2900	1985	09	19.86502	22	52	13.56	-16	27	45.4			095
2900	1985	09	20.83145	22	51	27.98	-16	27	43.2			095
2901	1985	09	21.99628	02	11	29.90	+09	40	27.6			095
2901	1985	10	18.91663	01	52	43.30	+08	07	46.2			095
2901	1985	11	12.81951	01	33	12.44	+06	45	34.2			095
2903	1985	10	18.84030	00	42	24.24	+18	19	00.0		E	095
2909	1985	11	13.05627	05	39	51.45	+19	59	43.3			095
2916	1985	09	20.96502	01	10	53.10	+13	04	17.4			095
2916	1985	09	21.93536	01	10	03.84	+13	01	07.6			095
2917	1985	09	19.93764	00	55	35.06	+14	13	44.1			095
2917	1985	09	21.93536	00	53	49.68	+14	17	10.2			095
2917	1985	10	18.84030	00	27	40.50	+14	10	15.6			095
2925	1985	09	20.96502	01	15	29.00	+09	34	46.4			095
2957	1985	11	13.05627	05	36	38.04	+22	18	45.4			095
2975	1985	09	19.93764	00	46	29.16	+14	09	40.7			095
2975	1985	09	21.93536	00	44	46.01	+13	57	31.8			095
3012	1985	09	19.93764	01	01	55.45	+15	31	24.1			095
3012	1985	09	21.93536	01	00	18.48	+15	34	22.2			095
3012	1985	10	18.84030	00	36	05.74	+15	30	20.2			095
3032	1985	05	23.85802	15	47	28.03	-17	35	26.9			095
3067	1985	08	13.95098	23	09	07.84	-07	40	48.0		E	095
3071	1985	05	23.85802	15	26	12.61	-15	27	52.8			095
3117	1985	08	13.95098	23	23	24.00	-08	51	31.9			095
3117	1985	08	15.94465	23	22	19.28	-09	01	19.2			095
3117	1985	08	17.96531	23	21	09.02	-09	11	34.8		P	095
3117	1985	08	19.96132	23	19	55.60	-09	21	59.4			095
3117	1985	08	24.94771	23	16	35.63	-09	48	51.2			095
3117	1985	09	11.89236	23	02	45.47	-11	25	32.4			095
3117	1985	09	19.86502	22	56	40.25	-12	01	50.1			095
3117	1985	09	20.83145	22	55	58.44	-12	05	40.7			095
3150	1985	08	13.95098	23	38	47.66	-07	04	01.0		E	095
3150	1985	08	15.94465	23	37	22.69	-07	01	55.3			095
3150	1985	08	17.96531	23	35	52.06	-06	59	58.0			095
3150	1985	08	19.96132	23	34	18.41	-06	58	15.5			095
3150	1985	08	24.94771	23	30	08.60	-06	54	32.8			095
3189	1983	09	11.80338	21	02	17.50	-10	18	59.4	17.5		095
3306	1985	05	23.85802	15	48	24.86	-15	38	34.1			095
3336	1985	08	23.90671	23	48	47.88	+00	36	24.2			095
3336	1985	09	15.87222	23	33	05.31	-01	03	24.8			095
3336	1985	09	20.89561	23	28	57.49	-01	31	48.6			095
3337	1985	08	23.90671	00	13	09.15	+01	49	08.6			095
3346	1985	09	19.93764	00	58	21.00	+11	29	29.4		E	095
3346	1985	09	21.93536	00	56	34.64	+11	33	23.0			095
3346	1985	10	18.84030	00	30	40.50	+11	53	06.8			095
3366	1985	09	22.96814	01	10	28.78	+04	12	17.3		E	095
3369	1985	09	19.93764	01	10	14.26	+20	00	49.2		E	095
3377	1985	09	20.96502	01	36	20.86	+10	44	18.9			095
3377	1985	09	22.96814	01	35	13.24	+10	37	13.0			095
3377	1985	10	18.91663	01	16	10.19	+08	34	08.7			095
3377	1985	11	12.81951	00	59	53.12	+06	41	12.4		E	095

3378	1985	08	14.96914	23	45	56.46	+00	06	22.2			095
3378	1985	08	16.96669	23	44	48.13	+00	08	49.0			095
3378	1985	08	18.96152	23	43	33.25	+00	10	39.7			095
3378	1985	08	23.90671	23	39	59.98	+00	12	37.9		E	095
3378	1985	09	15.87222	23	17	36.94	-00	15	39.7		P	095
3378	1985	09	20.89561	23	12	19.90	-00	26	40.3		E	095
3379	1985	08	15.94465	23	16	36.25	-05	39	39.4			095
3379	1985	08	17.96531	23	15	17.39	-05	51	05.4			095
3379	1985	08	19.96132	23	13	54.75	-06	02	55.2		P	095
3379	1985	08	24.94771	23	10	08.44	-06	34	20.0		E	095
3384	1985	08	15.94465	23	32	23.75	-04	45	44.8		E	095
3384	1985	08	19.96132	23	30	41.38	-05	06	34.6		E	095
3395	1985	09	21.99628	02	04	52.16	+14	31	47.0		E	095
3406	1985	09	21.93536	00	36	34.38	+16	56	03.4		E	095
3406	1985	10	18.84030	00	15	28.63	+14	25	13.0			095
3426	1983	02	15.09030	11	12	17.77	+15	56	02.9	16.5	E	095
3434	1985	08	13.95098	23	11	32.04	-11	38	39.6		E	095
3434	1985	08	15.94465	23	10	38.44	-11	49	32.8		E	095
3434	1985	08	17.96531	23	09	37.93	-12	00	57.4		E	095
3434	1985	08	19.96132	23	08	32.41	-12	12	28.4		E	095
3434	1985	09	11.89236	22	52	14.84	-14	18	59.2		E	095
3434	1985	09	19.86502	22	46	45.06	-14	48	03.3		E	095
3445	1985	09	19.93764	01	12	45.16	+19	26	26.0		E	095
3502	1985	05	23.85802	15	18	19.30	-14	54	52.6			095
3519	1985	08	14.96914	23	42	08.80	-03	07	07.4			095
3519	1985	08	16.96669	23	41	11.94	-03	13	35.0		E	095
3519	1985	08	18.96152	23	40	07.44	-03	20	48.0		E	095
3519	1985	09	15.87222	23	16	31.47	-05	47	37.8		E	095
3519	1985	09	20.89561	23	12	01.80	-06	13	39.6		E	095
3540	1985	09	21.99628	02	03	32.06	+13	22	14.2			095
3548	1985	10	18.91663	01	20	42.36	+04	26	18.8			095
3548	1985	11	12.81951	01	08	37.64	+03	45	49.0			095
3557	1985	08	23.90671	00	12	39.56	+03	04	54.6			095
3561	1985	08	13.95098	23	25	51.60	-13	17	08.9			095
3561	1985	08	15.94465	23	25	00.22	-13	28	26.9			095
3561	1985	08	17.96531	23	24	04.96	-13	40	07.2		P	095
3561	1985	08	19.96132	23	23	07.66	-13	51	37.5		E	095
3561	1985	08	24.94771	23	20	32.91	-14	20	40.6			095
3561	1985	09	11.89236	23	09	56.78	-15	58	32.2			095
3561	1985	09	19.86502	23	05	11.56	-16	33	58.3			095
3561	1985	09	20.83145	23	04	38.52	-16	37	47.8			095
3564	1985	09	20.96502	01	36	33.40	+09	07	52.0			095
3564	1985	09	22.96814	01	35	40.92	+09	05	45.1			095
3564	1985	10	18.91663	01	22	32.18	+08	29	15.8			095
3564	1985	11	12.81951	01	10	27.23	+07	55	42.1			095
3577	1985	09	15.95150	01	09	57.96	+12	45	17.0		E	095
3577	1985	09	19.93764	01	07	56.64	+12	35	49.0			095
3577	1985	09	20.96502	01	07	23.45	+12	33	10.6		E	095
3577	1985	09	21.93536	01	06	51.90	+12	30	30.9			095
3577	1985	09	22.96814	01	06	17.30	+12	27	40.9			095
3577	1985	10	18.84030	00	50	08.33	+10	50	59.4		E	095
3594	1985	09	19.93764	00	48	12.34	+17	31	50.0			095
3594	1985	09	21.93536	00	46	14.98	+17	34	25.0			095
3594	1985	10	18.84030	00	18	07.20	+17	03	10.1			095
3595	1985	09	21.99628	01	45	50.39	+13	48	18.7			095
3595	1985	10	18.91663	01	25	53.97	+11	28	17.6			095
3595	1985	11	12.81951	01	08	52.96	+09	04	41.8			095
3596	1985	09	19.93764	00	37	34.03	+12	13	43.9		E	095
3596	1985	10	18.84030	00	20	03.63	+11	47	56.9			095

3639		1985	09	15.95150	01	41	58.29	+12	31	53.3		095
3639		1985	09	20.96502	01	39	44.73	+12	16	17.2	E	095
3639		1985	09	21.99628	01	39	11.59	+12	12	29.1	E	095
3639		1985	09	22.96814	01	38	39.76	+12	08	44.2	E	095
3639		1985	10	18.91663	01	18	00.34	+09	39	25.0	E	095
3639		1985	11	12.81951	01	00	34.12	+07	14	01.8	E	095
3644		1985	09	15.95150	01	25	09.48	+10	38	35.4	16.5	095
3644		1985	09	20.96502	01	21	50.46	+10	32	26.4		095
3644		1985	09	22.96814	01	20	19.45	+10	28	50.9		095
3658		1985	08	16.96669	23	57	34.59	+02	47	33.0		095
3658		1985	08	18.96152	23	56	37.37	+02	47	53.1		095
3658		1985	08	23.90671	23	53	45.52	+02	45	22.6		095
3658		1985	09	15.87222	23	33	17.38	+01	40	18.1	E	095
3658		1985	09	20.89561	23	28	07.12	+01	18	07.6	E	095
3659		1985	09	22.96814	01	06	36.28	+06	58	38.6	17.8	095
3676		1985	09	22.96814	01	04	13.52	+07	58	09.3	E	095
3780		1985	08	14.96914	23	59	39.83	-01	44	34.7		095
3780		1985	08	16.96669	23	58	58.00	-01	51	55.2		095
3780		1985	08	18.96152	23	58	11.00	-01	59	49.4		095
3780		1985	08	23.90671	23	55	53.47	-02	21	37.2		095
3780		1985	09	15.87222	23	40	24.47	-04	29	40.4		095
3780		1985	09	20.89561	23	36	33.32	-04	59	06.2		095
3793		1985	09	15.95150	01	13	44.22	+10	00	55.6		095
3793		1985	09	20.96502	01	11	49.54	+09	38	10.7		095
3793		1985	09	22.96814	01	11	00.92	+09	28	40.6		095
3845		1985	08	18.96152	00	01	35.12	+02	55	50.4		095
3845		1985	08	23.90671	23	59	38.42	+02	38	46.9		095
3845		1985	09	15.87222	23	46	31.47	+00	45	09.5	E	095
3845		1985	09	20.89561	23	43	09.62	+00	15	30.3		095
3847		1985	09	22.96814	01	22	51.10	+04	16	05.4	17.0 E	095
3857		1985	08	24.94771	23	18	13.16	-09	40	35.8		095
3861		1985	08	18.96152	23	44	09.74	+02	46	43.9	17.0	095
3861		1985	09	15.87222	23	23	32.19	+00	06	05.8	17.3	095
3900		1985	08	14.96914	00	01	37.49	+01	21	58.6		095
3900		1985	08	16.96669	00	00	54.49	+01	26	48.6		095
3900		1985	08	18.96152	00	00	04.48	+01	31	05.5		095
3900		1985	08	23.90671	23	57	28.96	+01	38	57.7		095
3900		1985	09	15.87222	23	37	51.38	+01	30	51.0	E	095
3900		1985	09	20.89561	23	32	44.37	+01	22	01.0	E	095
3909		1985	09	19.93764	01	05	56.61	+16	27	17.4	16.8	095
3909		1985	09	21.93536	01	04	33.40	+16	13	41.2	17.0	095
3909		1985	10	18.84030	00	43	35.12	+12	16	59.6	17.3	095
3950		1983	09	11.88046	22	11	52.72	+01	59	33.2	17.0	095

220 Kavalur
R. Rajamohan, Indian Institute of Astrophysics, Bangalore 560034, India
0.45-m f/3 Schmidt
SAOC

1977	EV	1989	02	04.67708	09	08	18.00	+19	34	23.8	16.0	220
1977	EV	1989	02	04.78681	09	08	10.07	+19	34	11.8		220
1984	QR	1989	02	07.86944	09	47	47.29	+13	13	37.0	15.9	220
1984	QR	1989	02	08.70625	09	46	30.07	+13	09	17.7		220
1984	QR	1989	02	08.83125	09	46	18.51	+13	08	42.1		220
1987	RD1	1989	02	04.67708	09	06	11.42	+19	29	13.1	16.1	220
1987	RD1	1989	02	04.78681	09	06	04.83	+19	29	36.2		220
1987	RD1	1989	02	05.59722	09	05	18.40	+19	32	13.6		220
1989	CD	1989	02	04.90486	09	18	06.49	+17	55	47.8	15.8	220
1989	CD	1989	02	05.72569	09	17	16.87	+18	00	25.1		220
1989	CD	1989	02	05.83750	09	17	09.66	+18	01	01.4		220

1989 CH		1989 02 04.90486	09	14	22.10	+15	48	08.8	15.8	220
1989 CH		1989 02 05.72569	09	13	44.55	+15	58	50.9		220
1989 CH		1989 02 05.83750	09	13	39.20	+16	00	13.6		220
1989 CL		1989 02 04.90486	09	16	35.50	+15	46	54.4	16.1	220
1989 CL		1989 02 05.72569	09	15	55.38	+15	50	55.1		220
1989 CL		1989 02 05.83750	09	15	49.62	+15	51	27.5		220
1989 CD4	*	1989 02 01.62639	08	44	17.50	+19	47	28.2	15.6	220
1989 CD4		1989 02 01.76875	08	44	07.42	+19	47	42.3		220
1989 CD4		1989 02 02.59861	08	43	10.48	+19	48	57.2		220
1989 CE4	*	1989 02 01.62639	08	52	30.62	+19	36	27.3	15.6	220
1989 CE4		1989 02 01.76875	08	52	20.41	+19	36	38.0		220
1989 CE4		1989 02 02.59861	08	51	23.47	+19	37	34.5		220
1989 CF4	*	1989 02 03.72708	09	02	52.68	+14	54	57.8	15.9	220
1989 CF4		1989 02 03.83542	09	02	45.24	+14	55	07.3		220
1989 CF4		1989 02 04.59653	09	01	54.82	+14	56	21.0		220
1989 CG4	*	1989 02 04.90486	09	15	55.38	+16	44	20.2	16.1	220
1989 CG4		1989 02 05.72569	09	14	55.07	+16	47	23.8		220
1989 CG4		1989 02 05.83750	09	14	48.60	+16	47	53.7		220
149		1989 02 01.70486	08	54	20.45	+16	36	43.6	13.5	220
149		1989 02 01.83056	08	54	11.72	+16	37	22.5		220
149		1989 02 02.67639	08	53	15.94	+16	41	40.1		220
791		1989 03 04.69167	08	06	44.76	+20	33	49.8	15.7	220
791		1989 03 04.81667	08	06	41.84	+20	34	17.7		220
791		1989 03 05.72569	08	06	23.10	+20	37	40.3		220
848		1989 02 03.72708	09	08	36.26	+14	59	26.9	15.9	220
848		1989 02 03.83542	09	08	31.10	+14	59	50.1		220
848		1989 02 04.59653	09	07	54.57	+15	02	34.4		220

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

1986 EO		1988 11 12.17222	02	19	42.44	-06	19	42.4		293
1989 AZ1		1989 01 14.23021	06	52	19.15	+20	44	17.6		293
1989 AZ1		1989 01 14.24618	06	52	18.06	+20	44	25.4		293
3975		1989 01 14.23021	06	52	23.42	+20	55	04.0		293
3975		1989 01 14.24618	06	52	22.29	+20	55	06.9		293

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

2776		1989 03 08.56666	11	55	42.31	-01	56	48.3	15.5	364
2776		1989 03 08.59097	11	55	41.22	-01	56	35.8		364
2776		1989 03 14.58924	11	51	02.80	-01	03	50.3	15.5	364
2776		1989 03 14.61007	11	51	01.82	-01	03	38.0		364

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

1943 DL		1989 03 01.65764	09	53	14.23	+21	55	25.2	17	372
1943 DL		1989 03 01.66944	09	53	13.64	+21	55	24.5		372
1943 DL		1989 03 06.61215	09	48	24.18	+21	40	53.2	16.5	372
1943 DL		1989 03 08.56806	09	46	39.21	+21	34	04.0	16.5	372
1943 DL		1989 03 08.58125	09	46	38.53	+21	34	02.1		372
1943 DL		1989 03 10.60677	09	44	55.84	+21	26	15.9	17	372
1987 WW		1989 03 06.72812	12	11	08.49	+01	38	14.0	18	372

1987	WW		1989	03	06.74132	12	11	07.73	+01	38	15.5	372
1987	WW		1989	03	08.70000	12	09	19.42	+01	47	50.4	17.5 372
1987	WW		1989	03	08.71250	12	09	18.81	+01	47	55.5	372
1989	CR		1989	02	26.52049	07	19	33.68	+31	34	38.7	19.5 372
1989	CR		1989	02	26.53333	07	19	33.41	+31	34	42.5	372
1989	CV		1989	03	01.56493	08	12	58.84	+26	39	11.5	19 372
1989	CW		1989	03	06.58958	09	23	26.12	+15	06	36.9	17 372
1989	CW		1989	03	06.60000	09	23	25.72	+15	06	39.9	372
1989	CM1		1989	02	26.62639	09	54	12.56	+19	38	41.0	17 372
1989	CM1		1989	02	26.63541	09	54	12.12	+19	38	46.9	372
1989	CM1		1989	03	01.61389	09	51	14.98	+19	45	14.9	17.5 372
1989	CM1		1989	03	01.62431	09	51	14.26	+19	45	17.7	372
1989	CV1		1989	03	01.68229	09	58	27.23	+21	04	11.2	18 372
1989	CV1		1989	03	01.69410	09	58	26.87	+21	04	13.5	372
1989	CX1		1989	03	01.63472	09	46	20.95	+18	31	05.8	18 372
1989	CX1		1989	03	01.64514	09	46	20.38	+18	31	10.6	372
1989	EG		1989	03	05.71510	10	40	18.79	+01	33	58.0	16 372
1989	EG		1989	03	06.66389	10	39	21.94	+01	38	52.1	372
1989	EG1	*	1989	03	06.72812	12	11	52.24	+01	48	21.8	18 372
1989	EG1		1989	03	06.74132	12	11	51.60	+01	48	28.3	372
1989	EG1		1989	03	08.70000	12	10	26.71	+02	07	02.8	17.5 372
1989	EG1		1989	03	08.71250	12	10	26.15	+02	07	07.7	372
1989	EG1		1989	03	10.74653	12	08	53.57	+02	26	46.9	18 372
1989	EG1		1989	03	10.75486	12	08	53.19	+02	26	52.3	372
1989	EO1	*	1989	03	01.58264	09	33	20.05	+14	46	07.9	18 372
1989	EO1		1989	03	01.59306	09	33	19.38	+14	46	09.6	372
1989	EO1		1989	03	05.58854	09	29	42.12	+14	48	42.6	17.5 372
1989	EO1		1989	03	05.59965	09	29	41.77	+14	48	43.1	372
1989	EO1		1989	03	10.70590	09	25	40.99	+14	49	25.9	17.5 372
1989	EO1		1989	03	10.71597	09	25	40.60	+14	49	26.6	372
1989	EP1	*	1989	03	06.72812	12	12	11.15	+01	07	23.0	19 372
1989	EP1		1989	03	06.74132	12	12	10.76	+01	07	30.1	372
1989	EP1		1989	03	08.70000	12	10	45.7	+01	21	24	19 372
1989	EP1		1989	03	08.71250	12	10	45.1	+01	21	30	372
1989	EQ1	*	1989	03	08.78056	13	31	07.63	-01	58	55.9	18.5 372
1989	EQ1		1989	03	08.79236	13	31	07.32	-01	58	55.8	372
1989	EQ1		1989	03	10.63160	13	30	01.69	-01	52	15.8	18.5 372
1989	ER1	*	1989	03	10.65382	11	20	34.81	+12	50	47.1	18 372
1989	ER1		1989	03	10.66563	11	20	34.27	+12	50	50.6	372
1989	ER1		1989	03	11.65278	11	19	36.00	+12	54	07.0	17.5 372
1989	ER1		1989	03	11.66545	11	19	35.39	+12	54	11.4	372
1989	ER1		1989	03	14.72535	11	16	38.68	+13	03	15.3	17.5 372
1989	ER1		1989	03	14.73576	11	16	37.94	+13	03	16.7	372
1989	ET1	*	1989	03	11.70243	11	39	19.56	+11	26	40.9	16.5 372
1989	ET1		1989	03	11.71424	11	39	18.88	+11	26	43.9	372
1989	ET1		1989	03	15.71163	11	35	07.38	+11	39	59.6	16.5 372
1989	ET1		1989	03	15.72257	11	35	06.68	+11	40	02.2	372
1989	EU1	*	1989	03	10.72708	11	35	58.11	+09	01	50.5	18 372
1989	EU1		1989	03	10.73681	11	35	57.56	+09	01	56.5	372
1989	EU1		1989	03	14.67604	11	32	24.30	+09	41	00.8	18 372
1989	EK2	*	1989	03	05.75625	13	04	10.53	-00	20	18.2	18 372
1989	EK2		1989	03	05.76875	13	04	10.17	-00	20	15.3	372
1989	EK2		1989	03	08.75521	13	02	22.79	-00	12	37.5	17.5 372
1989	EK2		1989	03	08.76875	13	02	22.46	-00	12	33.5	372
1946			1989	03	14.70277	11	32	20.20	+08	55	03.2	17.5 372
1946			1989	03	14.71351	11	32	19.47	+08	55	06.5	372
2314			1989	03	14.72535	11	12	21.88	+13	04	36.2	17 372
2314			1989	03	14.73576	11	12	21.07	+13	04	37.5	372

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

1989 EV	*	1989 03 06.70868	12	18	02.18	+10	59	53.7	16.0	374
1989 EV		1989 03 06.72969	12	18	01.35	+10	59	58.9		374
1989 EV		1989 03 10.63785	12	14	46.79	+11	17	18.1		374
1989 EV		1989 03 10.67222	12	14	45.11	+11	17	24.3		374
1989 EW	*	1989 03 06.70868	12	19	52.33	+11	32	04.9	16.0	374
1989 EW		1989 03 06.72969	12	19	51.46	+11	32	08.6		374
1989 EW		1989 03 10.63785	12	16	41.01	+11	48	03.7		374
1989 EW		1989 03 10.67222	12	16	39.07	+11	48	08.3		374

391 Sendai Observatory, Ayashi Station
M. Koishikawa, Sendai Municipal Observatory, 1-1 Sakuragaoka-koen, Sendai 980, Japan
Observer M. Koishikawa
0.20-m reflector

1983 CS		1989 03 06.69097	10	46	56.14	+11	40	33.2		391
1983 CS		1989 03 06.71181	10	46	55.04	+11	40	38.1		391
1985 GX		1989 03 01.61944	09	56	45.77	+08	13	59.2		391
1985 GX		1989 03 01.64028	09	56	44.87	+08	14	14.3		391
1989 CL1		1989 03 06.64931	10	23	55.55	+13	51	45.1		391
1989 CL1		1989 03 06.67014	10	23	54.65	+13	51	50.8		391
1989 CL1		1989 03 08.63819	10	22	28.26	+13	59	15.6		391
1989 CL1		1989 03 08.65903	10	22	27.54	+13	59	19.9		391
1989 CL1		1989 03 10.59167	10	21	05.63	+14	06	10.5		391
1989 CL1		1989 03 10.61250	10	21	04.95	+14	06	15.5		391
1989 CY1		1989 03 06.56736	09	10	32.77	+15	01	47.7	16.5	391
1989 CY1		1989 03 06.58819	09	10	31.92	+15	01	52.2		391
1989 CY1		1989 03 08.53194	09	09	31.83	+15	09	08.4		391
1989 CY1		1989 03 08.55278	09	09	31.07	+15	09	16.8		391
1989 ET	*	1989 03 06.52431	09	28	43.40	+22	02	26.4	17.0	391
1989 ET		1989 03 06.54515	09	28	42.67	+22	02	28.1		391
1989 ET		1989 03 08.48889	09	27	40.37	+22	04	55.2		391
1989 ET		1989 03 08.50972	09	27	39.41	+22	05	04.6		391
1989 EU	*	1989 03 06.60764	10	13	20.72	+03	14	52.9	16.5	391
1989 EU		1989 03 06.62847	10	13	20.17	+03	14	58.2		391
1989 EU		1989 03 08.59444	10	12	04.03	+03	24	32.5		391
1989 EU		1989 03 08.61528	10	12	02.54	+03	24	33.1		391
1989 EA1	*	1989 03 09.67882	11	15	45.28	+07	49	08.8	15.5	391
1989 EA1		1989 03 09.70313	11	15	43.88	+07	49	14.6	15.5	391
1989 EA1		1989 03 11.69792	11	13	43.43	+07	58	13.3	16.0	391
1989 EA1		1989 03 11.71875	11	13	42.46	+07	58	19.9	16.0	391
338		1989 03 06.60764	10	11	42.88	+03	43	09.7		391
338		1989 03 06.62847	10	11	41.86	+03	43	14.7		391
588		1989 03 06.56736	09	10	35.41	+14	55	21.9		391
588		1989 03 06.58819	09	10	34.87	+14	55	23.2		391
588		1989 03 08.53194	09	09	44.48	+14	56	42.4		391
588		1989 03 08.55278	09	09	44.00	+14	56	42.8		391
736		1989 03 06.69097	10	45	34.75	+11	13	50.3		391
736		1989 03 06.71181	10	45	33.43	+11	13	59.9		391
783		1989 03 06.64931	10	22	30.37	+14	21	10.5		391
783		1989 03 06.67014	10	22	29.24	+14	21	21.7		391
825		1989 03 06.77500	12	19	15.93	+04	32	24.7		391
933		1989 03 08.63819	10	24	20.27	+13	48	57.6		391

933		1989	03	08.65903	10	24	19.29	+13	49	07.0	391
2066		1989	03	06.64931	10	23	24.86	+14	45	52.0	391
2066		1989	03	06.67014	10	23	23.67	+14	46	01.8	391
2136		1989	03	06.69097	10	45	59.37	+11	32	17.0	391
2136		1989	03	06.71181	10	45	58.39	+11	32	26.2	391
2300		1989	03	11.69792	11	13	37.25	+07	35	16.4	391
2300		1989	03	11.71875	11	13	35.99	+07	35	23.2	391
2525		1989	03	06.69097	10	45	51.13	+11	48	41.4	391
2525		1989	03	06.71181	10	45	50.21	+11	48	48.0	391

399 Kushiro
H. Kaneda, 12-7-2, 1 Chome, Ishiyama 1 Jo, Minami-Ku,
Sapporo 005, Japan
Observer S. Ueda
Measurer H. Kaneda
0.16-m f/3.8 Wright-Schmidt camera
AGK3, SAOC

1984	QR		1989	03	12.59618	09	07	43.48	+10	31	17.3	16	399
1984	QR		1989	03	12.61181	09	07	42.90	+10	31	13.3		399
1984	QR		1989	03	12.62639	09	07	42.25	+10	31	08.7		399
1986	EM1		1989	03	12.64861	11	10	54.64	+10	08	28.9	16.5	399
1986	EM1		1989	03	12.66319	11	10	53.74	+10	08	32.9		399
1986	EM1		1989	03	12.68183	11	10	52.46	+10	08	37.5		399
1987	KN5	*	1987	05	18.60799	15	17	12.40	-10	53	38.0	16	399
1987	KN5		1987	05	18.62038	15	17	11.62	-10	53	32.2		399
1987	KN5		1987	05	18.63380	15	17	10.92	-10	53	26.9		399
1987	UB1		1989	03	08.69462	11	23	54.57	+08	41	56.7	17	399
1987	UB1		1989	03	08.70974	11	23	53.49	+08	42	00.7		399
1987	UB1		1989	03	08.72604	11	23	52.57	+08	42	05.5		399
1987	UB1		1989	03	12.55770	11	20	10.39	+08	59	19.3	17	399
1987	UB1		1989	03	12.57234	11	20	09.38	+08	59	24.5		399
1987	UB1		1989	03	12.64861	11	20	05.10	+08	59	43.7		399
1987	UB1		1989	03	12.66319	11	20	04.06	+08	59	48.2		399
1987	UB1		1989	03	12.68183	11	20	02.97	+08	59	53.7		399
1987	VE1		1989	03	08.64375	10	25	30.43	-00	58	35.5	15.5	399
1987	VE1		1989	03	08.65833	10	25	29.67	-00	58	30.4		399
1987	VE1		1989	03	08.67367	10	25	28.75	-00	58	23.5		399
1987	VE1		1989	03	11.57118	10	23	01.63	-00	39	46.3	15.5	399
1987	VE1		1989	03	11.58785	10	23	00.92	-00	39	41.2		399
1988	AV5	*	1988	01	15.59167	09	41	21.84	+17	52	22.7	16.5	399
1988	AV5		1988	01	15.60694	09	41	21.18	+17	52	27.8		399
1988	AV5		1988	01	15.62674	09	41	20.52	+17	52	31.6		399
1988	AV5		1988	01	15.64716	09	41	19.74	+17	52	37.8		399
1988	AV5		1988	01	17.58438	09	40	06.24	+18	00	11.7	16.5	399
1988	AV5		1988	01	17.59907	09	40	05.72	+18	00	14.0		399
1988	AV5		1988	01	17.61551	09	40	05.12	+18	00	18.6		399
1988	BO5	*	1988	01	24.59537	09	55	58.26	+14	51	35.8	16.5	399
1988	BO5		1988	01	24.61060	09	55	57.51	+14	51	40.9		399
1988	BO5		1988	01	24.62795	09	55	56.67	+14	51	45.8		399
1988	BO5		1988	01	25.70642	09	55	06.32	+14	55	37.3	16.5	399
1988	BO5		1988	01	25.72222	09	55	05.44	+14	55	41.0		399
1988	BO5		1988	01	25.74097	09	55	04.60	+14	55	44.7		399
1988	CU7	*	1988	02	11.49792	09	38	23.41	+20	59	24.1	16.5	399
1988	CU7		1988	02	11.51510	09	38	22.40	+20	59	25.5		399
1988	CU7		1988	02	11.53403	09	38	21.00	+20	59	30.3		399
1989	BC		1989	02	26.47106	08	43	30.13	+31	09	43.3	16.5	399
1989	BC		1989	02	26.48542	08	43	29.46	+31	09	46.2		399
1989	BC		1989	02	26.50208	08	43	28.84	+31	09	50.1		399
1989	BC		1989	03	08.58872	08	38	13.02	+31	35	18.3	16.5	399

1989	BC		1989	03	08.60417	08	38	12.64	+31	35	20.3		399
1989	BC		1989	03	08.62049	08	38	12.24	+31	35	21.2		399
1989	BD		1989	02	26.47106	08	44	38.44	+29	58	40.1	16.5	399
1989	BD		1989	02	26.48542	08	44	37.85	+29	58	37.3		399
1989	BD		1989	02	26.50208	08	44	37.28	+29	58	35.6		399
1989	BV1		1989	02	11.64236	09	11	07.10	+17	23	59.0	16.5	399
1989	BV1		1989	02	11.65764	09	11	06.20	+17	24	04.3		399
1989	BV1		1989	02	11.67520	09	11	05.26	+17	24	06.6		399
1989	CH		1989	03	11.51539	08	54	11.71	+22	13	22.8	16	399
1989	CH		1989	03	11.53125	08	54	11.45	+22	13	28.1		399
1989	CH		1989	03	11.54583	08	54	11.33	+22	13	34.5		399
1989	CW		1989	02	27.52726	09	29	33.94	+14	40	32.8	16.5	399
1989	CW		1989	02	27.54253	09	29	33.39	+14	40	35.0		399
1989	CW		1989	02	27.56505	09	29	32.10	+14	40	41.9		399
1989	CX		1989	03	12.59618	09	07	27.93	+10	57	09.6	16.5	399
1989	CX		1989	03	12.61181	09	07	27.07	+10	56	55.9		399
1989	CX		1989	03	12.62639	09	07	26.41	+10	56	42.8		399
1989	CN1		1989	02	27.47234	09	49	07.55	+19	10	22.0	16	399
1989	CN1		1989	02	27.48681	09	49	06.69	+19	10	25.4		399
1989	CN1		1989	02	27.50451	09	49	05.77	+19	10	25.6		399
1989	EA1		1989	03	08.69462	11	16	45.03	+07	44	32.7	15	399
1989	EA1		1989	03	08.70974	11	16	44.07	+07	44	35.2		399
1989	EA1		1989	03	08.72604	11	16	43.04	+07	44	39.5		399
1989	EA1		1989	03	12.64861	11	12	46.25	+08	02	30.6	15	399
1989	EA1		1989	03	12.66319	11	12	45.27	+08	02	34.3		399
1989	EA1		1989	03	12.68183	11	12	44.22	+08	02	39.1		399
1989	EL2	*	1989	03	12.55770	11	24	37.58	+08	57	43.1	16.5	399
1989	EL2		1989	03	12.57234	11	24	36.56	+08	57	46.9		399
1989	EL2		1989	03	12.64861	11	24	31.19	+08	58	07.2		399
1989	EL2		1989	03	12.66319	11	24	30.25	+08	58	11.9		399
1989	EL2		1989	03	12.68183	11	24	29.08	+08	58	14.8		399
1989	EL2		1989	03	26.47465	11	10	09.52	+09	46	50.2	16.5	399
1989	EL2		1989	03	26.49063	11	10	08.64	+09	46	52.6		399
1989	EL2		1989	03	26.50729	11	10	07.52	+09	46	54.2		399
1989	EL2		1989	03	26.52326	11	10	06.76	+09	46	57.2		399

400 Kitami
K. Watanabe, 13-23-202, 4 Chome, Atsubetsu cyuo 3 jo, Shiroishi-ku,
Sapporo 004, Japan
Observers K. Endate, T. Fujii, A. Takahashi, M. Yanai
Measurer K. Watanabe
0.16-m f/3.3 reflector, 0.20-m f/4.8 reflector and 0.20-m f/4.0 reflector
AGK3, SAOC

1986	JG		1989	03	12.64792	12	39	36.57	-05	52	28.5	16.0	400
1986	JG		1989	03	12.66528	12	39	35.66	-05	52	24.9		400
1986	JG		1989	03	12.67778	12	39	35.09	-05	52	21.0		400
1986	JG		1989	03	26.52990	12	26	42.58	-04	40	44.0	15.5	400
1986	JG		1989	03	26.54240	12	26	41.75	-04	40	39.9		400
1986	JG		1989	03	26.55385	12	26	40.90	-04	40	35.5		400
1986	JG		1989	03	27.49102	12	25	44.13	-04	35	05.2	15.5	400
1986	JG		1989	03	27.50977	12	25	43.07	-04	34	57.4		400
1989	AM1		1989	01	30.50972	07	36	25.81	+22	14	21.4	16	400
1989	AM1		1989	01	30.52708	07	36	24.76	+22	14	21.3		400
1989	AM1		1989	01	30.53958	07	36	24.18	+22	14	20.6		400
1989	AM1		1989	02	07.59097	07	30	01.89	+21	59	55.8	16.5	400
1989	AM1		1989	02	07.61042	07	30	01.12	+21	59	51.8		400
1989	AM1		1989	02	07.62292	07	30	00.43	+21	59	52.0		400
1989	AX1		1989	01	30.55486	08	24	26.65	+28	33	13.9	16.0	400
1989	AX1		1989	01	30.57222	08	24	25.31	+28	33	12.6		400

1989	AX1		1989	01	30.58455	08	24	24.26	+28	33	14.2		400
1989	AX1		1989	02	07.63924	08	14	58.02	+28	34	08.6	16.0	400
1989	AX1		1989	02	07.65278	08	14	57.21	+28	34	05.9		400
1989	CB1		1989	03	12.56458	08	56	58.35	+19	16	39.0	16.5	400
1989	CB1		1989	03	12.62153	08	56	56.45	+19	16	51.1		400
1989	CB1		1989	03	12.64444	08	56	55.55	+19	16	58.1		400
1989	CM1		1989	02	26.49306	09	54	20.78	+19	38	25.6	16.5	400
1989	CM1		1989	02	26.50764	09	54	20.02	+19	38	25.2		400
1989	EM2	*	1989	03	12.64792	12	40	12.44	-05	17	21.5	17.0	400
1989	EM2		1989	03	12.66528	12	40	11.47	-05	17	21.5		400
1989	EM2		1989	03	12.67778	12	40	10.81	-05	17	19.1		400
1989	EM2		1989	03	26.52990	12	27	02.84	-04	53	13.5	15.5	400
1989	EM2		1989	03	26.55385	12	27	01.36	-04	53	10.0		400
1989	EM2		1989	03	27.49102	12	26	04.01	-04	51	01.2	16.0	400
1989	EM2		1989	03	27.50977	12	26	02.89	-04	50	58.2		400
1989	EN2	*	1989	03	12.64792	12	41	28.41	-05	35	25.1	17.0	400
1989	EN2		1989	03	12.66528	12	41	27.57	-05	35	21.3		400
1989	EN2		1989	03	12.67778	12	41	27.01	-05	35	20.2		400
1989	EN2		1989	03	26.52990	12	28	43.15	-04	33	01.0	16.5	400
1989	EN2		1989	03	26.54240	12	28	42.34	-04	32	58.6		400
1989	EN2		1989	03	26.55385	12	28	41.57	-04	32	55.9		400
1035			1989	03	26.52990	12	23	27.89	-05	05	42.2	16.0	400
1035			1989	03	26.54240	12	23	27.27	-05	05	39.8		400
1035			1989	03	26.55385	12	23	26.70	-05	05	38.5		400
1035			1989	03	27.49102	12	22	38.32	-05	04	06.5	16.0	400
1035			1989	03	27.50977	12	22	37.38	-05	04	04.2		400
1269			1989	03	26.50799	12	29	41.50	+00	05	13.0	13.5	400
1269			1989	03	26.52882	12	29	40.76	+00	05	16.8		400
1269			1989	03	26.54965	12	29	39.93	+00	05	23.9		400
1545			1989	03	26.50799	12	28	28.80	+01	06	20.9	14.0	400
1545			1989	03	26.52882	12	28	27.73	+01	06	26.4		400
1545			1989	03	26.54965	12	28	26.60	+01	06	32.0		400
4006			1989	02	07.59097	07	31	32.90	+21	09	56.7	16.5	400
4006			1989	02	07.61042	07	31	32.12	+21	09	56.7		400
4006			1989	02	07.62292	07	31	31.52	+21	10	04.7		400

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

1989	BQ		1989	03	28.58472	08	42	18.32	+24	26	28.0	17.0	402
1989	BQ		1989	03	29.48681	08	42	22.11	+24	27	56.3	17.0	402
1989	BR1		1989	02	14.52500	08	47	38.69	+18	30	50.0	17.5	402
1989	BR1		1989	02	14.62326	08	47	34.10	+18	31	08.8	17.5	402
1989	DC		1989	03	08.64514	10	39	52.21	+18	42	44.3	16.5	402
1989	DC		1989	03	08.65208	10	39	51.81	+18	42	44.4	16.5	402
1989	DC		1989	03	14.50972	10	34	00.62	+18	49	01.9	17.0	402
1989	DC		1989	03	14.51667	10	34	00.11	+18	49	02.1	17.0	402
1989	DC		1989	03	30.47812	10	22	01.45	+18	27	14.1	17.0	402
1989	DC		1989	03	30.50382	10	22	00.53	+18	27	09.2	17.0	402
1989	EA		1989	03	08.66458	10	47	42.94	+19	40	15.3	17.0	402
1989	EA		1989	03	08.67153	10	47	42.54	+19	40	16.8	17.0	402
1989	EF1	*	1989	03	02.66495	11	55	15.20	+04	33	16.7	16.5	402
1989	EF1		1989	03	02.67190	11	55	14.72	+04	33	17.4	16.5	402
1989	EF1		1989	03	10.57431	11	48	03.71	+05	09	20.0	16.5	402
1989	EF1		1989	03	10.58125	11	48	03.22	+05	09	22.8	16.5	402
1989	EF1		1989	03	10.59863	11	48	02.11	+05	09	28.1	16.5	402

1989	ES1	*	1989	03	10.72292	11	55	41.65	+05	16	34.5	16.5	402
1989	ES1		1989	03	11.63889	11	54	47.93	+05	17	43.2	16.5	402
1989	ES1		1989	03	11.64583	11	54	47.51	+05	17	43.5	16.5	402
1989	ES1		1989	03	11.72153	11	54	42.79	+05	17	48.1	16.5	402
1989	ES1		1989	03	15.71250	11	50	45.31	+05	22	12.5	16.5	402
1989	ES1		1989	03	15.71944	11	50	44.89	+05	22	12.7	16.5	402
1989	ES1		1989	03	15.74618	11	50	43.44	+05	22	15.2	16.5	402
1989	ES1		1989	03	29.54792	11	37	13.56	+05	29	47.7	17.0	402
1989	ES1		1989	03	29.55486	11	37	13.17	+05	29	47.3	17.0	402
1989	EO2	*	1989	03	15.71250	11	48	46.54	+04	48	40.9	16.5	402
1989	EO2		1989	03	15.71944	11	48	46.20	+04	48	43.1	16.5	402
1989	EO2		1989	03	15.74653	11	48	44.68	+04	48	52.2	16.5	402
1989	EO2		1989	03	29.54792	11	36	38.47	+06	00	09.9	16.5	402
1989	EO2		1989	03	29.55486	11	36	38.11	+06	00	12.8	16.5	402
1989	EO2		1989	03	30.55486	11	35	50.93	+06	04	20.4	16.5	402
1989	EO2		1989	03	30.56181	11	35	50.35	+06	04	23.9	16.5	402
1989	FA	*	1989	03	28.56181	11	44	38.35	+05	46	51.2	17.5	402
1989	FA		1989	03	28.56875	11	44	37.97	+05	46	54.9	17.5	402
1989	FA		1989	03	29.58623	11	43	47.47	+05	53	55.8	17.5	402
1989	FA		1989	03	29.59317	11	43	47.06	+05	53	59.8	17.5	402

413 Siding Spring
C.-I. Lagerkvist, Astronomiska Observatoriet, Box 515,
S-75120 Uppsala, Sweden
R. H. McNaught, Siding Spring Observatory, Coonabarabran, N.S.W. 2357,
Australia
Observers M. Hartley, C.-I. Lagerkvist, G. Lynga, R. H. McNaught,
Q. A. Parker, B. Pettersson
Measurers C.-I. Lagerkvist, R. H. McNaught
1.2-m Schmidt and (1) Uppsala Southern Schmidt

1985	FF3	*	1985	03	22.66621	11	35	26.37	+00	08	44.7	1	413
1985	FF3		1985	03	22.68248	11	35	25.50	+00	08	52.8	1	413
1987	JL	*	1987	05	04.46562	14	08	05.34	-22	42	36.5	1	413
1987	JL		1987	05	04.48155	14	08	04.50	-22	42	31.1	1	413
1987	JL		1987	05	04.53903	14	08	01.10	-22	42	11.6	1	413
1987	JL		1987	05	04.55496	14	08	00.09	-22	42	05.5	1	413
1989	EG	*	1989	03	02.53721	10	43	31.54	+01	18	27.6	16	413
1989	EG		1989	03	02.58929	10	43	28.31	+01	18	43.2		413
1989	EG		1989	03	04.69412	10	41	20.24	+01	29	01.4		413
1989	EG		1989	03	05.58784	10	40	26.64	+01	33	32.0		413
1989	EO	*	1989	03	02.53721	10	39	10.37	+00	29	22.3	17.5	413
1989	EO		1989	03	02.58929	10	39	07.10	+00	29	35.8		413
1989	EO		1989	03	05.58784	10	35	59.56	+00	42	42.4		413
1989	EP	*	1989	03	02.53721	10	40	48.40	+00	45	55.9	17.5	413
1989	EP		1989	03	02.58929	10	40	46.05	+00	46	09.6		413
1989	EP		1989	03	04.69412	10	39	11.42	+00	55	07.0		413
1989	EQ	*	1989	03	04.69412	10	45	06.07	+01	26	06.4	16.5	413
1989	EQ		1989	03	05.58784	10	44	20.53	+01	28	47.0		413
549			1989	03	04.69412	10	40	32.14	+02	40	47.1		413
549			1989	03	05.58784	10	39	43.59	+02	44	51.5		413
572			1985	01	19.67828	10	26	06.60	-03	04	03.6	1	413
572			1985	01	19.69144	10	26	06.18	-03	04	02.5	1	413
572			1985	01	21.71922	10	25	03.85	-02	59	44.2	1	413
572			1985	01	21.73619	10	25	03.24	-02	59	41.9	1	413
572			1985	02	16.61897	10	05	04.99	-00	42	12.0	1	413
572			1985	02	16.63170	10	05	04.27	-00	42	06.1	1	413
665			1985	02	16.65100	11	19	51.93	-12	31	00.2	1	413
665			1985	02	16.66762	11	19	51.21	-12	31	02.1	1	413
665			1985	03	18.63557	10	55	26.65	-12	07	00.6	1	413

665		1985	03	18.65220	10	55	25.86	-12	06	58.3	1 413
665		1985	03	22.63297	10	52	14.05	-11	53	46.7	1 413
665		1985	03	22.64959	10	52	13.26	-11	53	41.6	1 413
921		1985	01	20.64647	10	32	11.32	-09	26	56.5	1 413
921		1985	01	20.65894	10	32	11.00	-09	26	56.7	1 413
921		1985	01	20.71088	10	32	09.79	-09	26	56.3	1 413
921		1985	01	20.73422	10	32	09.25	-09	26	57.2	1 413
921		1985	03	15.62646	09	58	54.31	-05	15	02.1	1 413
921		1985	03	15.63892	09	58	53.91	-05	14	56.5	1 413
921		1985	03	22.60526	09	55	19.63	-04	18	59.0	1 413
921		1985	03	22.61773	09	55	19.27	-04	18	52.8	1 413
1224		1985	02	16.69117	11	57	17.80	-12	22	53.7	1 413
1224		1985	02	16.70710	11	57	17.13	-12	22	54.3	1 413
1224		1985	03	16.69939	11	33	07.56	-10	31	51.6	1 413
1224		1985	03	16.71238	11	33	06.84	-10	31	47.0	1 413
1224		1985	03	22.70153	11	27	25.61	-09	50	31.9	1 413
1224		1985	03	22.71538	11	27	24.78	-09	50	26.6	1 413
1547		1985	01	19.65196	10	27	18.01	-00	58	25.7	1 413
1547		1985	01	21.69014	10	26	03.70	-01	09	46.6	1 413
1547		1985	01	21.70289	10	26	03.20	-01	09	50.6	1 413
1547		1985	03	18.57048	09	37	16.76	-01	05	23.6	1 413
1547		1985	03	18.58571	09	37	16.27	-01	05	21.5	1 413
1590		1989	03	04.69412	10	47	32.77	+00	24	01.4	413
1590		1989	03	05.58784	10	46	39.22	+00	30	16.3	413
2449		1984	11	17.49365	02	08	07.65	-17	59	40.2	1 413
2449		1984	11	17.50958	02	08	07.03	-17	59	45.4	1 413
2621		1984	11	17.58506	03	55	10.73	+07	08	30.6	1 413
2621		1984	11	17.60099	03	55	09.84	+07	08	31.8	1 413
2621		1984	12	14.55636	03	32	50.12	+08	16	06.9	1 413
2621		1984	12	14.57229	03	32	49.56	+08	16	11.1	1 413
2621		1984	12	20.58151	03	29	23.69	+08	42	36.3	1 413
2621		1984	12	20.59744	03	29	23.19	+08	42	40.7	1 413
2621		1984	12	27.53505	03	26	29.71	+09	17	42.0	1 413
2621		1984	12	27.55998	03	26	29.22	+09	17	50.1	1 413
2621		1984	12	28.53682	03	26	10.67	+09	23	07.2	1 413
2621		1984	12	28.55275	03	26	10.36	+09	23	10.5	1 413
2653		1985	02	16.73133	11	55	23.74	-03	27	34.7	1 413
2653		1985	02	16.74727	11	55	23.19	-03	27	31.4	1 413
2653		1985	03	16.72761	11	35	24.59	-00	21	41.1	1 413
2653		1985	03	16.74008	11	35	23.97	-00	21	36.4	1 413
2653		1985	03	22.66621	11	30	29.23	+00	26	57.5	1 413
2653		1985	03	22.68248	11	30	28.43	+00	27	05.7	1 413
3044		1987	05	04.51272	15	58	14.69	-23	16	36.8	1 413
3044		1987	05	04.52865	15	58	13.95	-23	16	30.1	1 413
3044		1987	05	04.56397	15	58	12.36	-23	16	17.2	1 413
3044		1987	05	04.57989	15	58	11.60	-23	16	10.7	1 413

474 Mount John
A. C. Gilmore, P.O. Box 57, Lake Tekapo, New Zealand
Observer A. C. Gilmore
Measurer P. M. Kilmartin
0.6-m f/14 Cassegrain reflector
AGK3, SAOC, CPZ, field plates from Carter Observatory

1989 EP		1989	03	04.50449	10	39	19.99	+00	54	19.4	17 474
1989 EP		1989	03	04.53384	10	39	18.72	+00	54	26.9	474

552 San Vittore
E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy
Observers C. Vacchi, G. Sassi

Measurers C. Vacchi, V. Goretti, E. Colombini
AGK3, SAOC
0.45-m f/5 reflector and (1) 0.25-m f/2.5 Schmidt

1986	OA		1989	03	04.96806	10	58	25.61	-17	25	03.1	16.0	552
1986	OA		1989	03	04.98542	10	58	24.60	-17	24	59.0		552
1986	OA		1989	03	26.84583	10	39	57.16	-15	14	49.5	16.2	552
1986	OA		1989	03	26.87083	10	39	56.13	-15	14	37.3		552
1988	XT		1988	12	30.87083	04	50	52.65	+22	04	08.3	17.2	552
1988	XT		1988	12	30.89236	04	50	51.48	+22	04	04.9		552
1989	BE		1989	02	07.94306	09	04	43.97	+23	53	12.8	17.0	1 552
1989	BE		1989	02	07.96875	09	04	42.70	+23	53	15.8		1 552
1989	BE		1989	03	06.87986	08	46	10.40	+24	16	19.9	17.3	552
1989	BE		1989	03	06.90000	08	46	09.75	+24	16	19.1		552
1989	BF		1989	02	07.94306	09	01	43.37	+22	31	12.9	17.0	1 552
1989	BF		1989	02	07.96875	09	01	41.37	+22	31	13.9		1 552
1989	BF		1989	03	05.87639	08	38	29.49	+21	56	16.3	17.5	552
1989	BF		1989	03	05.89444	08	38	28.90	+21	56	12.9		552
1989	BG		1989	02	07.89931	08	53	30.52	+21	18	42.8	17.0	552
1989	BG		1989	02	07.92222	08	53	28.87	+21	18	46.0		552
1989	BG		1989	02	08.92569	08	52	18.43	+21	19	24.5	17.0	552
1989	BG		1989	02	08.95000	08	52	16.71	+21	19	26.1		552
1989	BG		1989	03	04.89583	08	30	16.55	+21	01	47.2	17.3	552
1989	BG		1989	03	04.91458	08	30	15.80	+21	01	43.9		552
1989	BH		1989	01	29.96042	09	11	38.83	+24	15	17.6	15.6	552
1989	BH		1989	02	07.94306	09	03	23.27	+25	57	56.1	15.9	1 552
1989	BH		1989	02	07.96875	09	03	21.74	+25	58	12.8		1 552
1989	BH		1989	02	08.88750	09	02	31.21	+26	07	56.1	15.9	552
1989	BH		1989	02	08.90903	09	02	29.94	+26	08	09.3		552
1989	BH		1989	03	05.84097	08	45	53.63	+29	03	41.9	16.7	552
1989	BH		1989	03	05.85833	08	45	53.20	+29	03	46.4		552
1989	BH		1989	03	06.84097	08	45	37.88	+29	06	53.0	16.8	552
1989	BH		1989	03	06.86528	08	45	37.36	+29	06	58.4		552
1989	BO		1989	02	07.94306	09	01	41.02	+25	24	23.1	16.0	1 552
1989	BO		1989	02	07.96875	09	01	39.77	+25	24	32.9		1 552
1989	BO		1989	03	05.90972	08	43	14.35	+27	10	37.7	17.0	552
1989	BO		1989	03	05.92778	08	43	13.87	+27	10	40.9		552
1989	CG2	*	1989	02	01.92361	09	08	52.15	+24	58	54.1	16.5	1 552
1989	CG2		1989	02	01.95000	09	08	51.27	+24	59	00.9		1 552
1989	CG2		1989	02	07.94306	09	05	26.30	+25	26	08.5	16.7	1 552
1989	CG2		1989	02	07.96875	09	05	25.40	+25	26	15.5		1 552
1989	CG2		1989	03	04.93125	08	52	58.16	+26	51	31.3	16.8	552
1989	CG2		1989	03	04.94931	08	52	57.76	+26	51	33.0		552
1989	CG2		1989	03	11.84931	08	50	33.92	+27	05	50.7	16.8	552
1989	CG2		1989	03	11.87917	08	50	33.37	+27	05	54.2		552
1989	CG2		1989	03	25.82847	08	47	41.22	+27	22	21.3	16.9	552
1989	CG2		1989	03	26.79931	08	47	35.58	+27	22	54.8	16.9	552
967			1989	02	07.94306	08	58	22.18	+24	14	10.7	16.9	1 552
967			1989	02	07.96875	08	58	20.34	+24	14	19.1		1 552
990			1989	02	07.94306	09	03	45.31	+25	40	09.1	16.5	1 552
990			1989	02	07.96875	09	03	43.74	+25	40	11.4		1 552
990			1989	02	08.88750	09	02	46.85	+25	41	42.3	16.5	552
990			1989	02	08.90903	09	02	45.47	+25	41	44.0		552
1081			1989	02	07.94306	08	55	22.21	+23	41	05.2	16.8	1 552
1081			1989	02	07.96875	08	55	20.77	+23	41	09.2		1 552
1396			1989	02	07.94306	08	50	23.94	+23	19	17.3	16.0	1 552
1396			1989	02	07.96875	08	50	22.10	+23	19	20.7		1 552
2504			1989	02	07.94306	08	54	36.90	+23	08	22.5	16.4	1 552
2504			1989	02	07.96875	08	54	35.33	+23	08	25.4		1 552

567 Osservatorio Chaonis
J. M. Baur, Via Zara 20, I-33083 Chions, Italy
Observers J. M. Baur, G. Carniel
Measurer J. M. Baur
0.6-m f/3 Wright-Schmidt reflector
AGK3

1987 WA	1989 03 02.94861	10 47 24.26	+17 13 37.5	18.3		567
1987 WA	1989 03 02.96667	10 47 23.28	+17 13 43.1			567
1987 WA	1989 03 05.92639	10 44 44.92	+17 27 20.4			567
1987 WA	1989 03 05.94583	10 44 43.86	+17 27 26.0			567
1987 WA	1989 03 07.91944	10 42 59.39	+17 35 53.8			567
1987 WA	1989 03 07.93889	10 42 58.37	+17 35 58.8			567
1989 CT	1989 03 02.82917	08 01 36.31	+18 37 59.2	17.8		567
1989 CT	1989 03 02.85000	08 01 35.70	+18 38 00.7			567
1989 CT	1989 03 02.87014	08 01 35.24	+18 38 01.7			567
1989 CT	1989 03 03.80903	08 01 14.13	+18 39 05.4			567
1989 CT	1989 03 03.84514	08 01 13.28	+18 39 08.7			567
1989 CT	1989 03 05.82222	08 00 34.65	+18 41 06.5			567
1989 CT	1989 03 05.84861	08 00 34.19	+18 41 08.3			567
1989 CT	1989 03 07.80694	08 00 03.87	+18 42 45.3			567
1989 CT	1989 03 07.83055	08 00 03.52	+18 42 46.7			567

568 Mauna Kea Observatory
D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive,
Honolulu, HI 96822, U.S.A.
Observer D. J. Tholen
2.24-m telescope encoders
SAOC

1989 DA	1989 03 16.40416	11 05 43.64	-00 27 15.7	15.3V	568

573 Eldagsen
W. Bonk, Nordstrasse 33, D-3257 Springe 3, Federal Republic of Germany
AGK3

213	1989 01 27.78226	07 08 17.88	+20 57 05.3		573
213	1989 01 27.78851	07 08 17.57	+20 57 06.6		573
356	1989 01 27.76391	07 25 04.78	+34 24 58.7		573
356	1989 01 27.77109	07 25 04.38	+34 24 57.3		573
454	1989 01 25.78197	09 07 21.16	+27 09 41.6		573
454	1989 01 25.78851	09 07 20.77	+27 09 43.5		573

587 Sormano
P. Sicoli, Via Valli 9, I-22040 Garnagnate Monastero (Como), Italy
Observers P. Sicoli, E. Colzani, A. Testa, M. Cavagna, G. Ventre,
C. Gualdoni
Long. and Parallax 9.23, -297, -305 (see MPC 11200)
0.5-m f/8 reflector
SAOC

1989 AC	1989 01 24.81667	05 52 34.39	+23 04 31.5		587
1989 AC	1989 01 24.82906	05 52 37.48	+23 04 34.2		587
356	1989 01 31.87778	07 21 36.58	+34 08 57.1		587
356	1989 02 04.99688	07 18 39.94	+33 50 16.2		587
356	1989 02 05.01840	07 18 39.04	+33 50 09.7		587
356	1989 02 07.85590	07 16 58.48	+33 35 58.1		587
356	1989 02 07.88854	07 16 57.28	+33 35 47.9		587
356	1989 02 09.83915	07 15 58.22	+33 25 29.3		587
356	1989 02 09.89127	07 15 56.68	+33 25 11.3		587
2645	1989 02 11.90799	10 12 06.78	+21 48 31.0		587
2645	1989 02 11.93715	10 12 04.63	+21 48 32.4		587

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

1985 FZ1	1989	02	07.39556	09	33	24.82	+13	37	08.9	657
1985 FZ1	1989	02	08.35389	09	32	37.46	+13	47	44.1	657
1985 FZ1	1989	02	08.41222	09	32	34.56	+13	48	23.4	657
1988 PC2	1988	08	11.26049	21	29	14.22	-01	28	58.7	657
1988 PC2	1988	08	11.30146	21	29	12.18	-01	29	24.9	657
1988 PC2	1988	08	22.35764	21	21	44.24	-03	28	03.7	657
1988 PC2	1988	08	22.39896	21	21	42.71	-03	28	34.0	657
62	1989	02	10.27187	08	40	20.78	+18	44	57.0	657
62	1989	02	10.33299	08	40	17.74	+18	45	11.1	657
111	1988	12	26.19549	04	28	29.36	+27	39	20.4	657
133	1989	02	07.39556	09	38	28.32	+13	37	48.0	657
133	1989	02	08.35389	09	37	38.58	+13	40	02.5	657
133	1989	02	08.41222	09	37	35.52	+13	40	11.3	657
187	1988	09	11.40382	02	06	35.48	+12	47	03.9	657
187	1988	09	11.44965	02	06	34.18	+12	47	02.9	657
212	1988	12	26.19549	04	28	46.06	+27	07	21.5	657
344	1988	11	26.29167	01	38	16.09	+04	55	41.3	657
412	1989	02	07.54937	15	19	46.76	-03	12	45.1	657
412	1989	02	07.56882	15	19	47.88	-03	12	44.7	657
450	1988	09	11.40347	02	10	17.18	+14	32	02.7	657
450	1988	10	10.36250	01	52	56.68	+15	06	09.0	657
450	1988	10	10.41354	01	52	53.87	+15	06	06.7	657
504	1988	11	30.40417	03	31	32.70	+02	56	51.5	657
535	1988	11	30.37847	02	56	23.17	+11	05	18.2	657
849	1988	11	30.38958	02	56	33.79	+14	52	56.9	657
943	1989	02	07.54937	15	22	45.84	-05	36	53.6	657
1166	1988	12	15.33965	06	06	54.53	+14	44	29.6	657
1166	1988	12	15.41187	06	06	49.93	+14	44	48.5	657
1680	1988	07	17.42569	21	15	54.74	-21	00	44.6	657
1680	1988	07	17.44444	21	15	53.80	-21	00	51.3	657
2181	1989	02	06.28167	09	27	18.12	+36	15	00.5	D 657
2181	1989	02	06.32229	09	27	15.02	+36	15	05.0	657
2181	1989	02	07.23236	09	26	09.74	+36	15	51.9	657
2181	1989	02	07.30910	09	26	04.13	+36	15	57.0	657
2338	1989	02	08.33375	08	56	29.55	+19	06	08.1	E 657
2338	1989	02	08.36778	08	56	27.80	+19	06	13.1	E 657

675 Palomar
J. Gibson, OAO Corporation and Jet Propulsion Laboratory, MS 238-332, Pasadena, CA 91109, U.S.A. (1)
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Observers R. Crockett (2, S), T. Gehrels (4, L), J. Gibson (1, C), E. Helin (2, S), H. E. Holt (3, S), E. Majkowski (2, S), B. Roman (2, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S), N. G. Thomas (3, S), D. Tracy (2, S)
Measurers S. J. Bus (3), J. Gibson (1), H. E. Holt (3), E. Majkowski (2), A. Olney (3), B. Roman (2), C. S. Shoemaker (3), D. Tracy (2), C. J. van Houten (4), I. van Houten-Groeneveld (4)
1.5-m reflector + CCD (C), 1.2-m (L) and 0.46-m (S) Schmidt telescopes

1973 SW	1989	01	10.28611	06	57	45.86	+02	01	09.5	3 675
1973 SW	1989	01	11.32413	06	57	12.19	+02	03	08.7	3 675

1984	QR		1989	03	06.19166	09	12	58.62	+11	02	06.3	2 675
1984	QR		1989	03	06.22205	09	12	57.04	+11	01	58.8	2 675
1985	JR		1989	03	08.52188	13	35	18.14	+12	27	48.3	16.2 3 675
1985	JR		1989	03	09.45590	13	34	52.54	+12	32	43.3	3 675
1985	XB		1989	03	04.47917	15	31	43.70	+33	00	02.7	16.5 2 675
1985	XB		1989	03	04.50347	15	31	44.09	+33	00	12.2	2 675
1985	XB		1989	03	05.52344	15	32	01.78	+33	05	53.6	2 675
1986	JG		1989	03	04.46128	12	45	20.25	-06	21	07.5	16.8 2 675
1986	JG		1989	03	05.47326	12	44	43.63	-06	18	16.9	2 675
1986	JG		1989	03	05.50156	12	44	42.52	-06	18	11.1	2 675
1986	JH		1989	03	04.41736	12	21	35.58	+29	50	46.7	17.0 2 675
1986	JH		1989	03	04.45417	12	21	33.18	+29	50	57.7	2 675
1986	JH		1989	03	06.47274	12	19	26.90	+30	02	21.3	2 675
1986	JH		1989	03	06.50156	12	19	25.16	+30	02	27.7	2 675
1987	MO		1989	03	04.21823	09	49	36.37	-23	17	40.2	17.0 2 675
1987	MO		1989	03	06.20087	09	47	03.69	-23	10	14.7	2 675
1987	MO		1989	03	06.22917	09	47	01.51	-23	10	08.1	2 675
1989	AC		1988	07	12.34479	19	54	01.43	-20	36	52.3	16.8 2 675
1989	AC		1988	07	13.24774	19	52	43.29	-20	40	36.8	2 675
1989	AL2		1989	03	07.29678	08	47	40.01	+40	39	08.4	17.6 3 675
1989	AL2		1989	03	08.22708	08	47	16.89	+40	40	03.0	3 675
1989	BL		1989	01	11.44392	09	09	47.87	+24	55	02.6	3 675
1989	BL		1989	01	11.48350	09	09	46.71	+24	55	12.2	3 675
1989	BL		1989	01	31.41597	08	58	52.31	+26	02	17.4	3 675
1989	BL		1989	02	01.31875	08	58	20.44	+26	04	59.0	17.5 3 675
1989	BW		1989	03	07.33889	09	22	36.28	+36	03	12.2	17.2 3 675
1989	BW		1989	03	08.30833	09	22	09.13	+36	03	17.0	3 675
1989	CZ		1989	03	01.24375	08	03	29.57	+25	12	10.6	17.5 2 675
1989	CZ		1989	03	05.17847	08	02	27.82	+25	05	24.9	2 675
1989	CA1		1989	03	04.21823	10	05	13.83	+17	54	53.5	17.0 2 675
1989	CA1		1989	03	06.23611	10	03	46.96	+18	15	04.3	2 675
1989	CC1		1989	03	01.28490	10	47	05.57	+12	52	51.2	16.5 2 675
1989	CC1		1989	03	01.31076	10	47	04.02	+12	53	24.5	2 675
1989	CC1		1989	03	06.24844	10	42	48.44	+14	23	47.0	2 675
1989	CC1		1989	03	06.27622	10	42	46.89	+14	24	15.4	2 675
1989	CH1		1989	03	01.29149	11	32	14.36	+21	11	02.0	16.5 2 675
1989	CH1		1989	03	01.31719	11	32	13.11	+21	11	20.7	2 675
1989	CJ1		1989	03	01.29149	11	18	46.58	+25	04	28.9	16.8 2 675
1989	CJ1		1989	03	01.31719	11	18	44.77	+25	05	06.0	2 675
1989	CJ1		1989	03	05.30365	11	14	44.19	+26	37	00.9	2 675
1989	CJ1		1989	03	05.33125	11	14	42.43	+26	37	37.8	2 675
1989	CE2		1989	03	05.16597	09	22	46.81	+05	31	13.2	2 675
1989	CE2		1989	03	05.19063	09	22	44.90	+05	31	04.3	2 675
1989	CH2		1989	01	11.44392	09	07	23.93	+25	14	27.6	3 675
1989	CH2		1989	01	11.48350	09	07	22.82	+25	14	41.2	3 675
1989	CH2	*	1989	02	01.31875	08	56	05.61	+27	15	35.6	17.8 3 675
1989	CH2		1989	02	01.35447	08	56	04.29	+27	15	47.1	3 675
1989	CJ2		1989	01	08.43263	09	12	57.83	+29	37	16.0	3 675
1989	CJ2		1989	01	08.46944	09	12	56.82	+29	37	22.1	3 675
1989	CJ2	*	1989	02	01.31875	08	59	18.37	+30	41	29.2	18 3 675
1989	CK2		1989	01	10.43194	09	25	14.61	+27	46	55.6	3 675
1989	CK2		1989	01	10.46386	09	25	13.80	+27	47	05.0	3 675
1989	CK2	*	1989	02	01.31875	09	13	52.65	+29	39	31.1	17.5 3 675
1989	CK2		1989	02	01.35447	09	13	51.23	+29	39	38.1	3 675
1989	EB	*	1989	03	04.37726	12	08	08.11	+25	51	23.0	15.8 2 675
1989	EB		1989	03	05.38351	12	06	55.68	+25	54	02.1	2 675
1989	EB		1989	03	06.42760	12	05	39.52	+25	56	33.9	2 675
1989	EC	*	1989	03	04.39687	11	23	05.55	-03	01	19.2	15.8 2 675
1989	EC		1989	03	04.42535	11	23	02.26	-03	01	33.8	2 675

1989	EC		1989	03	06.36134	11	19	26.73	-03	19	31.7		2 675
1989	EC		1989	03	06.38576	11	19	23.98	-03	19	45.7		2 675
1989	ED		1989	03	04.37726	11	51	58.93	+25	23	05.0	16.5	2 675
1989	ED	*	1989	03	05.38351	11	50	59.93	+25	28	12.7		2 675
1989	ED		1989	03	06.42760	11	49	57.68	+25	33	17.2		2 675
1989	EE	*	1989	03	04.44375	11	13	33.79	+06	55	03.4	17.0	2 675
1989	EE		1989	03	05.36337	11	12	58.77	+07	12	52.8		2 675
1989	EF	*	1989	03	04.49358	13	36	21.12	-02	35	07.6	17.0	2 675
1989	EF		1989	03	05.50816	13	36	14.48	-02	25	21.3		2 675
1989	EH	*	1989	03	01.26805	09	25	57.27	+03	04	58.7	16.2	2 675
1989	EH		1989	03	05.19062	09	23	58.15	+03	56	15.6		2 675
1989	EJ	*	1989	03	01.37726	11	45	58.37	+18	08	25.1	16.0	2 675
1989	EJ		1989	03	05.37778	11	42	48.26	+18	28	14.0		2 675
1989	EK	*	1989	03	05.39115	11	50	43.75	-04	32	43.1	16.7	2 675
1989	EK		1989	03	06.40955	11	49	58.76	-04	26	22.7		2 675
1989	EL	*	1989	03	05.39115	11	55	05.56	-09	32	03.3	16.7	2 675
1989	EL		1989	03	06.40955	11	54	17.46	-09	27	14.2		2 675
1989	EM	*	1989	03	05.39115	12	04	31.71	-02	48	20.4	16.7	2 675
1989	EM		1989	03	06.40955	12	03	44.80	-02	44	16.7		2 675
1989	EN	*	1989	03	05.39115	12	10	03.49	-06	51	34.8	17.5	2 675
1989	EN		1989	03	05.41979	12	10	01.04	-06	51	39.8		2 675
1989	EN		1989	03	06.40955	12	08	39.69	-06	54	59.5		2 675
1989	ER	*	1989	03	01.41059	11	37	53.21	-00	13	11.9	17.0	2 675
1989	ER		1989	03	06.39757	11	35	13.36	+00	52	17.3		2 675
1989	ES	*	1989	03	01.41059	11	47	54.24	+00	42	53.3	16.5	2 675
1989	ES		1989	03	06.39757	11	44	52.75	+01	28	54.4		2 675
1989	EK1	*	1989	03	04.47483	15	11	02.85	-08	27	01.0	17.0	2 675
1989	EK1		1989	03	05.51753	15	12	04.16	-08	08	26.6		2 675
1989	EL1	*	1989	03	05.45521	12	35	52.32	-00	49	52.9	15.5	2 675
1989	EL1		1989	03	05.48455	12	35	51.63	-00	49	32.2		2 675
1989	EL1		1989	03	06.43889	12	35	32.40	-00	38	05.6		2 675
1989	EV1	*	1989	03	04.41736	11	13	20.44	+07	27	18.9	16.8	3 675
1989	EV1		1989	03	04.44398	11	13	18.88	+07	27	31.5		3 675
1989	EV1		1989	03	05.34201	11	12	29.26	+07	34	04.1		3 675
1989	EV1		1989	03	05.36337	11	12	27.75	+07	34	15.7		3 675
1989	EP2	*	1989	03	04.23229	10	35	51.07	-03	22	11.1	17.2	2 675
1989	EP2		1989	03	04.26858	10	35	49.08	-03	22	03.5		2 675
1989	EP2		1989	03	06.24271	10	34	05.58	-03	14	53.9		2 675
1989	EP2		1989	03	06.27066	10	34	04.01	-03	14	46.3		2 675
1989	EQ2	*	1989	03	05.17205	09	05	28.74	+20	23	40.7	16.5	2 675
1989	EQ2		1989	03	05.19965	09	05	27.08	+20	23	30.1		2 675
1989	EQ2		1989	03	06.18646	09	04	45.82	+20	18	38.5		2 675
1989	EQ2		1989	03	06.21510	09	04	45.34	+20	18	38.0		2 675
1989	FB	*	1989	03	31.43056	13	25	54.04	+04	33	32.8	16.5	3 675
1989	FB		1989	04	01.36962	13	22	20.03	+04	23	59.8		3 675
1989	FB		1989	04	03.43056	13	14	12.40	+04	01	16.3		3 675
1989	FB		1989	04	04.42083	13	10	11.37	+03	49	33.3		3 675
1989	FB		1989	04	05.36302	13	06	18.57	+03	37	58.7	16.2	2 675
1989	FB		1989	04	06.34080	13	02	13.78	+03	25	19.3		2 675
1989	FC	*	1989	03	31.28021	12	13	06.41	+16	40	50.3	16.5	3 675
1989	FC		1989	03	31.31979	12	12	58.29	+16	40	20.2		3 675
1989	FC		1989	04	02.39878	12	08	57.77	+16	17	30.9		3 675
1989	FC		1989	04	03.28125	12	07	50.67	+16	09	25.8		3 675
1989	FC		1989	04	04.24306	12	06	46.54	+16	01	04.0		3 675
2196	P-L	*	1960	09	24.45000	00	39	40.80	+06	53	46.0	18.4	4 675
2196	P-L		1960	09	26.37010	00	37	53.55	+06	43	08.9		4 675
2196	P-L		1960	09	28.36808	00	35	59.34	+06	31	43.7		4 675
2196	P-L		1960	10	17.30420	00	18	03.03	+04	35	17.2		4 675
2196	P-L		1960	10	22.22293	00	14	06.31	+04	07	18.0		4 675

2196	P-L		1960	10	22.27920	00	14	03.68	+04	07	00.1	4 675
2196	P-L		1960	10	24.35836	00	12	33.58	+03	56	01.3	4 675
2196	P-L		1960	10	26.32573	00	11	14.83	+03	46	10.0	4 675
9521	P-L	*	1960	10	17.22501	23	28	00.68	-06	46	22.1	18.1 4 675
9521	P-L		1960	10	22.16324	23	25	59.79	-06	56	52.5	4 675
9521	P-L		1960	10	24.23753	23	25	22.74	-06	59	36.0	4 675
9521	P-L		1960	10	26.27157	23	24	54.57	-07	01	17.5	4 675
4157	T-3		1977	10	07.28125	01	28	09.37	+03	02	15.0	4 675
4157	T-3		1977	10	11.30000	01	24	29.98	+02	29	28.4	4 675
4157	T-3		1977	10	11.36771	01	24	26.11	+02	28	54.6	4 675
4157	T-3		1977	10	12.29826	01	23	34.45	+02	21	22.2	4 675
4157	T-3		1977	10	12.36441	01	23	30.63	+02	20	50.2	4 675
4157	T-3	*	1977	10	16.28368	01	19	51.14	+01	49	39.1	18.5 4 675
4157	T-3		1977	10	16.34931	01	19	47.33	+01	49	08.3	4 675
4157	T-3		1977	10	17.28628	01	18	54.95	+01	41	47.6	4 675
4157	T-3		1977	10	17.35313	01	18	51.06	+01	41	16.7	4 675
4157	T-3		1977	10	21.38698	01	15	07.16	+01	10	57.4	4 675
4157	T-3		1977	10	21.44705	01	15	03.82	+01	10	30.5	4 675
4157	T-3		1977	10	22.38542	01	14	12.77	+01	03	40.8	4 675
4157	T-3		1977	10	22.44878	01	14	09.26	+01	03	14.0	4 675
1450			1989	03	04.46753	13	34	28.62	-02	52	07.0	16.5 2 675
1450			1989	03	04.49358	13	34	27.91	-02	52	02.9	2 675
1450			1989	03	05.50816	13	34	03.04	-02	48	27.1	2 675
3784			1989	03	01.37726	11	50	09.60	+20	58	18.6	15.5 2 675
3784			1989	03	05.37778	11	47	19.24	+21	25	16.3	2 675
4034			1988	07	06.31517	16	18	11.87	+04	22	55.5	1 675

688 Lowell Observatory, Anderson Mesa Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observer S. J. Bus
Measurer S. J. Bus
1.0-m reflector + CCD

1988	VN4		1989	03	09.17464	05	26	22.40	-06	56	03.3	688
1988	VN4		1989	03	09.17946	05	26	23.35	-06	56	00.6	688

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

1952	HJ2		1989	03	09.20150	08	52	06.73	+18	59	37.0	801
1966	TP		1989	03	10.17625	09	28	34.25	+14	29	21.6	801
1978	PG3		1989	03	10.34436	12	03	59.32	-08	58	04.7	801
1980	PT		1989	03	11.25768	11	26	19.25	+03	22	46.6	801
1981	ST		1989	02	09.17617	08	03	34.96	+02	28	02.4	801
1981	ST		1989	03	09.10852	07	51	54.07	+05	50	59.3	801
1982	BQ		1987	09	25.28775	01	03	56.35	-03	07	39.6	E 801
1983	AC		1989	02	09.36390	10	53	10.65	+23	30	57.6	801
1983	AC		1989	03	07.29200	10	32	49.60	+25	56	17.5	S 801
1983	CS		1989	03	11.23279	10	43	32.49	+11	59	53.2	801
1983	RC2		1989	03	10.27496	10	20	04.18	+07	15	44.1	801
1983	WA		1989	03	11.20949	10	11	23.61	-03	24	04.0	801
1984	ED		1989	02	04.29241	09	00	53.17	+17	34	23.2	801
1984	ED		1989	03	11.09763	08	39	17.76	+20	56	07.8	801
1985	CV		1989	02	04.22803	08	38	37.58	+13	42	56.0	801
1985	CV		1989	03	11.07557	08	19	46.93	+18	29	08.1	801
1985	FD3		1989	03	09.15170	09	51	01.95	+20	44	03.3	801

1985	FD3		1989	03	10.20005	09	49	45.37	+20	37	01.9	801
1985	TQ		1989	03	11.12208	09	32	24.67	+17	44	04.7	801
1985	VK2		1989	02	09.38755	11	48	00.81	+28	59	07.6	801
1985	VK2		1989	03	10.32059	11	33	05.28	+30	39	00.5	801
1985	XB		1989	03	10.39798	15	32	35.53	+33	32	01.3	801
1985	XB		1989	03	11.38231	15	32	31.87	+33	36	58.4	801
1986	TL2		1989	02	09.33827	10	47	44.36	+26	15	20.9	801
1986	TL2		1989	03	10.29374	10	23	47.53	+28	02	18.9	801
1987	SB2		1989	03	11.04779	08	15	01.14	+37	54	48.3	801
1987	YT1		1989	03	07.18859	08	53	49.86	+07	47	16.3	S 801
1988	RA		1989	03	04.01663	03	02	09.91	+49	38	11.5	801
1988	RA		1989	03	11.02027	03	34	59.01	+50	01	34.4	801
1988	WC		1989	03	04.04062	04	42	41.14	-05	45	06.3	801
1988	WC		1989	03	10.01282	04	57	48.07	-05	40	52.8	801
1989	AC		1989	03	03.10815	07	18	06.96	+22	24	58.0	801
1989	AC		1989	03	10.03476	07	29	52.69	+22	03	17.8	801
1989	DA		1989	03	07.16373	10	20	38.23	+17	36	37.5	801
1989	DA		1989	03	09.08568	10	34	04.36	+12	24	50.9	t 801
1989	DA		1989	03	09.13666	10	34	21.81	+12	17	20.7	801
1989	DA		1989	03	11.17019	10	45	33.26	+07	45	51.2	801
1989	FB		1989	04	09.21701	12	49	58.79	+02	45	15.0	801
1989	FC		1989	04	09.26069	12	03	26.74	+15	21	55.0	801
368			1989	03	10.34436	12	04	10.09	-09	02	57.7	801
2136			1989	03	11.23279	10	42	44.00	+12	06	28.5	801

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1940	RG		1989	02	04.18681	09	12	39.01	+07	44	52.9	19.0 809
1940	RG		1989	02	04.19931	09	12	38.24	+07	44	56.9	809
1940	RG		1989	02	04.21181	09	12	37.55	+07	45	00.1	809
1940	RG		1989	02	07.18333	09	09	30.06	+07	57	59.6	809
1940	RG		1989	02	07.19583	09	09	29.28	+07	58	02.5	809
1940	RG		1989	02	07.20833	09	09	28.51	+07	58	06.4	809
1987	OQ		1989	02	05.10972	07	41	25.69	+04	51	17.0	18.0 809
1987	OQ		1989	02	05.12222	07	41	25.15	+04	51	19.3	809
1987	OQ		1989	02	05.13472	07	41	24.51	+04	51	21.3	809
1987	OQ		1989	02	07.12639	07	39	52.83	+04	57	26.0	809
1987	OQ		1989	02	07.13889	07	39	52.28	+04	57	28.7	809
1987	OQ		1989	02	07.15139	07	39	51.65	+04	57	30.7	809
1987	YT1		1989	02	04.18681	09	08	02.42	+05	17	05.7	17.0 809
1987	YT1		1989	02	04.19931	09	08	02.01	+05	17	09.3	809
1987	YT1		1989	02	04.21181	09	08	01.65	+05	17	12.4	809
1987	YT1		1989	02	07.18333	09	06	27.75	+05	30	35.1	809
1987	YT1		1989	02	07.19583	09	06	27.39	+05	30	38.4	809
1987	YT1		1989	02	07.20833	09	06	26.93	+05	30	41.6	809
1989	CR1		1989	02	04.18681	09	07	54.00	+03	12	50.2	17.8 809
1989	CR1		1989	02	04.19931	09	07	53.19	+03	12	50.6	809
1989	CR1		1989	02	04.21181	09	07	52.43	+03	12	51.4	809
1989	CR1		1989	02	07.18333	09	04	39.37	+03	16	25.4	809
1989	CR1		1989	02	07.19583	09	04	38.56	+03	16	25.9	809
1989	CR1		1989	02	07.20833	09	04	37.61	+03	16	26.5	809
1989	CM2	*	1989	02	04.18681	08	59	26.56	+04	59	43.5	18.8 809
1989	CM2		1989	02	04.19931	08	59	25.75	+04	59	48.2	809
1989	CM2		1989	02	04.21181	08	59	25.07	+04	59	51.8	809
1989	CM2		1989	02	07.18333	08	56	38.66	+05	16	59.7	809
1989	CM2		1989	02	07.19583	08	56	37.89	+05	17	04.4	809
1989	CM2		1989	02	07.20833	08	56	37.12	+05	17	08.5	809
1989	CN2	*	1989	02	04.18681	09	00	46.35	+03	50	55.5	17.4 809

1989	CN2		1989	02	04.19931	09	00	45.45	+03	50	52.6	809
1989	CN2		1989	02	04.21181	09	00	44.59	+03	50	50.6	809
1989	CN2		1989	02	07.18333	08	57	24.23	+03	42	23.0	809
1989	CN2		1989	02	07.19583	08	57	23.42	+03	42	20.7	809
1989	CN2		1989	02	07.20833	08	57	22.57	+03	42	17.8	809
1989	CO2	*	1989	02	04.18681	09	02	00.15	+04	44	49.5	18.6 809
1989	CO2		1989	02	04.19931	09	01	59.51	+04	44	50.6	809
1989	CO2		1989	02	04.21181	09	01	58.84	+04	44	52.1	809
1989	CO2		1989	02	07.18333	08	59	25.72	+04	49	21.4	809
1989	CO2		1989	02	07.19583	08	59	24.99	+04	49	22.3	809
1989	CO2		1989	02	07.20833	08	59	24.32	+04	49	24.1	809
1989	CP2	*	1989	02	04.18681	09	02	39.47	+07	00	09.3	18.2 809
1989	CP2		1989	02	04.19931	09	02	38.65	+07	00	10.9	809
1989	CP2		1989	02	04.21181	09	02	37.93	+07	00	12.4	809
1989	CP2		1989	02	07.18333	08	59	37.36	+07	05	40.0	809
1989	CP2		1989	02	07.19583	08	59	36.59	+07	05	42.2	809
1989	CP2		1989	02	07.20833	08	59	35.77	+07	05	42.9	809
1989	CQ2	*	1989	02	04.18681	09	02	47.94	+04	14	42.8	19.0 809
1989	CQ2		1989	02	04.19931	09	02	47.44	+04	14	46.4	809
1989	CQ2		1989	02	04.21181	09	02	46.90	+04	14	49.1	809
1989	CQ2		1989	02	07.18333	09	00	43.50	+04	28	43.4	809
1989	CQ2		1989	02	07.19583	09	00	42.95	+04	28	46.1	809
1989	CQ2		1989	02	07.20833	09	00	42.37	+04	28	49.8	809
1989	CR2	*	1989	02	04.18681	09	03	14.58	+03	50	46.0	19.6 809
1989	CR2		1989	02	04.19931	09	03	13.81	+03	50	48.4	809
1989	CR2		1989	02	04.21181	09	03	13.18	+03	50	49.5	809
1989	CR2		1989	02	07.18333	09	00	44.72	+03	59	05.4	809
1989	CR2		1989	02	07.19583	09	00	44.13	+03	59	07.3	809
1989	CR2		1989	02	07.20833	09	00	43.41	+03	59	10.1	809
1989	CS2	*	1989	02	04.18681	09	03	28.83	+06	32	32.8	19.0 809
1989	CS2		1989	02	04.19931	09	03	28.01	+06	32	37.2	809
1989	CS2		1989	02	04.21181	09	03	27.28	+06	32	41.7	809
1989	CS2		1989	02	07.18333	09	00	31.33	+06	49	51.8	809
1989	CS2		1989	02	07.19583	09	00	30.46	+06	49	56.1	809
1989	CS2		1989	02	07.20833	09	00	29.65	+06	50	00.4	809
1989	CT2	*	1989	02	04.18681	09	03	44.93	+07	06	22.0	18.5 809
1989	CT2		1989	02	04.19931	09	03	44.16	+07	06	25.6	809
1989	CT2		1989	02	04.21181	09	03	43.39	+07	06	29.0	809
1989	CT2		1989	02	07.18333	09	00	45.77	+07	19	42.3	809
1989	CT2		1989	02	07.19583	09	00	44.99	+07	19	44.7	809
1989	CT2		1989	02	07.20833	09	00	44.45	+07	19	46.9	809
1989	CU2	*	1989	02	04.18681	09	04	13.17	+03	06	28.0	20.0 809
1989	CU2		1989	02	04.19931	09	04	12.53	+03	06	32.5	809
1989	CU2		1989	02	04.21181	09	04	12.04	+03	06	35.6	809
1989	CU2		1989	02	07.18333	09	01	41.23	+03	23	08.0	809
1989	CU2		1989	02	07.19583	09	01	40.46	+03	23	13.4	809
1989	CU2		1989	02	07.20833	09	01	39.64	+03	23	17.9	809
1989	CV2	*	1989	02	04.18681	09	04	13.67	+07	47	01.1	18.8 809
1989	CV2		1989	02	04.19931	09	04	12.90	+07	46	59.4	809
1989	CV2		1989	02	04.21181	09	04	12.08	+07	46	58.4	809
1989	CV2		1989	02	07.18333	09	01	05.10	+07	42	03.3	809
1989	CV2		1989	02	07.19583	09	01	04.29	+07	42	02.6	809
1989	CV2		1989	02	07.20833	09	01	03.56	+07	42	00.7	809
1989	CW2	*	1989	02	04.18681	09	04	37.02	+04	57	03.6	18.0 809
1989	CW2		1989	02	04.19931	09	04	36.39	+04	57	05.1	809
1989	CW2		1989	02	04.21181	09	04	35.80	+04	57	06.6	809
1989	CW2		1989	02	07.18333	09	02	07.14	+05	04	30.2	809
1989	CW2		1989	02	07.19583	09	02	06.51	+05	04	33.5	809
1989	CW2		1989	02	07.20833	09	02	05.79	+05	04	35.5	809

1989	CX2	*	1989	02	04.18681	09	05	59.94	+07	36	11.8	18.6	809
1989	CX2		1989	02	04.19931	09	05	59.26	+07	36	12.7		809
1989	CX2		1989	02	04.21181	09	05	58.67	+07	36	14.5		809
1989	CX2		1989	02	07.18333	09	03	27.43	+07	42	41.5		809
1989	CX2		1989	02	07.19583	09	03	26.79	+07	42	44.2		809
1989	CX2		1989	02	07.20833	09	03	26.06	+07	42	46.5		809
1989	CY2	*	1989	02	04.18681	09	06	03.07	+06	40	24.4	20.0	809
1989	CY2		1989	02	04.19931	09	06	02.30	+06	40	29.1		809
1989	CY2		1989	02	04.21181	09	06	01.61	+06	40	33.0		809
1989	CY2		1989	02	07.18333	09	03	03.75	+06	55	45.5		809
1989	CY2		1989	02	07.19583	09	03	02.88	+06	55	49.3		809
1989	CY2		1989	02	07.20833	09	03	02.11	+06	55	52.6		809
1989	CZ2	*	1989	02	04.18681	09	08	56.82	+03	42	28.9	18.2	809
1989	CZ2		1989	02	04.19931	09	08	56.15	+03	42	28.9		809
1989	CZ2		1989	02	04.21181	09	08	55.47	+03	42	29.3		809
1989	CZ2		1989	02	07.18333	09	06	21.15	+03	44	08.9		809
1989	CZ2		1989	02	07.19583	09	06	20.43	+03	44	09.5		809
1989	CZ2		1989	02	07.20833	09	06	19.80	+03	44	09.6		809
1989	CA3	*	1989	02	04.18681	09	10	36.87	+04	27	52.1	20.0	809
1989	CA3		1989	02	04.19931	09	10	36.46	+04	27	54.5		809
1989	CA3		1989	02	04.21181	09	10	35.92	+04	27	56.0		809
1989	CA3		1989	02	07.18333	09	08	06.49	+04	33	15.0		809
1989	CA3		1989	02	07.19583	09	08	05.85	+04	33	16.2		809
1989	CA3		1989	02	07.20833	09	08	05.22	+04	33	16.6		809
1989	CB3	*	1989	02	04.18681	09	10	53.99	+07	29	54.0	17.4	809
1989	CB3		1989	02	04.19931	09	10	53.17	+07	29	54.9		809
1989	CB3		1989	02	04.21181	09	10	52.35	+07	29	56.7		809
1989	CB3		1989	02	07.18333	09	07	46.99	+07	36	27.9		809
1989	CB3		1989	02	07.19583	09	07	46.22	+07	36	30.6		809
1989	CB3		1989	02	07.20833	09	07	45.36	+07	36	31.8		809
1989	CC3	*	1989	02	04.18681	09	10	58.66	+05	12	12.1	19.5	809
1989	CC3		1989	02	04.19931	09	10	58.08	+05	12	13.3		809
1989	CC3		1989	02	04.21181	09	10	57.44	+05	12	13.5		809
1989	CC3		1989	02	07.18333	09	08	22.67	+05	16	05.1		809
1989	CC3		1989	02	07.19583	09	08	22.00	+05	16	05.5		809
1989	CC3		1989	02	07.20833	09	08	21.32	+05	16	07.3		809
1989	CD3	*	1989	02	04.18681	09	11	19.27	+06	49	21.4	19.8	809
1989	CD3		1989	02	04.19931	09	11	18.50	+06	49	20.6		809
1989	CD3		1989	02	04.21181	09	11	17.69	+06	49	20.5		809
1989	CD3		1989	02	07.18333	09	08	20.91	+06	47	01.4		809
1989	CD3		1989	02	07.19583	09	08	20.09	+06	47	00.5		809
1989	CD3		1989	02	07.20833	09	08	19.32	+06	46	59.6		809
1989	CE3	*	1989	02	04.18681	09	11	56.12	+07	29	46.0	18.7	809
1989	CE3		1989	02	04.19931	09	11	55.61	+07	29	51.9		809
1989	CE3		1989	02	04.21181	09	11	55.07	+07	29	57.3		809
1989	CE3		1989	02	07.18333	09	09	44.02	+07	53	03.6		809
1989	CE3		1989	02	07.19583	09	09	43.47	+07	53	09.5		809
1989	CE3		1989	02	07.20833	09	09	42.97	+07	53	15.8		809
1989	CF3	*	1989	02	04.18681	09	12	30.36	+04	37	18.3	19.0	809
1989	CF3		1989	02	04.19931	09	12	29.68	+04	37	21.1		809
1989	CF3		1989	02	04.21181	09	12	28.96	+04	37	23.3		809
1989	CF3		1989	02	07.18333	09	09	27.33	+04	47	29.5		809
1989	CF3		1989	02	07.19583	09	09	26.52	+04	47	33.3		809
1989	CF3		1989	02	07.20833	09	09	25.70	+04	47	35.0		809
1989	CG3	*	1989	02	04.18681	09	14	25.15	+05	55	22.2	18.0	809
1989	CG3		1989	02	04.19931	09	14	24.42	+05	55	27.1		809
1989	CG3		1989	02	04.21181	09	14	23.65	+05	55	30.9		809
1989	CG3		1989	02	07.18333	09	11	25.49	+06	12	29.7		809
1989	CG3		1989	02	07.19583	09	11	24.62	+06	12	34.4		809

1989	CG3		1989	02	07.20833	09	11	23.90	+06	12	37.9		809
1989	CH3	*	1989	02	04.18681	09	14	52.49	+05	49	45.7	19.2	809
1989	CH3		1989	02	04.19931	09	14	51.67	+05	49	47.1		809
1989	CH3		1989	02	04.21181	09	14	51.08	+05	49	48.5		809
1989	CH3		1989	02	07.18333	09	12	06.35	+05	56	15.8		809
1989	CH3		1989	02	07.19583	09	12	05.63	+05	56	17.6		809
1989	CH3		1989	02	07.20833	09	12	04.90	+05	56	18.9		809
1989	CJ3	*	1989	02	04.18681	09	15	12.92	+05	28	21.7	18.0	809
1989	CJ3		1989	02	04.19931	09	15	12.56	+05	28	24.0		809
1989	CJ3		1989	02	04.21181	09	15	12.10	+05	28	25.2		809
1989	CJ3		1989	02	07.18333	09	13	37.59	+05	34	45.3		809
1989	CJ3		1989	02	07.19583	09	13	37.19	+05	34	47.3		809
1989	CJ3		1989	02	07.20833	09	13	36.82	+05	34	48.2		809
1989	CK3	*	1989	02	04.18681	09	15	44.33	+03	31	51.6	20.0	809
1989	CK3		1989	02	04.19931	09	15	43.61	+03	31	53.0		809
1989	CK3		1989	02	04.21181	09	15	42.89	+03	31	55.1		809
1989	CK3		1989	02	07.18333	09	12	53.64	+03	40	20.6		809
1989	CK3		1989	02	07.19583	09	12	52.96	+03	40	22.7		809
1989	CK3		1989	02	07.20833	09	12	52.28	+03	40	23.4		809
1989	CL3	*	1989	02	04.18681	09	15	45.28	+05	20	23.5	17.7	809
1989	CL3		1989	02	04.19931	09	15	44.56	+05	20	26.7		809
1989	CL3		1989	02	04.21181	09	15	43.88	+05	20	28.8		809
1989	CL3		1989	02	07.18333	09	13	03.37	+05	31	34.9		809
1989	CL3		1989	02	07.19583	09	13	02.69	+05	31	37.8		809
1989	CL3		1989	02	07.20833	09	13	01.92	+05	31	41.0		809
1989	CM3	*	1989	02	04.18681	09	16	16.52	+06	22	27.9	20.0	809
1989	CM3		1989	02	04.19931	09	16	15.71	+06	22	30.7		809
1989	CM3		1989	02	04.21181	09	16	15.07	+06	22	33.0		809
1989	CM3		1989	02	07.18333	09	13	27.62	+06	33	25.7		809
1989	CM3		1989	02	07.19583	09	13	26.90	+06	33	28.3		809
1989	CM3		1989	02	07.20833	09	13	26.22	+06	33	32.0		809
1989	CN3	*	1989	02	04.18681	09	16	20.82	+05	31	15.1	17.5	809
1989	CN3		1989	02	04.19931	09	16	19.38	+05	31	06.2		809
1989	CN3		1989	02	04.21181	09	16	18.17	+05	30	58.5		809
1989	CN3		1989	02	07.18333	09	11	03.05	+04	58	29.9		809
1989	CN3		1989	02	07.19583	09	11	01.66	+04	58	22.0		809
1989	CN3		1989	02	07.20833	09	11	00.35	+04	58	14.7		809
1989	CO3	*	1989	02	04.18681	09	16	23.27	+05	34	39.0	17.8	809
1989	CO3		1989	02	04.19931	09	16	22.50	+05	34	43.3		809
1989	CO3		1989	02	04.21181	09	16	21.87	+05	34	47.3		809
1989	CO3		1989	02	07.18333	09	13	26.27	+05	52	21.9		809
1989	CO3		1989	02	07.19583	09	13	25.45	+05	52	27.2		809
1989	CO3		1989	02	07.20833	09	13	24.68	+05	52	31.3		809
1989	CP3	*	1989	02	04.18681	09	17	30.95	+04	10	04.0	19.5	809
1989	CP3		1989	02	04.19931	09	17	30.27	+04	10	07.4		809
1989	CP3		1989	02	04.21181	09	17	29.64	+04	10	11.1		809
1989	CP3		1989	02	07.18333	09	15	02.10	+04	25	19.9		809
1989	CP3		1989	02	07.19583	09	15	01.37	+04	25	23.8		809
1989	CP3		1989	02	07.20833	09	15	00.83	+04	25	28.2		809
1989	CQ3	*	1989	02	05.10972	07	34	56.72	+06	40	20.9	19.5	809
1989	CQ3		1989	02	05.12222	07	34	56.13	+06	40	24.2		809
1989	CQ3		1989	02	05.13472	07	34	55.67	+06	40	28.7		809
1989	CQ3		1989	02	07.12639	07	33	38.98	+06	50	15.2		809
1989	CQ3		1989	02	07.13889	07	33	38.53	+06	50	18.1		809
1989	CQ3		1989	02	07.15139	07	33	37.98	+06	50	22.6		809
1989	CR3	*	1989	02	05.10972	07	35	10.01	+06	34	00.5	20.0	809
1989	CR3		1989	02	05.12222	07	35	09.46	+06	34	04.6		809
1989	CR3		1989	02	05.13472	07	35	08.82	+06	34	08.3		809
1989	CR3		1989	02	07.12639	07	33	51.74	+06	44	31.2		809

1989	CR3		1989	02	07.13889	07	33	51.28	+06	44	34.6		809
1989	CR3		1989	02	07.15139	07	33	50.87	+06	44	37.5		809
1989	CS3	*	1989	02	05.10972	07	39	43.84	+06	40	36.2	17.6	809
1989	CS3		1989	02	05.12222	07	39	43.38	+06	40	39.3		809
1989	CS3		1989	02	05.13472	07	39	42.79	+06	40	42.9		809
1989	CS3		1989	02	07.12639	07	38	23.40	+06	49	02.0		809
1989	CS3		1989	02	07.13889	07	38	22.85	+06	49	04.9		809
1989	CS3		1989	02	07.15139	07	38	22.40	+06	49	07.8		809
1989	CT3	*	1989	02	05.10972	07	39	48.54	+05	43	07.3	17.8	809
1989	CT3		1989	02	05.12222	07	39	47.95	+05	43	11.8		809
1989	CT3		1989	02	05.13472	07	39	47.41	+05	43	16.4		809
1989	CT3		1989	02	07.12639	07	38	20.94	+05	55	50.9		809
1989	CT3		1989	02	07.13889	07	38	20.35	+05	55	56.2		809
1989	CT3		1989	02	07.15139	07	38	19.80	+05	56	00.7		809
1989	CU3	*	1989	02	05.10972	07	42	50.89	+02	14	17.5	18.0	809
1989	CU3		1989	02	05.12222	07	42	50.21	+02	14	22.0		809
1989	CU3		1989	02	05.13472	07	42	49.62	+02	14	25.3		809
1989	CU3		1989	02	07.12639	07	41	22.97	+02	25	50.6		809
1989	CU3		1989	02	07.13889	07	41	22.42	+02	25	54.5		809
1989	CU3		1989	02	07.15139	07	41	21.97	+02	25	58.0		809
1989	CV3	*	1989	02	05.10972	07	44	07.86	+04	59	00.4	19.0	809
1989	CV3		1989	02	05.12222	07	44	07.31	+04	59	03.2		809
1989	CV3		1989	02	05.13472	07	44	06.81	+04	59	08.7		809
1989	CV3		1989	02	07.12639	07	42	46.44	+05	10	05.3		809
1989	CV3		1989	02	07.13889	07	42	45.99	+05	10	09.6		809
1989	CV3		1989	02	07.15139	07	42	45.49	+05	10	13.3		809
1989	CW3	*	1989	02	05.10972	07	49	45.30	+02	59	54.0	19.0	809
1989	CW3		1989	02	05.12222	07	49	44.67	+02	59	55.3		809
1989	CW3		1989	02	05.13472	07	49	43.90	+02	59	57.3		809
1989	CW3		1989	02	07.12639	07	47	55.53	+03	04	00.6		809
1989	CW3		1989	02	07.13889	07	47	54.94	+03	04	01.6		809
1989	CW3		1989	02	07.15139	07	47	54.18	+03	04	03.1		809
1989	CX3	*	1989	02	05.10972	07	51	24.09	+05	56	52.2	17.5	809
1989	CX3		1989	02	05.12222	07	51	23.67	+05	57	01.6		809
1989	CX3		1989	02	05.13472	07	51	23.17	+05	57	10.6		809
1989	CX3		1989	02	07.12639	07	50	10.65	+06	22	35.6		809
1989	CX3		1989	02	07.13889	07	50	10.15	+06	22	45.6		809
1989	CX3		1989	02	07.15139	07	50	09.69	+06	22	54.7		809
1989	CY3	*	1989	02	05.10972	07	51	37.24	+06	36	41.7	19.2	809
1989	CY3		1989	02	05.12222	07	51	36.56	+06	36	42.1		809
1989	CY3		1989	02	05.13472	07	51	35.97	+06	36	41.7		809
1989	CY3		1989	02	07.12639	07	50	02.72	+06	35	30.9		809
1989	CY3		1989	02	07.13889	07	50	02.18	+06	35	30.5		809
1989	CY3		1989	02	07.15139	07	50	01.55	+06	35	29.9		809
2093	P-L		1989	02	04.18681	09	07	30.76	+03	16	15.3	18.6	809
2093	P-L		1989	02	04.19931	09	07	30.18	+03	16	18.3		809
2093	P-L		1989	02	04.21181	09	07	29.54	+03	16	21.2		809
2093	P-L		1989	02	07.18333	09	05	08.35	+03	28	18.3		809
2093	P-L		1989	02	07.19583	09	05	07.77	+03	28	20.8		809
2093	P-L		1989	02	07.20833	09	05	07.27	+03	28	23.5		809
153			1989	02	04.18681	09	09	40.51	+05	44	26.9	16.0	809
153			1989	02	04.19931	09	09	39.97	+05	44	29.2		809
153			1989	02	04.21181	09	09	39.47	+05	44	30.9		809
153			1989	02	07.18333	09	07	46.74	+05	52	46.7		809
153			1989	02	07.19583	09	07	46.19	+05	52	49.2		809
153			1989	02	07.20833	09	07	45.65	+05	52	51.6		809
617			1986	05	31.17153	17	50	33.55	-41	35	14.0		809
617			1986	06	03.27604	17	48	32.43	-41	44	33.0		809
617			1986	06	03.30590	17	48	31.19	-41	44	38.0		809

617		1986 06 04.18160	17	47	56.16	-41	47	07.1		809
617		1986 06 04.21007	17	47	55.02	-41	47	12.1		809
617		1986 06 08.15799	17	45	12.68	-41	57	37.3		809
617		1986 06 08.17188	17	45	12.03	-41	57	38.7		809
617		1986 06 08.18785	17	45	11.32	-41	57	41.4		809
1520		1989 02 05.10972	07	35	15.52	+05	11	04.5	16.0	809
1520		1989 02 05.12222	07	35	14.98	+05	11	05.6		809
1520		1989 02 05.13472	07	35	14.39	+05	11	06.1		809
1520		1989 02 07.12639	07	33	52.24	+05	14	18.1		809
1520		1989 02 07.13889	07	33	51.65	+05	14	19.7		809
1520		1989 02 07.15139	07	33	51.11	+05	14	20.4		809
3542		1989 02 04.18681	09	15	18.02	+06	32	12.6	18.8	809
3542		1989 02 04.19931	09	15	17.39	+06	32	14.7		809
3542		1989 02 04.21181	09	15	16.84	+06	32	17.1		809
3542		1989 02 07.18333	09	12	55.66	+06	39	36.0		809
3542		1989 02 07.19583	09	12	55.02	+06	39	38.8		809
3542		1989 02 07.20833	09	12	54.43	+06	39	39.8		809
3571		1989 02 04.18681	09	13	41.06	+06	03	20.7	18.2	809
3571		1989 02 04.19931	09	13	40.56	+06	03	22.6		809
3571		1989 02 04.21181	09	13	40.15	+06	03	24.1		809
3571		1989 02 07.18333	09	11	44.56	+06	10	41.0		809
3571		1989 02 07.19583	09	11	44.11	+06	10	42.5		809
3571		1989 02 07.20833	09	11	43.61	+06	10	45.0		809
3682		1989 02 05.10972	07	40	47.88	+06	10	32.0	17.0	809
3682		1989 02 05.12222	07	40	47.29	+06	10	33.7		809
3682		1989 02 05.13472	07	40	46.70	+06	10	34.8		809
3682		1989 02 07.12639	07	39	12.69	+06	14	55.1		809
3682		1989 02 07.13889	07	39	12.10	+06	14	56.3		809
3682		1989 02 07.15139	07	39	11.47	+06	14	57.8		809

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K. Kawanishi, 2045-1, Kariya, Akou, Hyogo-Ken 678-02, Japan
Observer K. Kawanishi
0.20-m f/4.8 reflector

1989 EV		1989 03 15.62708	12	10	26.48	+11	37	46.3	16.0	871
1989 EV		1989 03 15.64792	12	10	25.69	+11	37	52.9		871
1989 EW		1989 03 14.63888	12	13	10.88	+12	03	06.9	16.0	871
1989 EW		1989 03 14.65972	12	13	09.92	+12	03	12.9		871
1989 EW		1989 03 15.62708	12	12	16.90	+12	06	36.2		871
1989 EW		1989 03 15.64792	12	12	16.26	+12	06	40.3		871

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T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan
Observer M. Iwamoto
Measurer T. Furuta
0.25-m Wright-Schmidt

1977 EV		1989 02 26.48096	08	44	49.31	+18	37	00.2		872
1977 EV		1989 02 28.52020	08	43	06.79	+18	29	40.8	15.5	872
1977 EV		1989 02 28.53472	08	43	06.23	+18	29	36.5		872
1989 BQ		1989 02 10.59248	08	56	30.14	+21	23	26.8		872
1989 BQ		1989 02 10.60712	08	56	29.69	+21	23	30.7		872
1989 BQ		1989 02 27.49207	08	47	53.24	+22	54	40.8		872
1989 BQ		1989 02 27.50692	08	47	52.81	+22	54	41.2		872
1989 BR		1989 02 10.67581	08	54	31.28	+19	29	53.8		872
1989 BR		1989 02 10.69167	08	54	30.26	+19	29	55.0		872
1989 BT		1989 02 10.63571	08	58	07.47	+12	29	38.0		872
1989 BT		1989 02 10.64714	08	58	06.66	+12	29	40.5		872
1989 DD		1989 02 26.57734	11	02	02.7	+06	38	22		872
1989 DD	*	1989 02 26.60258	11	02	01.94	+06	38	28.0	16.0	872

1989 DD		1989 02 28.58345	11 00 32.4	+06 47 20				872
1638		1989 02 26.57734	11 03 32.90	+05 44 51.8				872

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M. Arai, 2695, Tomita, Saitama, 369-12 Japan
Observers M. Arai, H. Mori
Measurer H. Mori
0.30-m f/3.8 reflector

1989 CO		1989 03 01.53484	09 13 42.29	+19 02 56.6			17	875
1989 CO		1989 03 01.55556	09 13 41.26	+19 03 03.7				875
1989 EB1	*	1989 03 01.52778	09 14 24.32	+18 49 48.5			17	875
1989 EB1		1989 03 01.55556	09 14 22.97	+18 49 45.6				875
1989 EB1		1989 03 08.52292	09 09 14.87	+18 29 07.8			17	875
1989 EB1		1989 03 08.54375	09 09 13.98	+18 29 01.7				875
1989 EC1	*	1989 03 01.61111	11 06 19.61	+05 43 52.3			16	875
1989 EC1		1989 03 01.63403	11 06 18.41	+05 43 54.2				875
1989 EC1		1989 03 08.60104	11 00 02.95	+05 58 10.1			16	875
1989 EC1		1989 03 08.62118	11 00 01.85	+05 58 13.7				875
1989 ED1	*	1989 03 01.65104	11 43 17.58	+03 46 00.6			16.5	875
1989 ED1		1989 03 01.67222	11 43 16.89	+03 46 14.1				875
1989 ED1		1989 03 08.65972	11 38 27.55	+05 09 06.2			16.5	875
1989 ED1		1989 03 08.66736	11 38 27.10	+05 09 11.9				875
1989 EE1	*	1989 03 08.64028	11 43 31.36	+06 25 48.6			16.5	875
1989 EE1		1989 03 08.65972	11 43 30.23	+06 25 51.1				875
1989 EE1		1989 03 10.65278	11 41 24.54	+06 29 46.4			16	875
1989 EE1		1989 03 10.66979	11 41 23.38	+06 29 48.8				875

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N. Kawasato, 3-51, Hana-Koganei, Kodaira, Tokyo 187, Japan
Observer T. Hioki
Measurers N. Kawasato, T. Hioki
0.30-m f/3.8 hyperboloid astrocamera

1988 BF		1989 03 08.75868	13 45 43.87	+04 44 23.9			17	877
1988 BF		1989 03 08.81910	13 45 42.37	+04 44 41.5				877
1989 EX	*	1989 03 08.75868	13 45 56.93	+05 42 39.6			16.5	877
1989 EX		1989 03 08.81910	13 45 56.47	+05 43 15.8				877
1989 EX		1989 03 10.66545	13 45 37.76	+06 01 57.8				877
1989 EX		1989 03 10.71840	13 45 37.07	+06 02 30.3				877
1989 EX		1989 03 10.77257	13 45 36.31	+06 03 06.9				877
1989 EX		1989 03 29.65191	13 37 09.28	+09 20 38.9				877
1989 EX		1989 03 29.67326	13 37 08.59	+09 20 52.4				877
1025		1989 03 10.73507	11 52 55.7	+10 52 37			15	877
1025		1989 03 10.75799	11 52 54.5	+10 53 17				877
1025		1989 03 10.77951	11 52 52.9	+10 54 09				877

881 Toyota
T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan
Observer K. Suzuki
Measurer T. Furuta
0.31-m f/5.7 reflector

1987 SB2		1989 02 13.58924	08 30 41.39	+39 15 22.9				881
1987 SB2		1989 02 13.60243	08 30 40.80	+39 15 23.3				881
1989 EY		1989 03 05.59201	10 34 58.5	+14 16 07				881
1989 EY		1989 03 05.60313	10 34 53.43	+14 06 33.6				881
1989 EY	*	1989 03 09.53681	10 32 02.01	+14 35 37.5			17.0	881
1989 EY		1989 03 09.55000	10 32 01.49	+14 35 41.5				881
1989 EY		1989 03 10.56389	10 31 17.2	+14 40 25				881
1989 EY		1989 03 10.57847	10 31 16.3	+14 40 29				881
1989 EH1	*	1989 03 10.59861	11 13 45.43	+05 13 34.0			16.5	881

1989	EH1		1989	03	10.61319	11	13	44.59	+05 13 41.4	881
1989	EH1		1989	03	11.57500	11	12	58.9	+05 20 25	881
1989	EH1		1989	03	11.58958	11	12	58.01	+05 20 30.0	881
1989	EJ1	*	1989	03	10.59861	11	14	59.01	+05 09 40.9 16.5	881
1989	EJ1		1989	03	10.61319	11	14	58.10	+05 09 51.3	881
1989	EJ1		1989	03	11.57500	11	14	03.1	+05 18 36	881
1989	EJ1		1989	03	11.58958	11	14	02.2	+05 18 44	881
1946			1989	03	08.57535	11	38	39.6	+08 28 25	881
1946			1989	03	08.59896	11	38	38.1	+08 28 29	881
2157			1989	03	10.59861	11	16	39.32	+04 49 06.1	881
2157			1989	03	10.61319	11	16	38.61	+04 49 08.7	881

887 Ojima
T. Niijima, 86 Horiguchi, Ojima-machi, Nitta-gun, Gunma 370-04, Japan
Observers T. Niijima, K. Kanai
Measurer K. Kanai
0.30-m f/5.8 reflector

4039			1989	02	26.58426	09	19	41.86	+08 46 18.4 16	887
4039			1989	02	26.60486	09	19	40.67	+08 46 23.9	887

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

1981	TO3		1989	02	27.51667	08	03	29.01	+22 02 15.0 18.5	888
1981	TO3		1989	02	27.55000	08	03	28.15	+22 02 16.8	888
1983	WA		1989	03	10.57917	10	11	48.63	-03 28 27.4 17.0	888
1983	WA		1989	03	10.61250	10	11	47.20	-03 28 13.7	888
1989	AC		1989	02	26.48056	07	10	00.60	+22 37 42.4 16.5	888
1989	AC		1989	02	26.51389	07	10	04.03	+22 37 36.8	888
1989	AC		1989	03	08.48611	07	27	16.52	+22 08 25.5 17.0	888
1989	AC		1989	03	08.51944	07	27	19.75	+22 08 18.2	888
1989	AU1		1989	02	26.48889	07	25	42.62	+16 30 17.7 18.0	888
1989	AU1		1989	02	26.52222	07	25	42.00	+16 30 20.0	888
1989	BJ		1989	02	26.49722	07	46	57.78	+18 37 33.2 18.0	888
1989	BJ		1989	02	26.52986	07	46	56.81	+18 37 32.7	888
1989	BK		1989	02	26.55000	08	18	09.67	+29 22 22.1 17.0	888
1989	BK		1989	02	26.58333	08	18	08.77	+29 22 23.9	888
1989	BL		1989	02	26.55833	08	44	42.23	+26 58 56.4 17.5	888
1989	BL		1989	02	26.59167	08	44	41.33	+26 58 58.5	888
1989	BO		1989	02	26.55833	08	47	22.72	+26 50 27.9 18	888
1989	BO		1989	02	26.59167	08	47	21.41	+26 50 34.3	888
1989	BO		1989	02	27.52500	08	46	46.94	+26 53 32.7 17.0	888
1989	BO		1989	02	27.55833	08	46	45.66	+26 53 39.1	888
1989	BO		1989	03	09.55278	08	41	37.21	+27 17 43.7 17.0	888
1989	BO		1989	03	09.58681	08	41	36.33	+27 17 47.2	888
1989	BO		1989	03	10.55417	08	41	13.61	+27 19 21.1 17.0	888
1989	BO		1989	03	10.58750	08	41	12.76	+27 19 24.4	888
1989	CR1		1989	02	26.56667	08	45	35.82	+04 08 46.5 18.0	888
1989	CR1		1989	02	26.60000	08	45	34.03	+04 08 54.6	888
1989	CR1		1989	03	10.49514	08	38	16.21	+04 53 12.8 17.5	888
1989	CR1		1989	03	10.52847	08	38	15.35	+04 53 20.3	888
1989	CS1		1989	03	09.57778	11	08	54.43	+02 39 14.5 17.0	888
1989	CS1		1989	03	09.61181	11	08	52.15	+02 39 13.8	888
1989	CT1		1989	02	27.54167	09	04	11.59	+21 46 52.7 18.5	888
1989	CT1		1989	02	27.57500	09	04	09.88	+21 46 55.8	888
1989	CU1		1989	03	09.56944	11	00	43.05	+15 16 58.6 17.5	888
1989	CU1		1989	03	09.60347	11	00	41.05	+15 17 13.1	888
1989	CL2		1989	02	10.68958	09	21	09.96	+21 03 47.8 18.0	888

1989	CL2		1989	02	10.72272	09	21	07.90	+21	04	00.3		888
1989	CL2	*	1989	02	13.69236	09	18	32.51	+21	31	37.6	18.0	888
1989	CL2		1989	02	13.72639	09	18	30.72	+21	31	56.0		888
1989	EZ	*	1989	03	09.55278	08	42	55.19	+27	04	40.2	18.0	888
1989	EZ		1989	03	09.58681	08	42	53.90	+27	04	37.8		888
1989	EZ		1989	03	10.55417	08	42	21.70	+27	03	26.9	18.0	888
1989	EZ		1989	03	10.58750	08	42	20.30	+27	03	26.5		888
2093	P-L		1989	02	27.53333	08	50	31.57	+05	06	23.6	18.5	888
2093	P-L		1989	02	27.56667	08	50	30.44	+05	06	34.7		888
329			1989	03	10.49514	08	37	06.27	+04	46	52.2	14.0	888
329			1989	03	10.52847	08	37	05.59	+04	47	14.2		888
1132			1989	02	27.52500	08	48	26.84	+27	36	57.6	17	888
1132			1989	02	27.55833	08	48	25.25	+27	37	00.2		888

894 Kiyosato
S. Miyasaka, 3-8-501, 4 Chome, Nagayama, Tama, Tokyo 206, Japan
Observer S. Miyasaka
0.25-m f/4.8 reflector

1980	PT		1989	03	08.55204	11	28	14.81	+03	02	21.9		894
1980	PT		1989	03	08.57733	11	28	13.61	+03	02	35.0		894
1980	PT		1989	03	08.60419	11	28	12.36	+03	02	46.7		894
1984	UX1		1988	12	09.65575	05	21	50.15	+31	05	55.6		894
1984	UX1		1988	12	09.68917	05	21	47.64	+31	05	55.2		894
1984	UX1		1988	12	11.54362	05	19	35.30	+31	10	48.5		894
1984	UX1		1988	12	11.58567	05	19	31.82	+31	10	56.5		894
1985	GX		1989	03	08.48101	09	52	34.14	+09	35	51.7		894
1985	GX		1989	03	08.50104	09	52	33.60	+09	36	06.4		894
1985	GX		1989	03	08.51905	09	52	32.96	+09	36	19.1		894

896 Yatsugatake South Base Observatory
O. Muramatsu, 119-1, 2-8 Sakurazutsumi, Musashino, Tokyo 180, Japan
Observers Y. Kushida, O. Muramatsu
Measurer O. Muramatsu
0.16-m f/3.3 and 0.20-m f/4.8 reflectors

1989	EW		1989	03	11.72500	12	15	44.7	+11	52	15	15.2	N 896
1989	EW		1989	03	17.80148	12	10	18.41	+12	13	46.7		E 896

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

1989	EM1	*	1989	03	08.53611	10	05	02.99	+02	31	11.1	16	897
1989	EM1		1989	03	08.57431	10	05	01.42	+02	31	36.8		897
1989	EM1		1989	03	15.53918	10	01	18.30	+03	44	50.9		897
1989	EM1		1989	03	15.57801	10	01	17.20	+03	45	17.6		897
1989	EN1	*	1989	03	10.77014	15	13	32.75	+26	25	31.2	15.5	897
1989	EN1		1989	03	10.81042	15	13	35.14	+26	26	10.7		897
1989	EN1		1989	03	15.56302	15	17	50.93	+27	40	25.5		897
1989	EN1		1989	03	15.60231	15	17	52.26	+27	41	00.2		897
1989	EN1		1989	03	15.61296	15	17	52.75	+27	41	11.6		897

975 Valencia
A. Lopez, Observatorio Astronomico de Valencia, Avda. Blasco Ibanez 13,
E-46010 Valencia, Spain
Observers A. Lopez G., J. A. Lopez O., R. Lopez M., J. Artes P.
0.25-m f/15 refractor
SAOC

2	1987	05	05.94258	16	08	35.19	+24	23	58.9	975
2	1987	05	05.94591	16	08	35.01	+24	24	01.4	975
2	1987	05	05.94993	16	08	34.80	+24	24	03.4	975
2	1987	05	20.94051	15	56	09.60	+26	11	10.1	975
2	1987	05	20.94393	15	56	09.41	+26	11	11.0	975
2	1987	05	20.94786	15	56	09.17	+26	11	12.6	975
2	1987	05	28.90706	15	49	26.97	+26	35	39.7	975
2	1987	05	28.91060	15	49	26.78	+26	35	40.0	975
2	1987	05	28.91412	15	49	26.66	+26	35	40.6	975
2	1987	05	28.92159	15	49	26.37	+26	35	41.7	975
2	1987	05	28.92506	15	49	26.14	+26	35	42.0	975
2	1987	05	28.92865	15	49	25.99	+26	35	42.2	975
2	1987	06	02.90369	15	45	28.33	+26	39	31.7	975
2	1987	06	02.90742	15	45	28.13	+26	39	31.4	975
2	1987	06	02.91093	15	45	27.96	+26	39	31.5	975
2	1987	06	02.91602	15	45	27.81	+26	39	31.7	975
2	1987	06	02.91955	15	45	27.61	+26	39	32.6	975
2	1987	06	02.92328	15	45	27.42	+26	39	32.3	975
2	1987	06	23.95034	15	32	44.26	+25	30	51.5	975
2	1987	06	23.95339	15	32	44.27	+25	30	50.5	975
2	1987	06	23.95637	15	32	44.15	+25	30	49.3	975
2	1987	06	24.91602	15	32	21.22	+25	24	55.7	975
2	1987	06	24.91839	15	32	21.18	+25	24	54.8	975
2	1987	06	24.92094	15	32	21.11	+25	24	53.2	975
2	1987	06	24.92412	15	32	21.05	+25	24	52.2	975
2	1987	06	24.92657	15	32	20.90	+25	24	51.4	975
2	1987	06	24.92898	15	32	20.90	+25	24	50.4	975
2	1987	06	30.89594	15	30	24.95	+24	43	48.4	975
2	1987	06	30.89848	15	30	24.88	+24	43	48.3	975
2	1987	06	30.90089	15	30	24.79	+24	43	47.7	975
2	1987	06	30.90482	15	30	24.74	+24	43	46.0	975
2	1987	06	30.90748	15	30	24.65	+24	43	44.9	975
2	1987	06	30.90983	15	30	24.61	+24	43	42.9	975
18	1987	04	09.93819	13	59	08.74	+01	27	48.2	975
18	1987	04	09.94462	13	59	08.45	+01	27	51.0	975
18	1987	04	09.95041	13	59	08.25	+01	27	53.2	975
18	1987	04	09.95567	13	59	07.94	+01	27	55.8	975
18	1987	05	05.91770	13	36	04.83	+04	11	53.1	975
18	1987	05	05.92224	13	36	04.67	+04	11	54.4	975
18	1987	05	21.89707	13	25	29.84	+04	51	21.9	975
18	1987	05	21.90341	13	25	29.77	+04	51	22.2	975
18	1987	05	21.90969	13	25	29.69	+04	51	23.7	975
25	1987	05	20.96849	16	08	36.83	-01	12	19.0	975
25	1987	05	20.97263	16	08	36.64	-01	12	15.4	975
25	1987	06	24.94194	15	43	30.59	+06	20	43.1	975
25	1987	06	24.94582	15	43	30.54	+06	20	45.6	975
25	1987	06	30.93361	15	42	01.80	+06	47	43.0	975
25	1987	06	30.93708	15	42	01.71	+06	47	45.3	975
532	1987	04	09.89317	13	02	13.18	+23	43	22.4	975
532	1987	04	09.89763	13	02	12.93	+23	43	22.4	975
532	1987	04	09.90127	13	02	12.75	+23	43	22.8	975
532	1987	04	09.90598	13	02	12.37	+23	43	22.9	975
532	1987	04	09.90975	13	02	12.32	+23	43	24.3	975
532	1987	04	09.91331	13	02	12.03	+23	43	24.5	975
532	1987	04	09.91742	13	02	11.90	+23	43	25.4	975
532	1987	04	09.92096	13	02	11.74	+23	43	25.8	975
532	1987	04	09.92520	13	02	11.44	+23	43	26.6	975
532	1987	05	05.88587	12	45	57.57	+22	50	12.5	975
532	1987	05	05.88960	12	45	57.52	+22	50	12.2	975

532	1987	05	05.89310	12	45	57.34	+22	50	11.7	975
532	1987	05	05.89811	12	45	57.40	+22	50	08.1	975
532	1987	05	05.90117	12	45	57.29	+22	50	07.3	975
532	1987	05	05.90421	12	45	57.17	+22	50	07.9	975
532	1987	05	20.87972	12	43	33.20	+20	44	50.0	975
532	1987	05	20.88367	12	43	33.15	+20	44	49.6	975
532	1987	05	20.88721	12	43	33.14	+20	44	45.7	975
532	1987	05	21.87905	12	43	36.17	+20	34	45.0	975
532	1987	05	21.88448	12	43	36.14	+20	34	39.2	975
532	1987	05	28.87243	12	44	39.91	+19	18	53.4	975
532	1987	05	28.87849	12	44	39.97	+19	18	49.4	975
532	1987	05	28.88438	12	44	40.21	+19	18	49.3	975
532	1987	05	28.88921	12	44	40.27	+19	18	46.2	975
532	1987	06	01.88255	12	45	49.71	+18	32	05.4	975
532	1987	06	01.89265	12	45	49.77	+18	31	58.4	975
532	1987	06	01.89664	12	45	49.93	+18	31	54.9	975
532	1987	06	01.90602	12	45	50.15	+18	31	49.4	975
532	1987	06	02.87623	12	46	10.54	+18	20	09.2	975
532	1987	06	02.88002	12	46	10.55	+18	20	06.3	975
532	1987	06	02.88488	12	46	10.56	+18	20	02.5	975
532	1987	06	02.88922	12	46	10.73	+18	20	00.5	975
532	1987	06	23.88522	12	58	26.46	+13	46	05.4	975
532	1987	06	23.88976	12	58	26.66	+13	46	02.0	975
532	1987	06	23.89456	12	58	26.87	+13	45	57.0	975
532	1987	06	23.90023	12	58	27.20	+13	45	52.4	975
532	1987	06	23.90446	12	58	27.32	+13	45	49.7	975
532	1987	06	24.89108	12	59	14.53	+13	32	12.1	975
532	1987	06	24.89414	12	59	14.49	+13	32	08.5	975
532	1987	06	24.89695	12	59	14.67	+13	32	03.6	975
532	1987	06	24.90051	12	59	14.81	+13	32	04.1	975
532	1987	06	24.90352	12	59	14.87	+13	32	01.9	975
532	1987	06	24.90621	12	59	15.04	+13	32	00.3	975
532	1987	06	30.86394	13	04	19.42	+12	08	56.3	975
532	1987	06	30.86642	13	04	19.53	+12	08	54.6	975
532	1987	06	30.86897	13	04	19.59	+12	08	53.4	975
532	1987	06	30.87296	13	04	19.89	+12	08	48.5	975
532	1987	06	30.87678	13	04	20.06	+12	08	46.1	975
532	1987	06	30.87950	13	04	20.13	+12	08	44.4	975

999 Floirac
M. Rapaport, Observatoire de l’Universite de Bordeaux, B.P. 21,
F-33270 Floirac, France
Observers M. Rapaport, Y. Requieme, J. Mazurier
Automatic meridian circle

1	1987	05	08.14168	18	21	38.76	-23	11	27.0	999
1	1987	05	09.13900	18	21	25.75	-23	14	40.5	999
1	1987	05	21.10312	18	16	45.38	-23	56	09.9	999
1	1987	05	22.10003	18	16	11.94	-23	59	48.0	999
1	1987	05	29.07799	18	11	38.02	-24	25	50.4	999
1	1987	05	30.07385	18	10	53.69	-24	29	36.3	999
1	1987	05	31.07059	18	10	08.06	-24	33	21.5	999
1	1987	06	02.06494	18	08	33.37	-24	40	53.5	999
1	1987	06	21.00070	17	50	59.83	-25	48	02.7	999
1	1988	08	04.15143	00	26	23.31	-12	36	38.3	999
1	1988	08	05.14865	00	26	19.05	-12	41	33.6	999
1	1988	08	06.14585	00	26	13.44	-12	46	35.7	999
1	1988	08	18.11165	00	23	19.63	-13	54	33.2	999
1	1988	08	30.07417	00	17	19.75	-15	10	43.9	999
1	1988	09	01.06818	00	16	03.75	-15	23	33.0	999

1		1988	09	06.05248	00	12	36.91	-15 55 03.7	999
1		1988	09	07.04857	00	11	52.94	-16 01 12.4	999
1		1988	09	11.03581	00	08	49.67	-16 25 04.8	999
1		1988	09	20.00622	00	01	27.94	-17 12 36.1	999
1		1988	09	26.98268	23	55	35.93	-17 41 24.1	999
1		1988	10	01.96636	23	51	30.92	-17 56 42.8	999
1		1988	10	01.96726	23	51	30.87	-17 56 42.5	999
1		1988	10	02.96292	23	50	43.22	-17 59 11.4	999
1		1988	10	14.92437	23	42	07.13	-18 13 19.9	999
1		1988	10	20.90546	23	38	41.99	-18 09 21.0	999
1		1988	10	24.89410	23	36	49.25	-18 02 46.1	999
1		1988	10	28.88218	23	35	17.08	-17 53 11.7	999
1		1988	10	29.87830	23	34	57.36	-17 50 21.0	999
1		1988	10	30.87552	23	34	38.96	-17 47 20.5	999
1		1988	11	02.86706	23	33	51.93	-17 37 14.8	999
1		1988	11	03.86435	23	33	38.99	-17 33 33.1	999
1		1988	11	04.86135	23	33	27.42	-17 29 41.0	999
1		1988	11	15.83042	23	32	51.22	-16 37 10.8	999
1		1988	11	23.80945	23	34	06.89	-15 48 51.2	999
1		1988	11	26.80183	23	34	56.13	-15 28 51.3	999
2		1987	04	16.11786	16	20	31.20	+20 19 12.7	999
2		1987	04	18.11209	16	19	41.17	+20 47 44.9	999
2		1987	04	25.08965	16	16	03.75	+22 21 43.1	999
2		1987	04	27.08413	16	14	50.37	+22 46 35.5	999
2		1987	05	01.07050	16	12	10.63	+23 33 12.4	999
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2		1988	07	19.02846	20	24	27.96	+17 34 02.7	999
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2		1988	07	30.98856	20	15	00.50	+16 23 58.5	999
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2		1988	08	23.91135	19	58	23.70	+12 32 43.7	999
2		1988	08	27.89959	19	56	21.81	+11 46 14.4	999
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2	1988	09	30.80345	19	51	33.52	+05	01	34.5	999
2	1988	10	01.80038	19	51	46.00	+04	50	34.8	999
2	1988	10	02.79843	19	51	59.66	+04	39	40.0	999
2	1988	10	03.79580	19	52	14.46	+04	28	51.5	999
2	1988	10	14.76868	19	56	10.38	+02	37	09.1	999
3	1987	07	10.13299	22	18	14.24	-00	09	56.2	999
3	1987	07	26.08769	22	14	39.41	-00	49	19.1	999
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3	1987	08	28.97812	21	51	38.25	-05	14	06.2	999
3	1987	08	29.97565	21	50	50.68	-05	24	29.7	999
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3	1987	09	01.96541	21	48	30.36	-05	55	58.5	999
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3	1987	09	06.94879	21	44	48.08	-06	48	51.7	999
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4	1988	01	15.03675	08	23	23.59	+22	39	41.5	999
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4	1988	02	13.93451	07	53	06.66	+25	25	32.0	999
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4	1988	02	18.91718	07	49	25.89	+25	42	44.8	999
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4	1988	02	19.91495	07	48	46.82	+25	45	46.2	999
4	1988	02	21.90813	07	47	34.20	+25	51	24.1	999
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5	1987	02	15.96001	08	40	34.85	+17	30	17.2	999
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5	1987	03	03.91136	08	32	31.12	+19	00	31.5	999
5	1987	03	05.90528	08	32	04.24	+19	09	04.3	999
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5	1988	06	21.01282	18	11	35.65	-17	05	32.5	999
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5	1988	07	25.89746	17	43	22.63	-18	08	19.5	999
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6	1987	07	04.04483	19	47	10.24	-08	29	06.6	999
6	1987	07	10.02502	19	42	02.51	-09	11	52.0	999
6	1987	07	12.01859	19	40	13.51	-09	27	45.5	999
6	1987	07	22.98137	19	29	47.21	-11	07	32.7	999
6	1987	07	24.97463	19	27	53.41	-11	27	32.1	999
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6	1987	08	05.93473	19	17	27.57	-13	33	57.7	999
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6	1987	08	29.86191	19	07	03.44	-17	40	45.3	999
6	1987	09	02.85076	19	07	09.21	-18	17	01.9	999
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6	1988	12	22.11821	08	49	53.73	+08	49	02.9	999
6	1989	01	24.00964	08	23	29.88	+13	08	32.7	999
7	1987	07	04.05214	19	57	06.13	-15	46	41.7	999
7	1987	07	24.97973	19	35	34.49	-15	52	12.9	999
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7	1987	09	16.81573	19	10	44.08	-16	33	35.8	999
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7	1988	12	13.18708	09	52	47.49	+07	19	27.8	999
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17	1988	04	13.96129	12	29	54.37	+06	28	10.9	999
17	1988	04	20.93868	12	24	46.64	+06	57	34.2	999
18	1987	02	17.19131	14	17	20.89	-04	19	45.2	999
18	1987	04	17.01231	13	52	49.34	+02	21	29.4	999
18	1987	04	20.99914	13	49	10.00	+02	49	27.3	999
18	1987	04	24.98593	13	45	31.29	+03	15	13.9	999
18	1987	04	26.97919	13	43	43.33	+03	27	11.0	999
18	1987	04	30.96586	13	40	12.58	+03	48	59.5	999
18	1987	05	01.96284	13	39	21.30	+03	53	59.2	999
18	1987	05	03.95600	13	37	40.78	+04	03	23.4	999
18	1987	05	07.94312	13	34	29.22	+04	19	49.5	999

18	1987	05	21.89829	13	25	29.80	+04	51	21.4	999
18	1987	05	22.89545	13	25	00.41	+04	52	03.8	999
18	1987	05	29.87460	13	22	12.80	+04	51	23.7	999
18	1987	06	01.86573	13	21	22.03	+04	48	13.0	999
18	1988	07	17.14058	22	59	08.28	-03	30	20.1	999
18	1988	07	18.13783	22	59	35.35	-03	33	36.7	999
18	1988	07	25.12077	23	01	59.12	-04	05	02.2	999
18	1988	07	26.11825	23	02	12.96	-04	10	45.8	999
18	1988	07	28.11333	23	02	35.50	-04	23	10.7	999
18	1988	07	30.10784	23	02	51.12	-04	36	51.3	999
18	1988	07	31.10460	23	02	56.28	-04	44	10.9	999
18	1988	08	06.08856	23	02	50.16	-05	34	53.3	999
18	1988	08	07.08534	23	02	42.94	-05	44	26.6	999
18	1988	08	10.07744	23	02	10.79	-06	15	00.3	999
18	1988	08	18.05311	22	59	32.77	-07	48	51.1	999
18	1988	09	01.01033	22	51	43.30	-11	02	17.3	999
18	1988	09	05.99353	22	48	24.48	-12	14	00.2	999
18	1988	09	05.99446	22	48	24.44	-12	14	01.0	999
18	1988	09	06.99093	22	47	44.38	-12	28	10.7	999
18	1988	09	14.96605	22	42	36.67	-14	16	20.7	999
18	1988	09	19.94939	22	39	50.48	-15	16	50.1	999
18	1988	09	20.94631	22	39	20.85	-15	28	05.9	999
18	1988	09	27.92530	22	36	35.69	-16	37	56.2	999
18	1988	09	27.92620	22	36	35.67	-16	37	56.3	999
18	1988	10	01.91372	22	35	39.05	-17	10	17.4	999
18	1988	10	01.91462	22	35	39.05	-17	10	17.4	999
18	1988	10	29.84384	22	44	17.52	-18	15	44.4	999
18	1988	11	02.83464	22	47	38.38	-18	04	11.8	999
18	1988	11	03.83346	22	48	33.01	-18	00	35.8	999
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18	1988	11	13.81255	22	59	07.73	-17	10	18.8	999
18	1988	11	14.81172	23	00	19.54	-17	03	57.0	999
18	1988	11	16.80735	23	02	47.11	-16	50	32.1	999
18	1988	11	21.79775	23	09	18.62	-16	13	15.5	999
18	1988	11	22.79597	23	10	40.54	-16	05	11.8	999
18	1988	11	24.79249	23	13	27.75	-15	48	30.1	999
18	1988	11	26.78895	23	16	19.29	-15	31	04.3	999
19	1988	02	15.13779	12	52	01.39	-06	49	33.2	999
19	1988	02	20.12283	12	50	34.81	-06	40	17.5	999
19	1988	03	15.04744	12	35	52.52	-05	02	31.8	999
19	1988	03	27.00711	12	25	25.34	-03	50	28.5	999
19	1988	03	28.00443	12	24	31.61	-03	44	12.1	999
19	1988	04	07.96793	12	14	57.45	-02	36	13.2	999
19	1988	04	09.96049	12	13	19.65	-02	24	25.5	999
19	1988	04	09.96137	12	13	19.61	-02	24	25.4	999
19	1988	04	10.95744	12	12	31.81	-02	18	37.7	999
20	1987	09	18.20430	04	36	55.45	+21	47	21.7	999
20	1987	09	28.18428	04	45	57.59	+22	00	08.4	999
20	1987	12	06.97826	04	24	56.88	+20	42	25.6	999
20	1987	12	27.90907	04	07	12.01	+19	55	17.3	999
20	1987	12	30.89924	04	05	40.84	+19	51	13.8	999
20	1988	01	14.85589	04	03	00.62	+19	45	25.9	999
20	1988	01	14.85589	04	03	00.62	+19	45	25.9	999
20	1988	02	12.78906	04	20	17.96	+20	36	15.6	999
20	1988	02	13.78720	04	21	20.86	+20	38	58.5	999
20	1988	02	18.77727	04	26	58.30	+20	53	01.2	999
20	1988	02	21.77151	04	30	38.30	+21	01	42.5	999
21	1987	02	17.01515	10	03	00.26	+16	34	52.7	999
21	1987	03	22.90260	09	35	38.80	+18	42	47.5	999

21	1987	03	26.89042	09	33	53.54	+18	47	28.1	999
21	1988	03	14.22327	16	45	32.13	-20	25	34.3	999
21	1988	04	14.15011	17	02	15.33	-21	00	20.5	999
21	1988	04	21.13081	17	02	20.98	-21	04	01.3	999
21	1988	05	21.03757	16	45	59.15	-21	06	39.9	999
21	1988	05	24.02739	16	43	07.71	-21	05	36.1	999
21	1988	06	04.98610	16	30	49.22	-20	59	30.5	999
21	1988	06	14.95187	16	20	43.68	-20	53	40.8	999
21	1988	06	18.93942	16	17	04.18	-20	51	47.8	999
21	1988	06	20.93171	16	15	21.79	-20	51	03.4	999
21	1988	06	24.91862	16	12	14.05	-20	50	02.8	999
22	1988	02	17.11265	12	24	08.46	+18	11	52.1	999
22	1988	02	20.10342	12	22	38.62	+18	30	56.2	999
22	1988	03	14.02972	12	05	55.60	+20	40	12.7	999
22	1988	03	15.02573	12	05	03.99	+20	44	24.2	999
22	1988	03	23.99575	11	57	15.01	+21	13	53.0	999
22	1988	03	26.98613	11	54	41.57	+21	20	06.3	999
22	1988	03	27.98249	11	53	51.25	+21	21	45.7	999
22	1988	04	01.96604	11	49	47.76	+21	26	46.8	999
22	1988	04	07.94682	11	45	19.49	+21	25	43.1	999
22	1988	04	09.94086	11	43	57.21	+21	23	40.2	999
22	1988	04	10.93722	11	43	17.59	+21	22	19.8	999
22	1988	04	13.92828	11	41	25.07	+21	17	04.8	999
23	1988	09	08.10659	01	38	51.81	-03	08	51.0	999
23	1988	09	20.06932	01	32	25.08	-04	02	15.0	999
23	1988	09	27.04615	01	27	14.64	-04	34	45.3	999
23	1988	10	01.03294	01	23	54.68	-04	52	50.1	999
23	1988	10	09.00605	01	16	39.29	-05	25	58.8	999
23	1988	10	29.93556	00	57	14.57	-06	13	45.3	999
23	1988	11	01.92540	00	54	49.06	-06	14	18.0	999
23	1988	11	02.92213	00	54	02.61	-06	14	05.5	999
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23	1988	11	03.91888	00	53	17.27	-06	13	41.7	999
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23	1988	11	04.91653	00	52	33.03	-06	13	05.7	999
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23	1988	11	06.90920	00	51	08.29	-06	11	17.9	999
23	1988	11	06.91026	00	51	08.24	-06	11	18.2	999
23	1988	11	07.90600	00	50	27.78	-06	10	06.6	999
23	1988	11	14.88441	00	46	22.78	-05	56	14.3	999
23	1988	11	15.88119	00	45	53.61	-05	53	28.6	999
23	1988	11	18.87191	00	44	35.29	-05	44	04.4	999
23	1988	12	14.80069	00	43	11.89	-03	20	15.8	999
24	1987	04	25.07782	15	57	28.28	-20	47	31.7	999
24	1987	05	01.05779	15	53	28.24	-20	37	18.4	999
24	1987	05	04.04870	15	51	16.50	-20	31	26.8	999
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24	1987	06	05.94083	15	25	17.88	-19	11	02.2	999
24	1987	06	20.89353	15	17	05.37	-18	41	52.1	999
24	1988	06	21.12694	20	56	59.36	-18	17	15.9	999
24	1988	07	10.06857	20	47	07.40	-19	00	28.4	999
24	1988	07	18.04314	20	41	28.29	-19	23	03.3	999
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27	1988	03	03.18183	15	02	58.36	-15	14	52.5	999
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27	1988	03	27.11586	15	01	02.74	-14	55	14.7	999
27	1988	03	28.11275	15	00	35.71	-14	52	59.0	999
27	1988	04	11.06741	14	51	31.66	-14	10	22.6	999
27	1988	05	05.98264	14	27	42.54	-12	24	30.1	999
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27	1988	05	21.92929	14	13	46.14	-11	25	22.0	999
28	1987	12	28.13293	09	32	13.51	+09	37	47.1	999
28	1988	01	12.08934	09	28	24.08	+10	41	44.7	999
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28	1988	01	15.08085	09	26	55.32	+10	59	56.0	999
28	1988	01	19.06807	09	24	37.39	+11	26	39.8	999
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28	1988	02	15.97668	09	03	09.63	+15	18	03.3	999
28	1988	02	16.97333	09	02	24.29	+15	26	26.5	999
28	1988	02	19.96415	09	00	13.19	+15	51	08.0	999
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28	1988	03	31.84680	08	52	18.71	+19	20	22.2	999
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28	1988	04	10.82313	08	57	27.26	+19	29	55.7	999
29	1987	12	07.13500	08	11	41.42	+28	59	31.9	999
29	1987	12	28.06940	07	59	09.29	+30	05	52.4	999
29	1987	12	31.05877	07	56	18.77	+30	14	34.6	999
29	1988	01	15.00748	07	40	00.92	+30	44	33.5	999
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29	1988	03	10.83410	07	11	16.98	+28	34	00.2	999
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39	1987	08	08.13190	00	10	59.31	-01	03	38.9	999
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39	1987	12	27.74244	00	07	44.52	-07	36	38.2	999
39	1988	11	07.20888	08	03	43.92	+10	00	32.7	999
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39	1988	12	21.08627	07	59	24.45	+09	13	14.8	999
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40	1987	08	30.17039	02	31	59.67	+08	35	55.0	999
40	1987	09	03.15970	02	33	34.24	+08	35	06.0	999
40	1987	09	07.14997	02	34	40.38	+08	32	04.0	999
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40	1987	12	19.82886	01	41	40.05	+05	57	35.1	999
40	1987	12	20.82727	01	41	58.27	+06	02	43.7	999
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40	1988	01	09.77985	01	53	40.52	+08	10	54.2	999
40	1988	01	09.77985	01	53	40.52	+08	10	54.2	999
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42	1987	12	20.07574	07	37	16.54	+25	51	01.7	999
42	1988	01	11.99578	07	13	03.72	+27	38	54.9	999
42	1988	01	11.99578	07	13	03.72	+27	38	54.9	999
42	1988	02	19.86938	06	42	32.91	+28	54	59.5	999

42	1988	03	02.83453	06	41	17.19	+28	54	39.9	999
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42	1989	01	26.19775	13	01	52.49	+04	48	24.1	999
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44	1987	10	22.13332	05	07	19.36	+17	19	55.2	999
44	1987	11	19.04947	04	56	26.00	+16	32	46.6	999
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44	1988	01	14.86356	04	13	21.22	+16	52	12.5	999
44	1988	01	14.86356	04	13	21.22	+16	52	12.5	999
44	1988	02	12.79371	04	26	56.06	+18	51	06.9	999
44	1988	02	13.79219	04	27	52.50	+18	55	52.2	999
44	1988	02	15.78710	04	29	50.23	+19	05	24.8	999
45	1987	03	17.17244	15	40	40.78	-11	07	00.7	999
45	1987	05	01.04092	15	29	13.60	-07	51	17.6	999
45	1987	05	04.03183	15	26	53.79	-07	37	23.9	999
45	1987	05	08.01794	15	23	39.46	-07	19	53.0	999
45	1987	05	09.01524	15	22	49.85	-07	15	43.6	999
45	1987	05	24.96186	15	09	41.84	-06	24	55.8	999
45	1987	05	28.94888	15	06	43.66	-06	17	56.2	999
45	1987	05	29.94647	15	06	01.29	-06	16	35.5	999
45	1987	06	01.93686	15	04	00.37	-06	13	33.8	999
45	1987	06	16.89031	14	56	43.81	-06	21	03.7	999
45	1987	06	20.87922	14	55	41.26	-06	29	11.6	999
45	1988	07	28.13701	23	37	10.12	-04	09	37.3	999
45	1988	08	07.10756	23	34	48.83	-04	52	15.4	999
45	1988	08	10.09891	23	33	40.39	-05	08	01.0	999
45	1988	08	13.08947	23	32	20.60	-05	24	59.9	999
45	1988	08	30.03627	23	21	51.07	-07	18	25.6	999
45	1988	09	01.03032	23	20	22.31	-07	32	54.5	999
45	1988	09	07.00974	23	15	46.69	-08	16	28.9	999
45	1988	09	19.96777	23	05	47.74	-09	45	34.8	999
45	1988	09	30.93255	22	58	29.63	-10	47	07.7	999
45	1988	10	14.89055	22	52	13.28	-11	38	35.2	999
45	1988	10	30.84473	22	50	22.62	-11	56	26.3	999
45	1988	11	01.83999	22	50	33.62	-11	55	42.8	999
45	1988	11	02.83674	22	50	41.12	-11	55	06.8	999
45	1988	11	14.80708	22	53	53.35	-11	36	18.8	999
46	1988	01	19.14126	11	10	46.25	+03	40	20.9	999
46	1988	02	19.04441	10	52	58.02	+05	40	08.0	999
46	1988	02	20.04081	10	52	07.89	+05	45	47.0	999
46	1988	02	21.03783	10	51	17.15	+05	51	30.3	999
46	1988	03	14.96180	10	31	33.44	+08	05	58.8	999
49	1987	08	27.90281	19	58	08.59	-18	46	09.7	999
49	1987	09	17.84133	19	52	50.77	-18	53	50.1	999
49	1988	10	09.17860	05	24	56.17	+26	13	56.2	999
49	1988	10	15.16407	05	27	39.54	+26	17	00.7	999
49	1988	10	25.13899	05	29	41.36	+26	18	57.8	999
49	1988	10	30.12440	05	29	29.15	+26	18	21.9	999
49	1988	10	31.12218	05	29	20.75	+26	18	06.3	999
49	1988	11	02.11589	05	28	58.04	+26	17	27.0	999
49	1988	11	03.11343	05	28	43.73	+26	17	02.5	999
49	1988	11	07.10154	05	27	27.09	+26	14	54.7	999
49	1988	11	14.08018	05	24	01.80	+26	08	58.7	999

49	1988	11	15.07728	05	23	25.63	+26	07	52.9	999
49	1988	11	16.07385	05	22	47.90	+26	06	43.8	999
49	1988	11	17.07039	05	22	08.62	+26	05	30.3	999
49	1988	11	23.05119	05	17	43.91	+25	56	44.7	999
49	1988	12	08.00107	05	04	19.74	+25	24	19.9	999
49	1989	01	24.85266	04	39	37.49	+23	23	58.3	999
51	1987	08	31.17216	02	38	28.78	+09	51	45.8	999
51	1987	09	03.16388	02	39	23.63	+09	40	21.2	999
51	1987	09	07.15342	02	40	15.42	+09	22	53.6	999
51	1987	09	18.12432	02	40	25.54	+08	21	49.1	999
51	1987	09	29.09174	02	37	14.81	+07	02	59.2	999
51	1987	09	30.08824	02	36	47.81	+06	55	04.8	999
51	1987	10	18.03130	02	24	50.42	+04	20	27.4	999
51	1987	11	06.96475	02	07	11.43	+01	39	05.6	999
51	1987	12	30.80592	01	51	56.62	+00	47	34.2	999
51	1988	01	11.77783	01	58	27.63	+01	48	20.0	999
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52	1987	10	22.13677	05	13	31.90	+13	50	58.8	999
52	1987	12	06.99333	04	47	02.98	+12	51	10.1	999
52	1987	12	19.94983	04	36	09.02	+12	57	19.6	999
52	1987	12	20.94699	04	35	22.59	+12	58	24.6	999
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52	1988	01	11.87796	04	23	05.96	+13	44	26.7	999
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52	1988	01	12.87508	04	22	48.19	+13	47	28.9	999
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52	1988	01	14.86921	04	22	17.18	+13	53	46.4	999
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52	1988	02	12.79282	04	26	19.38	+15	50	43.0	999
52	1988	02	13.79128	04	26	49.64	+15	55	19.3	999
52	1988	02	15.78574	04	27	54.11	+16	04	34.8	999
52	1988	02	18.77911	04	29	40.72	+16	18	36.0	999
63	1987	02	17.04216	10	42	35.01	+08	46	37.0	999
63	1987	02	18.03851	10	41	36.87	+08	49	56.0	999
63	1987	03	04.98751	10	26	14.42	+09	41	36.7	999
63	1987	03	22.92627	10	09	56.89	+10	28	41.5	999
63	1987	04	10.86923	10	01	01.21	+10	37	45.6	999
63	1988	07	10.12960	22	16	11.04	-15	16	47.7	999
63	1988	07	17.10957	22	13	44.78	-15	17	25.8	999
63	1988	08	04.05113	22	00	55.40	-15	39	50.5	999
63	1988	08	05.04758	21	59	59.62	-15	41	35.4	999
63	1988	08	19.00051	21	45	54.78	-16	05	03.7	999
63	1988	08	21.98933	21	42	51.96	-16	08	55.9	999
63	1988	08	30.95867	21	34	20.27	-16	16	01.0	999
63	1988	08	31.95535	21	33	28.43	-16	16	20.0	999
63	1988	09	05.93894	21	29	29.01	-16	16	16.4	999
63	1988	09	05.93986	21	29	28.98	-16	16	16.4	999
63	1988	09	06.93626	21	28	45.49	-16	15	55.9	999
63	1988	09	10.92375	21	26	07.75	-16	13	25.4	999
63	1988	09	14.91054	21	23	58.03	-16	09	06.1	999
63	1988	09	19.89550	21	21	57.73	-16	01	05.7	999
63	1988	09	20.89328	21	21	39.39	-15	59	08.8	999
63	1988	09	26.87548	21	20	29.94	-15	45	11.0	999
63	1988	09	27.87258	21	20	25.03	-15	42	28.8	999
63	1988	09	27.87348	21	20	25.04	-15	42	28.5	999
63	1988	10	01.86165	21	20	24.26	-15	30	38.9	999
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63	1988	10	08.84413	21	21	33.57	-15	06	09.5	999

63	1988	10	14.82842	21	23	41.00	-14	41	14.3	999
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63	1988	10	29.79471	21	33	00.68	-13	24	49.3	999
63	1988	10	30.79282	21	33	48.73	-13	19	02.7	999
63	1988	11	01.78832	21	35	28.38	-13	07	14.5	999
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63	1988	11	14.76064	21	48	02.21	-11	42	38.3	999
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63	1988	11	16.75700	21	50	12.80	-11	28	27.1	999
63	1988	11	21.74745	21	55	53.63	-10	51	38.0	999
63	1988	11	22.74502	21	57	04.03	-10	44	02.8	999
65	1987	02	17.93750	08	14	38.15	+17	40	31.9	999
65	1987	02	24.91496	08	10	48.56	+17	59	13.7	999
65	1987	03	04.89171	08	07	25.48	+18	17	32.0	999
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65	1988	03	28.01274	12	37	29.77	-01	02	01.0	999
65	1988	04	09.97123	12	28	49.12	+00	03	09.2	999
65	1988	04	10.96812	12	28	10.62	+00	07	50.5	999
68	1988	10	01.19128	05	11	27.33	+25	13	49.5	999
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68	1988	10	09.17148	05	14	14.77	+25	44	50.6	999
68	1988	10	31.10935	05	11	41.05	+27	05	58.4	999
68	1988	11	02.10331	05	10	41.05	+27	12	43.0	999
68	1988	11	07.08710	05	07	39.02	+27	28	43.3	999
68	1988	11	16.05857	05	00	27.21	+27	53	29.9	999
68	1988	11	17.05469	04	59	32.21	+27	55	51.9	999
68	1988	12	07.98160	04	37	31.36	+28	23	15.1	999
68	1988	12	14.95783	04	30	15.76	+28	23	04.4	999
68	1988	12	15.95503	04	29	16.80	+28	22	44.7	999
68	1989	01	25.83050	04	11	14.89	+27	55	28.6	999
88	1987	12	30.95653	05	28	53.77	+24	23	02.7	999
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97	1987	06	20.97336	17	12	44.35	-06	31	28.3	999
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97	1988	07	26.11964	23	04	57.74	-02	52	29.9	999
97	1988	07	28.11424	23	04	40.65	-03	01	32.0	999
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97	1988	09	19.94419	22	31	44.09	-10	58	44.5	999

97	1988	09	26.92224	22	27	24.60	-12	01	38.6	999
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97	1988	10	28.83215	22	23	16.49	-14	42	33.6	999
97	1988	10	30.82703	22	23	59.11	-14	45	04.6	999
97	1988	11	01.82228	22	24	48.42	-14	46	44.2	999
97	1988	11	04.81437	22	26	14.68	-14	47	39.0	999
97	1988	11	04.81527	22	26	14.73	-14	47	39.3	999
97	1988	11	05.81296	22	26	46.72	-14	47	33.1	999
97	1988	11	07.80822	22	27	55.46	-14	46	44.1	999
97	1988	11	16.78776	22	34	20.16	-14	33	20.1	999
97	1988	12	13.73457	23	03	52.32	-12	30	40.2	999
115	1987	03	06.01808	11	14	24.48	-08	30	29.4	999
115	1987	04	20.86826	10	39	41.69	-05	26	28.9	999
129	1987	08	29.17123	02	29	27.79	+00	32	53.0	999
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129	1987	10	22.00637	02	05	26.80	-04	48	26.0	999
129	1988	01	06.77936	01	39	55.89	-03	40	36.9	999
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129	1988	11	15.11219	06	14	09.43	+10	33	03.7	999
129	1988	11	23.08642	06	09	56.33	+10	24	31.1	999
129	1988	12	21.99189	05	47	07.55	+10	34	07.1	999
171	1988	01	18.96341	06	52	24.65	+23	22	39.5	999
192	1987	03	04.00773	10	51	36.74	+07	31	10.3	999
192	1987	03	05.00355	10	50	36.57	+07	35	10.6	999
192	1987	03	26.93062	10	30	55.57	+08	48	32.1	999
196	1987	12	07.13592	08	12	52.04	+25	33	10.7	999
196	1987	12	31.06195	07	59	58.68	+27	13	22.4	999
196	1988	01	15.01182	07	47	08.87	+28	14	17.4	999
196	1988	01	15.01182	07	47	08.87	+28	14	17.4	999
196	1988	01	18.99808	07	43	31.18	+28	28	08.6	999
196	1988	02	14.91036	07	22	51.40	+29	21	15.7	999
196	1988	02	15.90665	07	22	20.13	+29	21	51.2	999
196	1988	02	16.90439	07	21	50.18	+29	22	21.3	999
196	1988	02	19.89528	07	20	28.96	+29	23	20.2	999
196	1988	03	10.83755	07	17	11.56	+29	12	42.0	999
216	1987	03	04.03045	11	24	25.13	-10	20	09.6	999
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230	1987	02	17.95280	08	36	42.57	+02	55	13.9	999
230	1987	03	04.90434	08	26	50.88	+04	14	04.3	999
230	1987	03	05.90108	08	26	24.30	+04	19	24.3	999
230	1987	03	17.86694	08	23	23.86	+05	20	12.6	999
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230	1988	03	27.20260	17	06	59.17	-23	41	12.0	999
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324	1987	12	27.99538	06	11	30.81	+39	22	42.9	999
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324	1988	02	17.83501	05	46	01.00	+33	09	58.5	999
324	1988	02	18.83251	05	46	27.00	+33	03	17.6	999
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337	1988	11	07.08041	04	57	40.38	+35	27	03.3	999
337	1988	11	16.05137	04	50	41.21	+36	05	54.5	999
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337	1988	11	22.03071	04	44	33.40	+36	22	44.6	999
337	1988	11	27.01383	04	38	48.89	+36	30	10.9	999
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337	1989	01	25.82673	04	05	59.01	+32	47	14.7	999
349	1987	10	22.12994	05	03	29.89	+28	24	45.7	999
349	1987	12	06.98092	04	28	50.59	+30	03	21.1	999
349	1987	12	12.96073	04	22	50.38	+30	00	43.0	999
349	1987	12	27.91093	04	10	19.55	+29	42	46.4	999
349	1988	01	09.87085	04	04	01.60	+29	22	51.5	999
349	1988	01	09.87085	04	04	01.60	+29	22	51.5	999
349	1988	01	11.86484	04	03	29.61	+29	20	01.1	999
349	1988	01	11.86484	04	03	29.61	+29	20	01.1	999
349	1988	01	12.86159	04	03	16.31	+29	18	38.8	999
349	1988	01	12.86159	04	03	16.31	+29	18	38.8	999
349	1989	01	24.13248	11	20	46.79	+14	39	25.7	999
349	1989	01	25.12936	11	20	26.10	+14	43	01.2	999
349	1989	01	26.12637	11	20	04.08	+14	46	41.7	999
354	1987	02	18.10901	12	22	49.42	+12	32	55.3	999
354	1987	02	25.08850	12	20	34.66	+14	04	15.3	999
354	1987	04	16.92792	11	49	29.43	+22	13	01.8	999
354	1987	04	23.90631	11	47	11.10	+22	24	58.8	999
354	1987	04	26.89811	11	46	32.54	+22	25	48.6	999
354	1987	05	07.86772	11	46	03.19	+22	08	57.8	999
354	1988	05	21.13988	19	12	27.18	-04	03	50.3	999
354	1988	05	22.13632	19	12	11.81	-04	02	38.7	999
354	1988	06	05.09408	19	06	20.80	-03	59	31.1	999
354	1988	06	13.06834	19	01	17.68	-04	10	31.0	999
354	1988	06	20.04562	18	56	05.16	-04	28	25.9	999

354	1988	06	21.04267	18	55	17.73	-04	31	38.1	999
354	1988	06	22.03973	18	54	29.75	-04	34	59.1	999
354	1988	06	23.03635	18	53	41.30	-04	38	30.0	999
354	1988	06	25.02949	18	52	03.00	-04	45	58.3	999
354	1988	06	28.01969	18	49	32.90	-04	58	19.3	999
354	1988	07	09.97948	18	39	24.70	-06	00	11.1	999
354	1988	07	15.95992	18	34	34.34	-06	37	34.7	999
354	1988	07	16.95728	18	33	47.92	-06	44	09.3	999
354	1988	07	20.94446	18	30	49.60	-07	11	16.7	999
354	1988	07	21.94030	18	30	07.11	-07	18	14.4	999
354	1988	07	22.93762	18	29	25.42	-07	25	16.6	999
354	1988	07	24.93088	18	28	04.94	-07	39	31.2	999
354	1988	07	25.92829	18	27	26.14	-07	46	44.0	999
354	1988	07	29.91512	18	25	01.48	-08	16	01.4	999
354	1988	08	03.89979	18	22	25.96	-08	53	25.1	999
354	1988	08	18.85643	18	17	51.45	-10	46	42.3	999
354	1988	08	26.83331	18	17	31.00	-11	45	16.9	999
354	1988	08	27.83063	18	17	34.60	-11	52	26.1	999
354	1988	08	29.82538	18	17	45.88	-12	06	35.9	999
423	1987	08	28.15601	02	04	39.13	-00	12	21.9	999
423	1987	09	30.05786	01	52	32.52	-01	52	12.2	999
423	1987	11	18.89651	01	16	08.41	-02	54	19.1	999
423	1987	12	19.80791	01	11	27.16	-00	47	43.7	999
423	1988	11	03.18146	07	07	33.73	+27	09	21.5	999
423	1988	11	07.17056	07	07	59.74	+27	23	29.5	999
423	1988	11	14.15119	07	07	47.43	+27	50	27.0	999
423	1988	11	16.14632	07	07	30.10	+27	58	38.7	999
423	1988	11	22.12933	07	06	01.14	+28	24	19.1	999
423	1988	11	23.12553	07	05	40.96	+28	28	44.5	999
423	1988	12	22.03305	06	46	04.32	+30	38	58.1	999
423	1989	01	24.91900	06	15	35.32	+32	03	06.8	999
451	1987	03	17.04562	12	37	53.75	+20	05	34.3	999
451	1987	04	13.95422	12	16	29.30	+21	33	02.5	999
451	1987	04	23.92287	12	10	25.94	+21	23	21.7	999
451	1987	04	26.91385	12	08	56.31	+21	16	22.5	999
451	1987	05	01.89812	12	06	49.60	+21	00	48.9	999
451	1988	05	21.04907	17	01	32.71	-15	49	44.1	999
451	1988	05	22.04551	17	00	45.33	-15	51	16.5	999
451	1988	05	24.03884	16	59	08.70	-15	54	27.6	999
451	1988	06	03.00528	16	50	39.77	-16	12	15.2	999
451	1988	06	04.99860	16	48	55.29	-16	16	11.5	999
451	1988	06	22.93911	16	33	58.25	-16	57	24.8	999
471	1987	02	16.83825	05	48	30.20	+31	29	56.0	999
471	1988	02	17.14156	13	05	02.08	+14	18	04.5	999
471	1988	02	20.13278	13	04	05.50	+14	37	28.3	999
471	1988	03	14.06040	12	51	13.97	+17	06	47.6	999
471	1988	03	28.01451	12	40	09.92	+18	17	35.5	999
471	1988	03	28.01541	12	40	09.86	+18	17	35.9	999
471	1988	04	10.96901	12	28	55.97	+18	56	23.2	999
471	1988	04	20.93678	12	21	52.65	+19	01	17.8	999
471	1988	05	12.87013	12	11	51.86	+18	08	03.0	999
471	1988	05	17.85594	12	10	50.08	+17	45	40.9	999
511	1987	03	06.11648	13	36	51.92	+13	05	15.1	999
511	1987	04	15.98622	13	10	28.64	+16	57	43.2	999
511	1987	04	20.96952	13	06	53.59	+17	07	26.3	999
511	1987	04	24.95729	13	04	10.65	+17	11	26.0	999
511	1987	04	30.93810	13	00	26.99	+17	11	08.0	999
511	1987	05	07.91667	12	56	45.16	+17	01	32.6	999
511	1987	05	08.91385	12	56	17.35	+16	59	23.7	999

511	1988 04 14.16288	17 21 10.15	-10 23 49.9	999
511	1988 04 28.12279	17 17 33.68	-10 07 17.7	999
511	1988 05 18.06031	17 06 36.51	-09 55 05.5	999
511	1988 05 19.05675	17 05 55.10	-09 54 59.9	999
511	1988 05 21.05076	17 04 30.47	-09 54 59.6	999
511	1988 06 03.00831	16 54 39.89	-10 01 01.0	999
511	1988 06 12.97621	16 46 51.86	-10 13 22.1	999
511	1988 06 21.94613	16 40 14.23	-10 30 25.8	999
511	1988 06 22.94292	16 39 32.62	-10 32 40.2	999
532	1987 03 17.07474	13 19 38.78	+21 04 01.1	999
532	1987 03 18.07132	13 19 05.21	+21 13 42.1	999
532	1987 04 13.98312	12 58 59.61	+23 51 21.9	999
532	1987 04 20.96097	12 53 53.52	+23 50 27.5	999
532	1987 04 26.94190	12 50 07.94	+23 35 24.2	999
532	1987 04 30.92913	12 48 02.21	+23 18 26.4	999
532	1987 05 20.87256	12 43 33.04	+20 44 53.8	999
532	1987 05 21.86961	12 43 36.00	+20 34 47.7	999
532	1987 05 22.86717	12 43 40.51	+20 24 30.5	999
532	1987 05 24.86116	12 43 54.13	+20 03 23.6	999
532	1988 07 09.08510	21 07 17.12	-23 45 13.8	999
532	1988 07 10.08193	21 06 38.14	-23 53 40.3	999
532	1988 07 17.05892	21 01 35.74	-24 53 17.0	999
532	1988 07 18.05628	21 00 48.80	-25 01 47.8	999
532	1988 07 25.03307	20 55 00.60	-26 00 18.0	999
532	1988 07 26.02991	20 54 08.67	-26 08 25.5	999
704	1987 02 17.92615	07 58 26.62	+08 52 60.0	999
704	1987 03 03.88282	07 51 23.23	+09 00 54.8	999
704	1987 03 04.87946	07 51 02.89	+09 01 31.7	999
704	1987 03 05.87675	07 50 43.93	+09 02 08.3	999
704	1987 03 15.84769	07 48 49.76	+09 07 35.4	999
704	1987 12 20.26773	12 14 42.09	-19 19 41.3	999
704	1988 03 27.98348	11 55 20.53	-25 41 14.9	999

* * * * *

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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 Parker-Hartley (1987 XXXVI)
Epoch 1987 Sept. 2.0 ET = JDE 2447040.5

T 1987 Aug. 15.56818 ET				Nakano
q 3.0253116		(1950.0)	P	Q
n 0.11092367	Peri.	181.29233	+0.42748043	-0.90038469
a 4.2899600	Node	243.40516	+0.83019676	+0.42647183
e 0.2947926	Incl.	5.19996	+0.35781814	+0.08619269
P 8.89				

From 20 observations 1986 Sept. 29-1989 Mar. 5.

Periodic Comet Shoemaker-Holt 2 (1989j)

T 1988 Aug. 18.90175 ET				Marsden
q 2.6886528		(1950.0)	P	Q
n 0.12496177	Peri.	10.09313	-0.31233392	-0.90158691
a 3.9623358	Node	98.59786	+0.84907194	-0.40625071
e 0.3214475	Incl.	17.62077	+0.42605676	+0.14866541
P 7.89				

From 18 observations 1989 Mar. 4-15.

Periodic Comet Helin-Roman-Crockett (1989b)

T 1988 Sept. 10.24873 ET				Marsden
q 3.4705103		(1950.0)	P	Q
n 0.12134826	Peri.	9.62176	-0.19097765	-0.97881084
a 4.0406108	Node	91.41474	+0.89556554	-0.20455513
e 0.1410927	Incl.	4.23763	+0.40185805	-0.00930294
P 8.12				

From 54 observations 1989 Jan. 3-Mar. 10.

Comet Yanaka (1989a)

T 1988 Oct. 31.84971 ET				Marsden
q 1.8950540		(1950.0)	P	Q
	Peri.	351.57877	-0.87074249	-0.37569341
	Node	156.40167	+0.48457376	-0.76530556
e 1.0	Incl.	52.42381	+0.08364081	+0.52264888

From 58 observations 1989 Jan. 2-Mar. 10.

Comet Shoemaker (1989f)

T 1988 Nov. 2.08703 ET				Marsden
q 2.2078337		(1950.0)	P	Q
	Peri.	18.82065	-0.01258996	-0.91059183
	Node	73.62957	+0.85320196	-0.22522711
e 1.0	Incl.	25.50377	+0.52142872	+0.34654765

From 25 observations 1989 Jan. 11-Mar. 5.

Comet Shoemaker (1989e)
T 1989 Feb. 25.96022 ET Marsden
q 2.6410294 (1950.0) P Q
Peri. 19.06975 -0.65909278 +0.31178426
Node 136.45127 +0.49328593 -0.50769202
e 1.0 Incl. 96.61235 +0.56768451 +0.80314344
From 50 observations 1989 Jan. 13-Mar. 10.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1986 PW4	12.6	860828	17.89	117.31	191.11	1.14	0.1732	3.0948	33	4		c
1986 PX4	14.2	860808	343.68	313.25	28.27	1.15	0.2157	2.4339	22	3		c
1986 PY4	12.2	860828	318.68	218.40	163.64	9.78	0.0967	3.1663	31	3		c
1986 PA5	13.9	860828	326.79	33.16	348.46	2.06	0.1755	2.4184	31	3		c
1986 RU5	11.7	860907	157.72	1.76	197.50	14.74	0.1208	2.6151	33	4		c
1986 RV5	14.8	860907	349.30	130.90	242.56	4.55	0.1793	2.2864	28	3		c
1986 RW5	14.5	860907	0.05	139.87	217.22	3.54	0.1703	2.2149	33	4		c
1986 RX5	14.6	860907	354.84	47.68	317.42	1.20	0.0768	2.1783	28	3		c
1986 RY5	13.9	860907	44.68	77.48	227.08	5.75	0.1358	2.3641	28	3		c
1986 TR4	13.0	860907	345.48	108.17	271.82	4.05	0.1880	2.6565	34	4		M
1988 PC2	13.0	880807	359.28	145.03	175.37	11.89	0.1926	2.6450	14	0		M
1988 RE2	12.0	880827	286.23	298.54	122.42	2.30	0.0604	3.0031	11	0	D	M
1988 RN7	12.0	880827	2.16	349.29	352.25	17.17	0.1296	3.2440	4	6	E	M
1989 AM1	11.0	890203	297.73	248.11	299.79	12.54	0.0684	3.1728	34	0		N
1989 AU1	10.0	890203	359.88	229.57	247.64	5.87	0.0842	5.2865	56	0		N
1989 AX1	12.5	890203	88.00	20.90	358.09	6.42	0.1687	2.2280	25	0		N
1989 AL2	9.5	890203	104.40	278.71	100.96	34.55	0.0850	5.2522	59	4		M
1989 BC	11.5	890223	311.50	99.07	99.20	13.13	0.1333	2.7561	38	0		N
1989 BD	12.5	890203	359.72	106.64	25.20	7.63	0.1475	2.6997	28	0		N
1989 BG	13.5	890203	250.55	278.55	329.85	7.56	0.0656	2.2897	34	0		M
1989 BH	13.0	890203	343.86	47.46	108.77	10.01	0.1738	2.3591	36	0		M
1989 BK	13.0	890203	48.44	313.93	93.08	8.75	0.3078	2.5584	29	0		N
1989 BO	11.5	890203	247.85	146.98	103.86	11.24	0.0579	3.0111	39	0		M
1989 BQ	10.0	890203	8.25	353.50	124.92	19.62	0.2529	5.1728	59	0		N
1989 BR	13.0	890203	356.25	169.49	327.91	5.01	0.0755	2.2836	12	6		N
1989 BT	12.0	890203	32.31	177.77	270.11	3.67	0.1897	2.7999	12	0		G
1989 BW	9.5	890203	55.23	355.00	70.51	17.48	0.1504	5.2053	58	5		M
1989 BC1	14.0	890114	358.75	5.59	116.55	17.97	0.0917	2.1812	2	6	E	G
1989 BD1	11.5	890114	178.83	0.69	293.58	11.41	0.1295	2.6128	2	6	E	G
1989 BF1	14.0	890114	15.50	134.89	317.45	1.68	0.1679	2.3049	2	6	E	G
1989 BJ1	14.5	890114	2.21	337.33	134.90	5.60	0.2137	2.3216	2	6		G
1989 BK1	12.5	890114	357.39	91.77	28.93	0.86	0.1463	3.1804	2	6	E	G
1989 BM1	14.0	890114	355.33	178.11	312.10	4.27	0.1121	2.2357	3	6	E	G
1989 BN1	14.0	890114	15.19	318.37	148.40	7.25	0.1215	2.5692	3	8	E	G
1989 BO1	14.5	890114	355.33	357.73	132.80	0.91	0.0291	2.2390	3	8	E	G
1989 BR1	11.0	890203	267.11	239.24	14.15	0.50	0.2625	3.2844	16	6		G
1989 BS1	14.5	890114	354.56	154.46	338.92	1.90	0.0954	2.1904	2	6	E	G
1989 BT1	13.5	890114	5.85	28.84	90.84	2.22	0.1882	2.8175	4	8		G
1989 BU1	12.5	890114	357.03	96.68	37.99	0.51	0.1119	3.0795	4	6	E	G
1989 BV1	14.0	890203	350.52	170.66	337.64	1.72	0.1489	2.3589	13	9		G
1989 BW1	14.0	890114	359.60	27.13	101.97	2.83	0.0914	2.3318	4	8		G
1989 BX1	13.0	890114	41.40	175.86	259.87	10.71	0.1811	2.7714	2	6	E	G
1989 CE	13.5	890114	87.06	40.98	339.06	5.68	0.2065	2.2992	6	8	E	G
1989 CH	12.0	890203	347.36	18.32	136.29	16.13	0.2017	2.8457	36	0		N
1989 CO	13.5	890223	300.91	93.58	121.82	3.92	0.1140	2.2963	24	5		N
1989 CR	14.5	890203	283.68	115.67	110.67	24.94	0.2545	2.5603	24	9		N
1989 CV	12.0	890223	258.21	211.70	25.88	5.39	0.0709	3.9588	25	7		N
1989 CW	13.0	890223	268.51	284.40	322.61	0.88	0.0784	2.2644	30	0		N

1989 CX	13.5	890223	20.89	145.72	327.63	24.40	0.2319	2.3459	33	9		N
1989 CA1	13.0	890223	18.91	348.49	139.84	13.92	0.1012	2.6005	23	4		M
1989 CB1	12.5	890203	253.18	127.02	133.34	4.98	0.1570	2.2056	36	0		N
1989 CC1	13.0	890223	46.01	271.36	153.91	28.24	0.4148	2.7514	23	0		M
1989 CH1	12.0	890203	8.94	23.35	124.18	15.85	0.0478	2.6032	23	5		M
1989 CJ1	14.0	890203	161.89	209.01	140.75	27.56	0.0719	1.9110	22	6		M
1989 CR1	14.5	890203	300.93	311.31	261.86	8.54	0.1612	2.3306	34	0		M
1989 CS1	13.5	890223	9.75	170.48	341.05	12.85	0.1116	2.6740	32	8		N
1989 CT1	13.5	890223	199.95	281.86	20.71	3.70	0.0586	2.5816	17	6		N
1989 CU1	14.5	890223	21.78	19.02	113.96	5.53	0.0955	2.2258	27	6		N
1989 CV1	15.0	890223	37.79	358.13	99.07	5.46	0.1769	2.3642	18	9		N
1989 CX1	13.5	890203	11.03	0.04	123.25	5.88	0.2401	2.8400	19	7		G
1989 CE2	14.0	890203	109.98	62.87	320.06	22.16	0.0985	1.9014	22	6	E	M
1989 CZ3	13.5	890203	297.53	69.12	152.80	4.74	0.2283	2.5324	5	6		G
1989 CA4	12.0	890203	84.24	242.36	139.22	16.74	0.2526	2.7531	5	6		G
1989 CB4	14.0	890203	32.93	281.05	166.43	5.59	0.1882	2.4035	5	6		G
1989 CC4	14.0	890203	57.04	293.69	137.76	25.65	0.0229	1.9767	5	6		G
1989 DC	13.0	890315	339.57	159.12	26.80	7.23	0.0758	2.3399	31	0		N
1989 EA	14.5	890223	322.75	152.91	61.14	5.60	0.2310	2.3372	7	6		N
1989 EB	11.0	890223	163.73	330.61	24.63	25.50	0.1622	2.3755	2	3		B
1989 ED	12.5	890223	310.29	166.78	54.78	14.11	0.0989	2.5207	2	3		B
1989 EM	14.5	890223	11.85	220.73	289.19	1.08	0.1890	2.1607	3	6		G
1989 EW	12.0	890315	333.58	163.43	46.70	9.43	0.1307	2.7164	11	9		N
1989 EX	12.5	890315	345.53	73.55	135.26	11.90	0.1239	2.5549	21	7		N
1989 EY	12.0	890315	326.73	96.59	107.74	4.18	0.1442	3.1734	5	5	E	N
1989 EG1	15.0	890315	352.99	24.94	160.36	6.33	0.0697	2.2866	4	6		N
1989 EO1	13.5	890315	68.23	110.11	330.49	6.66	0.0409	2.2894	9	6		N
1989 ER1	15.0	890315	36.45	55.99	51.06	4.34	0.2832	2.4067	4	6		N
1989 ES1	13.5	890315	3.69	161.32	8.71	9.75	0.1274	2.6619	19	9		N
1989 EW1		890223	177.09	325.42	5.23	4.40	0.0916	2.4551	2	6	E	G
1989 EX1	12.5	890223	175.68	191.90	140.39	17.18	0.1137	2.4090	2	6	E	G
1989 EY1	12.5	890223	325.14	132.49	59.83	2.80	0.1112	2.9168	2	6	E	G
1989 EA2	12.0	890223	108.72	4.72	45.34	3.67	0.0469	2.7140	2	6		G
1989 EC2	11.5	890223	205.42	309.34	15.89	7.29	0.1274	3.0195	2	6	E	G
1989 ED2	12.5	890223	1.08	93.98	69.41	2.59	0.1309	3.1538	2	6	E	G
1989 EM2	13.0	890404	349.06	205.04	357.83	6.19	0.0938	2.3781	15	7		N
1989 EO2	14.0	890404	1.84	102.41	77.82	1.59	0.1524	2.2484	15	7		N

1988 RE2 = 1988 SR (F. N. Bowman)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Goffin

(532) Herculina Obs. 1600 M 199.36894 Peri. 75.08723
H 5.78 G 0.25 Opp. 61 n 0.21365652 Node 107.39552
rms res. 0".7 (M-N) 1904-1988 e 0.1763770 Incl. 16.35677

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Goffin

(617) Patroclus Obs. 116 M 32.05274 Peri. 306.82314
H 8.17 G 0.15 Opp. 35 n 0.08240218 Node 43.75127
rms res. 1".1 (M-N) 1906-1986 e 0.1395816 Incl. 22.04348

(4045)* 1953 RG = 1953 RM = 1948 VE = 1959 TT = 1961 AJ
Discovered 1953 Sept. 9 at the Goethe Link Observatory.
Id. B. Potter (d, MPC 1084), H. Oishi (MPC 13599)
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M 343.39818	(1950.0)	P	Q
n 0.17036957	Peri. 249.98284	-0.36040301	-0.89792920
a 3.2226120	Node 223.91919	+0.93227204	-0.33765315
e 0.1153151	Incl. 21.36073	+0.03128117	-0.28233582
P 5.79	H 11.4	G 0.25	

Residuals in seconds of arc

481109	012	1.6-	0.3+	530913	760	0.8-	1.6-	610110	690	2.3-	4.4- Y
481109	012	3.5+	1.7+	530916	760	0.3-	0.6-	881012	801	1.1+	0.9+
530909	760	0.7+	0.3+	530916	760	0.8+	0.7-	881014	897	0.5-	0.5+
530909	760	0.7-	1.3-	591007	024	0.9-	0.8-	881014	897	0.4-	0.6+
530913	760	1.0+	3.0-	610110	690	(4.1-	29.5-)Y	881108	801	0.2+	3.7+

(4046)* 1953 TV = 1953 TJ2 = 1952 KX = 1966 VR = 1977 EY

Discovered 1953 Oct. 7 at the Goethe Link Observatory.

Id. S. Kanda (d, MPC 1753), H. Oishi (MPC 13694)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	227.61218		(1950.0)	P	Q
n	0.23054771	Peri.	77.63812	+0.25180562	+0.96575650
a	2.6340792	Node	207.19485	-0.93253668	+0.22485595
e	0.0677604	Incl.	7.86226	-0.25878420	+0.12943795
P	4.28	H	12.3	G 0.25	

Residuals in seconds of arc

520524	711	(7.6+	8.8-)Y	661113	095	3.0+	3.1+	881210	888	0.7-	0.3-
531007	760	0.4-	0.4-	770313	095	0.6+	0.9+	890103	888	0.6-	0.4-
531007	760	1.3-	1.2+	830917	095	0.6+	5.3-	890103	888	0.4+	0.5-
531010	760	0.6+	1.4+	881203	888	0.2-	0.1-	890110	054	0.1+	0.1-
531010	760	0.4+	1.2+	881203	888	1.4-	0.7-	890110	054	0.2-	0.9-
531015	760	2.4-	0.2+	881210	801	0.2+	1.0+				
531015	760	(16.6-	13.5-)	881210	888	1.2+	0.5+				

(4047)* 1964 TT2 = 1968 QH1 = 1981 SD5 = 1981 UF10

Discovered 1964 Oct. 8 at the Purple Mountain Observatory.

Id. T. Furuta (k, MPC 10294), H. Oishi (ibid.)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	347.23266		(1950.0)	P	Q
n	0.23271475	Peri.	308.66558	+0.94057032	+0.33847981
a	2.6177014	Node	31.57772	-0.29292980	+0.84967979
e	0.2078142	Incl.	3.01557	-0.17181271	+0.40432124
P	4.24	H	13.1	G 0.25	

Residuals in seconds of arc

641008	330	1.2-	0.1-	811023	330	3.4+	0.7+	850911	095	0.1+	1.2+
641030	330	0.4+	0.1+	850813	095	0.4-	0.5+	850919	095	3.2-	0.7-
641109	330	1.5-	3.2-	850815	095	0.6+	0.7+	850920	095	2.9-	1.4+
680827	095	3.0+	0.2-	850817	095	0.1-	1.4-	880314	054	0.1+	1.1+
810925	095	1.3-	0.4+	850819	095	0.1+	0.9-				
811007	095	0.6+	1.6+	850824	095	2.1+	0.1+				

(4048)* 1964 UC = 1954 UU = 1984 SV2 = 1984 US2

Discovered 1964 Oct. 30 at the Goethe Link Observatory.

Id. C. M. Bardwell (MPC 9588), E. Bowell (d, ibid.)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Green

M	169.54491		(1950.0)	P	Q
n	0.29506223	Peri.	21.71725	+0.95506877	-0.29635184
a	2.2345683	Node	355.51450	+0.26298952	+0.85418898
e	0.1874115	Incl.	3.21505	+0.13667540	+0.42724323
P	3.34	H	14.5	G 0.25	

Residuals in seconds of arc

541022	760	1.2-	1.2+	641101	330	0.8+	0.6+	840922	809	0.9+	0.1+
641008	330	0.7+	0.6-	840921	809	0.4-	0.1-	840922	809	0.3+	0.2-
641030	760	1.3-	0.5-	840921	809	0.2-	0.3-	840922	809	0.3-	0.0
641030	760	0.6+	0.8+	840921	809	0.4-	0.3-	840923	809	0.1-	0.3-

840923	809	0.4-	0.1+	840928	809	0.1+	0.3+	840930	809	0.8-	0.3-
840923	809	0.7-	0.0	840928	809	0.2-	0.3+	840930	809	0.1+	0.4-
840924	809	0.1-	0.2+	840928	809	0.9-	0.3+	841001	809	0.2-	1.1+
840924	809	0.0	0.2+	840929	809	0.4+	0.1-	841001	809	0.1+	0.9+
840924	809	0.7-	0.2+	840929	809	1.1+	0.3+	841001	809	0.4+	0.9+
840925	688	0.2-	0.7+	840929	809	0.7+	0.1-	841026	688	1.1-	0.8-
840925	688	1.8+	1.4+	840929	809	1.1+	0.3+	841026	688	1.6+	1.7-
840926	809	0.1+	0.8-	840929	809	0.9+	0.2+	890130	046	1.8+	1.5+
840926	809	0.6-	0.4-	840929	809	0.3+	0.1+	890130	046	(5.0+	2.9+)
840926	809	0.2-	0.6-	840930	809	0.3+	0.6-	890131	046	0.5+	1.3-
840927	809	0.2-	0.6-	840930	809	1.1-	0.2-	890131	046	0.7+	1.4-
840927	809	0.4-	0.6-	840930	809	0.2+	0.5-	890201	046	1.7-	0.8-
840927	809	0.8-	0.3-	840930	809	0.0	0.2-	890201	046	1.4-	1.6+

(4049)* 1973 QD2 = 1935 RK = 1941 UY = 1957 TJ = 1977 EM3 = 1979 VW2 = 1981 AR2 = 1984 SE4

Discovered 1973 Aug. 31 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Id. E. Bowell (MPC 11057), H. Oishi (ibid.)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	19.48101	(1950.0)	P	Q	
n	0.18295947	Peri.	213.31420	+0.65325551	+0.75599763
a	3.0730252	Node	97.50948	-0.68515094	+0.61359975
e	0.2697386	Incl.	2.40084	-0.32221953	+0.22795379
P	5.39	H	12.1	G 0.25	

Residuals in seconds of arc

350905	078(38.6-	50.9-)X		730927	095	1.1+	1.3+	810108	381	3.9+	2.6+
411019	020	2.4+	1.6-	770315	381	2.4-	0.4+	810108	381	2.4+	2.0+
411028	020	2.0+	0.6-	770315	381	2.5-	0.9+	830514	095	0.7+	0.0
571002	760	2.6-	0.3+	780707	675	0.2+	1.0+	840928	033	1.0-	0.6-
571002	760	3.7-	1.6+	780708	675	0.4+	0.6+	840928	033	1.1-	0.1-
730831	095	0.8+	1.2-	780709	675	0.6+	0.3+				
730905	095	0.7+	0.9+	791114	095	1.2-	1.8-				

(4050)* 1976 SF = 1954 XD = 1982 UW = 1982 VV5

Discovered 1976 Sept. 20 by C.-I. Lagerkvist and H. Rickman at the Uppsala Kvistaberg Station.

Id. H. Oishi (MPC 9956)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	79.13141	(1950.0)	P	Q	
n	0.17413012	Peri.	251.73006	+0.79371257	-0.60812008
a	3.1760460	Node	145.71942	+0.56734767	+0.73147677
e	0.1464475	Incl.	1.47541	+0.21940140	+0.30843428
P	5.66	H	12.3	G 0.25	

Residuals in seconds of arc

541201	024	0.7-	0.6+	821107	095	2.6-	0.4-	881202	399	0.6-	0.6+
760920	049	0.4+	0.4+	821108	095	1.5-	1.0+	881202	399	0.1-	0.1-
760920	049	1.8+	1.0+ Y	821108	095	(2.9-	3.7+)	881202	888	1.7+	0.6+
760920	049	0.7+	0.6+	870824	801	2.0-	0.4+	881202	888	(3.4+	3.6+)
760920	049	0.1-	0.9+	881105	888	0.2-	0.5+	881203	400	(5.2-	3.0+)
760925	095	2.4-	0.7-	881105	888	0.4-	1.4+	881203	400	(3.7-	2.3+)
760928	095	1.5+	1.0-	881108	801	0.1+	0.0	881203	400	(4.1-	3.5+)
760929	049	0.7+	0.3-	881111	801	0.5-	0.4+	881207	399	0.4-	0.2-
760929	049	0.5-	0.3-	881130	399	0.9+	0.2+	881207	399	0.5-	0.0
760930	049	0.6+	0.4+	881130	399	0.2-	0.2+	881207	399	1.1-	0.3+
760930	049	0.5+	1.1+	881130	399	0.9+	2.0-	881210	888	1.2+	1.0+
821021	688	0.3+	2.0-	881202	399	1.3+	0.3-	881210	888	0.9-	0.6-
821021	688	1.4+	2.2-	881202	399	0.7+	0.1-				

(4051)* 1978 VP = 1978 RS16 = 1973 TU = 1980 BY2 = 1982 PE = 1989 AY2
Discovered 1978 Nov. 1 by K. Tomita at Caussols.

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Kobayashi	
M 154.20579	(1950.0)		P	Q
n 0.21175562	Peri.	85.59600	+0.98014194	-0.19295462
a 2.7877003	Node	285.52440	+0.15784742	+0.89874023
e 0.1131667	Incl.	2.71975	+0.12002484	+0.39374423
P 4.65	H 12.0	G 0.25		

Residuals in seconds of arc

731001 095	0.1+	1.3+	781102 010	0.4-	0.7-	881229 413	0.7-	0.5-
780908 010	0.6+	0.5-	781102 010	0.3-	0.3-	890104 413	1.0+	1.7+
780909 010	1.5+	0.3+	800124 095	0.2-	0.4+	890104 413	2.4+	0.4-
781030 010	0.4-	0.4+	820813 095	1.0+	1.0+	890110 413	0.2-	0.0
781101 010	0.2-	0.2-	820815 095	1.4-	0.6-	890110 413	0.5-	1.1-
781101 010	0.7-	0.4-	881229 413	0.9-	1.1+			

(4052)* 1981 DP2 = 1933 BU = 1979 YY9 = 1983 RG4
Discovered 1981 Feb. 28 by S. J. Bus at Siding Spring in the course of the U. K. Schmidt-Caltech Asteroid Survey.
Id. H. Oishi (MPC 10295)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Oishi	
M 326.53132	(1950.0)		P	Q
n 0.18759689	Peri.	130.49259	+0.23003355	-0.96457876
a 3.0221704	Node	305.74510	+0.83776894	+0.26378889
e 0.0733158	Incl.	9.15410	+0.49520478	+0.00179993
P 5.25	H 12.3	G 0.25		

Residuals in seconds of arc

330129 024	0.6+	0.6+	810312 413	0.1-	0.5+	830911 688	0.1+	1.6-
791225 095	0.9+	0.9+	810312 413	1.3+	0.7+	830911 688	(5.4+	1.1-)
810212 413	0.1-	0.6+	810407 413	1.3-	0.3+	830911 095	2.1-	1.8-
810228 413	1.6-	0.1-	810407 413	0.9+	0.6+	880807 046	(7.5+	1.7-)
810228 413	0.8+	0.1-	810408 413	1.0-	0.4-	880807 046	(5.2+	0.5-)
810306 413	1.3+	0.0	810408 413	0.1-	0.3+	880831 809	1.1+	2.5+
810306 413	(3.6+	1.8-)	810409 413	1.3-	0.0	880901 809	0.4+	1.8+
810308 413	0.5-	0.1-	810409 413	0.1+	0.1-	880901 809	0.0	0.9+
810308 413	1.2+	0.3-	810501 413	0.2-	0.7-			

(4053)* 1981 TQ1 = 1981 TE4 = 1981 WZ5 = 1977 TE1 = 1979 BF2
Discovered 1981 Oct. 2 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.
Id. T. Furuta (MPC 11747)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Oishi	
M 129.97721	(1950.0)		P	Q
n 0.27557490	Peri.	8.69024	+0.95252160	+0.30237624
a 2.3387095	Node	333.62421	-0.28393606	+0.83989072
e 0.0782924	Incl.	4.60326	-0.10992234	+0.45072406
P 3.58	H 13.4	G 0.25		

Residuals in seconds of arc

770908 675	0.3-	1.1-	881009 888	(3.9-	2.4-)	881107 888	1.9+	1.2+
770909 675	0.5+	0.7-	881009 888	(4.6-	2.4-)	881107 888	0.8+	1.8+
771003 095	0.6-	2.8+	881015 888	(5.2-	1.1-)	881110 888	0.2-	0.5-
790124 095	0.1+	0.1+	881015 888	(4.9-	0.8-)	881110 888	0.9-	0.6-
811002 095	0.6+	0.5-	881102 888	1.3+	1.7-	881130 888	1.1-	1.0-
811008 095	0.2+	0.7-	881102 888	0.1+	0.2+	881130 888	1.2-	0.1+
811124 095	0.7-	0.8+	881107 888	1.0-	0.1+			

(4054)* 1983 TL = 1973 YO2
Discovered 1983 Oct. 5 by A. Mrkos at Klet.
Id. C. M. Bardwell (MPC 12786)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell

M	31.96039	(1950.0)	P	Q
n	0.18550200	Peri. 27.04364	+0.77501084	-0.63169506
a	3.0448810	Node 12.18161	+0.56336898	+0.67781445
e	0.1800750	Incl. 4.85969	+0.28631030	+0.37620330
P	5.31	H 12.7	G 0.25	

Residuals in seconds of arc

731220	095	0.1+	2.3+	831012	688	2.2+	0.8+	880908	809	0.9-	0.8-
830910	688	2.6+	0.0	831013	046	0.3-	0.4+	880908	809	0.7-	0.5-
830910	688	1.7+	0.7+	831013	046	0.0	0.8-	880918	809	1.7-	1.1+
831005	046	1.6+	1.1+	831014	046	0.5+	2.4-	880918	809	1.4-	0.9+
831005	046	0.7-	0.2+	831014	046	2.2-	1.3-	880918	809	1.4-	1.0+
831006	046	1.2-	0.2-	831015	046	0.8+	0.9-	880919	809	1.1+	1.3+
831006	046	1.8-	0.6-	831015	046	1.7-	1.1+	880919	809	0.9+	1.0+
831007	046	2.5+	1.2+	831104	688	1.4-	0.4-	880919	809	0.6+	1.0+
831007	046	1.8+	0.9-	831104	688	0.3+	1.0-	880920	809	0.8+	0.9+
831009	046	1.7-	1.9-	850220	675	0.3-	0.7+	880920	809	0.5+	0.4+
831009	046	2.2-	1.0+	850223	675	1.1+	1.0+	880920	809	0.3-	0.0
831012	688	2.0+	0.1-	880908	809	0.7-	0.8-				

(4055)* 1985 DO2 = 1988 OG

Discovered 1985 Feb. 24 by E. Helin at Palomar.

Id. R. W. Sinnott (MPC 13466)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell

M	170.67543	(1950.0)	P	Q
n	0.40135456	Peri. 154.06840	+0.75712271	+0.64449767
a	1.8201922	Node 164.30823	-0.64670520	+0.76254823
e	0.3266283	Incl. 23.23871	-0.09239906	-0.05606204
P	2.46	H 14.9	G 0.25	

Residuals in seconds of arc

850121	413	2.2+	0.5+	880810	688	1.2+	1.0+	880908	675	2.9-	0.8-
850224	675	1.5-	1.5+	880812	675	0.2-	0.7+	880908	568	1.3+	0.4-
850224	675	(3.4+	1.2-)	880812	675	0.7-	1.2+	880908	046	1.3-	0.6+
850226	675	(6.9-	2.7+)	880821	877	(4.6+	1.3+)	880908	046	1.5-	0.3+
850226	675	2.9-	1.9-	880821	877	(5.3+	1.4+)	880910	046	0.7-	0.8+
850226	413	0.9+	1.4-	880821	494	0.4+	0.9+	880910	046	0.9-	0.8+
850226	413	(3.4+	4.3-)	880823	657	1.3-	2.4-	880911	046	1.4-	0.9+
850227	675	0.1-	0.1+	880824	657	0.7-	0.1-	880911	046	1.2-	0.3+
850227	675	(2.6+	2.7-)	880824	657	0.3-	1.3+	880911	657	1.2-	0.7+
850227	413	1.9+	0.5-	880903	568	0.4-	1.6-	880911	503	0.2-	0.8+
850227	413	(4.7+	5.5-)	880904	568	1.0-	0.4+	880914	657	0.3+	0.9+
880720	675	1.6-	0.4+	880905	091	1.1+	0.7+	880914	657	0.9-	1.0+
880720	675	2.5-	0.4-	880906	675	1.2-	0.7-	881003	413	0.8+	0.4+
880809	688	0.3-	1.4-	880906	675	1.1-	1.1-	881003	413	0.5+	1.4+
880809	688	0.3+	0.5-	880907	091	(2.2+	7.7-)	881004	413	0.2+	0.9+
880810	688	2.1+	2.1-	880908	675	(2.9-	3.3-)	881007	568	0.3+	2.7-

(4056)* 1985 FZ1 = 1942 FJ

Discovered 1985 Mar. 22 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. W. Landgraf (MPC 9966)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell

M	56.14832	(1950.0)	P	Q
n	0.22889289	Peri. 355.07655	-0.73409820	-0.66445488
a	2.6467597	Node 142.03775	+0.63049330	-0.74352468
e	0.1037250	Incl. 13.15505	+0.25214683	-0.07530455
P	4.31	H 12.5	G 0.25	

Residuals in seconds of arc

420317	062	1.7-	0.2+	850414	688	0.7-	0.9+	890208	657	0.1-	1.9+
420317	062	0.6-	2.0-	850423	688	(5.9-	0.2+)	890208	657	1.2+	2.8+
420318	062	1.6+	0.6-	850423	688	0.4-	0.2-	890209	801	1.5-	1.2+
850322	688	0.5+	0.4+	860708	801	0.1+	0.8+	890211	399	0.3-	0.5-
850322	688	0.5+	0.3-	881207	801	0.4+	1.7-	890211	399	1.5-	1.6-
850414	688	0.5+	0.5+	890207	657	1.8+	1.5-	890211	399	0.3+	0.0

(4057)* 1985 TQ

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

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell

M	68.84115		(1950.0)	P	Q
n	0.08177237	Peri.	57.51782	+0.15104360	-0.98832013
a	5.2569234	Node	23.81956	+0.88927185	+0.12691274
e	0.1213594	Incl.	2.87092	+0.43171912	+0.08435925
P	12.05	H	9.9	G 0.25	

Residuals in seconds of arc

850922	095	0.8+	0.3+	861029	801	1.3-	0.4-	861231	568	1.3-	0.7-
851015	688	0.3-	0.4+	861031	801	0.9-	1.0-	880113	688	1.0-	2.0-
851015	688	0.7+	0.7-	861128	801	1.7-	0.7+	880113	688	1.0-	1.8-
851020	688	0.6-	0.8-	861130	381	0.0	2.3+	880116	801	0.5-	0.1-
851020	688	0.1+	1.7-	861130	381	0.9+	0.8+	880215	801	1.7+	0.2+
851107	688	1.6-	1.0-	861201	381	1.6+	1.4+	890208	801	0.6-	0.0
851107	688	1.8+	0.9-	861201	381	1.4+	0.9+	890209	801	0.1-	0.6+
851112	095	0.5-	1.1+	861204	688	1.2+	0.3+	890311	801	1.3+	0.2-
860108	801	1.1+	0.6+	861204	688	0.7-	0.2+				

(4058)* 1986 JV = 1972 XC = 1981 JB1

Discovered 1986 May 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. C. M. Bardwell (MPC 11055)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell

M	154.87849		(1950.0)	P	Q
n	0.18838022	Peri.	254.17445	+0.70038459	+0.69453139
a	3.0137867	Node	61.49700	-0.56193416	+0.67871747
e	0.0962694	Incl.	10.79428	-0.44010387	+0.23868128
P	5.23	H	11.6	G 0.25	

Residuals in seconds of arc

721202	095	2.1-	0.7+	810605	688	1.1-	0.0	860608	688	0.1+	1.1+
721206	095	0.3-	4.0+	860504	688	3.6+	1.6+	860608	688	0.5-	1.1+
810505	688	0.6+	0.1+	860504	688	3.1+	1.4+	881206	801	0.1+	0.3-
810505	688	0.9+	0.1-	860513	688	1.8-	0.0	881210	801	0.2+	0.0
810605	688	1.1-	0.7-	860513	688	1.8-	0.1-	890110	801	0.1+	0.8-

(4059)* 1987 SB5 = 1956 XQ = 1977 TC4 = 1977 TM7 = 1977 VG2 = 1983 XW1

Discovered 1987 Sept. 29 by P. Jensen at Brorfelde.

Id. H. Oishi (MPC 12968; unpublished), T. Urata (d, MPC 6840)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	216.84512		(1950.0)	P	Q
n	0.18795320	Peri.	35.84078	+0.05810468	+0.98856396
a	3.0183498	Node	237.87717	-0.94990430	+0.01186818
e	0.0690523	Incl.	9.45735	-0.30709228	+0.15033446
P	5.24	H	11.6	G 0.25	

Residuals in seconds of arc

561204 760	0.1-	1.5-	870929 054	0.7-	1.1+	881203 888	0.8-	0.3-
561204 760	0.2+	0.6-	870930 054	0.3+	0.3+	881205 801	(3.9+	0.9+)
771010 095	(1.9-	3.8+)	870930 054	0.2-	0.2-	881210 888	0.5+	0.3+
771013 330	1.6+	1.0-	871001 054	0.5+	0.4+	881210 888	0.3+	1.2+
771106 095	0.6-	0.1+	881105 888	1.1+	0.5+	890103 046	1.0-	0.6-
831205 561	0.1+	0.7+	881105 888	0.2-	0.2+	890103 046	1.0-	0.2-
831205 561	0.6+	0.3+	881112 801	0.6-	0.2-			
870929 054	0.5-	0.1+	881203 888	0.7+	0.2-			

(4060)* 1987 YT1 = 1942 ET = 1950 UJ = 1951 YP1 = 1966 FN

Discovered 1987 Dec. 17 by E. W. Elst and G. Pizarro at the European Southern Observatory.

Id. C. M. Bardwell (MPC 13467)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell

M	36.58666	(1950.0)	P	Q	
n	0.08197064	Peri.	305.03139	-0.39185646	-0.91808414
a	5.2484431	Node	167.60668	+0.90844726	-0.39637899
e	0.1578619	Incl.	16.16450	+0.14550634	+0.00228312
P	12.02	H	9.0	G 0.25	

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

420312 062	1.2-	2.0+	871223 809	0.2+	2.3-	880128 809	0.8-	0.1+
420312 062	0.3-	3.2-	871223 809	0.7+	1.3-	880129 809	0.6-	0.5-
420313 062	0.5+	0.3+	880115 809	0.2-	0.4-	880130 809	0.4-	0.3+
420314 062	0.1+	1.2-	880115 809	0.1-	0.3-	881207 801	1.9+	0.3+
420314 062	(0.08-	0.13-)X	880115 809	0.1+	0.1-	881208 801	2.5+	0.5+
501020 760	(5.7+	16.5+)	880116 809	0.3-	0.1-	890204 809	1.0-	0.7+
501020 760	(16.1+	24.8+)	880116 809	0.2+	0.2+	890204 809	1.0-	0.9+
511227 711	(4.6-	9.4+)Y	880116 809	0.3+	0.6+	890204 809	0.3-	0.7+
660316 330	3.0+	1.7-	880121 809	0.3-	0.6+	890207 809	1.4-	0.9+
660326 330	3.1-	1.9-	880121 809	0.5-	0.6+	890207 809	0.8-	0.8+
830905 095	0.1-	0.8+	880121 809	0.6-	0.7+	890207 809	1.6-	0.5+
871217 809	2.3+	3.1-	880123 809	1.0-	0.4+	890208 657	1.1+	2.1+
871217 809	2.7+	0.6-	880123 809	1.2-	0.3+	890208 657	1.7-	0.2+
871220 809	0.2+	0.3-	880125 809	0.6-	1.0+	890307 801	3.2+	0.9+
871220 809	0.3+	0.1+	880127 809	0.7-	0.3-			

(4061)* 1988 FF3 = 1934 PL = 1973 SX5 = 1978 NN2 = 1978 SD = 1979 WW5 = 1982 DD5 = 1982 DH6

Discovered 1988 Mar. 19 by W. Ferreri at the European Southern Observatory.

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Kobayashi

M	46.88004	(1950.0)	P	Q	
n	0.17984571	Peri.	244.57752	-0.02787781	+0.99954100
a	3.1083935	Node	23.83400	-0.90621252	-0.02026436
e	0.1448340	Incl.	1.68162	-0.42190247	-0.02251989
P	5.48	H	11.0	G 0.25	

Residuals in seconds of arc

340807 078	(6.3-	22.7-)X	791117 095	0.2-	1.5+	880320 809	0.1-	0.3-
730928 095	0.6-	0.7-	820222 010	1.7+	0.5-	880320 809	0.2-	0.3+
780707 095	0.1-	1.8+	820227 010	0.4-	2.1+	880325 809	0.8+	0.5-
780927 809	0.4+	0.2+	880319 809	0.4-	0.3-	880325 809	0.6+	0.1-
780928 809	(11.8-	17.7-)	880319 809	0.5-	0.5+			
780929 809	0.1+	0.1+	880319 809	0.0	0.4+			

(4062)* 1989 BF = 1932 BN = 1974 SX2 = 1981 WK1 = 1984 SA3

Discovered 1989 Jan. 28 at the Osservatorio San Vittore.

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Marsden

M	136.84633	(1950.0)	P	Q
n	0.29356984	Peri. 70.18549	+0.64260453	-0.76505681
a	2.2421350	Node 339.65056	+0.65024032	+0.57339799
e	0.1496558	Incl. 6.90434	+0.40527391	+0.29309185
P	3.36	H 13.9	G 0.25	

Residuals in seconds of arc

320129	024	2.4+	2.3+	840928	688	0.4-	1.0+	890130	552	1.2+	1.8-
320206	024	1.7+	0.5-	840928	688	0.6+	0.7+	890201	552	0.3+	2.0-
320212	024	1.8-	2.6+	841026	688	0.8-	0.4+	890201	552	0.4+	0.2-
740920	095	1.2+	0.5+	841026	688	0.5+	1.0-	890207	552	1.4-	2.3+
740922	095	1.9-	1.7+	890128	552	0.5+	1.4+	890207	552	2.6-	2.6+
811124	688	0.6+	0.7-	890128	552	0.2+	0.3+	890305	552	0.2-	0.2+
811124	688	0.9-	1.3-	890129	552	1.6+	0.5-	890305	552	0.6-	0.1+
840928	688	0.7+	0.1+	890129	552	0.5-	2.8-				
840928	688	1.7-	0.4-	890130	552	0.7+	0.5-				

(4063)* 1989 CG2 = 1943 EV = 1951 XJ = 1970 LC = 1974 VO2

Discovered 1989 Feb. 1 at the Osservatorio San Vittore.

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Marsden

M	71.57264	(1950.0)	P	Q
n	0.08414010	Peri. 317.43584	+0.30352503	-0.90454670
a	5.1578341	Node 112.84857	+0.93803222	+0.22851315
e	0.1199008	Incl. 18.96210	+0.16723669	+0.35996805
P	11.71	H 9.0	G 0.25	

Residuals in seconds of arc

430309	062	1.7-	1.9+	700606	095	0.7+	0.9-	890304	552	0.3+	1.0+
430309	062	0.4-	0.4-	741109	026	0.8-	0.4-	890304	552	0.7+	0.2+
430310	062	1.8+	2.6+	741113	026	1.5-	1.1+	890311	552	0.8+	0.2+
511204	711	0.3-	0.0	890201	552	0.8+	1.6-	890311	552	1.0+	0.5+
511204	711	0.0	0.8+	890201	552	1.3+	2.2-	890325	552	0.2-	0.0
511222	711	0.8+	0.1-	890207	552	2.1-	0.7-	890326	552	0.5+	0.2-
511222	711	0.9+	0.5+	890207	552	2.2-	0.4-				

(4064)* 2126 P-L = 1972 XT

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

Id. H. Oishi (MPC 11338)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	101.29469	(1950.0)	P	Q
n	0.25467023	Peri. 111.36330	-0.04543991	-0.99813827
a	2.4650019	Node 341.10407	+0.86363205	-0.01878266
e	0.0431462	Incl. 7.21697	+0.50207062	-0.05802771
P	3.87	H 13.5	G 0.25	

Residuals in seconds of arc

600924	675	0.5-	1.3-	721206	095	(3.2+	7.2+)	890131	877	(11.9+	12.9+)Y
600926	675	0.3-	0.6+	830911	095	3.9-	0.1+	890131	877	(8.3+	11.0+)Y
600928	675	0.2+	0.2-	870929	688	3.4+	1.4-	890205	888	0.3+	1.0-
600929	675	1.3+	0.4-	870929	688	1.8+	1.1-	890205	888	0.3+	1.4-
601025	675	0.1+	2.6+	871024	801	1.0-	0.9+	890214	888	(0.3+	5.4+)
601026	675	1.1+	0.9-	890105	888	0.7-	1.4-	890214	888	0.9-	2.0+
721202	095	2.5-	2.0+	890105	888	0.4+	0.7-				

(4065)* 2820 P-L = 1976 JF6 = 1986 GQ1

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

Id. H. Oishi (MPC 11338)

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Oishi

M	69.01882	(1950.0)	P	Q
n	0.28876513	Peri. 101.85540	-0.56106428	-0.82706280
a	2.2669375	Node 22.37875	+0.72007411	-0.50806464
e	0.0759383	Incl. 5.16334	+0.40828930	-0.24049417
P	3.41	H 14.2	G 0.25	

Residuals in seconds of arc

600924	675	1.2+	0.5+	601026	675	0.0	0.5-	890103	888	0.3+	0.1-
600924	675	0.1-	0.3-	760503	809	0.2+	0.4-	890103	888	0.4-	0.8-
600926	675	0.6+	0.5-	860402	054	(4.9-	2.0+)	890128	888	2.1+	1.0-
600927	675	0.1+	0.4+	860404	054	1.6-	0.9-	890128	888	0.9+	1.8+
600928	675	0.8-	0.1+	860410	054	0.4+	0.5-	890203	888	0.9-	0.0
601022	675	0.2-	0.6-	881215	888	0.6-	0.5-	890203	888	0.4-	0.3-
601025	675	0.1-	1.2-	881215	888	1.2-	0.8+				

1969 TJ2 = 1985 RD6

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Marsden

M	216.11218	(1950.0)	P	Q
n	0.18197268	Peri. 318.34479	+0.23218527	-0.97088010
a	3.0841308	Node 118.15204	+0.90912943	+0.19505049
e	0.2783839	Incl. 3.83735	+0.34579427	+0.13909402
P	5.42	H 13.0	G 0.25	

Residuals in seconds of arc

691008	095	0.3+	0.6-	691104	095	1.3-	2.0+	850920	095	1.0+	1.4-
691013	095	0.2-	1.1-	691111	095	0.3-	0.8+				
691016	095	1.7+	1.5-	850915	095	1.2-	2.1+				

1970 PS = 1938 QM = 1978 CR = 1983 BS = 1986 QZ3

Id. D. W. E. Green (k, MPC 14183; unpublished), B. G. Marsden, S. Nakano

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Marsden

M	143.32672	(1950.0)	P	Q
n	0.18549395	Peri. 268.69680	+0.53952347	-0.83614141
a	3.0449752	Node 148.01596	+0.82750457	+0.50490156
e	0.0927465	Incl. 10.76159	+0.15540470	+0.21434077
P	5.31	H 12.0	G 0.25	

Residuals in seconds of arc

380825	754	(32.8+	23.0+)	700828	095	1.7+	0.2+	830210	095	2.6-	2.1-
380825	754	(35.8+	24.5+)	700831	095	2.4-	3.0+	860830	095	0.5-	0.5+
380827	754	(8.3+	36.8+)	780202	330	0.2+	0.1+	860907	095	0.7+	0.5-
380827	754	(8.4+	35.6+)	830114	095	0.2+	0.1+	860912	095	0.4+	0.6-
380829	754	0.1-	1.9+	830121	688	0.2+	0.9+				
700810	095	0.2+	4.6-	830121	688	2.0+	0.8+				

1971 QW1 = 1989 CS3

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M	109.63891	(1950.0)	P	Q
n	0.18758881	Peri. 199.48686	+0.66778308	-0.73969245
a	3.0222633	Node 208.80250	+0.70377041	+0.66381746
e	0.0833331	Incl. 9.94316	+0.24243138	+0.11046019
P	5.25	H 12.0	G 0.25	

Residuals in seconds of arc

710830	095	1.4+	0.4+	890205	809	0.5-	0.1+	890207	809	0.4-	0.3-
710916	095	0.5-	0.2+	890205	809	0.5+	0.1+	890207	809	0.4+	0.5-
710927	095	(1.0+	9.3+)	890205	809	0.3-	0.6+				
711011	095	1.0-	0.6-	890207	809	0.3+	0.0				

1972 TW3 = 1972 RH2 = 1942 RC1 = 1982 BG3
Id. B. G. Marsden (d, MPC 9064), T. Kobayashi

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Kobayashi
M 344.87015	(1950.0)	P	Q
n 0.22984402	Peri. 18.69825	+0.95127512	-0.30834191
a 2.6394528	Node 359.25906	+0.27259345	+0.84243072
e 0.2578546	Incl. 4.24937	+0.14411268	+0.44185490
P 4.29	H 14.0	G 0.25	

Residuals in seconds of arc

420914 062	0.5+	1.8+	721005 095	2.6+	2.6+	820118 033	0.5+	0.1+
420915 062	0.4+	1.0-	721013 095	0.9-	1.5-			
720911 095	0.4+	0.6-	820118 033	0.4+	0.2-			

1976 QN = 1988 FC3

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Kobayashi
M 75.93737	(1950.0)	P	Q
n 0.31136888	Peri. 284.37150	+0.45152957	+0.89225598
a 2.1558535	Node 12.47041	-0.81759231	+0.41399531
e 0.1462366	Incl. 0.14765	-0.35730082	+0.18024190
P 3.17	H 14.5	G 0.25	

Residuals in seconds of arc

760826 095	0.3-	1.9+	880319 809	0.2+	0.1+	880325 809	0.0	0.1-
760827 675	1.2-	0.4+	880319 809	0.1+	0.0	880325 809	0.7-	0.2+
760828 675	0.7+	0.7-	880320 809	0.2+	0.4-	880326 809	0.5+	0.8-
760830 675	0.5+	1.7-	880320 809	0.4-	0.5+	880326 809	0.1-	0.4+

1977 DT1 = 1979 PM = 1983 GE2 = 1985 QB = 1988 CX5
Id. A. Lowe (k), C. M. Bardwell

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P)			Bardwell
M 196.17863	(1950.0)	P	Q
n 0.17976894	Peri. 268.57836	+0.54983371	-0.80092598
a 3.1092847	Node 144.52025	+0.83097053	+0.55328085
e 0.0600627	Incl. 24.10705	-0.08468102	+0.22890582
P 5.48	H 11.5	G 0.25	

Residuals in seconds of arc

770218 381	0.3+	0.0	830410 095	1.8+	1.1-	850914 688	1.4+	3.1+
770218 381	0.2-	0.1-	830412 095	1.5-	2.1+	880214 809	0.5-	1.3+
770219 381	0.1+	0.2+	850820 688	0.1+	0.3-	880214 809	0.6-	1.7+
770219 381	0.0	0.1+	850820 688	0.3-	0.1+	880214 809	0.5+	1.0+
790801 095	0.6-	0.2+	850914 688	0.4-	2.0+			

1978 SM5 = 1980 BC6 = 1989 CO1

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Kobayashi
M 303.82133	(1950.0)	P	Q
n 0.22553328	Peri. 208.81210	-0.19407313	+0.97951206
a 2.6729794	Node 50.05047	-0.88600835	-0.15148864
e 0.0330843	Incl. 4.02239	-0.42109955	-0.13269256
P 4.37	H 13.0	G 0.25	

Residuals in seconds of arc

780927 095	1.3-	0.3+	800123 095	0.1+	0.4+	890207 400	2.1-	0.6+
781003 095	0.2-	0.2+	890207 400	0.3+	0.0	890212 400	0.7+	1.1-
781007 095	1.5+	0.6-	890207 400	1.4+	1.3-	890212 400	0.5-	1.5+

1979 FQ2 = 1982 YB3 = 1984 GE = 1989 EJ
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Bardwell

M	323.77270	(1950.0)	P	Q
n	0.18966695	Peri. 191.19397	-0.36647482	+0.91689820
a	3.0001465	Node 57.48629	-0.83847454	-0.25180151
e	0.0525062	Incl. 10.80573	-0.40330714	-0.30966707
P	5.20	H 12.0	G 0.25	

Residuals in seconds of arc

790329	095	1.2+ 0.0	821222	095	0.1- 2.2+	890301	675	0.6- 1.3-
790425	095	1.5+ 1.4+	840405	046	0.5+ 0.4-	890305	675	0.4- 1.1-
790430	095	0.4- 1.9+	840405	046	1.7- 0.8-			

1981 EG11 = 1989 CP3
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M	66.89475	(1950.0)	P	Q
n	0.24040635	Peri. 270.78435	-0.52503120	-0.84948056
a	2.5615704	Node 211.06436	+0.81552838	-0.48460735
e	0.2356190	Incl. 5.80631	+0.24342493	-0.20865878
P	4.10	H 17.0	G 0.25	

Residuals in seconds of arc

810212	413	1.2+ 0.6+	810308	413	1.5- 0.7+	810409	413	0.8+ 2.5-
810214	413	0.1- 0.3+	810308	413	1.1+ 1.0-	810501	413	0.1+ 1.6-
810301	413	1.4- 0.6+	810311	413	0.5- 0.9+	810503	413	0.5+ 0.5-
810301	413	2.0+ 0.1+	810311	413	2.2+ 0.8-	890204	809	1.4- 0.2-
810301	413	0.8- 1.2+	810312	413	1.6- 0.7+	890204	809	1.7- 0.4-
810301	413	0.4- 0.8-	810315	413	0.7+ 1.0-	890204	809	1.3- 0.3-
810306	413	1.3- 1.7+	810315	413	0.3+ 0.5+	890207	809	1.4+ 0.3-
810306	413	0.8+ 0.0	810408	413	0.4+ 0.5+	890207	809	0.4+ 0.4-
810307	413	0.1- 0.0	810408	413	1.3+ 0.9-	890207	809	2.2+ 0.0
810307	413	1.9- 2.7+	810409	413	1.2- 0.4-			

1981 EZ17 = 1981 ED
Id. W. Landgraf (d, MPC 8530)
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Green

M	359.03817	(1950.0)	P	Q
n	0.23966607	Peri. 35.95478	-0.86278759	+0.50490655
a	2.5668424	Node 174.19053	-0.50260020	-0.85107998
e	0.1297469	Incl. 14.78180	-0.05468649	-0.14398698
P	4.11	H 13.0	G 0.25	

Residuals in seconds of arc

810209	413	0.7+ 0.5-	810309	704	(2.5- 5.4-)	810503	413	1.6- 0.4-
810302	413	0.2- 1.0+	810311	413	0.1- 0.9+	890129	046	0.5+ 0.2-
810302	413	0.7+ 1.4-	810311	413	0.2+ 0.5-	890129	046	1.0- 1.6+
810303	413	0.1+ 0.0	810316	413	0.9- 1.4+	890130	046	1.3+ 0.2-
810303	413	0.9+ 2.0-	810316	413	2.5+ 1.8-	890130	046	0.3- 0.1+
810307	511	0.2- 1.4+	810329	413	0.4- 1.7+	890131	046	0.3- 0.3-
810307	413	0.3- 0.9+	810502	413	(1.3+ 3.1+)	890131	046	(3.5- 0.3+)

1981 QP3 = 1989 EB2
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Green

M	276.77518	(1950.0)	P	Q
n	0.20141654	Peri. 220.73712	+0.43991479	+0.89647495
a	2.8823065	Node 75.42178	-0.80902633	+0.42123157
e	0.0500350	Incl. 3.13851	-0.38980940	+0.13746501
P	4.89	H 13.0	G 0.25	

Residuals in seconds of arc

810826	809	1.4-	0.0	810902	809	0.7-	0.6+	810906	809	0.7-	0.4+
810826	809	1.7-	0.0	810902	809	1.1-	0.6+	810906	809	0.6-	0.2+
810826	809	0.5-	0.4+	810902	809	0.5-	0.6+	810906	809	0.9-	0.2+
810827	809	1.6-	1.0+	810903	809	0.4-	0.1+	810907	809	0.7+	0.2+
810827	809	0.3-	0.8+	810903	809	0.9-	0.2+	810907	809	0.6+	0.8+
810827	809	0.0	0.8+	810903	809	0.9-	0.0	810907	809	0.6+	0.5+
810828	809	0.8+	0.2+	810904	809	0.1+	0.3-	890305	046	0.4+	2.1+
810828	809	0.8+	0.1-	810904	809	0.4+	0.1-	890305	046	0.9+	1.3-
810828	809	1.2+	0.3-	810904	809	0.5+	0.1+	890306	046	1.3+	1.1-
810831	809	0.4+	0.9-	810905	809	0.2-	0.3+	890306	046	0.4-	1.5-
810831	809	1.0+	0.6-	810905	809	0.3-	0.6+	890307	046	0.3-	0.1+
810831	809	1.0+	0.5-	810905	809	0.6-	0.9+	890307	046	1.8-	0.1+

1981 UT7 = 1981 WX = 1953 UL = 1986 QB4
Id. S. Nakano (d, MPC 10752), B. G. Marsden

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5		(J-P)	Marsden
M 200.94174	(1950.0)	P	Q
n 0.17792338	Peri. 207.67993	+0.96301219	+0.26864997
a 3.1307489	Node 136.71942	-0.24124948	+0.89408026
e 0.2039282	Incl. 1.74278	-0.12002590	+0.35839599
P 5.54	H 12.5	G 0.25	

Residuals in seconds of arc

531017	760	1.5+	0.9-	811030	381	0.5-	1.7+	860907	095	0.1+	0.9+
531017	760	1.2-	0.0	811124	688	1.7-	2.0-	860912	095	0.1+	1.3-
811024	095	0.2+	0.5-	811124	688	2.5+	0.0				
811030	381	0.8-	1.8+	860830	095	0.3-	0.5+				

1982 BQ2 = 1989 AP3

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5			Kobayashi
M 106.14325	(1950.0)	P	Q
n 0.28294809	Peri. 296.19939	+0.20544176	-0.97767957
a 2.2979022	Node 141.86277	+0.92138805	+0.17806485
e 0.1533676	Incl. 4.08613	+0.32990567	+0.11151489
P 3.48	H 14.0	G 0.25	

Residuals in seconds of arc

820119	095	2.5+	1.1-	820121	046	0.6-	1.1-	890110	413	0.3-	0.3+
820120	095	0.9+	1.9+	820125	046	1.7-	0.5+	890110	413	0.5-	1.6-
820120	046	(8.1+	10.8-)	820125	046	1.6-	0.5+	890112	413	0.9+	2.7+
820120	046	2.4-	0.5+	820127	046	2.4+	0.9-	890112	413	0.1-	1.0-
820121	046	0.1-	0.2-	820127	046	0.4+	0.2-				

1982 SU = 1989 EK1
Id. E. Helin

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5		(J-P)	Marsden
M 125.84071	(1950.0)	P	Q
n 0.38460883	Peri. 321.93451	-0.82947969	-0.55759660
a 1.8726535	Node 184.55070	+0.55758560	-0.83005663
e 0.0809088	Incl. 24.09857	-0.03258443	-0.00959257
P 2.56	H 14.0	G 0.25	

Residuals in seconds of arc

820920	675	2.5-	0.2+	821011	675	(5.8-	11.3-)	821013	675	(0.6+	3.7+)
820920	675	(6.7+	18.8+)	821011	675	(2.4+	3.8+)	821013	675	(3.5+	6.8+)
820924	675	0.3+	1.5-	821012	675	2.2-	1.9-	890304	675	0.7-	0.4-
820924	675	2.2+	1.0+	821012	675	1.3+	1.3+	890305	675	0.7+	0.6+
820928	675	0.1+	0.4-	821012	675	(2.2-	3.1-)				
820929	675	0.6-	0.4+	821012	675	1.3+	1.1+				

1982 UP2 = 1972 TX = 1987 YC4
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Kobayashi
M 175.91813 (1950.0) P Q
n 0.20097515 Peri. 39.10685 +0.98952642 -0.14397490
a 2.8865194 Node 329.16631 +0.12680446 +0.90148267
e 0.0870076 Incl. 1.16556 +0.06897901 +0.40816691
P 4.90 H 13.0 G 0.25
Residuals in seconds of arc
721007 095 0.0 0.1+ 821021 046 1.2+ 2.0- 821114 095 0.3- 0.5+
821020 095 1.1- 0.7+ 821025 095 0.7- 1.3+ 871223 010 (8.4- 1.5-)
821021 046 0.6+ 1.5- 821109 095 0.4+ 1.2+ 871223 010 0.1+ 0.3-

1983 RT1 = 1987 UE4
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Kobayashi
M 247.24677 (1950.0) P Q
n 0.26688389 Peri. 321.54171 +0.77955363 +0.62633518
a 2.3892108 Node 359.67608 -0.54417089 +0.67680044
e 0.1411167 Incl. 6.27694 -0.31011964 +0.38684028
P 3.69 H 14.0 G 0.25
Residuals in seconds of arc
830902 688 3.2+ 0.5- 830906 095 1.7- 1.5+ 871028 399 0.0 1.3+
830902 688 0.5+ 0.5- 871025 399 0.1+ 0.4+ 871028 399 1.1+ 1.3+
830906 688 1.7- 0.8- 871025 399 0.7+ 1.9- 871028 399 0.4+ 0.2+
830906 688 0.2+ 0.7+ 871025 399 1.8- 1.1-

1984 YU1 = 1989 EA1
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano
M 45.19338 (1950.0) P Q
n 0.28772733 Peri. 164.65616 -0.99752090 +0.06846648
a 2.2723898 Node 19.29193 -0.06862741 -0.89536304
e 0.0815979 Incl. 2.82109 -0.01556736 -0.44004247
P 3.43 H 13.0 G 0.25
Residuals in seconds of arc
841119 675 0.1+ 0.4+ 890308 399 0.1+ 0.9- 890312 399 0.2+ 0.1-
841121 675 0.8- 0.9+ 890309 391 (3.1- 2.4+) 890312 399 0.8- 0.3-
841223 095 0.9+ 1.2- 890309 391 1.2- 1.5+ 890312 399 0.8+ 0.3-
890308 399 0.6+ 1.0+ 890311 391 (0.8+ 4.4-)
890308 399 0.3+ 0.7- 890311 391 (5.7+ 3.4-)

1985 GV1 = 1952 KR = 1956 JA = 1960 GA = 1986 NA1
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Marsden
M 351.80356 (1950.0) P Q
n 0.23714454 Peri. 30.20139 -0.57552360 +0.81083079
a 2.5850056 Node 205.13836 -0.79144657 -0.58501264
e 0.0628373 Incl. 14.50848 -0.20587596 -0.01770973
P 4.16 H 12.0 G 0.25
Residuals in seconds of arc
520520 711 0.3- 4.5- Y 850415 675 0.1- 2.0+ 860709 688 1.9+ 0.0
560504 760 0.2+ 2.3+ 850423 675 1.2+ 0.9+ 860807 095 0.8- 0.3-
600401 839 0.1+ 2.2- 850424 675 0.0 2.5+ 860814 095 0.9- 0.4-
600401 839 0.6- 2.3- 850425 675 0.2- 1.2+ 860831 095 0.5+ 0.6+
850415 675 0.1+ 0.6+ 860709 688 1.4+ 0.6+ 860908 095 2.0- 1.3+

1985 QO6 = 1985 SW1 = 1981 UN17 = 1988 ES
Id. N. S. Chernykh (d), A. Lowe (k), C. M. Bardwell

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Bardwell
M 18.89024 (1950.0) P Q
n 0.22273185 Peri. 153.22014 +0.36484253 +0.92953156
a 2.6953513 Node 138.11825 -0.86791840 +0.36033194
e 0.0767987 Incl. 4.59552 -0.33705723 +0.07830695
P 4.43 H 12.5 G 0.25
Residuals in seconds of arc

811024 095 1.8+ 0.3+	850919 095 0.3+ 0.7+	880313 054 0.1- 0.1-
811028 095 1.6- 0.2-	850920 095 1.7- 0.4-	
850824 095 0.9+ 1.4-	880313 054 0.0 0.2-	

1985 XB
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Bardwell
M 101.06206 (1950.0) P Q
n 0.35533805 Peri. 69.05768 -0.65539159 -0.60317310
a 1.9741262 Node 70.78750 +0.37790914 -0.78298829
e 0.2245355 Incl. 28.77639 +0.65394690 -0.15202480
P 2.77 H 14.5 G 0.25
Residuals in seconds of arc

851215 675 (3.2+ 2.4-)	860106 675(13.4+ 22.5+)	860321 675 0.1- 0.1-
851215 675 (6.7+ 1.0-)	860107 675(18.9+ 8.7+)	860322 675 0.2- 0.1+
851217 675 (8.6- 1.4-)	860107 675(20.9+ 6.1+)	860322 675 0.3- 0.1+
851217 675 (5.8- 1.2-)	860108 675(29.1+ 14.4+)	860430 675 (3.1+ 1.0+)
851218 675 (5.6+ 2.4+)	860108 675(30.9+ 14.5+)	860430 675(10.8+ 2.9-)
851218 675 (4.4+ 4.2+)	860108 675(34.2+ 14.8+)	890304 675 0.2+ 0.4-
851218 675 (6.5+ 3.0+)	860112 675 0.2- 0.9-	890304 675 0.3+ 0.8+
851218 675 (1.1+ 2.4+)	860205 675 0.0 0.2-	890305 675 0.7- 0.3+
851218 675 (5.1+ 4.2+)	860304 675 0.4+ 0.5+	890310 801 0.1- 0.4+
851220 675 0.1+ 0.1-	860304 675 0.5+ 0.4+	890311 801 0.2+ 0.8-
851220 675 0.1- 0.0	860321 675 0.1- 0.0	

1986 PV4 = 1980 FR9 = 1982 UV8 = 1989 AK3
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano
M 289.68825 (1950.0) P Q
n 0.21083371 Peri. 311.44787 -0.09345880 +0.99133583
a 2.7958265 Node 312.93749 -0.87169873 -0.12626417
e 0.1789336 Incl. 7.24267 -0.48104759 +0.03620276
P 4.67 H 12.5 G 0.25
Residuals in seconds of arc

800316 095 0.3+ 0.6+	860908 095 0.3- 2.0+	890113 413 1.5- 0.4-
821021 095 0.4+ 1.4-	890104 413 1.4- 1.1+	890113 413 0.1- 0.2+
860806 095 0.4- 0.5+	890104 413 0.3- 1.2+	890115 413 0.1- 0.5+
860808 095 0.6- 0.2-	890110 413 0.3- 1.0+	890115 413 2.1+ 0.2+
860831 095 0.2- 0.6+	890110 413 2.6+ 1.2-	

1986 PB5 = 1975 RA1 = 1979 HR1 = 1981 TQ4 = 1989 BQ1
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Green
M 228.33882 (1950.0) P Q
n 0.18177823 Peri. 176.29916 +0.62477683 +0.77990406
a 3.0863298 Node 132.36214 -0.71763372 +0.59247513
e 0.1728708 Incl. 2.90628 -0.30766175 +0.20179910
P 5.42 H 11.9 G 0.25
Residuals in seconds of arc

750903 095 0.7+ 2.7-	860830 095 0.6- 0.4+	890130 046 0.4- 2.3-
750906 095 0.8+ 2.1-	860907 095 0.5- 0.4-	890130 046 0.7- 2.4-
790420 095 (9.5+ 6.2-)	860912 095 0.1+ 0.9-	890131 046 (8.8+ 6.7-)
811007 095 0.7- 1.8+	890129 046 (3.8- 1.7-)	890131 046 (8.1+ 3.3-)
860813 095 1.0+ 0.8+	890129 046 (2.7- 4.2-)	

1986 QA4 = 1979 GN = 1981 UP19

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5		(J-P)	Marsden
M 219.70693		(1950.0)	P	Q
n 0.18559465	Peri.	199.35376	+0.85673976	+0.51498093
a 3.0438736	Node	129.61764	-0.46822069	+0.79950416
e 0.1175797	Incl.	2.09321	-0.21625535	+0.30917267
P 5.31	H 12.5	G 0.25		

Residuals in seconds of arc

790401 809	0.1+	0.1-	811026 095	0.0	0.1+	860907 095	1.0-	0.4-
790402 809	0.1-	0.2+	860830 095	0.5+	1.2+	860912 095	0.5+	0.8-

1986 RT5 = 1988 CK2

Id. B. G. Marsden; 1988 CK2 = 1986 RN3 (MPC 13153) is invalid

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5		(J-P)	Marsden
M 241.20302		(1950.0)	P	Q
n 0.21527715	Peri.	70.60237	+0.99704888	+0.01771189
a 2.7572213	Node	288.32674	-0.04752197	+0.90658121
e 0.1229366	Incl.	4.51323	+0.06029250	+0.42165957
P 4.58	H 13.0	G 0.25		

Residuals in seconds of arc

860907 095	0.2+	0.7+	880216 809	0.5+	0.7-	880221 809	0.2+	0.1+
860911 095	0.4+	2.1-	880216 809	0.6-	0.1-	880221 809	0.7-	0.7+
861005 095	1.7+	1.2-	880216 809	2.3-	0.1+	880221 809	1.4-	0.6+
861010 095	2.3-	2.5+	880217 809	1.3+	0.5-	880223 809	2.0+	0.8+
880211 809	0.8-	1.4-	880217 809	1.4+	0.7-	880223 809	0.4+	1.1+
880215 809	0.6+	0.4-	880217 809	0.0	0.3-	880223 809	0.6-	0.5+

1987 ST1 = 1982 YY1 = 1989 BG1

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5		(J-P)	Green
M 116.12577		(1950.0)	P	Q
n 0.17895426	Peri.	102.27595	+0.85333845	-0.50320560
a 3.1187141	Node	288.07506	+0.40492875	+0.80446023
e 0.2342692	Incl.	8.24767	+0.32839945	+0.31563881
P 5.51	H 12.5	G 0.25		

Residuals in seconds of arc

821219 330	0.0	0.1-	870929 688	1.3+	2.3+	890127 046	0.7+	0.2-
870921 688	0.1+	0.6+	871016 688	0.2-	0.7-	890128 046	1.3+	0.6-
870921 688	0.2+	0.1+	890126 046	0.2+	0.2+	890128 046	0.1-	0.0
870921 010	1.9-	0.9-	890126 046	0.0	0.0	890203 046	1.9-	0.8+
870922 010	0.4+	1.8-	890127 046	1.8+	0.0	890203 046	2.0-	0.7-

1987 SN3 = 1989 CG3

Epoch 1989 Oct. 1.0 ET = JDE 2447800.5		(J-P)	Nakano
M 210.09889		(1950.0)	P	Q
n 0.28129998	Peri.	144.89595	+0.96909896	+0.24311650
a 2.3068735	Node	201.15049	-0.24438810	+0.92331527
e 0.1385659	Incl.	6.64166	-0.03349113	+0.29729325
P 3.50	H 14.5	G 0.25		

Residuals in seconds of arc

870912 809 (0.5-	2.5-)		870918 809	0.2+	0.4+	870924 809	0.4+	0.6+
870912 809	0.4-	1.5-	870918 809	0.1+	0.3-	870924 809	0.2+	0.7+
870912 809	0.3-	1.3-	870918 809	0.4+	0.5+	870924 809	0.4+	0.7+
870916 809	0.8-	0.4+	870923 809	0.6-	0.7+	870925 054	0.0	0.7-
870916 809	0.0	0.1-	870923 809	0.5-	0.7+	870925 054	0.2-	0.2-
870916 809	0.1+	0.2-	870923 809	0.2-	0.6+	870926 809	0.3+	0.3+

870926 809 0.4+ 0.3+ 870929 054 0.7- 0.2+ 890204 809 0.6+ 1.4-
870926 809 0.5+ 0.6+ 870929 809 0.8+ 0.3- 890204 809 1.3+ 0.6-
870927 809 0.1+ 0.8+ 870929 809 0.7+ 0.1- 890204 809 1.3+ 1.0-
870927 809 0.0 0.7+ 870929 054 0.0 1.6- 890207 809 1.0- 0.5+
870927 809 0.1- 0.7+ 870929 809 0.7+ 0.1- 890207 809 1.8- 1.4+
870928 809 0.1- 0.3- 870930 054 1.6- 1.5- 890207 809 0.4- 1.1+
870928 809 0.0 0.3- 870930 054 0.1- 0.3+
870928 809 0.2+ 0.5- 871001 054 0.0 0.2-

1988 SP = 1988 RX6 = 1981 WC4
Id. F. N. Bowman (d), B. G. Marsden
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Marsden
M 57.01432 (1950.0) P Q
n 0.26889708 Peri. 333.11842 +0.61263467 -0.78982246
a 2.3772756 Node 79.08699 +0.73037593 +0.55157190
e 0.2135434 Incl. 1.71068 +0.30204263 +0.26823294
P 3.67 H 14.0 G 0.25
Residuals in seconds of arc
811118 330 2.2- 3.4+ 880909 809 3.4- 0.5- 880919 809 0.0 0.5+
811127 330 0.3+ 3.3+ 880909 809 0.6- 0.3+ 880919 809 0.2+ 0.2-
811201 330 2.0+ 6.6- 880909 809 2.2+ 1.1+ 880919 809 0.5+ 0.5-
880908 809 2.1- 1.0- 880918 809 0.4- 0.5+ 880920 809 0.5- 0.5+
880908 809 0.6+ 0.4- 880918 809 0.1+ 0.2- 880920 809 0.3- 0.0
880908 809 3.5+ 0.4+ 880918 809 0.5+ 0.3- 880920 809 0.0 0.6-

1989 BE = 1933 FJ = 1974 WK1 = 1980 TF8
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Marsden
M 343.97020 (1950.0) P Q
n 0.15759429 Peri. 183.39734 -0.98979288 +0.14222163
a 3.3945061 Node 4.80780 -0.12804942 -0.85944553
e 0.0172782 Incl. 6.24256 -0.06255717 -0.49104622
P 6.25 H 11.5 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)
330324 029(0.10+ 0.05-)Y 890128 552 1.0+ 0.9- 890201 552 1.1+ 0.8+
330325 029(0.11+ 0.05-)Y 890129 552 1.4- 0.3+ 890207 552 1.3- 1.4+
741118 330 0.1+ 0.1- 890129 552 0.9- 0.0 890207 552 0.9- 1.0+
801010 095 1.7- 0.3+ 890130 552 0.8+ 0.1+ 890306 552 0.9+ 0.2-
801015 095 1.6+ 0.2- 890130 552 0.4+ 0.8+ 890306 552 0.2+ 0.4-
890128 552 0.1- 1.3- 890201 552 0.4+ 1.5-

1989 BN = 1982 BC = 1983 GO2 = 1983 JL
Id. T. Kobayashi
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano
M 246.52399 (1950.0) P Q
n 0.29377045 Peri. 258.13501 +0.76153939 +0.64591063
a 2.2411186 Node 61.60591 -0.56844011 +0.70526035
e 0.1081238 Incl. 3.48360 -0.31134162 +0.29224526
P 3.36 H 13.5 G 0.25
Residuals in seconds of arc
820116 688 (5.0- 16.1-) 890131 046 (1.5+ 4.5-) 890207 888 0.7- 0.8+
820116 688 0.0 0.5- 890201 046 2.0+ 3.6- 890207 888 0.8- 0.7+
830411 095 0.6+ 0.4+ 890201 046 2.0+ 3.7- 890210 888 0.5- 0.8+
830506 688 0.3+ 0.1- 890203 877 1.1- 1.0+ 890210 888 0.2- 0.4+
830506 688 1.0- 0.6- 890203 877 0.8+ 1.3+ 890213 888 0.7- 0.9+
890130 046 0.8- 1.8- 890204 877 1.5+ 1.0+ 890213 888 0.3- 0.5+
890130 046 (0.4+ 4.6-) 890204 877 0.9- 0.4+ 890214 888 (6.3- 2.8-)
890131 877 1.5- 1.2+ 890204 877 0.1- 1.9- 890214 888 0.4- 1.4+
890131 877 1.0+ 2.9+ 890205 888 (7.5- 4.9-) 890214 888 (4.3- 3.0-)
890131 046 0.9+ 3.3- 890205 888(10.8- 4.3-) 890214 888 0.1- 1.4+

1989 CZ = 1981 YF
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Marsden
M 144.49246 (1950.0) P Q
n 0.29018208 Peri. 14.13106 +0.83800931 -0.54533549
a 2.2595564 Node 18.95225 +0.49484646 +0.74509129
e 0.1681483 Incl. 3.30039 +0.22992909 +0.38398981
P 3.40 H 14.0 G 0.25
Residuals in seconds of arc
811220 688 1.8- 0.5+ 890206 675 1.3+ 0.4+ 890305 675 0.9- 1.4-
811230 688 0.6+ 0.5- 890211 675 0.3- 1.2+
811230 688 1.2+ 0.3- 890301 675 0.2- 0.1-

1989 CM1 = 1969 EY = 1973 FS = 1983 VW2
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Kobayashi
M 346.57915 (1950.0) P Q
n 0.24332203 Peri. 222.04709 -0.61189669 +0.79072193
a 2.5410610 Node 10.27267 -0.69523420 -0.52657360
e 0.1519810 Incl. 5.94592 -0.37713638 -0.31221638
P 4.05 H 12.5 G 0.25
Residuals in seconds of arc
690312 095 0.7- 1.8- 890212 400 1.2- 1.5- 890226 400 0.4+ 0.4+
730326 095 0.0 0.8+ 890212 400 1.3- 1.6- 890226 372 1.0- 2.1-
831108 381 1.0+ 0.3- 890212 400 1.3- 1.4- 890226 372 0.8+ 2.5+
831108 381 0.9- 0.3- 890213 372 0.8+ 0.2- 890301 372 1.2+ 0.3+
890207 400 2.4+ 0.1+ 890213 372 1.1- 1.1- 890301 372 0.0 1.9+
890207 400 1.0+ 2.1+ 890214 372 1.8+ 1.8-
890207 400 0.5- 0.4+ 890226 400 1.6- 3.0+

1989 CN1 = 1976 YX4
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Kobayashi
M 85.73061 (1950.0) P Q
n 0.25472051 Peri. 84.88773 -0.30609828 -0.95163586
a 2.4646776 Node 22.98977 +0.84451368 -0.28419840
e 0.1597072 Incl. 3.86485 +0.43943200 -0.11670672
P 3.87 H 13.5 G 0.25
Residuals in seconds of arc
761218 095 0.1- 0.1- 890210 399 0.8- 1.4+ 890227 399 0.1- 0.5-
761220 095 0.1+ 0.0 890212 400 0.1- 0.5- 890227 399 0.8- 1.1+
890210 399 0.8- 0.0 890212 400 1.3+ 1.0+ 890227 399 0.3+ 0.9-
890210 399 1.1+ 0.1- 890212 400 0.3- 1.4-

1989 CY1 = 1976 UC10
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano
M 17.71104 (1950.0) P Q
n 0.26815149 Peri. 35.25388 -0.93816150 +0.34601594
a 2.3816802 Node 164.97782 -0.32673038 -0.87422308
e 0.1568898 Incl. 2.48174 -0.11445634 -0.34059796
P 3.68 H 13.0 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)
761022 381 0.2+ 0.5+ 890210 872 2.4+ 0.9+ 890306 391 0.0 0.5-
761022 381 0.3- 0.2- 890214 872 1.3- 0.2- 890308 391(0.03+ 0.02-)
761024 381 0.2+ 0.3- 890214 872 1.8- 1.7- 890308 391(0.03+ 0.02-)
890210 872 0.3+ 0.6+ 890306 391 0.4+ 0.8+

1989 DA
Epoch 1989 Feb. 23.0 ET = JDE 2447580.5 Marsden

M	5.90952	(1950.0)	P	Q
n	0.30910339	Peri. 138.66640	-0.61335754	-0.78952018
a	2.1663745	Node 349.10901	+0.69187664	-0.52415298
e	0.5445272	Incl. 6.44938	+0.38091893	-0.31925153
P	3.19	H 19.0	G 0.25	

From 13 observations 1989 Feb. 27-Mar. 16.

1989 EG = 1983 LK = 1986 JW1
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M	52.02725	(1950.0)	P	Q
n	0.30340638	Peri. 259.81564	-0.99639435	-0.05923391
a	2.1934131	Node 276.76965	+0.07879879	-0.91146896
e	0.0898577	Incl. 3.50690	-0.03144902	-0.40708190
P	3.25	H 13.5	G 0.25	

Residuals in seconds of arc

830613	675	1.4-	0.4-	860511	413	1.1-	0.9-	890305	413	0.1-	0.6+
830614	675	0.2+	0.1+	860511	413	1.7-	0.1+	890305	372	0.6+	2.9-
830614	675	1.3+	0.0	890302	413	0.4-	0.5+	890306	372	0.9-	0.7+
860511	413	1.3+	0.8+	890302	413	1.0+	1.1+				
860511	413	1.6+	0.3+	890304	413	0.4-	0.2-				

1989 EV = 1973 UH2 = 1973 YN = 1983 AH2 = 1984 DN1 = 1987 WO2
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M	142.92023	(1950.0)	P	Q
n	0.21078608	Peri. 12.49955	+0.51524081	-0.84755132
a	2.7962476	Node 46.64902	+0.77045200	+0.39303336
e	0.1502535	Incl. 10.07559	+0.37540728	+0.35662520
P	4.68	H 12.0	G 0.25	

Residuals in seconds of arc

731027	095	2.5-	1.1+	871123	033	1.6-	0.8+	890310	374	1.2+	0.8+
731220	095	2.3+	2.6-	871123	033	0.5+	0.1-	890315	871	3.6-	0.2-
830114	801	0.4-	4.2+	890306	374	0.1-	0.1+	890315	871	1.5+	1.6+
840226	095	0.9+	1.3-	890306	374	3.1+	0.4-				
840305	095	0.1+	2.5-	890310	374	0.7-	3.5+				

1989 FB
Epoch 1989 Apr. 4.0 ET = JDE 2447620.5 Marsden

M	206.92124	(1950.0)	P	Q
n	0.92424247	Peri. 333.71875	+0.99294903	+0.06285062
a	1.0437875	Node 23.34462	+0.00988021	+0.80104550
e	0.2578010	Incl. 14.69321	-0.11812963	+0.59529481
P	1.07	H 17.0	G 0.25	

From 6 observations 1989 Mar. 31-Apr. 9.

1989 FC
Epoch 1989 Apr. 4.0 ET = JDE 2447620.5 Marsden

M	76.57438	(1950.0)	P	Q
n	0.95090954	Peri. 254.90331	+0.26192981	-0.96508692
a	1.0241807	Node 179.91176	+0.91538498	+0.24839659
e	0.3609818	Incl. 4.97559	+0.30571737	+0.08310462
P	1.04	H 21.0	G 0.25	

From 6 observations 1989 Mar. 31-Apr. 9.

2196 P-L = 1989 BL1
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M	95.53215	(1950.0)	P	Q
n	0.28763019	Peri. 173.25270	-0.11119125	-0.99353733
a	2.2729014	Node 283.12948	+0.91064975	-0.09267252
e	0.1490667	Incl. 1.34185	+0.39793661	-0.06553920
P	3.43	H 14.5	G 0.25	

Residuals in seconds of arc

600924	675	0.0	0.1+	601022	675	0.4-	0.2+	890129 046	0.6+	0.7-
600926	675	0.3+	1.1-	601022	675	0.1+	0.6+	890129 046	0.2-	0.2-
600928	675	0.5-	0.4+	601024	675	0.5-	0.6+	890130 046	1.9-	0.2-
601017	675	1.1+	0.2-	601026	675	0.2-	0.7-	890130 046	1.5+	1.1+

9521 P-L = 1974 VN = 1986 EV3 = 1988 YE
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 Kobayashi

M	109.20988	(1950.0)	P	Q
n	0.28693828	Peri. 297.63029	+0.48864719	-0.87200848
a	2.2765493	Node 123.08934	+0.81204740	+0.44251343
e	0.1257902	Incl. 1.96481	+0.31906574	+0.20924407
P	3.43	H 14.5	G 0.25	

Residuals in seconds of arc

601017	675	0.5-	0.9+	741112	095	0.4+	2.3-	890102 046	0.1-	0.3+
601022	675	1.2-	0.4+	860312	809	0.4-	0.7-	890102 046	0.4+	0.7+
601024	675	0.7+	0.1+	881230	046	1.5-	1.2-	890103 046	0.7+	1.0+
601026	675	0.5+	0.1-	881230	046	0.2-	0.4+	890103 046	0.9+	0.6+

4157 T-3 = 1989 BH1
Epoch 1989 Oct. 1.0 ET = JDE 2447800.5 (J-P) Nakano

M	54.96166	(1950.0)	P	Q
n	0.28696387	Peri. 345.51822	-0.85561616	-0.51675378
a	2.2764185	Node 163.26695	+0.48457186	-0.81989799
e	0.1018716	Incl. 5.93582	+0.18196454	-0.24644030
P	3.43	H 14.5	G 0.25	

Residuals in seconds of arc

771007	675	0.1-	0.3-	771017	675	0.3-	1.5-	890126 046	0.7-	0.1+
771011	675	0.7+	0.9+	771017	675	0.4-	1.3-	890127 046	2.7-	0.9+
771011	675	1.1+	0.1+	771021	675	0.9-	1.4+	890127 046	0.8-	1.1-
771012	675	0.2+	0.2-	771021	675	0.2-	0.8+	890128 046	3.1+	0.7+
771012	675	0.4+	0.1-	771022	675	0.0	1.9-	890128 046	3.0+	0.7+
771016	675	0.6-	1.7+	771022	675	0.4+	1.4-	890203 046	0.5-	0.6-
771016	675	0.4-	1.7+	890126	046	0.0	1.4-	890203 046	1.3-	0.9+

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NEW NAMES OF MINOR PLANETS.

(2463) Sterpin = 1934 FF
Discovered 1934 Mar. 10 by G. Van Biesbroeck at Williams Bay.
Name proposed by the discoverer’s daughter, Micheline Van Biesbroeck Wilson, in memory of her mother, Julia Sterpin Van Biesbroeck (1882-1968).

(2974) Holden = 1955 QK
Discovered 1955 Aug. 23 at the Goethe Link Observatory, Indiana University.
Named in memory of Edward S. Holden (1846-1914), first director of the Lick Observatory and founder of the Astronomical Society of the Pacific. Name proposed by F. K. Edmondson in the ASP’s centennial year and one year after the centennial of the Lick Observatory.

(3070) Aitken = 1949 GK
Discovered 1949 Apr. 4 at the Goethe Link Observatory, Indiana University.
Named in memory of Robert G. Aitken (1864-1952), fourth director of the Lick Observatory (1930-1935), and as associate director under W. W. Campbell he ran the Observatory when the latter was also president of the University of California (1923-1930). During his 40 years at Lick Aitken became the leading authority on double stars, his work culminating in tbe publication of his "New General Catalogue of Double Stars within 120 of the North Pole", published in two large volumes in 1932. His book "The Binary Stars" was published in 1918, and an updated second edition appeared in 1935. Name proposed by F. K. Edmondson.

(3211) Louispharailda = 1931 CE
Discovered 1931 Feb. 10 by G. Van Biesbroeck at Williams Bay.
Named in memory of the discoverer's parents, Louis Pierre Van Biesbroeck (1839-1919) and Pharailda de Colpaert Van Biesbroeck (1840-1920). Name proposed by Micheline Van Biesbroeck Wilson.

(3378) Susanvictoria = A922 WB
Discovered 1922 Nov. 25 by G. Van Biesbroeck at Williams Bay.
Named in honor of the discoverer's granddaughters, Susan Titus and Victoria Van Biesbroeck Streeter. Name proposed by Micheline Van Biesbroeck Wilson.

(3512) Eriepa = 1984 AC1
Discovered 1984 Jan. 8 by J. Wagner at the Anderson Mesa Station of the Lowell Observatory.
Named for the discoverer's home town of Erie, Pennsylvania.

(3765) Texereau = 1982 SU1
Discovered 1982 Sept. 16 by K. Tomita at Caussols.
Named in honor of Jean Texereau, leading figure in the world of astronomical optics. Among the fine telescopes he has constructed is the Caussols 0.9-m Schmidt with which this minor planet was discovered. Wide diffusion of his books and advice has greatly helped others, notably thousands of amateur astronomers, to build their own instruments.

(3797) Ching-Sung Yu = 1987 YL
Discovered 1987 Dec. 22 at the Oak Ridge Observatory.
Named in memory of Ching-Sung Yu (1897-1978), Chinese-American astrophysicist, whose spectrophotometric measurements of 91 stars at the Lick Observatory in the early 1920s represented a milestone in research on stellar energy distribution. After returning to China he established the Purple Mountain Observatory and served as its first director. He also developed the site of what is now the Yunnan Observatory, was director of the Academia Sinica's Institute of Astronomy and president of the Chinese Astronomical Society. After World War II Yu worked at the Harvard College Observatory and later became professor of astronomy and director of the Williams Observatory at Hood College in Frederick, Maryland.

(3822) Segovia = 1988 DP1
Discovered 1988 Feb. 21 by T. Seki at Geisei.
Named in memory of Andres Segovia (1893-1987), considered by many to be the most celebrated guitarist of all time. The discoverer heard Segovia perform in Japan in 1959, and this greatly inspired his own interest in playing the guitar.

(3851) Alhambra = 1986 UZ

Discovered 1986 Oct. 30 by T. Seki at Geisei.

Named for the famous palace of the Moorish kings at Granada. The great guitarist Segovia frequently included "Memory of Alhambra" in his performances.

(3875) Staehle = 1988 KE

Discovered 1988 May 17 by E. F. Helin at Palomar.

Named in honor of Robert L. Staehle, astronautical engineer, member of the technical staff of the Jet Propulsion Laboratory, and president and founder of the World Space Foundation. The Foundation, a non-profit corporation, promotes research and the exploration of space and provides funding from private sources. The discoverer wishes to acknowledge Rob Staehle for the role he and the Foundation have played in recognizing the importance of near-earth asteroids and sponsoring some of the research carried out by the Palomar Planet-Crossing Asteroid Survey. The NASA/JPL Asteroid Project has received valuable assistance and encouragement from Staehle and the Foundation since 1981.

(3876) Quaide = 1988 KJ

Discovered 1988 May 19 by E. F. Helin at Palomar.

Named in honor of William L. Quaide for his extraordinary record of scientific achievement in furthering the understanding of our solar system; his many years of service to NASA and the scientific community in support of solar system exploration; his dedication to his work, his personal and professional integrity, which have earned him the trust and respect of his colleagues and friends. Name proposed by the discoverer, following a suggestion by J. Rahe.

(3907) Kilmartin = A904 PC

Discovered 1904 Aug. 14 by M. Wolf at Heidelberg.

Named in honor of Pamela Margaret Kilmartin, co-director with her husband, Alan C. Gilmore, of the Comets and Minor Planets section of the Royal Astronomical Society of New Zealand. Originally employed as the librarian of the Carter Observatory in Wellington, she quickly became an astronomer in her own right and has been solely responsible for the measurement and reduction of the plates taken in the course of the astrometric programs in Wellington and more recently at the Mount John University Observatory. Name proposed by B. G. Marsden, who found the identifications involving this minor planet, and endorsed by A. C. Gilmore and F. M. Bateson.

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EPHEMERIDES.

Periodic Comet Parker-Hartley (1987 XXXVI) Elements MPC 14460

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989	04 04	10 24.46	+03 05.5	3.296	4.135	142.6	8.4	16.8
1989	04 14	10 21.99	+03 34.3					
1989	04 24	10 21.03	+03 55.3	3.562	4.185	122.2	11.7	17.0
1989	05 04	10 21.58	+04 07.9					
1989	05 14	10 23.57	+04 11.8	3.885	4.235	103.4	13.4	17.2
1989	05 24	10 26.87	+04 07.3					
1989	06 03	10 31.32	+03 54.8	4.230	4.284	86.2	13.7	17.5
1989	06 13	10 36.80	+03 34.8					
1989	06 23	10 43.14	+03 08.2	4.571	4.333	70.2	12.7	17.7
1989	07 03	10 50.21	+02 35.4					
1989	07 13	10 57.89	+01 57.3	4.884	4.381	55.0	11.0	17.9

1989 07 23	11 06.07	+01 14.3						
1989 08 02	11 14.64	+00 27.3	5.152	4.428	40.4	8.5	18.0	

Periodic Comet Shoemaker-Holt 2 (1989j) Elements MPC 14460

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 04 04	10 32.84	+32 11.5	2.248	2.993	130.2	14.8	14.0
1989 04 14	10 31.50	+31 38.6					
1989 04 24	10 32.39	+30 49.3	2.502	3.042	113.2	17.7	14.3
1989 05 04	10 35.34	+29 47.1					
1989 05 14	10 40.15	+28 35.1	2.794	3.093	97.5	18.9	14.6
1989 05 24	10 46.55	+27 15.5					
1989 06 03	10 54.26	+25 50.2	3.100	3.146	83.2	18.7	14.9
1989 06 13	11 03.07	+24 20.6					
1989 06 23	11 12.75	+22 47.9	3.403	3.200	70.0	17.4	15.2
1989 07 03	11 23.14	+21 12.9					
1989 07 13	11 34.10	+19 36.4	3.688	3.256	57.5	15.3	15.5
1989 07 23	11 45.50	+17 59.2					
1989 08 02	11 57.26	+16 21.9	3.944	3.313	45.5	12.6	15.7
1989 08 12	12 09.30	+14 45.1					
1989 08 22	12 21.54	+13 09.5	4.161	3.370	34.0	9.7	15.9

1989 FC a,e,i = 1.02, 0.36, 5 Elements MPC 14479

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 04 04	12 07.00	+16 03.7	0.076	1.070	156.0	22.3	16.5
1989 04 09	12 03.58	+15 24.5					
1989 04 14	12 02.65	+14 46.8	0.142	1.126	148.3	27.9	18.1
1989 04 19	12 03.14	+14 07.1					
1989 04 24	12 04.64	+13 24.7	0.212	1.177	140.6	32.8	19.2
1989 04 29	12 06.93	+12 39.3					
1989 05 04	12 09.91	+11 50.9	0.287	1.223	133.3	36.8	20.0
1989 05 09	12 13.54	+10 59.5					
1989 05 14	12 17.75	+10 05.5	0.366	1.264	126.6	40.0	20.7

1989 FB a,e,i = 1.04, 0.26, 15 Elements MPC 14479

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 04 04	13 11.92	+03 54.9	0.298	1.294	169.2	8.3	15.4
1989 04 09	12 50.92	+02 48.8					
1989 04 14	12 29.40	+01 30.2	0.287	1.279	162.2	13.9	15.5
1989 04 19	12 08.65	+00 02.4					
1989 04 24	11 49.71	-01 30.8	0.296	1.260	144.9	27.3	15.9
1989 04 29	11 33.28	-03 05.7					
1989 05 04	11 19.68	-04 40.0	0.321	1.236	129.1	39.3	16.4
1989 05 09	11 08.92	-06 12.9					
1989 05 14	11 00.81	-07 44.0	0.354	1.209	116.1	48.7	16.8
1989 05 19	10 55.02	-09 13.6					
1989 05 24	10 51.19	-10 42.0	0.388	1.177	105.4	56.0	17.1
1989 05 29	10 49.02	-12 09.7					
1989 06 03	10 48.23	-13 37.2	0.420	1.142	96.7	61.9	17.4
1989 06 08	10 48.59	-15 05.1					
1989 06 13	10 49.87	-16 33.7	0.445	1.103	89.2	67.0	17.6
1989 06 18	10 51.86	-18 03.0					
1989 06 23	10 54.38	-19 33.0	0.462	1.062	82.7	71.7	17.7

Comet Shoemaker (1989e) Elements MPC 14461

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 04 24	07 34.85	+58 05.3	2.780	2.709	75.5	21.1	14.0
1989 05 04	07 38.21	+58 50.4					
1989 05 14	07 45.12	+59 32.8	3.087	2.763	62.1	18.9	14.4
1989 05 24	07 55.12	+60 14.6					

1989 06 03	08 07.88	+60 56.7	3.333	2.831	52.4	16.5	14.6
1989 06 13	08 23.22	+61 39.7					
1989 06 23	08 40.99	+62 23.4	3.509	2.913	47.0	14.8	14.9
1989 07 03	09 01.18	+63 07.6					
1989 07 13	09 23.83	+63 51.8	3.617	3.005	46.2	14.1	15.1
1989 07 23	09 48.99	+64 34.9					
1989 08 02	10 16.81	+65 15.6	3.667	3.107	49.6	14.4	15.2
1989 08 12	10 47.37	+65 52.2					
1989 08 22	11 20.72	+66 22.5	3.674	3.218	55.9	15.1	15.4
1989 09 01	11 56.77	+66 43.7					
1989 09 11	12 35.22	+66 53.1	3.661	3.337	63.6	15.7	15.6
1989 09 21	13 15.47	+66 47.7					
1989 10 01	13 56.73	+66 25.6	3.653	3.461	71.2	15.9	15.7
1989 10 11	14 37.99	+65 45.9					
1989 10 21	15 18.24	+64 49.6	3.673	3.591	77.5	15.7	15.9
1989 10 31	15 56.69	+63 39.1					
1989 11 10	16 32.78	+62 18.3	3.742	3.725	81.4	15.2	16.1
1989 11 20	17 06.22	+60 52.0					
1989 11 30	17 36.98	+59 24.7	3.868	3.863	82.4	14.7	16.3
1989 12 10	18 05.14	+58 01.2					
1989 12 20	18 30.85	+56 45.0	4.044	4.003	80.6	14.0	16.6
1989 12 30	18 54.33	+55 38.9					
1990 01 09	19 15.76	+54 45.1	4.255	4.146	77.0	13.4	16.8

Comet Yanaka (1988r) Elements MPC 14322

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 04 24	07 35.13	-18 55.2	2.350	2.513	87.4	23.6	18.4
1989 05 04	07 43.40	-18 20.9					
1989 05 14	07 52.34	-18 02.5	2.854	2.787	76.0	20.6	19.2
1989 05 24	08 01.72	-17 58.1					
1989 06 03	08 11.37	-18 06.2	3.332	3.050	65.3	17.6	20.0
1989 06 13	08 21.19	-18 25.9					
1989 06 23	08 31.04	-18 56.2	3.772	3.304	55.5	14.7	20.6

Periodic Comet Helin-Roman-Crockett (1989b) Elements MPC 14460

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 04 24	08 14.50	+23 03.4	3.455	3.555	87.4	16.4	15.2
1989 05 04	08 22.07	+22 36.3					
1989 05 14	08 30.79	+22 04.2	3.751	3.570	72.0	15.6	15.4
1989 05 24	08 40.46	+21 27.1					
1989 06 03	08 50.89	+20 45.4	4.025	3.586	57.6	13.8	15.6
1989 06 13	09 01.94	+19 59.1					
1989 06 23	09 13.46	+19 08.6	4.263	3.603	44.1	11.3	15.7
1989 07 03	09 25.34	+18 14.0					
1989 07 13	09 37.49	+17 15.8	4.453	3.621	31.1	8.3	15.8

Comet Shoemaker (1989f) Elements MPC 14460

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 04 24	09 26.25	+44 22.1	2.675	2.943	95.3	19.9	18.3
1989 05 04	09 37.59	+42 31.2					
1989 05 14	09 49.59	+40 38.0	3.037	3.088	83.3	19.0	18.8
1989 05 24	10 02.03	+38 43.7					
1989 06 03	10 14.72	+36 49.3	3.408	3.238	71.8	17.3	19.3
1989 06 13	10 27.56	+34 55.5					
1989 06 23	10 40.42	+33 02.9	3.775	3.392	60.5	15.1	19.7
1989 07 03	10 53.23	+31 12.1					
1989 07 13	11 05.97	+29 23.6	4.125	3.550	49.5	12.6	20.1
1989 07 23	11 18.57	+27 38.0					
1989 08 02	11 31.02	+25 55.5	4.445	3.710	38.9	9.9	20.4

1989 DA a,e,i = 2.17, 0.54, 6 Elements MPC 14479

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	04 24	11 58.71	-14 13.3	0.403	1.368	149.5	21.9	18.6
1989	04 29	12 03.85	-14 31.7					
1989	05 04	12 09.15	-14 47.1	0.504	1.443	143.2	24.8	19.3
1989	05 09	12 14.68	-15 01.2					
1989	05 14	12 20.44	-15 15.1	0.616	1.519	136.8	27.1	19.9
1989	05 19	12 26.42	-15 29.4					
1989	05 24	12 32.60	-15 44.7	0.739	1.595	130.5	28.9	20.5
1989	05 29	12 38.98	-16 00.9					
1989	06 03	12 45.53	-16 18.5	0.873	1.670	124.4	30.1	21.0

Comet Yanaka (1989a) Elements MPC 14460

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989	04 24	15 05.69	+49 17.7	2.221	2.819	116.6	18.6	12.7
1989	05 04	14 58.05	+49 59.0					
1989	05 14	14 50.80	+49 59.0	2.469	2.988	111.3	18.4	13.2
1989	05 24	14 44.84	+49 23.9					
1989	06 03	14 40.72	+48 20.4	2.750	3.159	104.5	18.1	13.7
1989	06 13	14 38.68	+46 54.9					
1989	06 23	14 38.74	+45 13.8	3.054	3.334	97.0	17.6	14.2
1989	07 03	14 40.73	+43 22.0					
1989	07 13	14 44.47	+41 23.9	3.375	3.509	89.1	16.8	14.6
1989	07 23	14 49.70	+39 22.8					
1989	08 02	14 56.20	+37 21.7	3.703	3.686	81.1	15.8	15.0
1989	08 12	15 03.78	+35 22.5					
1989	08 22	15 12.26	+33 27.3	4.033	3.862	73.1	14.5	15.4
1989	09 01	15 21.47	+31 37.5					
1989	09 11	15 31.31	+29 54.2	4.356	4.039	65.2	13.1	15.8
1989	09 21	15 41.64	+28 18.5					
1989	10 01	15 52.36	+26 51.2	4.662	4.215	57.8	11.6	16.1
1989	10 11	16 03.38	+25 33.0					
1989	10 21	16 14.60	+24 24.5	4.944	4.390	51.3	10.2	16.4
1989	10 31	16 25.96	+23 26.2					
1989	11 10	16 37.35	+22 38.4	5.191	4.565	46.4	9.0	16.7
1989	11 20	16 48.70	+22 01.3					
1989	11 30	16 59.92	+21 35.2	5.397	4.739	44.1	8.3	16.9
1989	12 10	17 10.93	+21 20.0					
1989	12 20	17 21.62	+21 15.7	5.555	4.911	45.2	8.2	17.1

1987 QA a,e,i = 1.65, 0.47, 41 Elements MPC 12961

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1989	04 24	21 22.97	+16 27.3	2.409	2.233	-0.81	+4.2	20.2
1989	05 04	21 35.66	+18 08.0					
1989	05 14	21 47.41	+19 50.3	2.142	2.168	-0.97	+5.0	19.9
1989	05 24	21 58.08	+21 32.3					
1989	06 03	22 07.47	+23 12.1	1.854	2.092	-1.21	+6.0	19.6
1989	06 13	22 15.29	+24 46.5					
1989	06 23	22 21.21	+26 11.7	1.554	2.006	-1.58	+6.9	19.1
1989	07 03	22 24.79	+27 22.1					
1989	07 13	22 25.46	+28 09.1	1.256	1.909	-2.13	+7.2	18.5
1989	07 23	22 22.64	+28 20.3					
1989	08 02	22 15.69	+27 37.4	0.977	1.802	-2.86	+6.5	17.8
1989	08 12	22 04.32	+25 34.0					
1989	08 22	21 48.89	+21 38.8	0.748	1.684	-3.47	+5.6	16.9
1989	09 01	21 30.76	+15 24.3					
1989	09 11	21 12.43	+06 50.5	0.612	1.557	-3.33	+14.7	16.3
1989	09 21	20 56.73	-03 12.6					
1989	10 01	20 45.89	-13 22.3	0.602	1.421	-3.05	+38.6	16.5

1989 10 11	20 41.12	-22 30.1						
1989 10 21	20 42.55	-30 10.8	0.679	1.280	-3.46	+55.5	16.9	
1989 10 31	20 49.81	-36 30.1						
1989 11 10	21 02.35	-41 44.7	0.771	1.140	-3.85	+62.8	17.1	
1989 11 20	21 19.55	-46 12.1						
1989 11 30	21 40.93	-50 05.0	0.823	1.011	-3.80	+68.3	17.2	
1989 12 10	22 06.19	-53 33.2						
1989 12 20	22 35.05	-56 42.6	0.807	0.915	-2.97	+76.1	17.1	

Periodic Comet Brorsen-Metcalf Elements MPC 11523

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1989 04 24	22 01.43	-12 58.4	2.993	2.731	-0.61	-6.1	21.7
1989 04 29	22 07.48	-12 13.6					
1989 05 04	22 13.54	-11 26.9	2.736	2.603	-0.72	-7.2	21.3
1989 05 09	22 19.63	-10 38.2					
1989 05 14	22 25.75	-09 47.2	2.474	2.471	-0.86	-8.5	20.9
1989 05 19	22 31.90	-08 53.5					
1989 05 24	22 38.11	-07 56.8	2.212	2.337	-1.04	-10.3	20.4
1989 05 29	22 44.40	-06 56.7					
1989 06 03	22 50.78	-05 52.5	1.951	2.199	-1.26	-12.5	19.9
1989 06 08	22 57.28	-04 43.5					
1989 06 13	23 03.95	-03 28.8	1.693	2.058	-1.57	-15.5	19.3
1989 06 18	23 10.83	-02 07.0					
1989 06 23	23 18.00	-00 36.7	1.441	1.913	-1.99	-19.7	18.6
1989 06 28	23 25.58	+01 04.5					
1989 07 03	23 33.68	+02 59.1	1.199	1.764	-2.60	-25.6	17.9
1989 07 08	23 42.51	+05 11.2					
1989 07 13	23 52.38	+07 45.9	0.968	1.611	-3.52	-34.3	17.0
1989 07 18	00 03.75	+10 50.5					
1989 07 23	00 17.34	+14 35.2	0.756	1.453	-5.01	-47.1	16.0
1989 07 28	00 34.34	+19 13.4					
1989 08 02	00 56.81	+25 01.1	0.571	1.290	-7.59	-62.6	14.9
1989 08 07	01 28.45	+32 11.1					
1989 08 12	02 16.04	+40 30.9	0.438	1.122	-12.44	-53.4	13.7
1989 08 17	03 29.73	+48 30.6					
1989 08 22	05 12.19	+52 49.6	0.401	0.951	-23.24	+55.3	12.8
1989 08 27	06 55.92	+51 11.6					
1989 09 01	08 11.78	+45 40.9	0.482	0.780	-16.50	+90.2	12.3
1989 09 06	09 01.27	+39 12.7					
1989 09 11	09 34.90	+33 01.4	0.646	0.621	-6.15	+60.2	12.0

Periodic Comet Schwassmann-Wachmann 1 Elements MPC 11510

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 04 24	23 31.87	+02 18.2	6.525	5.779	39.0	6.3	(19.2)
1989 05 04	23 38.09	+03 09.4					
1989 05 14	23 43.81	+03 58.5	6.298	5.777	54.9	8.2	(19.1)
1989 05 24	23 48.95	+04 45.1					
1989 06 03	23 53.43	+05 28.6	6.021	5.776	71.3	9.6	(19.0)
1989 06 13	23 57.16	+06 08.3					
1989 06 23	00 00.05	+06 43.5	5.715	5.775	88.3	10.1	(18.9)
1989 07 03	00 02.02	+07 13.8					
1989 07 13	00 03.02	+07 38.3	5.408	5.774	106.2	9.7	(18.8)
1989 07 23	00 02.99	+07 56.5					
1989 08 02	00 01.92	+08 07.9	5.129	5.773	125.1	8.3	(18.7)
1989 08 12	23 59.86	+08 12.2					
1989 08 22	23 56.89	+08 09.2	4.915	5.773	145.0	5.8	(18.6)
1989 09 01	23 53.17	+07 59.3					
1989 09 11	23 48.93	+07 43.3	4.795	5.772	164.8	2.6	(18.5)

1989 09 21	23 44.43	+07 22.4						
1989 10 01	23 39.96	+06 58.2	4.790	5.772	167.7	2.1	(18.5)	
1989 10 11	23 35.84	+06 32.8						
1989 10 21	23 32.34	+06 08.0	4.903	5.772	148.1	5.2	(18.6)	
1989 10 31	23 29.66	+05 45.9						
1989 11 10	23 27.98	+05 28.0	5.117	5.772	127.4	7.8	(18.7)	
1989 11 20	23 27.37	+05 15.5						
1989 11 30	23 27.87	+05 09.3	5.401	5.772	107.3	9.4	(18.8)	
1989 12 10	23 29.47	+05 09.8						
1989 12 20	23 32.08	+05 17.1	5.719	5.772	88.2	9.8	(18.9)	
1989 12 30	23 35.65	+05 31.1						
1990 01 09	23 40.06	+05 51.5	6.034	5.773	70.0	9.2	(19.0)	
1990 01 19	23 45.22	+06 17.7						
1990 01 29	23 51.02	+06 49.2	6.316	5.774	52.8	7.8	(19.1)	
1990 02 08	23 57.36	+07 25.5						
1990 02 18	00 04.14	+08 05.8	6.541	5.774	36.3	5.8	(19.2)	

Periodic Comet Gehrels 2 Elements MPC 12124

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 04	24	23 36.91	+02 06.0	3.427	2.706	37.9	13.2	20.0
1989 05	04	23 52.72	+03 45.2					
1989 05	14	00 08.44	+05 23.8	3.198	2.643	48.7	16.7	19.7
1989 05	24	00 24.03	+07 00.8					
1989 06	03	00 39.45	+08 35.3	2.946	2.584	59.5	19.8	19.5
1989 06	13	00 54.65	+10 06.0					
1989 06	23	01 09.52	+11 31.9	2.679	2.530	70.6	22.3	19.2
1989 07	03	01 23.98	+12 51.8					
1989 07	13	01 37.85	+14 04.6	2.405	2.482	82.3	23.9	18.9
1989 07	23	01 50.98	+15 09.0					
1989 08	02	02 03.14	+16 03.8	2.134	2.440	94.9	24.5	18.5
1989 08	12	02 14.04	+16 47.5					
1989 08	22	02 23.38	+17 18.8	1.877	2.406	109.1	23.4	18.2
1989 09	01	02 30.83	+17 36.3					
1989 09	11	02 36.03	+17 38.5	1.649	2.379	125.5	20.2	17.9
1989 09	21	02 38.73	+17 24.4					
1989 10	01	02 38.79	+16 53.4	1.472	2.360	144.6	14.2	17.6
1989 10	11	02 36.35	+16 06.3					
1989 10	21	02 31.90	+15 05.8	1.371	2.350	166.6	5.6	17.4
1989 10	31	02 26.25	+13 57.2					
1989 11	10	02 20.50	+12 47.9	1.367	2.349	170.0	4.2	17.4
1989 11	20	02 15.73	+11 45.7					
1989 11	30	02 12.79	+10 57.0	1.465	2.356	147.4	13.0	17.6
1989 12	10	02 12.24	+10 26.0					
1989 12	20	02 14.28	+10 13.6	1.644	2.372	127.2	19.3	17.8
1989 12	30	02 18.84	+10 18.9					
1990 01	09	02 25.75	+10 39.6	1.879	2.397	109.7	22.7	18.2
1990 01	19	02 34.71	+11 12.5					
1990 01	29	02 45.47	+11 54.5	2.147	2.429	94.3	23.9	18.5
1990 02	08	02 57.76	+12 42.9					
1990 02	18	03 11.33	+13 34.6	2.428	2.468	80.7	23.3	18.8
1990 02	28	03 25.99	+14 27.4					
1990 03	10	03 41.56	+15 19.2	2.709	2.514	68.1	21.5	19.2
1990 03	20	03 57.86	+16 08.1					
1990 03	30	04 14.77	+16 52.7	2.979	2.566	56.5	18.9	19.5
1990 04	09	04 32.16	+17 31.6					
1990 04	19	04 49.90	+18 04.0	3.230	2.623	45.4	15.8	19.7
1990 04	29	05 07.89	+18 29.1					
1990 05	09	05 26.02	+18 46.2	3.454	2.685	34.6	12.3	20.0

Periodic Comet du Toit Elements MPC 11519

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1989 05 14	01 20.86	+04 16.2	2.939	2.157	-0.51	-7.8	21.7
1989 05 24	01 36.23	+06 25.3					
1989 06 03	01 50.46	+08 23.5	2.969	2.337	-0.41	-6.8	22.0
1989 06 13	02 03.49	+10 11.3					
1989 06 23	02 15.26	+11 49.4	2.949	2.516	-0.33	-6.1	22.4
1989 07 03	02 25.70	+13 18.3					
1989 07 13	02 34.65	+14 38.4	2.882	2.693	-0.28	-5.5	22.6
1989 07 23	02 41.97	+15 50.4					
1989 08 02	02 47.48	+16 54.4	2.780	2.868	-0.26	-5.2	22.8

Periodic Comet Kearns-Kwee Elements MPC 12123

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 06 03	22 58.15	-03 57.7	4.122	4.204	87.6	14.0	20.8
1989 06 13	23 01.83	-03 18.0					
1989 06 23	23 04.30	-02 44.4	3.742	4.121	104.8	13.8	20.5
1989 07 03	23 05.42	-02 17.6					
1989 07 13	23 05.07	-01 58.9	3.386	4.036	123.4	12.1	20.2
1989 07 23	23 03.17	-01 48.8					
1989 08 02	22 59.72	-01 47.8	3.088	3.950	143.5	8.8	19.9
1989 08 12	22 54.84	-01 56.0					
1989 08 22	22 48.76	-02 12.6	2.877	3.862	164.8	3.9	19.7
1989 09 01	22 41.89	-02 35.9					
1989 09 11	22 34.73	-03 03.6	2.779	3.774	169.9	2.7	19.5
1989 09 21	22 27.88	-03 32.6					
1989 10 01	22 21.89	-03 59.9	2.796	3.684	148.1	8.3	19.4
1989 10 11	22 17.25	-04 22.5					
1989 10 21	22 14.30	-04 38.2	2.911	3.594	126.6	12.9	19.4
1989 10 31	22 13.21	-04 45.5					
1989 11 10	22 14.06	-04 43.2	3.089	3.503	106.6	15.7	19.4
1989 11 20	22 16.76	-04 31.1					
1989 11 30	22 21.21	-04 09.1	3.293	3.411	88.4	16.8	19.4
1989 12 10	22 27.26	-03 37.2					
1989 12 20	22 34.71	-02 56.0	3.492	3.319	71.8	16.4	19.4
1989 12 30	22 43.43	-02 05.8					
1990 01 09	22 53.24	-01 07.2	3.664	3.227	56.5	14.7	19.4
1990 01 19	23 04.01	-00 00.9					
1990 01 29	23 15.62	+01 12.6	3.792	3.135	42.3	12.2	19.4

1982 TA a,e,i = 2.30, 0.77, 12 Elements MPC 10160

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 06 03	00 20.36	-03 34.4	2.829	2.636	68.7	21.0	20.3
1989 06 08	00 25.80	-02 59.0					
1989 06 13	00 31.15	-02 24.3	2.622	2.560	75.3	22.6	20.1
1989 06 18	00 36.40	-01 50.3					
1989 06 23	00 41.55	-01 17.0	2.409	2.480	82.0	23.9	19.9
1989 06 28	00 46.58	-00 44.6					
1989 07 03	00 51.46	-00 13.2	2.194	2.398	88.8	25.1	19.6
1989 07 08	00 56.18	+00 17.3					
1989 07 13	01 00.71	+00 46.6	1.978	2.312	95.7	25.9	19.3
1989 07 18	01 05.02	+01 14.8					
1989 07 23	01 09.09	+01 41.8	1.763	2.224	103.0	26.4	19.0
1989 07 28	01 12.87	+02 07.6					
1989 08 02	01 16.31	+02 31.9	1.552	2.131	110.5	26.5	18.7
1989 08 07	01 19.35	+02 54.7					
1989 08 12	01 21.92	+03 16.0	1.347	2.035	118.5	26.0	18.2
1989 08 17	01 23.95	+03 35.6					
1989 08 22	01 25.35	+03 53.7	1.150	1.935	127.0	24.7	17.7

1989 08 27	01 25.97	+04 09.9						
1989 09 01	01 25.67	+04 24.2	0.963	1.831	136.4	22.3	17.2	
1989 09 06	01 24.25	+04 36.5						
1989 09 11	01 21.49	+04 46.9	0.789	1.723	146.9	18.6	16.5	
1989 09 16	01 17.10	+04 55.3						
1989 09 21	01 10.69	+05 01.7	0.631	1.610	159.1	12.9	15.7	
1989 09 26	01 01.79	+05 05.9						
1989 10 01	00 49.78	+05 07.8	0.492	1.492	173.8	4.2	14.7	
1989 10 06	00 33.92	+05 07.5						
1989 10 11	00 13.36	+05 04.7	0.377	1.369	167.5	9.1	14.1	
1989 10 16	23 47.12	+04 59.1						
1989 10 21	23 14.30	+04 49.4	0.290	1.241	143.4	28.6	13.9	
1989 10 26	22 34.49	+04 34.2						
1989 10 31	21 48.39	+04 12.0	0.240	1.108	112.8	55.7	13.9	
1989 11 05	20 58.04	+03 41.7						
1989 11 10	20 06.45	+03 02.9	0.229	0.971	78.6	88.1	14.6	
1989 11 15	19 16.54	+02 14.6						
1989 11 20	18 30.48	+01 14.9	0.258	0.833	46.8	120.1	16.4	

Periodic Comet Smirnova-Chernykh Elements NK 520

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 06 03	01 59.00	+07 05.4	5.340	4.635	41.9	8.4	20.3	
1989 06 13	02 07.06	+07 46.5						
1989 06 23	02 14.63	+08 23.1	5.098	4.620	56.8	10.6	20.2	
1989 07 03	02 21.62	+08 54.8						
1989 07 13	02 27.89	+09 21.4	4.810	4.606	72.4	12.1	20.0	
1989 07 23	02 33.33	+09 42.5						
1989 08 02	02 37.79	+09 57.8	4.496	4.590	88.9	12.8	19.9	
1989 08 12	02 41.13	+10 07.0						
1989 08 22	02 43.23	+10 10.1	4.180	4.574	106.7	12.2	19.7	
1989 09 01	02 43.97	+10 06.9						
1989 09 11	02 43.28	+09 57.7	3.893	4.558	126.0	10.3	19.5	
1989 09 21	02 41.14	+09 42.9						
1989 10 01	02 37.64	+09 23.2	3.669	4.540	146.8	6.9	19.4	
1989 10 11	02 32.95	+08 59.9						
1989 10 21	02 27.38	+08 34.7	3.543	4.523	168.2	2.6	19.3	
1989 10 31	02 21.32	+08 09.7						
1989 11 10	02 15.24	+07 47.2	3.537	4.504	166.1	3.0	19.3	
1989 11 20	02 09.62	+07 29.3						
1989 11 30	02 04.84	+07 17.9	3.649	4.485	144.1	7.4	19.3	
1989 12 10	02 01.25	+07 14.1						
1989 12 20	01 59.05	+07 18.7	3.858	4.466	122.6	10.7	19.4	
1989 12 30	01 58.33	+07 31.6						
1990 01 09	01 59.12	+07 52.4	4.128	4.446	102.5	12.5	19.6	
1990 01 19	02 01.34	+08 20.3						
1990 01 29	02 04.90	+08 54.4	4.420	4.425	83.9	12.8	19.7	
1990 02 08	02 09.68	+09 33.7						
1990 02 18	02 15.55	+10 17.2	4.702	4.404	66.6	11.9	19.8	
1990 02 28	02 22.39	+11 03.8						
1990 03 10	02 30.07	+11 52.7	4.948	4.383	50.5	10.1	19.9	
1990 03 20	02 38.47	+12 42.9						
1990 03 30	02 47.51	+13 33.6	5.139	4.361	35.2	7.6	20.0	

Periodic Comet Bradfield 2 (1989c) Elements MPC 14322

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 06 03	02 44.91	-06 42.8	3.767	3.069	40.6	12.4	18.8	
1989 06 13	02 51.21	-06 11.7						
1989 06 23	02 56.49	-05 52.4	3.798	3.311	54.4	14.4	19.1	
1989 07 03	03 00.65	-05 44.5						

1989 07 13	03 03.55	-05 47.6	3.759	3.544	70.1	15.6	19.4
1989 07 23	03 05.03	-06 01.3					
1989 08 02	03 04.96	-06 25.0	3.674	3.770	87.6	15.6	19.6

Periodic Comet Encke — Elements MPC 12577

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 06 23	23 55.40	+02 07.3	3.848	4.000	91.2	14.7	20.9
1989 07 03	23 56.16	+02 26.1					
1989 07 13	23 55.34	+02 35.7	3.499	3.965	110.1	13.9	20.6
1989 07 23	23 52.78	+02 35.0					
1989 08 02	23 48.39	+02 23.0	3.184	3.922	130.8	11.3	20.3
1989 08 12	23 42.15	+01 59.1					
1989 08 22	23 34.22	+01 23.6	2.943	3.874	153.4	6.7	20.0
1989 09 01	23 24.88	+00 37.8					
1989 09 11	23 14.67	-00 15.8	2.814	3.818	175.4	1.2	19.7
1989 09 21	23 04.22	-01 13.3					
1989 10 01	22 54.25	-02 10.6	2.817	3.756	156.4	6.1	19.8
1989 10 11	22 45.41	-03 03.3					
1989 10 21	22 38.20	-03 48.1	2.941	3.687	132.5	11.5	20.0
1989 10 31	22 32.94	-04 22.8					
1989 11 10	22 29.75	-04 46.2	3.146	3.611	110.3	14.9	20.2
1989 11 20	22 28.61	-04 57.9					
1989 11 30	22 29.40	-04 58.3	3.386	3.527	90.0	16.2	20.4
1989 12 10	22 31.95	-04 47.9					
1989 12 20	22 36.05	-04 27.5	3.618	3.435	71.5	15.8	20.4

Periodic Comet d’Arrest (1987k) — Elements MPC 11501

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 06 23	03 55.64	+06 07.0	2.744	2.004	35.4	17.1	20.7
1989 07 03	04 15.31	+06 32.3					
1989 07 13	04 33.71	+06 45.1	2.758	2.152	44.4	19.3	20.9
1989 07 23	04 50.78	+06 46.3					
1989 08 02	05 06.47	+06 36.6	2.733	2.300	54.7	21.1	21.1
1989 08 12	05 20.66	+06 16.9					
1989 08 22	05 33.24	+05 48.3	2.666	2.446	66.5	22.3	21.2
1989 09 01	05 44.09	+05 11.8					
1989 09 11	05 53.04	+04 28.8	2.564	2.589	80.1	22.5	21.3
1989 09 21	05 59.90	+03 40.9					
1989 10 01	06 04.50	+02 49.8	2.441	2.728	95.7	21.4	21.3
1989 10 11	06 06.64	+01 57.8					
1989 10 21	06 06.21	+01 07.6	2.321	2.864	113.3	18.6	21.2
1989 10 31	06 03.16	+00 22.5					
1989 11 10	05 57.61	-00 13.8	2.236	2.997	132.6	14.1	21.1
1989 11 20	05 49.93	-00 37.8					
1989 11 30	05 40.68	-00 46.4	2.228	3.125	150.5	8.9	21.0
1989 12 10	05 30.67	-00 37.8					
1989 12 20	05 20.80	-00 12.2	2.329	3.249	155.4	7.2	21.1
1989 12 30	05 11.89	+00 28.6					
1990 01 09	05 04.59	+01 21.5	2.543	3.369	141.5	10.5	21.5
1990 01 19	04 59.30	+02 22.8					
1990 01 29	04 56.16	+03 29.0	2.853	3.486	122.7	13.8	21.9

1986 RT5 — a,e,i = 2.76, 0.12, 5 — Elements MPC 14476

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 04 04	12 56.45	-13 16.4	2.082	3.076	172.0	2.6	17.3
1989 04 14	12 48.19	-12 25.4					
1989 04 24	12 40.60	-11 31.7	2.105	3.067	159.6	6.6	17.5
1989 05 04	12 34.37	-10 40.6					
1989 05 14	12 30.02	-09 57.1	2.232	3.057	137.8	12.8	17.8

1985 XB a,e,i = 1.97, 0.22, 29 Elements MPC 14475

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	04 04	15 13.23	+34 18.3	0.856	1.669	127.9	28.2	16.4
1989	04 14	14 56.24	+33 14.0					
1989	04 24	14 37.01	+30 59.3	0.848	1.718	135.7	24.1	16.3
1989	05 04	14 18.41	+27 35.6					
1989	05 14	14 02.91	+23 18.0	0.912	1.771	134.1	24.2	16.5
1989	05 24	13 51.84	+18 30.3					
1989	06 03	13 45.41	+13 35.0	1.055	1.827	124.0	27.4	17.0
1989	06 13	13 43.28	+08 47.5					
1989	06 23	13 44.83	+04 16.6	1.261	1.883	111.1	30.2	17.5

1982 SU a,e,i = 1.87, 0.08, 24 Elements MPC 14473

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	04 04	15 24.23	+03 21.6	0.910	1.798	140.6	20.7	16.0
1989	04 14	15 20.55	+07 55.3					
1989	04 24	15 13.62	+12 12.6	0.876	1.817	149.8	16.2	15.8
1989	05 04	15 04.66	+15 47.9					
1989	05 14	14 55.35	+18 23.0	0.929	1.837	142.7	19.5	16.0
1989	05 24	14 47.34	+19 52.0					
1989	06 03	14 41.80	+20 20.2	1.049	1.858	128.4	25.3	16.5
1989	06 13	14 39.36	+19 57.8					
1989	06 23	14 40.18	+18 57.1	1.211	1.878	114.6	29.5	16.9

1977 DT1 a,e,i = 3.11, 0.06, 24 Elements MPC 14471

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	04 04	15 36.20	+12 42.1	2.505	3.289	135.0	12.4	16.7
1989	04 14	15 32.11	+14 07.5					
1989	04 24	15 26.38	+15 21.0	2.414	3.292	145.4	10.0	16.6
1989	05 04	15 19.51	+16 17.0					
1989	05 14	15 12.15	+16 50.8	2.417	3.294	144.7	10.2	16.6
1989	05 24	15 05.03	+17 00.3					
1989	06 03	14 58.77	+16 45.7	2.512	3.295	133.6	12.9	16.8
1989	06 13	14 53.90	+16 08.9					
1989	06 23	14 50.74	+15 13.5	2.682	3.296	118.9	15.7	17.0

1985 QO6 a,e,i = 2.70, 0.08, 5 Elements MPC 14474

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 04.90	-16 18.3	1.697	2.491	131.8	17.7	16.4
1989	06 13	20 02.92	-16 27.7					
1989	06 23	19 58.30	-16 48.3	1.543	2.489	152.5	10.9	16.0
1989	07 03	19 51.43	-17 19.0					
1989	07 13	19 43.06	-17 56.8	1.475	2.488	174.5	2.3	15.5
1989	07 23	19 34.25	-18 37.9					
1989	08 02	19 26.13	-19 18.7	1.508	2.489	161.0	7.6	15.9
1989	08 12	19 19.74	-19 56.0					
1989	08 22	19 15.82	-20 27.8	1.636	2.492	139.4	15.3	16.3

1988 DO a,e,i = 2.31, 0.14, 9 Elements MPC 14355

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 24.66	-22 05.3	1.843	2.600	128.6	17.7	18.7
1989	06 13	20 21.16	-21 56.6					
1989	06 23	20 14.79	-21 53.1	1.681	2.611	149.9	11.3	18.3
1989	07 03	20 05.93	-21 52.6					
1989	07 13	19 55.33	-21 52.2	1.606	2.619	173.4	2.6	17.9
1989	07 23	19 44.14	-21 49.3					
1989	08 02	19 33.54	-21 42.4	1.639	2.624	162.5	6.7	18.1
1989	08 12	19 24.67	-21 31.1					
1989	08 22	19 18.31	-21 16.1	1.772	2.627	139.9	14.4	18.6

1983 WH a,e,i = 2.28, 0.08, 5 Elements MPC 14348

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 20.29	-14 54.7	1.709	2.465	127.9	19.0	17.5
1989	06 13	20 17.88	-14 32.2					
1989	06 23	20 12.61	-14 19.5	1.537	2.461	148.4	12.5	17.0
1989	07 03	20 04.80	-14 16.9					
1989	07 13	19 55.15	-14 23.4	1.448	2.455	169.9	4.2	16.6
1989	07 23	19 44.73	-14 36.8					
1989	08 02	19 34.75	-14 54.7	1.460	2.447	162.6	7.1	16.7
1989	08 12	19 26.40	-15 14.5					
1989	08 22	19 20.54	-15 33.9	1.570	2.438	140.7	15.2	17.2

1986 QX1 a,e,i = 2.17, 0.10, 3 Elements MPC 12960

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 16.91	-25 15.0	1.138	1.959	130.9	23.0	16.7
1989	06 13	20 17.27	-25 39.8					
1989	06 23	20 13.75	-26 13.2	1.008	1.958	150.6	14.8	16.2
1989	07 03	20 06.61	-26 50.4					
1989	07 13	19 56.82	-27 24.3	0.949	1.960	171.3	4.5	15.7
1989	07 23	19 45.99	-27 47.8					
1989	08 02	19 35.96	-27 56.5	0.978	1.965	161.0	9.7	16.0
1989	08 12	19 28.43	-27 49.8					
1989	08 22	19 24.47	-27 30.3	1.088	1.973	140.1	19.2	16.5

(4047) 1964 TT2 a,e,i = 2.62, 0.21, 3 Elements MPC 14463

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 13.35	-24 23.7	1.463	2.266	131.6	19.6	16.6
1989	06 13	20 13.45	-24 45.7					
1989	06 23	20 10.40	-25 15.8	1.283	2.229	151.3	12.7	16.0
1989	07 03	20 04.36	-25 50.7					
1989	07 13	19 56.00	-26 25.3	1.183	2.194	172.0	3.7	15.5
1989	07 23	19 46.52	-26 53.7					
1989	08 02	19 37.38	-27 11.4	1.176	2.163	161.6	8.5	15.6
1989	08 12	19 30.05	-27 16.4					
1989	08 22	19 25.65	-27 09.2	1.256	2.136	140.4	17.6	16.1

(3870) Mayre a,e,i = 2.62, 0.16, 12 Elements MPC 13453

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 13.70	-00 55.3	1.474	2.209	124.2	22.3	15.7
1989	06 13	20 13.27	+00 17.5					
1989	06 23	20 10.04	+01 11.3	1.339	2.221	140.7	16.8	15.4
1989	07 03	20 04.36	+01 41.0					
1989	07 13	19 56.94	+01 43.0	1.272	2.236	155.2	11.0	15.1
1989	07 23	19 48.81	+01 16.9					
1989	08 02	19 41.13	+00 25.8	1.291	2.255	155.6	10.7	15.1
1989	08 12	19 35.02	-00 44.2					
1989	08 22	19 31.29	-02 05.0	1.397	2.276	141.4	16.1	15.5

1979 YO a,e,i = 2.40, 0.07, 8 Elements MPC 12941

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 16.81	-13 55.0	1.451	2.228	128.4	20.9	16.5
1989	06 13	20 16.40	-14 15.0					
1989	06 23	20 12.96	-14 52.2	1.298	2.228	148.5	13.8	16.0
1989	07 03	20 06.74	-15 45.7					
1989	07 13	19 58.45	-16 52.0	1.221	2.231	171.0	4.1	15.5
1989	07 23	19 49.21	-18 05.1					
1989	08 02	19 40.33	-19 18.3	1.240	2.234	164.3	7.0	15.7
1989	08 12	19 33.15	-20 25.6					
1989	08 22	19 28.62	-21 23.1	1.353	2.240	142.2	16.1	16.2

(3837) Carr a,e,i = 2.42, 0.07, 5 Elements MPC 13168

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 19.94	-13 48.2	1.484	2.252	127.6	20.9	16.5
1989	06 13	20 18.98	-13 14.6					
1989	06 23	20 15.00	-12 52.6	1.332	2.255	147.3	14.1	16.1
1989	07 03	20 08.30	-12 43.0					
1989	07 13	19 59.62	-12 45.8	1.256	2.260	167.9	5.4	15.7
1989	07 23	19 50.09	-12 58.8					
1989	08 02	19 41.00	-13 19.4	1.275	2.267	163.6	7.3	15.8
1989	08 12	19 33.59	-13 44.1					
1989	08 22	19 28.77	-14 09.5	1.387	2.275	142.7	15.6	16.2

1985 HG1 a,e,i = 2.29, 0.13, 3 Elements MPC 13039

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 26.60	-18 59.7	1.673	2.428	127.5	19.4	17.9
1989	06 13	20 24.40	-19 20.3					
1989	06 23	20 19.20	-19 51.9	1.528	2.453	148.5	12.5	17.5
1989	07 03	20 11.35	-20 32.0					
1989	07 13	20 01.59	-21 16.1	1.465	2.476	171.9	3.3	17.1
1989	07 23	19 51.03	-21 59.2					
1989	08 02	19 40.93	-22 37.1	1.506	2.497	164.0	6.4	17.3
1989	08 12	19 32.49	-23 06.8					
1989	08 22	19 26.58	-23 27.6	1.645	2.516	141.4	14.5	17.8

6092 P-L a,e,i = 2.61, 0.19, 11 Elements MPC 12144

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 20.46	-03 08.6	1.591	2.312	123.6	21.4	16.7
1989	06 13	20 19.13	-02 19.4					
1989	06 23	20 15.09	-01 48.6	1.466	2.349	141.6	15.6	16.4
1989	07 03	20 08.68	-01 39.2					
1989	07 13	20 00.64	-01 52.9	1.413	2.387	158.3	9.1	16.2
1989	07 23	19 51.98	-02 28.4					
1989	08 02	19 43.79	-03 21.8	1.453	2.427	158.8	8.7	16.3
1989	08 12	19 37.11	-04 27.4					
1989	08 22	19 32.66	-05 38.5	1.586	2.467	142.6	14.4	16.7

1979 VG a,e,i = 2.31, 0.11, 6 Elements MPC 11434

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 27.84	-27 59.2	1.649	2.418	128.8	19.1	17.4
1989	06 13	20 26.65	-28 38.8					
1989	06 23	20 22.17	-29 25.3	1.469	2.396	148.7	12.7	16.9
1989	07 03	20 14.58	-30 13.8					
1989	07 13	20 04.50	-30 57.5	1.369	2.372	167.7	5.3	16.4
1989	07 23	19 53.13	-31 29.4					
1989	08 02	19 41.93	-31 44.8	1.369	2.348	160.0	8.5	16.5
1989	08 12	19 32.44	-31 42.5					
1989	08 22	19 25.79	-31 24.5	1.462	2.323	139.2	16.5	16.9

1978 RL1 a,e,i = 3.22, 0.16, 2 Elements MPC 11051

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 20.70	-17 52.9	2.147	2.891	128.6	15.9	17.7
1989	06 13	20 19.54	-17 56.4					
1989	06 23	20 16.09	-18 08.4	1.947	2.866	148.8	10.6	17.3
1989	07 03	20 10.58	-18 27.8					
1989	07 13	20 03.50	-18 52.8	1.834	2.842	170.9	3.3	16.9
1989	07 23	19 55.60	-19 20.5					
1989	08 02	19 47.78	-19 47.8	1.824	2.819	166.0	5.0	16.9
1989	08 12	19 40.96	-20 12.4					
1989	08 22	19 35.93	-20 32.3	1.917	2.799	144.0	12.3	17.3

1985 RB1 a,e,i = 3.00, 0.25, 15 Elements MPC 13681

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 33.40	-17 29.7	2.214	2.923	125.6	16.4	17.3
1989	06 13	20 30.04	-16 55.7					
1989	06 23	20 24.36	-16 27.7	2.073	2.973	146.4	10.9	17.0
1989	07 03	20 16.72	-16 05.3					
1989	07 13	20 07.75	-15 47.7	2.020	3.023	168.5	3.8	16.7
1989	07 23	19 58.28	-15 33.8					
1989	08 02	19 49.19	-15 22.6	2.077	3.071	166.1	4.6	16.9
1989	08 12	19 41.31	-15 13.2					
1989	08 22	19 35.27	-15 04.7	2.242	3.119	144.3	10.9	17.3

1981 XA a,e,i = 2.01, 0.20, 21 Elements MPC 9466

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 37.08	-33 36.3	1.604	2.362	127.4	20.0	18.3
1989	06 13	20 36.27	-35 51.1					
1989	06 23	20 31.62	-38 19.4	1.430	2.338	145.3	14.3	17.8
1989	07 03	20 22.96	-40 51.3					
1989	07 13	20 10.69	-43 12.6	1.342	2.311	156.9	10.0	17.5
1989	07 23	19 56.04	-45 08.2					
1989	08 02	19 40.93	-46 27.8	1.353	2.280	148.5	13.5	17.6
1989	08 12	19 27.61	-47 08.6					
1989	08 22	19 17.89	-47 15.1	1.450	2.246	130.9	19.9	17.9

1937 TB a,e,i = 2.68, 0.19, 3 Elements MPC 10164

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 27.11	-23 31.3	1.868	2.620	128.3	17.7	17.3
1989	06 13	20 26.31	-23 50.4					
1989	06 23	20 22.72	-24 17.4	1.658	2.579	148.4	11.9	16.8
1989	07 03	20 16.48	-24 49.7					
1989	07 13	20 08.06	-25 23.2	1.530	2.537	169.9	4.0	16.3
1989	07 23	19 58.39	-25 53.0					
1989	08 02	19 48.63	-26 14.9	1.504	2.496	164.3	6.3	16.3
1989	08 12	19 40.04	-26 26.4					
1989	08 22	19 33.69	-26 27.2	1.575	2.455	142.3	14.6	16.7

1986 JN1 a,e,i = 1.95, 0.06, 24 Elements MPC 10945

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 36.06	-35 16.1	1.157	1.950	127.7	24.3	17.3
1989	06 13	20 37.64	-38 45.2					
1989	06 23	20 34.57	-42 29.0	1.052	1.965	143.6	17.9	16.9
1989	07 03	20 26.44	-46 10.1					
1989	07 13	20 13.67	-49 25.4	1.028	1.979	151.0	14.4	16.8
1989	07 23	19 57.99	-51 54.2					
1989	08 02	19 42.14	-53 26.0	1.090	1.993	142.4	18.1	17.0
1989	08 12	19 29.17	-54 02.3					
1989	08 22	19 21.21	-53 54.1	1.222	2.006	127.5	23.6	17.4

1987 DJ a,e,i = 3.02, 0.12, 11 Elements MPC 12001

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 26.36	-25 24.2	2.143	2.889	128.8	15.9	16.2
1989	06 13	20 25.35	-26 16.2					
1989	06 23	20 21.86	-27 16.4	1.949	2.867	148.8	10.6	15.8
1989	07 03	20 16.05	-28 21.2					
1989	07 13	20 08.39	-29 25.5	1.844	2.846	168.0	4.3	15.4
1989	07 23	19 59.70	-30 23.4					
1989	08 02	19 50.96	-31 10.3	1.843	2.825	161.8	6.4	15.5
1989	08 12	19 43.23	-31 43.2					
1989	08 22	19 37.42	-32 01.6	1.944	2.805	141.3	13.0	15.9

(3850) 1986 TK2 a,e,i = 2.23, 0.16, 5 Elements MPC 13299

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 20.08	-15 52.4	1.179	1.974	128.2	23.8	16.4
1989	06 13	20 22.43	-16 03.5					
1989	06 23	20 21.42	-16 32.7	1.013	1.946	147.1	16.5	15.9
1989	07 03	20 17.07	-17 20.6					
1989	07 13	20 09.87	-18 24.0	0.915	1.923	169.3	5.6	15.2
1989	07 23	20 01.00	-19 36.3					
1989	08 02	19 51.99	-20 49.2	0.901	1.903	166.9	6.9	15.2
1989	08 12	19 44.59	-21 54.6					
1989	08 22	19 40.19	-22 47.4	0.971	1.889	144.6	18.1	15.7

1978 RW a,e,i = 3.21, 0.21, 1 Elements MPC 10951

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 03	20 24.77	-18 20.8	1.911	2.656	127.8	17.6	16.3
1989	06 13	20 24.70	-18 23.1					
1989	06 23	20 22.13	-18 34.6	1.717	2.631	147.5	12.0	15.9
1989	07 03	20 17.26	-18 54.7					
1989	07 13	20 10.55	-19 20.9	1.603	2.609	169.4	4.1	15.4
1989	07 23	20 02.81	-19 50.1					
1989	08 02	19 55.01	-20 18.7	1.589	2.590	167.7	4.8	15.4
1989	08 12	19 48.21	-20 43.7					
1989	08 22	19 43.29	-21 02.9	1.675	2.574	145.7	12.8	15.8

4805 P-L a,e,i = 2.39, 0.16, 2 Elements MPC 7943

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 32.03	-22 57.1	1.290	2.208	146.1	14.9	18.0
1989	07 03	20 25.11	-23 29.8					
1989	07 13	20 15.80	-24 04.2	1.238	2.243	168.5	5.2	17.6
1989	07 23	20 05.35	-24 34.2					
1989	08 02	19 55.20	-24 55.5	1.281	2.280	166.2	6.1	17.7
1989	08 12	19 46.75	-25 05.7					
1989	08 22	19 40.99	-25 05.1	1.419	2.316	144.3	14.8	18.3
1989	09 01	19 38.39	-24 55.2					
1989	09 11	19 39.03	-24 37.5	1.630	2.353	124.7	20.6	18.8

1985 RG4 a,e,i = 2.65, 0.14, 14 Elements MPC 10837

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 27.46	-02 36.4	1.635	2.497	139.6	15.3	16.3
1989	07 03	20 21.95	-02 57.4					
1989	07 13	20 14.66	-03 39.9	1.553	2.526	158.3	8.5	16.0
1989	07 23	20 06.43	-04 41.9					
1989	08 02	19 58.23	-05 58.6	1.566	2.555	163.2	6.6	15.9
1989	08 12	19 51.09	-07 24.1					
1989	08 22	19 45.83	-08 51.3	1.680	2.584	146.4	12.5	16.3
1989	09 01	19 42.95	-10 14.9					
1989	09 11	19 42.69	-11 30.7	1.879	2.614	127.2	17.9	16.8

1983 CA1 a,e,i = 2.78, 0.16, 7 Elements MPC 14189

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 32.16	-26 26.5	2.152	3.051	146.4	10.6	18.2
1989	07 03	20 25.01	-26 48.5					
1989	07 13	20 16.22	-27 08.4	2.074	3.074	167.6	4.1	17.8
1989	07 23	20 06.61	-27 22.6					
1989	08 02	19 57.10	-27 28.5	2.103	3.095	165.2	4.8	17.9
1989	08 12	19 48.63	-27 25.3					
1989	08 22	19 41.96	-27 13.4	2.240	3.115	143.9	11.0	18.3
1989	09 01	19 37.54	-26 54.2					
1989	09 11	19 35.61	-26 29.4	2.463	3.133	123.5	15.5	18.7

1964 UP a,e,i = 2.16, 0.15, 3 Elements MPC 11241

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 30.87	-20 19.9	0.916	1.848	145.9	18.0	16.0
1989	07 03	20 25.91	-20 11.1					
1989	07 13	20 17.80	-20 08.3	0.838	1.845	168.0	6.6	15.4
1989	07 23	20 07.90	-20 07.4					
1989	08 02	19 57.99	-20 04.8	0.842	1.847	168.4	6.3	15.4
1989	08 12	19 49.93	-19 57.8					
1989	08 22	19 45.09	-19 45.6	0.926	1.854	146.3	17.6	16.0
1989	09 01	19 44.07	-19 28.3					
1989	09 11	19 46.97	-19 05.6	1.074	1.866	127.5	25.4	16.5

1979 MB6 a,e,i = 2.23, 0.19, 4 Elements MPC 6639

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 27.65	-14 47.1	1.101	2.021	145.1	16.7	18.5
1989	07 03	20 23.27	-15 07.6					
1989	07 13	20 15.99	-15 44.0	0.975	1.978	166.8	6.7	17.9
1989	07 23	20 06.78	-16 32.7					
1989	08 02	19 57.07	-17 27.7	0.934	1.939	168.3	6.1	17.7
1989	08 12	19 48.57	-18 22.4					
1989	08 22	19 42.78	-19 11.0	0.979	1.903	145.8	17.4	18.2
1989	09 01	19 40.62	-19 50.1					
1989	09 11	19 42.49	-20 17.3	1.090	1.871	126.2	25.7	18.6

1980 TX3 a,e,i = 2.85, 0.08, 2 Elements MPC 14016

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 28.99	-16 43.5	1.814	2.713	145.4	12.3	17.1
1989	07 03	20 23.52	-16 57.7					
1989	07 13	20 16.18	-17 19.3	1.697	2.699	167.5	4.7	16.7
1989	07 23	20 07.76	-17 45.3					
1989	08 02	19 59.19	-18 12.6	1.682	2.685	168.8	4.2	16.6
1989	08 12	19 51.52	-18 38.1					
1989	08 22	19 45.62	-18 59.6	1.770	2.672	146.5	12.1	17.0
1989	09 01	19 42.08	-19 15.9					
1989	09 11	19 41.21	-19 26.0	1.940	2.660	126.1	17.8	17.4

1988 EO1 a,e,i = 3.19, 0.17, 1 Elements MPC 13161

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 30.00	-20 28.2	2.224	3.120	146.2	10.5	17.3
1989	07 03	20 24.02	-20 51.7					
1989	07 13	20 16.59	-21 18.0	2.152	3.154	168.4	3.7	17.0
1989	07 23	20 08.42	-21 43.9					
1989	08 02	20 00.31	-22 06.9	2.187	3.188	168.4	3.7	17.0
1989	08 12	19 53.08	-22 24.8					
1989	08 22	19 47.39	-22 36.7	2.331	3.221	146.3	10.0	17.4
1989	09 01	19 43.67	-22 42.5					
1989	09 11	19 42.15	-22 42.3	2.562	3.254	125.7	14.5	17.8

1986 TZ1 a,e,i = 2.20, 0.22, 5 Elements MPC 11427

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 30.19	-22 31.7	1.130	2.055	146.5	15.8	16.1
1989	07 03	20 25.45	-23 35.7					
1989	07 13	20 17.54	-24 49.1	0.998	2.004	168.0	6.1	15.4
1989	07 23	20 07.41	-26 03.5					
1989	08 02	19 56.57	-27 09.4	0.955	1.954	165.3	7.6	15.3
1989	08 12	19 46.92	-27 59.2					
1989	08 22	19 40.15	-28 29.8	0.998	1.906	143.1	18.6	15.7
1989	09 01	19 37.31	-28 41.5					
1989	09 11	19 38.82	-28 36.5	1.104	1.862	123.7	26.7	16.1

1988 AF5 a,e,i = 2.36, 0.17, 4 Elements MPC 13457

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 33.18	-10 27.3	1.116	2.017	142.2	18.0	16.6
1989	07 03	20 28.03	-10 23.3					
1989	07 13	20 20.35	-10 37.8	1.051	2.044	162.9	8.4	16.2
1989	07 23	20 11.29	-11 08.2					
1989	08 02	20 02.25	-11 49.9	1.071	2.074	167.7	6.0	16.1
1989	08 12	19 54.68	-12 36.8					
1989	08 22	19 49.67	-13 23.3	1.182	2.107	147.7	14.8	16.7
1989	09 01	19 47.75	-14 05.1					
1989	09 11	19 49.11	-14 39.1	1.365	2.142	128.5	21.6	17.3

1982 QK3 a,e,i = 2.35, 0.19, 2 Elements MPC 13593

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 34.64	-21 28.3	1.152	2.070	145.3	16.2	16.7
1989	07 03	20 30.06	-21 39.2					
1989	07 13	20 22.47	-21 55.4	1.031	2.035	167.1	6.4	16.0
1989	07 23	20 12.90	-22 11.9					
1989	08 02	20 02.80	-22 24.0	0.997	2.003	168.9	5.6	15.9
1989	08 12	19 53.90	-22 27.8					
1989	08 22	19 47.66	-22 22.1	1.051	1.975	146.4	16.5	16.4
1989	09 01	19 44.94	-22 07.3					
1989	09 11	19 46.12	-21 44.3	1.174	1.951	126.8	24.4	16.8

1986 TC1 a,e,i = 2.25, 0.19, 4 Elements MPC 11625

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 40.14	-15 12.2	1.448	2.337	142.4	15.4	17.4
1989	07 03	20 34.93	-15 39.7					
1989	07 13	20 27.07	-16 20.4	1.300	2.297	164.7	6.7	16.8
1989	07 23	20 17.32	-17 10.5					
1989	08 02	20 06.82	-18 04.6	1.247	2.255	170.6	4.2	16.6
1989	08 12	19 57.02	-18 57.1					
1989	08 22	19 49.25	-19 43.2	1.292	2.212	147.2	14.3	17.0
1989	09 01	19 44.44	-20 20.3					
1989	09 11	19 43.11	-20 46.9	1.415	2.169	126.3	22.0	17.4

1984 DC1 a,e,i = 2.35, 0.21, 2 Elements MPC 10297

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 40.72	-15 44.3	1.629	2.512	142.5	14.3	17.9
1989	07 03	20 35.16	-16 03.8					
1989	07 13	20 27.15	-16 33.8	1.475	2.470	164.8	6.2	17.3
1989	07 23	20 17.44	-17 11.1					
1989	08 02	20 07.07	-17 51.4	1.419	2.426	170.7	3.9	17.1
1989	08 12	19 57.32	-18 30.3					
1989	08 22	19 49.41	-19 04.2	1.465	2.380	147.4	13.2	17.5
1989	09 01	19 44.19	-19 31.0					
1989	09 11	19 42.16	-19 49.7	1.593	2.334	126.2	20.4	17.8

1987 DY5 a,e,i = 2.99, 0.08, 10 Elements MPC 13312

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 37.19	-08 40.8	2.340	3.191	140.6	11.7	17.0
1989	07 03	20 32.26	-08 59.6					
1989	07 13	20 25.82	-09 30.5	2.204	3.183	161.1	5.9	16.6
1989	07 23	20 18.41	-10 11.6					
1989	08 02	20 10.71	-11 00.3	2.173	3.175	168.9	3.5	16.5
1989	08 12	20 03.48	-11 53.1					
1989	08 22	19 57.44	-12 46.5	2.251	3.166	149.6	9.3	16.8
1989	09 01	19 53.12	-13 37.4					
1989	09 11	19 50.87	-14 23.3	2.424	3.156	129.0	14.4	17.1

1988 HB a,e,i = 3.18, 0.06, 16 Elements MPC 13162

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 40.69	-27 21.1	2.116	3.003	144.6	11.3	15.6
1989	07 03	20 35.79	-28 38.8					
1989	07 13	20 28.99	-29 57.0	2.019	3.009	163.9	5.4	15.3
1989	07 23	20 20.95	-31 09.6					
1989	08 02	20 12.54	-32 11.2	2.027	3.015	163.9	5.4	15.3
1989	08 12	20 04.73	-32 58.1					
1989	08 22	19 58.40	-33 28.8	2.140	3.022	144.6	11.2	15.7
1989	09 01	19 54.18	-33 44.2					
1989	09 11	19 52.45	-33 46.0	2.338	3.030	125.0	15.8	16.0

1979 HE5 a,e,i = 2.17, 0.06, 5 Elements MPC 13151

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 45.66	-18 35.8	1.211	2.107	142.1	17.2	16.8
1989	07 03	20 40.54	-19 27.1					
1989	07 13	20 32.51	-20 29.2	1.123	2.120	164.6	7.3	16.4
1989	07 23	20 22.57	-21 35.0					
1989	08 02	20 12.15	-22 36.6	1.126	2.134	170.8	4.4	16.2
1989	08 12	20 02.82	-23 27.5					
1989	08 22	19 55.93	-24 04.1	1.223	2.148	147.8	14.5	16.8
1989	09 01	19 52.26	-24 26.0					
1989	09 11	19 52.13	-24 34.2	1.395	2.162	127.6	21.7	17.3

1984 SM1 a,e,i = 3.21, 0.06, 15 Elements MPC 13158

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 47.97	-36 44.9	2.208	3.077	142.5	11.6	16.8
1989	07 03	20 41.74	-37 17.7					
1989	07 13	20 33.40	-37 42.6	2.098	3.068	158.7	6.9	16.5
1989	07 23	20 23.74	-37 54.3					
1989	08 02	20 13.75	-37 49.3	2.090	3.058	158.9	6.9	16.5
1989	08 12	20 04.53	-37 26.5					
1989	08 22	19 57.04	-36 47.6	2.183	3.050	142.6	11.6	16.7
1989	09 01	19 51.90	-35 55.8					
1989	09 11	19 49.44	-34 54.7	2.362	3.042	124.0	15.9	17.0

1976 GM7 a,e,i = 3.24, 0.06, 11 Elements MPC 10613

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 40.16	-06 20.1	2.575	3.407	138.8	11.3	17.3
1989	07 03	20 35.53	-06 30.1					
1989	07 13	20 29.52	-06 52.0	2.445	3.412	158.6	6.2	17.0
1989	07 23	20 22.65	-07 24.7					
1989	08 02	20 15.50	-08 06.1	2.419	3.417	167.6	3.7	16.9
1989	08 12	20 08.75	-08 53.4					
1989	08 22	20 03.02	-09 43.3	2.503	3.421	150.7	8.3	17.2
1989	09 01	19 58.79	-10 32.6					
1989	09 11	19 56.39	-11 18.7	2.684	3.425	130.6	12.9	17.5

1980 KH a,e,i = 2.63, 0.14, 12 Elements MPC 13680

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 42.88	-00 17.4	1.446	2.282	135.1	18.3	16.4
1989	07 03	20 38.38	+00 41.5					
1989	07 13	20 31.62	+01 17.7	1.349	2.296	151.9	12.0	16.1
1989	07 23	20 23.42	+01 29.1					
1989	08 02	20 14.83	+01 15.5	1.336	2.313	159.3	8.9	16.0
1989	08 12	20 07.02	+00 40.3					
1989	08 22	20 01.03	-00 10.4	1.415	2.333	147.7	13.4	16.3
1989	09 01	19 57.52	-01 09.7					
1989	09 11	19 56.86	-02 10.8	1.573	2.355	130.6	18.9	16.7

1987 DS6 a,e,i = 3.14, 0.07, 9 Elements MPC 13313

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 44.77	-07 26.0	2.512	3.340	138.3	11.7	17.2
1989	07 03	20 40.25	-07 34.0					
1989	07 13	20 34.24	-07 53.6	2.367	3.334	158.5	6.4	16.9
1989	07 23	20 27.24	-08 23.7					
1989	08 02	20 19.86	-09 02.4	2.325	3.327	169.0	3.3	16.7
1989	08 12	20 12.79	-09 46.8					
1989	08 22	20 06.71	-10 33.4	2.394	3.319	151.7	8.3	17.0
1989	09 01	20 02.15	-11 19.4					
1989	09 11	19 59.47	-12 02.1	2.559	3.311	131.3	13.2	17.3

1973 SR6 a,e,i = 2.59, 0.18, 13 Elements MPC 13600

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 56.15	-37 42.1	1.869	2.733	140.7	13.6	18.2
1989	07 03	20 50.21	-38 49.3					
1989	07 13	20 41.39	-39 49.7	1.737	2.698	156.1	8.8	17.9
1989	07 23	20 30.50	-40 34.8					
1989	08 02	20 18.71	-40 57.9	1.701	2.662	156.3	8.8	17.8
1989	08 12	20 07.50	-40 55.6					
1989	08 22	19 58.25	-40 28.9	1.762	2.624	140.7	14.1	18.0
1989	09 01	19 51.90	-39 42.1					
1989	09 11	19 48.95	-38 40.2	1.902	2.586	122.5	19.2	18.3

1988 FB a,e,i = 2.40, 0.15, 3 Elements MPC 13858

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 54.38	-21 13.1	1.878	2.741	140.7	13.6	17.2
1989	07 03	20 48.49	-21 47.8					
1989	07 13	20 40.36	-22 27.4	1.762	2.750	163.0	6.2	16.8
1989	07 23	20 30.71	-23 07.1					
1989	08 02	20 20.51	-23 42.2	1.749	2.757	171.7	3.1	16.7
1989	08 12	20 10.87	-24 09.1					
1989	08 22	20 02.83	-24 25.7	1.843	2.761	149.2	10.8	17.1
1989	09 01	19 57.09	-24 32.2					
1989	09 11	19 54.08	-24 29.3	2.026	2.763	128.0	16.7	17.5

(3877) 3108 P-L a,e,i = 2.61, 0.13, 14 Elements MPC 13462

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 51.08	+02 19.3	1.638	2.437	131.9	18.1	16.1
1989	07 03	20 46.28	+03 19.2					
1989	07 13	20 39.32	+03 56.9	1.537	2.462	148.6	12.4	15.8
1989	07 23	20 30.93	+04 09.8					
1989	08 02	20 22.04	+03 57.6	1.521	2.488	157.3	9.1	15.7
1989	08 12	20 13.74	+03 23.2					
1989	08 22	20 06.99	+02 32.1	1.599	2.514	147.9	12.3	16.0
1989	09 01	20 02.48	+01 30.9					
1989	09 11	20 00.60	+00 26.4	1.762	2.541	131.2	17.3	16.4

1975 ED a,e,i = 2.22, 0.10, 2 Elements MPC 13156

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	20 59.36	-15 11.8	1.251	2.119	138.0	18.7	16.0
1989	07 03	20 54.64	-15 13.4					
1989	07 13	20 46.96	-15 27.6	1.157	2.140	159.9	9.4	15.5
1989	07 23	20 37.22	-15 50.9					
1989	08 02	20 26.70	-16 18.7	1.150	2.162	175.0	2.3	15.2
1989	08 12	20 16.93	-16 46.0					
1989	08 22	20 09.24	-17 08.8	1.239	2.185	152.3	12.4	15.8
1989	09 01	20 04.48	-17 25.0					
1989	09 11	20 03.04	-17 33.3	1.408	2.208	131.5	20.0	16.3

1985 PL a,e,i = 2.57, 0.22, 13 Elements MPC 10152

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 06 23	21 01.31	-27 14.1	1.314	2.192	140.0	17.3	16.5
1989 07 03	20 56.91	-26 55.5					
1989 07 13	20 49.14	-26 33.3	1.166	2.152	160.7	9.0	15.9
1989 07 23	20 38.84	-26 02.5					
1989 08 02	20 27.31	-25 19.3	1.106	2.115	171.4	4.1	15.6
1989 08 12	20 16.27	-24 22.3					
1989 08 22	20 07.34	-23 13.8	1.141	2.082	150.6	13.8	16.0
1989 09 01	20 01.61	-21 57.7					
1989 09 11	19 59.64	-20 37.7	1.255	2.054	130.1	22.0	16.4

1969 TJ1 a,e,i = 2.58, 0.04, 9 Elements MPC 13164

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 06 23	21 02.91	-31 31.3	1.775	2.635	139.8	14.4	17.1
1989 07 03	20 57.93	-32 27.8					
1989 07 13	20 50.23	-33 22.4	1.657	2.628	158.3	8.2	16.7
1989 07 23	20 40.54	-34 07.6					
1989 08 02	20 29.93	-34 37.1	1.634	2.622	163.0	6.5	16.6
1989 08 12	20 19.73	-34 46.8					
1989 08 22	20 11.19	-34 36.5	1.712	2.614	146.2	12.4	16.9
1989 09 01	20 05.21	-34 08.5					
1989 09 11	20 02.29	-33 26.6	1.874	2.607	127.0	18.0	17.3

1966 CF a,e,i = 2.37, 0.09, 9 Elements MPC 13055

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 06 23	21 00.80	-17 48.3	1.666	2.519	138.5	15.5	16.4
1989 07 03	20 56.25	-18 46.1					
1989 07 13	20 49.18	-19 54.9	1.549	2.530	160.7	7.6	15.9
1989 07 23	20 40.29	-21 08.7					
1989 08 02	20 30.53	-22 21.0	1.529	2.541	174.3	2.3	15.7
1989 08 12	20 21.10	-23 25.0					
1989 08 22	20 13.17	-24 16.6	1.615	2.550	151.5	10.9	16.2
1989 09 01	20 07.56	-24 53.8					
1989 09 11	20 04.81	-25 16.8	1.789	2.557	130.2	17.5	16.6

1988 BN a,e,i = 2.66, 0.23, 32 Elements MPC 13171

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1989 06 23	21 20.04	-34 51.6	1.999	2.822	-0.31	-13.1	17.0
1989 07 03	21 10.50	-34 45.4					
1989 07 13	20 58.34	-34 30.1	1.904	2.864	-0.41	-13.1	16.7
1989 07 23	20 44.58	-34 00.5					
1989 08 02	20 30.49	-33 13.9	1.915	2.905	-0.48	-12.1	16.6
1989 08 12	20 17.43	-32 10.9					
1989 08 22	20 06.50	-30 55.1	2.041	2.944	-0.50	-10.5	17.0
1989 09 01	19 58.35	-29 31.6					
1989 09 11	19 53.25	-28 04.8	2.266	2.981	-0.47	-9.1	17.4

1981 EN17 a,e,i = 2.29, 0.17, 5 Elements MPC 10771

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 06 23	20 56.62	-09 19.5	1.264	2.120	136.5	19.3	16.5
1989 07 03	20 53.95	-08 58.5					
1989 07 13	20 48.33	-08 55.2	1.110	2.082	156.5	11.2	15.9
1989 07 23	20 40.32	-09 10.0					
1989 08 02	20 30.96	-09 41.3	1.038	2.047	170.9	4.5	15.5
1989 08 12	20 21.69	-10 24.5					
1989 08 22	20 14.00	-11 13.5	1.057	2.014	153.6	12.9	15.8
1989 09 01	20 09.07	-12 02.1					
1989 09 11	20 07.63	-12 45.0	1.154	1.984	133.2	21.7	16.2

1988 CH3 a,e,i = 2.64, 0.15, 13 Elements MPC 13468

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1989	06 23	21 05.32	-14 04.6	1.611	2.448	-1.18	-11.1	17.3
1989	07 03	20 59.80	-13 23.1					
1989	07 13	20 51.81	-12 50.4	1.508	2.479	-1.34	-11.5	16.9
1989	07 23	20 42.14	-12 25.8					
1989	08 02	20 31.84	-12 08.1	1.500	2.510	-1.40	-11.2	16.6
1989	08 12	20 22.10	-11 55.8					
1989	08 22	20 14.00	-11 46.9	1.596	2.542	-1.31	-10.2	17.1
1989	09 01	20 08.26	-11 39.7					
1989	09 11	20 05.29	-11 32.3	1.783	2.574	-1.15	-9.0	17.6

1988 LF a,e,i = 2.55, 0.06, 16 Elements MPC 13470

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 03.00	-22 39.5	1.824	2.675	139.0	14.4	16.2
1989	07 03	20 59.02	-24 08.2					
1989	07 13	20 52.56	-25 45.5	1.691	2.669	160.0	7.5	15.7
1989	07 23	20 44.16	-27 24.2					
1989	08 02	20 34.70	-28 56.0	1.659	2.661	168.7	4.3	15.6
1989	08 12	20 25.31	-30 13.6					
1989	08 22	20 17.17	-31 12.6	1.733	2.653	149.2	11.3	15.9
1989	09 01	20 11.19	-31 51.9					
1989	09 11	20 08.00	-32 12.6	1.897	2.644	128.6	17.3	16.3

1986 TL1 a,e,i = 2.26, 0.13, 4 Elements MPC 11521

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 05.42	-14 14.3	1.378	2.227	136.3	18.4	17.3
1989	07 03	21 01.91	-13 58.3					
1989	07 13	20 55.39	-13 54.0	1.223	2.197	157.5	10.2	16.7
1989	07 23	20 46.44	-14 00.0					
1989	08 02	20 36.08	-14 13.6	1.154	2.167	175.5	2.1	16.2
1989	08 12	20 25.73	-14 30.7					
1989	08 22	20 16.88	-14 47.4	1.181	2.138	154.3	11.8	16.6
1989	09 01	20 10.67	-15 00.7					
1989	09 11	20 07.83	-15 08.4	1.292	2.110	133.0	20.4	17.1

1981 DM a,e,i = 2.36, 0.08, 7 Elements MPC 10537

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 06.54	-10 12.2	1.404	2.238	134.6	18.9	18.3
1989	07 03	21 02.41	-09 40.9					
1989	07 13	20 55.50	-09 24.3	1.290	2.254	155.3	10.9	17.9
1989	07 23	20 46.54	-09 22.0					
1989	08 02	20 36.60	-09 32.3	1.263	2.272	171.2	3.9	17.6
1989	08 12	20 27.01	-09 51.7					
1989	08 22	20 19.02	-10 15.8	1.334	2.289	154.7	10.9	18.0
1989	09 01	20 13.52	-10 40.6					
1989	09 11	20 11.02	-11 02.5	1.491	2.308	134.1	18.2	18.5

(3859) Borngen a,e,i = 3.21, 0.13, 3 Elements MPC 13309

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 04.11	-16 33.0	2.806	3.620	137.3	11.0	17.6
1989	07 03	20 59.98	-16 55.7					
1989	07 13	20 54.30	-17 24.9	2.650	3.617	158.9	5.8	17.3
1989	07 23	20 47.46	-17 58.0					
1989	08 02	20 40.01	-18 32.5	2.598	3.613	178.4	0.4	16.9
1989	08 12	20 32.59	-19 05.5					
1989	08 22	20 25.87	-19 34.5	2.662	3.608	155.7	6.6	17.4
1989	09 01	20 20.40	-19 57.9					
1989	09 11	20 16.61	-20 14.7	2.827	3.601	134.1	11.6	17.7

1981 ET42 a,e,i = 2.38, 0.21, 2 Elements MPC 11044

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 03.08	-19 09.2	1.008	1.891	138.3	21.0	17.8
1989	07 03	21 01.95	-19 09.8					
1989	07 13	20 57.35	-19 21.2	0.905	1.888	158.7	11.3	17.3
1989	07 23	20 50.02	-19 39.0					
1989	08 02	20 41.24	-19 57.6	0.877	1.892	177.7	1.2	16.8
1989	08 12	20 32.72	-20 11.1					
1989	08 22	20 26.11	-20 15.5	0.935	1.902	155.6	12.7	17.4
1989	09 01	20 22.51	-20 09.4					
1989	09 11	20 22.51	-19 52.5	1.067	1.919	135.5	21.6	18.0

1979 SJ11 a,e,i = 3.12, 0.14, 4 Elements MPC 10627

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 07.00	-13 28.2	2.633	3.435	135.7	11.9	17.9
1989	07 03	21 02.94	-13 32.5					
1989	07 13	20 57.19	-13 44.6	2.458	3.417	157.0	6.7	17.6
1989	07 23	20 50.17	-14 03.1					
1989	08 02	20 42.41	-14 25.8	2.385	3.398	176.3	1.1	17.2
1989	08 12	20 34.61	-14 50.2					
1989	08 22	20 27.49	-15 13.7	2.424	3.378	156.8	6.8	17.5
1989	09 01	20 21.66	-15 34.4					
1989	09 11	20 17.61	-15 50.6	2.567	3.357	135.2	12.2	17.8

1968 OC1 a,e,i = 2.30, 0.14, 5 Elements MPC 12450

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 06.17	-07 40.5	1.207	2.046	133.7	21.1	16.8
1989	07 03	21 04.46	-07 04.0					
1989	07 13	20 59.68	-06 46.6	1.069	2.027	152.9	13.2	16.3
1989	07 23	20 52.40	-06 49.6					
1989	08 02	20 43.59	-07 12.3	1.006	2.012	169.2	5.4	15.8
1989	08 12	20 34.66	-07 50.7					
1989	08 22	20 27.11	-08 38.4	1.033	2.001	156.4	11.7	16.1
1989	09 01	20 22.13	-09 28.6					
1989	09 11	20 20.46	-10 14.8	1.139	1.993	136.5	20.3	16.6

1983 CN3 a,e,i = 2.58, 0.28, 23 Elements MPC 11736

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 10.56	+00 36.0	2.203	2.948	128.8	15.6	17.8
1989	07 03	21 07.06	+00 15.2					
1989	07 13	21 01.49	-00 26.6	1.985	2.900	148.5	10.6	17.4
1989	07 23	20 54.20	-01 30.3					
1989	08 02	20 45.73	-02 54.5	1.858	2.850	164.9	5.3	17.0
1989	08 12	20 36.92	-04 35.2					
1989	08 22	20 28.68	-06 25.8	1.842	2.798	156.3	8.3	17.1
1989	09 01	20 21.85	-08 19.2					
1989	09 11	20 17.14	-10 08.4	1.931	2.743	135.7	14.8	17.3

1985 QH5 a,e,i = 2.68, 0.24, 2 Elements MPC 14350

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 11.76	-13 56.9	2.096	2.903	134.8	14.4	18.1
1989	07 03	21 08.13	-14 10.1					
1989	07 13	21 02.28	-14 34.1	1.899	2.859	156.2	8.3	17.7
1989	07 23	20 54.61	-15 06.9					
1989	08 02	20 45.75	-15 45.3	1.799	2.813	177.8	0.8	17.1
1989	08 12	20 36.62	-16 25.3					
1989	08 22	20 28.20	-17 02.9	1.808	2.766	156.8	8.3	17.5
1989	09 01	20 21.39	-17 35.1					
1989	09 11	20 16.86	-17 59.6	1.914	2.718	134.6	15.3	17.8

2594 P-L a,e,i = 2.90, 0.05, 3 Elements MPC 9298

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 14.77	-14 17.2	1.959	2.765	134.2	15.3	18.8
1989	07 03	21 11.82	-14 33.9					
1989	07 13	21 06.65	-15 01.8	1.810	2.767	155.4	8.8	18.4
1989	07 23	20 59.73	-15 38.1					
1989	08 02	20 51.74	-16 19.3	1.755	2.770	177.9	0.8	17.9
1989	08 12	20 43.61	-17 01.0					
1989	08 22	20 36.29	-17 38.9	1.807	2.773	158.6	7.7	18.4
1989	09 01	20 30.58	-18 10.1					
1989	09 11	20 27.07	-18 32.7	1.956	2.777	136.9	14.3	18.8

1981 EK8 a,e,i = 2.36, 0.14, 5 Elements MPC 11148

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 19.28	-13 17.2	1.213	2.044	132.8	21.4	18.4
1989	07 03	21 17.09	-12 42.5					
1989	07 13	21 11.65	-12 21.5	1.098	2.058	153.2	12.9	17.9
1989	07 23	21 03.58	-12 13.3					
1989	08 02	20 53.95	-12 15.7	1.062	2.074	174.0	2.9	17.5
1989	08 12	20 44.22	-12 24.8					
1989	08 22	20 35.89	-12 36.3	1.119	2.094	159.0	10.0	17.9
1989	09 01	20 30.07	-12 46.7					
1989	09 11	20 27.45	-12 52.8	1.259	2.117	138.0	18.6	18.5

1978 PX2 a,e,i = 2.39, 0.20, 2 Elements MPC 8797

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 15.94	-18 44.5	1.257	2.104	135.2	19.9	17.5
1989	07 03	21 14.98	-18 49.9					
1989	07 13	21 10.74	-19 06.6	1.098	2.066	155.5	11.8	16.9
1989	07 23	21 03.63	-19 31.0					
1989	08 02	20 54.52	-19 58.0	1.017	2.031	177.2	1.4	16.2
1989	08 12	20 44.83	-20 21.0					
1989	08 22	20 36.21	-20 34.9	1.027	2.000	157.8	11.0	16.7
1989	09 01	20 30.06	-20 36.9					
1989	09 11	20 27.32	-20 26.1	1.118	1.974	136.5	20.6	17.1

1981 EE14 a,e,i = 2.35, 0.11, 6 Elements MPC 10771

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 19.66	-04 46.6	1.293	2.091	129.4	22.1	18.6
1989	07 03	21 18.53	-04 10.7					
1989	07 13	21 14.40	-03 56.1	1.160	2.094	148.3	14.8	18.2
1989	07 23	21 07.74	-04 04.5					
1989	08 02	20 59.39	-04 35.4	1.099	2.099	166.2	6.6	17.8
1989	08 12	20 50.61	-05 24.7					
1989	08 22	20 42.80	-06 25.6	1.129	2.107	159.7	9.6	17.9
1989	09 01	20 37.10	-07 30.1					
1989	09 11	20 34.32	-08 31.1	1.245	2.118	140.0	17.8	18.4

(4016) 1979 XK a,e,i = 2.41, 0.22, 1 Elements MPC 14330

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 29.20	-15 16.0	2.157	2.928	131.2	15.1	18.8
1989	07 03	21 25.26	-15 37.8					
1989	07 13	21 19.05	-16 09.8	1.997	2.939	152.9	9.1	18.5
1989	07 23	21 10.97	-16 49.0					
1989	08 02	21 01.68	-17 31.5	1.933	2.947	176.3	1.3	18.0
1989	08 12	20 52.06	-18 13.0					
1989	08 22	20 43.07	-18 49.4	1.981	2.951	159.8	6.8	18.4
1989	09 01	20 35.55	-19 18.1					
1989	09 11	20 30.15	-19 37.5	2.133	2.953	137.3	13.4	18.8

1981 RQ a,e,i = 2.58, 0.18, 13 Elements MPC 12205

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 31.95	-27 48.4	1.504	2.322	133.3	18.6	16.6
1989	07 03	21 29.42	-27 50.7					
1989	07 13	21 23.49	-27 54.1	1.335	2.287	152.9	11.7	16.0
1989	07 23	21 14.58	-27 52.8					
1989	08 02	21 03.59	-27 40.5	1.248	2.254	169.5	4.7	15.6
1989	08 12	20 51.95	-27 12.3					
1989	08 22	20 41.28	-26 26.5	1.260	2.223	156.2	10.6	15.8
1989	09 01	20 32.95	-25 25.2					
1989	09 11	20 27.88	-24 12.2	1.361	2.195	135.5	18.7	16.2

1975 XH a,e,i = 2.42, 0.21, 11 Elements MPC 12199

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 33.15	-22 21.5	2.126	2.907	132.1	15.0	18.7
1989	07 03	21 29.71	-23 24.7					
1989	07 13	21 23.82	-24 36.2	1.972	2.915	153.0	9.1	18.3
1989	07 23	21 15.84	-25 50.6					
1989	08 02	21 06.43	-27 01.4	1.915	2.919	169.8	3.5	18.0
1989	08 12	20 56.51	-28 02.1					
1989	08 22	20 47.15	-28 48.2	1.969	2.921	155.8	8.2	18.3
1989	09 01	20 39.27	-29 17.5					
1989	09 11	20 33.63	-29 30.5	2.122	2.920	134.7	14.2	18.7

1981 SA7 a,e,i = 2.62, 0.17, 7 Elements MPC 14188

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 31.10	-23 50.8	1.880	2.677	132.9	16.1	17.2
1989	07 03	21 28.97	-24 37.6					
1989	07 13	21 24.12	-25 32.7	1.695	2.641	152.9	10.1	16.7
1989	07 23	21 16.87	-26 30.8					
1989	08 02	21 07.83	-27 25.5	1.601	2.605	169.3	4.1	16.3
1989	08 12	20 58.00	-28 09.8					
1989	08 22	20 48.63	-28 38.5	1.610	2.568	156.2	9.2	16.5
1989	09 01	20 40.83	-28 49.6					
1989	09 11	20 35.53	-28 43.1	1.713	2.530	135.4	16.2	16.9

1985 RB3 a,e,i = 2.57, 0.32, 5 Elements MPC 10836

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 31.45	-22 48.7	1.530	2.340	132.6	18.6	18.6
1989	07 03	21 30.76	-23 13.8					
1989	07 13	21 26.92	-23 48.7	1.318	2.268	152.3	12.0	18.0
1989	07 23	21 20.08	-24 28.9					
1989	08 02	21 10.77	-25 07.8	1.188	2.196	170.9	4.2	17.4
1989	08 12	21 00.12	-25 37.5					
1989	08 22	20 49.69	-25 51.4	1.154	2.126	158.1	10.2	17.5
1989	09 01	20 41.02	-25 46.5					
1989	09 11	20 35.40	-25 22.8	1.206	2.057	136.7	19.6	17.8

1933 FE1 a,e,i = 2.29, 0.22, 2 Elements MPC 13477

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 41.39	-11 30.8	1.399	2.169	127.2	21.9	17.9
1989	07 03	21 38.94	-11 26.0					
1989	07 13	21 33.32	-11 37.8	1.292	2.221	148.1	14.0	17.6
1989	07 23	21 25.07	-12 04.0					
1989	08 02	21 15.07	-12 40.6	1.263	2.272	171.3	3.9	17.2
1989	08 12	21 04.60	-13 21.7					
1989	08 22	20 55.03	-14 01.3	1.334	2.322	163.6	7.1	17.5
1989	09 01	20 47.47	-14 35.1					
1989	09 11	20 42.68	-14 59.8	1.499	2.370	141.3	15.4	18.1

1982 SA13 a,e,i = 3.91, 0.07, 1 Elements MPC 13585

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 30.54	-13 31.3	3.028	3.766	130.3	11.9	16.9
1989	07 03	21 28.23	-13 42.1					
1989	07 13	21 24.35	-14 00.8	2.834	3.756	151.0	7.5	16.6
1989	07 23	21 19.17	-14 26.0					
1989	08 02	21 13.06	-14 55.6	2.736	3.745	172.9	1.9	16.3
1989	08 12	21 06.57	-15 26.9					
1989	08 22	21 00.26	-15 57.2	2.751	3.735	164.5	4.1	16.4
1989	09 01	20 54.71	-16 24.1					
1989	09 11	20 50.40	-16 45.8	2.875	3.726	142.7	9.4	16.7

1988 DB a,e,i = 2.47, 0.12, 3 Elements MPC 12946

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 38.88	-12 45.1	1.712	2.473	128.2	18.8	16.5
1989	07 03	21 36.89	-13 03.4					
1989	07 13	21 32.20	-13 36.5	1.572	2.499	149.1	12.1	16.1
1989	07 23	21 25.21	-14 21.7					
1989	08 02	21 16.57	-15 14.7	1.516	2.525	172.3	3.1	15.7
1989	08 12	21 07.30	-16 09.6					
1989	08 22	20 58.54	-17 00.4	1.563	2.550	163.9	6.3	15.9
1989	09 01	20 51.31	-17 42.8					
1989	09 11	20 46.37	-18 13.8	1.710	2.575	141.4	14.1	16.4

1982 UH a,e,i = 2.38, 0.19, 2 Elements MPC 7470

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 36.72	-11 40.3	1.604	2.372	128.3	19.7	17.8
1989	07 03	21 35.82	-11 27.8					
1989	07 13	21 32.05	-11 29.6	1.401	2.328	148.3	13.3	17.2
1989	07 23	21 25.59	-11 45.2					
1989	08 02	21 16.95	-12 12.8	1.277	2.284	170.6	4.2	16.7
1989	08 12	21 07.12	-12 48.3					
1989	08 22	20 57.40	-13 26.1	1.250	2.240	164.2	7.1	16.7
1989	09 01	20 49.11	-14 01.2					
1989	09 11	20 43.37	-14 29.0	1.317	2.196	141.5	16.6	17.1

1985 JG1 a,e,i = 2.27, 0.09, 4 Elements MPC 12950

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 41.13	-08 01.1	1.605	2.350	125.9	20.5	17.3
1989	07 03	21 39.29	-07 47.8					
1989	07 13	21 34.61	-07 51.6	1.454	2.367	146.2	13.8	16.9
1989	07 23	21 27.42	-08 12.2					
1989	08 02	21 18.39	-08 47.4	1.381	2.382	168.0	5.1	16.5
1989	08 12	21 08.57	-09 33.1					
1989	08 22	20 59.20	-10 23.3	1.407	2.397	164.5	6.5	16.6
1989	09 01	20 51.40	-11 12.3					
1989	09 11	20 46.03	-11 55.2	1.532	2.410	142.6	14.7	17.1

1979 QC2 a,e,i = 2.95, 0.10, 2 Elements MPC 10307

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 36.16	-12 26.8	2.276	3.017	128.7	15.2	18.4
1989	07 03	21 34.20	-12 37.1					
1989	07 13	21 30.13	-12 58.8	2.079	2.998	149.3	10.0	18.0
1989	07 23	21 24.20	-13 30.5					
1989	08 02	21 16.89	-14 09.4	1.971	2.979	171.7	2.8	17.6
1989	08 12	21 08.91	-14 51.9					
1989	08 22	21 01.10	-15 33.6	1.971	2.959	164.8	5.1	17.7
1989	09 01	20 54.29	-16 10.9					
1989	09 11	20 49.19	-16 40.8	2.076	2.939	142.4	12.0	18.1

1982 HB2 a,e,i = 2.19, 0.07, 5 Elements MPC 9766

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 44.54	-21 13.4	1.412	2.201	129.3	20.9	17.4
1989	07 03	21 43.10	-21 52.6					
1989	07 13	21 38.27	-22 43.7	1.281	2.218	149.6	13.4	16.9
1989	07 23	21 30.40	-23 40.8					
1989	08 02	21 20.30	-24 35.8	1.229	2.234	169.7	4.7	16.5
1989	08 12	21 09.27	-25 20.2					
1989	08 22	20 58.88	-25 47.8	1.274	2.250	159.8	8.9	16.8
1989	09 01	20 50.48	-25 56.4					
1989	09 11	20 45.06	-25 46.7	1.410	2.265	138.5	17.1	17.3

6245 P-L a,e,i = 2.60, 0.09, 13 Elements MPC 12700

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 40.11	+02 52.1	1.952	2.627	121.3	19.3	18.9
1989	07 03	21 38.65	+03 16.7					
1989	07 13	21 34.87	+03 21.3	1.787	2.645	139.7	14.4	18.6
1989	07 23	21 29.05	+03 03.8					
1989	08 02	21 21.71	+02 23.7	1.695	2.663	157.8	8.3	18.3
1989	08 12	21 13.64	+01 23.1					
1989	08 22	21 05.80	+00 07.0	1.701	2.680	161.5	6.9	18.2
1989	09 01	20 59.05	-01 18.0					
1989	09 11	20 54.16	-02 44.5	1.810	2.696	144.9	12.4	18.6

1988 HF a,e,i = 2.56, 0.13, 8 Elements MPC 13451

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 42.58	-06 45.4	2.104	2.814	125.1	17.2	17.2
1989	07 03	21 40.54	-06 54.4					
1989	07 13	21 36.24	-07 19.1	1.931	2.829	145.5	11.7	16.8
1989	07 23	21 29.95	-07 58.7					
1989	08 02	21 22.19	-08 51.1	1.843	2.842	167.4	4.5	16.4
1989	08 12	21 13.71	-09 52.1					
1989	08 22	21 05.44	-10 56.4	1.861	2.853	166.1	4.9	16.5
1989	09 01	20 58.22	-11 58.8					
1989	09 11	20 52.79	-12 54.8	1.986	2.863	144.1	11.9	16.9

(4010) 1977 QJ2 a,e,i = 2.55, 0.13, 5 Elements MPC 14327

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 42.96	-16 19.2	1.439	2.218	128.4	21.1	16.5
1989	07 03	21 42.40	-16 01.4					
1989	07 13	21 38.71	-15 54.8	1.291	2.221	148.3	13.9	16.1
1989	07 23	21 32.21	-15 57.5					
1989	08 02	21 23.58	-16 06.0	1.220	2.228	170.9	4.1	15.6
1989	08 12	21 13.97	-16 16.0					
1989	08 22	21 04.77	-16 22.8	1.243	2.237	165.5	6.5	15.8
1989	09 01	20 57.23	-16 23.5					
1989	09 11	20 52.31	-16 16.1	1.360	2.249	143.3	15.5	16.3

1981 QF a,e,i = 2.56, 0.24, 4 Elements MPC 12208

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 37.39	-18 16.7	1.351	2.152	130.2	21.1	17.8
1989	07 03	21 38.41	-18 11.0					
1989	07 13	21 36.26	-18 16.6	1.166	2.106	149.4	14.2	17.3
1989	07 23	21 31.06	-18 31.2					
1989	08 02	21 23.33	-18 50.7	1.055	2.064	171.2	4.3	16.6
1989	08 12	21 14.14	-19 09.0					
1989	08 22	21 05.02	-19 20.1	1.033	2.026	164.5	7.7	16.7
1989	09 01	20 57.46	-19 20.2					
1989	09 11	20 52.74	-19 07.0	1.098	1.994	142.6	17.9	17.1

1988 JM a,e,i = 3.01, 0.10, 9 Elements MPC 13444

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 44.40	-05 10.9	2.071	2.771	124.0	17.7	16.6
1989	07 03	21 43.11	-04 27.2					
1989	07 13	21 39.54	-03 56.0	1.876	2.757	143.1	12.8	16.2
1989	07 23	21 33.92	-03 38.3					
1989	08 02	21 26.70	-03 34.7	1.760	2.745	162.5	6.4	15.8
1989	08 12	21 18.60	-03 44.2					
1989	08 22	21 10.52	-04 04.1	1.745	2.735	165.0	5.5	15.8
1989	09 01	21 03.37	-04 30.8					
1989	09 11	20 57.93	-05 00.1	1.832	2.725	145.9	11.9	16.1

1979 QJ1 a,e,i = 2.24, 0.10, 8 Elements MPC 13598

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	06 23	21 48.64	-08 43.3	1.630	2.359	124.5	20.8	17.8
1989	07 03	21 47.72	-09 04.0					
1989	07 13	21 43.97	-09 44.5	1.473	2.378	144.9	14.2	17.4
1989	07 23	21 37.63	-10 43.2					
1989	08 02	21 29.25	-11 56.4	1.393	2.395	168.0	5.1	17.0
1989	08 12	21 19.81	-13 17.3					
1989	08 22	21 10.50	-14 37.8	1.413	2.410	167.2	5.3	17.0
1989	09 01	21 02.49	-15 50.8					
1989	09 11	20 56.73	-16 51.0	1.535	2.424	144.1	14.1	17.6

(4061) 1988 FF3 a,e,i = 3.11, 0.14, 2 Elements MPC 14468

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 44.39	-16 08.3	1.842	2.751	147.0	11.6	15.1
1989	07 23	21 38.90	-16 38.4					
1989	08 02	21 31.79	-17 13.4	1.768	2.772	169.1	4.0	14.8
1989	08 12	21 23.84	-17 48.9					
1989	08 22	21 16.00	-18 20.2	1.798	2.793	167.3	4.6	14.9
1989	09 01	21 09.15	-18 43.8					
1989	09 11	21 04.06	-18 57.6	1.931	2.817	145.2	11.8	15.3
1989	09 21	21 01.20	-19 00.8					
1989	10 01	21 00.75	-18 53.6	2.147	2.841	124.9	16.8	15.7

1988 BM5 a,e,i = 2.55, 0.14, 13 Elements MPC 13675

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 50.17	-05 24.5	1.417	2.302	141.6	15.9	17.3
1989	07 23	21 43.19	-04 36.8					
1989	08 02	21 34.10	-04 04.7	1.341	2.327	161.8	7.8	17.0
1989	08 12	21 23.93	-03 47.8					
1989	08 22	21 13.93	-03 43.8	1.360	2.353	165.5	6.2	16.9
1989	09 01	21 05.30	-03 49.2					
1989	09 11	20 58.99	-03 59.4	1.478	2.381	146.2	13.6	17.4
1989	09 21	20 55.52	-04 10.0					
1989	10 01	20 55.02	-04 17.4	1.674	2.410	126.7	19.5	17.9

1979 TY1 a,e,i = 2.29, 0.15, 9 Elements MPC 13056

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 53.03	-27 30.6	1.482	2.396	146.4	13.6	17.9
1989	07 23	21 46.33	-28 33.8					
1989	08 02	21 36.95	-29 33.5	1.373	2.364	163.6	6.9	17.5
1989	08 12	21 25.89	-30 20.2					
1989	08 22	21 14.58	-30 46.2	1.361	2.331	158.3	9.2	17.5
1989	09 01	21 04.52	-30 48.0					
1989	09 11	20 57.01	-30 26.2	1.443	2.298	138.7	16.8	17.9
1989	09 21	20 52.81	-29 44.3					
1989	10 01	20 52.12	-28 46.6	1.594	2.263	119.7	22.6	18.2

1979 SA8 a,e,i = 2.27, 0.20, 5 Elements MPC 11430

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 07 13	21 51.02	-24 48.8	0.870	1.808	146.9	17.9	14.8
1989 07 23	21 46.48	-25 28.7					
1989 08 02	21 38.70	-26 04.7	0.820	1.820	165.4	8.1	14.4
1989 08 12	21 29.16	-26 26.3					
1989 08 22	21 19.80	-26 26.1	0.849	1.839	162.5	9.5	14.5
1989 09 01	21 12.40	-26 01.9					
1989 09 11	21 08.24	-25 15.9	0.956	1.864	143.5	18.8	15.1
1989 09 21	21 07.83	-24 12.8					
1989 10 01	21 11.05	-22 56.8	1.126	1.895	125.8	25.4	15.7

1985 GO a,e,i = 2.25, 0.10, 4 Elements MPC 10029

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 07 13	21 54.13	-16 39.1	1.294	2.205	144.9	15.4	17.2
1989 07 23	21 48.18	-17 41.8					
1989 08 02	21 39.78	-18 52.1	1.228	2.229	167.3	5.8	16.8
1989 08 12	21 29.98	-20 01.4					
1989 08 22	21 20.18	-21 01.0	1.257	2.253	166.6	6.0	16.9
1989 09 01	21 11.72	-21 45.0					
1989 09 11	21 05.71	-22 10.5	1.382	2.277	144.3	14.9	17.4
1989 09 21	21 02.74	-22 17.8					
1989 10 01	21 02.93	-22 08.7	1.581	2.300	124.4	21.1	17.9

1984 DQ a,e,i = 2.55, 0.22, 11 Elements MPC 13465

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 07 13	22 01.16	-18 07.3	1.530	2.424	143.6	14.4	17.6
1989 07 23	21 53.43	-18 10.8					
1989 08 02	21 43.58	-18 17.0	1.476	2.474	166.4	5.5	17.2
1989 08 12	21 32.66	-18 21.4					
1989 08 22	21 21.95	-18 20.1	1.524	2.523	168.5	4.6	17.3
1989 09 01	21 12.61	-18 10.9					
1989 09 11	21 05.57	-17 53.1	1.676	2.572	145.9	12.7	17.8
1989 09 21	21 01.30	-17 27.2					
1989 10 01	20 59.89	-16 54.3	1.910	2.619	125.3	18.2	18.3

1929 TD1 a,e,i = 2.42, 0.18, 3 Elements MPC 9684

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 07 13	21 52.67	-19 24.6	1.094	2.017	145.8	16.4	17.5
1989 07 23	21 48.93	-20 06.8					
1989 08 02	21 42.32	-20 55.4	0.999	2.000	166.5	6.8	16.9
1989 08 12	21 33.82	-21 41.8					
1989 08 22	21 24.94	-22 17.0	0.989	1.987	166.5	6.8	16.9
1989 09 01	21 17.24	-22 35.0					
1989 09 11	21 12.11	-22 32.9	1.066	1.979	145.5	16.7	17.4
1989 09 21	21 10.33	-22 11.5					
1989 10 01	21 12.09	-21 32.9	1.210	1.977	126.6	24.0	17.9

1983 AH1 a,e,i = 2.55, 0.21, 17 Elements MPC 11732

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 07 13	21 56.26	-22 56.3	2.101	2.995	145.5	11.1	18.6
1989 07 23	21 50.65	-24 27.2					
1989 08 02	21 43.10	-26 00.9	1.982	2.973	164.6	5.2	18.2
1989 08 12	21 34.24	-27 29.8					
1989 08 22	21 24.98	-28 46.7	1.972	2.947	161.2	6.4	18.2
1989 09 01	21 16.28	-29 46.4					
1989 09 11	21 09.11	-30 26.2	2.069	2.920	140.9	12.6	18.6
1989 09 21	21 04.14	-30 46.4					
1989 10 01	21 01.76	-30 48.9	2.247	2.890	120.8	17.3	18.9

1985 PO a,e,i = 2.54, 0.14, 3 Elements MPC 12580

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 52.25	-11 25.2	1.330	2.232	143.7	15.6	16.6
1989	07 23	21 48.36	-12 01.7					
1989	08 02	21 42.06	-12 53.0	1.218	2.216	165.6	6.5	16.1
1989	08 12	21 34.18	-13 53.6					
1989	08 22	21 25.91	-14 55.8	1.198	2.203	170.8	4.2	15.9
1989	09 01	21 18.51	-15 52.2					
1989	09 11	21 13.16	-16 36.8	1.273	2.192	148.0	14.1	16.4
1989	09 21	21 10.62	-17 06.1					
1989	10 01	21 11.20	-17 19.0	1.424	2.186	127.8	21.2	16.9

(3931) Batten a,e,i = 2.39, 0.08, 4 Elements MPC 13849

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 59.06	-13 51.9	1.696	2.581	143.0	13.7	17.5
1989	07 23	21 53.00	-14 12.8					
1989	08 02	21 44.78	-14 42.1	1.581	2.576	165.6	5.6	17.0
1989	08 12	21 35.18	-15 15.2					
1989	08 22	21 25.27	-15 46.8	1.567	2.569	170.3	3.8	16.9
1989	09 01	21 16.19	-16 12.7					
1989	09 11	21 08.94	-16 29.4	1.658	2.562	147.1	12.3	17.4
1989	09 21	21 04.21	-16 35.5					
1989	10 01	21 02.31	-16 30.8	1.832	2.552	126.0	18.5	17.8

1981 EX41 a,e,i = 3.18, 0.17, 1 Elements MPC 12796

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 54.34	-11 00.8	2.212	3.086	143.1	11.4	17.8
1989	07 23	21 49.75	-11 23.0					
1989	08 02	21 43.53	-11 54.3	2.061	3.053	164.9	5.0	17.4
1989	08 12	21 36.21	-12 31.9					
1989	08 22	21 28.54	-13 11.8	2.015	3.019	171.8	2.8	17.2
1989	09 01	21 21.31	-13 49.9					
1989	09 11	21 15.30	-14 22.5	2.077	2.986	149.1	10.0	17.5
1989	09 21	21 11.13	-14 47.1					
1989	10 01	21 09.13	-15 02.1	2.230	2.953	128.0	15.5	17.8

(3854) 1983 EA a,e,i = 1.89, 0.13, 24 Elements MPC 13305

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 33.49	-50 49.9	1.276	2.111	133.8	20.4	17.4
1989	07 23	22 21.63	-52 12.7					
1989	08 02	22 04.16	-53 04.4	1.201	2.094	141.8	17.5	17.2
1989	08 12	21 43.16	-53 06.5					
1989	08 22	21 22.00	-52 10.1	1.201	2.074	139.1	18.6	17.2
1989	09 01	21 04.01	-50 18.5					
1989	09 11	20 51.32	-47 44.6	1.279	2.052	127.3	23.0	17.5
1989	09 21	20 44.47	-44 44.8					
1989	10 01	20 42.93	-41 32.4	1.417	2.026	112.7	27.1	17.8

(3849) Incidentia a,e,i = 2.47, 0.05, 6 Elements MPC 13299

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 02.22	-21 05.4	1.683	2.575	143.9	13.4	17.0
1989	07 23	21 56.43	-21 49.5					
1989	08 02	21 48.35	-22 36.1	1.577	2.570	164.7	6.0	16.6
1989	08 12	21 38.78	-23 18.6					
1989	08 22	21 28.84	-23 50.6	1.571	2.564	165.8	5.5	16.5
1989	09 01	21 19.71	-24 08.1					
1989	09 11	21 12.47	-24 09.1	1.667	2.557	144.8	13.1	16.9
1989	09 21	21 07.81	-23 54.5					
1989	10 01	21 06.03	-23 26.2	1.844	2.549	124.6	18.9	17.3

1932 CY a,e,i = 3.12, 0.14, 1 Elements MPC 13683

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 57.44	-12 50.7	2.442	3.311	143.0	10.6	17.1
1989	07 23	21 52.31	-13 21.3					
1989	08 02	21 45.77	-13 58.4	2.342	3.333	165.2	4.5	16.8
1989	08 12	21 38.37	-14 38.8					
1989	08 22	21 30.79	-15 18.4	2.351	3.356	171.8	2.5	16.7
1989	09 01	21 23.74	-15 54.0					
1989	09 11	21 17.87	-16 22.6	2.473	3.377	149.1	8.8	17.1
1989	09 21	21 13.66	-16 42.7					
1989	10 01	21 11.37	-16 53.5	2.688	3.397	127.9	13.4	17.5

1982 FX3 a,e,i = 3.17, 0.11, 5 Elements MPC 13856

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 59.83	-19 03.6	2.154	3.037	144.1	11.3	16.7
1989	07 23	21 54.53	-19 34.6					
1989	08 02	21 47.58	-20 08.2	2.066	3.058	165.4	4.8	16.4
1989	08 12	21 39.63	-20 40.1					
1989	08 22	21 31.50	-21 05.9	2.083	3.080	168.4	3.8	16.3
1989	09 01	21 24.01	-21 22.7					
1989	09 11	21 17.92	-21 28.7	2.208	3.103	147.2	10.1	16.8
1989	09 21	21 13.75	-21 23.6					
1989	10 01	21 11.77	-21 08.0	2.422	3.125	126.6	14.9	17.1

1980 JH a,e,i = 2.61, 0.17, 13 Elements MPC 13685

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 54.88	+07 36.0	1.345	2.171	133.2	20.0	15.7
1989	07 23	21 52.05	+07 45.8					
1989	08 02	21 46.95	+07 23.7	1.232	2.174	150.5	13.3	15.3
1989	08 12	21 40.31	+06 28.5					
1989	08 22	21 33.20	+05 04.2	1.197	2.180	161.4	8.5	15.1
1989	09 01	21 26.76	+03 18.7					
1989	09 11	21 22.11	+01 23.2	1.254	2.190	151.2	12.8	15.4
1989	09 21	21 19.98	-00 30.6					
1989	10 01	21 20.71	-02 13.8	1.395	2.205	133.3	19.3	15.8

1978 SN4 a,e,i = 3.20, 0.18, 2 Elements MPC 11051

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 58.63	-14 50.4	1.786	2.672	143.4	13.1	16.1
1989	07 23	21 54.71	-15 18.8					
1989	08 02	21 48.84	-15 55.0	1.666	2.659	164.9	5.7	15.6
1989	08 12	21 41.65	-16 34.8					
1989	08 22	21 34.05	-17 12.7	1.644	2.649	171.5	3.2	15.5
1989	09 01	21 27.00	-17 44.1					
1989	09 11	21 21.41	-18 05.3	1.726	2.642	149.3	11.2	15.9
1989	09 21	21 17.95	-18 14.6					
1989	10 01	21 16.96	-18 11.4	1.892	2.637	128.8	17.2	16.3

1981 ER21 a,e,i = 3.23, 0.12, 6 Elements MPC 10296

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	21 58.34	-09 31.6	2.113	2.978	141.6	12.2	17.7
1989	07 23	21 54.44	-10 03.7					
1989	08 02	21 48.86	-10 47.3	1.972	2.958	163.2	5.7	17.3
1989	08 12	21 42.13	-11 38.8					
1989	08 22	21 34.98	-12 33.8	1.933	2.940	173.4	2.3	17.1
1989	09 01	21 28.22	-13 27.4					
1989	09 11	21 22.62	-14 15.0	2.003	2.923	150.9	9.7	17.5
1989	09 21	21 18.82	-14 53.3					
1989	10 01	21 17.17	-15 20.4	2.164	2.907	129.7	15.4	17.8

(3867) Shiretoko a,e,i = 2.35, 0.11, 6 Elements MPC 13446

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 07.57	-19 47.1	1.699	2.580	142.5	13.9	16.8
1989	07 23	22 02.29	-20 49.9					
1989	08 02	21 54.64	-21 58.3	1.582	2.571	163.5	6.5	16.4
1989	08 12	21 45.32	-23 04.9					
1989	08 22	21 35.40	-24 01.8	1.566	2.560	166.5	5.3	16.3
1989	09 01	21 26.05	-24 43.4					
1989	09 11	21 18.40	-25 06.4	1.653	2.547	145.5	12.9	16.7
1989	09 21	21 13.26	-25 10.7					
1989	10 01	21 11.00	-24 58.0	1.822	2.533	125.0	18.9	17.1

1982 FP3 a,e,i = 3.17, 0.13, 2 Elements MPC 11052

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 09.69	-14 30.6	2.395	3.246	140.7	11.4	18.1
1989	07 23	22 05.09	-15 03.6					
1989	08 02	21 58.90	-15 42.7	2.288	3.270	162.5	5.4	17.8
1989	08 12	21 51.65	-16 24.2					
1989	08 22	21 44.03	-17 03.9	2.288	3.295	173.4	2.0	17.6
1989	09 01	21 36.75	-17 38.1					
1989	09 11	21 30.53	-18 03.9	2.399	3.318	151.3	8.4	18.0
1989	09 21	21 25.89	-18 19.7					
1989	10 01	21 23.16	-18 25.2	2.607	3.341	130.1	13.3	18.4

1981 EQ18 a,e,i = 3.13, 0.17, 2 Elements MPC 11042

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 10.24	-10 51.5	2.140	2.986	139.4	12.8	18.7
1989	07 23	22 06.57	-11 16.5					
1989	08 02	22 01.05	-11 52.0	1.974	2.952	161.0	6.4	18.3
1989	08 12	21 54.14	-12 34.9					
1989	08 22	21 46.53	-13 20.9	1.909	2.919	176.0	1.4	17.9
1989	09 01	21 39.06	-14 05.2					
1989	09 11	21 32.56	-14 43.4	1.952	2.886	153.0	9.1	18.3
1989	09 21	21 27.76	-15 12.4					
1989	10 01	21 25.10	-15 30.2	2.090	2.853	131.5	15.2	18.6

1978 PJ2 a,e,i = 3.13, 0.15, 5 Elements MPC 11632

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 10.75	-05 41.3	2.319	3.141	137.2	12.7	17.6
1989	07 23	22 07.06	-05 58.4					
1989	08 02	22 01.67	-06 28.3	2.146	3.112	158.3	6.9	17.2
1989	08 12	21 55.01	-07 09.0					
1989	08 22	21 47.72	-07 57.2	2.075	3.083	174.6	1.8	16.8
1989	09 01	21 40.51	-08 48.6					
1989	09 11	21 34.17	-09 38.7	2.114	3.054	154.6	8.1	17.1
1989	09 21	21 29.35	-10 23.2					
1989	10 01	21 26.48	-10 59.4	2.251	3.025	133.1	14.0	17.5

1985 RU3 a,e,i = 2.67, 0.14, 13 Elements MPC 14020

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 12.80	+00 04.1	2.082	2.882	134.0	14.7	17.1
1989	07 23	22 09.12	-00 19.1					
1989	08 02	22 03.53	-01 01.1	1.909	2.859	154.6	8.8	16.7
1989	08 12	21 56.49	-02 00.9					
1989	08 22	21 48.70	-03 14.7	1.832	2.834	170.6	3.3	16.4
1989	09 01	21 40.98	-04 37.2					
1989	09 11	21 34.20	-06 01.6	1.865	2.809	155.0	8.7	16.6
1989	09 21	21 29.12	-07 21.4					
1989	10 01	21 26.21	-08 31.8	1.996	2.783	133.6	15.1	17.0

1988 DA a,e,i = 2.27, 0.10, 5 Elements MPC 12946

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 23.54	-16 11.4	1.581	2.433	138.0	16.2	17.2
1989	07 23	22 18.41	-16 42.8					
1989	08 02	22 10.64	-17 22.5	1.468	2.446	159.9	8.2	16.8
1989	08 12	22 00.93	-18 04.3					
1989	08 22	21 50.36	-18 41.6	1.452	2.458	172.8	3.0	16.5
1989	09 01	21 40.20	-19 08.9					
1989	09 11	21 31.64	-19 22.4	1.539	2.469	151.0	11.4	17.0
1989	09 21	21 25.55	-19 21.1					
1989	10 01	21 22.38	-19 05.8	1.715	2.477	129.7	18.1	17.5

(4037) 1987 EC a,e,i = 2.77, 0.16, 8 Elements MPC 14337

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 20.49	-20 53.6	2.171	3.019	139.7	12.6	17.1
1989	07 23	22 15.73	-21 29.8					
1989	08 02	22 08.87	-22 09.6	2.018	2.993	160.2	6.6	16.7
1989	08 12	22 00.41	-22 47.6					
1989	08 22	21 51.16	-23 18.5	1.968	2.966	168.5	3.9	16.5
1989	09 01	21 42.01	-23 38.1					
1989	09 11	21 33.95	-23 43.6	2.027	2.938	149.3	10.1	16.8
1989	09 21	21 27.73	-23 34.5					
1989	10 01	21 23.83	-23 11.8	2.179	2.909	128.4	15.6	17.2

6573 P-L a,e,i = 2.60, 0.08, 4 Elements MPC 12700

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 18.26	-11 41.4	1.954	2.792	137.8	14.1	17.9
1989	07 23	22 14.06	-12 20.0					
1989	08 02	22 07.78	-13 09.7	1.822	2.797	159.8	7.2	17.5
1989	08 12	21 59.96	-14 06.0					
1989	08 22	21 51.41	-15 03.4	1.791	2.801	176.0	1.4	17.2
1989	09 01	21 43.04	-15 56.3					
1989	09 11	21 35.81	-16 39.8	1.868	2.803	153.0	9.4	17.6
1989	09 21	21 30.44	-17 10.9					
1989	10 01	21 27.39	-17 28.6	2.040	2.804	131.4	15.5	18.0

1988 EB1 a,e,i = 2.43, 0.14, 3 Elements MPC 13161

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 23.45	-14 53.5	1.794	2.636	137.6	15.1	17.6
1989	07 23	22 18.69	-15 34.0					
1989	08 02	22 11.62	-16 23.3	1.683	2.657	159.6	7.7	17.2
1989	08 12	22 02.85	-17 16.1					
1989	08 22	21 53.31	-18 05.8	1.670	2.677	173.6	2.4	17.0
1989	09 01	21 44.06	-18 46.9					
1989	09 11	21 36.13	-19 15.3	1.764	2.695	152.0	10.1	17.5
1989	09 21	21 30.30	-19 29.4					
1989	10 01	21 27.00	-19 29.2	1.951	2.711	130.6	16.3	17.9

1988 KG a,e,i = 2.92, 0.19, 12 Elements MPC 13452

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 13.87	+05 20.1	1.805	2.587	130.8	17.3	15.1
1989	07 23	22 11.57	+05 30.5					
1989	08 02	22 07.17	+05 18.2	1.628	2.554	149.3	11.7	14.7
1989	08 12	22 01.10	+04 41.7					
1989	08 22	21 54.08	+03 42.3	1.536	2.524	164.1	6.3	14.4
1989	09 01	21 46.99	+02 24.4					
1989	09 11	21 40.84	+00 55.4	1.543	2.495	155.9	9.5	14.5
1989	09 21	21 36.49	-00 36.4					
1989	10 01	21 34.50	-02 03.1	1.643	2.470	136.7	16.1	14.8

1981 GN1 a,e,i = 2.33, 0.13, 10 Elements MPC 13604

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 15.04	+01 22.5	1.197	2.030	132.8	21.6	16.3
1989	07 23	22 13.58	+01 04.0					
1989	08 02	22 09.34	+00 14.6	1.080	2.035	152.6	13.2	15.9
1989	08 12	22 02.92	-01 04.4					
1989	08 22	21 55.37	-02 46.6	1.040	2.044	170.6	4.6	15.5
1989	09 01	21 47.97	-04 41.5					
1989	09 11	21 42.07	-06 36.2	1.093	2.057	156.9	11.1	15.9
1989	09 21	21 38.67	-08 19.3					
1989	10 01	21 38.27	-09 43.4	1.231	2.073	136.2	19.5	16.4

1985 RS a,e,i = 2.67, 0.14, 12 Elements MPC 14350

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 29.09	-22 05.0	1.840	2.683	137.9	14.7	16.7
1989	07 23	22 23.69	-22 32.5					
1989	08 02	22 15.90	-23 01.7	1.742	2.712	158.4	7.9	16.4
1989	08 12	22 06.39	-23 26.8					
1989	08 22	21 56.16	-23 42.1	1.742	2.740	168.3	4.3	16.2
1989	09 01	21 46.30	-23 43.9					
1989	09 11	21 37.87	-23 30.8	1.849	2.768	150.1	10.4	16.6
1989	09 21	21 31.61	-23 03.5					
1989	10 01	21 27.93	-22 23.9	2.048	2.795	129.6	16.0	17.1

(3872) 1983 AV a,e,i = 2.66, 0.21, 13 Elements MPC 13460

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 26.03	-23 00.3	2.321	3.157	138.7	12.3	17.9
1989	07 23	22 21.52	-24 15.3					
1989	08 02	22 15.01	-25 33.3	2.207	3.172	158.1	6.9	17.6
1989	08 12	22 07.01	-26 47.6					
1989	08 22	21 58.24	-27 52.0	2.199	3.184	164.2	5.0	17.5
1989	09 01	21 49.55	-28 41.3					
1989	09 11	21 41.81	-29 12.6	2.301	3.194	147.2	9.8	17.8
1989	09 21	21 35.74	-29 25.4					
1989	10 01	21 31.79	-29 21.3	2.496	3.202	127.2	14.4	18.1

1985 TH1 a,e,i = 2.74, 0.07, 2 Elements MPC 14194

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 23.33	-08 39.7	2.016	2.833	135.6	14.5	17.6
1989	07 23	22 19.81	-09 01.2					
1989	08 02	22 14.22	-09 35.4	1.859	2.821	157.1	8.0	17.2
1989	08 12	22 07.02	-10 19.4					
1989	08 22	21 58.91	-11 08.7	1.798	2.809	178.8	0.4	16.7
1989	09 01	21 50.76	-11 58.3					
1989	09 11	21 43.50	-12 43.0	1.846	2.796	156.2	8.4	17.2
1989	09 21	21 37.91	-13 18.7					
1989	10 01	21 34.51	-13 43.2	1.991	2.783	134.2	14.9	17.5

1979 OA a,e,i = 2.91, 0.38, 25 Elements MPC 6950

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1989	07 13	22 42.56	+09 31.8	1.219	1.963	-1.69	-21.0	16.4
1989	07 23	22 37.18	+12 48.7					
1989	08 02	22 28.40	+15 39.0	1.152	2.024	-2.07	-21.1	16.2
1989	08 12	22 17.00	+17 52.2					
1989	08 22	22 04.31	+19 21.5	1.161	2.092	-2.31	-21.7	16.1
1989	09 01	21 51.93	+20 05.5					
1989	09 11	21 41.44	+20 09.9	1.255	2.165	-2.24	-21.6	16.4
1989	09 21	21 33.94	+19 45.7					
1989	10 01	21 29.90	+19 04.7	1.428	2.242	-1.92	-19.9	16.9

1988 EJ a,e,i = 2.62, 0.12, 17 Elements MPC 13160

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 26.23	+08 29.9	1.886	2.621	126.5	18.2	16.8
1989	07 23	22 23.32	+08 19.2					
1989	08 02	22 18.31	+07 43.4	1.746	2.647	145.7	12.5	16.5
1989	08 12	22 11.65	+06 42.0					
1989	08 22	22 04.09	+05 17.8	1.690	2.673	162.6	6.5	16.2
1989	09 01	21 56.51	+03 36.5					
1989	09 11	21 49.82	+01 46.5	1.739	2.698	157.8	8.1	16.4
1989	09 21	21 44.79	-00 03.4					
1989	10 01	21 41.91	-01 45.4	1.890	2.722	138.6	14.1	16.8

(3885) 1979 HG5 a,e,i = 2.75, 0.07, 5 Elements MPC 13474

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 26.83	-08 53.1	1.752	2.572	134.9	16.3	16.2
1989	07 23	22 24.24	-09 28.3					
1989	08 02	22 19.37	-10 18.4	1.617	2.579	156.2	9.1	15.8
1989	08 12	22 12.70	-11 19.7					
1989	08 22	22 04.99	-12 26.1	1.575	2.586	179.2	0.3	15.3
1989	09 01	21 57.21	-13 30.9					
1989	09 11	21 50.36	-14 27.8	1.638	2.595	157.1	8.7	15.9
1989	09 21	21 45.30	-15 11.9					
1989	10 01	21 42.55	-15 41.1	1.795	2.605	135.4	15.7	16.3

1942 DB a,e,i = 2.58, 0.12, 12 Elements MPC 10157

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 36.19	-10 00.0	1.853	2.654	133.1	16.2	16.2
1989	07 23	22 31.39	-09 46.5					
1989	08 02	22 24.21	-09 43.0	1.723	2.677	154.9	9.3	15.9
1989	08 12	22 15.19	-09 47.4					
1989	08 22	22 05.21	-09 56.2	1.689	2.700	177.7	0.8	15.4
1989	09 01	21 55.26	-10 05.9					
1989	09 11	21 46.42	-10 12.9	1.764	2.721	157.5	8.1	15.9
1989	09 21	21 39.50	-10 14.6					
1989	10 01	21 35.01	-10 09.3	1.938	2.742	135.3	14.9	16.4

1981 EX28 a,e,i = 2.33, 0.10, 6 Elements MPC 14345

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 33.69	-05 15.2	1.392	2.204	131.9	20.1	18.3
1989	07 23	22 30.23	-04 49.1					
1989	08 02	22 23.88	-04 40.0	1.273	2.224	152.7	12.1	17.9
1989	08 12	22 15.23	-04 47.2					
1989	08 22	22 05.31	-05 07.2	1.237	2.244	173.0	3.1	17.5
1989	09 01	21 55.40	-05 35.1					
1989	09 11	21 46.83	-06 05.0	1.300	2.265	158.1	9.5	17.9
1989	09 21	21 40.62	-06 31.0					
1989	10 01	21 37.33	-06 49.3	1.453	2.287	136.7	17.5	18.4

1966 CL a,e,i = 2.38, 0.17, 3 Elements MPC 11624

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 32.67	-10 20.6	1.516	2.340	134.1	18.2	17.6
1989	07 23	22 29.11	-10 58.8					
1989	08 02	22 22.90	-11 51.9	1.415	2.378	155.9	10.0	17.2
1989	08 12	22 14.64	-12 54.6					
1989	08 22	22 05.32	-13 59.5	1.404	2.415	177.9	0.9	16.8
1989	09 01	21 56.11	-14 59.3					
1989	09 11	21 48.19	-15 47.4	1.497	2.451	156.1	9.6	17.4
1989	09 21	21 42.44	-16 20.4					
1989	10 01	21 39.35	-16 37.2	1.681	2.486	134.3	16.7	17.9

1983 EV a,e,i = 2.73, 0.11, 4 Elements MPC 8213

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 31.76	-13 21.2	2.208	3.016	135.3	13.7	17.8
1989	07 23	22 27.73	-13 47.7					
1989	08 02	22 21.69	-14 22.7	2.062	3.022	156.8	7.6	17.5
1989	08 12	22 14.07	-15 02.6					
1989	08 22	22 05.56	-15 42.6	2.016	3.026	176.2	1.3	17.1
1989	09 01	21 56.98	-16 18.3					
1989	09 11	21 49.21	-16 45.6	2.083	3.029	155.9	7.8	17.5
1989	09 21	21 42.98	-17 02.3					
1989	10 01	21 38.78	-17 07.2	2.249	3.031	134.0	13.7	17.9

1981 EV8 a,e,i = 2.29, 0.19, 6 Elements MPC 13165

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 21.71	+00 12.3	1.056	1.893	132.0	23.5	18.0
1989	07 23	22 22.08	+00 46.3					
1989	08 02	22 19.36	+00 53.4	0.921	1.872	150.3	15.6	17.4
1989	08 12	22 13.96	+00 30.7					
1989	08 22	22 06.83	-00 19.9	0.855	1.856	168.2	6.4	16.9
1989	09 01	21 59.32	-01 32.0					
1989	09 11	21 53.02	-02 54.4	0.870	1.847	159.5	11.0	17.1
1989	09 21	21 49.26	-04 15.0					
1989	10 01	21 48.80	-05 23.8	0.964	1.845	139.7	20.5	17.6

1979 OK15 a,e,i = 2.22, 0.17, 5 Elements MPC 11147

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 26.70	-06 22.0	1.025	1.879	133.9	22.9	16.9
1989	07 23	22 26.01	-06 53.1					
1989	08 02	22 22.03	-07 49.8	0.932	1.899	154.6	13.3	16.4
1989	08 12	22 15.38	-09 07.1					
1989	08 22	22 07.23	-10 35.4	0.913	1.924	178.0	1.0	15.9
1989	09 01	21 59.06	-12 03.0					
1989	09 11	21 52.42	-13 18.6	0.982	1.953	158.0	11.1	16.5
1989	09 21	21 48.43	-14 14.8					
1989	10 01	21 47.63	-14 48.5	1.132	1.985	136.9	20.2	17.1

1976 GJ1 a,e,i = 3.12, 0.10, 1 Elements MPC 12199

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 30.42	-08 51.6	2.645	3.431	134.0	12.3	17.4
1989	07 23	22 26.91	-09 13.3					
1989	08 02	22 21.76	-09 44.7	2.487	3.436	155.4	7.1	17.1
1989	08 12	22 15.32	-10 23.2					
1989	08 22	22 08.15	-11 05.6	2.429	3.440	178.2	0.5	16.7
1989	09 01	22 00.86	-11 48.0					
1989	09 11	21 54.13	-12 26.8	2.486	3.443	158.7	6.1	17.1
1989	09 21	21 48.58	-12 58.7					
1989	10 01	21 44.63	-13 21.9	2.648	3.446	136.7	11.5	17.4

(4036) 1987 DW5 a,e,i = 2.80, 0.15, 5 Elements MPC 14337

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 32.54	-07 33.6	2.438	3.219	133.0	13.3	17.7
1989	07 23	22 29.11	-08 01.0					
1989	08 02	22 23.87	-08 40.1	2.267	3.213	154.5	7.8	17.3
1989	08 12	22 17.16	-09 28.7					
1989	08 22	22 09.55	-10 22.8	2.194	3.205	177.5	0.8	16.9
1989	09 01	22 01.74	-11 17.9					
1989	09 11	21 54.50	-12 09.4	2.236	3.196	158.9	6.5	17.2
1989	09 21	21 48.52	-12 53.2					
1989	10 01	21 44.29	-13 26.9	2.382	3.185	136.6	12.5	17.6

1976 SV10 a,e,i = 2.74, 0.07, 2 Elements MPC 9753

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 33.74	-07 39.3	1.745	2.547	132.8	17.0	16.5
1989	07 23	22 31.02	-07 43.4					
1989	08 02	22 25.92	-08 01.5	1.603	2.553	153.8	10.1	16.1
1989	08 12	22 18.88	-08 31.3					
1989	08 22	22 10.67	-09 08.8	1.550	2.561	176.4	1.4	15.7
1989	09 01	22 02.28	-09 48.6					
1989	09 11	21 54.74	-10 25.4	1.602	2.569	159.4	7.9	16.1
1989	09 21	21 48.96	-10 54.4					
1989	10 01	21 45.50	-11 13.0	1.750	2.579	137.5	15.2	16.5

1981 EY45 a,e,i = 3.15, 0.18, 4 Elements MPC 10624

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 33.16	-08 28.4	2.255	3.043	133.3	14.1	18.4
1989	07 23	22 30.23	-08 31.6					
1989	08 02	22 25.33	-08 45.6	2.061	3.008	154.2	8.4	18.0
1989	08 12	22 18.77	-09 08.5					
1989	08 22	22 11.12	-09 37.2	1.962	2.972	176.7	1.1	17.5
1989	09 01	22 03.15	-10 08.2					
1989	09 11	21 55.69	-10 37.0	1.972	2.937	159.6	6.9	17.8
1989	09 21	21 49.55	-11 00.1					
1989	10 01	21 45.30	-11 14.8	2.084	2.902	137.5	13.5	18.1

1986 WG a,e,i = 2.41, 0.26, 22 Elements MPC 11729

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 41.49	+22 08.3	2.426	3.003	115.2	17.8	18.6
1989	07 23	22 38.09	+23 13.6					
1989	08 02	22 32.54	+23 58.6	2.221	2.984	130.7	14.9	18.3
1989	08 12	22 25.11	+24 18.3					
1989	08 22	22 16.36	+24 09.3	2.086	2.961	143.6	11.7	18.1
1989	09 01	22 07.05	+23 30.5					
1989	09 11	21 58.12	+22 24.0	2.040	2.936	146.9	10.8	18.0
1989	09 21	21 50.46	+20 55.7					
1989	10 01	21 44.78	+19 13.4	2.091	2.907	137.2	13.5	18.1

1977 HH1 a,e,i = 3.12, 0.21, 0 Elements MPC 11049

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 34.83	-09 19.3	1.644	2.454	133.2	17.6	16.8
1989	07 23	22 33.53	-09 27.3					
1989	08 02	22 29.80	-09 49.2	1.502	2.453	153.6	10.6	16.4
1989	08 12	22 24.02	-10 22.3					
1989	08 22	22 16.95	-11 01.9	1.446	2.456	176.2	1.6	15.9
1989	09 01	22 09.53	-11 42.2					
1989	09 11	22 02.83	-12 17.3	1.491	2.464	160.8	7.7	16.3
1989	09 21	21 57.78	-12 42.7					
1989	10 01	21 55.01	-12 55.5	1.629	2.475	139.2	15.3	16.8

1982 SC6 a,e,i = 2.36, 0.20, 7 Elements MPC 13605

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 45.41	-16 25.8	1.774	2.576	133.0	16.8	17.6
1989	07 23	22 42.36	-16 54.1					
1989	08 02	22 36.56	-17 32.3	1.589	2.539	153.8	10.2	17.1
1989	08 12	22 28.28	-18 15.5					
1989	08 22	22 18.27	-18 57.0	1.494	2.500	172.1	3.2	16.6
1989	09 01	22 07.58	-19 30.3					
1989	09 11	21 57.49	-19 49.5	1.504	2.458	156.0	9.6	16.9
1989	09 21	21 49.20	-19 51.8					
1989	10 01	21 43.52	-19 36.9	1.610	2.416	134.1	17.3	17.2

1985 VC1 a,e,i = 2.67, 0.18, 14 Elements MPC 14196

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 45.09	-30 45.0	1.666	2.492	135.1	16.8	16.9
1989	07 23	22 42.70	-31 52.3					
1989	08 02	22 37.19	-33 00.2	1.518	2.455	150.9	11.6	16.5
1989	08 12	22 28.92	-33 59.1					
1989	08 22	22 18.79	-34 38.8	1.457	2.420	157.1	9.4	16.3
1989	09 01	22 08.06	-34 51.6					
1989	09 11	21 58.24	-34 33.7	1.489	2.387	145.4	13.8	16.4
1989	09 21	21 50.61	-33 46.4					
1989	10 01	21 45.96	-32 34.2	1.602	2.355	128.0	19.6	16.7

1982 AF a,e,i = 2.72, 0.14, 11 Elements MPC 13855

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 42.73	-01 36.0	1.798	2.555	128.2	18.2	17.1
1989	07 23	22 40.30	-00 48.5					
1989	08 02	22 35.37	-00 14.7	1.611	2.528	147.9	12.3	16.7
1989	08 12	22 28.22	+00 04.2					
1989	08 22	22 19.51	+00 08.3	1.506	2.502	167.1	5.2	16.3
1989	09 01	22 10.16	-00 00.6					
1989	09 11	22 01.30	-00 18.8	1.504	2.478	161.1	7.6	16.3
1989	09 21	21 53.99	-00 41.1					
1989	10 01	21 49.02	-01 02.6	1.598	2.454	140.4	15.1	16.7

1985 RH a,e,i = 2.61, 0.15, 14 Elements MPC 12967

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 52.99	-19 00.6	1.624	2.424	131.8	18.2	4.1
1989	07 23	22 48.90	-19 03.7					
1989	08 02	22 41.89	-19 12.1	1.509	2.455	152.6	11.0	3.7
1989	08 12	22 32.51	-19 20.6					
1989	08 22	22 21.73	-19 23.4	1.483	2.488	171.3	3.5	3.4
1989	09 01	22 10.76	-19 16.2					
1989	09 11	22 00.88	-18 56.1	1.562	2.521	157.1	8.9	3.8
1989	09 21	21 53.11	-18 23.2					
1989	10 01	21 48.03	-17 38.9	1.738	2.554	135.9	15.8	4.2

1981 ET24 a,e,i = 2.30, 0.04, 7 Elements MPC 11739

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 43.84	-01 32.5	1.585	2.351	127.9	19.9	18.2
1989	07 23	22 42.11	-01 45.8					
1989	08 02	22 37.73	-02 20.9	1.434	2.359	148.5	13.0	17.8
1989	08 12	22 31.03	-03 16.8					
1989	08 22	22 22.75	-04 29.2	1.363	2.367	170.9	3.9	17.4
1989	09 01	22 13.91	-05 51.3					
1989	09 11	22 05.69	-07 14.2	1.394	2.374	162.7	7.3	17.6
1989	09 21	21 59.18	-08 29.6					
1989	10 01	21 55.09	-09 31.6	1.523	2.380	140.3	15.6	18.0

1986 UG a,e,i = 2.21, 0.15, 2 Elements MPC 12709

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 41.69	-08 45.4	1.292	2.107	131.4	21.2	17.1
1989	07 23	22 41.51	-09 03.7					
1989	08 02	22 38.24	-09 42.2	1.124	2.073	151.6	13.4	16.5
1989	08 12	22 32.06	-10 38.7					
1989	08 22	22 23.70	-11 46.6	1.032	2.041	174.7	2.6	15.9
1989	09 01	22 14.33	-12 57.3					
1989	09 11	22 05.50	-14 00.2	1.033	2.011	160.7	9.5	16.1
1989	09 21	21 58.68	-14 47.3					
1989	10 01	21 54.87	-15 14.1	1.120	1.983	138.3	19.6	16.6

(4030) 1984 EO1 a,e,i = 2.46, 0.10, 7 Elements MPC 14335

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 49.58	-11 39.7	1.464	2.262	130.6	20.0	16.7
1989	07 23	22 47.36	-11 33.7					
1989	08 02	22 42.15	-11 40.0	1.332	2.275	151.3	12.4	16.3
1989	08 12	22 34.37	-11 55.6					
1989	08 22	22 24.88	-12 15.4	1.281	2.290	174.4	2.5	15.8
1989	09 01	22 14.88	-12 33.8					
1989	09 11	22 05.71	-12 45.5	1.330	2.306	161.2	8.1	16.1
1989	09 21	21 58.53	-12 47.1					
1989	10 01	21 54.04	-12 36.9	1.473	2.324	139.1	16.4	16.6

1984 CP a,e,i = 2.44, 0.10, 7 Elements MPC 12800

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 47.31	-11 02.7	1.746	2.532	130.9	17.7	18.8
1989	07 23	22 45.12	-11 55.0					
1989	08 02	22 40.39	-13 02.4	1.610	2.552	152.1	10.7	18.5
1989	08 12	22 33.49	-14 20.0					
1989	08 22	22 25.13	-15 40.4	1.563	2.571	173.3	2.6	18.1
1989	09 01	22 16.28	-16 55.7					
1989	09 11	22 08.04	-17 58.5	1.623	2.589	159.1	8.0	18.4
1989	09 21	22 01.40	-18 44.3					
1989	10 01	21 57.02	-19 11.1	1.781	2.605	137.1	15.2	18.9

1972 JJ a,e,i = 3.04, 0.04, 9 Elements MPC 13480

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 47.12	-19 56.8	2.146	2.939	133.4	14.6	16.9
1989	07 23	22 44.98	-20 52.9					
1989	08 02	22 40.64	-21 56.0	2.002	2.942	152.9	9.0	16.6
1989	08 12	22 34.41	-23 00.3					
1989	08 22	22 26.91	-23 59.4	1.952	2.945	166.7	4.5	16.3
1989	09 01	22 18.93	-24 47.2					
1989	09 11	22 11.39	-25 18.8	2.008	2.949	154.5	8.4	16.6
1989	09 21	22 05.14	-25 32.1					
1989	10 01	22 00.78	-25 27.3	2.162	2.953	134.7	13.9	16.9

1948 AG a,e,i = 1.93, 0.08, 24 Elements MPC 13169

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 51.88	-28 27.7	1.233	2.068	133.5	20.9	17.9
1989	07 23	22 51.74	-31 54.4					
1989	08 02	22 47.72	-35 31.6	1.140	2.071	147.9	15.1	17.6
1989	08 12	22 39.94	-38 59.7					
1989	08 22	22 29.29	-41 57.1	1.137	2.073	149.5	14.3	17.6
1989	09 01	22 17.33	-44 07.1					
1989	09 11	22 06.17	-45 22.0	1.220	2.072	136.8	19.4	17.9
1989	09 21	21 57.71	-45 44.5					
1989	10 01	21 53.06	-45 22.8	1.368	2.070	120.9	24.5	18.3

1983 AD a,e,i = 2.56, 0.12, 10 Elements MPC 11619

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	07 13	22 54.60	-20 58.4	2.096	2.876	131.9	15.3	18.6
1989	07 23	22 52.05	-22 01.1					
1989	08 02	22 47.07	-23 11.3	1.941	2.873	151.3	9.8	18.3
1989	08 12	22 39.97	-24 22.7					
1989	08 22	22 31.35	-25 27.9	1.879	2.868	164.9	5.3	18.0
1989	09 01	22 22.08	-26 20.0					
1989	09 11	22 13.17	-26 53.6	1.924	2.861	153.5	9.0	18.2
1989	09 21	22 05.61	-27 06.5					
1989	10 01	22 00.09	-26 59.2	2.067	2.852	133.7	14.7	18.6