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EDITORIAL NOTICE.

The next MPCs will be published on or about 1989 Feb. 20. No MPCs will be issued in January.

* * * * *

ERRATA.

The values of n given for the orbits of the 48 numbered minor planets on MPC 13145-13148 are incorrect and should read as follows:

(14)	0.23685716	(1486)	0.30243275	(1634)	0.29288266
(19)	0.25821418	(1487)	0.17541770	(1906)	0.26965427
(59)	0.22039860	(1497)	0.19969087	(2040)	0.17989936
(128)	0.21606777	(1506)	0.23911111	(2055)	0.28074473
(521)	0.21696498	(1518)	0.29680526	(2067)	0.12540532
(545)	0.17320128	(1534)	0.21852868	(2072)	0.25696700
(646)	0.27795666	(1552)	0.18878788	(2083)	0.38485058
(772)	0.18957126	(1557)	0.18896016	(2086)	0.26496791
(1401)	0.29664131	(1564)	0.17607043	(2099)	0.28191188
(1410)	0.18780233	(1575)	0.26935451	(2100)	1.29844654
(1430)	0.24060629	(1576)	0.17806390	(2102)	0.67269684
(1432)	0.26800918	(1585)	0.19674179	(2105)	0.26677706
(1434)	0.18811979	(1590)	0.29607027	(2130)	0.29129898
(1450)	0.23338341	(1596)	0.20060891	(2131)	0.38016588
(1455)	0.29277459	(1612)	0.18058112	(2138)	0.22365465
(1485)	0.18752690	(1613)	0.21763535	(2422)	0.27726864

13481	-15	For Yakoleva read Yakovleva
13817	2 to 4	The contact, observer and telescope for these Cerro Tololo observations should read: E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A. Observer S. J. Bus 0.61-m reflector
13846	-21 to -20	For at the Anderson Mesa Station of the Lowell Observatory read on plates taken by C. Kowal at Palomar
13852	8	For G 0.00 read G 0.25

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object		Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N Obs.
1988 JJ		1988 07	17.20104	15 04 44.89	+05 35 28.7	MPC13537	17.0	675
1988 TA	*	1988 10	05.30557	01 37 12.31	+12 30 57.2	MPC13667	16	1 675
1988 TA		1988 10	05.33682	01 37 03.79	+12 27 44.7	MPC13667		1 675
1988 TA		1988 10	06.30696	01 34 10.82	+11 00 31.4	MPC13667		1 675
1988 TA		1988 10	06.32780	01 34 06.47	+10 58 55.9	MPC13667		1 675
1988 VE2		1988 11	12.71553	03 30 47.68	+12 34 14.1	MPC13819		2 877
1988 VE2		1988 11	12.72977	03 30 46.83	+12 34 11.3	MPC13819		2 877
879		1986 11	25.96076	02 34 12.95	+30 17 24.2	MPC13663		3 571

Note 1: new measurements by J. Gibson; time originally very slightly different. 2: time originally erroneously given as 90 min earlier. 3: time originally erroneously given as 1986 11 25.94896.

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 13780.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1985 WV	*	1985 11	20.01200	04 24 43.22	+16 56 05.7	1985 VN3	17.5	095
1988 VO4	*	1988 11	08.49861	02 15 29.70	+16 43 21.7	1988 VN1	16	399
1988 VO4		1988 11	08.51424	02 15 28.64	+16 43 17.3	1988 VN1		399

* * * * *

IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 12852.

	Note		Note		Note
1954 LK = (2738)	1	1954 TZ = (683)	1	1977 UL2 = (2099)	2
1987 SJ12= (482)	1	1987 YO1 = (3487)	3	1988 VG2 = (724)	4

Note 1: identification by G. Williams. 2: by F. N. Bowman. 3: by E. Goffin. 4: by S. Nakano.

* * * * *

CRITICAL LIST OF MINOR PLANETS.

The following list updates and is in the same form as that on MPC 12493:

1. Objects observed at only one opposition:
719 724* 878

* As shown in the item Identications above, this long-lost minor planet has very recently been found and can be completely removed from the critical list. See also IAUC 4676, MPC 13981-13982, 13985 and 13999.

2. Objects observed at only two oppositions:
2608 3270 3352 3360 3551 3553 3671 3688 3757 3838 3908

3. Objects accurately observed at only three oppositions:
1538 2059 2061 2062 2076 2101 2135 2148 2198 2202 2272 2340
2552 2629 2671 2695 2703 2765 2895 2915 2937 2986 3004 3025
3037 3040 3041 3043 3075 3086 3087 3101 3102 3144 3160 3198
3204 3206 3211 3212 3217 3218 3245 3252 3254 3255 3271 3273
3284 3287 3289 3307 3336 3343 3361 3392 3398 3401 3402 3410
3416 3426 3446 3468 3476 3480 3489 3512 3531 3532 3537 3542
3552 3554 3556 3563 3579 3629 3632 3635 3677 3693 3712 3752
3792 3801 3805 3808 3833 3834 3913

4. Objects observed at four or more oppositions, last during 1973-1974:
1134 1871 1876

5. Objects observed at four or more oppositions, last during 1976-1978:
944 1050 1509 1709 1816 1901 1919 1932 2048 2049

* * * * *

ROMAN NUMERAL DESIGNATIONS OF COMETS IN 1987.

The following tabulation continues that on MPC 12627. Comets 1987 XXII and XXV are sungrazing comets that were not given provisional designations.

Comet	T	Name	Year/letter	Ref.
1987 I	Jan. 1.6	P/Forbes	1986g	IAUC 4229
1987 II	Mar. 9.7	Sorrells	1986n	MPC 12454
1987 III	Mar. 17.3	Nishikawa-Takamizawa-Tago	1987c	MPC 12009
1987 IV	Mar. 19.9	Shoemaker	1988b	MPC 13458
1987 V	Apr. 10.3	Torres	1987j	MPC 13459
1987 VI	Apr. 14.5	P/Howell	1987h	IAUC 4335
1987 VII	Apr. 20.8	Wilson	1986l	MPC 13596
1987 VIII	May 24.6	P/Jackson-Neujmin	1987t	IAUC 4438
1987 IX	June 14.0	P/du Toit-Hartley	1986q	IAUC 4293
1987 X	June 18.0	P/Grigg-Skjellerup	1986m	IAUC 4255
1987 XI	July 4.3	P/Russell 2	1987q	IAUC 4415
1987 XII	July 15.9	P/Hartley 3	1988d	MPC 13459
1987 XIII	July 17.4	P/Encke		MPC 10520
1987 XIV	July 22.6	P/Klemola	1987i	IAUC 4349
1987 XV	July 27.3	P/West-Kohoutek-Ikemura	1987x	MPC 12454
1987 XVI	Aug. 10.2	P/Gehrels 1	1987v	MPC 12201
1987 XVII	Aug. 12.1	P/Helin	1987w	MPC 13459
1987 XVIII	Aug. 18.7	P/Comas Sola	1986j	IAUC 4239
1987 XIX	Aug. 30.5	P/Schwassmann-Wachmann 2	1986h	IAUC 4231
1987 XX	Sept. 1.1	P/Wild 3	1987e	MPC 12200
1987 XXI	Sept. 9.2	Levy	1987y	MPC 12575
1987 XXII	Oct. 6.1	(SMM 1)		IAUC 4621
1987 XXIII	Oct. 9.5	Rudenko	1987u	MPC 13597
1987 XXIV	Oct. 16.5	P/Brooks 2	1987m	IAUC 4372
1987 XXV	Oct. 18.0	(SMM 2)		IAUC 4621
1987 XXVI	Oct. 25.7	P/Reinmuth 2	1987l	IAUC 4369
1987 XXVII	Oct. 30.1	P/Kohoutek	1986k	MPC 13597
1987 XXVIII	Oct. 31.8	P/Harrington	1987n	IAUC 4383
1987 XXIX	Nov. 7.3	Bradfield	1987s	MPC 13597

1987 XXX	Nov. 29.9	Levy	1988e	MPC 13452
1987 XXXI	Dec. 4.1	P/Mueller	1987a1	MPC 13459
1987 XXXII	Dec. 11.9	McNaught	1987b1	MPC 13597
1987 XXXIII	Dec. 18.3	P/Borrelly	1987p	IAUC 4404
1987 XXXIV	Dec. 19.5	P/Bus	1987f	IAUC 4310
1987 XXXV	Dec. 26.8	Maury-Phinney	1988c	MPC 13042

* * * * *

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

046 Klet. Observers A. Mrkos and Z. Vavrova.
327 Peking Observatory, Xinglong Station. 0.60-m Schmidt. Observers Y.-l. Ge and Q. Wang.
372 Geisei. Observer T. Seki.
413 Siding Spring. Uppsala Southern Schmidt. Observer R. H. McNaught.
500 The geocentric code is given to observations from the SMM (Solar Maximum Mission) satellite. Observers S. A. Beck, J. Klein, D. Kobe, D. Pitone, A. Stanger, O. C. St. Cyr, B. Twambly and C. Waugh.
675 Palomar. 0.46-m Schmidt. Observers C. and E. Shoemaker.
801 Oak Ridge Observatory. Observers R. E. McCrosky and C.-Y. Shao.
809 European Southern Observatory. 1.5-m Danish reflector + CCD. Observer R. M. West.
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.
	Periodic Comet Schwassmann-Wachmann 1				
/1974 II	1988 12 05.38681	21 57 25.42	-08 10 50.6	14 T	897
/1974 II	1988 12 05.41510	21 57 26.11	-08 10 46.6		897
	Periodic Comet Wolf-Harrington				
/1984 XVII	1985 03 14.50517	09 27 28.33	-17 37 58.9	15 T	1 413
/1984 XVII	1985 03 14.54691	09 27 27.35	-17 37 35.4		1 413
	Periodic Comet Halley				
/1986 III	1988 05 14.97387	09 28 55.37	-04 01 03.0	23.1N	809
/1986 III	1988 05 14.98150	09 28 55.35	-04 01 01.4	23.5N	809
/1986 III	1988 05 15.01159	09 28 55.36	-04 00 57.4	23.1N	809
/1986 III	1988 05 15.01885	09 28 55.32	-04 00 56.3	23.6N	809
/1986 III	1988 05 15.05212	09 28 55.30	-04 00 51.7	24.0N	809
/1986 III	1988 05 16.01561	09 28 55.05	-03 58 40.7	24.0N	809
/1986 III	1988 05 16.03010	09 28 55.06	-03 58 38.8	23.9N	809
/1986 III	1988 05 16.04464	09 28 55.04	-03 58 36.5	23.7N	809
/1986 III	1988 05 16.05907	09 28 55.05	-03 58 35.0	23.5N	809
/1986 III	1988 05 17.02118	09 28 55.25	-03 56 26.2	22.7N	809
/1986 III	1988 05 17.03625	09 28 55.24	-03 56 24.8	22.8N	809
/1986 III	1988 05 17.98189	09 28 55.85	-03 54 21.3	23.2N	809
/1986 III	1988 05 17.99639	09 28 55.85	-03 54 19.4	22.8N	809
/1986 III	1988 05 18.01082	09 28 55.86	-03 54 17.8	22.9N	809
/1986 III	1988 05 19.03205	09 28 56.93	-03 52 07.8	23.6N	809
	Comet 1987 XXII (SMM 1)				
/1987 XXII	1987 10 05.90863	12 38 36	-04 57.0		500
/1987 XXII	1987 10 05.97406	12 40 55	-04 50.4		500

Comet 1987 XXV (SMM 2)

/1987 XXV	1987	10	17.81405	13	22	41	-09	38.4				500
/1987 XXV	1987	10	17.87947	13	24	38	-09	31.2				500

Periodic Comet Tempel 2

/1987g	1988	10	10.40503	18	54	52.66	-30	36 59.2				897
/1987g	1988	10	10.40845	18	54	53.94	-30	37 06.6				897
/1987g	1988	11	10.42083	20	51	16.0	-28	53 38				897
/1987g	1988	11	10.43692	20	51	18.3	-28	53 35				897

Comet Shoemaker-Holt-Rodriquez (1988h)

/1988h	1988	10	10.41817	18	38	46.95	-07	52 13.0	15	T		897
/1988h	1988	10	10.44375	18	38	46.96	-07	52 38.5				897
/1988h	1988	10	14.41667	18	39	07.86	-08	50 12.0	15	T		897
/1988h	1988	10	14.42523	18	39	08.01	-08	50 23.9				897
/1988h	1988	10	14.45116	18	39	08.20	-08	50 42.3				897
/1988h	1988	10	29.72517	18	43	01.32	-12	16 13.2				046
/1988h	1988	10	29.73368	18	43	01.55	-12	16 18.2				046
/1988h	1988	11	04.72319	18	45	32.86	-13	30 10.3				046
/1988h	1988	11	04.73049	18	45	33.19	-13	30 16.7				046
/1988h	1988	11	05.72847	18	46	01.47	-13	42 15.8				046
/1988h	1988	11	05.73576	18	46	01.56	-13	42 20.5				046
/1988h	1988	11	06.97762	18	46	37.86	-13	57 05.8				801

Comet 1988l (SMM 3)

/1988l	1988	06	27.63958	06	19	48	+22	46.2				500
/1988l	1988	06	27.65069	06	19	58	+22	49.8				500
/1988l	1988	06	27.66250	06	20	02	+22	52.8				500
/1988l	1988	06	27.69306	06	20	48	+23	02.4				500
/1988l	1988	06	27.70486	06	21	00	+23	06.6				500
/1988l	1988	06	27.71667	06	21	22	+23	09.0				500
/1988l	1988	06	27.72222	06	21	34	+23	13.2				500

Comet 1988m (SMM 4)

/1988m	1988	08	21.70000	09	56	55	+12	01.8				500
/1988m	1988	08	21.73611	09	58	29	+12	05.4				500
/1988m	1988	08	21.75347	09	59	17	+12	06.0				500

Comet 1988n (SMM 5)

/1988n	1988	10	11.88403	13	02	46	-07	31.2				500
/1988n	1988	10	11.90139	13	03	19	-07	30.0				500
/1988n	1988	10	11.90694	13	03	26	-07	30.0				500
/1988n	1988	10	11.91875	13	03	53	-07	28.2				500
/1988n	1988	10	11.95486	13	05	07	-07	25.2				500
/1988n	1988	10	11.97222	13	05	41	-07	23.4				500

Periodic Comet Ge-Wang (1988o)

/1988o	1988	10	11.48385	03	03	42.04	+06	30 27.8	16.5	T	2	675
/1988o	1988	10	11.51510	03	03	41.43	+06	30 13.3			2	675
/1988o	1988	11	03.54097	02	51	28.68	+03	52 09.2	17	T	2	897
/1988o	1988	11	03.58056	02	51	27.22	+03	51 55.2			2	897
/1988o	1988	11	04.36736	02	50	58.46	+03	47 17.7	16	T	2	675
/1988o	1988	11	04.59666	02	50	50.19	+03	45 59.4	17	T		327
/1988o	1988	11	04.63797	02	50	48.50	+03	45 43.7				327
/1988o	1988	11	19.70527	02	42	09.18	+02	35 55.3	17	T		413
/1988o	1988	11	28.42118	02	38	15.46	+02	13 16.7	17	T		372
/1988o	1988	11	28.51563	02	38	13.15	+02	13 07.3				372
/1988o	1988	12	07.11356	02	35	36.50	+02	04 30.2			3	801

Comet 1988p (SMM 6)

/1988p	1988 11 18.17708	15 33 04	-19 52.8		500
/1988p	1988 11 18.24861	15 34 22	-19 36.6		500
/1988p	1988 11 18.25972	15 34 34	-19 34.8		500

Note 1: at edge of plate. 2: prediscovery images. 3: poor sky; faint image; difficult to measure.

* * * * *

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
J.-L. Heudier, CERGA Caussols, F-06460 Saint Vallier de Thiey, France
Observer A. Maury
Reductions by R. Chemin
0.9-m Schmidt telescope

1988 XB	1988 12 09.21250	07 24 24.86	+25 18 28.3	14.5	010
1988 XB	1988 12 09.23681	07 24 14.51	+25 19 09.6		010

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

1973 UU5		1988 11 03.85451	01 10 45.74	+06 33 20.4			033
1973 UU5		1988 11 03.91285	01 10 43.40	+06 33 05.4		18.4	033
1973 UU5		1988 11 04.89132	01 10 06.46	+06 28 59.4			033
1981 RG1		1988 11 03.96389	04 21 24.70	+30 50 39.0			033
1981 RG1		1988 11 04.01250	04 21 21.92	+30 50 48.7		17.6	033
1981 RG1		1988 11 04.97917	04 20 27.44	+30 53 52.2			033
1987 HU		1988 09 08.97917	00 24 04.98	+00 55 28.8			033
1987 HU		1988 09 09.02778	00 24 02.47	+00 55 06.6			033
1987 HU		1988 09 09.98472	00 23 14.85	+00 48 01.4		19.1	033
1987 HU		1988 09 10.03333	00 23 12.26	+00 47 39.1			033
1987 HU		1988 09 10.97222	00 22 24.50	+00 40 36.4			033
1987 HU		1988 09 11.02500	00 22 21.69	+00 40 12.5			033
1988 RH3	*	1988 09 08.97917	00 14 18.49	+01 21 52.9			033
1988 RH3		1988 09 09.02778	00 14 16.08	+01 21 50.6			033
1988 RH3		1988 09 09.98472	00 13 29.72	+01 21 12.5		18.7	033
1988 RH3		1988 09 10.03333	00 13 27.22	+01 21 09.5			033
1988 RH3		1988 09 10.97222	00 12 40.91	+01 20 27.1			033
1988 RH3		1988 09 11.02500	00 12 38.26	+01 20 26.7			033
1988 RJ3	*	1988 09 08.97917	00 14 53.27	+01 32 20.5			033
1988 RJ3		1988 09 09.02778	00 14 50.69	+01 32 07.9			033
1988 RJ3		1988 09 09.98472	00 14 01.45	+01 28 13.4		18.4	033
1988 RJ3		1988 09 10.03333	00 13 58.82	+01 28 00.5			033
1988 RJ3		1988 09 10.97222	00 13 09.60	+01 24 02.5			033
1988 RJ3		1988 09 11.02500	00 13 06.73	+01 23 50.8			033
1988 RK3	*	1988 09 08.97917	00 16 32.05	-00 03 13.9			033
1988 RK3		1988 09 09.02778	00 16 29.53	-00 03 32.0			033
1988 RK3		1988 09 09.98472	00 15 42.42	-00 09 22.2		19.0	033
1988 RK3		1988 09 10.03333	00 15 39.90	-00 09 40.2			033
1988 RK3		1988 09 10.97222	00 14 52.84	-00 15 28.7			033
1988 RK3		1988 09 11.02500	00 14 50.09	-00 15 47.6			033
1988 RL3	*	1988 09 08.97917	00 17 01.13	-00 47 56.1			033
1988 RL3		1988 09 09.02778	00 16 58.81	-00 48 15.3			033
1988 RL3		1988 09 09.98472	00 16 14.01	-00 54 08.2		19.1	033
1988 RL3		1988 09 10.03333	00 16 11.62	-00 54 26.2			033
1988 RL3		1988 09 10.97222	00 15 26.95	-01 00 16.5			033
1988 RL3		1988 09 11.02500	00 15 24.36	-01 00 36.2			033
1988 RM3	*	1988 09 08.97917	00 17 01.29	+01 48 09.6			033
1988 RM3		1988 09 09.02778	00 16 58.56	+01 48 11.4			033
1988 RM3		1988 09 09.98472	00 16 06.17	+01 49 03.4		17.8	033
1988 RM3		1988 09 10.03333	00 16 03.34	+01 49 05.2			033
1988 RM3		1988 09 10.97222	00 15 10.81	+01 49 49.9			033
1988 RM3		1988 09 11.02500	00 15 07.71	+01 49 52.5			033
1988 RN3	*	1988 09 08.97917	00 17 52.74	+02 02 55.4			033
1988 RN3		1988 09 09.02778	00 17 50.85	+02 02 32.2			033
1988 RN3		1988 09 09.98472	00 17 14.37	+01 55 20.6		19.8	033
1988 RN3		1988 09 10.03333	00 17 12.34	+01 54 57.7			033
1988 RN3		1988 09 10.97222	00 16 35.55	+01 47 43.8			033
1988 RN3		1988 09 11.02500	00 16 33.38	+01 47 20.6			033
1988 RO3	*	1988 09 08.97917	00 18 05.28	+01 10 38.7			033
1988 RO3		1988 09 09.02778	00 18 02.35	+01 10 47.8			033
1988 RO3		1988 09 09.98472	00 17 05.92	+01 14 01.7		18.1	033
1988 RO3		1988 09 10.03333	00 17 02.88	+01 14 11.0			033

1988	RO3		1988	09	10.97222	00	16	06.38	+01	17	16.2		033
1988	RO3		1988	09	11.02500	00	16	03.09	+01	17	28.6		033
1988	RP3	*	1988	09	08.97917	00	18	15.10	+01	21	09.1		033
1988	RP3		1988	09	09.02778	00	18	12.32	+01	21	15.9		033
1988	RP3		1988	09	09.98472	00	17	18.57	+01	23	53.2	17.2	033
1988	RP3		1988	09	10.03333	00	17	15.68	+01	23	59.8		033
1988	RP3		1988	09	10.97222	00	16	21.76	+01	26	30.0		033
1988	RP3		1988	09	11.02500	00	16	18.59	+01	26	38.8		033
1988	RQ3	*	1988	09	08.97917	00	18	43.91	+00	13	09.8		033
1988	RQ3		1988	09	09.02778	00	18	41.57	+00	12	50.2		033
1988	RQ3		1988	09	09.98472	00	17	56.89	+00	06	29.3	18.3	033
1988	RQ3		1988	09	10.03333	00	17	54.46	+00	06	10.0	18.9	033
1988	RQ3		1988	09	10.97222	00	17	09.58	-00	00	10.0		033
1988	RQ3		1988	09	11.02500	00	17	06.96	-00	00	31.0		033
1988	RR3	*	1988	09	08.97917	00	18	51.90	-00	39	11.2		033
1988	RR3		1988	09	09.02778	00	18	49.28	-00	39	24.0		033
1988	RR3		1988	09	09.98472	00	17	59.96	-00	43	33.7	18.8	033
1988	RR3		1988	09	10.03333	00	17	57.29	-00	43	45.8		033
1988	RR3		1988	09	10.97222	00	17	07.83	-00	47	55.3		033
1988	RR3		1988	09	11.02500	00	17	04.93	-00	48	09.7		033
1988	RS3	*	1988	09	08.97917	00	18	52.41	+00	13	33.3		033
1988	RS3		1988	09	09.02778	00	18	50.85	+00	13	14.5		033
1988	RS3		1988	09	09.98472	00	18	22.41	+00	07	07.1	17.7	033
1988	RS3		1988	09	10.03333	00	18	20.74	+00	06	48.1		033
1988	RS3		1988	09	10.97222	00	17	51.62	+00	00	39.5		033
1988	RS3		1988	09	11.02500	00	17	49.77	+00	00	19.0		033
1988	RT3	*	1988	09	08.97917	00	20	06.91	+00	57	37.6		033
1988	RT3		1988	09	09.02778	00	20	04.99	+00	57	31.5	I	033
1988	RT3		1988	09	09.98472	00	19	28.31	+00	55	41.2	18.9	033
1988	RT3		1988	09	10.03333	00	19	26.28	+00	55	35.2		033
1988	RT3		1988	09	10.97222	00	18	48.98	+00	53	38.5		033
1988	RT3		1988	09	11.02500	00	18	46.77	+00	53	34.4		033
1988	RU3	*	1988	09	08.97917	00	20	32.90	-00	01	31.6		033
1988	RU3		1988	09	09.02778	00	20	30.82	-00	01	48.7		033
1988	RU3		1988	09	09.98472	00	19	50.77	-00	07	28.4	19.0	033
1988	RU3		1988	09	10.03333	00	19	48.62	-00	07	46.0		033
1988	RU3		1988	09	10.97222	00	19	08.54	-00	13	23.7		033
1988	RU3		1988	09	11.02500	00	19	06.26	-00	13	41.4		033
1988	RV3	*	1988	09	08.97917	00	20	48.66	+01	28	09.2		033
1988	RV3		1988	09	09.02778	00	20	46.56	+01	27	51.4		033
1988	RV3		1988	09	09.98472	00	20	05.51	+01	21	50.8	19.2	033
1988	RV3		1988	09	10.03333	00	20	03.24	+01	21	31.3		033
1988	RV3		1988	09	10.97222	00	19	21.95	+01	15	30.1		033
1988	RV3		1988	09	11.02500	00	19	19.54	+01	15	10.8		033
1988	RW3	*	1988	09	08.97917	00	21	08.91	+01	09	20.6		033
1988	RW3		1988	09	09.02778	00	21	06.93	+01	09	09.5		033
1988	RW3		1988	09	09.98472	00	20	29.10	+01	05	28.7	19.3	033
1988	RW3		1988	09	10.03333	00	20	27.02	+01	05	17.1		033
1988	RW3		1988	09	10.97222	00	19	49.15	+01	01	37.0		033
1988	RW3		1988	09	11.02500	00	19	46.95	+01	01	24.9		033
1988	RX3	*	1988	09	08.97917	00	21	30.45	+00	45	31.9		033
1988	RX3		1988	09	09.02778	00	21	28.48	+00	45	13.1		033
1988	RX3		1988	09	09.98472	00	20	51.47	+00	39	06.3	19.6	033
1988	RX3		1988	09	10.03333	00	20	49.45	+00	38	47.5		033
1988	RX3		1988	09	10.97222	00	20	12.22	+00	32	42.0		033
1988	RY3	*	1988	09	08.97917	00	22	02.81	+02	07	01.0		033
1988	RY3		1988	09	09.02778	00	22	01.00	+02	06	46.2		033
1988	RY3		1988	09	09.98472	00	21	26.52	+02	02	24.5	18.9	033

1988	RY3		1988	09	10.03333	00	21	24.63	+02	02	10.5		033
1988	RY3		1988	09	10.97222	00	20	49.92	+01	57	47.0		033
1988	RY3		1988	09	11.02500	00	20	47.94	+01	57	33.3		033
1988	RZ3	*	1988	09	08.97917	00	25	47.77	+01	56	45.6		033
1988	RZ3		1988	09	09.02778	00	25	45.81	+01	56	29.1		033
1988	RZ3		1988	09	09.98472	00	25	09.10	+01	51	14.7	19.7	033
1988	RZ3		1988	09	10.03333	00	25	07.06	+01	50	58.0		033
1988	RZ3		1988	09	10.97222	00	24	30.09	+01	45	42.9		033
1988	RZ3		1988	09	11.02500	00	24	27.93	+01	45	26.0		033
1988	RA4	*	1988	09	08.97917	00	26	53.74	+01	40	35.6	E	033
1988	RA4		1988	09	09.02778	00	26	51.34	+01	40	13.8		033
1988	RA4		1988	09	09.98472	00	26	05.34	+01	32	53.2	20.0	033
1988	RA4		1988	09	10.03333	00	26	02.88	+01	32	30.5		033
1988	RA4		1988	09	10.97222	00	25	16.71	+01	25	11.5		033
1988	RA4		1988	09	11.02500	00	25	13.96	+01	24	47.8		033
1988	RB4	*	1988	09	09.98472	00	21	34.95	-01	04	07.9	19.1 E	033
1988	RB4		1988	09	10.03333	00	21	32.17	-01	04	12.8		033
1988	RB4		1988	09	10.97222	00	20	40.46	-01	05	47.7		033
1988	RB4		1988	09	11.02500	00	20	37.47	-01	05	51.1		033
283			1988	11	03.96389	04	15	29.60	+32	21	48.9		033
283			1988	11	04.01250	04	15	27.34	+32	21	46.3	14.0	033
283			1988	11	04.97917	04	14	42.13	+32	20	42.7		033
317			1988	09	08.97917	00	22	55.63	+00	56	10.6		033
317			1988	09	09.02778	00	22	53.41	+00	55	52.5		033
317			1988	09	09.98472	00	22	11.33	+00	49	58.5	13.7	033
317			1988	09	10.03333	00	22	09.00	+00	49	40.0		033
317			1988	09	10.97222	00	21	26.60	+00	43	46.2		033
317			1988	09	11.02500	00	21	24.07	+00	43	26.6		033
433			1988	09	11.04653	01	19	03.11	+32	16	19.0	12.8	033
433			1988	09	11.06389	01	19	02.61	+32	16	36.1		033
433			1988	09	11.09444	01	19	01.45	+32	17	12.2		033
433			1988	09	11.11181	01	19	00.94	+32	17	28.4		033
1519			1988	09	09.00382	01	04	49.81	+02	16	44.6	15.8	033
1519			1988	09	09.06076	01	04	47.72	+02	16	50.9		033
1519			1988	09	10.00903	01	04	13.00	+02	18	30.8		033
1975			1988	09	08.97917	00	19	12.89	+00	40	32.4		033
1975			1988	09	09.02778	00	19	11.05	+00	40	10.9		033
1975			1988	09	09.98472	00	18	36.01	+00	33	11.6	16.5	033
1975			1988	09	10.03333	00	18	34.09	+00	32	49.8		033
1975			1988	09	10.97222	00	17	58.90	+00	25	52.9		033
1975			1988	09	11.02500	00	17	56.80	+00	25	30.0		033
1991			1988	11	03.96389	04	26	54.35	+31	45	26.3		033
1991			1988	11	04.01250	04	26	51.32	+31	45	27.0	17.5	033
1991			1988	11	04.97917	04	25	52.81	+31	45	28.3		033
2284			1988	09	09.00382	01	04	39.45	+01	09	38.1	17.1	033
2284			1988	09	09.06076	01	04	37.42	+01	09	14.7		033
2284			1988	09	10.00903	01	04	04.91	+01	02	46.5		033
2458			1988	09	08.97917	00	26	10.63	+00	11	21.4		033
2458			1988	09	09.02778	00	26	08.78	+00	11	07.3		033
2458			1988	09	09.98472	00	25	32.83	+00	06	28.4	17.1	033
2458			1988	09	10.03333	00	25	30.91	+00	06	14.1		033
2458			1988	09	10.97222	00	24	54.97	+00	01	38.0		033
2458			1988	09	11.02500	00	24	52.86	+00	01	22.3		033
2800			1988	09	09.00382	00	59	20.05	+01	37	57.8	18.6	033
2800			1988	09	09.06076	00	59	18.25	+01	37	44.7		033
2956			1988	09	09.00382	01	01	11.94	+02	11	00.8	18.2	033
2956			1988	09	09.06076	01	01	09.96	+02	10	45.3		033
2956			1988	09	10.00903	01	00	37.37	+02	06	21.4		033

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A. Mrkos, Dept. of Astronomy and Astrophysics, Charles University,
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0.6-m Maksutov reflector

1936 QV	1988	11	12.89115	03	29	33.19	+15	05	10.8		046
1936 QV	1988	11	12.90388	03	29	32.44	+15	05	05.9		046
1971 UT1	1988	11	12.89115	03	16	52.49	+14	53	38.8		046
1971 UT1	1988	11	12.90388	03	16	51.94	+14	53	35.6		046
1975 VN2	1988	11	04.80480	02	03	19.86	+14	08	48.1	15.4	046
1975 VN2	1988	11	04.81892	02	03	18.87	+14	08	49.7		046
1975 VN2	1988	11	05.79751	02	02	13.51	+14	10	54.9		046
1975 VN2	1988	11	05.81024	02	02	12.69	+14	10	56.3		046
1975 VN2	1988	11	10.78472	01	56	51.39	+14	21	30.7		046
1975 VN2	1988	11	10.79884	01	56	50.51	+14	21	32.8		046
1976 SD3	1988	11	05.79751	02	05	03.75	+13	04	53.1		046
1976 SD3	1988	11	05.81024	02	05	02.99	+13	04	49.0		046
1977 DY8	1988	11	04.80480	02	05	10.41	+13	37	23.2		046
1977 DY8	1988	11	04.81892	02	05	09.76	+13	37	19.1		046
1977 DY8	1988	11	05.79751	02	04	07.73	+13	34	15.0		046
1977 DY8	1988	11	05.81024	02	04	06.95	+13	34	14.1		046
1977 DY8	1988	11	10.78472	01	59	06.15	+13	19	13.4		046
1977 DY8	1988	11	10.79884	01	59	05.24	+13	19	08.9		046
1978 SL6	1988	11	04.87384	02	36	18.12	+14	03	34.7	16.7	046
1978 SL6	1988	11	04.88796	02	36	17.22	+14	03	30.2		046
1978 SL6	1988	11	05.86076	02	35	15.34	+13	59	02.6		046
1978 SL6	1988	11	05.87315	02	35	14.52	+13	59	01.5		046
1978 SL6	1988	11	10.85330	02	30	04.77	+13	36	49.7		046
1978 SL6	1988	11	10.86603	02	30	03.98	+13	36	46.0		046
1978 SL6	1988	11	11.85231	02	29	05.15	+13	32	32.4		046
1978 SL6	1988	11	11.86505	02	29	04.18	+13	32	29.5		046
1982 BU1	1988	11	04.90856	02	34	05.39	+09	26	51.2		046
1982 BU1	1988	11	04.92130	02	34	04.79	+09	26	47.9		046
1982 BU1	1988	11	05.89039	02	33	08.21	+09	22	09.8		046
1982 BU1	1988	11	05.90312	02	33	07.56	+09	22	05.4		046
1982 BU1	1988	11	10.88495	02	28	20.54	+08	59	14.2		046
1982 BU1	1988	11	10.89769	02	28	19.77	+08	59	10.5		046
1982 PL	1988	11	04.96811	02	43	55.36	+17	36	37.6		046
1982 PL	1988	11	04.98229	02	43	54.60	+17	36	34.5		046
1982 PL	1988	11	05.95312	02	43	03.57	+17	33	21.1		046
1982 PL	1988	11	05.96597	02	43	02.77	+17	33	17.2		046
1982 PL	1988	11	11.88403	02	37	57.79	+17	13	22.6		046
1982 PL	1988	11	11.89670	02	37	57.20	+17	13	21.0		046
1982 SB6	1988	10	18.90882	01	34	53.71	+06	24	44.9	16.5	046
1982 SB6	1988	10	18.92155	01	34	53.07	+06	24	41.6		046
1982 SB6	1988	11	04.83877	01	22	57.72	+05	17	13.1	16.6	046
1982 SB6	1988	11	04.85289	01	22	57.26	+05	17	11.4		046
1982 SB6	1988	11	05.82847	01	22	21.07	+05	13	57.4		046
1982 SB6	1988	11	05.84120	01	22	20.52	+05	13	55.2		046
1982 SB6	1988	11	10.81921	01	19	28.36	+04	59	07.8		046
1982 SB6	1988	11	10.83333	01	19	27.70	+04	59	08.2		046
1984 BL	1988	11	12.89115	03	22	19.94	+16	36	05.5		046
1984 BL	1988	11	12.90388	03	22	19.35	+16	36	04.4		046
1984 SB6	1988	11	04.93831	03	00	01.26	+12	13	19.7		046
1984 SB6	1988	11	04.94931	03	00	00.56	+12	13	15.4		046
1984 SB6	1988	11	05.92153	02	59	02.41	+12	10	23.2		046
1984 SB6	1988	11	05.93426	02	59	01.45	+12	10	20.9		046
1984 SB6	1988	11	11.91383	02	53	08.22	+11	53	41.3		046
1984 SB6	1988	11	12.92436	02	52	09.58	+11	51	10.3		046

1984	SB6		1988	11	12.93709	02	52	08.95	+11	51	09.8		046
1988	TO		1988	10	16.97873	01	29	44.11	+09	48	31.9	16.0	046
1988	TO		1988	10	16.99146	01	29	43.44	+09	48	28.4		046
1988	TQ		1988	10	18.90882	01	45	56.80	+04	53	28.3	16.6	046
1988	TQ		1988	10	18.92155	01	45	56.31	+04	53	20.5		046
1988	TR		1988	10	18.90882	01	48	20.91	+05	11	28.0	16.5	046
1988	TR		1988	10	18.92155	01	48	20.22	+05	11	23.7		046
1988	TZ		1988	10	11.99100	01	25	00.72	+09	23	40.1	17.0	046
1988	TZ		1988	10	12.00512	01	24	59.90	+09	23	37.5		046
1988	TO1		1988	10	18.90882	01	42	56.63	+06	03	03.4	16.6	046
1988	TO1		1988	10	18.92155	01	42	56.11	+06	03	00.1		046
1988	TO1		1988	11	04.83877	01	30	16.94	+05	01	44.4		046
1988	TO1		1988	11	04.85289	01	30	16.43	+05	01	40.6		046
1988	TO1		1988	11	05.82847	01	29	38.41	+04	59	06.4		046
1988	TO1		1988	11	05.84120	01	29	37.76	+04	59	03.2		046
1988	TO1		1988	11	10.81921	01	26	39.23	+04	48	05.4		046
1988	TO1		1988	11	10.83333	01	26	38.59	+04	48	04.4		046
1988	TS1		1988	11	04.87384	02	36	07.07	+13	12	20.1	16.8	046
1988	TS1		1988	11	04.88796	02	36	06.31	+13	12	15.2		046
1988	TS1		1988	11	05.86076	02	35	20.23	+13	08	07.7		046
1988	TS1		1988	11	05.87315	02	35	19.65	+13	08	04.5		046
1988	TS1		1988	11	10.85330	02	31	27.83	+12	47	24.0	u	046
1988	TS1		1988	11	10.86603	02	31	27.22	+12	47	25.0		046
1988	TS1		1988	11	11.85231	02	30	42.52	+12	43	27.5		046
1988	TS1		1988	11	11.86505	02	30	41.57	+12	43	23.8		046
1988	TR2		1988	10	16.94782	01	22	50.18	+06	51	38.5		046
1988	TR2		1988	10	16.96050	01	22	49.35	+06	51	40.3		046
1988	TX2		1988	10	11.99100	01	34	31.21	+06	13	23.3	16.7	046
1988	TX2		1988	10	12.00512	01	34	30.54	+06	13	17.1		046
1988	UH		1988	11	10.85330	02	28	29.92	+12	52	11.1		046
1988	UH		1988	11	10.86603	02	28	29.13	+12	52	06.9		046
1988	UH		1988	11	11.85231	02	27	44.16	+12	47	43.6		046
1988	UH		1988	11	11.86505	02	27	43.40	+12	47	43.2		046
1988	UJ		1988	11	04.87384	02	31	30.84	+14	10	39.9	16.4	046
1988	UJ		1988	11	04.88796	02	31	30.01	+14	10	40.0		046
1988	UJ		1988	11	05.86076	02	30	37.03	+14	09	37.6		046
1988	UJ		1988	11	05.87315	02	30	36.33	+14	09	37.5		046
1988	UJ		1988	11	10.85330	02	26	08.33	+14	04	26.0		046
1988	UJ		1988	11	10.86603	02	26	07.72	+14	04	26.0		046
1988	UJ		1988	11	11.85231	02	25	15.71	+14	03	27.5		046
1988	UJ		1988	11	11.86505	02	25	14.98	+14	03	27.5		046
1988	UT	*	1988	10	18.90882	01	38	31.25	+05	32	57.8	16.4	046
1988	UT		1988	10	18.92155	01	38	30.53	+05	32	50.5		046
1988	UT		1988	11	05.82847	01	23	43.07	+04	03	52.5		046
1988	UT		1988	11	05.84120	01	23	42.51	+04	03	51.1		046
1988	UT		1988	11	10.81921	01	20	46.14	+03	50	15.1		046
1988	UT		1988	11	10.83333	01	20	45.57	+03	50	12.9		046
1988	VA		1988	11	04.87384	02	28	38.32	+13	38	34.0	16.9	046
1988	VB		1988	11	04.96811	02	41	41.71	+15	24	39.2	16.5	046
1988	VB		1988	11	04.98229	02	41	40.78	+15	24	40.8		046
1988	VB		1988	11	05.95312	02	40	41.73	+15	25	58.6		046
1988	VB		1988	11	05.96597	02	40	40.91	+15	25	58.2		046
1988	VF		1988	11	04.80480	02	09	12.69	+13	58	12.6	16.7	046
1988	VF		1988	11	04.81892	02	09	11.91	+13	58	17.3		046
1988	VF		1988	11	05.79751	02	08	14.32	+14	00	41.5		046
1988	VF		1988	11	05.81024	02	08	13.62	+14	00	43.0		046
1988	VF		1988	11	10.78472	02	03	40.10	+14	13	15.6		046
1988	VF		1988	11	10.79884	02	03	39.31	+14	13	17.3		046
1988	VJ		1988	11	04.96811	02	42	15.59	+16	23	38.5	16.6	046

1988	VJ	1988	11	04.98229	02	42	14.80	+16	23	33.0	046
1988	VJ	1988	11	05.95312	02	41	15.07	+16	16	04.0	046
1988	VJ	1988	11	05.96597	02	41	13.12	+16	15	55.8	046
1988	VV	1988	11	05.86076	02	27	54.02	+15	06	45.7	16.9 046
1988	VV	1988	11	05.87315	02	27	53.35	+15	06	41.2	046
1988	VV	1988	11	10.85330	02	23	33.32	+14	28	28.6	046
1988	VV	1988	11	10.86603	02	23	32.65	+14	28	25.1	046
1988	VV	1988	11	11.85231	02	22	43.52	+14	21	01.3	046
1988	VV	1988	11	11.86505	02	22	42.61	+14	20	55.8	046
1988	VW	1988	11	04.87384	02	31	33.56	+15	51	09.2	16.9 046
1988	VW	1988	11	04.88796	02	31	32.73	+15	51	04.3	046
1988	VW	1988	11	05.86076	02	30	46.42	+15	47	13.2	046
1988	VW	1988	11	05.87315	02	30	45.87	+15	47	11.5	046
1988	VW	1988	11	10.86603	02	26	49.52	+15	27	15.2	046
1988	VW	1988	11	11.85231	02	26	04.10	+15	23	22.1	046
1988	VW	1988	11	11.86505	02	26	03.37	+15	23	21.2	046
1988	VY	1988	11	05.86076	02	28	07.64	+13	35	09.1	046
1988	VY	1988	11	05.87315	02	28	06.85	+13	35	03.7	046
1988	VQ1	1988	11	04.96811	02	45	15.34	+15	46	45.7	16.8 046
1988	VQ1	1988	11	04.98229	02	45	14.60	+15	46	46.2	046
1988	VQ1	1988	11	05.95312	02	44	08.81	+15	46	24.7	046
1988	VQ1	1988	11	05.96597	02	44	08.04	+15	46	24.2	046
1988	VQ1	1988	11	11.88403	02	37	29.69	+15	43	49.3	046
1988	VQ1	1988	11	11.89670	02	37	28.91	+15	43	49.9	046
1988	VW1	1988	11	04.93831	03	01	37.92	+12	41	34.2	16.9 046
1988	VW1	1988	11	04.94931	03	01	37.24	+12	41	31.9	046
1988	VW1	1988	11	05.92153	03	00	47.04	+12	37	57.2	046
1988	VW1	1988	11	05.93426	03	00	46.26	+12	37	55.7	046
1988	VW1	1988	11	11.91383	02	55	38.43	+12	16	31.3	046
1988	VW1	1988	11	12.92436	02	54	46.63	+12	13	03.4	046
1988	VW1	1988	11	12.93709	02	54	45.94	+12	13	00.8	046
1988	VZ1	1988	11	04.87384	02	33	19.18	+15	15	58.8	16.5 046
1988	VZ1	1988	11	04.88796	02	33	18.39	+15	15	54.7	046
1988	VZ1	1988	11	05.86076	02	32	31.06	+15	12	14.7	046
1988	VZ1	1988	11	05.87315	02	32	30.57	+15	12	10.1	046
1988	VZ1	1988	11	10.85330	02	28	29.92	+14	53	12.0	046
1988	VZ1	1988	11	10.86603	02	28	29.19	+14	53	10.8	046
1988	VZ1	1988	11	11.85231	02	27	42.46	+14	49	28.5	046
1988	VA2	1988	11	04.96811	02	45	37.10	+16	24	21.3	16.9 046
1988	VA2	1988	11	04.98229	02	45	36.26	+16	24	20.7	046
1988	VA2	1988	11	05.95312	02	44	31.57	+16	22	34.4	046
1988	VA2	1988	11	05.96597	02	44	30.87	+16	22	35.1	046
1988	VA2	1988	11	11.88403	02	38	03.82	+16	11	38.6	046
1988	VA2	1988	11	11.89670	02	38	03.00	+16	11	38.0	046
1988	VB2	1988	11	04.96811	02	46	26.52	+14	18	53.1	16.3 046
1988	VB2	1988	11	04.98229	02	46	25.54	+14	18	46.8	046
1988	VB2	1988	11	05.95312	02	45	25.50	+14	11	27.8	046
1988	VB2	1988	11	05.96597	02	45	24.92	+14	11	23.0	046
1988	VC2	1988	11	04.96811	02	49	46.87	+15	55	01.1	16.7 046
1988	VC2	1988	11	04.98229	02	49	46.18	+15	55	00.5	046
1988	VC2	1988	11	05.95312	02	48	54.79	+15	53	51.0	046
1988	VC2	1988	11	05.96597	02	48	54.05	+15	53	50.0	046
1988	VY2	1988	11	12.89115	03	22	32.87	+14	23	40.6	16.5 046
1988	VY2	1988	11	12.90388	03	22	32.28	+14	23	41.1	046
1988	VE3	1988	11	04.96811	02	50	05.61	+17	06	04.6	16.9 046
1988	VE3	1988	11	04.98229	02	50	04.84	+17	06	12.4	046
1988	VG3	1988	11	04.96811	02	51	10.57	+17	49	54.6	16.9 046
1988	VG3	1988	11	04.98229	02	51	09.64	+17	49	56.1	046
1988	VG3	1988	11	05.95312	02	49	55.16	+17	52	30.5	046

1988	VG3		1988	11	05.96597	02	49	54.27	+17	52	30.7		046
1988	VH3		1988	11	04.87384	02	34	16.20	+13	24	46.3	17.0	046
1988	VH3		1988	11	04.88796	02	34	15.46	+13	24	42.2		046
1988	VH3		1988	11	05.86076	02	33	26.03	+13	18	51.2		046
1988	VH3		1988	11	05.87315	02	33	25.23	+13	18	48.0		046
1988	VK3		1988	11	04.87384	02	34	29.17	+14	02	45.3	17.0	046
1988	VK3		1988	11	05.86076	02	33	23.23	+14	00	55.8		046
1988	VK3		1988	11	05.87315	02	33	22.18	+14	00	52.4		046
1988	VW4		1988	11	04.87384	02	35	33.29	+13	57	40.6	17.1	046
1988	VW4		1988	11	04.88796	02	35	32.47	+13	57	34.2		046
1988	VW4		1988	11	05.86076	02	34	41.59	+13	52	45.0		046
1988	VW4		1988	11	05.87315	02	34	40.85	+13	52	41.6		046
1988	VW4		1988	11	10.85330	02	30	24.06	+13	28	19.7	V	046
1988	VW4		1988	11	10.86603	02	30	23.01	+13	28	18.3		046
1988	VX4		1988	11	10.85330	02	24	12.83	+13	24	36.4		046
1988	VX4		1988	11	10.86603	02	24	12.18	+13	24	28.8		046
1988	VX4		1988	11	11.85231	02	23	30.53	+13	17	11.8		046
1988	VX4		1988	11	11.86505	02	23	29.90	+13	17	04.0		046
1988	VB5		1988	11	04.93831	03	00	01.91	+14	18	09.4		046
1988	VB5		1988	11	04.94931	03	00	01.29	+14	18	00.4		046
1988	VB5		1988	11	05.92153	02	59	10.79	+14	06	38.7		046
1988	VB5		1988	11	05.93426	02	59	10.16	+14	06	30.2		046
1988	VB5		1988	11	11.91383	02	54	02.26	+12	57	30.6		046
1988	VB5		1988	11	12.92436	02	53	11.41	+12	46	10.8		046
1988	VB5		1988	11	12.93709	02	53	10.73	+12	46	03.0		046
1988	VC5	*	1988	11	04.81892	02	08	01.32	+13	57	16.3	17.0	046
1988	VC5		1988	11	05.79751	02	07	13.65	+13	49	15.2		046
1988	VC5		1988	11	05.81024	02	07	13.01	+13	49	07.5		046
1988	VD5		1988	10	16.97873	01	34	39.01	+07	51	37.3	15.9	046
1988	VD5		1988	10	16.99146	01	34	38.49	+07	51	41.7		046
1988	VD5	*	1988	11	04.83877	01	20	27.66	+04	54	04.4	16.5	046
1988	VD5		1988	11	04.85289	01	20	27.00	+04	53	56.0		046
1988	VD5		1988	11	05.82847	01	19	49.26	+04	45	41.8		046
1988	VD5		1988	11	05.84120	01	19	48.68	+04	45	37.2		046
1988	VD5		1988	11	10.81921	01	16	51.15	+04	06	13.6		046
1988	VD5		1988	11	10.83333	01	16	50.70	+04	06	08.1		046
1988	VE5	*	1988	11	04.83877	01	22	43.40	+05	24	52.2	16.9	046
1988	VE5		1988	11	04.85289	01	22	42.92	+05	24	49.6		046
1988	VE5		1988	11	05.82847	01	22	05.54	+05	22	05.3		046
1988	VF5	*	1988	11	04.83877	01	23	35.24	+05	12	11.8	16.5	046
1988	VF5		1988	11	04.85289	01	23	34.62	+05	12	12.4		046
1988	VF5		1988	11	05.82847	01	22	49.40	+05	13	54.4		046
1988	VF5		1988	11	05.84120	01	22	48.76	+05	13	55.2		046
1988	VF5		1988	11	10.81921	01	19	25.75	+05	24	47.0		046
1988	VF5		1988	11	10.83333	01	19	25.16	+05	24	48.9		046
1988	VG5	*	1988	11	04.87384	02	26	47.56	+14	08	02.0	16.6	046
1988	VG5		1988	11	04.88796	02	26	46.83	+14	07	57.9		046
1988	VG5		1988	11	05.86076	02	25	52.80	+14	04	07.5		046
1988	VG5		1988	11	11.85231	02	20	33.63	+13	41	17.8		046
1988	VG5		1988	11	11.86505	02	20	32.84	+13	41	13.8		046
1988	VH5	*	1988	11	04.87384	02	33	54.86	+14	30	07.0	15.9	046
1988	VH5		1988	11	04.88796	02	33	54.08	+14	30	04.8		046
1988	VH5		1988	11	11.86505	02	26	22.20	+13	57	43.8		046
1988	VJ5	*	1988	11	04.87384	02	34	27.86	+12	08	14.3	16.8	046
1988	VJ5		1988	11	04.88796	02	34	27.04	+12	08	13.5		046
1988	VJ5		1988	11	05.86076	02	33	25.72	+12	05	38.2		046
1988	VJ5		1988	11	05.87315	02	33	24.98	+12	05	38.0		046
1988	VJ5		1988	11	05.89039	02	33	23.95	+12	05	31.8		046
1988	VJ5		1988	11	05.90312	02	33	23.20	+12	05	29.9		046

1988	VJ5		1988	11	10.85330	02	28	22.41	+11	53	31.8		046
1988	VJ5		1988	11	10.86603	02	28	21.57	+11	53	29.5		046
1988	VJ5		1988	11	10.88495	02	28	20.63	+11	53	22.9		046
1988	VJ5		1988	11	10.89769	02	28	19.84	+11	53	21.2		046
1988	VJ5		1988	11	11.85231	02	27	24.26	+11	51	19.2		046
1988	VJ5		1988	11	11.86505	02	27	23.55	+11	51	21.5		046
1988	VK5	*	1988	11	04.87384	02	35	16.23	+15	25	36.2	17.0	046
1988	VK5		1988	11	04.88796	02	35	15.14	+15	25	34.0		046
1988	VK5		1988	11	05.86076	02	34	22.62	+15	25	14.2		046
1988	VK5		1988	11	05.87315	02	34	21.88	+15	25	13.0		046
1988	VL5	*	1988	11	04.90856	02	29	06.18	+11	29	50.7	16.7	046
1988	VL5		1988	11	04.92130	02	29	05.27	+11	29	43.0		046
1988	VL5		1988	11	05.89039	02	27	54.01	+11	22	47.1		046
1988	VL5		1988	11	05.90312	02	27	53.24	+11	22	48.0		046
1988	VM5	*	1988	11	04.90856	02	30	42.60	+10	20	51.0	16.6	046
1988	VM5		1988	11	04.92130	02	30	41.96	+10	20	48.7		046
1988	VM5		1988	11	05.89039	02	29	56.06	+10	17	43.1		046
1988	VM5		1988	11	05.90312	02	29	55.27	+10	17	40.7		046
1988	VM5		1988	11	10.88495	02	26	04.80	+10	03	07.2		046
1988	VM5		1988	11	10.89769	02	26	04.30	+10	03	07.6		046
1988	VN5	*	1988	11	04.90856	02	32	11.98	+10	33	53.2	17.0	046
1988	VN5		1988	11	04.92130	02	32	11.39	+10	33	51.7		046
1988	VN5		1988	11	05.89039	02	31	17.31	+10	28	39.3		046
1988	VN5		1988	11	05.90312	02	31	16.58	+10	28	34.9		046
1988	VN5		1988	11	10.88495	02	26	42.96	+10	03	05.9		046
1988	VN5		1988	11	10.89769	02	26	42.26	+10	03	03.0		046
1988	VO5	*	1988	11	04.90856	02	33	12.00	+11	43	41.7	16.6	046
1988	VO5		1988	11	04.92130	02	33	11.39	+11	43	40.8		046
1988	VO5		1988	11	05.87315	02	32	09.08	+11	42	47.8		046
1988	VO5		1988	11	05.89039	02	32	08.10	+11	42	43.1		046
1988	VO5		1988	11	05.90312	02	32	07.38	+11	42	43.0		046
1988	VO5		1988	11	10.85330	02	26	46.70	+11	38	29.6		046
1988	VO5		1988	11	10.86603	02	26	46.18	+11	38	29.0		046
1988	VO5		1988	11	10.88495	02	26	45.14	+11	38	26.9		046
1988	VO5		1988	11	10.89769	02	26	44.19	+11	38	25.3		046
1988	VO5		1988	11	11.85231	02	25	43.48	+11	37	49.6		046
1988	VO5		1988	11	11.86505	02	25	42.68	+11	37	51.0		046
1988	VP5	*	1988	11	04.90856	02	39	48.45	+11	04	40.7	16.4	046
1988	VP5		1988	11	04.92130	02	39	47.56	+11	04	38.8		046
1988	VP5		1988	11	05.89039	02	38	45.28	+11	04	02.5		046
1988	VP5		1988	11	05.90312	02	38	44.43	+11	04	01.7		046
1988	VP5		1988	11	10.88495	02	33	31.37	+11	01	51.1		046
1988	VP5		1988	11	10.89769	02	33	30.58	+11	01	50.2		046
1988	VQ5	*	1988	11	04.93831	02	56	18.82	+14	54	27.4	16.9	046
1988	VQ5		1988	11	04.94931	02	56	18.08	+14	54	18.5		046
1988	VQ5		1988	11	05.92153	02	55	18.49	+14	46	20.4		046
1988	VQ5		1988	11	05.93426	02	55	17.79	+14	46	15.3		046
1988	VR5	*	1988	11	04.93831	02	57	30.16	+14	35	41.7	17.3	046
1988	VR5		1988	11	04.94931	02	57	29.57	+14	35	37.3		046
1988	VR5		1988	11	05.92153	02	56	39.08	+14	24	35.9		046
1988	VR5		1988	11	05.93426	02	56	38.49	+14	24	29.3		046
1988	VR5		1988	11	12.92436	02	50	40.18	+13	06	29.4		046
1988	VR5		1988	11	12.93709	02	50	39.48	+13	06	23.2		046
1988	VS5	*	1988	11	04.93831	02	58	04.23	+14	51	35.5	17.1	046
1988	VS5		1988	11	04.94931	02	58	03.30	+14	51	36.9		046
1988	VS5		1988	11	05.92153	02	56	57.33	+14	48	22.3		046
1988	VS5		1988	11	05.93426	02	56	56.55	+14	48	22.8		046
1988	VT5	*	1988	11	04.93831	02	59	45.13	+15	55	54.7	16.8	046
1988	VT5		1988	11	04.94931	02	59	44.47	+15	55	54.5		046

1988	VT5		1988	11	05.92153	02	58	54.61	+15	51	49.0	046
1988	VT5		1988	11	05.93426	02	58	53.86	+15	51	48.7	046
1988	VT5		1988	11	12.92436	02	52	53.68	+15	22	43.4	046
1988	VT5		1988	11	12.93709	02	52	53.05	+15	22	40.2	046
1988	VU5	*	1988	11	04.93831	03	03	28.04	+12	28	40.9	17.0 046
1988	VU5		1988	11	04.94931	03	03	27.53	+12	28	35.4	046
1988	VU5		1988	11	05.92153	03	02	25.40	+12	22	39.6	046
1988	VU5		1988	11	05.93426	03	02	24.72	+12	22	36.8	046
1988	VV5	*	1988	11	04.93831	03	04	38.64	+15	30	44.3	16.0 046
1988	VV5		1988	11	04.94931	03	04	38.01	+15	30	41.7	046
1988	VV5		1988	11	05.92153	03	03	44.61	+15	25	31.7	046
1988	VV5		1988	11	05.93426	03	03	43.86	+15	25	28.2	046
1988	VV5		1988	11	11.91383	02	58	09.49	+14	53	28.6	046
1988	VV5		1988	11	12.92436	02	57	13.22	+14	48	05.4	046
1988	VV5		1988	11	12.93709	02	57	12.54	+14	48	02.1	046
1988	VW5	*	1988	11	04.93831	03	06	48.17	+15	44	10.2	16.6 046
1988	VW5		1988	11	04.94931	03	06	47.61	+15	44	08.1	046
1988	VW5		1988	11	05.92153	03	06	00.67	+15	40	32.3	046
1988	VW5		1988	11	05.93426	03	05	59.89	+15	40	29.3	046
1988	VW5		1988	11	11.91383	03	01	04.08	+15	18	08.6	046
1988	VW5		1988	11	12.92436	03	00	14.16	+15	14	21.9	046
1988	VW5		1988	11	12.93709	03	00	13.66	+15	14	18.9	046
1988	VX5	*	1988	11	04.96811	02	46	14.05	+16	32	47.9	17.0 046
1988	VX5		1988	11	04.98229	02	46	13.40	+16	32	49.1	046
1988	VX5		1988	11	05.95312	02	45	15.88	+16	34	10.0	046
1988	VX5		1988	11	05.96597	02	45	15.26	+16	34	11.4	046
1988	VY5	*	1988	11	04.96811	02	49	38.13	+14	56	41.2	16.6 046
1988	VY5		1988	11	04.98229	02	49	37.47	+14	56	40.7	046
1988	VY5		1988	11	05.95312	02	48	43.89	+14	56	33.0	046
1988	VY5		1988	11	05.96597	02	48	43.10	+14	56	35.5	046
1988	VY5		1988	11	11.88403	02	43	16.56	+14	55	48.5	046
1988	VY5		1988	11	11.89670	02	43	16.00	+14	55	49.1	046
1988	VZ5	*	1988	11	05.92153	02	58	56.67	+15	04	54.9	17.0 046
1988	VZ5		1988	11	05.93426	02	58	56.04	+15	04	50.7	046
1988	VZ5		1988	11	12.92436	02	52	04.82	+14	33	19.3	046
1988	VZ5		1988	11	12.93709	02	52	04.40	+14	33	17.5	046
1988	VA6	*	1988	11	05.95312	02	51	17.77	+16	19	23.1	16.8 046
1988	VA6		1988	11	05.96597	02	51	16.84	+16	19	20.3	046
1988	VA6		1988	11	11.88403	02	45	11.82	+16	06	33.6	046
1988	VA6		1988	11	11.89670	02	45	11.05	+16	06	30.8	046
2558	P-L		1988	11	04.80480	02	01	28.37	+15	04	20.9	046
2558	P-L		1988	11	04.81892	02	01	27.76	+15	04	18.4	046
2558	P-L		1988	11	05.79751	02	00	39.05	+15	01	48.9	046
2558	P-L		1988	11	05.81024	02	00	38.36	+15	01	48.8	046
2558	P-L		1988	11	10.78472	01	56	40.27	+14	49	35.2	046
2558	P-L		1988	11	10.79884	01	56	39.51	+14	49	32.4	046
66			1988	11	04.80480	02	02	24.22	+15	24	33.6	046
66			1988	11	04.81892	02	02	23.46	+15	24	30.7	046
66			1988	11	05.79751	02	01	31.48	+15	21	22.7	046
66			1988	11	05.81024	02	01	30.78	+15	21	20.9	046
66			1988	11	10.78472	01	57	18.87	+15	05	37.3	046
66			1988	11	10.79884	01	57	18.17	+15	05	34.8	046
206			1988	11	04.83877	01	29	06.77	+03	38	58.5	046
206			1988	11	04.85289	01	29	06.20	+03	38	55.7	046
206			1988	11	05.82847	01	28	24.95	+03	35	07.6	046
206			1988	11	05.84120	01	28	24.37	+03	35	04.5	046
206			1988	11	10.81921	01	25	08.29	+03	17	52.6	046
206			1988	11	10.83333	01	25	07.78	+03	17	49.5	046

277	1988	11	04.96811	02	50	01.51	+16	34	36.0	046
277	1988	11	04.98229	02	50	00.79	+16	34	32.2	046
277	1988	11	05.95312	02	49	10.16	+16	30	20.9	046
277	1988	11	05.96597	02	49	09.49	+16	30	17.7	046
277	1988	11	11.88403	02	44	02.84	+16	04	35.0	046
277	1988	11	11.89670	02	44	02.12	+16	04	31.6	046
604	1988	11	04.80480	02	05	49.63	+16	09	00.8	046
604	1988	11	04.81892	02	05	48.86	+16	08	58.3	046
604	1988	11	05.79751	02	05	00.77	+16	06	28.4	046
604	1988	11	05.81024	02	05	00.15	+16	06	27.3	046
604	1988	11	10.78472	02	01	04.98	+15	53	49.2	046
604	1988	11	10.79884	02	01	04.27	+15	53	46.9	046
1472	1988	11	04.83877	01	24	45.95	+06	44	40.6	046
1472	1988	11	04.85289	01	24	45.26	+06	44	41.4	046
1472	1988	11	05.82847	01	24	02.83	+06	45	32.8	046
1472	1988	11	05.84120	01	24	02.19	+06	45	33.5	046
1472	1988	11	10.81921	01	20	52.61	+06	52	09.7	046
1472	1988	11	10.83333	01	20	52.13	+06	52	11.0	046
1784	1988	11	04.93831	03	03	04.93	+15	22	11.3	046
1784	1988	11	04.94931	03	03	04.31	+15	22	10.2	046
1784	1988	11	05.92153	03	02	04.58	+15	18	19.9	046
1784	1988	11	05.93426	03	02	03.78	+15	18	16.8	046
1784	1988	11	11.91383	02	55	55.04	+14	54	44.9	046
1784	1988	11	12.92436	02	54	53.55	+14	50	48.2	046
1784	1988	11	12.93709	02	54	52.69	+14	50	45.8	046
1849	1988	11	04.87384	02	32	40.94	+12	05	48.2	046
1849	1988	11	04.88796	02	32	40.42	+12	05	47.4	046
1849	1988	11	04.90856	02	32	39.18	+12	05	42.0	046
1849	1988	11	04.92130	02	32	38.49	+12	05	40.1	046
1849	1988	11	05.86076	02	31	48.22	+12	04	42.3	046
1849	1988	11	05.87315	02	31	47.54	+12	04	41.9	046
1849	1988	11	05.89039	02	31	46.89	+12	04	37.4	046
1849	1988	11	05.90312	02	31	46.16	+12	04	37.1	046
1849	1988	11	10.85330	02	27	25.59	+11	59	39.0	046
1849	1988	11	10.86603	02	27	24.95	+11	59	38.7	046
1849	1988	11	10.88495	02	27	24.10	+11	59	34.4	046
1849	1988	11	10.89769	02	27	23.44	+11	59	33.2	046
1849	1988	11	11.85231	02	26	33.97	+11	58	45.3	046
1849	1988	11	11.86505	02	26	33.29	+11	58	45.7	046
1857	1988	11	04.80480	02	00	22.49	+15	11	11.2	046
1857	1988	11	04.81892	02	00	21.74	+15	11	03.7	046
1857	1988	11	05.79751	01	59	31.81	+15	02	44.7	046
1857	1988	11	05.81024	01	59	31.08	+15	02	38.4	046
1857	1988	11	10.78472	01	55	32.34	+14	21	03.1	046
1857	1988	11	10.79884	01	55	31.67	+14	20	56.4	046
1889	1988	11	12.89115	03	27	58.34	+17	53	16.5	046
1889	1988	11	12.90388	03	27	57.66	+17	53	16.5	046
1895	1988	11	04.96811	02	53	05.74	+16	31	07.0	046
1895	1988	11	04.98229	02	53	05.00	+16	31	04.4	046
1895	1988	11	11.88403	02	47	16.20	+16	10	05.4	046
1895	1988	11	11.89670	02	47	15.59	+16	10	02.9	046
2040	1988	11	04.83877	01	33	47.26	+05	47	00.2	046
2040	1988	11	04.85289	01	33	46.54	+05	46	59.2	046
2040	1988	11	10.81921	01	28	56.91	+05	47	21.0	046
2040	1988	11	10.83333	01	28	56.30	+05	47	21.0	046
2092	1988	11	04.83877	01	28	12.19	+05	51	58.6	046
2092	1988	11	04.85289	01	28	11.58	+05	51	56.4	046
2092	1988	11	05.82847	01	27	29.85	+05	49	03.6	046
2092	1988	11	05.84120	01	27	29.18	+05	49	00.4	046

2092	1988	11	10.81921	01	24	09.49	+05	35	58.4	046
2092	1988	11	10.83333	01	24	08.97	+05	35	58.0	046
2153	1988	11	04.87384	02	33	27.05	+14	50	50.7	046
2153	1988	11	04.88796	02	33	26.31	+14	50	48.2	046
2153	1988	11	05.87315	02	32	37.11	+14	47	21.8	046
2153	1988	11	10.85330	02	28	30.55	+14	30	06.7	046
2153	1988	11	10.86603	02	28	29.91	+14	30	04.1	046
2153	1988	11	11.85231	02	27	42.22	+14	26	43.2	046
2153	1988	11	11.86505	02	27	41.54	+14	26	41.9	046
2193	1988	11	04.80480	02	08	49.07	+13	02	11.6	046
2193	1988	11	04.81892	02	08	48.38	+13	02	09.8	046
2193	1988	11	05.79751	02	07	58.46	+13	00	47.2	046
2193	1988	11	05.81024	02	07	57.86	+13	00	45.9	046
2193	1988	11	10.78472	02	03	51.28	+12	54	05.9	046
2193	1988	11	10.79884	02	03	50.61	+12	54	04.9	046
2315	1988	11	04.80480	02	03	39.39	+14	44	32.9	046
2315	1988	11	04.81892	02	03	38.64	+14	44	32.2	046
2315	1988	11	05.79751	02	02	44.82	+14	43	58.5	046
2315	1988	11	05.81024	02	02	44.07	+14	43	57.9	046
2315	1988	11	10.78472	01	58	19.95	+14	41	14.0	046
2315	1988	11	10.79884	01	58	19.19	+14	41	14.1	046
2321	1988	11	04.96811	02	48	03.71	+15	43	53.3	046
2321	1988	11	04.98229	02	48	02.95	+15	43	52.4	046
2321	1988	11	05.95312	02	47	09.65	+15	42	41.5	046
2321	1988	11	05.96597	02	47	09.02	+15	42	40.5	046
2321	1988	11	11.88403	02	41	45.69	+15	35	18.8	046
2321	1988	11	11.89670	02	41	45.06	+15	35	17.7	046
2516	1988	11	04.87384	02	29	27.75	+12	25	47.0	046
2516	1988	11	04.88796	02	29	26.89	+12	25	42.0	046
2516	1988	11	04.90856	02	29	25.95	+12	25	33.0	046
2516	1988	11	04.92130	02	29	25.23	+12	25	29.8	046
2516	1988	11	05.86076	02	28	29.37	+12	21	12.9	046
2516	1988	11	05.87315	02	28	28.66	+12	21	10.3	046
2516	1988	11	05.89039	02	28	28.24	+12	21	01.2	046
2516	1988	11	05.90312	02	28	27.46	+12	20	58.6	046
2516	1988	11	10.85330	02	23	41.18	+11	58	55.4	046
2516	1988	11	10.86603	02	23	40.43	+11	58	53.1	046
2516	1988	11	10.88495	02	23	40.01	+11	58	49.3	046
2516	1988	11	10.89769	02	23	39.32	+11	58	45.7	046
2516	1988	11	11.85231	02	22	45.47	+11	54	45.4	046
2516	1988	11	11.86505	02	22	44.96	+11	54	42.7	046
2611	1988	11	04.83877	01	26	03.79	+05	29	41.4	046
2611	1988	11	04.85289	01	26	03.30	+05	29	40.5	046
2611	1988	11	05.82847	01	25	23.83	+05	26	51.7	046
2611	1988	11	05.84120	01	25	23.37	+05	26	48.8	046
2611	1988	11	10.81921	01	22	13.51	+05	13	54.7	046
2611	1988	11	10.83333	01	22	12.91	+05	13	53.7	046
2969	1988	11	04.87384	02	35	24.00	+13	17	19.6	046
2969	1988	11	04.88796	02	35	23.21	+13	17	15.6	046
2969	1988	11	05.86076	02	34	33.53	+13	12	54.2	046
2969	1988	11	05.87315	02	34	32.93	+13	12	51.6	046
2969	1988	11	05.89039	02	34	31.90	+13	12	40.7	046
2969	1988	11	05.90312	02	34	31.17	+13	12	39.7	046
2969	1988	11	10.85330	02	30	22.00	+12	50	51.2	046
2969	1988	11	10.86603	02	30	21.57	+12	50	47.7	046
2969	1988	11	11.85231	02	29	32.92	+12	46	31.9	046
2969	1988	11	11.86505	02	29	32.14	+12	46	30.2	046
2985	1988	11	04.96811	02	53	48.73	+17	23	29.5	046
2985	1988	11	04.98229	02	53	47.87	+17	23	26.7	046

2985		1988	11	05.95312	02	52	55.29	+17	20	29.5		046
2985		1988	11	05.96597	02	52	54.65	+17	20	28.6		046
2985		1988	11	11.88403	02	47	34.34	+17	02	12.9		046
2985		1988	11	11.89670	02	47	33.63	+17	02	10.5		046
3153		1988	11	04.96811	02	49	17.70	+17	13	30.4		046
3153		1988	11	04.98229	02	49	16.81	+17	13	29.8		046
3153		1988	11	05.95312	02	48	12.30	+17	13	55.8		046
3153		1988	11	05.96597	02	48	11.36	+17	13	55.7		046
3153		1988	11	11.88403	02	41	40.04	+17	15	48.8		046
3153		1988	11	11.89670	02	41	39.22	+17	15	49.6		046
3495		1988	11	04.83877	01	20	35.63	+04	57	00.0		046
3495		1988	11	04.85289	01	20	35.13	+04	56	56.7		046
3495		1988	11	05.82847	01	19	59.32	+04	53	42.9		046
3495		1988	11	05.84120	01	19	58.59	+04	53	41.9		046
3899		1988	11	05.92153	02	59	08.14	+14	10	14.8	15.9	046
3899		1988	11	05.93426	02	59	07.49	+14	10	12.7		046
3899		1988	11	11.91383	02	54	09.74	+13	55	00.1		046
3899		1988	11	12.92436	02	53	19.79	+13	52	31.5		046
3899		1988	11	12.93709	02	53	19.09	+13	52	29.7		046

054 Brorfelde
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Observations in part in association with INAS

1974	RG1		1988	11	09.93723	02	17	43.21	+28	02	04.6		054
1974	RG1		1988	11	13.90701	02	14	02.47	+27	44	01.8		054
1974	RG1		1988	11	13.92901	02	14	01.26	+27	43	56.0		054
1988	VC		1988	11	09.93723	02	16	12.29	+28	13	38.0		054
1988	VC		1988	11	13.90701	02	12	41.05	+27	58	10.8		054
1988	VC		1988	11	13.92901	02	12	39.82	+27	58	06.2		054
1988	VD		1988	11	13.90701	02	06	42.58	+31	04	39.1		054
1988	VA1		1988	11	09.93723	02	09	38.50	+29	24	06.7		054
1988	VA1		1988	11	13.90701	02	07	27.77	+28	29	06.0		054
1988	VA1		1988	11	13.92901	02	07	27.18	+28	28	47.5		054
1988	VB1		1988	11	09.93723	02	08	52.35	+30	28	41.7		054
1988	VB1		1988	11	13.90701	02	04	31.33	+30	23	35.2		054
1988	VC1		1988	11	09.93723	02	10	57.97	+28	07	44.0		054
1988	VC1		1988	11	13.92901	02	07	40.58	+27	28	20.6		054
1988	VD1		1988	11	13.90701	02	10	14.70	+29	21	06.9		054
1988	VD1		1988	11	13.92901	02	10	13.45	+29	21	03.4		054
1988	VO3		1988	11	03.97585	03	46	10.43	+25	36	43.5	17.0	054
1988	VO3		1988	11	03.98800	03	46	09.71	+25	36	44.8		054
1988	VO3		1988	11	04.92891	03	45	16.82	+25	37	42.8		054
1988	VC4	*	1988	11	03.97585	03	38	05.10	+25	08	17.4	18 V	054
1988	VC4		1988	11	03.98800	03	38	04.37	+25	08	18.1		054
1988	VC4		1988	11	04.92891	03	37	08.64	+25	08	57.2		054
1988	VD4	*	1988	11	03.97585	03	38	28.85	+25	19	04.0	17.5	054
1988	VD4		1988	11	03.98800	03	38	28.08	+25	19	06.8		054
1988	VD4		1988	11	04.92891	03	37	27.76	+25	22	37.9		054
1988	VE4	*	1988	11	03.97585	03	38	36.06	+24	49	03.1	17.0	054
1988	VE4		1988	11	03.98800	03	38	35.32	+24	49	05.6		054
1988	VE4		1988	11	04.92891	03	37	38.76	+24	51	17.7		054
1988	VF4	*	1988	11	03.97585	03	38	48.43	+25	09	35.1	17.5	054
1988	VF4		1988	11	03.98800	03	38	47.65	+25	09	37.7		054
1988	VF4		1988	11	04.92891	03	37	53.76	+25	12	01.6		054
1988	VG4	*	1988	11	03.97585	03	40	00.72	+26	08	02.4	16.0	054

1988	VG4		1988	11	03.98800	03	40	00.14	+26	08	00.6		054
1988	VG4		1988	11	04.92891	03	39	16.77	+26	04	38.7		054
1988	VH4	*	1988	11	03.97585	03	42	12.59	+23	13	42.0	17.0	054
1988	VH4		1988	11	03.98800	03	42	12.04	+23	13	40.0		054
1988	VH4		1988	11	04.92891	03	41	23.36	+23	11	03.2		054
1988	VJ4	*	1988	11	03.97585	03	44	55.95	+26	40	04.6	17.5	054
1988	VJ4		1988	11	03.98800	03	44	55.27	+26	40	03.7		054
1988	VJ4		1988	11	04.92891	03	43	55.13	+26	37	25.2		054
1988	VK4	*	1988	11	03.97585	03	44	57.58	+26	38	54.9	17.5	054
1988	VK4		1988	11	03.98800	03	44	56.92	+26	38	55.9		054
1988	VK4		1988	11	04.92891	03	43	54.13	+26	39	51.6		054
1988	VL4	*	1988	11	03.97585	03	45	45.08	+21	57	14.1	17.5	054
1988	VL4		1988	11	03.98800	03	45	44.43	+21	57	12.4		054
1988	VL4		1988	11	04.92891	03	44	53.41	+21	56	07.5		054
1988	VM4	*	1988	11	03.97585	03	48	42.54	+26	13	06.0	16.5	054
1988	VM4		1988	11	03.98800	03	48	41.83	+26	13	12.5		054
1988	VM4		1988	11	04.92891	03	47	41.60	+26	22	44.4		054
1988	WC		1988	12	01.94973	03	23	41.97	+16	13	20.5	16.5	054
1988	WC		1988	12	07.77787	03	18	01.79	+13	00	38.9		054
1988	WC		1988	12	07.79523	03	18	00.86	+13	00	04.4		054
1231			1988	11	13.90701	02	14	35.46	+29	51	21.5		054
1242			1988	11	03.94369	03	26	53.67	+35	00	07.4		054
1242			1988	11	03.96105	03	26	52.58	+35	00	09.7		054
1481			1988	11	03.97585	03	44	38.25	+24	21	50.3		054
1481			1988	11	03.98800	03	44	37.64	+24	21	49.5		054
1481			1988	11	04.92891	03	43	51.02	+24	20	21.6		054
3309			1988	11	03.94369	03	22	26.36	+33	55	41.3		054
3309			1988	11	03.96105	03	22	24.39	+33	55	53.1		054

095 Crimean Astrophysical Observatory
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1940	ED		1983	05	14.90257	15	39	18.12	-12	56	28.6		095
1973	QD2		1983	05	14.90257	15	41	57.68	-17	00	55.0		095
1978	GR3		1983	03	05.92212	11	32	45.46	+02	45	17.0	17.0	095
1978	GR3		1983	03	15.85473	11	25	14.55	+03	38	32.4	17.5	095
1978	GR3		1983	03	18.79146	11	23	01.33	+03	54	20.4	17.0	095
1978	GR3		1983	03	18.87096	11	22	57.78	+03	54	42.6	17.5	095
1978	GR3		1983	03	20.93906	11	21	25.29	+04	05	37.8	17.0	095
1978	GR3		1983	04	09.79474	11	09	12.78	+05	32	55.0	17.2	095
1980	DL5		1969	09	08.98601	23	27	38.63	-07	32	21.2	16.5	095
1980	DL5		1969	10	07.83334	23	05	16.25	-09	01	48.5	16.5	095
1980	TP		1983	09	04.87510	22	11	33.63	-11	05	08.8	E	095
1980	TP		1983	09	06.86816	22	10	06.78	-11	17	10.2	E	095
1981	RD2		1983	01	06.87979	06	42	25.88	+18	48	56.0		095
1981	RD2		1983	01	12.99579	06	37	00.82	+18	35	08.3	E	095
1981	RD2		1983	02	02.81729	06	23	13.86	+17	57	10.6		095
1982	UT6		1977	09	19.05254	01	54	13.64	+12	38	19.6	17.5	095
1982	UT6		1977	10	07.95644	01	41	54.64	+11	45	25.2	17.5	095
1982	UT6		1977	10	13.91386	01	36	59.75	+11	21	41.0	17.5	095
1982	UY6		1969	10	15.90354	01	15	03.04	+04	52	15.0	16.5	095
1983	AG4	*	1983	01	15.02700	09	12	07.97	+29	00	23.9	17.0	095
1983	AG4		1983	02	10.89720	08	42	04.64	+28	09	48.6	17.5	095
1983	AG4		1983	03	05.76557	08	26	29.44	+25	59	59.3	17.5	095
1983	BM		1983	01	15.11102	10	20	35.56	+15	27	00.3	16.5	095

1983	BM		1983	02	10.96801	09	58	37.19	+15	28	17.5		16.5	E	095
1983	BM		1983	03	05.84297	09	35	09.09	+15	18	09.4		17.0		095
1983	BM		1983	03	15.78010	09	27	35.22	+14	59	46.0		16.5	E	095
1983	EU		1983	03	05.92212	11	40	20.36	+00	10	32.9		16.5		095
1983	EU		1983	03	15.85473	11	31	43.18	+01	35	27.0		17.0		095
1983	EU		1983	03	18.79146	11	29	07.38	+02	01	25.0		16.5		095
1983	EU		1983	03	18.87096	11	29	03.11	+02	02	06.7		16.5		095
1983	EU		1983	03	20.93906	11	27	15.05	+02	20	12.2		16.5		095
1983	EU		1983	04	09.79474	11	13	33.02	+04	50	41.1		17.2		095
1983	EV		1983	03	15.85473	11	42	41.04	+03	49	46.6				095
1983	EV		1983	03	18.79146	11	40	05.34	+04	01	08.0				095
1983	EV		1983	03	18.87096	11	40	01.26	+04	01	26.2				095
1983	EV		1983	03	20.93906	11	38	12.45	+04	09	14.9			E	095
1983	EL2	*	1983	03	05.92212	11	23	54.82	+03	25	28.1		17.0	E	095
1983	EL2		1983	03	15.85473	11	16	11.19	+04	12	13.4		17.5	E	095
1983	EL2		1983	03	18.87096	11	13	51.84	+04	26	16.4		17.5	E	095
1983	EL2		1983	03	20.93906	11	12	18.03	+04	35	48.2		17.0		095
1983	EL2		1983	04	09.79474	10	59	54.24	+05	50	29.6		17.5		095
1983	EM2	*	1983	03	14.94031	11	52	35.45	+02	02	09.8		17.0	E	095
1983	EM2		1983	03	15.85473	11	51	46.74	+02	10	14.9		17.5	E	095
1983	EM2		1983	03	18.79146	11	49	09.65	+02	36	02.4		17.0	E	095
1983	EM2		1983	03	18.87096	11	49	05.26	+02	36	42.5		17.5	E	095
1983	EN2	*	1983	03	15.85473	11	36	11.92	+01	48	27.1		17.5		095
1983	EN2		1983	03	18.87096	11	33	27.63	+01	54	58.5		17.5		095
1983	EN2		1983	03	20.93906	11	31	36.00	+01	59	20.7		17.5	M	095
1983	GU	*	1983	04	10.86780	12	51	30.95	+18	34	55.3				095
1983	GU		1983	04	12.89244	12	49	46.69	+18	44	26.8		16.8		095
1983	GU		1983	05	01.82020	12	35	54.33	+19	15	22.5		16.8	E	095
1983	LM		1983	08	05.81529	19	37	51.25	+01	11	58.3		16.5		095
1983	LM		1983	08	10.81696	19	34	49.28	+00	45	44.5		16.5		095
1983	LM		1983	08	13.85313	19	33	15.72	+00	27	48.2		16.5		095
1983	LM		1983	08	29.78053	19	29	14.85	-01	21	45.4		16.5		095
1983	LM		1983	08	31.76713	19	29	15.44	-01	35	58.9		16.5	M	095
1983	PX	*	1983	08	04.97785	22	33	06.10	+04	28	41.5		17.0		095
1983	PX		1983	08	06.93671	22	32	19.91	+04	22	14.9		17.0		095
1983	PX		1983	09	01.87810	22	17	11.13	+01	22	40.0		16.0		095
1983	PX		1983	09	05.88669	22	14	44.41	+00	44	00.9		16.0		095
1983	PX		1983	09	11.88046	22	11	27.69	-00	15	15.3		16.5		095
1983	PX		1983	09	14.93429	22	10	01.94	-00	45	26.8		17.0	M	095
1983	PY	*	1983	08	04.90564	21	21	30.25	-01	14	32.4		16.0		095
1983	PY		1983	08	06.87039	21	20	22.56	-01	27	54.8		16.0		095
1983	PY		1983	09	01.79895	21	07	22.72	-05	37	39.8		16.5		095
1983	PY		1983	09	05.82698	21	06	32.66	-06	20	17.9		16.5		095
1983	PY		1983	09	11.80338	21	06	15.66	-07	20	39.7		16.5		095
1983	PZ	*	1983	08	04.90564	21	26	12.35	-04	38	32.9		16.5		095
1983	PZ		1983	08	06.87039	21	24	43.10	-04	46	22.5		16.5		095
1983	PZ		1983	09	01.79895	21	06	25.07	-07	23	41.4		17.0		095
1983	PZ		1983	09	05.82698	21	04	44.66	-07	50	53.9		17.0		095
1983	PZ		1983	09	11.80338	21	03	15.16	-08	29	01.6		17.0		095
1983	QH1	*	1983	08	16.90178	21	49	54.35	-11	18	34.2		16.0		095
1983	QH1		1983	09	02.80219	21	37	50.34	-13	33	02.3		17.0	M	095
1983	QH1		1983	09	04.80369	21	36	41.44	-13	47	10.8		16.5		095
1983	QH1		1983	09	06.79733	21	35	38.69	-14	00	41.2		16.5		095
1983	RZ1		1983	09	04.94524	23	11	53.57	-10	11	56.6		16.5		095
1983	RZ1		1983	09	06.93969	23	09	56.88	-10	16	36.9		16.5		095
1983	RZ1		1983	09	11.95476	23	05	03.60	-10	26	47.0		16.5		095
1983	RC2		1983	09	03.95531	00	10	04.96	+04	28	57.0		16.5		095
1983	RC2		1983	09	10.95834	00	04	38.86	+03	55	59.6		16.5		095
1983	RC2		1983	09	13.98314	00	02	04.40	+03	39	36.5		16.5		095

1983	RD2		1983	09	03.95531	00	11	54.96	+02	58	07.5	16.5	095
1983	RD2		1983	09	10.95834	00	06	54.00	+02	27	57.2	16.5	095
1983	RD2		1983	09	13.98314	00	04	27.66	+02	12	47.6	16.5	095
1983	RQ4	*	1983	09	04.87510	22	10	32.91	-03	25	40.8	16.5	095
1983	RQ4		1983	09	06.86816	22	08	59.04	-03	42	48.9	16.0	095
1983	RQ4		1983	09	09.88067	22	06	42.44	-04	08	49.3	16.5	095
1983	RQ4		1983	09	11.88046	22	05	16.25	-04	26	06.5	17.0 E	095
1983	RQ4		1983	09	15.91402	22	02	34.94	-05	00	35.8	16.5 M	095
1983	RR4	*	1983	09	01.79895	20	56	56.81	-06	34	01.2	17.0 M	095
1983	RR4		1983	09	05.82698	20	55	12.28	-07	31	10.5	17.0	095
1983	RR4		1983	09	11.80338	20	53	31.69	-08	53	03.3	17.0	095
1983	RS4	*	1983	09	01.87810	22	26	51.56	+03	15	53.3	16.5	095
1983	RS4		1983	09	11.88046	22	16	27.19	+03	25	05.0	17.0	095
1983	RS4		1983	09	14.93429	22	13	37.25	+03	25	17.2	17.0	095
1983	RT4	*	1983	09	01.87810	22	33	35.66	+03	33	27.9	16.5 E	095
1983	RT4		1983	09	11.88046	22	26	35.06	+02	00	10.7	17.0 M	095
1983	RT4		1983	09	14.93429	22	24	38.07	+01	29	55.6	17.0	095
1983	RU4	*	1983	09	02.80219	21	26	06.31	-17	38	32.1	16.2	095
1983	RU4		1983	09	04.80369	21	24	50.25	-17	27	56.6	16.5	095
1983	RU4		1983	09	06.79733	21	23	42.06	-17	16	56.2	16.2	095
1983	RV4	*	1983	09	02.80219	21	42	08.50	-13	59	26.4	17.0 E	095
1983	RV4		1983	09	04.80369	21	40	26.31	-13	53	25.3	16.5 E	095
1983	RV4		1983	09	06.79733	21	38	48.41	-13	47	10.4	16.5 E	095
1983	RW4	*	1983	09	03.95531	00	20	52.58	+02	32	08.9	16.5 E	095
1983	RW4		1983	09	10.95834	00	15	28.10	+02	17	11.0	16.5	095
1983	RW4		1983	09	13.98314	00	12	57.30	+02	09	38.5	16.5	095
1983	RX4	*	1983	09	05.01538	00	10	05.73	+13	34	36.2	17.0 E	095
1983	RX4		1983	09	07.01191	00	09	04.07	+13	32	58.2	16.5	095
1983	RX4		1983	09	09.95081	00	07	21.89	+13	27	55.4	17.0	095
1983	RX4		1983	09	12.93900	00	05	26.19	+13	19	41.2	17.0	095
1983	RY4	*	1983	09	05.01538	00	16	33.20	+18	46	13.2	16.5	095
1983	RY4		1983	09	07.01191	00	15	32.76	+18	46	55.9	16.0 E	095
1983	RY4		1983	09	12.93900	00	12	03.88	+18	41	42.6	16.0	095
1983	RZ4	*	1983	09	05.01538	00	16	34.00	+11	23	52.2	17.0 E	095
1983	RZ4		1983	09	07.01191	00	15	41.57	+11	18	20.4	17.0	095
1983	RZ4		1983	09	09.95081	00	14	13.17	+11	07	47.9	17.0	095
1983	RA5	*	1983	09	05.01538	00	18	49.30	+11	22	09.4	16.5 E	095
1983	RA5		1983	09	07.01191	00	17	20.21	+11	15	27.0	16.0	095
1983	RA5		1983	09	09.95081	00	15	00.18	+11	03	48.5	16.5	095
1983	RA5		1983	09	12.93900	00	12	28.51	+10	49	41.3	16.5 E	095
1983	RB5	*	1983	09	05.01538	00	26	41.57	+11	22	06.7	17.0 E	095
1983	RB5		1983	09	07.01191	00	25	18.12	+11	20	54.6	17.5	095
1983	RB5		1983	09	09.95081	00	23	03.91	+11	17	29.0	17.5	095
1983	RC5	*	1983	09	05.01538	00	33	49.43	+11	35	42.3	17.0 E	095
1983	RC5		1983	09	07.01191	00	32	30.02	+11	39	04.9	17.0	095
1983	RC5		1983	09	09.95081	00	30	21.56	+11	42	34.0	17.0	095
1983	RC5		1983	09	12.93900	00	27	57.49	+11	44	19.2	16.5 E	095
1983	RD5	*	1983	09	05.01538	00	34	12.20	+14	15	15.2	17.5	095
1983	RD5		1983	09	07.01191	00	33	08.89	+14	13	48.2	17.5	095
1983	RD5		1983	09	09.95081	00	31	24.05	+14	09	38.5	17.5	095
1985	PZ1	*	1985	08	13.95098	23	20	30.38	-07	42	27.8	16.5 E	095
1985	PZ1		1985	08	15.94465	23	19	31.25	-08	02	01.8	16.5	095
1985	PZ1		1985	08	17.96531	23	18	25.34	-08	22	26.4	16.8	095
1985	PZ1		1985	08	19.96132	23	17	14.63	-08	43	07.4	16.5	095
1985	PZ1		1985	08	24.94771	23	13	57.28	-09	36	14.6	16.8	095
1985	PZ1		1985	09	11.89236	22	59	57.66	-12	44	50.9	17.0	095
1985	PZ1		1985	09	19.86502	22	54	02.69	-13	54	50.5	17.0	095
1985	PZ1		1985	09	20.83145	22	53	23.47	-14	02	23.0	17.0	095
1985	PA2	*	1985	08	13.95098	23	25	05.54	-11	52	39.0	17.0	095

1985	PA2		1985	08	17.96531	23	23	17.98	-12	00	33.6	17.0	095
1985	PA2		1985	08	19.96132	23	22	12.69	-12	04	52.6	17.3	095
1985	PA2		1985	08	24.94771	23	18	58.82	-12	16	12.2	16.0	095
1985	PA2		1985	09	11.89236	23	03	42.75	-12	47	01.6	16.5	095
1985	PA2		1985	09	19.86502	22	56	58.19	-12	46	33.7	16.0	095
1985	PA2		1985	09	20.83145	22	56	13.84	-12	45	38.0	16.0	095
1985	PB2	*	1985	08	13.95098	23	29	38.66	-08	44	10.7	17.0	095
1985	PB2		1985	08	15.94465	23	29	13.40	-09	09	47.8	16.5	095
1985	PB2		1985	08	17.96531	23	28	41.72	-09	36	33.9	16.5	095
1985	PB2		1985	08	19.96132	23	28	04.38	-10	03	45.5	16.5	095
1985	PB2		1985	08	24.94771	23	26	07.56	-11	14	11.0	16.0	095
1985	PB2		1985	09	11.89236	23	15	54.94	-15	32	12.3	17.0	095
1985	PB2		1985	09	19.86502	23	10	58.00	-17	12	56.1	16.5	095
1985	PB2		1985	09	20.83145	23	10	24.08	-17	24	03.9	17.0	095
1985	PC2	*	1985	08	13.95098	23	31	56.82	-08	25	31.9	17.0	095
1985	PC2		1985	08	15.94465	23	31	17.06	-08	36	24.2	17.0	095
1985	PC2		1985	08	17.96531	23	30	30.99	-08	47	53.3	17.5	095
1985	PC2		1985	08	19.96132	23	29	40.56	-08	59	40.1	17.0	095
1985	PC2		1985	08	24.94771	23	27	13.34	-09	30	39.2	16.5	095
1985	PC2		1985	09	11.89236	23	15	33.19	-11	27	59.2	17.0	095
1985	PC2		1985	09	19.86502	23	09	57.13	-12	14	29.6	16.5	095
1985	PC2		1985	09	20.83145	23	09	18.06	-12	19	33.7	16.3	095
1985	PD2	*	1985	08	13.95098	23	34	01.72	-09	20	05.4	17.0	095
1985	PD2		1985	08	15.94465	23	33	19.56	-09	36	10.4	17.0	095
1985	PD2		1985	08	17.96531	23	32	29.40	-09	53	07.5	16.8	095
1985	PD2		1985	08	19.96132	23	31	32.75	-10	10	29.1	16.8	095
1985	PD2		1985	08	24.94771	23	28	42.25	-10	56	06.0	16.5	095
1985	PD2		1985	09	11.89236	23	14	28.97	-13	46	04.5	16.5	095
1985	PD2		1985	09	19.86502	23	07	34.81	-14	50	40.8	16.0	095
1985	PD2		1985	09	20.83145	23	06	47.04	-14	57	31.5	16.0	095
1985	PE2	*	1985	08	13.95098	23	36	16.16	-11	19	56.8	17.5	095
1985	PE2		1985	08	24.94771	23	28	27.34	-12	53	34.6	17.0	095
1985	PE2		1985	09	19.86502	23	05	06.50	-16	07	58.7	17.5	095
1985	PE2		1985	09	20.83145	23	04	17.50	-16	13	08.4	17.5	095
1985	PF2	*	1985	08	13.95098	23	37	27.06	-10	22	32.0	17.5	095
1985	PF2		1985	08	17.96531	23	35	04.94	-10	42	12.8	17.5	095
1985	PF2		1985	08	24.94771	23	30	03.75	-11	19	01.3	16.8	095
1985	PF2		1985	09	19.86502	23	06	19.44	-13	24	05.5	17.0	095
1985	PF2		1985	09	20.83145	23	05	27.32	-13	27	14.6	17.0	095
1985	QL4	*	1985	08	24.94771	23	27	20.44	-11	27	41.5	17.0	095
1985	QL4		1985	09	11.89236	23	14	59.94	-13	15	39.8	17.3	095
1985	QL4		1985	09	19.86502	23	09	24.06	-13	56	05.5	17.8	095
1985	QL4		1985	09	20.83145	23	08	44.90	-14	00	26.3	17.0 E	095
1985	QM4	*	1985	08	24.94771	23	39	34.84	-08	26	58.4	16.5	095
1985	QM4		1985	09	11.89236	23	25	01.44	-09	56	05.3	17.0	095
1985	QM4		1985	09	19.86502	23	17	42.44	-10	31	08.4	17.3	095
1985	QM4		1985	09	20.83145	23	16	50.61	-10	34	51.8	17.0	095
1985	RZ1		1985	08	14.96914	23	53	07.78	-05	19	07.4	16.5	095
1985	RZ1		1985	08	18.96152	23	52	18.18	-05	22	38.2	17.0 N	095
1985	RZ1		1985	08	23.90671	23	50	33.89	-05	30	05.2	16.0 E	095
1985	RZ1		1985	09	15.87222	23	34	18.75	-06	30	39.2	17.5	095
1985	RZ1		1985	09	20.89561	23	29	54.94	-06	43	29.6	16.0	095
1985	RD4		1985	08	14.96914	23	47	56.48	-01	56	16.3	17.0	095
1985	RD4		1985	08	18.96152	23	45	52.85	-02	01	47.4	17.0	095
1985	RD4		1985	09	15.87222	23	21	33.50	-03	34	32.2	16.5	095
1985	RD4		1985	09	20.89561	23	16	26.12	-03	55	11.2	17.0	095
1985	SR		1985	08	15.94465	23	34	03.41	-08	00	33.8	17.5	095
1985	SR		1985	08	17.96531	23	32	49.12	-08	08	39.2	17.0	095
1985	SR		1985	08	24.94771	23	27	43.88	-08	39	25.1	16.8	095

1985	SR	1985	09	19.86502	23	04	16.50	-10	29	04.5	17.0	095
1985	SR	1985	09	20.83145	23	03	28.54	-10	31	51.9	17.0	095
1985	UT3	1985	09	21.99628	01	56	52.67	+13	24	02.4	16.0	095
1985	UT3	1985	10	18.91663	01	41	03.46	+08	38	36.6	15.0	095
1985	UT3	1985	11	12.81951	01	24	38.28	+04	04	03.0	16.0	095
1988	DN1	1983	03	13.96090	13	06	24.90	+10	44	45.3	17.0	095
1988	DN1	1983	04	10.86780	12	46	12.82	+13	15	55.9	17.5	095
1988	DN1	1983	04	12.89244	12	44	41.46	+13	22	19.2	17.0 E	095
1988	DN1	1983	05	01.82020	12	32	42.78	+13	41	09.0	16.0	095
1988	PR1	1983	08	04.90564	21	16	41.06	-05	27	45.2	17.0 E	095
1988	PR1	1983	08	06.87039	21	15	13.35	-05	43	38.3	16.5 E	095
1988	PR1	1983	09	01.79895	20	57	55.25	-09	32	04.5	17.0 M	095
1988	PR1	1983	09	05.82698	20	56	07.00	-10	06	07.5	17.0	095
1988	PR1	1983	09	11.80338	20	54	07.32	-10	53	31.2	17.0	095
6032	P-L	1983	09	03.95531	00	02	01.49	+03	02	40.6	16.5	095
6032	P-L	1983	09	10.95834	23	56	40.63	+02	41	19.8	E	095
6032	P-L	1983	09	13.98314	23	54	08.54	+02	30	06.4	16.5	095
16		1983	04	10.02730	15	22	28.42	-14	21	29.6		095
16		1983	04	11.00298	15	21	58.80	-14	18	34.0		095
21		1983	01	13.05174	09	10	53.45	+19	44	47.1	E	095
21		1983	02	10.89720	08	42	37.68	+22	01	16.9	E	095
21		1983	03	05.76557	08	25	10.94	+22	58	21.3		095
24		1983	08	16.96776	22	47	28.64	-08	40	26.5		095
24		1983	09	09.88067	22	30	29.94	-10	19	46.4	E	095
24		1983	09	12.86748	22	28	25.16	-10	31	24.0	E	095
24		1983	09	13.85317	22	27	44.90	-10	35	07.2		095
24		1983	09	15.91402	22	26	21.88	-10	42	44.2	E	095
24		1983	09	16.94897	22	25	41.16	-10	46	27.4		095
33		1983	03	15.85473	11	11	51.90	+06	05	59.0	E	095
33		1983	03	20.93906	11	08	04.32	+06	28	06.0	E	095
33		1983	04	05.86528	10	57	34.59	+07	27	13.2		095
33		1983	04	09.79474	10	55	27.77	+07	38	35.9		095
34		1983	05	14.90257	15	39	05.32	-12	27	05.8		095
38		1983	02	10.82567	07	26	26.92	+20	31	57.8	E	095
45		1983	08	11.86201	19	09	06.16	-17	28	42.5		095
48		1983	09	01.79895	20	50	24.94	-11	06	56.5		095
48		1983	09	05.82698	20	48	21.13	-11	24	56.7	E	095
48		1983	09	08.77630	20	47	01.19	-11	37	37.3		095
48		1983	09	08.85788	20	46	59.00	-11	37	58.8		095
48		1983	09	11.80338	20	45	49.06	-11	50	07.9		095
52		1983	01	14.95272	08	15	16.62	+17	48	16.1	E	095
54		1983	07	20.98202	22	22	34.91	-08	13	27.5	E	095
54		1983	08	16.90178	22	00	55.88	-06	39	55.0		095
54		1983	08	31.84351	21	46	14.31	-06	16	23.6		095
54		1983	09	03.83293	21	43	35.22	-06	13	00.9		095
54		1983	09	12.80189	21	36	45.22	-06	03	49.8		095
59		1983	03	13.80956	10	21	12.70	+07	56	52.1	E	095
59		1983	03	16.81258	10	19	10.04	+08	17	25.6		095
63		1983	01	13.05174	08	48	16.41	+23	19	01.0		095
63		1983	01	15.02700	08	46	17.48	+23	24	42.8	E	095
63		1983	02	10.89720	08	16	57.82	+24	16	19.1		095
63		1983	03	05.76557	08	00	26.98	+24	01	34.1	E	095
75		1983	04	09.87132	12	08	24.61	-02	02	20.0		095
75		1983	04	11.83706	12	06	50.10	-01	54	08.3		095
76		1983	02	10.82567	07	10	19.34	+19	23	33.9	E	095
77		1983	05	14.97975	17	32	42.43	-26	37	56.0		095
90		1983	08	07.00130	23	11	22.19	-08	52	57.0		095
90		1983	08	16.96776	23	06	14.82	-09	32	26.8		095
90		1983	09	02.88008	22	54	27.03	-10	50	09.5		095

90	1983	09	04.94524	22	52	53.63	-10	59	30.0		17.0	E 095
90	1983	09	06.93969	22	51	23.31	-11	08	20.0			095
104	1983	05	12.83346	13	39	29.00	-09	41	14.7			095
104	1983	05	15.81426	13	37	44.60	-09	33	18.6			095
106	1983	02	10.89720	08	09	38.84	+26	12	38.4			E 095
110	1983	03	15.01184	12	49	12.07	+02	21	26.6			095
110	1983	04	09.87132	12	27	50.09	+04	10	58.2			N 095
110	1983	04	11.83706	12	26	14.48	+04	17	16.2			E 095
111	1983	08	16.96776	22	46	56.34	-03	42	02.7			E 095
111	1983	09	06.86816	22	28	47.56	-04	55	00.4			E 095
111	1983	09	09.88067	22	26	09.38	-05	06	54.5			E 095
111	1983	09	11.88046	22	24	26.81	-05	14	46.7			E 095
111	1983	09	12.86748	22	23	37.13	-05	18	38.4			095
111	1983	09	13.85317	22	22	48.19	-05	22	27.9			E 095
111	1983	09	15.91402	22	21	07.94	-05	30	23.6			095
111	1983	09	16.94897	22	20	18.97	-05	34	17.8			095
112	1983	05	12.90253	14	36	07.32	-19	47	06.3			E 095
114	1983	01	06.87979	06	42	11.49	+15	47	53.5			095
114	1983	02	02.81729	06	21	31.42	+17	07	38.6			095
119	1983	01	06.87979	06	55	26.61	+13	35	32.1			E 095
119	1983	02	02.81729	06	33	33.74	+14	32	51.7			095
123	1983	09	05.01538	00	30	22.66	+11	56	38.5			E 095
123	1983	09	07.01191	00	29	07.82	+11	56	08.7			095
123	1983	09	09.95081	00	27	08.83	+11	54	04.8			095
123	1983	09	12.93900	00	24	58.07	+11	50	21.1			E 095
124	1983	08	07.00130	23	27	06.97	-01	08	47.1			095
124	1983	08	13.00910	23	24	23.37	-01	28	55.5			E 095
124	1983	09	09.00579	23	04	57.56	-03	55	26.5			E 095
124	1983	09	11.95476	23	02	32.13	-04	14	12.6			E 095
128	1983	01	13.05174	08	48	06.00	+24	58	25.0			095
128	1983	01	15.02700	08	46	21.52	+25	09	28.0			095
128	1983	02	10.89720	08	21	02.42	+27	06	41.0			095
128	1983	03	05.76557	08	07	22.64	+27	33	54.8			095
130	1983	03	05.84297	09	36	48.53	+15	46	10.1			095
139	1983	02	10.96801	10	04	45.02	+24	26	41.7			E 095
139	1983	03	15.78010	09	34	15.36	+23	29	16.2			E 095
149	1983	03	16.00229	13	13	21.43	-06	54	56.2			095
150	1983	09	03.95531	00	03	06.74	+02	22	24.0			095
150	1983	09	10.95834	23	58	33.50	+01	48	47.3			E 095
150	1983	09	13.98314	23	56	25.34	+01	32	48.4			095
152	1983	02	11.03084	11	35	48.56	+19	21	50.8			E 095
152	1983	02	15.09030	11	33	15.72	+19	41	13.6			E 095
162	1983	09	11.95476	23	30	25.87	-10	00	53.3			E 095
163	1983	08	07.00130	23	30	43.10	-02	51	06.3			095
163	1983	08	13.00910	23	28	17.07	-03	18	20.5			095
163	1983	09	06.93969	23	10	12.44	-06	08	17.4			E 095
163	1983	09	09.00579	23	08	20.60	-06	24	44.0			095
163	1983	09	11.95476	23	05	39.91	-06	48	15.4			095
182	1983	02	10.89720	08	18	25.93	+21	05	29.6			E 095
182	1983	03	05.76557	08	06	52.56	+21	52	02.9			E 095
184	1983	09	17.02304	01	13	26.44	+08	52	27.7			E 095
186	1983	03	13.89009	11	25	45.90	+13	38	28.9			095
190	1983	04	05.86528	10	46	15.35	+06	47	32.2			E 095
190	1983	04	09.79474	10	44	59.07	+07	00	58.7			E 095
195	1983	07	19.00502	22	37	21.00	-16	04	34.9			095
195	1983	08	05.95625	22	27	28.66	-16	59	14.4			E 095
195	1983	08	13.98542	22	21	17.63	-17	26	53.9			E 095
195	1983	09	10.83562	21	57	56.22	-18	36	57.5			095
196	1983	01	15.11102	10	51	24.32	+17	15	20.5			E 095

196	1983	02	10.96801	10	38	02.84	+19	37	33.4	E 095
201	1983	04	09.87132	12	20	37.34	+02	38	37.0	095
201	1983	04	11.83706	12	19	08.59	+02	49	59.6	095
203	1983	09	03.95531	23	49	20.19	-00	51	31.8	E 095
206	1983	08	16.96776	22	51	40.91	-08	19	33.3	095
206	1983	09	12.86748	22	31	00.41	-11	00	17.4	E 095
206	1983	09	13.85317	22	30	16.66	-11	05	40.8	095
206	1983	09	15.91402	22	28	46.66	-11	16	42.7	E 095
206	1983	09	16.94897	22	28	02.72	-11	22	04.4	E 095
214	1983	09	03.95531	23	45	49.75	-00	39	34.0	E 095
216	1983	04	10.92058	14	09	19.10	-14	36	44.9	095
216	1983	05	12.83346	13	45	49.04	-11	05	51.6	095
216	1983	05	15.81426	13	43	58.54	-10	47	42.0	095
226	1983	01	14.95272	07	57	58.97	+13	32	27.2	095
226	1983	02	10.82567	07	35	25.00	+16	15	42.6	095
227	1983	09	05.01538	00	32	16.84	+11	23	41.0	E 095
227	1983	09	07.01191	00	31	00.96	+11	21	09.6	095
227	1983	09	09.95081	00	29	03.78	+11	16	32.0	095
227	1983	09	12.93900	00	26	59.03	+11	10	47.6	E 095
229	1983	08	16.96776	22	54	23.41	-09	45	46.6	095
229	1983	09	13.85317	22	35	01.79	-11	28	09.0	E 095
233	1983	05	14.90257	16	01	02.72	-17	04	43.2	095
233	1983	06	05.85487	15	42	00.32	-15	07	44.9	095
235	1983	01	15.11102	10	33	01.09	+22	06	29.9	E 095
235	1983	02	10.96801	10	16	06.07	+24	53	32.5	E 095
235	1983	03	14.79517	09	49	40.57	+26	44	27.0	095
238	1983	08	04.90564	21	29	28.35	-00	43	24.3	E 095
238	1983	08	06.87039	21	28	04.00	-00	54	14.7	095
238	1983	08	12.86395	21	23	39.56	-01	31	01.9	095
238	1983	09	01.79895	21	09	47.72	-04	00	27.5	095
238	1983	09	05.82698	21	07	31.78	-04	32	44.4	095
238	1983	09	08.77630	21	06	03.07	-04	56	13.3	E 095
238	1983	09	08.85788	21	06	00.72	-04	56	52.4	E 095
238	1983	09	11.80338	21	04	42.81	-05	20	04.3	E 095
238	1983	09	12.80189	21	04	18.94	-05	27	59.0	E 095
243	1983	03	13.80956	09	59	55.17	+11	51	45.5	095
243	1983	03	16.81258	09	58	00.15	+12	01	04.1	095
248	1983	09	07.01191	00	30	33.24	+09	44	27.0	E 095
248	1983	09	09.95081	00	28	30.67	+09	32	54.6	E 095
250	1983	03	15.01184	12	46	58.80	+01	56	14.2	r 095
250	1983	04	09.87132	12	25	31.02	+02	43	47.2	095
250	1983	04	11.83706	12	23	57.58	+02	45	47.8	095
253	1983	04	12.95210	14	45	07.90	-09	47	31.3	E 095
255	1983	09	11.95476	23	29	55.84	-09	48	35.1	E 095
258	1983	03	16.00229	13	18	03.17	-13	18	14.5	E 095
270	1983	01	06.87979	06	36	05.28	+21	19	51.3	095
270	1983	01	12.99579	06	29	07.70	+21	20	58.0	095
270	1983	02	02.81729	06	12	24.82	+21	22	15.0	095
274	1983	02	10.89720	08	47	23.10	+21	34	18.5	E 095
274	1983	03	05.76557	08	32	00.76	+22	36	01.6	095
276	1983	08	30.82002	20	46	31.10	+11	10	13.4	095
288	1983	08	16.96776	22	35	09.13	-12	32	48.5	E 095
288	1983	09	13.85317	22	12	59.69	-15	02	15.0	E 095
289	1983	03	05.92212	11	52	18.25	-00	30	13.2	095
289	1983	03	15.85473	11	45	05.29	+00	30	33.0	095
289	1983	03	18.79146	11	42	54.14	+00	49	05.6	095
289	1983	03	18.87096	11	42	50.59	+00	49	35.2	095
289	1983	03	20.93906	11	41	18.62	+01	02	33.8	E 095
295	1983	08	11.86201	19	02	30.56	-21	23	53.3	095

302	1983	07	19.00502	22	11	33.82	-15	43	37.8	E 095
302	1983	08	05.95625	21	59	09.35	-16	49	17.4	095
302	1983	08	13.98542	21	51	37.69	-17	22	31.6	095
302	1983	09	02.80219	21	32	25.50	-18	28	22.8	095
302	1983	09	04.80369	21	30	42.12	-18	32	38.9	E 095
302	1983	09	06.79733	21	29	03.84	-18	36	21.8	E 095
302	1983	09	09.81053	21	26	45.13	-18	40	52.4	E 095
302	1983	09	10.83562	21	26	01.03	-18	42	06.6	E 095
310	1983	05	14.97975	18	08	30.27	-21	09	44.9	095
311	1983	01	12.99579	06	44	45.62	+24	58	23.0	095
318	1983	08	16.96776	22	38	33.84	-06	32	49.7	E 095
318	1983	09	04.87510	22	26	04.50	-08	35	38.6	E 095
318	1983	09	06.86816	22	24	44.66	-08	48	47.6	095
318	1983	09	09.88067	22	22	46.25	-09	08	22.7	095
318	1983	09	12.86748	22	20	52.69	-09	27	25.0	095
318	1983	09	13.85317	22	20	16.32	-09	33	32.6	095
318	1983	09	15.91402	22	19	01.50	-09	46	17.7	095
318	1983	09	16.94897	22	18	24.97	-09	52	34.1	095
333	1983	03	05.84297	09	28	01.96	+17	30	18.0	095
333	1983	03	15.78010	09	22	17.61	+17	45	25.3	095
336	1983	07	20.98202	22	23	51.22	+00	16	46.3	E 095
336	1983	08	04.97785	22	15	17.16	+00	12	24.3	095
336	1983	08	12.94105	22	08	40.75	-00	11	49.7	E 095
336	1983	08	31.84351	21	51	20.75	-01	55	26.4	E 095
336	1983	09	03.83293	21	48	49.38	-02	15	23.6	E 095
336	1983	09	04.87510	21	47	58.60	-02	22	25.1	E 095
336	1983	09	12.80189	21	42	18.32	-03	15	53.6	E 095
340	1983	09	10.95834	00	27	05.84	-00	55	14.5	E 095
346	1983	03	13.89009	11	35	29.36	+16	28	29.7	095
357	1983	04	12.89244	13	03	01.08	+12	12	53.5	E 095
357	1983	05	01.82020	12	51	20.69	+13	18	07.2	095
358	1983	07	19.95706	21	26	42.35	-11	32	29.5	r 095
358	1983	08	05.88612	21	14	19.94	-12	38	44.0	E 095
358	1983	08	10.89369	21	10	15.03	-13	01	20.7	E 095
358	1983	08	13.91575	21	07	46.66	-13	15	17.5	E 095
359	1983	02	11.03084	11	14	06.60	+09	47	58.6	E 095
367	1983	08	16.96776	22	43	29.72	-13	05	35.3	E 095
369	1983	04	11.98611	14	38	01.31	+02	39	16.5	E 095
369	1983	05	15.88554	14	09	01.86	+03	51	02.2	E 095
371	1983	08	11.86201	19	08	09.25	-19	33	22.9	095
376	1983	09	05.01538	00	37	11.87	+12	20	25.3	095
376	1983	09	07.01191	00	35	40.31	+12	17	33.2	095
376	1983	09	09.95081	00	33	15.53	+12	11	42.8	095
376	1983	09	12.93900	00	30	37.89	+12	03	52.9	E 095
379	1983	01	14.95272	08	02	46.12	+18	30	03.9	E 095
379	1983	02	10.82567	07	41	36.00	+19	37	06.4	095
380	1983	06	02.85072	14	32	07.68	-08	04	42.8	E 095
383	1983	01	15.11102	10	26	13.95	+12	44	26.2	E 095
383	1983	02	10.96801	10	09	31.41	+14	43	46.9	E 095
383	1983	03	05.84297	09	51	41.65	+16	24	35.9	095
383	1983	03	15.78010	09	45	32.16	+16	53	54.3	095
386	1983	03	15.01184	12	34	43.57	+04	58	04.5	E 095
396	1983	04	10.02730	15	19	35.14	-20	28	34.8	E 095
396	1983	04	11.00298	15	19	11.86	-20	26	43.8	E 095
396	1983	05	12.90253	14	56	14.27	-18	27	17.8	095
396	1983	06	02.85072	14	40	50.87	-16	48	40.6	E 095
399	1983	09	17.02304	01	11	14.76	+16	45	53.0	095
421	1983	03	15.85473	11	43	13.23	-00	44	15.5	E 095
421	1983	03	18.79146	11	40	43.20	-00	21	29.8	095

421	1983	03	18.87096	11	40	39.14	-00	20	54.0		095
421	1983	03	20.93906	11	38	54.30	-00	04	52.4	E	095
427	1983	04	10.92058	13	46	46.89	-19	12	38.4		095
427	1983	05	12.83346	13	22	21.73	-16	44	01.9	E	095
427	1983	05	15.81426	13	20	39.66	-16	29	31.1		095
428	1983	04	09.87132	12	16	18.95	-00	18	25.6		095
428	1983	04	11.83706	12	14	29.86	-00	11	30.4		095
431	1983	03	14.94031	12	28	35.74	-00	35	19.4	E	095
431	1983	04	09.87132	12	10	18.68	+01	27	06.8		095
431	1983	04	11.83706	12	09	00.40	+01	35	22.6		095
432	1983	04	09.94752	14	29	05.93	+06	00	45.3		095
432	1983	04	11.90696	14	27	29.32	+06	09	00.1		095
440	1983	07	19.95706	21	38	14.66	-13	09	57.1	r	095
440	1983	08	10.89369	21	17	34.72	-14	31	24.9		095
440	1983	08	13.91575	21	14	23.88	-14	43	56.0		095
465	1983	03	13.80956	09	55	39.42	+08	09	41.1		095
465	1983	03	16.81258	09	53	40.11	+08	18	20.1		095
467	1983	04	10.92058	13	59	15.48	-21	16	24.2	E	095
474	1983	09	04.87510	22	16	31.75	-09	15	20.8		095
474	1983	09	06.86816	22	15	20.28	-09	38	22.8		095
474	1983	09	09.88067	22	13	38.78	-10	12	12.3		095
474	1983	09	12.86748	22	12	08.16	-10	44	21.9	E	095
474	1983	09	13.85317	22	11	40.78	-10	54	37.1		095
474	1983	09	15.91402	22	10	47.19	-11	15	25.4		095
474	1983	09	16.94897	22	10	22.75	-11	25	32.9		095
478	1983	05	14.90257	15	35	22.45	-18	48	31.8	E	095
492	1983	04	12.95210	14	28	08.06	-14	07	14.8		095
495	1983	04	10.02730	15	16	44.92	-16	13	28.4		095
495	1983	04	11.00298	15	16	10.29	-16	10	13.0		095
495	1983	05	12.90253	14	49	32.44	-13	52	42.2		095
496	1983	08	16.90178	22	08	24.72	-05	21	01.9	E	095
496	1983	08	31.84351	21	54	02.44	-06	56	29.3		095
496	1983	09	04.87510	21	50	21.56	-07	23	29.4	E	095
496	1983	09	12.80189	21	43	54.50	-08	14	40.7	E	095
509	1983	03	15.92799	12	35	04.56	-15	26	01.2		095
510	1983	04	10.02730	15	15	38.96	-13	58	31.1		095
510	1983	04	11.00298	15	15	16.15	-13	51	27.3		095
510	1983	06	02.85072	14	38	21.50	-06	56	00.9	E	095
511	1983	08	11.86201	18	48	15.47	-24	12	14.0	E	095
512	1983	02	11.03084	11	24	39.40	+15	00	17.1		095
514	1983	09	03.95531	00	16	07.97	+07	56	46.7	E	095
514	1983	09	10.95834	00	11	41.45	+07	34	38.8		095
515	1983	03	05.92212	11	57	32.43	+02	45	17.3		095
515	1983	03	14.94031	11	51	01.00	+03	31	34.0	E	095
515	1983	03	15.85473	11	50	20.01	+03	36	17.5	E	095
515	1983	03	18.79146	11	48	09.05	+03	51	19.0	E	095
515	1983	03	18.87096	11	48	05.34	+03	51	42.6	E	095
517	1983	02	10.82567	07	16	47.81	+20	18	15.0	E	095
521	1983	05	14.90257	15	39	56.82	-10	45	46.2	E	095
524	1983	08	16.96776	22	57	17.00	-04	23	17.7		095
524	1983	09	11.88046	22	33	36.72	-05	01	03.4	E	095
524	1983	09	13.85317	22	31	48.60	-05	04	40.0	E	095
524	1983	09	15.91402	22	29	58.56	-05	08	25.2	E	095
524	1983	09	16.94897	22	29	04.66	-05	10	14.5	E	095
526	1983	07	19.95706	21	20	22.75	-15	14	17.0		095
526	1983	08	05.88612	21	08	20.94	-16	15	57.6		095
526	1983	08	10.89369	21	04	33.44	-16	34	42.3		095
526	1983	08	13.91575	21	02	17.07	-16	45	49.7		095
529	1983	04	11.98611	14	30	01.76	-05	45	05.0	E	095

530	1983	01	14.95272	07	39	28.87	+18	21	57.1	E	095
530	1983	02	10.82567	07	20	02.83	+19	51	25.4	E	095
534	1983	05	14.97975	17	38	51.25	-21	50	46.8		095
537	1983	01	15.11102	10	30	11.12	+14	57	02.4		095
537	1983	02	10.96801	10	14	56.22	+17	28	37.9		095
537	1983	03	05.84297	09	57	50.87	+19	33	29.6		095
538	1983	08	16.96776	22	45	12.44	-10	12	51.2		095
538	1983	09	13.85317	22	26	31.56	-13	12	45.5		095
541	1983	03	15.92799	12	12	58.76	-11	24	34.3		095
542	1983	08	04.90564	21	33	50.41	-09	16	41.5	E	095
542	1983	08	06.87039	21	32	28.25	-09	32	28.0		095
542	1983	09	02.80219	21	13	41.56	-13	24	38.4		095
542	1983	09	04.80369	21	12	34.84	-13	40	54.6		095
542	1983	09	06.79733	21	11	32.81	-13	56	41.4		095
542	1983	09	08.85788	21	10	33.82	-14	12	31.7	E	095
542	1983	09	09.81053	21	10	08.38	-14	19	42.9		095
542	1983	09	11.80338	21	09	19.19	-14	34	19.6	E	095
544	1983	09	05.88669	22	36	25.63	+02	01	09.9	E	095
544	1983	09	08.93288	22	33	38.15	+01	51	56.7		095
544	1983	09	11.88046	22	31	01.31	+01	42	18.5		095
544	1983	09	14.93429	22	28	26.41	+01	31	46.7	E	095
545	1983	09	03.95531	00	04	02.08	+07	14	07.4	E	095
545	1983	09	10.95834	23	58	30.72	+07	10	49.3	E	095
545	1983	09	13.98314	23	55	59.38	+07	07	35.7	E	095
548	1983	08	16.96776	23	03	05.63	-11	26	52.6		095
548	1983	09	02.88008	22	48	39.38	-13	33	53.5		095
548	1983	09	06.93969	22	44	44.72	-14	03	32.0	E	095
551	1983	05	12.83346	13	18	33.07	-08	32	24.6	E	095
551	1983	05	15.81426	13	17	01.43	-08	23	18.0	E	095
557	1983	08	16.96776	22	39	30.75	-05	43	11.2		095
557	1983	09	04.87510	22	22	28.10	-07	08	06.3	E	095
557	1983	09	09.88067	22	17	59.82	-07	31	35.7		095
557	1983	09	12.86748	22	15	27.19	-07	45	11.1		095
557	1983	09	13.85317	22	14	38.50	-07	49	32.4		095
557	1983	09	15.91402	22	12	59.06	-07	58	32.0		095
557	1983	09	16.94897	22	12	10.63	-08	02	56.4		095
568	1983	08	05.81529	19	46	52.19	+01	21	53.0		095
568	1983	08	10.81696	19	42	59.91	+01	14	00.8		095
568	1983	08	13.85313	19	40	48.81	+01	07	39.0		095
568	1983	08	29.78053	19	32	04.25	+00	19	31.0		095
568	1983	08	31.76713	19	31	21.04	+00	12	18.3		095
569	1983	08	16.96776	23	03	34.34	-04	46	48.4		095
569	1983	09	06.93969	22	46	35.53	-06	20	22.6	E	095
580	1983	04	10.02730	15	05	26.66	-13	01	12.7		095
580	1983	04	11.00298	15	04	54.54	-12	58	38.6		095
580	1983	05	12.90253	14	42	41.58	-11	25	43.0		095
585	1983	08	04.90564	21	26	58.88	-06	39	17.9		095
585	1983	08	06.87039	21	25	16.47	-06	50	30.2		095
585	1983	09	01.79895	21	03	37.13	-09	37	37.6		095
585	1983	09	05.82698	21	00	59.00	-10	03	07.3		095
585	1983	09	08.77630	20	59	16.06	-10	21	06.3		095
585	1983	09	08.85788	20	59	13.31	-10	21	36.3		095
585	1983	09	11.80338	20	57	42.44	-10	38	53.8		095
586	1983	09	03.95531	00	13	48.62	+03	29	07.4		095
586	1983	09	10.95834	00	09	21.60	+03	00	03.5	M	095
586	1983	09	13.98314	00	07	16.48	+02	46	11.6		095
598	1983	01	12.99579	06	35	13.88	+27	15	18.8		095
603	1983	01	13.05174	09	05	48.21	+26	32	14.8		095
603	1983	01	15.02700	09	04	03.10	+26	35	14.3		095

603		1983	02	10.89720	08	35	23.26	+26	29	45.6	095
603		1983	03	05.76557	08	19	59.20	+24	56	04.4	095
606		1983	03	13.80956	10	16	50.22	+05	37	50.6	E 095
606		1983	03	16.81258	10	14	25.19	+05	47	11.4	E 095
607		1983	09	07.01191	00	01	27.91	+15	35	30.8	E 095
607		1983	09	09.95081	23	59	14.69	+15	29	39.2	E 095
607		1983	09	12.93900	23	56	54.28	+15	22	01.8	E 095
611		1983	09	10.95834	00	30	18.19	+06	13	09.3	E 095
612		1983	04	12.95210	14	32	21.64	-09	17	28.7	E 095
613		1983	01	15.11102	10	22	48.36	+16	53	02.0	095
613		1983	02	10.96801	10	03	22.84	+18	08	58.9	095
613		1983	03	05.84297	09	43	09.56	+18	53	28.8	095
613		1983	03	15.78010	09	36	21.02	+18	55	23.5	095
617		1983	03	13.96090	12	50	27.64	+13	29	41.6	095
617		1983	04	10.86780	12	36	26.19	+14	19	47.1	095
617		1983	04	12.89244	12	35	25.47	+14	21	19.6	095
617		1983	05	01.82020	12	26	59.93	+14	18	50.8	095
622		1983	03	15.01184	13	03	41.43	+03	04	16.1	095
624		1983	08	16.96776	22	46	51.06	-10	20	18.5	095
624		1983	09	13.85317	22	31	44.63	-10	54	38.2	095
624		1983	09	15.91402	22	30	40.10	-10	56	37.8	E 095
624		1983	09	16.94897	22	30	08.22	-10	57	35.0	E 095
627		1983	07	19.95706	21	17	22.10	-13	29	43.7	095
627		1983	08	05.88612	21	05	02.31	-15	03	44.6	095
627		1983	08	10.89369	21	01	04.94	-15	33	22.1	095
627		1983	08	13.91575	20	58	43.53	-15	51	04.0	095
641		1983	08	16.96776	22	56	30.25	-09	55	06.5	095
641		1983	09	13.85317	22	30	07.60	-12	21	42.5	095
641		1983	09	15.91402	22	28	14.56	-12	30	23.5	E 095
641		1983	09	16.94897	22	27	19.18	-12	34	29.3	E 095
642		1983	01	15.02700	08	41	03.61	+30	08	12.7	E 095
646		1983	01	12.99579	06	30	26.92	+27	06	10.0	095
647		1983	09	03.76610	20	17	22.10	-09	23	01.4	095
651		1983	03	13.89009	11	37	28.84	+15	06	03.2	095
652		1983	04	09.94752	14	17	52.28	+08	27	31.5	095
652		1983	04	11.90696	14	16	10.62	+08	35	36.5	095
653		1983	04	11.98611	14	58	55.55	+00	21	27.5	095
653		1983	05	15.88554	14	34	34.14	+02	39	01.1	095
656		1983	08	11.86201	19	19	20.06	-21	32	40.8	095
658		1983	09	11.95476	23	28	06.22	-03	28	58.3	E 095
670		1983	08	04.90564	21	32	09.97	-06	34	40.8	095
670		1983	08	06.87039	21	30	45.10	-06	46	14.3	095
670		1983	08	12.86395	21	26	14.69	-07	24	49.8	095
670		1983	09	01.79895	21	11	59.53	-09	50	17.0	095
670		1983	09	04.80369	21	10	16.91	-10	12	07.4	E 095
670		1983	09	05.82698	21	09	44.78	-10	19	27.7	095
670		1983	09	06.79733	21	09	15.19	-10	26	17.8	E 095
670		1983	09	08.77630	21	08	19.60	-10	40	06.3	E 095
670		1983	09	08.85788	21	08	17.28	-10	40	39.6	095
670		1983	09	09.81053	21	07	52.44	-10	47	11.3	E 095
670		1983	09	11.80338	21	07	05.22	-11	00	32.2	095
670		1983	09	12.80189	21	06	43.50	-11	07	08.1	E 095
682		1983	09	03.95531	00	19	04.18	+07	20	59.6	E 095
682		1983	09	10.95834	00	14	49.32	+06	18	15.2	095
682		1983	09	13.98314	00	12	46.34	+05	48	30.1	095
687		1983	03	13.80956	10	16	09.46	+08	51	48.4	095
687		1983	03	16.81258	10	13	38.42	+08	55	19.7	095
688		1983	03	05.92212	11	57	07.96	+01	15	56.1	E 095
688		1983	03	14.94031	11	50	27.62	+02	29	29.5	E 095

688	1983	03	15.85473	11	49	45.10	+02	37	10.9	E 095
688	1983	03	18.79146	11	47	28.15	+03	01	47.4	E 095
688	1983	03	18.87096	11	47	24.34	+03	02	25.4	E 095
689	1983	09	03.95531	00	03	15.01	-00	03	25.0	095
689	1983	09	13.98314	23	58	17.53	-01	44	21.0	r 095
698	1983	03	15.01184	12	36	45.71	+09	03	49.1	E 095
703	1983	05	14.90257	15	47	08.02	-18	15	59.4	095
709	1983	09	04.87510	22	11	13.50	-05	12	08.6	095
709	1983	09	06.86816	22	09	19.28	-05	09	51.3	095
709	1983	09	09.88067	22	06	32.10	-05	06	30.4	095
709	1983	09	11.88046	22	04	45.60	-05	04	19.5	E 095
709	1983	09	12.86748	22	03	54.34	-05	03	13.3	095
709	1983	09	13.85317	22	03	04.25	-05	02	07.5	E 095
709	1983	09	14.93429	22	02	10.53	-05	00	59.5	E 095
709	1983	09	15.91402	22	01	22.94	-04	59	50.7	095
709	1983	09	16.94897	22	00	34.00	-04	58	41.1	095
710	1983	03	16.81258	09	51	54.55	+13	37	45.2	E 095
720	1983	04	10.02730	15	24	02.06	-19	01	39.6	095
720	1983	04	11.00298	15	23	32.46	-19	00	41.2	095
720	1983	05	12.90253	14	59	19.99	-17	52	07.0	095
723	1983	08	07.00130	23	39	36.03	-01	58	01.1	095
723	1983	08	13.00910	23	37	40.59	-02	19	48.3	095
723	1983	09	09.00579	23	21	52.18	-04	47	33.8	095
723	1983	09	11.95476	23	19	43.78	-05	06	19.9	095
728	1983	02	10.89720	08	43	40.90	+24	40	05.8	095
728	1983	03	05.76557	08	27	57.09	+25	33	16.5	095
735	1983	04	10.02730	15	10	27.48	-16	36	47.0	095
735	1983	04	11.00298	15	09	46.06	-16	37	43.1	095
735	1983	05	12.90253	14	39	19.02	-16	44	20.1	095
738	1983	04	12.95210	14	47	18.54	-10	38	23.1	095
740	1983	04	11.98611	15	00	56.28	-00	19	37.3	095
740	1983	05	15.88554	14	35	50.70	+01	20	04.0	095
743	1983	03	13.80956	09	53	55.37	+05	26	57.0	095
743	1983	03	16.81258	09	52	06.48	+05	42	14.4	E 095
744	1983	09	02.80219	21	29	43.97	-15	25	33.8	095
744	1983	09	04.80369	21	28	30.13	-15	34	39.9	095
744	1983	09	06.79733	21	27	19.69	-15	43	22.4	095
744	1983	09	09.81053	21	25	38.84	-15	55	56.8	095
745	1983	03	05.84297	09	25	04.20	+21	54	21.8	E 095
745	1983	03	15.78010	09	20	14.97	+22	37	11.1	095
747	1983	08	11.86201	19	01	28.78	-16	08	33.6	095
749	1983	01	06.87979	07	04	46.50	+21	56	47.0	E 095
753	1983	01	14.80485	05	07	31.00	+30	01	41.9	095
754	1983	08	30.76933	20	07	50.57	+05	02	39.3	095
755	1983	08	07.00130	23	40	47.25	-01	00	29.2	095
755	1983	09	09.00579	23	22	08.62	-03	21	25.0	E 095
755	1983	09	11.95476	23	20	03.47	-03	36	59.4	095
756	1983	03	15.92799	12	17	21.12	-15	39	52.4	095
757	1983	02	11.03084	11	31	07.06	+13	32	12.3	095
757	1983	02	15.09030	11	27	54.49	+13	49	15.2	095
768	1983	04	12.95210	14	42	12.15	-14	55	10.0	095
772	1983	05	14.90257	16	05	22.91	-16	54	20.7	095
772	1983	06	05.85487	15	40	16.02	-19	27	01.1	095
777	1983	01	12.99579	06	16	01.04	+25	17	35.5	E 095
779	1983	01	14.80485	04	52	14.36	+28	20	35.7	E 095
800	1983	03	13.80956	09	52	26.75	+11	31	33.3	095
800	1983	03	16.81258	09	49	54.84	+11	40	58.5	E 095
803	1983	02	02.81729	06	15	36.65	+17	03	14.7	095
807	1983	03	13.89009	11	42	53.10	+13	39	28.2	095

809	1983	03	14.94031	12	18	07.13	+03	15	27.7		095
811	1983	06	02.85072	15	05	45.22	-12	41	02.6		095
813	1983	01	15.11102	10	35	24.08	+19	43	11.7		095
813	1983	02	10.96801	10	15	25.45	+22	41	11.3		095
813	1983	03	14.79517	09	43	27.37	+24	26	21.2		095
820	1983	06	02.85072	14	51	28.20	-08	14	53.2		095
830	1983	04	10.92058	14	01	13.12	-16	34	46.2		095
830	1983	05	12.83346	13	38	06.66	-14	43	27.7		095
830	1983	05	15.81426	13	36	21.52	-14	33	15.0		095
842	1983	03	16.00229	13	14	41.57	-11	03	27.1		095
848	1983	01	06.87979	06	54	56.26	+21	24	41.2		095
848	1983	02	02.81729	06	34	45.74	+21	49	53.6		095
868	1983	03	05.84297	09	34	08.81	+19	28	09.5		095
868	1983	03	15.78010	09	28	15.05	+20	00	59.4		095
869	1983	03	05.92212	11	52	54.93	+04	48	08.2		095
869	1983	03	15.85473	11	45	16.98	+06	15	22.2		095
869	1983	03	18.79146	11	42	54.10	+06	41	13.6		095
869	1983	03	18.87096	11	42	50.10	+06	41	51.2		095
869	1983	03	20.93906	11	41	08.69	+06	59	50.4	E	095
875	1983	09	01.87810	22	34	50.75	+07	42	30.5	E	095
875	1983	09	05.88669	22	32	03.53	+06	53	56.2		095
886	1983	06	05.85487	15	50	03.44	-21	46	34.2	E	095
888	1983	07	19.00502	22	12	20.32	-16	19	01.3		095
890	1983	08	16.96776	22	52	39.00	-05	42	49.7		095
890	1983	09	13.85317	22	33	49.16	-09	09	58.6	E	095
892	1983	08	05.81529	19	39	10.50	+02	57	43.1		095
892	1983	08	10.81696	19	36	11.56	+02	24	24.9		095
892	1983	08	13.85313	19	34	31.78	+02	03	04.8		095
892	1983	08	29.78053	19	28	06.35	+00	01	59.2		095
892	1983	08	31.76713	19	27	36.50	-00	13	31.4		095
893	1983	08	13.98542	21	46	52.53	-12	30	56.8	E	095
893	1983	08	16.90178	21	44	50.47	-13	01	08.2	E	095
893	1983	09	02.80219	21	33	23.16	-15	52	14.8		095
893	1983	09	04.80369	21	32	11.16	-16	11	03.8		095
893	1983	09	06.79733	21	31	03.00	-16	29	15.7		095
893	1983	09	09.81053	21	29	27.19	-16	55	46.0		095
893	1983	09	10.83562	21	28	56.94	-17	04	26.5	E	095
894	1983	04	05.86528	10	52	21.12	+01	22	35.5		095
894	1983	04	09.79474	10	50	41.86	+01	48	04.4		095
902	1983	08	07.00130	23	43	56.41	-05	10	27.4	M	095
902	1983	08	13.00910	23	42	17.66	-05	02	50.8		095
902	1983	09	09.00579	23	22	42.31	-05	15	33.6		095
902	1983	09	11.95476	23	19	48.69	-05	19	17.5		095
905	1983	04	10.02730	15	13	24.98	-18	15	58.0		095
905	1983	04	11.00298	15	12	43.43	-18	15	21.0		095
905	1983	05	12.90253	14	40	43.99	-17	11	06.6		095
911	1983	07	19.00502	22	24	27.60	-16	05	44.8		095
911	1983	08	05.95625	22	16	11.72	-16	19	49.3		095
911	1983	08	13.98542	22	11	43.69	-16	27	07.0		095
911	1983	09	10.83562	21	55	40.53	-16	41	48.5		095
915	1983	04	10.92058	14	00	14.32	-15	26	28.6		095
915	1983	05	12.83346	13	28	05.50	-13	29	18.9		095
915	1983	05	15.81426	13	25	50.31	-13	19	22.0		095
939	1983	04	09.87132	12	00	55.04	-03	07	43.4	E	095
939	1983	04	11.83706	11	59	09.81	-02	57	02.4	E	095
943	1983	04	10.86780	13	01	50.55	+12	45	34.8		095
943	1983	04	12.89244	13	00	20.01	+12	53	00.2	E	095
943	1983	05	01.82020	12	48	18.24	+13	20	37.3		095
945	1983	08	04.97785	22	24	12.91	+01	36	25.8	E	095

945	1983	08	06.93671	22	22	13.25	+01	46	15.1			095
945	1983	08	11.93632	22	16	50.81	+02	09	05.1		E	095
945	1983	08	12.94105	22	15	42.75	+02	13	24.1			095
950	1983	03	18.79146	11	32	05.99	-02	14	25.5		N	095
950	1983	03	18.87096	11	32	03.01	-02	12	43.5		E	095
950	1983	03	20.93906	11	30	45.91	-01	23	44.1		E	095
950	1983	04	05.86528	11	22	54.06	+04	35	08.7		E	095
950	1983	04	09.79474	11	21	47.10	+05	53	06.8		E	095
955	1983	03	05.92212	11	57	31.40	-00	23	43.6		E	095
955	1983	03	15.85473	11	47	23.39	-00	09	17.3		E	095
955	1983	03	18.79146	11	44	11.40	-00	03	58.3			095
955	1983	03	18.87096	11	44	06.22	-00	03	51.4			095
955	1983	03	20.93906	11	41	49.41	-00	00	03.2		E	095
958	1983	08	16.96776	22	59	27.16	-07	10	50.6			095
958	1983	09	06.93969	22	46	26.66	-08	08	52.1	17.5	E	095
962	1983	03	05.92212	11	49	48.40	+02	58	51.2			095
962	1983	03	15.85473	11	42	19.92	+03	54	20.7			095
962	1983	03	18.79146	11	40	04.58	+04	10	43.0			095
962	1983	03	18.87096	11	40	01.10	+04	11	08.6			095
962	1983	03	20.93906	11	38	25.70	+04	22	28.6		E	095
964	1983	04	10.02730	15	08	32.87	-20	01	36.9			095
968	1983	09	03.76610	20	32	56.72	-03	18	05.2			095
971	1983	03	13.96090	13	07	36.66	+16	08	42.6			095
971	1983	04	10.86780	12	42	47.54	+18	06	15.0			095
971	1983	04	12.89244	12	41	01.23	+18	07	38.2			095
971	1983	05	01.82020	12	27	44.87	+17	30	02.4		I	095
973	1983	09	13.98314	23	47	38.00	+01	55	15.6			095
975	1983	01	14.80485	05	02	13.85	+25	41	09.3		E	095
979	1983	05	14.90257	15	46	59.15	-18	29	58.5			095
979	1983	06	05.85487	15	30	20.36	-16	35	38.6			095
984	1983	08	16.96776	22	34	40.00	-03	40	51.0		E	095
984	1983	09	04.87510	22	17	38.38	-03	40	16.1			095
984	1983	09	06.86816	22	15	50.91	-03	41	33.7			095
984	1983	09	08.93288	22	14	01.97	-03	43	06.7		E	095
984	1983	09	09.88067	22	13	13.19	-03	43	47.6			095
984	1983	09	11.88046	22	11	32.53	-03	45	23.1			095
984	1983	09	12.86748	22	10	44.28	-03	46	07.5			095
984	1983	09	14.93429	22	09	06.44	-03	47	49.6		E	095
984	1983	09	15.91402	22	08	21.78	-03	48	33.4		E	095
984	1983	09	16.94897	22	07	35.91	-03	49	22.0		E	095
987	1983	09	07.01191	00	13	01.30	+10	19	46.1		E	095
987	1983	09	09.95081	00	10	53.30	+10	20	41.5			095
988	1983	08	05.88612	20	57	03.32	-19	50	34.4			095
992	1983	04	12.95210	14	30	06.61	-14	24	08.8			095
994	1983	02	10.96801	10	29	22.67	+24	19	36.5		E	095
994	1983	03	14.79517	09	55	41.72	+24	30	24.3		E	095
996	1983	03	16.00229	13	12	09.11	-08	03	42.4			095
1007	1983	03	13.80956	09	46	53.26	+11	35	29.2		E	095
1012	1983	03	13.89009	11	33	53.78	+10	21	02.5		E	095
1017	1983	03	13.89009	11	53	15.72	+12	39	29.4		E	095
1028	1983	05	14.90257	15	45	57.00	-18	09	43.6			095
1028	1983	06	05.85487	15	29	36.66	-17	52	59.1			095
1029	1983	04	10.02730	15	21	35.20	-19	13	28.6			095
1029	1983	04	11.00298	15	21	05.24	-19	12	33.3			095
1029	1983	05	12.90253	14	56	41.48	-18	04	18.4			095
1031	1983	08	05.81529	19	44	13.06	+04	18	58.7			095
1031	1983	08	10.81696	19	40	57.22	+03	57	46.7			095
1031	1983	08	13.85313	19	39	08.13	+03	43	22.1			095
1031	1983	08	29.78053	19	32	11.66	+02	14	36.2			095

1031	1983	08	31.76713	19	31	40.13	+02	02	36.6		095
1034	1983	09	07.01191	00	19	26.03	+09	32	22.6	E	095
1034	1983	09	09.95081	00	17	22.18	+09	32	01.0	E	095
1035	1983	02	11.03084	11	30	34.59	+12	28	30.2		095
1035	1983	02	15.09030	11	27	52.65	+12	38	33.5		095
1039	1983	03	13.80956	09	57	42.96	+05	32	52.5		095
1039	1983	03	16.81258	09	55	50.03	+05	49	41.1	E	095
1040	1983	09	03.76610	20	18	30.19	-05	50	38.7		095
1046	1983	03	16.00229	13	13	26.10	-08	02	30.0		095
1047	1983	03	15.01184	12	43	08.44	+04	45	31.6		095
1061	1983	04	09.87132	12	15	47.84	+01	57	11.2		095
1063	1983	01	15.11102	10	45	51.65	+14	59	13.4		095
1063	1983	02	10.96801	10	31	37.29	+18	16	33.1		095
1069	1983	02	11.03084	11	33	18.88	+09	42	33.5	E	095
1069	1983	02	15.09030	11	31	34.72	+10	17	52.5	E	095
1069	1983	03	13.89009	11	14	51.44	+14	21	39.0	E	095
1073	1983	03	15.85473	11	17	58.72	+06	20	19.3	M	095
1073	1983	03	20.93906	11	14	22.78	+06	41	42.7		095
1073	1983	04	09.79474	11	02	18.46	+07	49	08.9		095
1076	1983	05	14.90257	15	40	02.31	-14	12	02.8		095
1079	1983	08	05.95625	22	16	15.44	-10	52	43.0		095
1079	1983	08	16.90178	22	08	01.10	-11	34	29.3	E	095
1079	1983	09	10.83562	21	48	32.78	-13	08	46.6		095
1083	1983	09	04.94524	23	16	45.44	-13	48	51.3		095
1083	1983	09	06.93969	23	14	51.28	-14	01	55.0		095
1085	1983	07	19.95706	21	06	21.16	-14	37	06.9	E	095
1085	1983	08	05.88612	20	54	14.32	-16	01	04.5	E	095
1085	1983	08	10.89369	20	50	30.69	-16	26	33.9		095
1085	1983	08	13.91575	20	48	18.88	-16	41	43.0	E	095
1086	1983	08	05.95625	22	03	53.56	-09	19	44.6		095
1086	1983	08	13.98542	21	57	51.60	-09	34	22.5	E	095
1086	1983	08	16.90178	21	55	34.72	-09	40	20.7		095
1086	1983	08	31.84351	21	43	55.72	-10	12	31.5		095
1086	1983	09	04.80369	21	41	02.72	-10	20	40.7	E	095
1086	1983	09	06.79733	21	39	39.28	-10	24	39.6	E	095
1086	1983	09	09.81053	21	37	38.82	-10	30	21.1	E	095
1086	1983	09	10.83562	21	36	59.60	-10	32	11.9	E	095
1086	1983	09	12.80189	21	35	46.91	-10	35	38.1	E	095
1094	1983	03	05.84297	09	56	27.34	+14	46	57.8	E	095
1094	1983	03	15.78010	09	50	37.89	+16	23	38.8	E	095
1097	1983	03	14.94031	12	23	14.12	-00	39	52.1		095
1097	1983	04	09.87132	12	00	58.50	+01	52	59.6	E	095
1097	1983	04	11.83706	11	59	24.08	+02	03	21.5	E	095
1098	1983	03	05.76557	08	41	55.01	+21	22	40.4	E	095
1103	1983	01	06.87979	06	26	37.86	+14	44	01.2	E	095
1104	1983	07	19.95706	21	23	27.75	-15	23	08.2		095
1104	1983	08	05.88612	21	09	54.78	-17	21	43.7		095
1104	1983	08	10.89369	21	05	09.38	-18	00	01.3		095
1104	1983	08	13.91575	21	02	14.75	-18	23	00.0		095
1111	1983	01	06.87979	06	38	33.58	+20	09	02.6		095
1111	1983	01	12.99579	06	33	12.56	+20	21	15.7		095
1111	1983	02	02.81729	06	19	22.79	+21	00	18.5		095
1113	1983	09	04.87510	22	11	30.10	-07	15	03.3		095
1113	1983	09	06.86816	22	09	51.25	-07	17	53.4		095
1113	1983	09	09.88067	22	07	25.31	-07	22	04.9		095
1113	1983	09	12.86748	22	05	05.84	-07	26	01.6		095
1113	1983	09	13.85317	22	04	21.28	-07	27	16.2		095
1113	1983	09	15.91402	22	02	50.13	-07	29	48.2		095
1113	1983	09	16.94897	22	02	05.56	-07	31	00.8		095

1121	1983	03	05.92212	11	55	47.75	+01	14	48.0	E 095
1121	1983	03	18.79146	11	43	43.93	+02	04	36.9	095
1121	1983	03	18.87096	11	43	39.12	+02	04	54.2	095
1121	1983	03	20.93906	11	41	41.54	+02	12	56.2	E 095
1139	1983	08	05.81529	19	52	18.53	+04	58	17.2	N 095
1139	1983	08	10.81696	19	46	50.84	+04	28	05.7	095
1139	1983	08	13.85313	19	43	46.29	+04	06	15.2	095
1139	1983	08	29.78053	19	32	08.57	+01	40	37.4	095
1139	1983	08	31.76713	19	31	19.60	+01	20	13.5	095
1142	1983	08	16.96776	22	43	34.75	-08	55	37.0	095
1142	1983	09	06.86816	22	28	41.78	-10	35	35.4	E 095
1142	1983	09	09.88067	22	26	35.13	-10	49	11.2	E 095
1142	1983	09	12.86748	22	24	33.97	-11	02	08.1	E 095
1142	1983	09	13.85317	22	23	55.35	-11	06	17.4	095
1142	1983	09	15.91402	22	22	35.66	-11	14	40.8	095
1142	1983	09	16.94897	22	21	56.94	-11	18	44.7	095
1143	1983	07	19.95706	21	21	07.91	-11	31	45.9	095
1143	1983	09	11.80338	20	57	17.41	-13	25	07.1	E 095
1145	1983	07	19.00502	22	37	05.22	-13	46	08.5	M 095
1145	1983	08	05.95625	22	25	51.60	-14	16	10.6	095
1145	1983	08	13.98542	22	18	27.28	-14	35	53.3	095
1145	1983	09	10.83562	21	51	32.69	-15	23	20.4	095
1152	1983	01	13.05174	08	55	49.35	+21	36	04.8	095
1152	1983	02	10.89720	08	25	17.92	+22	25	38.0	095
1152	1983	03	05.76557	08	09	28.94	+22	09	30.7	095
1156	1983	09	11.95476	23	30	32.07	-05	53	44.9	E 095
1171	1983	03	14.94031	12	06	25.83	+03	07	34.9	095
1173	1983	03	15.92799	12	17	57.94	-10	55	35.3	095
1182	1983	09	03.95531	00	15	59.25	+07	43	37.7	E 095
1182	1983	09	10.95834	00	09	43.67	+08	00	23.7	E 095
1199	1983	09	03.76610	20	32	54.50	-06	08	53.2	r 095
1200	1983	04	10.92058	14	05	21.97	-12	14	38.8	E 095
1200	1983	05	12.83346	13	42	51.57	-09	16	02.0	E 095
1200	1983	05	15.81426	13	41	12.63	-09	02	14.0	095
1201	1983	05	14.90257	15	43	25.42	-13	40	05.6	095
1209	1983	01	15.11102	10	36	01.62	+16	47	09.8	095
1209	1983	02	10.96801	10	21	25.40	+19	10	02.6	095
1209	1983	03	05.84297	10	03	52.67	+21	00	42.8	E 095
1218	1983	03	05.76557	08	38	42.16	+24	07	43.0	E 095
1223	1983	04	10.02730	15	31	00.23	-19	15	06.1	095
1223	1983	04	11.00298	15	30	31.43	-19	14	10.1	095
1223	1983	05	12.90253	15	06	38.19	-18	08	22.9	095
1224	1983	09	05.01538	00	24	48.39	+19	19	05.1	E 095
1224	1983	09	12.93900	00	20	40.43	+19	22	25.8	095
1229	1983	08	07.00130	23	16	55.72	-03	33	48.5	095
1229	1983	08	16.96776	23	12	32.44	-04	02	15.8	E 095
1229	1983	09	06.93969	22	58	52.60	-05	32	20.2	E 095
1229	1983	09	09.00579	22	57	23.35	-05	42	15.7	E 095
1229	1983	09	11.95476	22	55	17.06	-05	56	21.4	E 095
1231	1983	08	07.00130	23	34	00.25	-03	43	24.0	095
1231	1983	09	11.95476	23	04	33.13	-04	19	44.0	E 095
1236	1983	04	12.95210	14	36	54.23	-09	56	34.9	095
1242	1983	08	16.96776	22	57	34.22	-11	44	45.5	095
1242	1983	09	13.85317	22	31	05.66	-12	06	50.5	095
1242	1983	09	15.91402	22	29	11.00	-12	06	23.4	E 095
1242	1983	09	16.94897	22	28	15.19	-12	06	03.1	E 095
1257	1983	09	06.86816	22	25	59.28	-04	11	15.1	E 095
1257	1983	09	09.88067	22	23	30.00	-04	30	31.8	095
1257	1983	09	12.86748	22	21	08.63	-04	49	22.5	095

1257	1983	09	13.85317	22	20	23.69	-04	55	30.5	E 095
1257	1983	09	14.93429	22	19	35.25	-05	02	18.3	E 095
1257	1983	09	15.91402	22	18	52.03	-05	08	15.9	095
1257	1983	09	16.94897	22	18	07.68	-05	14	33.8	095
1258	1983	07	20.98202	22	10	56.53	-06	54	34.3	095
1258	1983	08	16.90178	21	52	57.28	-07	21	23.7	095
1258	1983	08	31.84351	21	41	22.63	-07	54	39.1	095
1258	1983	09	12.80189	21	33	26.66	-08	21	27.8	095
1261	1983	03	16.81258	10	20	21.02	+14	23	20.6	E 095
1263	1983	08	07.00130	23	36	48.56	-03	35	17.0	095
1263	1983	08	13.00910	23	35	09.69	-04	50	10.0	095
1263	1983	09	04.94524	23	22	26.60	-10	39	34.5	095
1263	1983	09	06.93969	23	20	59.08	-11	12	26.0	E 095
1263	1983	09	09.00579	23	19	26.44	-11	46	24.5	E 095
1263	1983	09	11.95476	23	17	12.03	-12	34	43.3	E 095
1268	1983	01	13.05174	09	06	52.76	+20	58	48.2	E 095
1268	1983	02	10.89720	08	46	19.42	+22	02	56.1	E 095
1268	1983	03	05.76557	08	33	12.54	+22	20	41.4	095
1294	1983	01	13.05174	09	17	42.46	+25	52	44.2	095
1294	1983	01	15.02700	09	16	03.91	+26	07	42.4	095
1294	1983	02	10.89720	08	49	46.46	+28	53	15.8	E 095
1317	1983	03	14.94031	12	13	41.53	+02	34	06.2	095
1318	1983	03	14.94031	12	16	05.17	-02	27	13.8	E 095
1321	1983	01	13.05174	08	45	46.70	+21	23	01.5	095
1321	1983	02	10.89720	08	20	00.68	+21	57	44.7	095
1321	1983	03	05.76557	08	05	16.75	+21	51	59.0	E 095
1328	1983	08	04.90564	21	17	15.50	-07	03	26.3	095
1328	1983	08	06.87039	21	15	53.44	-07	09	16.0	E 095
1328	1983	09	01.79895	20	58	41.88	-08	43	14.3	095
1328	1983	09	05.82698	20	56	35.50	-08	58	32.0	095
1328	1983	09	08.77630	20	55	13.00	-09	09	29.1	095
1328	1983	09	08.85788	20	55	10.69	-09	09	46.7	095
1328	1983	09	11.80338	20	53	57.69	-09	20	23.5	095
1332	1983	03	05.92212	11	56	42.34	+01	35	49.8	E 095
1332	1983	03	14.94031	11	50	08.42	+02	14	21.6	E 095
1332	1983	03	15.85473	11	49	27.16	+02	18	21.0	E 095
1332	1983	03	18.79146	11	47	14.57	+02	31	11.4	E 095
1332	1983	03	18.87096	11	47	10.95	+02	31	31.3	E 095
1334	1983	04	11.98611	14	48	46.50	+01	56	34.8	095
1334	1983	05	14.83334	14	24	37.08	+04	21	31.4	E 095
1334	1983	05	15.88554	14	23	52.83	+04	23	03.1	095
1335	1983	03	20.93906	11	23	23.00	+04	03	14.4	095
1339	1983	03	13.80956	09	44	30.57	+04	10	12.9	E 095
1340	1983	08	07.00130	23	22	02.75	-04	09	15.7	095
1340	1983	09	06.93969	23	02	44.50	-06	08	04.1	E 095
1340	1983	09	11.95476	22	59	06.75	-06	30	08.6	095
1347	1983	05	12.90253	15	06	58.76	-17	15	02.2	E 095
1347	1983	06	02.85072	14	50	37.07	-14	39	27.4	095
1351	1983	04	10.92058	13	39	42.24	-14	24	21.3	E 095
1351	1983	05	15.81426	13	14	21.26	-13	02	40.3	E 095
1352	1983	08	11.86201	19	03	13.41	-17	26	19.8	095
1353	1983	06	02.85072	15	07	11.01	-11	43	54.7	E 095
1354	1983	01	14.80485	05	01	00.18	+29	15	18.2	095
1356	1983	03	15.01184	13	05	12.27	+03	51	28.5	095
1363	1983	03	16.00229	13	15	00.06	-08	35	28.9	095
1369	1983	04	09.87132	12	29	54.52	+00	33	24.9	095
1369	1983	04	11.83706	12	28	35.36	+00	48	36.4	095
1372	1983	03	05.76557	08	35	26.10	+22	21	19.5	095
1376	1983	01	06.87979	06	33	00.86	+18	08	27.2	095

1378	1983	01	12.99579	06	47	29.50	+28	02	34.5		E	095
1389	1983	08	05.95625	22	19	58.38	-08	50	58.3		N	095
1389	1983	08	31.84351	22	00	24.35	-10	54	33.8		E	095
1389	1983	09	06.86816	21	55	56.34	-11	23	04.1		E	095
1389	1983	09	10.83562	21	53	13.00	-11	40	46.4		M	095
1397	1983	02	10.89720	08	41	03.07	+22	30	28.8			095
1397	1983	03	05.76557	08	23	57.30	+23	25	07.8			095
1401	1983	01	14.95272	07	47	31.77	+17	20	23.6			095
1404	1983	09	02.80219	21	35	58.69	-17	42	14.4			095
1404	1983	09	06.79733	21	33	51.75	-17	42	38.6			095
1404	1983	09	10.83562	21	31	50.85	-17	42	18.7			095
1408	1983	05	14.90257	15	39	15.20	-12	47	05.3			095
1409	1983	09	10.95834	00	26	54.43	+02	29	31.2			095
1415	1983	01	14.80485	05	15	38.91	+27	38	40.0			095
1420	1983	01	06.87979	06	29	40.52	+21	33	12.8		E	095
1420	1983	01	12.99579	06	23	58.68	+21	31	43.3			095
1420	1983	02	02.81729	06	09	47.89	+21	25	34.4		E	095
1431	1983	05	14.83334	14	42	26.63	+06	06	08.2	17.0		095
1431	1983	05	15.88554	14	41	32.08	+06	07	12.5	17.0	I	095
1434	1983	03	05.92212	11	45	16.73	+07	03	28.8		E	095
1434	1983	03	15.85473	11	38	18.80	+08	19	58.6		E	095
1437	1983	07	20.98202	22	04	39.10	-07	22	09.9			095
1437	1983	08	16.90178	21	50	52.75	-07	27	43.1			095
1437	1983	08	31.84351	21	42	30.41	-07	39	49.5			095
1437	1983	09	03.83293	21	40	54.88	-07	42	33.4		E	095
1437	1983	09	12.80189	21	36	27.22	-07	50	03.6			095
1445	1983	04	09.87132	12	05	59.24	+02	42	01.2			095
1446	1983	09	04.94524	23	07	57.47	-11	11	17.4			095
1446	1983	09	06.93969	23	05	52.19	-11	19	38.4			095
1446	1983	09	11.95476	23	00	37.66	-11	39	12.4			095
1456	1983	08	04.97785	22	18	35.91	+01	58	12.3			095
1456	1983	08	06.93671	22	17	19.94	+02	02	41.0			095
1456	1983	08	11.93632	22	13	50.06	+02	10	53.3		E	095
1456	1983	08	12.94105	22	13	05.38	+02	12	01.8			095
1458	1983	04	11.98611	14	34	56.22	-04	11	30.9			095
1458	1983	05	15.88554	14	10	14.14	+01	07	09.3			095
1460	1983	01	15.11102	10	55	41.17	+17	09	26.2		E	095
1461	1983	03	13.96090	13	08	51.91	+15	50	29.9			095
1461	1983	04	10.86780	12	49	08.48	+18	19	55.7			095
1461	1983	04	12.89244	12	47	39.86	+18	25	24.6			095
1461	1983	05	01.82020	12	35	55.60	+18	34	08.3			095
1462	1983	03	05.84297	09	25	15.50	+16	24	56.3		E	095
1462	1983	03	15.78010	09	19	43.30	+16	46	45.3			095
1464	1983	03	13.96090	13	01	54.35	+11	58	20.3			095
1464	1983	04	10.86780	12	40	40.44	+14	01	42.4			095
1464	1983	04	12.89244	12	39	07.67	+14	05	36.6			095
1464	1983	05	01.82020	12	27	16.30	+14	01	16.4			095
1472	1983	01	15.11102	10	13	55.11	+18	29	56.9	17.0	E	095
1472	1983	03	15.78010	09	18	01.42	+22	39	38.1			095
1473	1983	08	30.76933	20	07	16.22	+04	40	28.7			095
1477	1983	01	13.05174	09	03	47.65	+24	36	17.5			095
1477	1983	01	15.02700	09	01	47.57	+24	32	44.1			095
1477	1983	02	10.89720	08	32	49.65	+23	15	38.7			095
1477	1983	03	05.76557	08	17	19.22	+21	29	15.2			095
1491	1983	01	14.80485	05	03	29.64	+26	42	40.0			095
1505	1983	08	30.76933	20	20	09.43	+02	13	20.5			095
1514	1983	08	11.86201	19	02	16.63	-19	02	07.6			095
1525	1983	08	04.90564	21	20	16.06	-08	15	45.7			095
1525	1983	08	06.87039	21	18	38.68	-08	14	27.4			095

1525	1983	09	01.79895	20	58	53.10	-08	27	56.2			095
1525	1983	09	08.77630	20	55	49.47	-08	35	17.2			095
1525	1983	09	08.85788	20	55	47.56	-08	35	21.3			095
1525	1983	09	11.80338	20	54	58.38	-08	38	05.2			095
1529	1983	09	02.88008	22	57	42.50	-18	20	50.2			095
1533	1983	09	04.87510	22	05	35.38	-10	45	54.0		E	095
1533	1983	09	06.86816	22	04	15.19	-10	59	27.4		E	095
1533	1983	09	09.88067	22	02	17.82	-11	19	22.8		E	095
1533	1983	09	10.83562	22	01	41.85	-11	25	36.5			095
1533	1983	09	12.86748	22	00	27.72	-11	38	26.2		E	095
1533	1983	09	13.85317	21	59	52.60	-11	44	32.8		E	095
1533	1983	09	15.91402	21	58	42.04	-11	57	10.8		E	095
1536	1983	02	10.82567	07	14	52.54	+19	55	33.1		E	095
1542	1983	04	10.02730	14	56	28.20	-16	21	11.4			095
1542	1983	04	11.00298	14	55	54.60	-16	18	05.6		E	095
1542	1983	04	12.95210	14	54	45.06	-16	11	44.5		E	095
1542	1983	05	12.90253	14	33	00.81	-14	12	49.7		E	095
1544	1983	02	11.03084	11	20	12.76	+10	09	26.8		E	095
1544	1983	02	15.09030	11	17	09.60	+10	32	31.1		E	095
1547	1983	08	04.97785	22	25	17.60	+01	54	17.8			095
1547	1983	08	06.93671	22	23	49.50	+01	56	43.9			095
1547	1983	08	12.94105	22	18	54.44	+02	00	12.3			095
1551	1983	04	10.02730	15	24	41.90	-13	00	52.9			095
1551	1983	04	11.00298	15	24	11.34	-12	57	59.1			095
1551	1983	05	12.90253	14	57	25.50	-11	08	12.2			095
1551	1983	06	02.85072	14	39	36.65	-10	22	55.1			095
1555	1983	03	16.81258	10	19	07.04	+07	02	58.2			095
1558	1983	02	11.03084	11	43	03.34	+14	06	49.7			095
1558	1983	02	15.09030	11	41	07.50	+14	34	10.1			095
1558	1983	03	13.89009	11	23	34.70	+17	27	06.2			095
1559	1983	03	16.00229	12	57	08.18	-10	07	10.8			095
1560	1983	01	14.95272	08	13	57.72	+18	11	36.8		E	095
1560	1983	02	10.82567	07	48	09.67	+18	30	53.1		E	095
1561	1983	09	17.02304	01	14	06.61	+11	57	13.3			095
1576	1983	02	10.82567	07	36	07.59	+20	37	28.8		E	095
1581	1983	03	14.94031	12	20	10.33	+01	55	24.1			095
1581	1983	04	09.87132	12	01	38.66	+03	58	13.6		E	095
1581	1983	04	11.83706	12	00	24.88	+04	05	20.0		E	095
1582	1983	04	10.86780	12	59	57.36	+12	39	28.8		E	095
1582	1983	04	12.89244	12	58	24.31	+12	45	06.9		E	095
1582	1983	05	01.82020	12	45	48.54	+12	55	57.0			095
1589	1983	05	14.90257	15	43	01.01	-14	41	35.8			095
1614	1983	03	15.01184	13	02	28.84	+02	50	00.7			095
1617	1983	09	13.00984	00	39	25.59	-04	55	43.2			095
1620	1983	02	11.03084	11	31	19.38	+15	23	42.5			095
1620	1983	02	15.09030	11	26	06.09	+13	39	17.0			095
1642	1983	09	03.95531	23	45	43.56	+02	24	43.1		E	095
1644	1983	08	06.93671	22	45	51.19	+02	09	31.5	16.5	E	095
1644	1983	09	08.93288	22	18	32.88	+00	28	27.5			095
1644	1983	09	11.88046	22	16	02.41	+00	13	54.9			095
1644	1983	09	14.93429	22	13	33.00	-00	01	28.8			095
1646	1983	03	15.01184	13	07	26.38	+05	57	09.5			095
1652	1983	06	05.85487	15	28	34.08	-19	41	04.0			095
1654	1983	09	02.88008	22	49	58.13	-20	38	45.4			095
1659	1983	01	15.02700	09	08	56.33	+30	59	01.2			095
1668	1983	04	09.79474	10	58	09.65	+08	00	43.4			095
1673	1983	03	15.85473	11	24	40.79	+00	30	37.5			095
1673	1983	03	20.93906	11	20	59.77	+00	58	39.8			095
1674	1983	03	05.84297	09	29	04.19	+18	06	49.2			095

1674	1983	03	15.78010	09	23	57.89	+18	29	04.4			095
1680	1983	06	02.85072	14	57	50.22	-13	28	44.2			095
1681	1983	09	13.00984	00	41	59.22	-07	54	29.8			095
1690	1983	05	14.90257	15	38	15.94	-17	44	37.7			095
1706	1983	04	12.95210	14	24	41.77	-18	03	52.6		E	095
1708	1983	08	04.90564	21	29	34.06	-07	15	39.5			095
1708	1983	08	06.87039	21	28	01.75	-07	23	55.6			095
1708	1983	09	01.79895	21	07	30.79	-09	32	20.2		M	095
1708	1983	09	05.82698	21	04	47.25	-09	52	58.3			095
1708	1983	09	11.80338	21	01	14.47	-10	22	23.1			095
1711	1983	03	15.01184	12	56	11.93	+07	02	51.7			095
1723	1983	03	05.84297	09	24	21.45	+14	31	09.5		E	095
1723	1983	03	15.78010	09	19	27.85	+15	29	42.1			095
1725	1983	04	12.95210	14	44	23.50	-11	06	22.8			095
1726	1983	03	16.00229	13	04	01.99	-10	29	26.0			095
1729	1983	09	10.95834	00	31	38.75	+02	35	47.4		E	095
1742	1983	08	07.00130	23	41	59.94	-02	31	09.0			095
1742	1983	09	11.95476	23	22	03.78	-05	21	24.6			095
1751	1983	09	03.83293	21	32	30.19	-00	02	53.0			095
1758	1983	01	06.87979	06	58	15.00	+20	09	20.6			095
1758	1983	02	02.81729	06	37	12.21	+21	58	41.4			095
1764	1983	03	14.94031	12	07	43.04	+00	50	01.9			095
1766	1983	03	14.94031	12	17	17.61	-02	57	28.4	17.0	E	095
1766	1983	04	09.87132	11	57	42.50	-00	08	28.6		E	095
1773	1983	02	11.03084	11	21	47.65	+13	40	57.9			095
1773	1983	02	15.09030	11	19	08.42	+14	08	16.4		M	095
1777	1983	01	14.80485	05	19	50.55	+27	22	01.8			095
1786	1983	04	10.92058	14	09	06.47	-17	05	26.0			095
1791	1983	01	06.87979	06	26	12.30	+15	37	50.9		E	095
1794	1983	09	05.01538	00	45	06.00	+16	34	25.7		E	095
1804	1983	08	16.96776	22	52	49.60	-06	07	16.3			095
1804	1983	09	09.88067	22	30	47.25	-07	34	58.7		E	095
1804	1983	09	12.86748	22	28	07.04	-07	45	55.8		E	095
1804	1983	09	13.85317	22	27	15.90	-07	49	24.7			095
1804	1983	09	15.91402	22	25	31.04	-07	56	33.1		E	095
1804	1983	09	16.94897	22	24	40.10	-07	59	58.6			095
1807	1983	03	20.93906	11	20	17.98	-01	07	36.6		E	095
1809	1983	03	15.85473	11	32	58.10	+07	49	56.6		E	095
1809	1983	03	20.93906	11	29	01.83	+08	15	29.8		E	095
1810	1983	09	06.86816	22	06	18.06	-04	09	42.0			095
1810	1983	09	09.88067	22	03	33.72	-04	27	00.0			095
1810	1983	09	11.88046	22	01	49.44	-04	38	29.9		E	095
1810	1983	09	12.86748	22	00	59.28	-04	44	03.8			095
1810	1983	09	14.93429	21	59	18.69	-04	55	44.2		E	095
1810	1983	09	15.91402	21	58	32.72	-05	01	08.6			095
1810	1983	09	16.94897	21	57	45.62	-05	06	49.9			095
1824	1983	09	11.95476	23	23	57.28	-05	17	39.8			095
1826	1983	02	10.82567	07	09	48.72	+16	58	36.9		E	095
1829	1983	02	10.82567	07	27	21.56	+19	37	00.2			095
1835	1983	03	16.00229	13	17	47.88	-09	41	31.7			095
1837	1983	02	10.82567	07	17	53.47	+19	54	41.2		E	095
1842	1983	05	15.88554	14	13	01.81	-02	57	19.4		E	095
1861	1983	02	15.09030	11	16	09.00	+16	30	02.8	16.5	E	095
1868	1983	08	04.97785	22	26	45.88	+05	37	41.9			095
1868	1983	08	06.93671	22	26	00.34	+05	33	03.0			095
1868	1983	09	01.87810	22	14	18.22	+03	57	32.3			095
1868	1983	09	05.88669	22	12	27.03	+03	38	20.5			095
1868	1983	09	11.88046	22	09	47.66	+03	08	20.0			095
1868	1983	09	14.93429	22	08	31.38	+02	52	33.2			095

1874	1983	03	15.85473	11	31	17.66	+04	39	08.6		095
1874	1983	03	20.93906	11	27	50.78	+05	04	41.2		095
1893	1983	05	14.90257	15	44	09.75	-17	20	40.5		095
1893	1983	06	05.85487	15	23	21.75	-17	37	27.5	E	095
1899	1983	02	11.03084	11	40	32.70	+16	08	11.1		095
1899	1983	02	15.09030	11	38	14.48	+16	33	19.6		095
1899	1983	03	13.89009	11	13	31.42	+18	51	27.2	E	095
1906	1983	09	03.95531	00	15	22.63	+01	16	06.1		095
1906	1983	09	10.95834	00	09	37.53	+01	13	15.0		095
1906	1983	09	13.98314	00	06	50.53	+01	10	30.2		095
1909	1983	08	11.86201	19	17	58.35	-19	10	14.9		095
1939	1983	03	05.84297	09	36	26.02	+15	34	56.4		095
1939	1983	03	15.78010	09	30	22.86	+16	01	14.2		095
1940	1983	08	06.87039	21	45	41.07	-04	49	45.2		095
1940	1983	08	16.90178	21	38	01.94	-05	16	07.7		095
1940	1983	08	31.84351	21	26	49.66	-06	06	13.8	E	095
1940	1983	09	03.83293	21	24	47.69	-06	16	57.2		095
1940	1983	09	12.80189	21	19	25.79	-06	48	27.6		095
1948	1983	01	15.11102	10	17	27.72	+19	54	34.2	E	095
1948	1983	02	10.96801	09	57	40.72	+21	55	39.5	E	095
1948	1983	03	15.78010	09	27	57.88	+22	43	49.8		095
1952	1983	03	14.79517	09	45	51.04	+33	09	58.7	E	095
1964	1983	08	16.90178	21	46	42.81	-08	53	18.2		095
1975	1983	08	06.87039	21	34	20.13	-08	45	01.1	E	095
1975	1983	09	02.80219	21	14	36.25	-11	36	34.4	E	095
1975	1983	09	04.80369	21	13	26.56	-11	48	51.2		095
1975	1983	09	06.79733	21	12	21.60	-12	00	47.4		095
1975	1983	09	11.80338	21	10	02.22	-12	29	08.6		095
1978	1983	02	10.89720	08	40	30.00	+25	14	41.2		095
1984	1983	09	04.87510	22	09	22.81	-07	19	22.3		095
1984	1983	09	06.86816	22	08	00.31	-07	30	58.7		095
1984	1983	09	09.88067	22	06	00.31	-07	48	15.8		095
1984	1983	09	12.86748	22	04	08.10	-08	04	57.9		095
1984	1983	09	13.85317	22	03	32.78	-08	10	19.0		095
1984	1983	09	15.91402	22	02	21.66	-08	21	25.0		095
1984	1983	09	16.94897	22	01	47.41	-08	26	50.6		095
2002	1983	03	16.81258	10	19	56.98	+06	17	36.2		095
2013	1983	02	10.89720	08	14	48.44	+25	59	49.6	E	095
2020	1983	03	16.81258	10	04	46.48	+14	23	42.9	E	095
2033	1983	03	13.80956	09	56	25.20	+07	23	56.1		095
2033	1983	03	16.81258	09	54	03.12	+07	24	57.4		095
2034	1983	02	11.03084	11	33	36.64	+14	27	28.5		095
2034	1983	02	15.09030	11	30	06.10	+14	41	58.0		095
2036	1983	09	03.95531	00	22	42.95	+03	35	00.0	E	095
2036	1983	09	10.95834	00	16	36.15	+03	19	02.4		095
2036	1983	09	13.98314	00	13	40.13	+03	10	00.8		095
2051	1983	03	13.80956	10	12	32.63	+09	19	04.2		095
2051	1983	03	16.81258	10	10	31.19	+09	31	54.9		095
2058	1983	03	14.94031	12	10	16.16	+02	55	38.1		095
2067	1983	03	16.81258	10	23	19.96	+10	47	10.5	E	095
2070	1983	03	20.93906	11	36	35.87	+02	58	37.9		095
2081	1983	01	12.99579	06	31	46.94	+26	44	14.1		095
2084	1983	01	14.95272	07	55	06.03	+16	11	52.6		095
2084	1983	02	10.82567	07	30	37.04	+18	23	58.1		095
2090	1983	01	15.11102	10	13	23.17	+16	45	08.7	E	095
2090	1983	03	05.84297	09	34	35.06	+18	18	26.0		095
2090	1983	03	15.78010	09	27	57.14	+18	20	29.8		095
2107	1983	09	03.83293	21	25	27.78	-00	51	13.5		095
2107	1983	09	12.80189	21	20	00.72	-01	52	25.3	E	095

2111	1983	03	16.81258	10	26	31.12	+08	07	46.2	E	095
2114	1983	08	16.96776	22	56	48.75	-07	05	04.2		095
2116	1983	08	16.90178	22	00	56.16	-05	37	42.3		095
2116	1983	08	31.84351	21	49	22.22	-07	44	51.6		095
2116	1983	09	04.87510	21	46	29.63	-08	19	33.5	E	095
2125	1983	08	16.96776	22	39	22.31	-07	38	29.5		095
2125	1983	09	04.87510	22	24	07.28	-08	52	50.6	E	095
2125	1983	09	06.86816	22	22	31.16	-09	00	45.3		095
2125	1983	09	09.88067	22	20	09.84	-09	12	20.2		095
2125	1983	09	12.86748	22	17	56.53	-09	23	15.7		095
2125	1983	09	13.85317	22	17	14.22	-09	26	41.1		095
2125	1983	09	15.91402	22	15	48.25	-09	33	41.2		095
2125	1983	09	16.94897	22	15	06.94	-09	37	04.6		095
2126	1983	03	13.80956	10	11	43.22	+08	01	33.4		095
2126	1983	03	16.81258	10	09	09.41	+08	07	17.4		095
2132	1983	05	14.97975	17	39	37.67	-22	17	53.4		095
2142	1983	03	05.92212	11	38	09.14	+02	39	26.6		095
2142	1983	03	15.85473	11	30	50.78	+03	28	55.0		095
2142	1983	03	18.79146	11	28	40.06	+03	43	36.3		095
2142	1983	03	18.87096	11	28	36.62	+03	43	57.9		095
2142	1983	04	05.86528	11	16	44.78	+05	02	57.9		095
2142	1983	04	09.79474	11	14	45.40	+05	16	07.6		095
2164	1983	09	04.94524	23	12	44.22	-08	23	45.5		095
2164	1983	09	06.93969	23	11	17.38	-08	34	11.7		095
2164	1983	09	09.00579	23	09	46.85	-08	44	56.4		095
2164	1983	09	11.95476	23	07	37.69	-08	59	54.0		095
2173	1983	03	14.94031	11	55	23.22	+01	23	59.5		095
2184	1983	01	14.95272	08	10	39.36	+14	50	26.3		095
2184	1983	02	10.82567	07	49	15.96	+15	36	34.5	E	095
2192	1983	04	12.95210	14	39	24.19	-12	01	51.0		095
2195	1983	04	12.95210	14	53	49.98	-09	29	00.1	E	095
2204	1983	09	04.87510	22	00	56.44	-07	57	57.1		095
2204	1983	09	06.86816	21	59	10.44	-08	25	11.3		095
2204	1983	09	12.86748	21	54	05.66	-09	46	49.9	E	095
2204	1983	09	15.91402	21	51	42.38	-10	27	21.8	E	095
2206	1983	09	13.00984	00	44	17.21	-10	38	43.7	E	095
2207	1983	03	05.92212	11	39	22.21	+04	20	23.6		095
2207	1983	03	15.85473	11	34	39.76	+04	58	59.1		095
2207	1983	03	18.79146	11	33	15.69	+05	10	15.5		095
2207	1983	03	18.87096	11	33	13.45	+05	10	32.6		095
2207	1983	03	20.93906	11	32	14.16	+05	18	23.5		095
2223	1983	03	15.92799	12	25	18.50	-14	24	19.6		095
2224	1983	04	12.95210	14	48	07.32	-15	08	08.2		095
2226	1983	03	14.94031	12	27	00.48	-00	16	46.6	E	095
2226	1983	04	09.87132	12	06	48.41	+01	38	40.6		095
2226	1983	04	11.83706	12	05	24.66	+01	45	58.1		095
2228	1983	08	07.00130	23	17	59.25	-05	25	47.4		095
2228	1983	08	16.96776	23	13	19.13	-06	02	58.6	E	095
2228	1983	09	04.94524	23	00	41.60	-07	35	17.7		095
2228	1983	09	06.93969	22	59	12.78	-07	45	41.3		095
2228	1983	09	11.95476	22	55	28.28	-08	11	38.1	E	095
2247	1983	09	03.95531	00	21	51.25	-00	08	24.4	E	095
2249	1983	07	19.95706	21	31	26.04	-13	02	24.2		095
2249	1983	08	05.88612	21	20	01.25	-14	16	21.1	M	095
2249	1983	08	10.89369	21	16	16.57	-14	40	05.7		095
2249	1983	08	13.91575	21	14	00.78	-14	54	28.3		095
2253	1983	03	20.93906	11	23	29.78	+07	07	51.1		095
2258	1983	09	03.95531	00	04	09.06	+02	14	29.7		095
2258	1983	09	10.95834	23	58	57.52	+01	44	58.3	E	095

2258	1983	09	13.98314	23	56	32.94	+01	30	53.2			095
2264	1983	09	17.02304	01	27	17.52	+09	20	50.3		E	095
2266	1983	04	10.92058	13	47	18.85	-18	26	48.4			095
2271	1983	03	16.81258	10	22	34.81	+12	20	43.6		E	095
2279	1983	01	06.87979	07	02	01.63	+19	50	12.2	17.0	E	095
2283	1983	05	14.90257	16	12	28.13	-12	28	38.9		E	095
2284	1983	03	16.81258	10	03	25.12	+14	15	45.6		E	095
2286	1983	04	10.02730	15	08	06.27	-16	42	17.2			095
2286	1983	04	11.00298	15	07	28.71	-16	40	06.6			095
2291	1983	03	13.80956	10	14	46.91	+04	15	17.3		E	095
2291	1983	03	16.81258	10	13	05.05	+04	51	00.8		E	095
2293	1983	04	10.02730	15	24	02.27	-18	54	27.9			095
2293	1983	04	11.00298	15	23	34.07	-18	52	58.3			095
2293	1983	05	12.90253	15	00	44.54	-17	30	01.0			095
2294	1983	01	14.80485	05	30	53.13	+26	01	44.0		E	095
2297	1983	08	05.88612	20	55	38.03	-16	59	13.3			095
2297	1983	08	10.89369	20	51	43.41	-17	17	43.8			095
2304	1983	05	15.88554	14	28	36.98	-02	48	49.5		E	095
2306	1983	04	12.95210	14	29	06.88	-17	20	08.4		E	095
2316	1983	04	09.87132	12	14	00.74	+00	36	33.8			095
2316	1983	04	11.83706	12	12	21.90	+00	48	01.1			095
2331	1983	08	16.90178	21	33	58.57	-08	53	28.1			095
2332	1983	03	13.96090	13	14	47.27	+10	35	23.0		N	095
2332	1983	05	01.82020	12	37	40.25	+11	55	36.0			095
2353	1983	04	12.95210	14	39	57.47	-17	01	10.7			095
2357	1983	03	14.94031	12	02	46.34	-00	16	01.4			095
2359	1983	04	12.95210	14	46	54.85	-14	54	25.0			095
2364	1983	03	14.79517	09	50	17.57	+28	27	50.2			095
2377	1983	09	03.95531	00	09	30.09	+02	41	10.8			095
2377	1983	09	10.95834	00	04	45.24	+02	11	50.6			095
2377	1983	09	13.98314	00	02	31.82	+01	57	46.7			095
2392	1983	09	11.95476	22	54	19.03	-09	31	03.8			095
2393	1983	08	06.93671	22	07	43.10	+05	23	01.2		E	095
2393	1983	08	11.93632	22	04	37.78	+05	12	45.5			095
2395	1983	03	16.00229	13	22	10.98	-08	11	16.0			095
2400	1983	08	16.90178	21	51	58.69	-05	21	04.7			095
2400	1983	08	31.84351	21	41	38.78	-07	16	29.8			095
2400	1983	09	03.83293	21	39	46.41	-07	39	54.3		E	095
2403	1983	08	07.00130	23	13	28.97	-00	51	40.9		E	095
2405	1983	03	14.94031	12	25	08.99	+00	08	02.4		E	095
2405	1983	04	09.87132	12	06	53.43	+02	15	03.2			095
2405	1983	04	11.83706	12	05	39.76	+02	22	57.0			095
2407	1983	03	16.81258	09	49	32.32	+13	43	17.8		E	095
2416	1983	04	11.98611	14	49	34.16	-01	21	28.5			095
2416	1983	05	15.88554	14	25	37.85	+01	25	14.9			095
2419	1983	03	05.92212	11	43	05.86	+02	26	13.2			095
2419	1983	03	15.85473	11	34	16.25	+03	57	57.2			095
2419	1983	03	18.79146	11	31	38.73	+04	24	46.2			095
2419	1983	03	20.93906	11	29	45.16	+04	43	55.7			095
2429	1983	03	14.79517	10	00	10.54	+29	23	01.0		M	095
2450	1983	09	10.83562	21	47	35.35	-15	26	24.3			095
2451	1983	03	13.80956	10	01	48.55	+11	00	46.2			095
2451	1983	03	16.81258	09	59	30.78	+11	06	20.6			095
2460	1983	09	04.80369	21	07	37.00	-13	19	50.6		E	095
2460	1983	09	06.79733	21	06	13.69	-13	30	07.0		E	095
2460	1983	09	11.80338	21	03	10.57	-13	54	10.0		E	095
2461	1983	09	13.85317	22	12	39.44	-13	51	13.4			095
2466	1983	03	05.92212	11	31	51.94	+04	27	03.8			095
2466	1983	03	15.85473	11	23	46.75	+05	32	58.7			095

2466	1983	03	20.93906	11	19	41.34	+06	05	39.7			095
2466	1983	04	09.79474	11	06	15.71	+07	51	17.3			095
2470	1983	02	10.89720	08	28	38.60	+22	47	04.2			095
2470	1983	03	05.76557	08	14	42.42	+23	29	02.4			095
2500	1983	03	15.01184	12	49	42.32	+05	08	03.0			095
2501	1983	02	10.89720	08	48	25.34	+22	40	01.1		E	095
2501	1983	03	05.76557	08	28	30.54	+23	13	18.0			095
2507	1983	03	05.84297	09	24	44.37	+20	01	04.0		E	095
2507	1983	03	15.78010	09	19	15.38	+20	49	39.3			095
2511	1983	03	13.89009	11	39	10.22	+17	22	52.4			095
2515	1983	02	10.96801	10	02	22.00	+18	23	14.4			095
2522	1983	01	14.95272	08	02	07.97	+14	46	06.4			095
2522	1983	02	10.82567	07	39	25.39	+14	52	39.1			095
2523	1983	01	14.95272	07	55	58.04	+17	34	50.4			095
2523	1983	02	10.82567	07	33	14.69	+17	34	11.5			095
2525	1983	03	05.76557	08	39	57.08	+21	19	52.4		E	095
2531	1983	01	06.87979	06	51	50.93	+22	34	27.2		E	095
2531	1983	01	12.99579	06	46	14.26	+23	03	12.4			095
2535	1983	06	02.85072	14	53	49.76	-11	09	38.1			095
2540	1983	04	12.95210	14	26	07.00	-13	21	49.1			095
2541	1983	02	10.96801	09	56	52.60	+17	13	27.9	17.0	E	095
2541	1983	03	05.84297	09	38	24.33	+18	47	15.2			095
2541	1983	03	15.78010	09	32	22.11	+19	10	07.6			095
2555	1983	03	05.92212	11	29	46.31	+01	56	58.0			095
2555	1983	03	15.85473	11	21	52.46	+02	46	17.9			095
2555	1983	03	20.93906	11	17	53.86	+03	11	29.3			095
2555	1983	04	09.79474	11	04	57.52	+04	35	13.0			095
2557	1983	04	09.79474	10	45	19.50	+05	35	10.4		E	095
2559	1983	04	09.79474	10	45	43.01	+07	10	43.2			095
2562	1983	01	15.11102	10	29	06.32	+14	20	50.2			095
2562	1983	03	05.84297	09	50	17.80	+15	35	47.4			095
2562	1983	03	15.78010	09	42	59.98	+15	37	44.9			095
2563	1983	04	10.02730	15	30	14.34	-16	12	28.7		E	095
2572	1983	02	10.82567	07	24	24.48	+14	12	12.3			095
2577	1983	04	09.94752	14	16	02.40	+05	54	35.3			095
2577	1983	04	11.90696	14	14	20.30	+06	39	56.0		s	095
2580	1983	04	10.02730	15	19	31.38	-15	39	25.0			095
2580	1983	04	11.00298	15	18	58.30	-15	36	33.6			095
2581	1983	09	03.95531	23	49	01.56	+03	36	02.3		E	095
2585	1983	09	13.00984	00	47	46.40	-03	59	14.0			095
2589	1983	05	14.90257	15	57	02.36	-16	24	30.1			095
2592	1983	04	09.79474	10	48	47.67	+06	29	46.0			095
2597	1983	03	14.94031	12	03	48.80	+01	01	12.8			095
2600	1983	04	12.89244	12	49	00.78	+13	08	08.6			095
2600	1983	05	01.82020	12	36	27.07	+13	29	02.4			095
2605	1983	03	14.94031	12	07	29.56	+00	59	22.0	17.5		095
2619	1983	04	09.87132	12	04	03.41	-00	58	27.4			095
2625	1983	09	06.93969	23	11	53.25	-10	58	39.4			095
2625	1983	09	11.95476	23	07	28.25	-11	39	35.3			095
2630	1983	04	09.87132	12	12	34.46	-01	36	06.8			095
2632	1983	04	09.87132	12	33	14.22	-01	34	52.0		E	095
2635	1983	09	11.88046	22	28	25.28	-02	35	06.2			095
2636	1983	05	14.97975	17	53	04.21	-17	30	57.2			095
2640	1983	09	06.93969	22	51	50.10	-11	52	39.8			095
2668	1983	08	16.90178	21	51	37.97	-10	06	36.2			095
2670	1983	09	05.01538	00	15	28.39	+16	18	35.2			095
2670	1983	09	07.01191	00	14	13.98	+16	16	42.8			095
2670	1983	09	09.95081	00	12	18.68	+16	12	45.9			095
2670	1983	09	12.93900	00	10	15.54	+16	07	11.9			095

2672	1983	05	14.83334	14	21	19.02	+10	44	04.0		095
2674	1983	03	05.92212	11	36	29.03	+02	13	08.1		095
2674	1983	03	15.85473	11	31	35.10	+02	47	04.7		095
2674	1983	03	18.79146	11	30	07.76	+02	57	10.2		095
2674	1983	03	18.87096	11	30	05.30	+02	57	26.8		095
2674	1983	03	20.93906	11	29	04.08	+03	04	28.0		095
2674	1983	04	09.79474	11	20	17.81	+04	05	45.0	E	095
2675	1983	08	07.00130	23	15	17.85	-07	57	24.8	E	095
2675	1983	08	16.96776	23	09	42.31	-08	23	36.8	E	095
2675	1983	09	04.94524	22	52	49.94	-09	37	02.9		095
2675	1983	09	06.93969	22	50	51.06	-09	44	53.3		095
2686	1983	09	17.02304	01	11	19.26	+15	17	02.3		095
2688	1983	09	04.94524	23	10	25.82	-10	40	29.4		095
2688	1983	09	06.93969	23	08	56.50	-10	50	34.1		095
2688	1983	09	11.95476	23	05	11.19	-11	15	00.3		095
2692	1983	09	11.88046	22	23	43.00	+04	13	19.6	N	095
2692	1983	09	14.93429	22	21	23.69	+03	53	23.9	M	095
2704	1983	09	04.87510	22	10	06.38	-05	03	50.0		095
2704	1983	09	06.86816	22	08	22.97	-05	17	12.7		095
2704	1983	09	12.86748	22	03	30.19	-05	56	51.5		095
2708	1983	04	09.79474	10	59	24.16	+10	09	25.1	E	095
2711	1983	08	06.87039	21	49	01.38	-08	32	36.9	N	095
2711	1983	08	16.90178	21	41	58.50	-09	44	30.3		095
2711	1983	09	02.80219	21	30	17.50	-11	51	01.8		095
2711	1983	09	04.80369	21	29	04.63	-12	05	24.2		095
2711	1983	09	06.79733	21	27	55.88	-12	19	18.0		095
2711	1983	09	09.81053	21	26	18.97	-12	39	45.4		095
2715	1983	09	17.02304	01	02	32.94	+09	24	00.4	E	095
2718	1983	04	12.95210	14	18	38.65	-13	20	12.8	E	095
2719	1983	03	05.92212	11	44	34.90	+02	33	57.0		095
2719	1983	03	15.85473	11	34	41.68	+03	40	56.4		095
2719	1983	03	18.79146	11	31	45.99	+04	00	26.8		095
2719	1983	03	18.87096	11	31	41.31	+04	00	56.4		095
2719	1983	03	20.93906	11	29	39.59	+04	14	18.6		095
2719	1983	04	09.79474	11	14	08.88	+05	53	40.1		095
2722	1983	08	16.96776	22	46	37.06	-08	44	01.3		095
2727	1983	09	03.95531	00	00	17.89	+02	49	36.9		095
2727	1983	09	10.95834	23	55	08.66	+02	10	36.0	E	095
2727	1983	09	13.98314	23	52	45.72	+01	52	20.0		095
2730	1983	01	14.80485	05	14	30.89	+32	00	21.9		095
2731	1983	08	07.00130	23	28	37.00	-05	51	10.6		095
2731	1983	08	13.00910	23	26	34.32	-06	38	11.1		095
2731	1983	09	04.94524	23	13	35.94	-10	05	47.5		095
2731	1983	09	06.93969	23	12	15.10	-10	24	11.3		095
2731	1983	09	09.00579	23	10	50.72	-10	42	56.6		095
2731	1983	09	11.95476	23	08	50.94	-11	09	06.4		095
2762	1983	09	17.02304	01	15	49.69	+15	32	35.1		095
2775	1983	09	06.93969	23	11	10.78	-11	55	50.5		095
2775	1983	09	11.95476	23	06	43.19	-12	29	45.2	E	095
2776	1983	09	06.86816	22	20	59.32	-06	21	02.7		095
2785	1983	09	03.95531	00	21	45.74	+03	15	51.5	N	095
2785	1983	09	10.95834	00	17	10.60	+02	50	39.7		095
2793	1983	09	17.02304	01	10	08.78	+18	03	54.5	E	095
2802	1983	03	05.76557	08	13	43.11	+21	08	55.0	16.5	095
2804	1983	04	11.98611	14	51	12.54	+00	33	12.9		095
2804	1983	05	15.88554	14	25	39.12	+02	08	33.0		095
2808	1983	08	05.95625	21	59	57.25	-10	02	58.7	M	095
2808	1983	08	16.90178	21	51	01.22	-10	19	48.7		095
2808	1983	08	31.84351	21	38	33.32	-10	46	18.9		095

2808	1983	09	10.83562	21	31	15.13	-11	01	34.7		E	095
2819	1983	08	05.88612	21	00	51.00	-21	05	42.2		r	095
2826	1983	05	12.83346	13	34	45.58	-09	50	53.2			095
2833	1983	08	07.00130	23	27	12.91	-03	30	17.1			095
2833	1983	09	09.00579	23	05	47.69	-05	27	38.3			095
2833	1983	09	11.95476	23	03	25.94	-05	40	49.1			095
2837	1983	02	10.89720	08	09	47.30	+24	07	31.4	17.0	E	095
2848	1983	01	12.99579	06	21	18.51	+24	32	02.1	17.0		095
2852	1983	01	06.87979	06	33	44.18	+22	47	56.9		E	095
2853	1983	04	09.79474	10	53	42.59	+03	51	53.5			095
2857	1983	03	16.81258	10	08	14.93	+13	30	28.6		E	095
2859	1983	01	06.87979	06	57	50.25	+16	46	05.6	16.5		095
2861	1983	04	09.79474	10	44	59.54	+06	20	17.6		E	095
2864	1983	02	10.82567	07	40	36.15	+20	30	08.6	17.0		095
2869	1983	03	05.92212	11	53	21.89	+02	18	46.3			095
2869	1983	03	15.85473	11	43	39.38	+02	38	01.8			095
2869	1983	03	18.79146	11	40	41.10	+02	43	57.7			095
2869	1983	03	18.87096	11	40	36.12	+02	44	07.5			095
2869	1983	03	20.93906	11	38	29.60	+02	48	06.2			095
2871	1983	01	15.11102	10	52	14.80	+15	37	11.9		E	095
2871	1983	02	10.96801	10	33	18.13	+17	51	42.8			095
2880	1983	01	15.11102	10	16	14.25	+20	06	31.2		E	095
2881	1983	01	14.95272	08	16	17.78	+11	57	35.3	16.5	E	095
2890	1983	01	15.11102	10	29	14.49	+17	01	26.4			095
2890	1983	02	10.96801	10	04	59.85	+18	29	59.6			095
2890	1983	03	05.84297	09	39	49.52	+19	10	40.2			095
2890	1983	03	15.78010	09	32	11.31	+19	03	33.1			095
2901	1983	04	09.87132	12	22	10.10	+02	05	21.0			095
2901	1983	04	11.83706	12	20	41.43	+02	12	59.8			095
2904	1983	04	10.86780	12	31	13.14	+20	46	45.0		E	095
2904	1983	04	12.89244	12	29	27.88	+20	47	20.6		E	095
2907	1983	03	15.85473	11	28	55.02	+03	18	53.0			095
2907	1983	03	18.79146	11	26	50.69	+03	39	47.5			095
2907	1983	03	18.87096	11	26	47.44	+03	40	21.7			095
2907	1983	03	20.93906	11	25	20.86	+03	54	57.5			095
2907	1983	04	09.79474	11	13	28.84	+05	59	19.4			095
2928	1983	09	04.87510	22	04	48.85	-05	40	16.5			095
2928	1983	09	06.86816	22	03	14.81	-05	45	01.7			095
2928	1983	09	09.88067	22	00	57.00	-05	52	12.6			095
2928	1983	09	12.86748	21	58	46.79	-05	59	14.4			095
2928	1983	09	15.91402	21	56	41.06	-06	06	08.6			095
2930	1983	09	06.93969	22	49	04.57	-09	39	29.6	17.5	E	095
2931	1983	08	07.00130	23	18	01.13	-07	16	17.4	17.0		095
2931	1983	09	04.94524	22	58	31.28	-09	10	18.0			095
2931	1983	09	11.95476	22	52	50.91	-09	39	46.9		E	095
2943	1983	09	05.01538	00	06	56.72	+18	18	54.2		E	095
2943	1983	09	07.01191	00	05	12.98	+18	30	06.4		E	095
2943	1983	09	12.93900	23	59	34.56	+18	56	18.0		E	095
2946	1983	09	11.95476	22	56	48.31	-06	17	20.4			095
2949	1983	08	16.96776	22	39	50.94	-06	13	34.2	16.0		095
2949	1983	09	04.87510	22	24	17.54	-09	05	11.5		E	095
2949	1983	09	06.86816	22	22	41.44	-09	23	02.8			095
2949	1983	09	09.88067	22	20	22.63	-09	49	08.4			095
2949	1983	09	13.85317	22	17	35.25	-10	21	38.1			095
2949	1983	09	15.91402	22	16	16.34	-10	37	30.4			095
2949	1983	09	16.94897	22	15	39.10	-10	45	08.0			095
2953	1983	09	02.80219	21	15	35.63	-14	16	24.0			095
2953	1983	09	04.80369	21	14	18.38	-14	22	38.3			095
2953	1983	09	06.79733	21	13	05.50	-14	28	35.5			095

2954	1983	09	11.95476	22	55	42.37	-06	56	15.1		E	095
2955	1983	09	11.95476	23	07	48.94	-10	58	32.2	16.5		095
2962	1983	04	11.98611	14	31	26.70	-03	48	42.9		E	095
2972	1983	08	05.95625	22	18	25.03	-08	15	57.8		E	095
2972	1983	08	31.84351	21	57	58.54	-10	22	25.7			095
2972	1983	09	04.87510	21	54	51.10	-10	43	28.0		E	095
2972	1983	09	06.86816	21	53	25.65	-10	53	22.8		E	095
2972	1983	09	09.88067	21	51	27.12	-11	07	33.5		E	095
2972	1983	09	10.83562	21	50	52.69	-11	11	48.7	15.5		095
2976	1983	09	17.02304	01	31	16.66	+12	43	43.7	16.5	E	095
2979	1983	09	10.83562	21	51	45.81	-14	30	35.1			095
2987	1983	05	14.90257	15	51	26.40	-18	40	15.8			095
3011	1983	09	04.87510	21	52	36.97	-04	58	50.4			095
3016	1983	08	16.96776	22	50	36.16	-09	26	12.0			095
3034	1983	01	15.11102	10	39	45.68	+13	58	43.3			095
3034	1983	02	10.96801	10	19	46.21	+15	54	39.1		E	095
3034	1983	03	15.78010	09	47	49.52	+17	54	22.5	17.0	E	095
3056	1983	01	14.80485	05	25	43.75	+32	06	04.5	16.5		095
3095	1983	03	16.81258	09	57	26.48	+09	35	51.3			095
3109	1983	09	11.95476	23	27	21.72	-11	12	09.5	16.5	E	095
3117	1983	02	10.96801	10	09	45.88	+15	28	15.8			095
3117	1983	03	15.78010	09	44	14.82	+17	48	45.3	17.5		095
3134	1983	09	01.87810	22	35	43.29	+02	24	46.4	16.5	E	095
3134	1983	09	05.88669	22	33	09.69	+02	10	22.5	16.0		095
3134	1983	09	08.93288	22	31	13.97	+01	58	45.1	16.0		095
3134	1983	09	11.88046	22	29	23.75	+01	47	02.4	17.0		095
3134	1983	09	14.93429	22	27	32.66	+01	34	30.0	16.5	E	095
3151	1983	04	10.92058	13	41	51.69	-14	52	47.8		E	095
3168	1983	04	10.92058	13	54	13.15	-13	05	44.6			095
3190	1983	09	11.95476	23	27	43.13	-06	10	06.1		E	095
3196	1983	09	04.94524	22	56	06.10	-14	50	14.2	17.0	E	095
3196	1983	09	06.93969	22	54	24.25	-14	53	00.1		E	095
3213	1983	08	16.96776	23	00	57.38	-07	40	11.7			095
3213	1983	09	06.93969	22	46	20.00	-09	06	39.2	17.5	E	095
3228	1983	09	04.87510	22	11	00.41	-08	56	53.2	17.0		095
3228	1983	09	06.86816	22	09	14.94	-09	06	07.5	16.5		095
3228	1983	09	09.88067	22	06	39.38	-09	19	47.8	17.5		095
3228	1983	09	15.91402	22	01	50.50	-09	45	28.6	17.0		095
3229	1983	09	01.87810	22	20	00.84	+00	31	59.4	15.5		095
3229	1983	09	05.88669	22	15	55.91	+00	32	39.4	15.5		095
3229	1983	09	08.93288	22	12	58.38	+00	31	52.4	15.5		095
3229	1983	09	11.88046	22	10	16.53	+00	30	16.2	16.0		095
3229	1983	09	14.93429	22	07	41.50	+00	27	53.8	16.0		095
3230	1983	05	14.90257	16	09	06.76	-13	22	56.9		E	095
3230	1983	06	05.85487	15	47	28.56	-14	38	25.3		P	095
3252	1983	09	05.01538	00	25	12.85	+14	29	32.5			095
3252	1983	09	07.01191	00	23	43.10	+14	32	09.2			095
3252	1983	09	09.95081	00	21	22.87	+14	34	45.4			095
3252	1983	09	12.93900	00	18	51.85	+14	35	46.0			095
3297	1983	09	11.95476	23	20	36.81	-07	35	16.0			095
3327	1983	04	09.79474	10	57	58.53	+08	48	47.4	17.7		095
3329	1983	04	10.92058	13	57	24.55	-16	46	33.1			095
3334	1983	03	14.94031	12	02	02.20	+05	13	07.6	16.5	E	095
3347	1983	04	09.87132	12	25	22.37	-03	10	02.0			095
3359	1983	01	15.11102	10	27	52.09	+19	22	47.8	16.5		095
3359	1983	02	10.96801	10	05	23.86	+21	34	35.3	17.5		095
3366	1983	04	09.87132	12	12	01.74	+00	44	32.4			095
3366	1983	04	11.83706	12	10	46.40	+00	57	36.5			095
3378	1983	01	14.80485	04	59	48.65	+34	55	17.2	17.5	E	095

3380	1983	03	15.85473	11	37	47.81	+07	46	29.4		E	095
3380	1983	03	20.93906	11	33	41.80	+08	12	43.5		E	095
3393	1983	09	04.94524	23	22	23.25	-06	53	04.3	17.0	N	095
3393	1983	09	06.93969	23	20	51.44	-07	11	20.7	17.0	E	095
3393	1983	09	11.95476	23	16	56.41	-07	57	11.0	16.5		095
3395	1983	05	12.83346	13	18	09.71	-11	14	05.8			095
3430	1983	04	09.87132	12	22	31.48	+01	36	40.6			095
3433	1983	03	05.76557	08	28	56.36	+21	07	12.5	17.0		095
3447	1983	03	14.79517	09	29	43.16	+33	26	20.3	16.0	E	095
3457	1983	03	15.78010	09	28	36.31	+18	30	53.4	16.5		095
3465	1983	04	11.98611	14	47	08.17	-05	01	32.8			095
3471	1983	09	12.93900	00	38	31.62	+16	58	16.6	17.0	E	095
3472	1983	09	07.01191	00	26	46.93	+10	24	10.1		E	095
3474	1983	08	04.90564	21	39	32.69	-07	50	19.6	16.5		095
3474	1983	08	06.87039	21	38	03.35	-08	04	16.4	17.0		095
3474	1983	08	16.90178	21	30	07.10	-09	20	53.9	17.0	E	095
3474	1983	09	02.80219	21	18	27.44	-11	31	30.6	16.5	E	095
3474	1983	09	04.80369	21	17	25.66	-11	45	25.0	16.5		095
3474	1983	09	06.79733	21	16	29.47	-11	59	03.0	16.5		095
3474	1983	09	09.81053	21	15	16.69	-12	18	32.2	16.2		095
3485	1983	09	02.80219	21	08	34.34	-15	45	53.8	15.5	E	095
3485	1983	09	04.80369	21	07	27.50	-15	48	40.8	15.5	E	095
3485	1983	09	06.79733	21	06	27.75	-15	50	58.9	15.5	E	095
3485	1983	09	09.81053	21	05	11.38	-15	53	36.5	16.0	E	095
3494	1983	08	04.97785	22	38	20.84	+02	53	18.6	16.0		095
3494	1983	08	06.93671	22	37	14.78	+02	51	53.7	15.5		095
3494	1983	08	12.94105	22	33	17.94	+02	41	10.5			095
3494	1983	09	01.87810	22	16	53.03	+01	05	29.7	16.0		095
3494	1983	09	05.88669	22	13	34.72	+00	38	16.2	15.5		095
3494	1983	09	08.93288	22	11	12.06	+00	16	41.0	15.5		095
3494	1983	09	11.88046	22	09	03.10	-00	04	37.5	15.5		095
3494	1983	09	14.93429	22	07	00.88	-00	26	49.3	16.0		095
3538	1983	01	14.95272	07	58	15.02	+14	01	23.9	16.5		095
3538	1983	02	10.82567	07	37	29.28	+16	15	21.9	17.0		095
3550	1983	04	11.90696	14	16	25.62	+05	34	58.0			095
3580	1983	03	16.81258	10	22	59.01	+10	37	35.7	16.5	E	095
3582	1983	01	15.02700	09	11	44.82	+31	32	58.4	16.5	E	095
3584	1983	01	12.99579	06	34	36.21	+24	28	03.7	17.0		095
3622	1983	02	10.82567	07	35	30.09	+16	40	06.1	17.0		095
3642	1983	05	14.83334	14	42	55.01	+06	08	40.4			095
3642	1983	05	15.88554	14	42	06.74	+06	09	41.0		E	095
3645	1983	01	06.87979	06	43	33.90	+19	07	27.4	16.5		095
3645	1983	01	12.99579	06	37	36.16	+19	00	38.1	17.0	E	095
3649	1983	09	06.93969	23	11	18.07	-13	12	41.4	18.0		095
3654	1983	08	16.90178	21	46	27.50	-09	36	16.7	17.0		095
3670	1983	01	15.11102	10	20	09.15	+15	39	43.2		E	095
3670	1983	02	10.96801	10	02	47.87	+18	31	53.5			095
3670	1983	03	05.84297	09	43	37.36	+20	41	43.4			095
3670	1983	03	15.78010	09	37	12.71	+21	15	11.8			095
3698	1983	04	09.87132	12	28	17.95	+02	29	36.8			095
3711	1983	09	05.01538	00	25	58.54	+18	01	02.9			095
3711	1983	09	07.01191	00	24	35.14	+18	07	24.4		E	095
3711	1983	09	09.95081	00	22	22.78	+18	15	11.2		E	095
3711	1983	09	12.93900	00	19	57.21	+18	21	01.2			095
3733	1983	09	11.88046	22	23	24.32	-02	04	11.7	18.0		095
3750	1973	01	02.79280	04	02	07.72	+34	15	41.8	17.0		095
3750	1974	02	16.96786	10	53	01.04	+16	33	41.2	17.0		095
3772	1972	12	02.04250	07	03	58.85	+20	48	30.3	17.0		095
3772	1972	12	13.95148	06	56	07.40	+21	28	22.6	17.0		095

3773		1983 04 12.95210	14 39 36.68	-14 24 39.8						095
3796		1983 01 12.99579	06 47 28.32	+20 29 24.3			17.0			095
3799		1983 04 10.02730	15 17 45.68	-16 22 04.9			16.8			095
3799		1983 04 11.00298	15 17 20.99	-16 19 49.4						095
3799		1983 05 12.90253	14 55 42.86	-14 37 01.3						095
3799		1983 06 02.85072	14 41 33.96	-13 35 28.8						095
3806		1983 09 05.01538	00 29 43.33	+12 26 56.1			17.0			095
3806		1983 09 07.01191	00 29 37.79	+12 12 46.0			17.0		M	095
3806		1983 09 09.95081	00 29 18.05	+11 49 13.5			17.5			095
3813		1983 09 17.02304	01 14 50.26	+14 23 27.5			16.5			095
3846		1983 04 10.92058	13 48 42.00	-15 32 54.3						095
3846		1983 05 15.81426	13 25 29.26	-11 21 56.3						095
3879		1983 08 31.84351	22 03 10.25	-07 14 01.6			15.5		E	095
3879		1983 09 04.87510	21 59 17.63	-06 56 31.6						095
3879		1983 09 06.86816	21 57 29.13	-06 47 58.8						095
3879		1983 09 09.88067	21 54 55.69	-06 35 15.4					E	095
3879		1983 09 12.86748	21 52 38.56	-06 22 30.5					E	095
3879		1983 09 15.91402	21 50 35.94	-06 09 35.6					E	095
3883		1983 04 09.79474	10 49 31.54	+08 48 11.2			17.0			095
3915		1983 03 05.92212	11 42 29.38	+00 55 15.3			17.0			095
3915		1983 03 15.85473	11 34 38.53	+02 50 35.8			16.5			095
3915		1983 03 18.79146	11 32 16.59	+03 25 04.5			16.5			095
3915		1983 03 18.87096	11 32 13.01	+03 25 55.5			16.5			095
3915		1983 03 20.93906	11 30 33.81	+03 50 04.5			16.5			095
3915		1983 04 09.79474	11 17 16.80	+07 16 19.6			17.0			095
3920		1983 01 06.87979	06 55 31.78	+19 32 26.5			17.0			095
3934		1983 03 15.01184	12 47 17.74	+05 12 43.1			17.5			095
3935		1983 08 16.90178	21 48 23.16	-06 17 38.5			15.5			095
3935		1983 08 31.84351	21 33 18.06	-06 29 08.3			15.5			095
3935		1983 09 03.83293	21 30 30.75	-06 32 34.9			15.5			095
3935		1983 09 12.80189	21 23 11.00	-06 42 59.9			15.5			095

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

1981	QD2	1988 10 15.10000	00 30 39.77	-01 15 57.5						293
1981	QD2	1988 10 15.11667	00 30 38.81	-01 16 00.3						293
1988	NF	1988 10 15.05833	00 03 56.91	+54 07 15.7						293
1988	NF	1988 10 15.06667	00 03 57.31	+54 07 02.2						293
670		1988 10 15.10000	00 31 16.73	-01 16 14.5						293
670		1988 10 15.11667	00 31 16.08	-01 16 22.5						293
1331		1988 10 15.10000	00 32 36.66	-01 17 49.6						293
1331		1988 10 15.11667	00 32 36.02	-01 17 53.4						293

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

1978	SL6	1988 11 02.59444	02 38 44.69	+14 14 05.0			16.5			372
1978	SL6	1988 11 02.60764	02 38 43.99	+14 14 02.0						372
1978	SL6	1988 11 05.68576	02 35 26.2	+14 00 03			16			372
1978	SL6	1988 11 06.63889	02 34 25.7	+13 55 38			16			372
1985	BB	1988 11 03.65799	02 34 41.87	+13 51 12.1			20			372
1986	GD	1988 11 05.71562	02 27 17.05	+13 39 50.2			18			372
1986	GD	1988 11 06.60555	02 26 20.28	+13 37 48.9			18			372
1988	TS1	1988 11 02.63021	02 37 53.4	+13 22 09			17.5			372
1988	TS1	1988 11 03.65799	02 37 04.1	+13 17 35						372
1988	UH	1988 11 02.63021	02 34 52.56	+13 29 55.0			17.5			372
1988	UH	1988 11 03.65799	02 34 04.28	+13 25 10.6			17			372

1988	UH		1988	11	05.68576	02	32	29.3	+13	15	54	17	372
1988	UH		1988	11	06.63889	02	31	44.3	+13	11	26	17	372
1988	VA		1988	11	06.68611	02	27	17.04	+13	13	23.2	15	372
1988	VA		1988	11	08.53229	02	25	56.86	+12	47	52.0	15.5	372
1988	VA		1988	11	08.66181	02	25	50.79	+12	46	06.5		372
1988	VA		1988	11	13.60069	02	22	28.45	+11	40	02.0	16.5	372
1988	VA		1988	11	13.61111	02	22	28.06	+11	39	54.2		372
1988	VY		1988	11	02.66667	02	30	47.20	+13	50	19.6	18	372
1988	VY		1988	11	05.71562	02	28	14.65	+13	35	50.0	18	372
1988	VY		1988	11	06.60555	02	27	30.64	+13	31	39.9	18	372
1988	VE1		1988	11	13.65208	03	13	10.37	+19	19	44.5	17.5	372
1988	VE1		1988	11	13.66458	03	13	09.38	+19	19	42.7		372
1988	VE1		1988	11	18.70035	03	08	08.86	+19	14	18.5	16.5	372
1988	VE1		1988	11	18.71076	03	08	08.36	+19	14	18.3		372
1988	VG1		1988	11	18.65937	03	50	10.31	+14	39	09.9	17	372
1988	VG1		1988	11	18.66962	03	50	09.64	+14	39	07.6		372
1988	VG1		1988	11	28.49201	03	42	01.63	+13	42	18.5	17	372
1988	VG1		1988	11	28.50243	03	42	01.06	+13	42	12.9		372
1988	VJ1		1988	11	13.67569	03	15	32.31	+18	44	00.5	16	372
1988	VJ1		1988	11	13.68611	03	15	31.70	+18	43	57.2		372
1988	VJ1		1988	11	18.67986	03	10	37.34	+18	03	45.3	17	372
1988	VJ1		1988	11	18.68958	03	10	36.89	+18	03	39.5		372
1988	VJ1		1988	11	28.44965	03	02	18.35	+16	48	52.4	17.5	372
1988	VJ1		1988	11	28.46111	03	02	17.78	+16	48	48.3		372
1988	VH3	*	1988	11	01.52431	02	37	06.03	+13	44	55.0	18.5	372
1988	VH3		1988	11	01.57326	02	37	03.46	+13	44	35.3		372
1988	VH3		1988	11	02.63021	02	36	09.44	+13	38	15.8	18	372
1988	VH3		1988	11	03.65799	02	35	17.21	+13	32	04.0	18	372
1988	VH3		1988	11	05.68576	02	33	35.1	+13	20	02	17.5	372
1988	VH3		1988	11	06.63889	02	32	46.6	+13	14	20	17.5	372
1988	VJ3	*	1988	11	02.63021	02	33	37.59	+13	45	43.0	17	372
1988	VJ3		1988	11	03.65799	02	32	25.97	+13	45	03.9	17.5	372
1988	VK3		1988	11	02.59444	02	37	02.2	+14	06	55	18	372
1988	VK3		1988	11	02.60764	02	37	01.2	+14	06	55		372
1988	VK3	*	1988	11	02.63021	02	37	00.15	+14	06	51.6	18	372
1988	VK3		1988	11	03.65799	02	35	50.86	+14	04	57.0	17.5	372
1988	VK3		1988	11	06.63889	02	32	30.9	+13	59	30	18	372
1988	VW4	*	1988	11	02.59444	02	37	33.3	+14	09	00	18	372
1988	VW4		1988	11	02.60764	02	37	32.4	+14	08	57		372
1988	VW4		1988	11	05.68576	02	34	50.6	+13	53	43	18	372
1988	VW4		1988	11	06.63889	02	34	00.8	+13	49	02	18	372
1988	VX4	*	1988	11	05.71562	02	27	54.94	+14	03	16.7	18	372
1988	VX4		1988	11	06.60555	02	27	16.30	+13	56	38.1	18	372
2614			1988	11	13.69722	04	34	56.73	+13	34	01.4	16.5	372
2614			1988	11	13.70694	04	34	56.21	+13	34	01.4		372
2891			1988	11	28.51563	02	37	15.17	+02	32	01.7	15	372
2969			1988	11	02.63021	02	37	18.52	+13	27	30.6	17.5	372
2969			1988	11	03.65799	02	36	25.58	+13	22	50.7	17	372
2969			1988	11	05.68576	02	34	42.5	+13	13	44	16.5	372
2969			1988	11	06.63889	02	33	53.7	+13	09	29	16.5	372
3273			1988	11	18.70035	03	06	58.12	+19	24	39.7	16.5	372
3273			1988	11	18.71076	03	06	57.68	+19	24	38.6		372

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

1988	VH		1988	11	27.52986	02	57	04.55	+19	44	13.6	16	385
1988	VH		1988	11	27.55174	02	57	03.49	+19	44	00.9		385

1988	VH		1988	11	29.54340	02	55	38.30	+19	24	50.7	385
1988	VH		1988	11	29.56285	02	55	37.26	+19	24	38.9	385
1988	VF1		1988	11	07.55417	03	19	54.80	+20	30	08.1	385
1988	VF1		1988	11	07.57691	03	19	53.48	+20	30	00.0	385
1988	VF1		1988	11	10.54618	03	16	53.70	+20	09	45.7	385
1988	VF1		1988	11	10.56840	03	16	52.42	+20	09	36.7	385
1988	VF1		1988	11	13.56007	03	13	51.21	+19	48	42.7	385
1988	VF1		1988	11	13.56806	03	13	50.91	+19	48	37.1	385
1988	VF1		1988	11	13.57604	03	13	50.08	+19	48	33.0	385
1988	VF1		1988	11	27.50000	03	01	15.16	+18	12	55.4	385
1988	VF1		1988	11	27.52188	03	01	14.12	+18	12	47.5	385
1988	WB	*	1988	11	27.52986	03	00	39.95	+19	37	22.9	16.5 385
1988	WB		1988	11	27.55174	03	00	38.74	+19	37	16.3	385
1988	WB		1988	11	29.58455	02	58	45.33	+19	27	12.8	385
1988	WB		1988	11	29.59375	02	58	44.68	+19	27	09.3	385
1988	WB		1988	12	05.49931	02	53	53.01	+18	59	26.0	16.5 385
1988	WB		1988	12	05.51875	02	53	51.82	+18	59	24.3	385
1988	WF	*	1988	11	29.61701	05	00	26.20	+21	52	18.3	16.5 385
1988	WF		1988	11	29.63472	05	00	25.07	+21	52	14.7	385
1988	WF		1988	12	05.53299	04	55	04.87	+21	48	38.1	385
1988	WF		1988	12	05.57951	04	55	02.28	+21	48	36.3	385
1988	XJ	*	1988	12	03.61007	04	55	37.49	+23	00	18.2	16 385
1988	XJ		1988	12	03.63194	04	55	36.32	+23	00	17.1	385
1988	XJ		1988	12	05.54479	04	53	37.85	+22	55	16.6	385
1988	XJ		1988	12	05.59097	04	53	34.79	+22	55	10.0	385
1175			1988	11	27.50000	03	01	45.96	+18	41	19.5	385
1175			1988	11	27.52188	03	01	44.92	+18	41	10.7	385
1311			1988	11	29.61701	04	58	22.72	+22	04	38.8	385
1311			1988	11	29.63472	04	58	21.61	+22	04	34.8	385
1311			1988	12	05.53299	04	52	04.19	+21	46	24.6	385
1311			1988	12	05.57951	04	52	01.03	+21	46	16.1	385
2719			1988	11	29.61701	04	57	52.05	+21	38	41.2	385
2719			1988	11	29.63472	04	57	50.85	+21	38	39.8	385
2719			1988	12	05.53299	04	51	17.54	+21	29	52.8	385
2719			1988	12	05.57951	04	51	14.17	+21	29	48.6	385

386 Yatsugatake-Kobuchizawa
O. Muramatsu, 119-1, 2-8 Sakurazutsumi, Musashino, Tokyo 180, Japan
Observers M. Inoue, O. Muramatsu
Measurer O. Muramatsu
0.31-m reflector

1988	TT1		1988	11	12.61979	01	30	03.81	+09	09	58.7	386
1988	TT1		1988	11	12.63368	01	30	02.99	+09	09	59.9	386
1988	VR		1988	11	05.64028	02	26	42.67	+09	04	17.1	15.8 386
1988	VR		1988	11	12.64792	02	19	33.60	+09	15	20.3	386
1988	VR		1988	11	12.66146	02	19	32.75	+09	15	22.5	386
1988	VZ		1988	11	12.67535	02	31	09.71	+16	51	39.8	16.3 386
1988	VZ		1988	11	12.68924	02	31	08.95	+16	51	39.8	386
1988	VZ		1988	12	03.47743	02	16	26.34	+16	47	57.6	16.7 386
1988	VZ		1988	12	03.49479	02	16	25.79	+16	47	58.1	386
1988	VR1		1988	11	12.70382	03	12	02.50	+12	17	00.3	16.0 386
1988	VR1		1988	11	12.71771	03	12	01.77	+12	16	55.0	386
1988	VS1		1988	11	12.70382	03	12	46.37	+12	29	33.9	16.0 r 386
1988	VS1		1988	11	12.71771	03	12	45.70	+12	29	32.5	r 386

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

1988	TF1		1988	11	09.55382	01	32	23.13	+15	03	28.9	391
1988	TF1		1988	11	14.54375	01	29	17.95	+14	33	05.1	391
1988	TF1		1988	11	15.47639	01	28	47.20	+14	27	38.2	391
1988	TF1		1988	11	15.49722	01	28	46.28	+14	27	31.8	391
1988	VT1		1988	11	15.59722	02	36	29.21	-00	41	19.1	391
1988	VT1		1988	11	15.61806	02	36	28.37	-00	41	26.9	391
1988	VT1		1988	11	29.54306	02	28	57.47	-01	33	48.2	391
1988	VT1		1988	11	29.56389	02	28	57.09	-01	33	51.5	391
1988	VT1		1988	12	02.54792	02	27	49.90	-01	38	19.3	391
1988	VT1		1988	12	03.51111	02	27	31.24	-01	39	17.0	391
1988	VT1		1988	12	03.53194	02	27	30.60	-01	39	18.9	391
1988	VT1		1988	12	06.52014	02	26	40.63	-01	40	40.7	391
1988	VT1		1988	12	06.54097	02	26	40.33	-01	40	40.9	391
1988	VU1		1988	11	15.64028	04	20	38.45	+23	44	46.9	391
1988	VU1		1988	11	15.66111	04	20	37.55	+23	44	41.1	391
1988	VU1		1988	12	02.63542	04	04	12.54	+22	24	02.8	391
1988	VU1		1988	12	02.65625	04	04	11.29	+22	23	57.1	391
1988	VU1		1988	12	03.64583	04	03	15.49	+22	18	55.9	391
1988	VU1		1988	12	03.66667	04	03	14.25	+22	18	48.8	391
1988	VU1		1988	12	05.68542	04	01	21.62	+22	08	38.8	391
1988	VU1		1988	12	06.69931	04	00	26.01	+22	03	22.8	391
1988	VU1		1988	12	06.72014	04	00	25.10	+22	03	20.6	391
1988	VU1		1988	12	07.62153	03	59	36.17	+21	58	46.1	391
1988	VU1		1988	12	07.64236	03	59	35.23	+21	58	38.9	391
1988	XF	*	1988	12	02.63542	04	05	09.11	+22	25	33.6	15.5 391
1988	XF		1988	12	02.65625	04	05	07.79	+22	25	31.4	391
1988	XF		1988	12	03.64583	04	04	07.00	+22	24	21.0	391
1988	XF		1988	12	03.66667	04	04	05.69	+22	24	19.1	391
1988	XF		1988	12	05.68542	04	02	04.32	+22	21	52.7	391
1988	XF		1988	12	06.69931	04	01	04.27	+22	20	35.3	391
1988	XF		1988	12	06.72014	04	01	03.31	+22	20	33.6	391
1988	XF		1988	12	07.62153	04	00	11.21	+22	19	28.3	391
1988	XF		1988	12	07.64236	04	00	09.89	+22	19	26.5	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

1976	SF		1988	11	30.51528	04	54	48.27	+20	24	06.4	16 399
1976	SF		1988	11	30.52986	04	54	47.41	+20	24	05.3	399
1976	SF		1988	11	30.54525	04	54	46.66	+20	24	02.0	399
1976	SF		1988	12	02.51829	04	53	02.70	+20	21	27.9	16 399
1976	SF		1988	12	02.53333	04	53	01.84	+20	21	27.0	399
1976	SF		1988	12	02.55006	04	53	00.84	+20	21	26.4	399
1976	SF		1988	12	02.56484	04	53	00.07	+20	21	24.6	399
1978	SL6		1988	11	11.62575	02	29	18.21	+13	33	31.2	16.5 399
1978	SL6		1988	11	11.64213	02	29	17.01	+13	33	27.1	399
1978	SL6		1988	11	11.66149	02	29	16.13	+13	33	23.8	399
1982	PL		1988	11	11.55347	02	38	13.72	+17	14	30.2	16 399
1982	PL		1988	11	11.57049	02	38	12.95	+17	14	26.7	399
1982	PL		1988	11	11.68032	02	38	07.42	+17	14	04.5	399
1982	PL		1988	11	11.69601	02	38	06.60	+17	14	01.2	399
1982	PL		1988	11	14.57668	02	35	44.54	+17	04	22.9	16 399
1982	PL		1988	11	14.59271	02	35	43.70	+17	04	19.6	399
1986	EM2		1988	11	11.55347	02	28	41.82	+18	04	59.6	16 399
1986	EM2		1988	11	11.57049	02	28	40.80	+18	04	53.6	399

1986	EM2	1988	11	11.68032	02	28	34.01	+18	04	18.4	399
1986	EM2	1988	11	11.69601	02	28	33.15	+18	04	13.3	399
1986	EM2	1988	11	14.54931	02	25	48.11	+17	48	32.3	16.5 399
1986	EM2	1988	11	14.57668	02	25	46.40	+17	48	25.4	399
1986	EM2	1988	11	14.59271	02	25	45.46	+17	48	21.1	399
1988	TO	1988	11	02.46204	01	15	15.56	+08	55	09.6	16 399
1988	TO	1988	11	02.47882	01	15	14.72	+08	55	06.9	399
1988	TO	1988	11	02.49410	01	15	14.04	+08	55	05.9	399
1988	TB1	1988	11	02.46204	01	08	47.46	+07	18	08.8	16.5 399
1988	TB1	1988	11	02.47882	01	08	46.76	+07	18	02.9	399
1988	TB1	1988	11	02.49410	01	08	46.28	+07	17	58.8	399
1988	TL1	1988	11	02.46204	01	05	37.92	+07	53	48.6	16.5 399
1988	TL1	1988	11	02.47882	01	05	37.30	+07	53	41.2	399
1988	TL1	1988	11	02.49410	01	05	36.67	+07	53	31.6	399
1988	UJ	1988	11	11.48232	02	25	35.12	+14	03	52.5	16.5 399
1988	UJ	1988	11	11.49896	02	25	34.30	+14	03	49.7	399
1988	UJ	1988	11	11.51539	02	25	33.39	+14	03	49.1	399
1988	UJ	1988	11	11.53067	02	25	32.41	+14	03	47.4	399
1988	UJ	1988	11	14.49144	02	22	59.01	+14	01	00.3	16.5 399
1988	UJ	1988	11	14.50914	02	22	57.94	+14	00	56.5	399
1988	UJ	1988	11	14.52535	02	22	57.08	+14	00	57.0	399
1988	VB	1988	11	11.62575	02	35	01.30	+15	33	04.0	16 399
1988	VB	1988	11	11.64213	02	35	00.30	+15	33	03.5	399
1988	VB	1988	11	11.66149	02	34	59.15	+15	33	04.9	399
1988	VJ	1988	11	11.62575	02	35	34.60	+15	32	26.6	16 399
1988	VJ	1988	11	11.64213	02	35	33.63	+15	32	19.2	399
1988	VJ	1988	11	11.66149	02	35	32.44	+15	32	10.0	399
1988	VP	1988	11	14.65000	03	30	50.18	+18	58	42.1	16 399
1988	VP	1988	11	14.66458	03	30	49.15	+18	58	44.0	399
1988	VP	1988	11	14.68229	03	30	47.94	+18	58	47.7	399
1988	VP	1988	11	17.61285	03	27	20.23	+19	08	00.7	16 399
1988	VP	1988	11	17.62922	03	27	19.04	+19	08	03.0	399
1988	VP	1988	11	17.64734	03	27	17.75	+19	08	06.3	399
1988	VP	1988	11	17.66389	03	27	16.51	+19	08	11.2	399
1988	VP	1988	11	30.46551	03	12	45.88	+19	45	41.6	16 399
1988	VP	1988	11	30.47986	03	12	45.03	+19	45	44.9	399
1988	VP	1988	11	30.49514	03	12	43.99	+19	45	47.5	399
1988	VP	1988	12	02.44745	03	10	43.78	+19	51	17.4	399
1988	VP	1988	12	02.46216	03	10	42.79	+19	51	20.9	16 399
1988	VP	1988	12	02.47755	03	10	41.89	+19	51	22.6	399
1988	VP	1988	12	02.49213	03	10	41.03	+19	51	24.6	399
1988	VV	1988	11	11.48232	02	23	01.71	+14	23	46.3	16.5 399
1988	VV	1988	11	11.49896	02	23	01.02	+14	23	40.4	399
1988	VV	1988	11	11.51539	02	22	59.99	+14	23	31.8	399
1988	VV	1988	11	11.53067	02	22	59.25	+14	23	25.7	399
1988	VV	1988	11	14.49144	02	20	36.35	+14	01	33.5	16.5 399
1988	VV	1988	11	14.50914	02	20	35.60	+14	01	28.3	399
1988	VV	1988	11	14.52535	02	20	34.87	+14	01	20.9	399
1988	VW	1988	11	08.49861	02	28	40.40	+15	36	45.6	16.5 399
1988	VW	1988	11	08.51424	02	28	39.73	+15	36	41.9	399
1988	VW	1988	11	11.48232	02	26	21.07	+15	24	55.5	16.5 399
1988	VW	1988	11	11.49896	02	26	20.23	+15	24	49.7	399
1988	VW	1988	11	11.51539	02	26	19.42	+15	24	45.4	399
1988	VW	1988	11	11.53067	02	26	18.55	+15	24	42.4	399
1988	VW	1988	11	14.49144	02	24	04.84	+15	13	04.7	16.5 399
1988	VW	1988	11	14.50914	02	24	04.04	+15	13	00.2	399
1988	VW	1988	11	14.52535	02	24	03.45	+15	13	00.5	399
1988	VZ	1988	11	11.55347	02	32	09.79	+16	52	09.4	16 399
1988	VZ	1988	11	11.57049	02	32	08.80	+16	52	08.9	399

1988	VZ		1988	11	11.68032	02	32	02.80	+16	52	06.3		399
1988	VZ		1988	11	11.69601	02	32	01.89	+16	52	06.0		399
1988	VZ		1988	11	14.54931	02	29	31.88	+16	50	49.9	16	399
1988	VZ		1988	11	14.57668	02	29	30.29	+16	50	51.6		399
1988	VZ		1988	11	14.59271	02	29	29.42	+16	50	51.5		399
1988	VO1		1988	11	06.41505	02	21	49.66	+15	04	20.0	16.5	399
1988	VO1		1988	11	06.42940	02	21	48.65	+15	04	13.9		399
1988	VO1		1988	11	06.54306	02	21	42.22	+15	03	23.8		399
1988	VO1		1988	11	11.48232	02	17	09.54	+14	26	06.7	16	399
1988	VO1		1988	11	11.49896	02	17	08.53	+14	25	57.9		399
1988	VO1		1988	11	11.51539	02	17	07.57	+14	25	49.5		399
1988	VO1		1988	11	11.53067	02	17	06.71	+14	25	42.7		399
1988	VO1		1988	11	14.49144	02	14	33.90	+14	04	10.8	16.5	399
1988	VO1		1988	11	14.50914	02	14	33.10	+14	04	01.6		399
1988	VO1		1988	11	14.52535	02	14	32.10	+14	03	54.8		399
1988	VQ1		1988	11	11.62575	02	37	46.69	+15	43	57.3	16.5	399
1988	VQ1		1988	11	11.64213	02	37	45.46	+15	43	57.7		399
1988	VQ1		1988	11	11.66149	02	37	44.11	+15	43	56.6		399
1988	VZ1		1988	11	06.54306	02	31	58.07	+15	09	41.5	16.5	399
1988	VZ1		1988	11	14.49144	02	25	39.47	+14	39	38.3	16.5	399
1988	VZ1		1988	11	14.50914	02	25	38.72	+14	39	35.7		399
1988	VZ1		1988	11	14.52535	02	25	37.81	+14	39	29.8		399
1988	VA2		1988	11	11.57049	02	38	23.25	+16	12	14.3	16.5	399
1988	VA2		1988	11	14.57668	02	35	16.34	+16	06	50.2	16.5	399
1988	VA2		1988	11	14.59271	02	35	15.25	+16	06	46.1		399
1988	VB2		1988	11	11.62575	02	39	42.28	+13	29	34.0	16	399
1988	VB2		1988	11	11.64213	02	39	41.31	+13	29	28.2		399
1988	VB2		1988	11	11.66149	02	39	40.06	+13	29	18.2		399
1988	VC2		1988	11	11.62575	02	43	55.65	+15	46	50.8	16.5	399
1988	VC2		1988	11	11.64213	02	43	54.59	+15	46	50.0		399
1988	VC2		1988	11	11.66149	02	43	53.75	+15	46	48.5		399
1988	VD2		1988	11	11.62575	02	42	17.20	+14	15	11.0	16.5	399
1988	VD2		1988	11	11.64213	02	42	16.16	+14	15	09.4		399
1988	VD2		1988	11	11.66149	02	42	14.90	+14	15	07.4		399
1988	VL2		1988	11	14.65000	03	39	52.58	+19	47	14.2	16	399
1988	VL2		1988	11	14.66458	03	39	51.65	+19	47	06.0		399
1988	VL2		1988	11	14.68229	03	39	50.58	+19	46	55.0		399
1988	VL2		1988	11	17.61285	03	36	59.76	+19	19	38.8	16	399
1988	VL2		1988	11	17.62922	03	36	58.79	+19	19	28.4		399
1988	VL2		1988	11	17.64734	03	36	57.63	+19	19	18.0		399
1988	VL2		1988	11	17.66389	03	36	56.66	+19	19	08.7		399
1988	VL2		1988	12	02.44745	03	23	14.50	+17	01	43.7	16.5	399
1988	VL2		1988	12	02.46216	03	23	13.85	+17	01	37.8		399
1988	VL2		1988	12	02.47755	03	23	12.98	+17	01	30.2		399
1988	VL2		1988	12	02.49213	03	23	12.38	+17	01	22.3		399
1988	VQ2		1988	11	14.65000	03	37	28.71	+17	59	44.0	16	399
1988	VQ2		1988	11	14.66458	03	37	27.57	+17	59	47.6		399
1988	VQ2		1988	11	14.68229	03	37	26.21	+17	59	53.6		399
1988	VQ2		1988	11	17.61285	03	33	44.96	+18	16	09.7	15.5	399
1988	VQ2		1988	11	17.62922	03	33	43.63	+18	16	16.6		399
1988	VQ2		1988	11	17.64734	03	33	42.22	+18	16	22.5		399
1988	VQ2		1988	11	17.66389	03	33	40.95	+18	16	27.1		399
1988	VQ2		1988	12	02.44745	03	16	23.95	+19	32	45.2	16.5	399
1988	VQ2		1988	12	02.46216	03	16	23.05	+19	32	48.6		399
1988	VQ2		1988	12	02.47755	03	16	22.05	+19	32	52.3		399
1988	VQ2		1988	12	02.49213	03	16	21.16	+19	32	57.1		399
1988	VT2	*	1988	11	08.48229	02	16	07.02	+16	23	06.8	16.5	399
1988	VT2		1988	11	08.49861	02	16	06.20	+16	23	00.0		399
1988	VT2		1988	11	08.51424	02	16	05.12	+16	22	52.1		399

1988	VT2		1988	11	11.48232	02	13	35.01	+16	06	44.1	16.5	399
1988	VT2		1988	11	11.49896	02	13	34.24	+16	06	40.9		399
1988	VT2		1988	11	11.51539	02	13	33.41	+16	06	36.1		399
1988	VT2		1988	11	11.53067	02	13	32.55	+16	06	30.8		399
1988	VT2		1988	11	14.49144	02	11	13.12	+15	50	51.5	16.5	399
1988	VT2		1988	11	14.50914	02	11	12.31	+15	50	46.1		399
1988	VT2		1988	11	14.52535	02	11	11.49	+15	50	39.7		399
1988	VU2		1988	11	02.51562	02	29	19.95	+16	10	31.1	16.5	399
1988	VU2		1988	11	02.52998	02	29	18.92	+16	10	29.9		399
1988	VU2		1988	11	02.54769	02	29	18.12	+16	10	28.7		399
1988	VU2	*	1988	11	08.48229	02	23	47.36	+15	58	01.9	16.5	399
1988	VU2		1988	11	08.49861	02	23	46.36	+15	57	56.8		399
1988	VU2		1988	11	08.51424	02	23	45.36	+15	57	58.8		399
1988	VU2		1988	11	11.48232	02	21	05.12	+15	51	35.0	16.5	399
1988	VU2		1988	11	11.49896	02	21	04.13	+15	51	32.6		399
1988	VU2		1988	11	11.51539	02	21	03.36	+15	51	29.9		399
1988	VU2		1988	11	11.53067	02	21	02.42	+15	51	28.5		399
1988	VU2		1988	11	14.49144	02	18	29.40	+15	45	18.7	16.5	399
1988	VU2		1988	11	14.50914	02	18	28.37	+15	45	20.1		399
1988	VU2		1988	11	14.52535	02	18	27.62	+15	45	16.4		399
1988	VV2	*	1988	11	08.53970	02	37	35.25	+18	21	29.2	16.5	399
1988	VV2		1988	11	08.55532	02	37	34.35	+18	21	25.0		399
1988	VV2		1988	11	08.57222	02	37	33.52	+18	21	19.6		399
1988	VV2		1988	11	11.57049	02	34	29.24	+18	06	28.9	16.5	399
1988	VV2		1988	11	11.68032	02	34	22.22	+18	05	53.5		399
1988	VV2		1988	11	11.69601	02	34	21.07	+18	05	46.5		399
1988	VV2		1988	11	14.54931	02	31	33.87	+17	51	43.0	16.5	399
1988	VV2		1988	11	14.57668	02	31	32.19	+17	51	37.5		399
1988	VV2		1988	11	14.59271	02	31	31.22	+17	51	32.8		399
1988	VW2	*	1988	11	08.53970	02	40	38.40	+17	47	20.1	16.5	399
1988	VW2		1988	11	08.55532	02	40	37.69	+17	47	12.7		399
1988	VW2		1988	11	11.55347	02	38	29.19	+17	29	31.6	16.5	399
1988	VW2		1988	11	11.57049	02	38	28.37	+17	29	23.1		399
1988	VW2		1988	11	11.68032	02	38	23.61	+17	28	45.1		399
1988	VW2		1988	11	11.69601	02	38	22.72	+17	28	41.3		399
1988	VX2	*	1988	11	08.60498	02	41	37.28	+15	20	49.2	16.5	399
1988	VX2		1988	11	08.61979	02	41	36.52	+15	20	43.1		399
1988	VX2		1988	11	08.63530	02	41	35.79	+15	20	33.3		399
1988	VX2		1988	11	11.62575	02	39	22.40	+14	58	47.3	16.5	399
1988	VX2		1988	11	11.64213	02	39	21.67	+14	58	42.3		399
1988	VX2		1988	11	11.66149	02	39	20.74	+14	58	31.8		399
1988	VA3		1988	11	08.53970	02	48	08.67	+18	06	08.5	16.5	399
1988	VA3		1988	11	08.55532	02	48	07.70	+18	06	06.6		399
1988	VA3		1988	11	08.57222	02	48	06.61	+18	06	03.6		399
1988	VA3	*	1988	11	11.55347	02	44	49.52	+18	00	07.0	16	399
1988	VA3		1988	11	11.57049	02	44	48.41	+18	00	07.0		399
1988	VA3		1988	11	11.68032	02	44	41.12	+17	59	51.7		399
1988	VA3		1988	11	11.69601	02	44	40.00	+17	59	50.8		399
1988	VA3		1988	11	14.54931	02	41	35.07	+17	53	57.2	16.5	399
1988	VA3		1988	11	14.57668	02	41	33.41	+17	53	54.3		399
1988	VA3		1988	11	14.59271	02	41	32.35	+17	53	53.0		399
1988	VE3		1988	11	02.56806	02	53	13.22	+16	45	33.7	16.5	399
1988	VE3		1988	11	02.58323	02	53	11.76	+16	45	42.1		399
1988	VE3		1988	11	02.60104	02	53	10.17	+16	45	49.1		399
1988	VE3		1988	11	08.53970	02	45	27.52	+17	35	52.3	16.5	399
1988	VE3		1988	11	08.55532	02	45	26.35	+17	35	59.8		399
1988	VE3		1988	11	08.57222	02	45	24.89	+17	36	08.5		399
1988	VE3	*	1988	11	11.55347	02	41	37.11	+18	00	01.1	16.5	399
1988	VE3		1988	11	11.57049	02	41	35.72	+18	00	09.8		399

1988	VE3		1988	11	11.68032	02	41	26.96	+18	01	02.8	399
1988	VE3		1988	11	11.69601	02	41	25.91	+18	01	08.1	399
1988	VE3		1988	11	14.54931	02	37	54.72	+18	23	11.7	16.5 399
1988	VE3		1988	11	14.57668	02	37	52.36	+18	23	22.9	399
1988	VE3		1988	11	14.59271	02	37	51.20	+18	23	29.0	399
1988	VG3		1988	11	08.53970	02	46	37.62	+17	59	07.9	16.5 399
1988	VG3		1988	11	08.55532	02	46	36.27	+17	59	10.8	399
1988	VG3		1988	11	08.57222	02	46	35.06	+17	59	13.3	399
1988	VG3		1988	11	11.55347	02	42	49.41	+18	06	19.5	16.5 399
1988	VG3		1988	11	11.57049	02	42	48.40	+18	06	21.8	399
1988	VG3		1988	11	11.68032	02	42	39.70	+18	06	37.6	399
1988	VG3	*	1988	11	14.54931	02	39	09.27	+18	13	00.8	16.5 399
1988	VG3		1988	11	14.57668	02	39	07.26	+18	13	04.3	399
1988	VG3		1988	11	14.59271	02	39	05.85	+18	13	06.4	399
1988	VT3	*	1988	11	14.65000	03	27	45.39	+20	29	39.8	16.5 399
1988	VT3		1988	11	14.66458	03	27	44.51	+20	29	32.9	399
1988	VT3		1988	11	14.68229	03	27	43.46	+20	29	26.3	399
1988	VT3		1988	11	17.61285	03	24	38.53	+20	10	16.9	16.5 399
1988	VT3		1988	11	17.64734	03	24	36.37	+20	10	04.2	399
1988	VT3		1988	11	17.66389	03	24	35.24	+20	09	57.4	399
1988	VT3		1988	11	30.46551	03	11	55.09	+18	44	31.9	16.5 399
1988	VT3		1988	11	30.47986	03	11	54.27	+18	44	26.0	399
1988	VT3		1988	11	30.49514	03	11	53.65	+18	44	21.3	399
1988	VT3		1988	12	02.46216	03	10	11.97	+18	31	46.2	16.5 399
1988	VT3		1988	12	02.47755	03	10	10.98	+18	31	42.4	399
1988	VT3		1988	12	02.49213	03	10	10.09	+18	31	35.0	399
1988	VU3	*	1988	11	14.65000	03	28	27.87	+19	25	59.7	16.5 399
1988	VU3		1988	11	14.66458	03	28	27.10	+19	25	57.5	399
1988	VU3		1988	11	14.68229	03	28	26.09	+19	25	55.4	399
1988	VU3		1988	11	17.61285	03	26	01.38	+19	18	03.9	16.5 399
1988	VU3		1988	11	17.62922	03	26	00.55	+19	18	00.6	399
1988	VU3		1988	11	17.64734	03	25	59.75	+19	17	57.2	399
1988	VU3		1988	11	17.66389	03	25	58.75	+19	17	54.3	399
1988	VV3	*	1988	11	14.65000	03	41	21.17	+20	45	52.1	16 399
1988	VV3		1988	11	14.66458	03	41	20.23	+20	45	50.7	399
1988	VV3		1988	11	14.68229	03	41	19.21	+20	45	47.2	399
1988	VV3		1988	11	17.61285	03	38	23.23	+20	38	50.0	16.5 399
1988	VV3		1988	11	17.62922	03	38	21.92	+20	38	46.5	399
1988	VV3		1988	11	17.66389	03	38	19.83	+20	38	41.0	399
1988	VO4		1988	11	11.48232	02	12	33.38	+16	26	51.8	16 399
1988	VO4		1988	11	11.49896	02	12	32.33	+16	26	47.6	399
1988	VO4		1988	11	11.51539	02	12	31.51	+16	26	41.1	399
1988	VO4		1988	11	11.53067	02	12	30.50	+16	26	36.3	399
1988	VO4		1988	11	14.49144	02	09	43.10	+16	10	17.6	16 399
1988	VO4		1988	11	14.50914	02	09	42.31	+16	10	15.0	399
1988	VO4		1988	11	14.52535	02	09	41.34	+16	10	07.3	399
1988	VA5	*	1988	11	14.65000	03	26	48.80	+20	05	11.7	16.5 399
1988	VA5		1988	11	14.66458	03	26	47.98	+20	05	10.5	399
1988	VA5		1988	11	14.68229	03	26	46.84	+20	05	07.0	399
1988	VA5		1988	11	17.61285	03	23	36.37	+19	57	50.6	16.5 399
1988	VA5		1988	11	17.62922	03	23	35.37	+19	57	47.9	399
1988	VA5		1988	11	17.64734	03	23	33.92	+19	57	46.2	399
1988	VA5		1988	11	30.46551	03	11	06.92	+19	25	33.8	17 399
1988	VA5		1988	11	30.47986	03	11	06.06	+19	25	33.0	399
1988	VA5		1988	11	30.49514	03	11	05.18	+19	25	30.2	399
1988	VA5		1988	12	02.44745	03	09	31.24	+19	21	06.5	16.5 399
1988	VA5		1988	12	02.46216	03	09	30.42	+19	21	04.0	399
1988	VA5		1988	12	02.47755	03	09	29.66	+19	21	03.5	399
1988	VG5		1988	11	02.51562	02	28	59.21	+14	17	28.3	16.5 399

1988	VG5		1988	11	02.52998	02	28	58.47	+14	17	23.2		399
1988	VG5		1988	11	02.54769	02	28	57.82	+14	17	22.5		399
1988	WA		1988	11	14.65000	03	40	57.33	+18	24	16.0	16.5	399
1988	WA		1988	11	14.66458	03	40	56.36	+18	24	16.5		399
1988	WA		1988	11	14.68229	03	40	54.72	+18	24	21.3		399
1988	WA	*	1988	11	17.61285	03	37	10.87	+18	32	46.6	16.5	399
1988	WA		1988	11	17.62922	03	37	09.55	+18	32	50.5		399
1988	WA		1988	11	17.64734	03	37	08.02	+18	32	52.6		399
1988	WA		1988	11	17.66389	03	37	06.75	+18	32	56.1		399
1988	WA		1988	12	02.44745	03	19	20.61	+19	12	00.1	17	399
1988	WA		1988	12	02.46216	03	19	19.49	+19	12	03.4		399
1988	WA		1988	12	02.47755	03	19	18.65	+19	12	04.1		399
1988	WA		1988	12	02.49213	03	19	17.57	+19	12	08.0		399
1988	WD	*	1988	11	30.52986	04	44	30.83	+20	31	28.1	16.5	399
1988	WD		1988	11	30.54525	04	44	29.84	+20	31	29.5		399
1988	WD		1988	12	02.51829	04	42	22.32	+20	33	00.1	16.5	399
1988	WD		1988	12	02.53333	04	42	21.40	+20	33	03.1		399
1988	XA		1988	11	30.51528	04	55	35.58	+20	23	21.2	15.5	399
1988	XA		1988	11	30.52986	04	55	34.88	+20	23	18.2		399
1988	XA		1988	11	30.54525	04	55	34.08	+20	23	14.1		399
1988	XA	*	1988	12	02.51829	04	53	48.75	+20	14	17.8	15.5	399
1988	XA		1988	12	02.53333	04	53	48.05	+20	14	14.2		399
1988	XA		1988	12	02.55006	04	53	47.00	+20	14	08.0		399
1988	XA		1988	12	02.56484	04	53	46.15	+20	14	04.8		399
1988	XE	*	1988	12	02.58403	05	05	21.41	+22	11	33.1	14.5	399
1988	XE		1988	12	02.59826	05	05	20.44	+22	11	20.4		399
1988	XE		1988	12	02.61319	05	05	19.61	+22	11	09.8		399
1988	XE		1988	12	02.62778	05	05	18.73	+22	10	56.0		399
1988	XE		1988	12	05.56563	05	02	42.25	+21	31	22.4	15	399
1988	XQ		1988	12	07.55851	05	09	01.90	+22	54	20.8	16	399
1988	XQ		1988	12	07.57303	05	09	00.97	+22	54	13.5		399
1988	XQ		1988	12	07.58912	05	09	00.12	+22	54	04.1		399
1988	XQ		1988	12	07.60347	05	08	59.08	+22	53	52.1		399
1988	XS		1988	12	07.55851	05	14	01.58	+23	55	29.6	15.5	399
1988	XS		1988	12	07.57303	05	14	00.67	+23	55	24.1		399
1988	XS		1988	12	07.58912	05	13	59.41	+23	55	20.3		399
1988	XS		1988	12	07.60347	05	13	58.44	+23	55	15.6		399
3107	T-3		1988	11	11.48232	02	13	56.87	+14	04	54.9	16	399
3107	T-3		1988	11	11.49896	02	13	56.12	+14	04	49.7		399
3107	T-3		1988	11	11.51539	02	13	55.25	+14	04	48.0		399
3107	T-3		1988	11	11.53067	02	13	54.32	+14	04	42.9		399
3107	T-3		1988	11	14.49144	02	11	36.13	+13	55	46.9	16	399
3107	T-3		1988	11	14.50914	02	11	35.25	+13	55	43.4		399
3107	T-3		1988	11	14.52535	02	11	34.41	+13	55	37.5		399
569			1988	12	07.55851	05	12	18.63	+24	38	21.8	12	399
569			1988	12	07.57303	05	12	17.74	+24	38	20.1		399
569			1988	12	07.58912	05	12	16.64	+24	38	19.8		399
569			1988	12	07.60347	05	12	15.74	+24	38	17.5		399
942			1988	12	07.55851	05	10	29.62	+24	51	12.9	14	399
942			1988	12	07.57303	05	10	28.84	+24	51	15.5		399
942			1988	12	07.58912	05	10	27.64	+24	51	19.5		399
942			1988	12	07.60347	05	10	26.81	+24	51	22.1		399
1319			1988	11	14.54931	02	26	02.45	+16	41	31.9	16	399
1319			1988	11	14.57668	02	26	01.04	+16	41	27.1		399
1319			1988	11	14.59271	02	26	00.29	+16	41	23.6		399
1889			1988	11	30.46551	03	11	34.71	+18	03	26.3	15.5	399
1889			1988	11	30.47986	03	11	34.01	+18	03	27.3		399
1889			1988	11	30.49514	03	11	33.09	+18	03	28.2		399
1889			1988	12	02.44745	03	09	53.07	+18	04	45.2	15	399

1889		1988	12	02.46216	03	09	52.38	+18	04	46.5	399
1889		1988	12	02.47755	03	09	51.58	+18	04	47.3	399
1889		1988	12	02.49213	03	09	50.70	+18	04	48.0	399
2123		1988	11	11.48232	02	22	50.86	+15	53	32.6	15 399
2123		1988	11	11.49896	02	22	49.95	+15	53	27.1	399
2123		1988	11	11.51539	02	22	49.07	+15	53	23.5	399
2123		1988	11	11.53067	02	22	48.29	+15	53	19.1	399
2123		1988	11	14.49144	02	20	25.29	+15	40	57.2	15 399
2123		1988	11	14.50914	02	20	24.40	+15	40	52.9	399
2123		1988	11	14.52535	02	20	23.58	+15	40	49.0	399
2153		1988	11	11.48232	02	28	00.04	+14	28	00.9	15.5 399
2153		1988	11	11.49896	02	27	59.28	+14	27	57.2	399
2153		1988	11	11.51539	02	27	58.43	+14	27	54.7	399
2153		1988	11	11.53067	02	27	57.65	+14	27	50.5	399
2153		1988	11	14.49144	02	25	37.10	+14	17	53.8	15.5 399
2153		1988	11	14.50914	02	25	36.24	+14	17	50.1	399
2153		1988	11	14.52535	02	25	35.41	+14	17	46.9	399
2321		1988	11	11.62575	02	41	59.64	+15	35	38.6	15.5 399
2321		1988	11	11.64213	02	41	58.67	+15	35	38.6	399
2321		1988	11	11.66149	02	41	57.61	+15	35	35.5	399
2464		1988	11	17.61285	03	23	32.76	+19	38	51.6	15 399
2464		1988	11	17.62922	03	23	31.86	+19	38	48.1	399
2464		1988	11	17.64734	03	23	30.84	+19	38	46.0	399
2464		1988	11	17.66389	03	23	29.94	+19	38	42.4	399
2464		1988	11	30.46551	03	12	58.30	+19	01	24.9	14.5 399
2464		1988	11	30.47986	03	12	57.66	+19	01	24.4	399
2464		1988	11	30.49514	03	12	56.89	+19	01	20.6	399
2464		1988	12	02.44745	03	11	30.84	+18	55	56.5	15 399
2464		1988	12	02.46216	03	11	30.19	+18	55	54.6	399
2464		1988	12	02.47755	03	11	29.51	+18	55	51.5	399
2464		1988	12	02.49213	03	11	28.81	+18	55	49.2	399
2819		1988	11	02.46204	01	15	13.97	+08	49	49.7	14 399
2819		1988	11	02.47882	01	15	13.20	+08	49	45.5	399
2819		1988	11	02.49410	01	15	12.62	+08	49	44.1	399
2926		1988	11	14.65000	03	38	43.50	+18	02	24.5	16.5 399
2926		1988	11	14.66458	03	38	42.75	+18	02	20.2	399
3153		1988	11	14.54931	02	38	48.94	+17	16	26.1	14.5 399
3153		1988	11	14.57668	02	38	47.07	+17	16	27.9	399
3153		1988	11	14.59271	02	38	45.95	+17	16	28.3	399

400 Kitami
K. Watanabe, 13-23-202, 4 Chome, Atsubetsu cyuo 3 jo, Shiroishi-ku,
Sapporo 004, Japan
Observers K. Endate, T. Fujii, M. Yanai
Measurer K. Watanabe
AGK3

1976	SF	1988	12	03.56042	04	52	06.91	+20	20	09.0	16.0 400
1976	SF	1988	12	03.57500	04	52	06.22	+20	20	07.1	400
1976	SF	1988	12	03.58750	04	52	05.51	+20	20	07.4	400
1978	TQ8	1988	11	16.58958	04	03	44.19	+16	48	00.7	15.5 400
1978	TQ8	1988	11	16.60556	04	03	43.18	+16	47	56.3	400
1978	TQ8	1988	11	16.61806	04	03	42.39	+16	47	54.6	400
1978	TQ8	1988	12	01.53130	03	48	01.72	+15	54	28.8	16.5 400
1978	TQ8	1988	12	01.55491	03	48	00.32	+15	54	26.2	400
1985	GB	1988	12	03.47361	03	34	22.74	+20	17	16.2	16.5 400
1985	GB	1988	12	03.49792	03	34	21.59	+20	17	12.4	400
1985	GB	1988	12	03.51875	03	34	20.45	+20	17	08.7	400
1986	EL1	1988	12	03.47361	03	29	01.54	+20	42	05.0	15.5 400
1986	EL1	1988	12	03.51875	03	28	59.07	+20	42	01.4	400

1988	UL		1988	11	08.48924	01	32	23.92	+12	41	22.9	16.5	400
1988	UL		1988	11	08.50521	01	32	23.22	+12	41	10.1		400
1988	UL		1988	11	08.51736	01	32	22.88	+12	41	02.6		400
1988	UL		1988	11	11.47743	01	30	39.20	+12	03	12.9	16.5	400
1988	UL		1988	11	11.49479	01	30	38.56	+12	02	57.4		400
1988	VZ2		1988	11	13.47118	03	33	30.03	+28	18	14.7	15.0	400
1988	VZ2		1988	11	13.48646	03	33	29.13	+28	18	08.9		400
1988	VZ2		1988	11	13.49861	03	33	28.32	+28	18	01.6		400
1988	VZ2		1988	11	14.51076	03	32	33.78	+28	10	31.2	14.5	400
1988	VZ2		1988	11	14.52604	03	32	32.87	+28	10	23.8		400
1988	VZ2		1988	11	14.53819	03	32	32.17	+28	10	18.4		400
1988	VL3	*	1988	11	03.55521	01	42	37.81	+12	58	57.9	16.0	400
1988	VL3		1988	11	03.57257	01	42	37.10	+12	58	40.6		400
1988	VL3		1988	11	03.58438	01	42	36.74	+12	58	30.0		400
1988	VL3		1988	11	13.46771	01	37	36.80	+10	45	27.4	16.5	400
1988	VL3		1988	11	13.48507	01	37	36.49	+10	45	13.0		400
1988	VR3	*	1988	11	13.55419	04	08	46.01	+17	20	04.5	16.0	400
1988	VR3		1988	11	13.56947	04	08	45.34	+17	20	01.5		400
1988	VR3		1988	11	16.58958	04	05	50.14	+17	08	18.0	16.0	400
1988	VR3		1988	11	16.60556	04	05	49.05	+17	08	13.2		400
1988	VR3		1988	11	16.61806	04	05	48.27	+17	08	09.9		400
1988	VR3		1988	12	01.53130	03	51	07.83	+16	14	54.1	16.0	400
1988	VR3		1988	12	01.55491	03	51	06.43	+16	14	50.2		400
1988	VR3		1988	12	06.47708	03	46	47.35	+16	00	58.8	16	400
1988	VR3		1988	12	06.49375	03	46	46.52	+16	00	55.6		400
1988	VY3	*	1988	11	13.47118	03	29	08.67	+27	55	26.3	17.0	400
1988	VY3		1988	11	13.48646	03	29	07.49	+27	55	23.6		400
1988	VY3		1988	11	13.49861	03	29	06.49	+27	55	23.1		400
1988	VY3		1988	11	14.51076	03	27	56.52	+27	53	24.3	16.5	400
1988	VY3		1988	11	14.52604	03	27	55.31	+27	53	20.8		400
1988	VY3		1988	11	14.53819	03	27	54.51	+27	53	18.0		400
1988	VZ3	*	1988	11	13.47118	03	30	36.84	+27	18	59.5	16.5	400
1988	VZ3		1988	11	13.48646	03	30	35.87	+27	18	54.9		400
1988	VZ3		1988	11	13.49861	03	30	35.13	+27	18	50.0		400
1988	VZ3		1988	11	14.51076	03	29	35.45	+27	11	27.7	16.0	400
1988	VZ3		1988	11	14.52604	03	29	34.36	+27	11	18.6		400
1988	VZ3		1988	11	14.53819	03	29	33.70	+27	11	14.9		400
1988	VZ3		1988	12	02.51771	03	13	17.80	+24	37	21.9	16	400
1988	VZ3		1988	12	02.53646	03	13	16.77	+24	37	09.9		400
1988	VZ3		1988	12	02.54757	03	13	16.51	+24	37	04.5		400
1988	VA4	*	1988	11	15.58194	03	49	08.83	+21	45	29.3	16	400
1988	VA4		1988	11	15.60625	03	49	07.30	+21	45	26.4		400
1988	VA4		1988	11	15.62639	03	49	05.56	+21	45	19.7		400
1988	VA4		1988	11	16.58264	03	48	02.80	+21	40	51.5	16.5	400
1988	VA4		1988	11	16.60694	03	48	01.11	+21	40	46.8		400
1988	VA4		1988	11	16.62778	03	47	59.26	+21	40	35.9		400
1988	VB4	*	1988	11	15.58194	03	57	46.65	+23	32	31.6	16	400
1988	VB4		1988	11	15.60625	03	57	45.22	+23	32	29.2		400
1988	VB4		1988	11	15.62639	03	57	43.83	+23	32	28.2		400
1988	VB4		1988	11	16.58264	03	56	47.41	+23	31	09.0	15.5	400
1988	VB4		1988	11	16.60694	03	56	45.91	+23	31	06.7		400
1988	VB4		1988	11	16.62778	03	56	44.64	+23	31	05.3		400
1988	XC		1988	12	03.65139	04	22	23.42	+27	33	16.6	16	400
1988	XC		1988	12	03.67569	04	22	21.94	+27	33	17.8		400
1988	XC		1988	12	03.69653	04	22	20.86	+27	33	16.3		400
1988	XC		1988	12	06.52465	04	19	48.42	+27	30	25.0	16	400
1988	XC		1988	12	06.54201	04	19	47.44	+27	30	26.0		400
1988	XC		1988	12	06.55382	04	19	46.77	+27	30	24.6		400
1988	XD	*	1988	12	02.47778	04	55	41.57	+22	14	36.9	16.5	400

1988	XD		1988	12	02.49375	04	55	40.73	+22	14	35.8		400
1988	XD		1988	12	02.50625	04	55	40.01	+22	14	35.2		400
1988	XD		1988	12	03.56042	04	54	43.51	+22	14	04.4	16.5	400
1988	XD		1988	12	03.57500	04	54	42.71	+22	14	03.0		400
1988	XD		1988	12	03.58750	04	54	42.01	+22	14	04.1		400
1988	XQ	*	1988	12	03.50625	05	12	47.73	+23	36	24.9	16	400
1988	XQ		1988	12	03.52361	05	12	46.86	+23	36	13.9		400
1988	XQ		1988	12	03.53611	05	12	46.16	+23	36	08.2		400
1988	XQ		1988	12	06.51667	05	10	00.68	+23	05	13.1	16.0	400
1988	XQ		1988	12	06.53125	05	09	59.89	+23	05	04.6		400
1988	XQ		1988	12	06.54375	05	09	59.19	+23	04	56.8		400
1988	XR	*	1988	12	03.60422	05	15	38.16	+22	21	22.4	16.5	400
1988	XR		1988	12	03.62083	05	15	37.05	+22	21	21.6		400
1988	XR		1988	12	03.63333	05	15	36.31	+22	21	19.9		400
1988	XR		1988	12	06.56250	05	12	32.94	+22	15	32.2	16.0	400
1988	XR		1988	12	06.57951	05	12	31.80	+22	15	29.7		400
1988	XR		1988	12	06.59236	05	12	30.93	+22	15	29.8		400
1988	XS	*	1988	12	03.60422	05	18	09.37	+24	16	09.2	16	400
1988	XS		1988	12	03.62083	05	18	08.37	+24	16	02.7		400
1988	XS		1988	12	03.63333	05	18	07.54	+24	15	59.3		400
1988	XS		1988	12	06.56250	05	15	04.24	+24	00	46.3	16.0	400
1988	XS		1988	12	06.57951	05	15	03.12	+24	00	40.0		400
1988	XS		1988	12	06.59236	05	15	02.41	+24	00	38.5		400
1988	XT	*	1988	12	03.60422	05	20	13.40	+22	56	29.0	16.5	400
1988	XT		1988	12	03.62083	05	20	12.22	+22	56	29.0		400
1988	XT		1988	12	03.63333	05	20	11.57	+22	56	26.4		400
1988	XT		1988	12	06.56250	05	16	54.92	+22	51	30.1	16.5	400
1988	XT		1988	12	06.57951	05	16	53.81	+22	51	28.6		400
1988	XT		1988	12	06.59236	05	16	52.74	+22	51	27.7		400
316			1988	11	14.59447	04	28	48.71	+18	33	45.9	12.5	400
316			1988	11	14.61183	04	28	47.88	+18	33	44.2		400
316			1988	11	14.62606	04	28	47.21	+18	33	42.5		400
397			1988	11	13.55419	04	09	26.94	+16	48	45.3	12.0	400
397			1988	11	13.56947	04	09	26.09	+16	48	35.1		400
397			1988	11	13.58266	04	09	25.52	+16	48	28.0		400
569			1988	12	06.56250	05	13	18.24	+24	39	57.7	12.0	400
569			1988	12	06.57951	05	13	17.28	+24	39	56.5		400
569			1988	12	06.59236	05	13	16.41	+24	39	54.9		400
609			1988	11	13.49169	03	54	03.77	+14	25	18.3	14.5	400
609			1988	11	13.50627	03	54	03.09	+14	25	06.5		400
722			1988	11	16.58264	04	00	38.43	+23	00	01.3	15.0	400
722			1988	11	16.60694	04	00	36.56	+23	00	02.6		400
722			1988	11	16.62778	04	00	34.97	+23	00	01.8		400
846			1988	12	03.47361	03	34	09.56	+19	22	46.2	14.0	400
846			1988	12	03.49792	03	34	08.50	+19	22	43.4		400
846			1988	12	03.51875	03	34	07.47	+19	22	40.6		400
897			1988	12	03.60422	05	19	33.94	+23	10	56.4	13.5	400
897			1988	12	03.62083	05	19	32.86	+23	10	50.4		400
897			1988	12	03.63333	05	19	32.07	+23	10	45.5		400
897			1988	12	06.56250	05	16	26.12	+22	53	41.5	13.0	400
897			1988	12	06.57951	05	16	25.06	+22	53	37.0		400
897			1988	12	06.59236	05	16	24.13	+22	53	30.3		400
1311			1988	12	02.47778	04	55	21.41	+21	55	59.2	14.5	400
1311			1988	12	02.49375	04	55	20.31	+21	55	56.7		400
1311			1988	12	02.50625	04	55	19.47	+21	55	54.4		400
1311			1988	12	03.56042	04	54	11.73	+21	52	37.5	14.5	400
1311			1988	12	03.57500	04	54	10.81	+21	52	36.2		400
1311			1988	12	03.58750	04	54	09.92	+21	52	33.7		400
2258			1988	11	15.58194	03	52	36.47	+22	30	53.0	14.5	400

2258		1988	11	15.60625	03	52	34.97	+22	30	50.2		400
2258		1988	11	15.62639	03	52	33.93	+22	30	47.5		400
2258		1988	11	16.58264	03	51	38.70	+22	27	58.8	15	400
2258		1988	11	16.60694	03	51	37.23	+22	27	54.2		400
2258		1988	11	16.62778	03	51	35.95	+22	27	51.9		400
2313		1988	12	03.60422	05	18	43.96	+21	41	34.5	16.0	400
2313		1988	12	03.62083	05	18	42.81	+21	41	33.0		400
2313		1988	12	03.63333	05	18	41.96	+21	41	30.6		400
2511		1988	11	13.49169	03	53	16.99	+13	31	52.6	16	400
2511		1988	11	13.50627	03	53	16.17	+13	31	51.2		400
2511		1988	11	16.54514	03	49	53.35	+13	29	34.3	16.0	400
2511		1988	11	16.55903	03	49	52.25	+13	29	34.9		400
2511		1988	11	16.57153	03	49	51.42	+13	29	34.0		400
3138		1988	11	14.59447	04	27	53.20	+19	28	10.4	16	400
3138		1988	11	14.61183	04	27	52.12	+19	28	04.5		400
3138		1988	11	14.62606	04	27	51.19	+19	27	59.5		400

413 Siding Spring
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Measurer R. H. McNaught
1.2-m Schmidt and (1) Uppsala Southern Schmidt

1976	WC	1988	02	18.61153	11	30	29.37	-00	10	05.8	16		413
1976	WC	1988	02	18.68097	11	30	27.03	-00	08	22.5			413
1979	VA	1979	06	15.61153	17	55	43.93	-24	11	10.9	17		413
1979	VA	1979	06	15.62194	17	55	44.02	-24	11	07.9			413
1979	VA	1979	08	15.37433	16	34	38.69	-17	31	26.9	16		413
1979	VA	1979	08	15.41947	16	34	38.18	-17	31	10.0			413
1987	OA	1987	07	18.54755	19	47	09.97	+09	29	48.5	17.5		413
1987	OA	1987	07	18.59963	19	47	01.36	+09	30	48.9		F	413
1987	QB	1987	05	31.61351	17	33	34.69	-10	31	02.9	18.5	F	413
1987	QB	1987	05	31.66559	17	33	36.90	-10	30	34.2		F	413
1987	QB	1987	08	26.61281	22	49	46.20	-07	41	23.3	17		413
1987	QB	1987	08	26.65448	22	49	53.74	-07	41	34.4			413
1987	SB	1987	10	22.45579	23	55	34.91	-06	26	42.5	17		413
1987	SB	1987	10	22.52176	23	55	32.10	-06	26	41.6			413
1988	CL1	1988	02	20.60191	10	42	02.36	-02	17	37.2	17.5		413
1988	CL1	1988	02	20.66788	10	41	59.50	-02	17	12.2			413
1988	DA	1988	05	11.37103	10	41	12.50	+08	06	52.6	17.5		413
1988	DA	1988	05	11.45436	10	41	16.04	+08	06	17.7			413
1988	DO	1986	10	04.46763	22	32	46.65	+02	38	36.0	18	E	413
1988	DO	1986	10	04.49888	22	32	45.46	+02	38	26.3		E	413
1988	EK1	1988	02	18.61153	11	30	07.46	-01	32	49.4	15.5		413
1988	EK1	1988	02	18.68097	11	30	03.82	-01	32	23.8			413
1988	EK1	1988	05	11.37103	10	51	10.57	+05	17	43.0	17	E	413
1988	EK1	1988	05	11.45436	10	51	12.45	+05	17	39.7		E	413
1988	FJ	1988	05	11.37103	10	46	10.00	+02	25	31.1	17		413
1988	FJ	1988	05	11.45436	10	46	12.22	+02	24	26.8			413
1988	FM1	1988	02	18.61153	11	17	23.61	+00	12	07.9	17.5		413
1988	FM1	1988	02	18.68097	11	17	20.46	+00	12	15.1			413
1988	GF	1988	04	12.54375	12	48	56.93	-16	38	53.9	16		413
1988	GF	1988	04	12.61319	12	48	53.48	-16	38	09.2			413
1988	RO1	1988	11	02.48464	00	54	29.96	-08	52	58.9	18		413
1988	RO1	1988	11	02.54020	00	54	31.99	-08	53	07.7			413
724		1983	06	14.52340	16	19	49.89	-08	28	45.7	18		413
724		1983	06	14.56507	16	19	47.82	-08	28	38.2			413

724	1984 11 14.42984	00 34 09.93	+01 15 14.2		16		413
724	1984 11 14.48192	00 34 10.39	+01 14 49.8				413
724	1987 05 31.61351	17 28 56.15	-08 53 53.7		18.5	V	413
724	1987 05 31.66559	17 28 53.34	-08 53 40.2			V	413

494 Stakenbridge
B. Manning, Moonrakers, Stakenbridge, Churchill, Kidderminster, Worcs. DY10 3LS, England

504	1988 12 04.84791	03 27 47.18	+03 16 39.2		13	V	494
504	1988 12 04.87113	03 27 45.94	+03 16 42.3				494

552 San Vittore
E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy
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Measurers C. Vacchi, V. Goretti, E. Colombini
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1988 QU	1988 08 17.92917	21 43 35.79	-11 36 17.1		16.8		552
1988 QU	1988 08 17.95556	21 43 34.63	-11 36 34.9		16.8		552
1988 QU	1988 08 18.95764	21 42 47.78	-11 47 10.5		16.8		552
1988 QU	1988 08 18.97361	21 42 47.06	-11 47 20.3		16.8		552
1988 VY1	1988 11 26.88056	02 48 25.37	+18 46 08.5		16.0		552
1988 VY1	1988 11 26.89722	02 48 24.53	+18 46 01.8		16.0		552
1988 VY1	1988 11 27.83125	02 47 39.92	+18 40 06.5		16.0		552
1988 VY1	1988 11 27.84931	02 47 39.04	+18 39 59.9		16.0		552
1988 VY1	1988 12 07.81389	02 40 48.28	+17 40 33.2		16.5		552
1988 VY1	1988 12 07.83542	02 40 47.57	+17 40 26.2		16.5		552
1988 XS	1988 12 09.91319	05 11 33.55	+23 42 53.2		15.7		552
1988 XS	1988 12 09.93958	05 11 31.80	+23 42 44.8		15.7		552
1988 XS	1988 12 10.94653	05 10 28.63	+23 37 20.4		15.7		552
1988 XS	1988 12 10.96597	05 10 27.28	+23 37 15.4		15.7		552
1988 XT	1988 12 09.91319	05 13 04.12	+22 45 30.7		16.8		552
1988 XT	1988 12 09.93958	05 13 02.27	+22 45 25.7		16.8		552
1988 XT	1988 12 10.90000	05 11 55.49	+22 43 38.1		16.8		552
1988 XT	1988 12 10.92083	05 11 54.00	+22 43 35.7		16.8		552

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

1986 EL1	1988 11 11.92014	03 50 02.23	+21 08 40.1		16.5		567
1986 EL1	1988 11 11.93403	03 50 01.32	+21 08 38.4				567

571 Cavriana
L. Lai, Via Mantovana 130, I-37062 Dossobuono (Verona), Italy
Observers L. Lai, I. Rocchetti, M. Ruzza, G. Vesentini
0.4-m reflector
SAOC

879	1986 11 25.94896	02 34 13.46	+30 17 33.5				571
879	1986 11 28.88924	02 32 20.44	+29 40 59.6				571

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

249	1988 11 04.80332	03 16 14.23	+37 32 00.7				573
249	1988 11 04.82080	03 16 12.94	+37 32 01.3				573
546	1988 11 03.79256	02 28 29.25	+23 44 39.9				573
546	1988 11 03.81091	02 28 27.95	+23 44 40.9				573
604	1988 11 04.78255	02 05 50.95	+16 09 08.7				573
604	1988 11 04.79702	02 05 50.23	+16 09 06.7				573

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

1953	TC	1988	09	11.43229	02	26	48.11	+15	12	52.5	657
1977	SN	1988	09	12.36674	01	17	07.55	-01	18	50.0	657
1977	SN	1988	09	12.41882	01	17	05.26	-01	19	06.7	657
1979	YM8	1988	10	11.23056	01	38	04.77	+33	09	30.5	657
1979	YM8	1988	10	11.28021	01	38	02.24	+33	09	20.9	657
1986	CK1	1988	09	12.34937	00	57	31.27	+16	44	37.0	657
200		1988	09	08.24000	23	26	34.62	+01	48	27.6	657
200		1988	09	08.31500	23	26	30.53	+01	48	17.5	657
200		1988	09	13.25910	23	22	04.83	+01	35	55.1	657
200		1988	09	13.33757	23	22	00.48	+01	35	42.8	657
360		1988	07	31.26042	16	32	55.88	-10	57	16.4	657
533		1988	09	08.29382	00	11	46.24	+01	46	07.5	657
533		1988	09	08.37056	00	11	43.22	+01	45	40.2	657
533		1988	09	13.31604	00	08	27.49	+01	15	00.2	657
533		1988	09	13.39729	00	08	23.95	+01	14	29.1	657
712		1988	09	12.24549	22	08	16.17	+10	29	23.3	657
954		1988	09	13.31604	00	10	08.07	+00	36	32.3	657
954		1988	09	13.39729	00	10	04.57	+00	36	08.7	657
3427		1988	09	13.25910	23	27	18.54	+00	13	15.2	657
3427		1988	09	13.33757	23	27	13.99	+00	12	53.1	657
3908		1988	08	23.32993	21	58	54.55	+00	19	46.9	657
3908		1988	08	23.36396	21	58	54.62	+00	20	30.3	657
3908		1988	08	24.38687	21	59	07.44	+00	42	33.4	657
3908		1988	08	24.40701	21	59	07.52	+00	43	00.4	657
3908		1988	09	02.23264	22	02	15.91	+04	26	46.9	657
3908		1988	09	03.26111	22	02	49.81	+04	57	40.6	657
3908		1988	09	03.28437	22	02	50.43	+04	58	23.5	657
3908		1988	09	04.26458	22	03	26.59	+05	28	54.0	657
3908		1988	09	04.29514	22	03	27.25	+05	29	52.9	657
3908		1988	09	12.24549	22	11	15.18	+10	27	22.5	657
3908		1988	09	14.25875	22	14	21.54	+12	00	02.2	657
3908		1988	09	14.28306	22	14	23.46	+12	01	12.1	657
3908		1988	10	10.33264	01	11	03.12	+46	01	14.9	657

675 Palomar
J. Gibson, OAA Corporation and Jet Propulsion Laboratory, MS 238-332, Pasadena, CA 91109, U.S.A. (1)
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Observers R. Coker (2, S), 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), C. Mikolajczak (2, S), J. Mueller (7, L), J. Phinney (7, L), B. Roman (2, S), C. Shoemaker (3, S), E. Shoemaker (3, S)
Measurers R. Coker (2), J. Gibson (1, 7), E. Majkowski (2), C. Mikolajczak (2), J. Mueller (7), B. Roman (2), T. Rodriquez (3), C. Shoemaker (3), C. J. van Houten (4), I. van Houten-Groeneveld (4), R. M. West (5)
1.5-m reflector + CCD (C), 1.2-m (L) and 0.46-m (S) Schmidt telescopes

1955	HY	*	1955	04	18.21389	10	43	11.46	-00	30	39.9	5 675
1955	HY		1955	04	18.23889	10	43	11.01	-00	30	26.9	18.0 5 675

1977	RL		1988	11	13.30625	02	59	56.14	+18	18	30.1	17.0	2 675
1977	RL		1988	11	13.33281	02	59	52.30	+18	19	00.1		2 675
1988	QC		1988	09	10.35330	23	23	54.42	-11	33	22.2	18.0	3 675
1988	QC		1988	09	12.38177	23	24	22.64	-12	07	08.4		3 675
1988	QC		1988	10	07.26823	23	33	10.65	-17	10	49.1	18.5	3 675
1988	QC		1988	10	09.27170	23	34	22.82	-17	21	56.9		3 675
1988	RA		1988	10	13.31597	00	16	10.47	+20	22	45.2	15	3 675
1988	RA		1988	10	13.35885	00	16	04.75	+20	23	28.8		3 675
1988	RA		1988	11	04.18576	23	33	24.19	+25	32	09.6	16.3	3 675
1988	RA		1988	11	06.24063	23	30	24.33	+25	55	24.7		3 675
1988	RX		1988	10	08.20998	22	50	32.61	-14	39	04.1	18.2	3 675
1988	RX		1988	10	10.21059	22	49	57.36	-14	43	39.1		3 675
1988	RO1		1988	10	08.30781	00	37	34.32	-04	01	56.4	17.6	3 675
1988	RO1		1988	10	10.31076	00	38	53.32	-04	43	05.5		3 675
1988	RO1		1988	10	13.41302	00	40	52.68	-05	40	25.6	18.0	3 675
1988	TA		1988	10	05.32120	01	37	08.04	+12	29	20.7		7 675
1988	TA		1988	10	06.31738	01	34	08.65	+10	59	44.3		7 675
1988	TA		1988	10	19.38146	01	21	23.25	+04	54	34.7		3 675
1988	TA		1988	10	19.38541	01	21	23.11	+04	54	32.5		3 675
1988	TA		1988	10	19.39001	01	21	22.95	+04	54	30.2		3 675
1988	TA		1988	10	20.32623	01	21	06.74	+04	46	35.9		3 675
1988	TA		1988	10	20.33124	01	21	06.55	+04	46	33.3		3 675
1988	TA		1988	10	20.33536	01	21	06.41	+04	46	31.5		3 675
1988	TA		1988	10	21.37178	01	20	49.11	+04	38	48.9		3 675
1988	TA		1988	10	21.37597	01	20	48.98	+04	38	46.9		3 675
1988	TA		1988	10	21.38135	01	20	48.82	+04	38	44.7		3 675
1988	TA		1988	10	21.38866	01	20	48.60	+04	38	41.4		3 675
1988	TA		1988	10	22.31939	01	20	37.08	+04	32	39.3		3 675
1988	TA		1988	10	22.32485	01	20	36.90	+04	32	37.0		3 675
1988	TA		1988	10	22.32943	01	20	36.78	+04	32	35.3		3 675
1988	TV2		1988	11	05.33837	02	00	37.48	+21	29	18.7	17.2	3 675
1988	TV2		1988	11	06.38559	02	00	10.95	+21	21	17.1		3 675
1988	TW2		1988	09	12.48056	01	20	16.85	+42	45	38.9	17.3	3 675
1988	TW2		1988	09	12.50556	01	20	15.91	+42	45	40.6		3 675
1988	TY2	*	1988	10	09.34115	00	51	38.43	+32	14	51.9	18.0	3 675
1988	TY2		1988	10	11.33160	00	48	22.03	+32	20	57.7		3 675
1988	TZ2		1988	09	14.28489	22	58	58.91	-18	28	28.8	17	3 675
1988	TZ2		1988	09	14.31770	22	58	57.80	-18	28	33.1		3 675
1988	TZ2	*	1988	10	07.25000	22	48	36.49	-18	58	51.8	18.0	3 675
1988	TZ2		1988	10	08.18438	22	48	16.90	-18	59	01.5		3 675
1988	TZ2		1988	10	09.25260	22	47	55.32	-18	59	08.5		3 675
1988	TZ2		1988	10	10.21059	22	47	36.45	-18	59	06.6		3 675
1988	VG2		1988	11	12.34774	03	43	30.46	+07	21	04.1	15.0	2 675
1988	VG2		1988	11	13.38472	03	42	44.79	+07	07	27.6		2 675
1988	VN2	*	1988	11	12.24253	02	33	04.49	+00	58	21.1	17.0	2 675
1988	VN2		1988	11	13.27170	02	32	14.07	+00	59	58.7		2 675
1988	VO2	*	1988	11	12.30208	03	17	57.85	+30	37	35.1	16.5	2 675
1988	VO2		1988	11	13.37274	03	16	50.96	+30	31	21.7		2 675
1988	VP2	*	1988	11	12.30208	03	42	28.08	+29	54	21.1	17.0	2 675
1988	VP2		1988	11	13.37274	03	41	10.69	+29	53	42.8		2 675
1988	VQ2	*	1988	11	12.33958	03	40	23.22	+17	46	31.8	16.5	2 675
1988	VQ2		1988	11	13.40330	03	39	02.97	+17	52	41.5		2 675
1988	VR2	*	1988	11	13.41597	04	27	40.68	+09	52	11.8	16.0	2 675
1988	VR2		1988	11	14.43976	04	26	51.36	+09	55	48.2		2 675
1988	VS2	*	1988	11	13.41597	04	28	17.57	+10	31	51.0	16.5	2 675
1988	VS2		1988	11	14.43976	04	27	25.96	+10	21	43.3		2 675
1988	VW3	*	1988	11	12.45035	04	05	57.63	+11	07	14.7	16.5	2 675
1988	VW3		1988	11	13.43976	04	05	10.01	+11	01	58.1		2 675

1988	VX3	*	1988	11	12.45035	04	24	49.30	+07	59	49.4	15.5	2 675
1988	VX3		1988	11	13.43976	04	24	03.19	+07	57	11.1		2 675
1988	VN4		1988	10	08.41649	01	50	38.86	+33	55	16.0	18.5	3 675
1988	VN4		1988	10	08.44219	01	50	38.26	+33	54	52.7		3 675
1988	VN4	*	1988	11	04.25694	01	36	14.86	+20	48	48.7	17.5	3 675
1988	VN4		1988	11	04.28767	01	36	13.69	+20	47	29.8		3 675
1988	VN4		1988	11	09.32431	01	34	10.90	+17	05	28.3		3 675
1988	VN4		1988	11	09.37344	01	34	09.61	+17	03	15.0		3 675
1988	VP4		1988	09	13.44930	01	22	48.62	+30	05	30.3		3 675
1988	VP4		1988	09	13.49618	01	22	46.48	+30	05	48.0		3 675
1988	VP4		1988	10	11.30243	00	46	18.30	+31	28	09.7	18.2	3 675
1988	VP4		1988	10	11.33438	00	46	14.44	+31	28	03.6		3 675
1988	VP4	*	1988	11	04.18576	23	58	08.01	+27	26	57.1	17.8	3 675
1988	VP4		1988	11	04.21267	23	58	05.01	+27	26	29.8		3 675
1988	VP4		1988	11	06.24063	23	54	26.07	+26	52	36.0		3 675
1988	VP4		1988	11	06.26875	23	54	23.14	+26	52	08.2		3 675
1988	VQ4	*	1988	11	12.48420	04	56	10.55	+07	21	03.4	16.0	2 675
1988	VQ4		1988	11	13.49740	04	55	30.34	+07	16	53.2		2 675
1988	VR4	*	1988	11	12.48420	04	56	16.09	+01	45	58.8	16.0	2 675
1988	VR4		1988	11	13.49740	04	55	37.00	+01	38	12.2		2 675
1988	VS4		1988	10	07.36797	01	52	35.15	+28	07	41.7	17.2	3 675
1988	VS4		1988	10	08.41649	01	51	37.07	+27	56	01.2		3 675
1988	VS4	*	1988	11	04.25694	01	25	15.64	+20	57	34.7	17.8	3 675
1988	VS4		1988	11	09.32431	01	21	23.98	+19	27	10.9		3 675
1988	VT4		1988	10	08.41649	01	42	06.26	+31	45	03.4	17.5	3 675
1988	VT4		1988	10	10.41892	01	40	47.35	+31	01	19.8		3 675
1988	VT4		1988	10	11.41441	01	40	07.03	+30	38	49.4		3 675
1988	VT4	*	1988	11	04.25694	01	25	26.38	+20	10	40.6	17.8	3 675
1988	VT4		1988	11	09.32431	01	23	42.65	+17	56	46.4		3 675
1988	VU4	*	1988	11	12.31788	03	40	47.42	+06	41	25.0	16.0	2 675
1988	VU4		1988	11	13.38472	03	39	52.34	+06	31	33.7		2 675
1988	VV4	*	1988	11	12.31788	03	50	26.82	+09	45	24.0	17.0	2 675
1988	VV4		1988	11	13.38472	03	49	20.94	+09	43	21.9		2 675
1988	XB		1988	12	08.45434	07	29	50.14	+24	55	38.4		2 675
4271	T-3		1977	10	07.28125	01	31	27.00	+01	04	00.6		4 675
4271	T-3		1977	10	11.30000	01	29	19.02	+00	54	19.3		4 675
4271	T-3		1977	10	11.36771	01	29	16.78	+00	54	09.6		4 675
4271	T-3		1977	10	12.29826	01	28	46.78	+00	51	57.6		4 675
4271	T-3		1977	10	12.36441	01	28	44.54	+00	51	48.4		4 675
4271	T-3	*	1977	10	16.28368	01	26	37.53	+00	42	56.3	17.1	4 675
4271	T-3		1977	10	16.34931	01	26	35.33	+00	42	48.4		4 675
4271	T-3		1977	10	17.28628	01	26	04.90	+00	40	44.6		4 675
4271	T-3		1977	10	17.35313	01	26	02.61	+00	40	36.5		4 675
4271	T-3		1977	10	21.38698	01	23	52.12	+00	32	18.0		4 675
4271	T-3		1977	10	21.44705	01	23	50.15	+00	32	09.6		4 675
4271	T-3		1977	10	22.38542	01	23	20.10	+00	30	21.2		4 675
4271	T-3		1977	10	22.44878	01	23	18.02	+00	30	16.7		4 675
5191	T-3	*	1977	10	16.29444	01	44	25.74	-04	19	15.6	18.2	4 675
5191	T-3		1977	10	16.36024	01	44	23.72	-04	19	29.8		4 675
5191	T-3		1977	10	17.29688	01	43	56.02	-04	22	45.3		4 675
5191	T-3		1977	10	17.36372	01	43	54.04	-04	22	59.4		4 675
5191	T-3		1977	10	22.37274	01	41	26.26	-04	39	37.4		4 675
5191	T-3		1977	10	22.43872	01	41	24.46	-04	39	50.6		4 675
724			1953	08	16.36632	21	58	31.55	+06	33	38.4		5 675
724			1953	08	16.38958	21	58	30.40	+06	33	30.1	17.0	5 675
724			1955	04	18.23889	10	42	00.02	-00	02	01.2	19.0	5 675
3908			1988	10	20.36706	03	55	28.07	+48	26	50.3		1 675
3908			1988	10	20.37144	03	55	31.38	+48	26	42.6		1 675

3908		1988	10	20.37431	03	55	33.54	+48	26	37.6	1 675
3908		1988	10	20.37721	03	55	35.74	+48	26	32.3	1 675
3908		1988	10	20.37905	03	55	37.12	+48	26	29.0	1 675
3908		1988	10	20.38170	03	55	39.12	+48	26	24.4	1 675
3908		1988	10	20.38652	03	55	42.77	+48	26	15.7	1 675
3908		1988	10	21.32247	04	08	12.66	+47	54	04.3	1 675
3908		1988	10	21.33105	04	08	18.76	+47	53	47.6	1 675
3908		1988	10	21.33788	04	08	23.60	+47	53	34.2	1 675
3908		1988	10	21.54046	04	10	45.95	+47	45	50.6	1 675
3908		1988	10	21.54258	04	10	47.47	+47	45	45.2	1 675
3908		1988	10	21.54409	04	10	48.53	+47	45	41.1	1 675
3908		1988	10	21.54564	04	10	49.63	+47	45	37.2	1 675
3908		1988	10	22.34269	04	20	47.18	+47	14	37.4	1 675
3908		1988	10	22.34714	04	20	50.07	+47	14	27.7	1 675
3908		1988	10	22.34862	04	20	51.04	+47	14	24.2	1 675
3908		1988	10	22.35106	04	20	52.64	+47	14	18.9	1 675
3908		1988	10	22.55079	04	23	01.90	+47	05	50.1	1 675
3908		1988	10	22.55182	04	23	02.56	+47	05	47.2	1 675
3908		1988	10	22.55303	04	23	03.38	+47	05	43.7	1 675
3908		1988	10	22.55432	04	23	04.20	+47	05	40.1	1 675

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Observers R. E. McCrosky, C.-Y. Shao
1.5-m reflector
AC

1932	EO	1988	10	07.11499	22	37	30.01	-10	56	11.7	801
1932	EO	1988	10	13.10229	22	34	58.29	-10	53	48.6	801
1932	EO	1988	11	10.07817	22	33	24.14	-09	50	05.0	801
1932	EO	1988	11	12.97782	22	34	11.31	-09	38	49.9	B 801
1933	OD	1988	11	10.29127	03	06	14.46	+11	12	02.5	801
1933	OD	1988	11	12.21824	03	04	40.41	+11	03	32.2	801
1949	GH	1988	10	12.10114	21	54	27.45	+00	39	49.6	801
1949	GH	1988	11	07.08974	22	01	31.17	-02	01	22.0	w 801
1949	PL	1988	07	14.25943	19	48	40.50	-18	35	18.8	801
1950	JB	1988	11	11.42133	08	59	45.14	+15	12	36.2	801
1950	JB	1988	11	12.40962	09	00	32.32	+15	12	46.3	801
1953	RG	1988	10	12.29621	01	28	53.12	+20	30	36.4	801
1953	RG	1988	11	08.14185	01	11	18.55	+16	04	40.6	w 801
1954	UN2	1988	11	12.26670	03	32	09.44	+16	25	37.6	801
1962	OB	1988	11	08.09003	01	01	23.26	+26	54	28.2	801
1970	OF	1988	10	13.32090	02	14	09.63	+25	40	40.5	801
1970	OF	1988	11	08.19680	01	51	08.65	+24	11	23.3	801
1970	WC	1988	11	12.17399	01	12	03.58	+11	54	15.0	801
1974	RG1	1988	11	10.26935	02	17	23.95	+28	00	41.4	801
1976	SF	1987	08	24.25288	21	55	49.96	-12	41	34.3	801
1976	SF	1988	11	08.38167	05	11	04.28	+20	50	12.3	p 801
1976	SF	1988	11	11.35874	05	09	23.88	+20	47	10.6	801
1976	YW2	1988	11	11.40371	08	23	31.09	+20	41	00.9	801
1976	YW2	1988	11	12.38166	08	23	58.70	+20	44	02.3	801
1977	DY8	1988	10	06.32594	02	34	46.09	+14	51	06.2	801
1977	DY8	1988	11	11.24905	01	58	38.98	+13	17	54.7	W 801
1977	SN	1988	10	06.24077	00	55	59.07	-03	25	28.4	801
1978	TQ8	1988	11	08.33910	04	11	51.05	+17	19	54.1	801
1978	TQ8	1988	11	11.31212	04	09	03.99	+17	08	29.2	801
1979	YM8	1988	10	12.33435	01	37	07.30	+33	05	50.6	801
1979	YM8	1988	11	08.16474	01	15	32.88	+29	55	55.7	801

1980	RC1	1988	10	12.31207	01	30	56.76	+16	00	53.9	801
1980	RC1	1988	11	08.11507	01	10	43.41	+13	20	42.1	p 801
1981	QN	1988	11	11.27271	03	20	29.67	+22	56	54.2	801
1981	QN	1988	11	12.23858	03	19	29.52	+22	49	46.3	801
1981	QD2	1988	10	13.25182	00	32	13.31	-01	12	28.3	801
1981	WQ	1988	11	08.31620	04	00	57.19	+20	46	43.2	801
1981	WQ	1988	11	11.29501	03	57	47.05	+20	52	26.8	801
1981	WP1	1987	04	27.27707	15	06	06.53	-11	48	29.6	801
1981	WP1	1988	10	10.35609	02	40	09.40	+05	53	41.1	801
1981	WP1	1988	11	12.19606	02	07	55.97	+05	38	34.2	w 801
1982	PL	1988	10	06.38914	03	05	51.75	+18	44	19.2	801
1982	PL	1988	11	08.24878	02	41	03.13	+17	25	43.0	801
1982	QS3	1988	11	10.32649	04	17	55.13	+13	34	56.2	801
1982	QS3	1988	11	11.33512	04	17	10.29	+13	29	37.7	801
1983	LM	1988	10	06.34756	02	44	11.67	+17	44	41.3	801
1983	LM	1988	11	08.22297	02	17	49.07	+13	07	49.8	801
1983	XD	1985	03	25.12758	09	02	53.26	+09	59	16.4	801
1983	XD	1987	06	24.25618	17	58	49.81	-21	06	51.3	801
1983	XD	1988	10	13.29639	00	53	24.25	+13	23	25.3	801
1983	XD	1988	11	07.11452	00	38	50.57	+10	52	16.1	801
1984	BL	1988	11	07.24376	03	27	03.93	+16	48	47.3	801
1984	BL	1988	11	08.29590	03	26	11.99	+16	46	26.7	801
1984	SX	1988	11	10.22283	00	44	58.97	+08	18	18.2	801
1984	SB6	1988	10	14.32489	03	17	58.76	+13	17	33.8	801
1984	SB6	1988	11	08.27003	02	56	42.81	+12	03	36.3	801
1985	CX	1988	11	11.38326	05	39	43.94	+19	37	20.0	801
1985	CX	1988	11	12.34538	05	39	10.05	+19	40	02.1	801
1985	UT4	1988	11	10.10396	23	16	15.12	-06	26	11.8	801
1987	SB5	1988	11	12.32605	05	26	58.95	+19	52	41.9	801
1988	NF	1988	11	05.00341	00	24	07.20	+42	58	54.0	G 801
1988	NF	1988	11	10.24868	00	30	51.74	+39	49	27.4	801
1988	RE	1988	11	12.14567	01	08	22.47	-10	26	32.8	W 801
1988	XB	1988	12	08.28018	07	31	07.75	+24	49	51.4	801
1988	XB	1988	12	09.32991	07	23	37.79	+25	21	58.8	801
428		1988	11	12.17399	01	12	35.74	+11	50	34.7	801
951		1988	11	13.00522	19	45	46.18	-17	40	58.9	S 801
1980		1988	11	04.97239	19	46	48.76	+21	57	00.4	T 801
1980		1988	11	08.01010	20	02	08.42	+21	30	57.8	801

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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

1988	VO	1988	11	12.71875	02	50	43.6	+21	12	13	16.5 875
1988	VO	1988	11	12.74317	02	50	40.6	+21	12	41	875
1988	VP	1988	11	12.63681	03	33	11.99	+18	52	14.7	16 875
1988	VP	1988	11	12.65764	03	33	10.60	+18	52	17.0	875
1988	VP	1988	11	14.59514	03	30	54.17	+18	58	32.3	16 875
1988	VP	1988	11	14.61597	03	30	52.72	+18	58	36.8	875
1988	VS	1988	11	12.67986	03	34	02.44	+17	52	55.0	17 875
1988	VS	1988	11	12.70069	03	34	01.61	+17	52	50.4	875
1988	VH1	1988	11	12.56609	02	59	03.29	+18	43	54.9	15 875
1988	VH1	1988	11	12.58692	02	59	02.25	+18	43	45.4	875
1988	VH1	1988	12	01.49444	02	48	04.25	+16	20	53.6	16 875
1988	VH1	1988	12	01.51458	02	48	03.87	+16	20	48.4	875
1988	VQ1	1988	11	14.55341	02	34	35.10	+15	42	41.7	17 875
1988	VQ1	1988	11	14.56042	02	34	34.32	+15	42	44.0	875

1988	VL2		1988	11	30.60764	03	24	47.66	+17	18	13.8	17	875
1988	VL2		1988	11	30.62569	03	24	46.80	+17	18	03.1		875
1988	VL2		1988	12	01.53194	03	24	00.72	+17	09	51.1	17	875
1988	VL2		1988	12	01.55486	03	23	59.46	+17	09	38.2		875
1988	VM2		1988	11	30.56319	03	27	02.16	+23	14	51.2		875
1988	VQ2		1988	11	15.56944	03	36	19.53	+18	04	53.4	15.5	875
1988	VQ2		1988	11	15.58958	03	36	17.90	+18	05	00.6		875
1988	VQ2		1988	11	15.59664	03	36	17.38	+18	05	01.3		875
1988	VB3		1988	11	15.60764	03	30	43.81	+14	03	44.6	16	875
1988	VB3		1988	11	15.62500	03	30	42.81	+14	03	38.9		875
1988	VB3		1988	11	15.63206	03	30	42.47	+14	03	35.1		875
1988	VZ4	*	1988	11	15.56944	03	45	39.27	+18	06	33.2	16.5	875
1988	VZ4		1988	11	15.58958	03	45	38.07	+18	06	30.0		875
1988	VZ4		1988	11	29.50694	03	34	08.18	+17	23	29.0	17	875
1988	VZ4		1988	11	29.53542	03	34	06.77	+17	23	23.3		875
1988	WC	*	1988	11	29.50694	03	26	20.58	+17	34	03.7	16	875
1988	WC		1988	11	29.51458	03	26	20.01	+17	33	51.7		875
1988	WC		1988	11	29.53542	03	26	18.54	+17	33	09.3		875
1988	WC		1988	11	30.60764	03	25	07.96	+16	57	50.0	16	875
1988	WC		1988	11	30.62569	03	25	06.68	+16	57	14.9		875
1988	WC		1988	12	01.53194	03	24	08.77	+16	27	17.0	16	875
1988	WC		1988	12	01.55486	03	24	07.17	+16	26	34.7		875

877 Okutama
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

1954	UN2		1988	11	05.65799	03	37	58.12	+17	07	45.8		877
1954	UN2		1988	11	05.67535	03	37	57.23	+17	07	39.1		877
1975	VP		1988	11	07.71215	04	06	30.7	+13	56	53		877
1975	VP		1988	11	07.72951	04	06	29.9	+13	56	50		877
1986	EL1		1988	11	05.69063	03	55	53.6	+21	12	38	N	877
1986	EL1		1988	11	05.70799	03	55	52.8	+21	12	40	N	877
1988	VE2		1988	11	09.63507	03	33	26.01	+12	40	43.4		877
1988	VE2		1988	11	09.65243	03	33	25.14	+12	40	40.3		877
1988	VE2		1988	11	27.42124	03	18	32.49	+12	12	08.7		877
1988	VE2		1988	11	27.43854	03	18	31.62	+12	12	10.0		877
1988	VG2		1988	11	15.58854	03	41	07.0	+06	39	11		877
1988	VG2		1988	11	15.60972	03	41	05.8	+06	38	54		877
1988	VH2		1988	12	06.58229	03	48	00.89	+17	05	42.6		877
1988	VH2		1988	12	06.60382	03	47	59.2	+17	05	49		877
1988	VH2		1988	12	07.58264	03	47	01.93	+17	09	38.6		877
1988	VH2		1988	12	07.60590	03	47	00.54	+17	09	45.1		877
1988	VJ2		1988	11	30.52674	03	36	12.01	+12	48	52.9		877
1988	VJ2		1988	11	30.54422	03	36	11.28	+12	48	47.9		877
1988	VJ2		1988	12	07.54763	03	33	12.37	+12	11	20.2		877
1988	VJ2		1988	12	07.56528	03	33	11.97	+12	11	16.5		877
1988	VK2		1988	12	06.54896	03	34	35.14	+16	32	52.3		877
1988	VK2		1988	12	06.56632	03	34	34.24	+16	32	54.0		877
1988	VF3		1988	11	08.58889	03	44	38.0	+07	37	08	N	877
1988	VF3		1988	11	08.61146	03	44	37.3	+07	37	07	N	877
1988	VF3	*	1988	11	12.59747	03	41	32.02	+07	20	50.5	16	877
1988	VF3		1988	11	12.61136	03	41	31.25	+07	20	47.4		877
1988	VF3		1988	11	15.58854	03	39	04.98	+07	10	17.5		877
1988	VF3		1988	11	15.60972	03	39	03.85	+07	10	12.6		877
2038			1988	11	09.69896	04	07	31.0	+14	07	51		877
2038			1988	11	09.71631	04	07	29.7	+14	07	54		877

881 Toyota
M. Kizawa, 1458-10, Minami Numagami, Shizuoka 420, Japan
Observer K. Suzuki
Measurers T. Furuta and M. Kizawa
0.31-m f/5.7 reflector

1988 TP		1988 11 12.58681	01 45 14.99	+10 55 20.8			17	F	881
1988 TP		1988 11 12.60590	01 45 14.25	+10 55 17.7				F	881
1988 TP		1988 11 13.55451	01 44 40.87	+10 49 19.7				F	881
1988 TP		1988 11 13.58090	01 44 39.91	+10 49 08.4				F	881
1988 XU	*	1988 12 06.53646	05 24 55.22	+25 04 27.9			16.5		881
1988 XU		1988 12 06.55729	05 24 53.78	+25 04 30.1					881
1988 XU		1988 12 07.56563	05 23 43.33	+25 06 02.8					881
1988 XU		1988 12 07.58299	05 23 41.68	+25 06 04.5					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

1988 US		1988 11 03.57756	03 45 04.00	+25 22 05.7			16	887
1988 US		1988 11 03.59247	03 45 03.26	+25 22 01.2				887
1988 VY4	*	1988 11 13.64807	04 39 46.51	+26 47 14.0			17	887
1988 VY4		1988 11 15.61614	04 38 06.31	+26 46 46.6				887

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

1936 QV		1988 11 06.72500	03 35 48.47	+15 38 03.1			17.5	888
1936 QV		1988 11 06.75764	03 35 46.40	+15 37 52.1				888
1962 OB		1988 11 07.52639	01 01 47.31	+26 58 18.4			17.0	888
1962 OB		1988 11 07.55764	01 01 45.88	+26 58 04.9				888
1962 OB		1988 11 10.55625	00 59 43.04	+26 37 37.3				888
1962 OB		1988 11 10.58889	00 59 41.91	+26 37 24.3				888
1962 OB		1988 11 14.50833	00 57 23.64	+26 10 24.9			17.0	888
1962 OB		1988 11 14.54167	00 57 22.42	+26 10 11.2				888
1969 TP2		1988 11 05.61181	00 52 17.55	-00 59 54.5			17.0	888
1969 TP2		1988 11 05.64444	00 52 16.56	-00 59 55.1				888
1969 TP2		1988 11 13.54028	00 49 53.35	-00 54 06.9			17.0	888
1969 TP2		1988 11 13.57361	00 49 52.95	-00 54 03.4				888
1974 SX1		1988 11 10.62014	04 12 16.66	+30 17 01.9			17.0	888
1974 SX1		1988 11 10.65347	04 12 14.35	+30 17 06.0				888
1976 SF		1988 11 05.73750	05 12 22.78	+20 52 46.2			17.5	888
1976 SF		1988 11 05.76944	05 12 21.83	+20 52 45.2				888
1976 SD3		1988 11 05.67569	02 05 09.03	+13 05 16.4			17.5	888
1976 SD3		1988 11 05.70833	02 05 07.57	+13 05 09.8				888
1976 SD3		1988 11 10.56458	02 01 29.92	+12 50 32.2			17.5	888
1976 SD3		1988 11 10.59722	02 01 28.11	+12 50 25.9				888
1976 SZ9		1988 11 05.74514	05 17 38.87	+27 45 18.0			18.0	888
1976 SZ9		1988 11 05.77778	05 17 37.91	+27 45 21.3				888
1980 YM		1988 11 13.66736	04 12 35.21	+22 35 23.7			17	888
1980 YM		1988 11 13.69792	04 12 33.46	+22 35 14.5				888
1980 YM		1988 11 14.72014	04 11 38.71	+22 30 49.7			17.0	888
1980 YM		1988 11 14.75208	04 11 36.93	+22 30 40.6				888
1981 JD3		1988 11 14.50000	00 33 48.44	-02 13 08.4			17.0	888
1981 SJ7		1988 11 10.62847	04 16 59.60	+28 24 27.7			17.0	888
1981 SJ7		1988 11 10.66181	04 16 57.18	+28 24 20.7				888
1981 TQ1		1988 11 10.54028	00 45 11.96	+11 47 48.3			17.0	888
1981 TQ1		1988 11 10.58125	00 45 10.73	+11 47 39.5				888

1983	XU		1988	11	05.51944	00	53	21.93	+02	52	09.4	17.5	888
1983	XU		1988	11	05.56528	00	53	19.93	+02	52	01.4		888
1984	SX		1988	11	13.53194	00	43	20.19	+08	06	33.9	17.5	888
1984	SX		1988	11	13.56528	00	43	19.29	+08	06	27.2		888
1984	SB6		1988	11	05.68333	02	59	16.70	+12	11	06.8	17.5	888
1984	SB6		1988	11	05.71667	02	59	14.64	+12	11	00.8		888
1985	HV1		1988	11	06.74097	03	55	46.36	+20	05	07.4	17.0	888
1985	HV1		1988	11	06.77361	03	55	44.76	+20	05	03.0		888
1985	JF		1988	11	05.76111	05	28	22.06	+05	20	46.9	18.5	888
1985	JF		1988	11	05.79444	05	28	21.33	+05	20	32.6		888
1986	EL1		1988	11	06.73333	03	54	57.09	+21	12	11.3	16.5	888
1986	EL1		1988	11	06.76597	03	54	55.23	+21	12	09.9		888
1986	EL1		1988	11	11.67361	03	50	16.19	+21	08	54.6	17.0	888
1986	EL1		1988	11	11.70417	03	50	14.30	+21	08	51.4		888
1986	EL1		1988	11	12.67986	03	49	17.40	+21	08	02.0		888
1986	EL1		1988	11	12.71042	03	49	15.50	+21	07	59.7		888
1987	SB5		1988	11	05.75278	05	30	23.88	+20	13	58.1	18.0	888
1987	SB5		1988	11	05.78611	05	30	22.85	+20	13	51.4		888
1988	TG		1988	11	14.51667	01	01	46.10	-03	15	10.9	17.0	888
1988	TG		1988	11	14.55000	01	01	46.46	-03	15	53.4		888
1988	TP1		1988	11	11.53056	00	55	28.56	+03	14	49.1	17.0	888
1988	TP1		1988	11	11.56111	00	55	27.70	+03	14	45.9		888
1988	TQ1		1988	11	11.51458	00	44	46.40	+12	23	11.5	17.5	888
1988	TQ1		1988	11	11.54583	00	44	45.41	+12	23	07.0		888
1988	TR1		1988	11	11.53819	00	58	52.53	+00	12	51.6	17.0	888
1988	TR1		1988	11	11.56944	00	58	52.08	+00	12	38.4		888
1988	VS		1988	11	11.61042	03	34	47.38	+17	57	01.0	17.5	888
1988	VS		1988	11	11.64306	03	34	46.13	+17	56	53.4		888
1988	VS		1988	11	12.62431	03	34	04.96	+17	53	07.5		888
1988	VS		1988	11	12.65694	03	34	03.51	+17	52	59.7		888
1988	VS		1988	11	14.65208	03	32	39.34	+17	45	17.1	17.5	888
1988	VS		1988	11	14.68333	03	32	38.01	+17	45	09.8		888
1988	VT		1988	11	11.52222	00	46	28.73	+11	37	59.9	17.5	888
1988	VT		1988	11	11.55347	00	46	28.12	+11	37	43.6		888
1988	VF1		1988	11	11.60278	03	15	49.63	+20	02	26.1	15.5	888
1988	VF1		1988	11	11.63542	03	15	47.59	+20	02	12.7		888
1988	VV1		1988	11	14.50833	00	57	57.06	+26	03	26.3	17.5	888
1988	VW1		1988	11	14.57500	02	53	23.06	+12	07	29.0	17.0	888
1988	VW1		1988	11	14.60625	02	53	21.41	+12	07	23.4		888
1988	VY1		1988	11	12.60903	03	01	09.31	+20	17	38.5	17.0	888
1988	VY1		1988	11	12.64097	03	01	07.41	+20	17	25.7		888
1988	VY1		1988	11	14.59028	02	59	17.74	+20	05	11.7	17	888
1988	VY1		1988	11	14.59792	02	59	17.53	+20	05	05.0	17.5	888
1988	VY1		1988	11	14.62222	02	59	15.95	+20	04	58.2		888
1988	VY1		1988	11	14.62986	02	59	15.59	+20	04	52.1		888
1988	VM3	*	1988	11	11.58750	02	59	52.52	+20	36	59.6	17.5	888
1988	VM3		1988	11	11.61875	02	59	50.28	+20	36	53.4		888
1988	VM3		1988	11	12.60903	02	58	42.40	+20	32	54.1		888
1988	VM3		1988	11	12.64097	02	58	40.11	+20	32	46.5		888
1988	VM3		1988	11	14.58264	02	56	28.67	+20	24	54.4	17.5	888
1988	VM3		1988	11	14.59028	02	56	28.13	+20	24	53.1		888
1988	VM3		1988	11	14.61458	02	56	26.38	+20	24	46.6		888
1988	VM3		1988	11	14.62222	02	56	25.87	+20	24	44.9		888
1988	VN3	*	1988	11	11.59514	03	06	36.26	+17	06	34.2	17.5	888
1988	VN3		1988	11	11.62708	03	06	34.19	+17	06	19.0		888
1988	VN3		1988	11	12.61667	03	05	35.99	+16	58	44.0		888
1988	VN3		1988	11	12.64931	03	05	33.98	+16	58	29.0		888
1988	VN3		1988	11	14.64375	03	03	37.46	+16	43	02.8	18.0	888
1988	VN3		1988	11	14.67569	03	03	35.61	+16	42	47.6		888

1988	VO3	*	1988	11	11.65833	03	38	31.20	+25	40	39.7	18.0	888
1988	VO3		1988	11	11.68889	03	38	29.23	+25	40	39.4		888
1988	VO3		1988	11	12.63264	03	37	29.68	+25	40	29.9		888
1988	VO3		1988	11	12.66528	03	37	27.50	+25	40	28.6		888
1988	VO3		1988	11	14.65972	03	35	20.71	+25	39	41.1	18.0	888
1988	VO3		1988	11	14.69097	03	35	18.53	+25	39	39.9		888
1988	VP3	*	1988	11	12.60903	02	58	34.75	+20	21	45.4	18.0	888
1988	VP3		1988	11	12.64097	02	58	32.44	+20	21	44.2		888
1988	VP3		1988	11	14.58264	02	56	18.28	+20	21	36.8	18.0	888
1988	VP3		1988	11	14.59028	02	56	17.80	+20	21	37.3		888
1988	VP3		1988	11	14.61458	02	56	15.87	+20	21	35.8		888
1988	VP3		1988	11	14.62222	02	56	15.44	+20	21	36.4		888
1988	VQ3	*	1988	11	12.69514	04	07	12.55	+18	03	25.3	18.0	888
1988	VQ3		1988	11	12.72569	04	07	10.98	+18	03	11.8		888
1988	VQ3		1988	11	14.66736	04	05	29.82	+17	48	58.8	18.5	888
1988	VQ3		1988	11	14.69931	04	05	28.14	+17	48	43.9		888
1988	VR3		1988	12	01.61597	03	51	02.71	+16	14	31.9	17.5	888
1988	VR3		1988	12	01.63958	03	51	01.46	+16	14	30.8		888
1988	VR3		1988	12	03.62778	03	49	13.62	+16	08	41.5	17.5	888
1988	VR3		1988	12	03.66042	03	49	11.77	+16	08	35.1		888
1988	VS3	*	1988	11	13.66736	04	11	00.08	+23	09	21.6	17	888
1988	VS3		1988	11	13.69792	04	10	58.21	+23	09	08.5		888
1988	VS3		1988	11	14.71250	04	10	00.64	+23	01	18.4	17.0	888
1988	VS3		1988	11	14.74444	04	09	58.70	+23	01	04.5		888
1988	VB5	*	1988	11	14.57500	02	51	49.88	+12	27	52.5	17.0	888
1988	VB5		1988	11	14.60625	02	51	48.21	+12	27	33.6		888
1988	VB5		1988	12	01.54583	02	40	34.48	+09	48	24.1	16.5	888
1988	VB5		1988	12	01.60000	02	40	32.87	+09	47	58.9		888
1988	VB5		1988	12	03.55069	02	39	41.35	+09	33	48.6	17.0	888
1988	VB5		1988	12	03.58333	02	39	40.51	+09	33	35.1		888
1988	XB	*	1988	12	05.78264	07	50	46.52	+23	15	50.8	16.0	888
1988	XB		1988	12	05.81389	07	50	30.14	+23	17	11.4		888
1988	XB		1988	12	06.66528	07	43	33.12	+23	52	13.1	16	888
1988	XB		1988	12	06.72639	07	43	02.03	+23	54	38.3		888
1988	XB		1988	12	06.75764	07	42	46.42	+23	55	49.9		888
1988	XB		1988	12	07.69861	07	35	28.16	+24	30	24.3	16	888
1988	XB		1988	12	07.73611	07	35	10.06	+24	31	42.1		888
1988	XG	*	1988	12	01.53750	02	38	06.10	+20	20	03.8	17.0	888
1988	XG		1988	12	01.55347	02	38	05.76	+20	19	59.4		888
1988	XG		1988	12	01.56944	02	38	05.05	+20	19	54.7		888
1988	XG		1988	12	01.60764	02	38	03.81	+20	19	45.6		888
1988	XG		1988	12	03.54236	02	37	02.60	+20	11	14.4	17.0	888
1988	XG		1988	12	03.57569	02	37	01.53	+20	11	05.7		888
1988	XH	*	1988	12	02.56597	03	42	56.49	+30	41	09.0	16	888
1988	XH		1988	12	02.59792	03	42	54.25	+30	41	02.6		888
1988	XH		1988	12	03.55903	03	41	51.53	+30	37	19.8	16.5	888
1988	XH		1988	12	03.59167	03	41	49.18	+30	37	11.9		888
1988	XK	*	1988	12	03.63542	04	27	14.71	+19	18	10.5	18.0	888
1988	XK		1988	12	03.66875	04	27	12.81	+19	18	00.7		888
1988	XK		1988	12	05.58611	04	25	26.78	+19	08	57.9	17.5	888
1988	XK		1988	12	06.67639	04	24	26.71	+19	03	49.9	17.5	888
1988	XK		1988	12	06.70208	04	24	25.28	+19	03	42.3		888
1988	XL	*	1988	12	03.63542	04	27	48.06	+19	12	07.2	18.0	888
1988	XL		1988	12	03.66875	04	27	45.92	+19	11	59.7		888
1988	XL		1988	12	05.58611	04	25	47.14	+19	05	30.3	18.0	888
1988	XL		1988	12	06.67639	04	24	40.20	+19	01	52.1	18.0	888
1988	XL		1988	12	06.70208	04	24	38.54	+19	01	46.3		888
2535	P-L		1988	11	13.54861	00	56	18.12	+02	46	50.8	17.5	888
2535	P-L		1988	11	13.58125	00	56	17.48	+02	46	47.7		888

2538	P-L	1988	11	05.69167	03	30	27.83	+25	05	57.2	18.0	888
2538	P-L	1988	11	05.72500	03	30	25.55	+25	05	57.5		888
186		1988	11	11.52222	00	46	36.27	+11	44	40.0	14	888
186		1988	11	11.55347	00	46	36.03	+11	44	58.1		888
813		1988	11	11.59514	03	08	33.77	+17	08	58.4	15.0	888
813		1988	11	11.62708	03	08	31.39	+17	08	56.7		888
813		1988	11	12.61667	03	07	21.59	+17	08	06.1		888
813		1988	11	12.64931	03	07	19.15	+17	08	05.1		888
1167		1988	11	11.59514	03	07	31.31	+16	58	03.7	15.5	888
1167		1988	11	11.62708	03	07	29.82	+16	57	55.7		888
1167		1988	11	12.61667	03	06	45.68	+16	53	46.3		888
1167		1988	11	12.64931	03	06	44.21	+16	53	38.1		888
2258		1988	11	11.68125	03	56	16.66	+22	41	42.7	16.5	888
2258		1988	11	11.71181	03	56	14.94	+22	41	37.7		888

894 Kiyosato
S. Miyasaka, 3-8-501, 4 Chome, Nagayama, Tama, Tokyo 206, Japan
Observers S. Miyasaka, R. Murofushi, K. Ohgoe, O. Ohgoe,
Y. Sakakibara, N. Sasamuma
Measurers S. Miyasaka, T. Takahata
0.25-m f/4.8 reflector

1955	BG	1988	11	12.54653	01	55	10.49	-08	48	48.8	I	894
1955	BG	1988	11	12.58576	01	55	08.47	-08	48	38.1	G	894
1975	VA9	1988	11	02.56740	04	26	57.35	+37	34	48.5		894
1975	VA9	1988	11	02.60619	04	26	55.77	+37	34	45.7		894
1977	AL1	1988	10	14.58757	02	50	11.00	+01	58	58.6		894
1977	AL1	1988	10	14.61285	02	50	09.88	+01	58	57.2		894
1977	AL1	1988	11	10.50595	02	24	12.17	+01	43	35.0		894
1977	AL1	1988	11	10.54384	02	24	09.76	+01	43	35.9		894
1979	YM8	1988	11	10.49438	01	14	14.55	+29	33	31.3		894
1979	YM8	1988	11	10.53160	01	14	13.20	+29	33	09.9		894
1979	YM8	1988	11	11.42458	01	13	45.67	+29	24	28.9		894
1979	YM8	1988	11	11.45560	01	13	44.77	+29	24	09.1		894
1984	BL	1988	11	02.55524	03	30	47.73	+16	58	44.5		894
1984	BL	1988	11	02.59656	03	30	45.72	+16	58	40.4		894
1988	UO	1988	11	10.59258	02	46	47.23	+20	43	17.2		894
1988	UO	1988	11	10.65116	02	46	43.32	+20	43	16.7		894
1988	UO	1988	11	14.64792	02	42	33.47	+20	41	24.5		894
1988	UO	1988	11	14.67431	02	42	32.00	+20	41	24.5		894

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

1988	VL2		1988	11	09.75139	03	44	31.18	+20	31	34.0	16.5		896
1988	VL2		1988	11	13.75347	03	40	44.60	+19	55	31.1			896
1988	VL2		1988	11	13.77691	03	40	43.12	+19	55	17.4			896
1988	WG	*	1988	11	30.57390	04	58	12.4	+27	17	20	15.2	E	896
1988	WG		1988	12	05.73536	04	52	27.25	+27	47	08.2			896
1988	WG		1988	12	05.76939	04	52	25.10	+27	47	15.9			896
1988	XV	*	1988	12	07.57813	04	38	14.93	+16	46	49.0	16.0	t	896
1988	XV		1988	12	07.60521	04	38	13.42	+16	46	48.0		D	896
1988	XV		1988	12	10.62465	04	34	54.98	+16	48	12.0		D	896
1988	XV		1988	12	10.64583	04	34	53.43	+16	48	11.0		w	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

1933	OD	1988	11	03.63194	03	11	39.29	+11 42 44.2	17	897
1933	OD	1988	11	03.68542	03	11	36.57	+11 42 29.7		897
1936	QV	1988	11	10.49931	03	32	00.95	+15 17 52.5	17	897
1936	QV	1988	11	10.54028	03	31	58.22	+15 17 40.7		897
1936	QV	1988	11	15.50845	03	26	50.47	+14 51 27.7	17	897
1936	QV	1988	11	15.54097	03	26	48.14	+14 51 16.7		897
1953	RG	1988	10	14.50764	01	27	19.65	+20 10 45.1	17	897
1953	RG	1988	10	14.54583	01	27	17.98	+20 10 24.4		897
1954	UN2	1988	11	10.49931	03	33	46.23	+16 37 01.1	16	897
1954	UN2	1988	11	10.54028	03	33	44.06	+16 36 42.6		897
1977	RD7	1988	12	01.49167	04	24	55.66	+24 25 04.5	17	897
1977	RD7	1988	12	01.52986	04	24	53.05	+24 24 59.9		897
1981	WQ	1988	11	11.48889	03	57	34.91	+20 52 49.5	16	897
1981	WQ	1988	11	11.52917	03	57	32.16	+20 52 52.9		897
1982	PL	1988	10	31.51806	02	47	49.26	+17 51 02.0	17	897
1982	PL	1988	10	31.55625	02	47	47.26	+17 50 55.3		897
1983	LM	1988	10	30.49549	02	25	14.92	+14 25 25.7	16	897
1983	LM	1988	10	30.54167	02	25	12.29	+14 25 00.1		897
1984	BL	1988	11	10.49931	03	24	21.78	+16 41 32.1	16	897
1984	BL	1988	11	10.50694	03	24	21.35	+16 41 30.3		897
1984	BL	1988	11	10.54028	03	24	19.62	+16 41 29.4		897
1984	BL	1988	11	10.54792	03	24	19.14	+16 41 26.7		897
1985	CX	1988	12	01.56250	05	23	56.99	+20 37 59.3	17	897
1985	CX	1988	12	01.60139	05	23	54.76	+20 38 05.8		897
1985	HV1	1988	11	11.48889	03	51	58.99	+19 55 04.2	17	897
1985	HV1	1988	11	11.52917	03	51	57.25	+19 55 01.6		897
1986	EL1	1988	11	11.48889	03	50	27.69	+21 09 00.4	16	897
1986	EL1	1988	11	11.52917	03	50	25.19	+21 08 59.7		897
1988	RF3	1988	11	11.51181	03	48	13.91	+28 58 30.3	16	897
1988	RF3	1988	11	11.55208	03	48	11.46	+28 58 32.3		897
1988	RF3	1988	11	14.59306	03	45	12.40	+29 00 53.9	17	897
1988	RF3	1988	11	14.63472	03	45	09.93	+29 00 57.2		897
1988	VF	1988	11	14.46736	02	00	43.46	+14 22 59.3	17	897
1988	VF	1988	11	14.53507	02	00	40.17	+14 23 11.0		897
1988	VF	1988	11	30.51250	01	53	35.25	+15 14 37.8	17	897
1988	VF	1988	11	30.54861	01	53	34.98	+15 14 45.1		897
1988	VK	1988	11	14.47535	02	37	12.80	+04 00 21.3		897
1988	VK	1988	11	14.54491	02	37	08.56	+04 00 23.3		897
1988	VK	1988	11	29.55000	02	26	04.87	+04 27 50.1	17	897
1988	VK	1988	11	29.58472	02	26	03.89	+04 27 58.4		897
1988	VL	1988	11	14.47535	02	34	29.96	+04 03 30.7		897
1988	VL	1988	11	14.54491	02	34	26.73	+04 02 59.1		897
1988	VN	1988	11	15.49144	02	33	56.04	+10 41 47.3	17	897
1988	VN	1988	11	15.53333	02	33	53.69	+10 41 42.0		897
1988	VN	1988	11	29.56806	02	23	42.69	+10 20 22.0	17	897
1988	VN	1988	11	29.60278	02	23	41.32	+10 20 20.1		897
1988	VP	1988	11	10.50694	03	35	40.52	+18 45 11.6	16	897
1988	VP	1988	11	10.54792	03	35	37.58	+18 45 18.1		897
1988	VP	1988	11	14.60359	03	30	53.33	+18 58 34.9	16	897
1988	VP	1988	11	14.64253	03	30	50.53	+18 58 42.1		897
1988	VS	1988	11	10.50694	03	35	33.56	+18 01 13.2	17	897
1988	VS	1988	11	10.54792	03	35	31.71	+18 01 03.1		897
1988	VL1	1988	11	10.52222	03	27	42.54	+22 52 42.2	16	897
1988	VL1	1988	11	10.56319	03	27	39.82	+22 52 23.7		897
1988	VM2	1988	11	11.48889	03	48	22.68	+20 09 51.9	16	897
1988	VM2	1988	11	11.52917	03	48	19.79	+20 10 16.9		897
1988	VM2	1988	11	27.44977	03	30	20.13	+22 47 04.8	16	897

1988	VM2		1988	11	27.48837	03	30	17.70	+22	47	23.5		897
1988	VY2	*	1988	11	10.49931	03	24	43.25	+14	23	07.6	16	897
1988	VY2		1988	11	10.54028	03	24	40.84	+14	23	07.6		897
1988	VY2		1988	11	14.58519	03	21	00.12	+14	24	10.3	16	897
1988	VY2		1988	11	14.62708	03	20	57.77	+14	24	10.7		897
1988	VY2		1988	12	01.42546	03	06	29.98	+14	33	29.7	17	897
1988	VY2		1988	12	01.46528	03	06	27.99	+14	33	34.2		897
1988	VZ2	*	1988	11	10.52986	03	36	06.78	+28	39	04.2	15	897
1988	VZ2		1988	11	10.57083	03	36	04.69	+28	38	45.9		897
1988	VZ2		1988	11	14.50249	03	32	33.97	+28	10	33.9	15	897
1988	VZ2		1988	11	14.57442	03	32	29.89	+28	09	59.9		897
1988	VZ2		1988	11	27.42454	03	21	08.36	+26	19	02.8	15	897
1988	VZ2		1988	11	27.46470	03	21	06.26	+26	18	41.7		897
1988	VB3	*	1988	11	10.49931	03	34	55.52	+14	33	42.5	17	897
1988	VB3		1988	11	10.54028	03	34	53.40	+14	33	25.8		897
1988	VB3		1988	11	15.50845	03	30	48.63	+14	04	20.1	17	897
1988	VB3		1988	11	15.54097	03	30	46.92	+14	04	10.2		897
1988	VB3		1988	11	29.49149	03	19	43.23	+12	48	55.2	17	897
1988	VB3		1988	11	29.52656	03	19	41.67	+12	48	44.0		897
1988	VD3	*	1988	11	11.49653	03	46	59.34	+23	34	25.3	16	897
1988	VD3		1988	11	11.53681	03	46	56.82	+23	34	21.0		897
1988	VD3		1988	11	15.51736	03	42	53.86	+23	23	53.5	16	897
1988	VD3		1988	11	15.54873	03	42	51.81	+23	23	50.0		897
1988	VD3		1988	11	27.44977	03	30	53.73	+22	44	39.8	17	897
1988	VD3		1988	11	27.48837	03	30	51.50	+22	44	31.3		897
1988	VT3		1988	11	10.51458	03	32	03.29	+20	55	36.5	17	897
1988	VT3		1988	11	10.55556	03	32	00.77	+20	55	19.4		897
1988	WC		1988	12	07.58594	03	18	11.46	+13	06	58.6	16	897
1988	WC		1988	12	07.62361	03	18	09.31	+13	05	45.2		897
1988	WE	*	1988	11	29.55903	02	32	18.85	+06	55	20.2	16	897
1988	WE		1988	11	29.59375	02	32	17.60	+06	55	26.9		897
1988	WE		1988	12	01.39572	02	31	21.78	+06	59	47.0	17	897
1988	WE		1988	12	01.44566	02	31	20.27	+06	59	55.3		897
1988	XB		1988	12	07.65602	07	35	48.46	+24	28	53.7	15	897
1988	XB		1988	12	07.66366	07	35	44.99	+24	29	09.9		897
1988	XC	*	1988	12	01.49931	04	24	21.66	+27	35	06.0	17	897
1988	XC		1988	12	01.53750	04	24	19.42	+27	35	01.7		897
1988	XC		1988	12	05.43443	04	20	47.15	+27	31	35.4	17	897
1988	XC		1988	12	05.45862	04	20	45.84	+27	31	35.3		897
1988	XM	*	1988	12	05.49514	04	32	00.06	+14	16	17.6	16	897
1988	XM		1988	12	05.53333	04	31	57.64	+14	16	23.1		897
1988	XM		1988	12	07.51348	04	29	57.22	+14	20	14.4	16	897
1988	XM		1988	12	07.55278	04	29	54.87	+14	20	20.5		897
1988	XN	*	1988	12	05.49514	04	36	18.30	+15	50	02.2	16	897
1988	XN		1988	12	05.53333	04	36	15.73	+15	49	57.6		897
1988	XN		1988	12	07.51348	04	34	13.04	+15	43	58.8	16	897
1988	XN		1988	12	07.55278	04	34	10.38	+15	43	52.4		897
1988	XO	*	1988	12	05.56667	05	29	40.77	+18	02	44.8	17	897
1988	XO		1988	12	05.60694	05	29	37.76	+18	03	00.3		897
1988	XO		1988	12	07.52859	05	27	27.88	+18	14	20.9	17	897
1988	XO		1988	12	07.56782	05	27	25.06	+18	14	36.2		897
1988	XP	*	1988	12	05.58958	05	26	33.88	+09	17	59.9	16	897
1988	XP		1988	12	05.62986	05	26	31.34	+09	18	03.8		897
1988	XP		1988	12	07.53669	05	24	35.14	+09	21	51.4	16.5 I	897
1988	XP		1988	12	07.57541	05	24	32.92	+09	21	52.5		897
112			1988	11	27.44977	03	31	41.81	+23	40	14.8	14	897
112			1988	11	27.48837	03	31	39.36	+23	40	05.3		897
846			1988	11	11.48889	03	52	40.36	+20	25	00.2	15	897
846			1988	11	11.52917	03	52	38.23	+20	24	53.7		897

897	1988	12	01.57014	05	21	40.84	+23 22 32.6	15	897
897	1988	12	01.60903	05	21	38.41	+23 22 18.3		897
1426	1988	10	14.50764	01	28	33.23	+20 49 22.5	16	897
1426	1988	10	14.54583	01	28	30.87	+20 49 15.0		897
1481	1988	11	27.44977	03	23	55.82	+23 25 57.8	16	897
1481	1988	11	27.48837	03	23	53.72	+23 25 49.0		897
1701	1988	11	29.55903	02	25	05.61	+07 52 12.1	16	897
1701	1988	11	29.59375	02	25	04.33	+07 52 17.9		897
1712	1988	11	15.52575	04	00	26.46	+19 42 57.6	16	897
1712	1988	11	15.55613	04	00	25.03	+19 42 45.2		897
2159	1988	11	14.61887	03	22	04.50	+23 33 41.8	16	897
2159	1988	11	14.65781	03	22	01.93	+23 33 34.1		897
2695	1988	11	14.58519	03	26	23.58	+14 14 55.0	16	897
2695	1988	11	14.62708	03	26	20.92	+14 15 01.1		897
2695	1988	11	15.50845	03	25	23.86	+14 16 52.6	16	897
2695	1988	11	15.54097	03	25	21.65	+14 16 56.7		897
2695	1988	12	01.42546	03	09	04.57	+14 54 59.9	16	897
2695	1988	12	01.46528	03	09	02.45	+14 55 07.1		897
2742	1988	11	10.49931	03	26	49.89	+13 56 32.6	16	897
2742	1988	11	10.54028	03	26	47.51	+13 56 24.1		897
2742	1988	11	14.58519	03	23	14.57	+13 44 27.1	16	897
2742	1988	11	14.62708	03	23	12.35	+13 44 20.6		897
3262	1988	11	03.63194	03	09	46.00	+10 55 42.6	16	897
3262	1988	11	03.68542	03	09	43.17	+10 55 38.6		897

978 Conder Brow
G. M. Hurst, 16 Westminster Close, Kempshott Rise, Basingstoke, Hants. RG22 4PP, England
Observer D. G. Buczynski
0.55-m reflector
AGK3

3908	1988	09	17.87813	22	21	40.00	+15 09 21.8		978
3908	1988	09	17.89479	22	21	42.06	+15 10 16.7		978

* * * * *

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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 Ge-Wang (1988o)

T 1988 May 23.76853 ET				Marsden
q 2.5172231		(1950.0)	P	Q
n 0.08665845	Peri.	176.07065	+0.99745912	+0.07123897
a 5.0574171	Node	179.84091	-0.06962625	+0.97648752
e 0.5022710	Incl.	11.67367	-0.01508282	+0.20346285

P 11.37
From 11 observations 1988 Oct. 11-Dec. 7.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1983 AG4	14.3	830205	30.82	95.73	341.33	11.11	0.2751	2.7813	50	3		F
1983 EU	14.0	830327	346.78	9.94	183.13	4.17	0.0851	2.2470	35	0		V
1983 EM2	15.4	830317	38.04	313.24	165.63	3.18	0.2186	2.2107	4	4		F
1983 EN2	14.0	830307	358.11	183.40	350.73	7.39	0.1270	2.8541	5	3	E	G
1983 GU	13.3	830426	281.72	176.88	115.62	14.46	0.1727	2.5866	21	3		F
1983 PY	14.3	830824	3.05	131.56	187.85	7.51	0.2643	2.4128	38	5		F
1983 PZ	14.1	830824	356.95	120.05	209.14	4.73	0.1929	2.2691	38	5		F
1983 QH1	14.9	830824	4.19	166.09	154.94	4.27	0.1857	2.3036	21	4		F
1983 RZ1	14.6	830903	20.66	297.02	14.65	4.03	0.1899	2.2343	10	7		V
1983 RD2	13.7	830913	8.54	78.31	266.17	0.81	0.1347	2.3432	10	5		V
1983 RS4	13.1	830913	30.37	349.23	311.34	13.33	0.1778	2.4573	13	3		F
1983 RT4	12.8	830913	349.23	156.36	201.79	9.65	0.1594	2.6402	13	3		F
1983 RU4	15.2	830903	358.94	352.77	339.19	6.78	0.2699	2.4373	4	3		F
1983 RV4	12.5	830903	359.38	0.58	329.82	15.67	0.2041	3.2259	4	3	E	G
1983 RW4	12.4	830913	167.49	191.89	356.87	10.39	0.1476	2.7316	10	3		F
1983 RX4	14.3	830913	355.86	109.29	253.64	5.25	0.2000	2.1827	8	4		F
1983 RY4	13.9	830913	345.31	125.39	258.65	8.92	0.2284	2.7145	8	3		F
1983 RZ4	15.3	830903	0.23	116.64	235.27	4.56	0.2217	2.2630	5	3		F
1983 RA5	14.3	830913	43.68	32.32	260.05	4.58	0.2300	2.3595	8	4		F
1983 RB5	13.8	830903	283.54	165.62	293.84	5.01	0.2237	2.2217	5	3		F

1983	RC5	13.8	830913	301.69	115.42	322.81	7.20	0.1716	2.3448	8	4		F
1983	RD5	14.5	830903	331.70	133.16	260.10	5.41	0.1180	2.2881	5	3		G
1985	PB2	13.1	850823	347.54	213.48	145.07	14.17	0.1993	2.6017	38	8		c
1985	PF2	13.2	850823	284.88	6.20	50.77	4.64	0.0104	2.3785	38	5		c
1985	QL4	12.3	850912	59.71	156.20	116.24	6.81	0.1302	3.2027	27	4		c
1985	RZ1	14.0	850823	336.10	359.28	21.68	3.15	0.2412	2.3737	37	7		M
1988	GF	12.5	880409	300.33	49.80	226.72	13.37	0.1723	2.5872	39	8		N
1988	QU	13.0	880807	39.79	130.65	148.71	15.49	0.0330	2.6633	17	8		M
1988	RH3	14.5	880827	358.12	358.36	357.31	9.07	0.1385	2.8765	2	6	E	d
1988	RJ3	15.0	880827	5.17	350.24	356.99	2.57	0.0031	2.2863	2	6	E	d
1988	RM3	14.0	880827	313.20	57.60	356.53	11.27	0.1554	2.5092	2	6		d
1988	RN3	17.0	880827	19.69	140.89	176.14	3.88	0.2508	2.5140	2	6		d
1988	RO3	14.0	880827	357.57	358.28	358.14	17.82	0.1620	2.8357	2	6	E	d
1988	RP3	13.5	880827	357.15	359.06	358.07	15.98	0.1684	2.8569	2	6	E	d
1988	RR3	15.5	880827	354.72	333.92	23.35	2.94	0.0201	2.2243	2	6	E	d
1988	RS3	15.5	880827	356.89	196.30	157.67	2.67	0.2551	2.4462	2	6		d
1988	RT3	16.0	880827	357.20	347.98	7.18	2.77	0.2554	2.6585	2	6	E	d
1988	RU3	15.0	880827	359.30	207.36	147.27	2.51	0.0510	2.6076	2	6	E	d
1988	RW3	15.0	880827	357.70	331.36	25.83	1.33	0.1536	2.9218	2	6	E	d
1988	RX3	15.5	880827	356.53	193.15	165.12	4.06	0.0875	2.7104	2	5	E	d
1988	RY3	15.0	880827	357.84	186.50	171.04	1.24	0.1869	3.0389	2	6	E	d
1988	RZ3	15.5	880827	357.17	190.98	167.41	2.46	0.0955	2.7286	2	6	E	d
1988	RA4	15.5	880827	176.34	6.20	172.74	6.46	0.2231	2.1792	2	6	E	d
1988	TG	14.5	881026	351.75	196.71	203.77	25.17	0.2771	2.4453	37	0		N
1988	TO	13.0	881026	33.76	316.36	19.50	2.48	0.2186	2.3534	28	0		N
1988	TB1	13.0	881026	25.59	142.92	208.28	5.00	0.1515	2.4341	20	0		N
1988	TL1	13.5	881026	357.10	175.97	213.87	4.91	0.1392	2.2866	20	0		N
1988	TP1	12.0	881026	19.18	269.20	89.75	1.86	0.0997	2.9143	38	0		N
1988	TQ1	13.5	881026	326.94	82.55	345.70	5.86	0.1439	2.4597	27	9		N
1988	TR1	13.0	881026	5.17	181.70	194.57	13.24	0.1740	2.6217	28	0		N
1988	TS1	13.0	881026	359.74	225.37	173.61	1.58	0.2187	3.1349	29	0		G
1988	TW2	13.5	880916	51.78	43.45	254.04	22.79	0.2320	2.4001	31	4		M
1988	TX2	13.0	881006	73.93	121.06	174.49	4.05	0.0905	2.2116	5	7	E	N
1988	UH	12.0	881026	239.24	327.61	203.10	3.75	0.1176	3.0961	24	9		G
1988	UJ	11.5	881026	293.85	68.95	43.30	10.32	0.0675	3.0501	32	0		N
1988	UO	11.0	881115	49.33	309.02	31.02	9.83	0.1843	2.7342	14	0		N
1988	UT	14.5	881026	347.75	267.61	137.70	2.18	0.1647	2.1882	23	6		G
1988	VA	14.0	881115	359.27	187.79	218.31	10.93	0.2003	2.3696	11	9		N
1988	VD	15.5	881026	306.65	79.11	27.36	22.86	0.1308	1.9415	10	7		M
1988	VF	15.0	881115	21.76	330.75	35.64	6.38	0.2618	2.2730	27	8		G
1988	VH	12.0	881115	52.68	99.08	242.13	12.53	0.1668	2.5889	26	8		N
1988	VK	14.0	881115	19.03	269.58	109.79	5.78	0.1545	2.1932	26	8		N
1988	VN	13.0	881115	4.48	304.54	94.74	3.18	0.1183	2.6161	26	7		N
1988	VO	14.5	881115	355.09	14.04	44.20	25.84	0.2406	2.3505	9	8		N
1988	VT	13.0	881115	46.31	104.35	226.25	12.37	0.1230	2.7424	9	0		N
1988	VV	14.0	881026	353.72	181.21	224.61	4.07	0.1509	2.3348	12	0		G
1988	VW	12.0	881115	347.37	141.17	279.93	0.66	0.1590	3.2153	12	0		N
1988	VY	14.0	881026	332.09	236.03	199.01	1.67	0.1450	2.9547	4	6		G
1988	VZ	11.5	881115	34.54	315.41	37.17	9.64	0.2162	3.1889	31	0		N
1988	VA1	14.0	881026	2.74	125.36	266.41	10.15	0.2678	2.4067	10	8		M
1988	VB1	13.0	881026	23.60	4.16	1.43	13.23	0.1785	2.5350	10	7		M
1988	VC1	13.5	881026	328.72	171.20	267.39	11.63	0.1316	2.6321	10	7		M
1988	VE1	12.5	881115	56.19	294.81	44.30	7.02	0.1533	2.7865	16	8		N
1988	VG1	12.0	881115	278.36	293.73	219.41	11.26	0.1231	3.0210	22	9		N
1988	VJ1	14.5	881115	38.85	118.64	234.66	5.10	0.2191	2.2620	22	0		N
1988	VQ1	14.0	881026	327.00	38.21	43.88	6.26	0.1333	2.2986	12	0		G
1988	VR1	12.0	881115	314.69	278.50	209.57	9.85	0.3098	3.0949	5	6		N
1988	VS1	13.5	881115	46.20	253.46	97.45	3.59	0.1420	2.2050	5	6	E	N

1988	VT1	12.0	881205	352.29	247.00	176.05	12.25	0.2485	3.1198	28	0		N
1988	VU1	12.0	881205	45.11	119.02	256.09	5.54	0.0733	2.6692	29	0		N
1988	VV1	12.5	881115	67.93	359.90	302.16	12.34	0.2074	2.8761	12	7		N
1988	VW1	13.0	881026	96.57	167.06	131.08	2.86	0.0756	2.8953	10	0		G
1988	VZ1	12.0	881026	302.54	100.60	11.07	0.27	0.1410	3.1815	12	0		G
1988	VA2	14.5	881026	24.77	324.73	40.03	3.39	0.1613	2.1611	12	9		G
1988	VB2	13.0	881026	57.81	114.63	211.40	4.41	0.1488	2.2174	9	0		G
1988	VC2	12.0	881026	19.09	330.44	45.85	7.06	0.1391	3.1762	9	0		G
1988	VD2	14.0	881115	354.40	356.03	58.34	3.23	0.1248	2.2038	9	9		N
1988	VH2	14.0	881115	35.69	289.16	74.88	9.61	0.2189	2.4238	29	7		N
1988	VJ2	14.0	881205	7.91	196.49	211.69	5.29	0.3332	2.5279	30	7		N
1988	VK2	13.0	881115	28.75	305.04	74.70	7.72	0.1292	2.5638	29	6		N
1988	VL2	13.0	881115	323.41	223.19	235.64	10.51	0.0955	2.4266	23	0		N
1988	VQ2	12.5	881115	41.41	288.47	56.94	17.22	0.2807	2.7008	19	0		N
1988	VT2	13.5	881115	13.55	108.98	275.56	1.62	0.1713	2.4046	12	0	D	N
1988	VU2	13.5	881115	343.50	46.50	26.82	3.05	0.2594	2.6420	12	0		N
1988	VV2	14.0	881115	31.74	45.85	319.97	1.40	0.1314	2.2000	6	9		N
1988	VY2	11.5	881115	55.12	282.91	63.78	12.37	0.0966	3.1706	21	8		M
1988	VB3	12.0	881115	50.02	143.26	212.91	8.92	0.0794	3.0071	19	9		N
1988	VE3	13.5	881115	24.26	315.53	42.74	19.84	0.3398	2.9629	12	0		N
1988	VG3	14.5	881026	22.87	330.61	39.95	9.40	0.1271	2.1542	10	0		G
1988	VH3	16.0	881026	4.29	189.35	201.00	2.24	0.2197	2.4171	5	7		G
1988	VK3	14.5	881026	4.63	346.12	47.22	5.60	0.0316	2.2613	4	7	E	G
1988	VM3	14.5	881115	62.25	335.29	356.99	2.29	0.1401	2.1906	3	8		N
1988	VN3	15.5	881115	354.63	190.16	226.68	4.96	0.1055	2.2764	3	6	E	N
1988	VO3	14.5	881026	18.46	2.24	14.34	4.83	0.2446	2.5392	11	9		M
1988	VR3	13.0	881205	32.69	193.83	182.74	2.26	0.2051	2.4168	23	0		N
1988	VT3	13.5	881115	321.66	215.78	245.41	3.95	0.1173	2.2492	22	0		N
1988	VZ3	13.5	881115	355.59	147.78	272.83	5.97	0.1787	2.2569	19	9		N
1988	VS4	14.5	881006	196.91	314.18	233.95	16.89	0.0392	1.9683	33	4		B
1988	VT4	15.0	881006	21.47	120.02	226.42	23.37	0.2348	2.2877	32	5		B
1988	VW4	14.0	881115	13.34	188.76	199.36	1.95	0.0868	2.7472	9	9		N
1988	VX4	12.5	881026	181.44	358.42	219.07	17.12	0.0749	3.1412	6	6	E	G
1988	VA5	13.5	881115	37.70	319.05	35.26	2.04	0.2389	2.3773	18	0		N
1988	VB5	13.5	881115	36.00	138.46	218.16	12.53	0.1883	2.5380	29	0		M
1988	VD5	12.0	881026	254.73	301.00	199.38	13.71	0.0817	2.6255	25	8		M
1988	VF5	14.0	881026	33.73	289.41	47.61	6.11	0.2134	2.2488	6	6		B
1988	VG5	14.0	881026	2.82	335.86	56.78	0.67	0.1800	2.4147	9	7	E	M
1988	VJ5	14.5	881026	34.94	274.32	71.57	2.76	0.2019	2.2533	7	0		G
1988	VM5	14.0	881026	357.78	284.19	116.47	2.28	0.2752	2.8301	6	6		G
1988	VN5	14.5	881026	328.44	284.50	158.28	2.42	0.1908	2.4104	6	6		G
1988	VO5	14.0	881026	317.64	45.00	56.76	5.94	0.2312	2.4131	7	8		G
1988	VP5	14.0	881026	35.20	282.07	63.97	5.75	0.2033	2.3708	6	6		G
1988	VR5	12.5	881026	87.67	68.54	221.97	26.77	0.2252	2.8656	8	6		G
1988	VT5	13.0	881026	4.98	203.26	192.53	1.18	0.1428	2.9053	8	6	E	G
1988	VV5	13.0	881026	337.86	231.74	200.30	2.27	0.1504	2.4867	8	7	E	G
1988	VW5	13.5	881026	351.53	257.74	159.31	1.00	0.2624	2.8627	8	7		B
1988	VY5	12.5	881026	325.30	37.46	47.98	11.17	0.1245	3.1568	7	6		G
1988	WA	13.5	881115	69.33	269.22	57.83	12.68	0.1635	2.3118	18	0		N
1988	WB	13.0	881205	321.52	169.49	289.96	1.64	0.0353	2.1844	8	6		N
1988	XC	12.0	881205	6.70	41.51	17.01	4.49	0.2479	3.2789	5	9		N
1988	XF	13.5	881205	339.84	61.33	41.71	1.59	0.2596	2.2746	5	9	E	N
1988	XK	13.0	881205	314.83	248.69	236.74	6.91	0.1173	2.8519	3	5	E	N
1988	XL	15.0	881205	34.04	170.30	214.10	2.31	0.1542	2.3884	3	5		N
1988	XQ	14.5	881205	4.95	170.40	256.34	7.29	0.2452	2.2193	4	0	E	N
1988	XS	10.5	881205	130.27	27.80	259.98	18.87	0.2810	2.6369	7	0	E	G
1988	XT	14.0	881205	339.35	212.88	248.65	0.77	0.0940	2.2143	7	0	E	G

1988 VT2 = 1988 VN1 (K. Watanabe)

(724) Hapag
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Nakano
M 342.82211 (1950.0) P Q
n 0.25604866 Peri. 204.50374 +0.66908114 -0.73865791
a 2.4561472 Node 203.76867 +0.71097754 +0.66828829
e 0.2484701 Incl. 11.73081 +0.21642866 +0.08817738
P 3.85 H 13.6 G 0.25
Residuals in seconds of arc

111022	045	0.9-	0.3+	530816	675	0.7-	0.2-	881108	877	1.2+	1.4-	Y
111022	045	0.3-	0.1+	530816	675	0.1-	0.4-	881108	877	1.1+	0.8-	Y
111023	045	0.5+	1.6-	550418	675	1.0-	1.4-	881112	675	(0.2+	3.9-)	
111025	045	1.4-	0.8-	830614	413	0.6-	0.2-	881112	877	1.6-	0.6+	
111028	045	(5.8-	2.0+)	830614	413	1.5+	0.1+	881112	877	0.5-	1.1+	
111029	045	1.8+	1.1+	841114	413	0.5+	0.6-	881113	675	0.1-	1.2-	
111102	045	(1.6-	6.6-)	841114	413	0.2-	0.0	881115	877	1.3+	1.6+	Y
111119	045	0.4+	0.4+	870531	413	0.2-	0.0	881115	877	1.4-	0.7+	Y
111120	045	(3.7-	4.0-)	870531	413	0.3+	0.3+					

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Marsden
(2060) Chiron Obs. 71 M 306.99630 Peri. 339.14969
H 6.62 G 0.25 Opp. 15 n 0.019448425 Node 208.62605
rms res. 0".9 (M-P) 1895-1988 e 0.3803816 Incl. 6.93206

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2211) 1951 WO2 Obs. 18 M 238.62542 Peri. 194.63095
H 13.9 G 0.25 Opp. 5 n 0.17400076 Node 145.91861
rms res. 1".16 (M-P) 1951-1987 e 0.0918799 Incl. 17.37162

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2229) Mezzarco Obs. 16 M 198.77914 Peri. 31.62082
H 13.2 G 0.25 Opp. 4 n 0.22296722 Node 271.79987
rms res. 1".32 (M-P) 1977-1986 e 0.2637425 Incl. 12.71809

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2351) O'Higgins Obs. 30 M 327.00340 Peri. 60.81089
H 13.1 G 0.25 Opp. 7 n 0.24514129 Node 332.80526
rms res. 1".63 (M-P) 1964-1987 e 0.1884118 Incl. 3.73207

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2417) McVittie Obs. 23 M 125.73881 Peri. 20.18182
H 12.25 G 0.15 Opp. 7 n 0.17233830 Node 84.31625
rms res. 1".97 (M-P) 1958-1987 e 0.2104825 Incl. 3.10114

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2433) Sootiyo Obs. 31 M 234.45577 Peri. 69.18664
H 11.88 G 0.33 Opp. 8 n 0.23425110 Node 188.24837
rms res. 2".06 (M-P) 1960-1986 e 0.2192760 Incl. 10.40894

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2449) 1978 GC Obs. 36 M 257.23565 Peri. 102.03785
H 14.47 G 0.40 Opp. 6 n 0.37377137 Node 179.35551
rms res. 1".65 (M-P) 1978-1986 e 0.1687330 Incl. 24.98127

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2506) Pirogov Obs. 46 M 53.51984 Peri. 288.21669
H 11.86 G 0.25 Opp. 8 n 0.19973029 Node 164.51754
rms res. 1".71 (M-P) 1959-1988 e 0.0186132 Incl. 2.16540

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2521) 1979 DK Obs. 19 M 8.47139 Peri. 247.92269
H 11.7 G 0.25 Opp. 6 n 0.21115831 Node 280.95255
rms res. 1".72 (M-P) 1951-1986 e 0.0911675 Incl. 7.72297

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2560) 1932 CW Obs. 63 M 220.44831 Peri. 286.21279
H 11.81 G 0.15 Opp. 8 n 0.21616670 Node 148.09568
rms res. 1".51 (M-P) 1932-1987 e 0.0349707 Incl. 5.93493

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2588) Flavia Obs. 22 M 320.04065 Peri. 95.32198
H 13.43 G 0.15 Opp. 6 n 0.25563268 Node 242.33361
rms res. 2".42 (M-P) 1954-1985 e 0.2081498 Incl. 2.26793

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2593) Buryatia Obs. 24 M 18.38467 Peri. 75.20038
H 14.01 G 0.25 Opp. 5 n 0.30842501 Node 63.83312
rms res. 1".59 (M-P) 1976-1987 e 0.0786062 Incl. 0.21435

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2598) Merlin Obs. 12 M 207.01991 Peri. 216.30174
H 12.59 G 0.15 Opp. 5 n 0.21218905 Node 197.57442
rms res. 1".73 (M-P) 1948-1985 e 0.2153756 Incl. 7.78436

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2601) Bologna Obs. 87 M 83.70453 Peri. 199.64978
H 11.30 G 0.15 Opp. 7 n 0.17787011 Node 288.05632
rms res. 1".07 (M-P) 1965-1987 e 0.0549236 Incl. 9.58468

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2619) Skalnate Pleso Obs. 18 M 298.46817 Peri. 61.20606
H 12.6 G 0.25 Opp. 5 n 0.18892084 Node 204.15032
rms res. 1".13 (M-P) 1975-1988 e 0.0459661 Incl. 1.11402

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2621) Goto Obs. 54 M 285.06220 Peri. 272.42335
H 10.75 G 0.15 Opp. 5 n 0.18138972 Node 95.66779
rms res. 2".01 (M-P) 1971-1984 e 0.1636551 Incl. 13.05917

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2624) Samitchell Obs. 24 M 151.35906 Peri. 145.21804
H 10.6 G 0.25 Opp. 9 n 0.12519194 Node 161.55784
rms res. 2".25 (M-P) 1954-1986 e 0.1172546 Incl. 2.77788

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2649) Oongaq Obs. 24 M 287.13731 Peri. 169.41274
H 11.79 G 0.15 Opp. 5 n 0.23170571 Node 245.04003
rms res. 1".38 (M-P) 1963-1987 e 0.1433570 Incl. 12.22898

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2656) Evenkia Obs. 26 M 316.88859 Peri. 74.89489
H 13.84 G 0.25 Opp. 6 n 0.29100414 Node 95.53889
rms res. 2".15 (M-P) 1955-1984 e 0.0793213 Incl. 3.20071

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2659) Millis Obs. 39 M 211.90970 Peri. 332.01367
H 11.15 G 0.15 Opp. 9 n 0.17920326 Node 156.89351
rms res. 1".66 (M-P) 1958-1986 e 0.1189698 Incl. 1.31648

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2673) 1980 KN Obs. 73 M 158.09118 Peri. 163.16359
H 12.5 G 0.25 Opp. 4 n 0.17056810 Node 71.45304
rms res. 0".57 (M-P) 1957-1985 e 0.1397424 Incl. 2.30446

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2681) Ostrovskij Obs. 26 M 207.54417 Peri. 59.55320
H 12.58 G 0.15 Opp. 5 n 0.21667543 Node 66.77526
rms res. 1".06 (M-P) 1975-1986 e 0.1926578 Incl. 3.99545

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2683) Brian Obs. 40 M 315.35492 Peri. 16.62392
H 11.97 G 0.15 Opp. 10 n 0.19802640 Node 342.23496
rms res. 1".80 (M-P) 1929-1987 e 0.0571310 Incl. 1.48837

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2688) Halley Obs. 38 M 11.75711 Peri. 179.93239
H 11.84 G 0.15 Opp. 6 n 0.17587432 Node 95.27477
rms res. 1".60 (M-P) 1955-1987 e 0.1568872 Incl. 3.47468

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2691) 1974 KB Obs. 27 M 86.68485 Peri. 275.99751
H 13.61 G 0.25 Opp. 5 n 0.29321859 Node 319.54698
rms res. 0".67 (M-P) 1974-1987 e 0.1131206 Incl. 3.59027

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2700) Baikonur Obs. 47 M 134.01912 Peri. 275.27467
H 12.31 G 0.25 Opp. 5 n 0.19876035 Node 171.02526
rms res. 0".68 (M-P) 1973-1985 e 0.0424571 Incl. 2.39862

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2702) 1978 SZ2 Obs. 12 M 355.92581 Peri. 311.40507
H 11.5 G 0.25 Opp. 7 n 0.15484489 Node 246.13991
rms res. 2".15 (M-P) 1971-1988 e 0.0740337 Incl. 1.58637

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2710) Veverka Obs. 17 M 269.47175 Peri. 32.04412
H 13.43 G 0.15 Opp. 4 n 0.26082334 Node 143.99635
rms res. 0".96 (M-P) 1974-1986 e 0.1295411 Incl. 3.11599

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2716) Tuulikki Obs. 16 M 147.57699 Peri. 163.22640
H 13.5 G 0.25 Opp. 7 n 0.27031982 Node 218.11315
rms res. 1".98 (M-P) 1939-1986 e 0.1062807 Incl. 5.95508

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2717) Tellervo Obs. 43 M 243.65024 Peri. 162.81398
H 12.76 G 0.25 Opp. 14 n 0.29901960 Node 164.46114
rms res. 2".07 (M-P) 1909-1988 e 0.2176643 Incl. 3.28029

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2745) 1976 SR10 Obs. 24 M 97.44419 Peri. 303.37272
H 13.37 G 0.25 Opp. 5 n 0.28463618 Node 137.34611
rms res. 1".48 (M-P) 1976-1988 e 0.1899502 Incl. 22.38524

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2758) Cordelia Obs. 44 M 132.61956 Peri. 65.54040
H 13.85 G 0.15 Opp. 4 n 0.24162856 Node 335.34662
rms res. 1".14 (M-P) 1978-1986 e 0.2730654 Incl. 2.81325

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2759) Idomeneus Obs. 36 M 294.72429 Peri. 4.46649
H 9.77 G 0.15 Opp. 5 n 0.08404453 Node 170.55270
rms res. 1".25 (M-P) 1979-1984 e 0.0678300 Incl. 21.98161

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2785) Sedov Obs. 39 M 299.62384 Peri. 96.18971
H 12.0 G 0.25 Opp. 8 n 0.20247435 Node 334.42546
rms res. 1".47 (M-P) 1932-1986 e 0.0442050 Incl. 1.43933

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2786) Grinevia Obs. 22 M 115.65303 Peri. 18.84868
H 12.1 G 0.25 Opp. 5 n 0.23433330 Node 8.87564
rms res. 2".16 (M-P) 1972-1985 e 0.1756912 Incl. 13.27993

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2791) Paradise Obs. 44 M 37.41155 Peri. 165.01322
H 11.5 G 0.25 Opp. 4 n 0.26537979 Node 335.59861
rms res. 1".51 (M-P) 1977-1986 e 0.1704580 Incl. 31.01177

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2792) Ponomarev Obs. 30 M 202.00995 Peri. 71.22545
H 13.00 G 0.25 Opp. 5 n 0.28687317 Node 16.30941
rms res. 1".67 (M-P) 1970-1987 e 0.1282540 Incl. 9.37062

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2800) 4585 P-L Obs. 14 M 72.61877 Peri. 172.11636
H 12.9 G 0.25 Opp. 4 n 0.17625804 Node 102.57225
rms res. 0".74 (M-P) 1960-1986 e 0.1383195 Incl. 3.06886

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2805) Kalle Obs. 14 M 240.38931 Peri. 309.12040
H 12.3 G 0.25 Opp. 5 n 0.22279002 Node 48.90178
rms res. 1".83 (M-P) 1941-1984 e 0.1444420 Incl. 6.88219

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2806) 1953 GG Obs. 19 M 359.33743 Peri. 312.17355
H 13.2 G 0.25 Opp. 7 n 0.26853104 Node 115.62832
rms res. 1".60 (M-P) 1951-1986 e 0.0476614 Incl. 2.34269

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2809) Vernadskij Obs. 39 M 230.86967 Peri. 347.45977
H 13.69 G 0.25 Opp. 6 n 0.26038757 Node 356.94865
rms res. 1".91 (M-P) 1906-1988 e 0.1779732 Incl. 2.46704

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2819) Ensor Obs. 29 M 3.16538 Peri. 343.99450
H 12.3 G 0.25 Opp. 7 n 0.21511033 Node 18.12641
rms res. 1".66 (M-P) 1933-1983 e 0.2023938 Incl. 2.43926

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2839) Annette Obs. 24 M 275.33949 Peri. 6.26093
H 12.7 G 0.25 Opp. 8 n 0.29870257 Node 44.14218
rms res. 2".47 (M-P) 1929-1985 e 0.1497945 Incl. 4.81072

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2852) 1981 QU2 Obs. 79 M 163.18043 Peri. 254.28516
H 12.2 G 0.25 Opp. 5 n 0.21210268 Node 109.74234
rms res. 0".82 (M-P) 1957-1986 e 0.0859609 Incl. 1.70249

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2857) 1942 DA Obs. 45 M 199.70302 Peri. 332.25354
H 12.7 G 0.25 Opp. 9 n 0.26515756 Node 149.52055
rms res. 1".68 (M-P) 1942-1987 e 0.0956998 Incl. 5.73798

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2864) Soderblom Obs. 40 M 61.06012 Peri. 11.62842
H 12.68 G 0.15 Opp. 9 n 0.21650184 Node 134.86325
rms res. 1".87 (M-P) 1965-1986 e 0.1495775 Incl. 3.14231

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2898) 1938 DN Obs. 13 M 318.60526 Peri. 209.51004
H 12.7 G 0.25 Opp. 4 n 0.24122047 Node 116.24742
rms res. 0".97 (M-P) 1938-1987 e 0.0208798 Incl. 14.30906

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(2901) 1973 DP Obs. 18 M 286.70313 Peri. 238.57962
H 12.28 G 0.25 Opp. 5 n 0.20327048 Node 68.83290
rms res. 1".51 (M-P) 1959-1985 e 0.0491541 Incl. 3.17604

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(2964) 1974 OA1 Obs. 35 M 59.81000 Peri. 58.49745
H 12.4 G 0.25 Opp. 4 n 0.23612213 Node 330.49690
rms res. 1".06 (M-P) 1974-1987 e 0.2010469 Incl. 13.57740

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(3013) Dobrovoleva Obs. 20 M 91.12062 Peri. 93.62742
H 13.54 G 0.25 Opp. 4 n 0.27199293 Node 6.85143
rms res. 1".18 (M-P) 1979-1988 e 0.1398173 Incl. 3.65927

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(3018) Godiva Obs. 42 M 218.14016 Peri. 71.47330
H 12.92 G 0.25 Opp. 4 n 0.27063255 Node 228.07949
rms res. 2".04 (M-P) 1979-1986 e 0.1875770 Incl. 4.73665

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(3044) 1983 RE3 Obs. 22 M 38.99194 Peri. 68.83906
H 12.1 G 0.25 Opp. 4 n 0.20470254 Node 242.31466
rms res. 1".56 (M-P) 1978-1987 e 0.1562731 Incl. 13.55712

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(3047) Goethe Obs. 25 M 143.57650 Peri. 79.84774
H 12.91 G 0.15 Opp. 7 n 0.22942911 Node 317.27235
rms res. 2".37 (M-P) 1960-1986 e 0.0256022 Incl. 1.61076

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(3060) 1982 RD1 Obs. 22 M 268.41377 Peri. 4.16877
H 13.3 G 0.25 Opp. 6 n 0.28663222 Node 326.29985
rms res. 1".62 (M-P) 1958-1986 e 0.1766238 Incl. 7.25549

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Filenko
(3074) Popov Obs. 18 M 132.02113 Peri. 151.38277
H 13.60 G 0.25 Opp. 8 n 0.27555801 Node 348.36977
rms res. 1".61 (M-P) 1964-1986 e 0.1114852 Incl. 2.41799

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Sumzina
(3147) Samantha Obs. 14 M 265.34869 Peri. 241.49499
H 14.2 G 0.25 Opp. 5 n 0.23222375 Node 215.77791
rms res. 1".24 (M-P) 1976-1986 e 0.1955407 Incl. 3.55256

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Schmadel
(3199) Nefertiti Obs. 91 M 333.59924 Peri. 53.28919
H 15.03 G 0.25 Opp. 4 n 0.49879194 Node 339.44494
rms res. 1".1 (M-P) 1982-1988 e 0.2837955 Incl. 32.97222

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Schmadel
(3271) 1982 RB Obs. 30 M 355.64029 Peri. 158.61208
H 16.9 G 0.25 Opp. 3 n 0.32325023 Node 158.43818
rms res. 0".7 (M-P) 1982-1988 e 0.3944593 Incl. 24.99197

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (1950.0) Schmadel
(3288) Seleucus Obs. 99 M 71.73306 Peri. 349.22539
H 15.34 G 0.25 Opp. 4 n 0.34031526 Node 218.15073
rms res. 0".8 (M-P) 1982-1988 e 0.4579351 Incl. 5.93621

(3937)* 1932 EO = 1972 RP = 1975 EJ1 = 1978 TR5 = 1978 WL
Discovered 1932 Mar. 14 by K. Reinmuth at Heidelberg.
Id. C. M. Bardwell (MPC 11517)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell
M 235.44202 (1950.0) P Q
n 0.18385028 Peri. 110.70730 -0.31561477 -0.94886665
a 3.0630907 Node 357.66317 +0.80316419 -0.26361644
e 0.0358394 Incl. 8.85591 +0.50528665 -0.17366191
P 5.36 H 11.8 G 0.25
Residuals in seconds of arc

320314	024	0.1+	0.8+	750315	095	1.4-	3.2+	870621	474	0.7+	0.2-
320315	024	1.1+	0.6-	781008	095	0.1+	0.6+	870621	474	1.3+	0.6-
320326	024	(10.7-	1.1+)	781026	675	1.2+	0.3-	881007	801	2.8-	1.3+
720907	095	1.6-	1.2-	781027	675	0.8+	0.0	881013	801	0.2+	1.7+
721006	095	1.2-	1.3-	781124	033	0.8+	0.0	881110	801	0.2-	1.1+
750306	095	0.9+	0.7+	781124	033	0.6+	0.0	881112	801	0.1-	1.2+

(3938)* 1949 PL = 1980 NC
Discovered 1949 Aug. 2 by K. Reinmuth at Heidelberg.
Id. C. M. Bardwell (MPC 8212)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell
M 66.90679 (1950.0) P Q
n 0.25105860 Peri. 76.09410 -0.59130979 +0.80632579
a 2.4885860 Node 157.63853 -0.75319952 -0.54605648
e 0.0434344 Incl. 2.08431 -0.28817221 -0.22729067
P 3.93 H 12.6 G 0.25
Residuals in seconds of arc

490802	024	1.4-	0.5-	800711	805	0.3-	0.9-	870304	046	0.1-	0.1-
490821	024	1.1-	0.1-	800712	805	0.1+	1.1-	870330	801	0.2+	0.8+
490822	024	3.1+	1.0+	800713	805	0.4-	0.7-	870427	801	1.1-	1.5+
490824	690	2.2-	4.5-	800713	805	0.7-	0.9-	880714	801	0.1-	0.1-
490826	690	2.7+	1.5+	870304	046	0.9-	1.4-				

(3939)* 1953 GO = 1972 VW1 = 1977 TY4 = 1982 SW2 = 1986 GH1 = 1988 TT1
Discovered 1953 Apr. 7 by K. Reinmuth at Heidelberg.

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Nakano
M 85.28923 (1950.0) P Q
n 0.17922470 Peri. 250.57474 +0.17697439 +0.95827927
a 3.1155697 Node 32.34170 -0.66933202 +0.28438261
e 0.0886973 Incl. 24.80752 -0.72157793 -0.02876405
P 5.50 H 11.3 G 0.25
Residuals in seconds of arc

530407	024	(8.4+	0.2-)	820919	809	0.1+	0.2-	881029	896	2.8-	1.8+
530412	024	1.9+	1.0+	860414	046	0.0	1.0+	881031	896	0.7-	1.3-
530419	024	0.5-	1.0-	860414	046	2.3-	2.0-	881031	896	(3.6+	0.4+)
721103	033	(7.4-	3.7+)	881013	896	0.1-	0.6-	881105	896	2.9+	2.8+
721104	033	0.4-	0.1+	881013	896	0.7-	2.0+	881105	896	(3.8+	3.4+)
771007	095	0.5+	4.4-	881019	896	(4.8+	2.9-)	881112	386	2.6+	0.6-
820919	809	0.3-	0.1+	881019	896	0.9+	1.7-	881112	386	0.7+	0.9-
820919	809	0.2-	0.0	881029	896	1.5-	2.1+				

(3940)* 1973 FE1 = 1976 JE3 = 1987 HC

Discovered 1973 Mar. 27 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. C. M. Bardwell (MPC 11835)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell
M 223.33258 (1950.0) P Q
n 0.35171384 Peri. 304.28892 -0.73284219 -0.67370764
a 1.9876645 Node 194.19174 +0.67812761 -0.73463409
e 0.0569016 Incl. 22.84554 -0.05554519 -0.08019211
P 2.80 H 12.8 G 0.25
Residuals in seconds of arc

730327	095	0.6+	0.1-	870430	675	0.5-	0.0	881009	046	3.1+	1.0+
730402	095	0.1+	1.6+	870502	675	0.2-	1.3-	881009	046	2.3+	1.7+
730405	095	0.6-	1.4-	870629	801	0.8+	1.9+	881014	894	0.6-	2.5+
760503	095	1.3-	0.6+	880912	801	0.3+	1.2+	881014	894	2.4-	0.6-
760524	095	1.3+	0.8-	881003	046	1.4-	2.9-	881015	399	0.1+	0.5+
870421	675	1.1+	0.5-	881003	046	1.9-	2.1-	881015	399	1.3-	1.4-
870424	675	0.8-	0.2-	881004	046	1.3-	2.6-	881015	399	1.0+	0.4+
870425	675	0.7+	0.4-	881004	046	1.1-	1.8-	881016	046	0.8+	0.8-
870428	675	1.2-	0.7-	881007	801	0.4+	2.6+	881016	046	1.8+	0.9+

(3941)* 1973 UU5 = 1978 TQ2

Discovered 1973 Oct. 27 by F. Borngen at Tautenburg.

Id. T. Kobayashi (MPC 11856)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Schmadel
M 268.84327 (1950.0) P Q
n 0.19677350 Peri. 281.33751 -0.28401680 -0.95881576
a 2.9274646 Node 185.16479 +0.89057233 -0.26279220
e 0.0235960 Incl. 1.66017 +0.35526803 -0.10776180
P 5.01 H 13.0 G 0.25
Residuals in seconds of arc

731027	033	0.3-	0.0	781007	095	0.0	2.4+	881014	046	(1.9-	2.0-)
731027	033	0.9+	0.5-	880908	033	0.2-	0.1+	881016	046	(0.6-	1.5-)
731028	033	0.6+	0.3+	880908	033	0.1+	0.0	881016	046	(0.9+	0.1-)
731031	033	1.5-	0.6-	880909	033	0.0	0.2+	881103	033	0.2+	0.1-
731102	033	0.1-	0.0	880910	033	0.4+	0.4-	881103	033	0.3-	0.2-
731103	033	0.4+	0.8+	880911	033	0.2-	0.1+	881104	033	0.1+	0.3+
781003	095	0.1-	0.3+	881014	046	(2.2-	2.3-)				

(3942)* 1977 RH7 = 1977 TP7 = 1976 GW4

Discovered 1977 Sept. 11 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. O. Kippes (d, MPC 5347), C. M. Bardwell (MPC 9960)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell

M	29.24508	(1950.0)	P	Q
n	0.26637445	Peri. 287.67751	+0.58218551	+0.81267386
a	2.3922561	Node 17.99455	-0.71200069	+0.52438719
e	0.1946123	Incl. 4.62770	-0.39257489	+0.25412451
P	3.70	H 13.3	G 0.25	

Residuals in seconds of arc

760402	095	1.0+	1.9+	811028	095	2.0-	0.5-	880922	399	1.2-	0.8-
770911	095	0.3-	0.3-	880913	399	0.7+	0.8+	880922	399	2.0+	1.3-
770918	095	0.1-	0.3+	880913	399	1.1+	0.0	880922	399	0.3-	1.0-
770921	095	1.4-	1.5-	880913	399	1.7+	3.5+	881012	801	1.5-	0.6-
771010	095	1.0+	2.5+	880914	801	2.2-	0.3-				
811024	095	2.2+	0.4+	880921	399	0.9-	0.2+				

(3943)* 1981 RG1 = 1974 RQ1

Discovered 1981 Sept. 3 by F. Borngen at Tautenburg.

Id. L. D. Schmadel (MPC 11729)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Schmadel

M	18.90528	(1950.0)	P	Q
n	0.28747810	Peri. 353.71652	+0.99990470	-0.00477326
a	2.2736985	Node 6.59869	+0.01059184	+0.86706656
e	0.1897294	Incl. 6.47253	-0.00885445	+0.49816945
P	3.43	H 14.2	G 0.25	

Residuals in seconds of arc

740914	095	0.1-	1.6+	811116	026	2.2+	1.5+	880909	033	0.2-	0.7+
740914	095	1.6+	3.4-	811116	026	0.9+	0.0	880910	033	0.2+	0.6+
810903	033	1.2-	0.1-	811121	026	0.1-	0.0	880910	033	0.3-	0.8+
810903	033	1.1-	0.0	811217	675	0.6-	0.9-	881103	033	0.1-	0.1-
811101	026	1.1+	0.0	811217	675	0.3-	0.2-	881104	033	0.3+	0.1-
811102	026	1.9-	2.1-	830416	033	0.0	0.8-	881104	033	0.2+	0.4-
811107	026	0.1-	1.1+	830416	033	1.2-	1.1-				

(3944)* 1981 WP1 = 1977 SH3

Discovered 1981 Nov. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. C. M. Bardwell (MPC 6646)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell

M	11.17578	(1950.0)	P	Q
n	0.27038185	Peri. 287.69773	+0.99089386	+0.05526915
a	2.3685598	Node 69.27515	+0.00398737	+0.89942464
e	0.1511914	Incl. 7.54320	-0.13458625	+0.43356733
P	3.65	H 13.2	G 0.25	

Residuals in seconds of arc

770923	095	0.0	1.2+	811220	688	3.1-	0.9-	860112	688	2.9+	2.1+
771008	095	2.7-	0.8+	811220	688	2.2+	0.5-	860209	801	2.9-	1.7+
811124	688	2.8+	0.3-	811230	688	1.1-	1.1-	870427	801	2.6+	3.3+
811124	688	1.0+	1.5-	820116	688	1.3+	0.3+	881010	801	0.3-	1.5+
811202	688	2.0+	0.3-	820116	688	1.1+	1.1+	881112	801	1.6-	1.9+
811202	688	0.6-	0.5-	860112	688	2.6-	2.4+				

(3945)* 1982 PL = 1971 TD2 = 1980 FM1

Discovered 1982 Aug. 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. T. A. Vinogradova (MPC 13582)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Marsden

M	23.85507	(1950.0)	P	Q	
n	0.17780058	Peri.	334.28295	+0.96020801	+0.27923598
a	3.1321839	Node	9.50697	-0.25039627	+0.86909704
e	0.2609170	Incl.	1.83054	-0.12370238	+0.40828618
P	5.54	H	12.2	G 0.25	

Residuals in seconds of arc

711013	095	0.2+	0.7-	820920	095	0.1-	0.0	881106	896	(2.9-	1.9+)Y
711014	095	0.9-	4.0+	881006	801	0.1+	0.3+	881106	896	2.0-	1.9+ Y
711015	095	2.6-	2.7+	881013	399	1.0+	0.3-	881108	801	1.6+	0.8+
711020	095	0.8+	0.6-	881013	399	2.8+	0.3-	881108	399	0.9+	1.0-
800316	809	0.4+	0.9+	881013	399	1.7+	2.8-	881108	399	0.0	0.2+
800316	809	0.1+	0.3+	881031	897	0.1+	2.0-	881108	399	0.7-	0.3-
800316	809	0.3+	0.9+	881031	897	1.1+	1.7-	881111	399	(4.2-	0.8-)
800316	809	0.3+	0.6+	881103	875	0.3-	0.3+	881111	399	(2.5-	0.9-)
800317	809	0.4-	0.4+	881103	875	0.8-	1.4+	881111	399	0.1-	0.5-
800317	809	0.3+	0.5+	881103	896	1.8+	0.4-	881111	399	0.2-	0.5-
800317	809	0.3+	0.8+	881103	896	2.6-	1.1-	881111	046	(5.0+	0.8-)
800317	809	1.2+	0.6+	881104	046	(8.4+	3.4-)	881111	046	(5.9+	0.1+)
820814	095	0.9-	0.3+	881104	046	(8.5+	3.6-)	881114	399	1.5-	1.9+
820816	095	0.6+	0.4-	881105	046	(8.0+	3.4-)	881114	399	2.0-	1.8+
820913	095	0.2+	0.7+	881105	046	(6.5+	4.7-)				

(3946)* 1983 EL2 = 1969 UT2 = 1974 SK = 1978 GQ4 = 1980 TD12 = 1986 WJ2 = 1988 FJ1

Discovered 1983 Mar. 5 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Green

M	306.29724	(1950.0)	P	Q	
n	0.18191683	Peri.	274.83285	-0.49259023	+0.87023094
a	3.0847558	Node	325.65310	-0.79320865	-0.45240111
e	0.1370893	Incl.	0.73911	-0.35801521	-0.19501625
P	5.42	H	12.1	G 0.25	

Residuals in seconds of arc

691016	095	0.7-	1.4+	830315	095	1.3-	1.1+	861201	046	0.5-	1.4-
740919	095	1.8-	0.5+	830318	095	2.1+	1.0-	861203	046	1.2-	1.4-
740921	095	0.5+	0.5+	830320	095	(4.6+	2.5+)	861203	046	0.1-	0.3+
740923	095	0.6+	0.4-	830409	095	0.1+	0.1+	880317	033	0.1+	1.1+
780411	095	0.1-	0.2-	861130	046	1.7+	1.2+	880317	033	0.4-	0.9+
801010	095	0.2+	2.5+	861130	046	0.2-	0.7-				
830305	095	0.4+	1.1+	861201	046	0.6+	1.2-				

(3947)* 1983 XD = 1955 SP

Discovered 1983 Dec. 1 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. C. M. Bardwell (MPC 8465)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell

M	6.42410	(1950.0)	P	Q	
n	0.18049188	Peri.	104.32489	+0.99531561	+0.03513685
a	3.1009703	Node	253.72158	-0.06634757	+0.92585997
e	0.1446312	Incl.	5.38396	+0.07031956	+0.37622962
P	5.46	H	12.0	G 0.25	

Residuals in seconds of arc

550917	760	0.6+	1.2-	831205	688	0.2+	0.2-	840102	688	1.7+	0.9-
550917	760	1.0+	0.5-	831205	688	0.2+	0.5-	840104	688	0.7+	0.3+
551010	760	0.7-	0.4+	831206	688	2.0-	0.0	840104	688	0.5-	3.4-
551010	760	0.1-	0.4-	831206	688	0.4+	0.8+	850325	801	0.4-	0.5+
831128	688	0.8-	0.3+	831209	688	1.2+	0.3-	870624	801	0.3+	0.6-
831128	688	1.0-	0.3+	831209	688	0.2-	1.0+	881013	801	1.8-	2.2+
831201	688	1.3-	0.2+	831229	688	1.0+	1.4-	881107	801	0.6+	0.1-
831201	688	1.1+	0.9+	831229	688	0.7+	0.9+				

(3948)* 1985 RF = 1975 TG5 = 1975 VH7 = 1978 NR1 = 1981 JF

Discovered 1985 Sept. 15 by P. Jensen at Brorfelde.

Id. B. G. Marsden (MPC 10303)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Marsden

M	344.01930		(1950.0)	P	Q
n	0.28963142	Peri.	120.09929	+0.64905636	+0.76069193
a	2.2624150	Node	190.38451	-0.71329353	+0.60461563
e	0.1941250	Incl.	2.72836	-0.26445826	+0.23619423
P	3.40	H	13.7	G 0.25	

Residuals in seconds of arc

751014	095	0.3+	2.7-	850917	054	0.3+	0.1-	880614	657	1.3-	1.3-
751106	095	0.9-	3.0-	850923	054	0.2+	0.1-	880614	657	0.5-	1.7-
780704	095	1.2+	2.5+	851010	054	1.2-	0.8-	880615	801	0.3-	1.4+
780708	095	0.6-	1.7+	851012	054	0.1+	1.9+	880615	675	0.1-	1.5-
810503	688	0.2-	0.5-	851018	054	0.0	0.2-	880617	675	0.1+	1.3-
810503	688	0.4-	0.5-	870127	054	2.2+	1.4+				
850915	054	0.7+	0.3+	880514	688	0.3+	0.1+				

(3949)* 1985 UL = 1985 VG1 = 1984 JB1 = 1987 HE2

Discovered 1985 Oct. 20 by A. Mrkos at Klet.

Id. S. Nakano (d, MPC 10817), C. M. Bardwell (MPC 11996)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Rogers

M	149.19864		(1950.0)	P	Q
n	0.30049612	Peri.	302.92511	-0.97522763	+0.21243410
a	2.2075479	Node.	249.40474	-0.17449602	-0.91014169
e	0.0329922	Incl.	3.77723	-0.13594925	-0.35568786
P	3.28	H	13.3	G 0.25	

Residuals in seconds of arc

840503	688	0.3+	1.2-	851024	046	1.6+	2.0-	880915	801	1.7+	1.5+
840503	688	0.6-	1.0-	851107	688	2.0+	1.6-	881004	046	1.1+	3.3-
851020	046	(1.5-	3.4-)	870422	010	2.2-	0.2+	881004	046	1.5+	1.3-
851020	046	0.4-	1.0-	870422	010	0.8+	2.6-	881007	801	1.1+	2.2+
851021	046	0.1+	0.9-	870422	010	0.5+	0.1-	881009	046	2.3-	0.8-
851021	046	1.4-	0.9+	880912	801	0.3-	2.8+	881009	046	3.4-	1.4-

(3950)* 1986 CH = 1986 AV2 = 1976 FF = 1984 WN2

Discovered 1986 Feb. 8 by S. Inoda at T. Urata at Karasuyama.

Id. F. Bowman (d, MPC 10817), E. Bowell (k, MPC 11843), L. Schmadel (ibid.)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Rogers

M	140.63045		(1950.0)	P	Q
n	0.19046789	Peri.	272.37536	-0.98762241	+0.02240416
a	2.9917240	Node.	268.93721	+0.04050371	-0.91974813
e	0.0554417	Incl.	8.93237	-0.15153031	-0.39186915
P	5.17	H	12.1	G 0.25	

Residuals in seconds of arc

760331	095	1.4+	2.1+	860216	889	1.1+	1.6-	880808	046	0.8-	0.8-
841120	675	0.7+	0.6+	860216	889	0.6+	0.0	880809	801	0.3-	0.1+
841121	675	0.7-	0.3-	860302	889	0.9-	0.1+	880813	046	(2.2+	3.0-)
860112	688	0.6+	1.3-	860302	889	1.3-	0.7+	880813	046	2.5-	0.2+
860112	688	0.8+	0.8-	860312	889	(3.1-	0.5-)	880815	046	1.8+	1.9+
860208	889	0.8-	0.2+	860312	889	0.8-	0.7-	880815	046	1.7+	0.1-
860208	889	0.4-	2.6+	880807	046	0.3-	0.9-				

(3951)* 1986 CK1 = 1986 AU2 = 1976 JG9 = 1979 DR = 1981 UJ12

Discovered 1986 Feb. 13 at Osservatorio San Vittore.

Id. B. G. Marsden (d, MPC 10953), C. M. Bardwell (ibid.)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Townsend

M	314.86343	(1950.0)	P	Q	
n	0.27552543	Peri.	151.62177	+0.47782468	-0.87338022
a	2.3389894	Node.	269.69661	+0.78704651	+0.47330594
e	0.1739887	Incl.	5.41052	+0.39018119	+0.11484109
P	3.58	H	13.1	G 0.25	

Residuals in seconds of arc

760502	809	0.3-	0.8-	860213	552	0.2-	0.6+	880912	657	0.3+	1.5-
790228	330	1.3-	1.5-	860214	809	0.5-	0.7-	880914	657	0.3-	0.5-
811022	095	0.4-	3.2+	860214	809	0.1-	0.8-	880914	657	0.4+	0.5-
811024	095	1.5-	3.5+	860215	809	1.2+	1.2-	881002	552	1.2+	0.7-
860112	688	2.4+	1.8-	860215	809	1.0+	1.3-	881002	552	0.4+	0.1-
860112	688	1.3+	1.2-	860216	809	0.8+	0.1-	881006	552	0.9+	2.1-
860211	809	1.0-	0.5+	860216	809	0.5+	0.5-	881006	552	0.5+	1.8-
860211	809	0.9-	0.6+	860217	809	0.3-	0.4+	881011	657	2.1+	0.2-
860211	809	0.6-	0.5+	860217	809	0.2-	0.3+	881011	657	1.1+	0.5+
860212	809	0.7-	0.9-	860220	809	0.5-	0.0	881015	567	0.1-	0.8-
860212	809	0.6-	0.9-	860220	809	0.3-	0.0	881015	567	0.0	1.9+
860212	809	0.4-	0.9-	860220	809	0.2-	0.1+	881016	552	0.6-	2.9-
860213	809	0.4-	0.6+	880910	552	0.4+	0.1-	881016	552	(0.5-	4.1-)
860213	809	0.3-	0.6+	880910	552	0.6-	0.1-	881020	552	1.2+	1.1+
860213	809	0.1-	0.5+	880912	657	1.0-	0.3+	881020	552	1.0+	0.5+
860213	552	0.5-	1.7+								

(3952)* 1986 EM2 = 1975 EF5 = 1982 AK

Discovered 1986 Mar. 14 at the Bulgarian National Observatory.

Id. B. G. Marsden (MPC 12140)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Marsden

M	294.30422	(1950.0)	P	Q	
n	0.26758136	Peri.	175.95950	-0.24459487	-0.96908503
a	2.3850573	Node	288.19610	+0.88861226	-0.21067678
e	0.1562144	Incl.	1.95243	+0.38799691	-0.12841148
P	3.68	H	13.7	G 0.25	

Residuals in seconds of arc

750315	095	0.8+	1.9+	860308	809	0.1+	0.4+	881013	399	0.3+	0.7-
820115	046	0.4-	0.6+	860309	809	0.4-	0.2-	881111	399	0.7+	0.1-
820115	046	0.1-	0.4-	860309	809	0.6+	0.2-	881111	399	1.1+	0.6-
820116	046	0.9+	0.3+	860312	809	1.1-	1.2+	881111	399	0.1+	0.8+
820116	046	0.9+	0.3+	860312	809	0.7+	0.0	881111	399	1.4+	0.9+
820118	046	1.1-	0.1+	860314	071	0.8+	1.5-	881114	399	0.7-	1.0-
820118	046	3.6-	1.0+	860314	071	0.9+	0.8-	881114	399	2.0-	1.2+
820119	095	2.1+	2.4-	860315	809	0.6-	0.2+	881114	399	1.9-	2.2+
820120	095	1.2+	0.7-	860315	809	1.0-	0.7+				
860308	809	0.3-	0.4-	881013	399	0.5+	1.7-				

(3953)* 1986 VB6 = 1969 TO6 = 1979 QG8 = 1979 RP1

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

Id. L. D. Schmadel (MPC 11729)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Green

M	214.10965	(1950.0)	P	Q
n	0.28982808	Peri. 237.38350	+0.99198843	-0.10683156
a	2.2613914	Node 128.65863	+0.12370292	+0.92970419
e	0.1876098	Incl. 4.95327	-0.02562310	+0.35247288
P	3.40	H 14.0	G 0.25	

Residuals in seconds of arc

691015	095	1.4+	4.7-	861127	033	0.1-	0.4-	880313	054	0.2+	0.4+
790826	095	0.1+	2.1+	861128	033	0.3-	0.5-	880313	054	0.0	0.2+
790914	095	0.6-	0.8-	861129	033	0.7-	0.2+	880318	054	0.5+	0.7-
861106	688	0.2+	1.2+	861204	688	0.2-	0.2-	880415	054	0.8-	0.3-
861106	688	0.8+	1.5+	861204	688	0.4-	2.4+				

(3954)* 1987 HU = 1984 FE

Discovered 1987 Apr. 24 by F. Borngen at Tautenburg.

Id. D. W. E. Green (MPC 12709)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Schmadel

M	111.37568	(1950.0)	P	Q
n	0.31394358	Peri. 71.31686	-0.60785045	+0.79384984
a	2.1440504	Node 161.21488	-0.74783588	-0.56475012
e	0.0931503	Incl. 3.18578	-0.26694442	-0.22552101
P	3.14	H 15.5	G 0.25	

Residuals in seconds of arc

840331	688	2.0-	0.1+	870424	033	0.1-	0.5-	880909	033	0.1-	0.1+
840331	688	2.6+	0.0	870427	033	0.2+	0.1-	880909	033	0.5+	0.0
840403	688	(8.5-	3.9+)	870427	033	0.3-	0.4+	880910	033	0.2-	0.6-
840403	688	0.6-	0.1-	870429	033	0.4+	0.1-	880910	033	0.3-	0.2-
870424	033	0.1-	0.1+	880908	033	0.3+	0.9+	880911	033	0.2-	0.2-

(3955)* 1988 RF3 = 1956 TQ = 1972 TJ8 = 1977 RD6 = 1977 TB7 = 1980 GJ1 = 1982 RM

Discovered 1988 Sept. 9 by F. Borngen at Tautenburg.

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Nakano

M	308.93457	(1950.0)	P	Q
n	0.18762676	Peri. 76.13794	-0.16359165	-0.98384883
a	3.0218497	Node 23.65179	+0.82062178	-0.17658912
e	0.0773835	Incl. 10.43460	+0.54755609	-0.02928755
P	5.25	H 11.5	G 0.25	

Residuals in seconds of arc

561011	760	(86.0-	64.1-)X	800416	805	0.2+	0.0	880910	033	0.6+	0.1+
721006	095	0.2-	4.2+	820915	688	0.1+	0.5+	880910	033	0.1+	0.3-
770909	095	2.5-	0.6+	820915	688	1.3+	0.0	881111	897	0.3-	0.3-
771009	095	1.4-	1.7-	820922	688	1.3+	0.4-	881111	897	1.1-	0.9-
800414	805	0.2-	1.7+	820922	688	0.0	0.6-	881114	897	0.0	0.9-
800415	805	0.8+	0.4-	880909	033	0.5+	0.6-	881114	897	1.2+	0.9+

(3956)* 1988 VL1 = 1951 TD = 1971 QM1 = 1978 WS3 = 1981 RA4 = 1981 SM3 = 1986 AZ1

Discovered 1988 Nov. 3 by P. Jensen at Brorfelde.

Id. S. Nakano, N. S. Chernykh (d)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Nakano

M	12.47386	(1950.0)	P	Q
n	0.29405728	Peri. 107.55901	+0.99580313	-0.04288696
a	2.2396565	Node 254.95764	+0.00932308	+0.92634924
e	0.1797429	Incl. 4.80239	+0.09104506	+0.37421624
P	3.35	H 13.2	G 0.25	

Residuals in seconds of arc

511002	760	0.2+	0.9+	810905	095	1.5+	0.1-	881103	054	0.7+	0.3+
511002	760	0.4+	0.5+	810923	095	0.6-	1.5-	881103	054	0.5+	0.2+
710830	095	2.6-	0.7+	860112	688	0.6+	0.1-	881104	054	0.3+	0.1-
710926	095	1.5+	0.6-	860112	688	1.3+	0.2-	881110	897	0.4+	0.4+
781129	675	2.0-	0.4-	860117	688	0.4-	0.3-	881110	897	0.1-	0.5-
781130	675	0.6-	0.3+	860117	688	1.0-	0.2-				

1953 VX1 = 1953 XE = 1979 FE1 = 1980 LV = 1981 WU8 = 1988 XN

Id. C. M. Bardwell (d, MPC 4772), T. Kobayashi

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	357.69919	(1950.0)	P	Q
n	0.28207955	Peri. 205.55887	+0.79712619	-0.60367559
a	2.3026167	Node 191.60146	+0.56436595	+0.75245830
e	0.1384902	Incl. 3.66907	+0.21466467	+0.26340517
P	3.49	H 13.5	G 0.25	

Residuals in seconds of arc

531109	024	1.0-	1.3-	531205	760	0.2+	0.7+	881205	897	0.0	1.0-
531111	760	0.2+	0.4-	790323	095	0.3-	0.3-	881205	897	1.3-	1.2+
531111	760	1.4-	0.2+	800610	675	0.1-	0.7-	881207	897	0.3+	0.4-
531205	760	1.5+	0.5+	811125	095	2.1+	0.2-	881207	897	1.7-	0.1-

1971 UN1 = 1982 SX10 = 1988 VZ4

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	358.48469	(1950.0)	P	Q
n	0.17562773	Peri. 209.58095	+0.80589623	-0.59205020
a	3.1579651	Node 186.72375	+0.54775888	+0.74738326
e	0.2142187	Incl. 1.36877	+0.22470309	+0.30148767
P	5.61	H 13.0	G 0.25	

Residuals in seconds of arc

711026	029	0.4+	0.1+	711110	029	0.2-	0.7+	881115	875	1.3-	1.1-
711026	029	0.3-	0.3-	711110	029	0.0	1.2-	881129	875	0.4+	1.4+
711030	029	0.6+	0.2-	711119	029	0.9+	1.4+	881129	875	0.0	0.6+
711110	029	0.2+	0.4+	820927	095	0.0	0.1-				
711110	029	1.8-	0.1+	881115	875	0.8+	1.7-				

1975 TE = 1975 TF2 = 1948 QL = 1985 PA2

Id. B. G. Marsden (d, MPC 9064; unpublished)

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden

M	314.27767	(1950.0)	P	Q
n	0.29311352	Peri. 325.39840	+0.98187350	+0.18704740
a	2.2444659	Node 23.87676	-0.15226972	+0.87465584
e	0.2166956	Incl. 4.33873	-0.11286439	+0.44720290
P	3.36	H 14.5	G 0.25	

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

480829	078(0.04-	0.04-)X		850813	095	0.5+	0.9-	850911	095	0.7+	1.2+
751003	095	1.3-	0.3+	850817	095	0.9-	0.4-	850919	095	1.2-	0.1-
751010	688	0.2+	1.1-	850819	095	0.0	0.1+	850920	095	0.7-	0.4+
751011	688	1.3+	0.2+	850824	095	1.2+	0.2+				

1975 TR4 = 1988 UL
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	329.38225		(1950.0)		P		Q				
n	0.22583229	Peri.	190.12618		+0.67372639		-0.70455234				
a	2.6706249	Node	218.08434		+0.70074017		+0.70488578				
e	0.0354148	Incl.	21.18751		+0.23464009		-0.08210991				
P	4.36	H	12.0	G	0.25						

Residuals in seconds of arc

751014	095	0.5-	1.5+	881016	400	0.2-	0.5-	881108	400	0.4+	0.5-
751102	095	1.7+	2.1-	881016	400	3.0-	3.0-	881108	400	0.9-	0.9-
751106	095	1.2-	0.2+	881019	400	2.8+	2.0+	881108	400	1.0+	1.0+
751107	095	(5.4+	9.2+)	881019	400	(0.7+	4.6+)	881111	400	1.1+	2.3+
881016	400	3.1-	1.3-	881019	400	1.5+	1.8+	881111	400	0.6+	0.2-

1977 SN = 1981 UG18
Id. S. Nakano (MPC 11146); 1977 SN = 1955 QS1 is invalid (MPC 11146)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden

M	39.67712		(1950.0)		P		Q				
n	0.27047077	Peri.	212.18156		+0.44659831		+0.89084258				
a	2.3680454	Node	84.46342		-0.80209317		+0.43990224				
e	0.2358048	Incl.	4.80439		-0.39648014		+0.11351440				
P	3.64	H	13.5	G	0.25						

Residuals in seconds of arc

770918	095	1.1+	1.0+	811024	095	0.6+	0.9-	880912	657	1.9-	0.1+
770922	095	0.3-	0.0	870225	801	0.4-	0.4+	881006	801	0.7+	2.1+
771007	095	0.5-	0.0	870329	801	1.3+	2.0+				
771017	095	0.7-	0.9-	880912	657	0.1+	0.0				

1977 TS3 = 1977 VN1 = 1977 VQ1 = 1988 VE2
Id. T. Urata (d, MPC 5347), O. Kippes (ibid.), B. G. Marsden, S. Nakano
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden

M	7.32341		(1950.0)		P		Q				
n	0.18250036	Peri.	262.30840		+0.96019034		-0.27113998				
a	3.0781829	Node	113.40407		+0.27635952		+0.88692408				
e	0.2527196	Incl.	4.20004		+0.04074213		+0.37396362				
P	5.40	H	12.0	G	0.25						

Residuals in seconds of arc

770923	095	0.2+	0.4+	771104	330	1.2-	0.8-	881112	877	0.5-	0.7+
771008	095	1.3-	0.2-	881107	877	2.1+	2.2+	881112	877	1.8-	0.3-
771012	330	1.5+	0.4+	881107	877	1.9+	2.2+	881127	877	0.4+	0.0
771103	330	1.7-	0.0	881109	877	1.3-	3.1-	881127	877	0.4-	2.0+
771104	330	2.4+	0.4+	881109	877	0.5-	3.9-				

1978 GR3 = 1988 CT6
Id. A. Lowe (MPC 13162)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Bardwell

M	348.70845		(1950.0)		P		Q				
n	0.18542687	Peri.	22.90598		-0.95441087		+0.29848833				
a	3.0457095	Node	174.45953		-0.27718303		-0.88356994				
e	0.1162281	Incl.	1.27544		-0.11076763		-0.36084466				
P	5.32	H	12.0	G	0.25						

Residuals in seconds of arc

780411	095	0.0	0.3+	830318	095	2.2-	2.1+	880118	809	1.1+	0.7+
780505	095	0.1-	0.5+	830318	095	0.0	1.1-	880118	809	1.8+	0.8+
830305	095	0.3-	1.3+	830320	095	0.2+	0.4-	880120	809	0.4+	1.0+
830315	095	(4.1-	1.0-)	830409	095	0.0	1.4-	880120	809	0.3+	0.9+

880122 809 0.1+ 0.4+ 880126 809 0.8- 0.9+ 880215 046 1.1- 1.1+
880122 809 0.2+ 0.4+ 880128 809 0.0 0.4+ 880215 046 1.2- 0.6+
880124 809 0.4+ 1.0+ 880128 809 0.5+ 0.7+ 880216 046 0.7- 1.5-
880124 809 0.1- 1.0+ 880130 809 0.0 0.5+ 880216 046 2.0- 2.3-
880126 809 0.4- 1.0+ 880130 809 0.7+ 0.5+

1978 ON = 1977 HT = 1988 VB4
Id. S. J. Bus (k, MPC 10951), S. Nakano
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	24.23573	(1950.0)	P	Q
n	0.21622923	Peri. 342.74347	+0.99001995	-0.13869653
a	2.7491218	Node 25.26936	+0.13521337	+0.88489139
e	0.1064143	Incl. 3.35416	+0.03972208	+0.44466898
P	4.56	H 12.0	G 0.25	

Residuals in seconds of arc
770424 675 0.0 0.4+ 780731 323 0.6+ 0.5+ 881115 400 1.3+ 1.8-
770425 675 0.4+ 0.4+ 780731 323 0.0 0.5+ 881115 400 1.0- 1.1-
780710 675 0.3+ 2.6- Y 780803 323 1.5- 1.1+ 881116 400 0.3- 1.6+
780711 675 (7.1+ 3.3-)Y 780803 323 1.7- 1.5+ 881116 400 0.5- 1.4+
780713 675 (3.5- 2.6+)Y 780811 323 1.7+ 1.0- 881116 400 0.4- 1.8+
780728 323 0.3- 1.1- 780811 323 1.6+ 0.2+
780728 323 0.7- 1.1+ 881115 400 0.7+ 1.4-

1978 TW2 = 1978 VN12 = 1966 DE = 1968 UT1 = 1983 CE4 = 1985 WV = 1988 RQ3
Id. T. Furuta (d, JAM 1968), C. M. Bardwell
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Bardwell

M	259.46403	(1950.0)	P	Q
n	0.29102025	Peri. 310.58599	-0.24618710	-0.96903482
a	2.2552158	Node 153.64762	+0.90167389	-0.23619955
e	0.0987726	Incl. 2.46146	+0.35549416	-0.07198123
P	3.39	H 14.0	G 0.25	

Residuals in seconds of arc (or two decimals in units of degrees)
660218 760(0.03- 0.00+)X 830214 381 0.4+ 0.4- 880910 033 0.7- 0.5-
681023 095 3.2- 2.2+ 851120 095 0.0 3.7- 880910 033 0.8- 0.9-
781003 095 0.5- 0.0 880908 033 0.4- 0.1- 880911 033 0.3- 0.4-
781007 095 1.8+ 0.1+ 880909 033 0.5- 0.5-
781102 095 2.3+ 2.5+ 880909 033 0.0 0.7-

1978 VV5 = 1983 CX1 = 1988 RK3
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Bardwell

M	165.77874	(1950.0)	P	Q
n	0.27770233	Peri. 45.91334	-0.99563213	+0.09123853
a	2.3267545	Node 139.30948	-0.09196414	-0.92181333
e	0.1383542	Incl. 1.74066	-0.01610177	-0.37674357
P	3.55	H 14.5	G 0.25	

Residuals in seconds of arc
781105 675 0.0 0.3+ 781130 675 0.1+ 0.7- 880909 033 0.6+ 0.0
781106 675 1.1- 0.8+ 830204 046 0.7- 0.1- 880910 033 0.2+ 0.1-
781107 675 0.9+ 0.4- 830204 046 0.4+ 0.6- 880910 033 0.2- 0.4-
781108 675 0.5- 0.5+ 880908 033 0.7+ 0.1- 880911 033 0.3- 0.4+
781129 675 0.3+ 1.0- 880909 033 0.4- 0.5-

1979 FD2 = 1988 RL3
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Bardwell

M	187.84767	(1950.0)	P	Q
n	0.26095342	Peri. 26.84570	-0.98122777	-0.19061904
a	2.4252783	Node 142.12904	+0.16725849	-0.91669264
e	0.1524473	Incl. 2.73243	+0.09600345	-0.35119651
P	3.78	H 14.0	G 0.25	

Residuals in seconds of arc

790323	095	0.7-	3.2+		880908	033	0.6-	0.3+		880910	033	1.0-	1.3+
790329	095	4.7+	0.2-		880909	033	0.6-	1.0-		880911	033	0.8-	1.4+
790420	095	1.2+	0.2-		880909	033	0.6-	0.3+					
790425	095	0.6-	2.0-		880910	033	1.0-	0.4+					

1979 KR = 1972 TZ2 = 1975 GG1 = 1988 RU2

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	53.68539	(1950.0)		P	Q
n	0.23876926	Peri.	50.18050	-0.34633378	+0.93573091
a	2.5732606	Node	199.86685	-0.90950258	-0.35236778
e	0.1414861	Incl.	11.33407	-0.22990863	-0.01564021
P	4.13	H	13.0	G 0.25	

Residuals in seconds of arc

721005	095	0.4-	2.2+		790521	809	0.3+	0.3-		790524	809	0.1-	0.3+
750415	805	0.2+	1.5+		790523	809	0.0	0.5+		880905	675	0.1-	0.4-
790519	809	0.3-	0.5-		790523	809	0.1+	0.2+		880907	675	0.3+	0.2-

1979 MB2 = 1979 OF1 = 1988 VF3

Id. H. Oishi (d, JAM 2062), S. Nakano

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	326.82096	(1950.0)		P	Q
n	0.24256800	Peri.	297.22615	+0.20333591	-0.97707311
a	2.5463294	Node	140.87707	+0.92994284	+0.17255563
e	0.2750502	Incl.	5.74004	+0.30636715	+0.12471041
P	4.06	H	14.0	G 0.25	

Residuals in seconds of arc

790623	413	0.7-	0.5-		790724	675	0.5+	0.0		881112	877	1.8+	0.8-
790624	413	0.3+	0.2+		790725	675	0.7+	0.3-		881112	877	1.0+	0.8-
790625	413	0.4-	1.0+		881108	877	(7.3-	3.7-)Y		881115	877	0.6-	0.6+
790629	413	0.3-	0.5-		881108	877	1.7-	1.2+ Y		881115	877	0.6-	0.1-

1979 VA

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Marsden

M	25.66626	(1950.0)		P	Q
n	0.22961364	Peri.	91.07232	+0.99856064	-0.02271172
a	2.6412181	Node	270.23034	+0.00152335	+0.91756173
e	0.6228264	Incl.	2.78502	+0.05361274	+0.39694414
P	4.29	H	16.3	G 0.25	

From 50 observations 1979 June 15-1980 Feb. 11, mean residual 1".0.

1980 BB = 1979 YZ8 = 1980 BU5 = 1953 PE1 = 1978 TF9 = 1978 UM = 1985 DR4

Id. B. G. Marsden (d, MPC 9203), K. Ichikawa (k), H. Oishi

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Ichikawa

M	64.09725	(1950.0)		P	Q
n	0.20383432	Peri.	254.78476	+0.90206943	+0.42821840
a	2.8594689	Node	79.83616	-0.37198017	+0.83467316
e	0.0688645	Incl.	3.13609	-0.21886410	+0.34633759
P	4.84	H	12.4	G 0.25	

Residuals in seconds of arc

530805	078	0.0	0.3-		791224	095	1.8-	1.3-		800126	801	1.5+	0.6+
781004	095	0.8+	1.3+		800123	095	0.4-	0.3-		850220	675	0.2-	0.6+
781028	688	0.9-	1.0- Y		800125	801	0.4+	0.1+		850223	675	0.4+	0.1+

1980 BM = 1980 BK4 = 1980 CC = 1952 US1 = 1952 VH = 1960 MD = 1978 TR1 = 1982 OQ
Id. B. G. Marsden (d, MPC 9203), K. Ichikawa (k), H. Oishi
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Ichikawa

M	93.44061	(1950.0)	P	Q	
n	0.22609770	Peri.	228.03779	+0.98678687	-0.00614239
a	2.6685345	Node	131.63423	+0.04807714	+0.96537573
e	0.2061164	Incl.	12.51099	-0.15472644	+0.26079104
P	4.36	H	12.3	G 0.25	

Residuals in seconds of arc

521022	839	1.8+	1.3-	600624	839	1.2-	1.0+	800211	688	1.7+	1.0-
521022	839	1.3+	2.0-	781003	095	1.2-	0.3+	800211	688	2.0+	1.6-
521113	839	2.1-	1.8+	800122	688	0.1+	0.6-	820721	372	0.6+	3.9-
521113	839	0.1-	0.6+	800122	688	3.8-	1.1-	820721	372	0.4+	2.5-
600624	839	0.3+	0.8+	800122	095	0.1-	1.3-				

1980 PB2 = 1969 TE6 = 1986 TL3
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	181.06159	(1950.0)	P	Q	
n	0.17371208	Peri.	115.66965	+0.57586835	+0.81696814
a	3.1811394	Node	189.66902	-0.80013689	+0.55552027
e	0.1021233	Incl.	10.51061	-0.16779927	+0.15479112
P	5.67	H	12.0	G 0.25	

Residuals in seconds of arc

691015	095	1.9-	2.1-	861004	046	2.4+	1.7+	861005	046	0.1+	2.5-
691017	095	2.1+	1.1+	861004	046	0.8-	2.6+	861005	046	0.5+	3.3-
800806	809	0.2-	0.3-	861004	046	2.4+	4.4-	861009	046	(5.2-	0.1-)
800807	809	0.4+	0.5-	861005	046	3.0+	3.8-	861009	046	1.8+	0.1+
800809	809	0.1+	0.1+	861005	046	3.5-	4.7+	861010	046	0.8-	1.1+
800810	809	0.2-	0.6+	861005	046	1.8-	4.2+	861010	046	2.2-	0.8+

1980 RZ3 = 1980 TK7 = 1949 QP1 = 1973 AM4
Ids. S. Nakano (d, MPC 10752), T. Kobayashi
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	274.13672	(1950.0)	P	Q	
n	0.22315408	Peri.	11.98518	+0.94540014	-0.32552976
a	2.6919448	Node	7.07267	+0.28741768	+0.80993481
e	0.2339205	Incl.	7.36231	+0.15365431	+0.48788931
P	4.42	H	13.0	G 0.25	

Residuals in seconds of arc

490824	760	1.6-	1.9+	730103	095	0.9+	0.7+	801010	095	2.8+	0.3-
490824	760	3.7+	1.0+	800906	095	1.0-	0.4-	801015	095	1.5+	1.7+

1980 SJ = 1935 QM = 1954 UB
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	28.72193	(1950.0)	P	Q	
n	0.26289747	Peri.	145.14130	+0.94954382	-0.30524897
a	2.4133026	Node	232.79309	+0.26323492	+0.90052298
e	0.1425804	Incl.	5.18945	+0.17051072	+0.30964725
P	3.75	H	13.5	G 0.25	

Residuals in seconds of arc

350831	024	0.2+	0.6-	800929	046	1.0-	0.5-	801003	046	1.3+	1.3+
541031	024	1.0+	0.7+	801001	046	0.3-	0.1+	801008	095	0.5+	2.0+
541101	024	1.0-	1.0-	801001	046	0.8-	1.2-				
800929	046	1.0-	1.9+	801003	046	0.5+	3.0-				

1980 TX3 = 1987 BL2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi
M 246.57382 (1950.0) P Q
n 0.20523959 Peri. 151.09938 +0.99262043 +0.12086253
a 2.8463958 Node 201.96528 -0.11569838 +0.91963412
e 0.0833695 Incl. 1.50820 -0.03631195 +0.37371825
P 4.80 H 13.0 G 0.25
Residuals in seconds of arc

801007	675	0.3-	0.6-	801010	095	0.1-	0.3-	870131 046 (3.7- 0.4-)
801008	675	0.2-	0.1+	801015	095	0.4+	0.3-	870131 046 0.5- 1.3+
801009	675	0.3+	0.4+	870130	046	1.7+	0.0	870201 046 0.8- 0.5-
801010	675	0.8-	0.3+	870130	046	1.4+	0.3+	870201 046 2.3- 1.0-

1981 EZ46 = 1963 TF
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden
M 235.14865 (1950.0) P Q
n 0.18634473 Peri. 2.39358 +0.70238254 -0.71135354
a 3.0356999 Node 42.98951 +0.65241573 +0.62922548
e 0.3830927 Incl. 2.11778 +0.28462693 +0.31313166
P 5.29 H 14.5 G 0.25
Residuals in seconds of arc

631013	760	0.1-	0.9-	810213	413	0.6-	0.1+	810307 413 0.4+ 0.3-
631013	760	1.0+	0.4-	810302	413	1.6+	0.0	810311 413 0.4- 0.3+
631016	760	2.4+	0.7+	810302	413	2.5+	1.5-	810426 413 0.0 0.7-
631016	760	3.2-	0.3+	810303	413	0.8-	1.6+	810502 413 1.0- 0.6-
810209	413	1.0-	0.2-	810307	413	1.0-	0.9+	

1981 EZ47 = 1975 XX1 = 1975 XE3 = 1979 SU6 = 1979 TT
Ids. B. G. Marsden, C. M. Bardwell (d, MPC 5009), N. S. Chernykh (d)
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden
M 8.01585 (1950.0) P Q
n 0.23142469 Peri. 46.87587 +0.65754049 -0.75341810
a 2.6274258 Node 2.01288 +0.68010941 +0.59282224
e 0.2452625 Incl. 2.10513 +0.32417850 +0.28446960
P 4.26 H 14.5 G 0.25
Residuals in seconds of arc

751126	330	1.1+	1.6-	791014	095	0.3-	0.1-	810307 413 0.1- 0.8-
751129	330	1.3-	0.7-	810202	413	1.3-	0.3-	810311 413 0.3- 0.5+
751201	095	0.2+	2.7+	810213	413	1.3+	0.9-	810311 413 0.5+ 0.1-
751202	095	(0.9+	7.2-)	810303	413	(5.2+	3.3-)	
790923	095	0.8+	0.9-	810307	413	0.9-	0.4+	

1981 UA = 1988 TH
Id. F. N. Bowman
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden
M 336.36323 (1950.0) P Q
n 0.27742810 Peri. 21.06101 +0.79884069 -0.58668987
a 2.3282875 Node 16.99883 +0.46618047 +0.46422323
e 0.3299178 Incl. 27.02700 +0.38017013 +0.66354487
P 3.55 H 15.5 G 0.25
Residuals in seconds of arc

811021	675	0.7-	2.4-	811102	801	0.1+	0.4-	811105 675 0.7- 0.5+
811023	675	0.3+	1.4+	811104	675	1.0+	0.6-	881008 675 0.1+ 0.2+
811025	675	0.0	2.1+	811105	675	0.0	0.4-	881010 675 0.1- 0.2-

1981 WR = 1974 VU2 = 1988 XV
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	313.98542	(1950.0)		P	Q
n	0.28619281	Peri.	340.39792	-0.04465403	-0.99647358
a	2.2805054	Node	112.10894	+0.92645293	-0.06791007
e	0.0896575	Incl.	4.39754	+0.37375258	+0.04928106
P	3.44	H	13.5	G 0.25	

Residuals in seconds of arc

741109	808	0.6-	1.0+	811202	688	0.7+	2.5+	881207	896	2.4+	1.0-
741109	808	0.3-	1.8+	811220	688	1.4+	3.0-	881210	896	0.7+	3.4+
811124	688	1.2-	2.4-	811220	688	1.5+	2.3-	881210	896	1.0-	1.8+
811124	688	0.1-	2.3-	881207	896	2.8-	0.5+				

1982 SE1 = 1988 XG
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	7.55403	(1950.0)		P	Q
n	0.17225926	Peri.	95.53191	+0.94364540	-0.32397602
a	3.1990070	Node	283.38538	+0.26939583	+0.87059966
e	0.1614269	Incl.	3.98593	+0.19224789	+0.37026446
P	5.72	H	12.0	G 0.25	

Residuals in seconds of arc

820919	095	0.6+	0.9+	821011	688	1.5+	0.4+	881201	888	0.7+	0.2-
820921	095	1.2-	2.2+	821021	688	0.1+	0.1-	881201	888	1.8+	1.0+
820922	688	0.4-	1.8-	821021	688	0.5+	0.5+	881203	888	2.6-	0.7-
820922	688	0.8-	1.6-	881201	888	0.1-	0.3+	881203	888	2.7-	0.7-
821011	688	0.2-	0.6-	881201	888	2.9+	0.2+				

1983 GR = 1983 JS = 1988 VA3
Id. S. Nakano (d, MPC 10752; unpublished), T. Kobayashi
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	165.68705	(1950.0)		P	Q
n	0.27009972	Peri.	184.24305	-0.76083627	+0.64500198
a	2.3702089	Node	36.24724	-0.59175285	-0.64439537
e	0.0597808	Incl.	6.93760	-0.26637705	-0.41076399
P	3.65	H	13.0	G 0.25	

Residuals in seconds of arc

830411	809	0.0	1.0-	830515	688	0.5+	0.1-	881111	399	0.1+	0.9-
830411	809	0.4-	0.0	881108	399	0.3+	0.8+	881111	399	0.9-	0.2+
830411	809	0.3-	1.1+	881108	399	1.6+	0.7+	881114	399	1.7-	0.5-
830507	688	0.6+	0.8+	881108	399	2.5+	0.4-	881114	399	0.4+	0.0
830507	688	0.2-	0.8-	881111	399	1.9-	1.3-	881114	399	0.4+	0.7+
830515	688	0.3-	0.3+	881111	399	1.3-	0.8+				

1983 PX = 1974 TF1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Vinogradova

M	38.25687	(1950.0)		P	Q
n	0.21042262	Peri.	111.41115	+0.64491997	+0.76261040
a	2.7994611	Node	199.01878	-0.74565293	+0.61352129
e	0.2628120	Incl.	8.83228	-0.16757068	+0.20498049
P	4.68	H	13.7	G 0.25	

Residuals in seconds of arc

741010	808	0.2-	1.0-	830804	095	0.9-	0.7+	830911	095	1.4-	0.2-
741010	808	0.1-	0.4+	830806	095	0.5+	0.2-	830914	095	0.8+	3.2+
741012	808	0.3-	0.2+	830901	095	0.6+	0.3+				
741012	808	0.7+	0.2+	830905	095	0.2+	3.7-				

1983 RC2 = 1953 JN = 1961 TB1 = 1978 EJ8 = 1979 OV13 = 1979 QT7
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	171.22811	(1950.0)	P	Q
n	0.26876300	Peri. 49.65438	+0.54550899	+0.83756350
a	2.3780661	Node 253.42974	-0.77812451	+0.49278964
e	0.0937530	Incl. 1.80093	-0.31135541	+0.23589351
P	3.67	H 13.0	G 0.25	

Residuals in seconds of arc

530514 839	0.7-	0.2-	790719 095	0.2-	1.7+	830910 095	1.5+	0.7+
530514 839	0.2+	1.3-	790826 095	0.4+	0.4-	830913 095	0.3-	0.2+
611010 760	1.2-	1.3+	830903 095	2.5+	1.1+	830914 688	0.2-	1.6-
611010 760	0.7+	1.0+	830904 688	0.8+	1.5-	830914 688	0.1-	1.9-
780305 095	0.8-	2.4-	830904 688	2.6-	2.5-			

1983 RQ4 = 1987 SR
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Vinogradova

M	55.99019	(1950.0)	P	Q
n	0.25409531	Peri. 204.87128	+0.80514218	-0.59255861
a	2.4687188	Node 191.56778	+0.56278547	+0.77658989
e	0.1489389	Incl. 7.13501	+0.18713255	+0.21396829
P	3.88	H 13.2	G 0.25	

Residuals in seconds of arc

830904 095	1.0+	0.6+	830911 095	(1.2+	0.8+)	870919 688	0.6+	0.1-
830906 095	0.1-	0.0	830915 095	0.4-	2.4-	870926 688	1.0+	2.2+
830909 095	0.5-	1.8+	870919 688	1.5-	2.5-	870926 688	0.1-	0.4+

1983 RR4 = 1932 RC = 1954 RU
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Nakano

M	104.55237	(1950.0)	P	Q
n	0.27001998	Peri. 196.08312	+0.99504905	-0.08733197
a	2.3706755	Node 168.60759	+0.09420548	+0.98088944
e	0.1843079	Incl. 13.89641	-0.03166577	+0.17386498
P	3.65	H 13.5	G 0.25	

Residuals in seconds of arc

320906 024	0.4-	2.3+	540904 675	0.1+	1.3-	830911 095	1.1+	0.5+
320908 012(18.0- 19.7-)X			830901 095	1.2+	1.4-			
540904 675	0.2+	0.4-	830905 095	2.2-	0.1+			

1983 VP1 = 1965 AN = 1976 JF7 = 1978 TX5 = 1985 BE2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	299.66031	(1950.0)	P	Q
n	0.20105288	Peri. 225.83410	-0.29421769	-0.93735098
a	2.8857753	Node 242.13480	+0.92599390	-0.23125409
e	0.0055488	Incl. 12.18345	+0.23658243	-0.26056610
P	4.90	H 11.5	G 0.25	

Residuals in seconds of arc

650101 330	1.9+	0.5+	831107 046	0.4+	1.3-	831112 046	0.1-	2.0+
650110 330	1.5-	0.0	831108 046	1.3+	0.2-	831112 046	1.0+	1.8+
760502 809	0.1-	1.1-	831108 381	2.6-	1.3+	850119 688	1.3-	0.6+
781008 095	0.2-	0.4+	831108 381	0.3+	0.4+	850119 688	0.7+	0.7-
831107 046	1.0+	2.1-	831108 046	1.3-	1.6-			
831107 046	0.3-	1.0-	831108 046	1.4+	1.1-			

1983 WR = 1971 TA = 1977 TN5 = 1987 KB5
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi
M 354.60794 (1950.0) P Q
n 0.17319787 Peri. 292.16091 +0.96137577 +0.19595093
a 3.1874327 Node 57.03578 -0.07463670 +0.86153611
e 0.2344989 Incl. 13.31915 -0.26492639 +0.46835752
P 5.69 H 11.5 G 0.25
Residuals in seconds of arc

711010	808	1.2+	1.5-	831201	688	0.3-	0.3+	840104	688	0.2+	0.9-
771008	095	1.6-	1.3+	831201	688	1.3-	0.5-	840104	688	0.5-	0.1+
831129	688	1.6+	0.2+	831206	801	(3.2-	8.1+)	870530	413	0.6-	1.2-
831129	688	0.5+	0.0	840102	688	1.5+	1.7-	870530	413	0.5-	0.7-

1984 SC1 = 1988 SE
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi
M 1.39412 (1950.0) P Q
n 0.23954835 Peri. 341.26292 +0.94932856 +0.31428033
a 2.5676782 Node 0.43187 -0.24967039 +0.75757788
e 0.1841153 Incl. 13.64754 -0.19089261 +0.57210456
P 4.11 H 14.0 G 0.25
Residuals in seconds of arc

840920	046	1.0-	1.4+	840929	046	1.8-	0.6+	880916	511	2.9-	0.1-
840921	046	0.8+	0.6-	840929	046	0.1+	0.5+	880916	511	1.6+	0.6+
840927	046	0.5+	1.1-	840930	046	0.0	0.2+	880917	511	1.5-	0.8-
840927	046	1.6+	1.9-	840930	046	0.2-	1.0+	880917	511	2.8+	0.3+

1985 BB
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi
M 89.85464 (1950.0) P Q
n 0.19300260 Peri. 231.88594 +0.40351953 +0.91428157
a 2.9654728 Node 61.94767 -0.82632822 +0.38081797
e 0.0345199 Incl. 2.30626 -0.39287870 +0.13808291
P 5.11 H 14.0 G 0.25
Residuals in seconds of arc

850126	372	0.7+	0.6-	850210	372	2.9-	0.4+	860514	372	1.9+	1.5-
850126	372	0.4-	1.9+	850210	372	2.3+	0.3-	860514	372	1.6-	2.3+
850131	372	1.5+	1.2-	850224	372	0.2+	0.7+	881103	372	0.3-	0.8+
850131	372	0.8-	1.0-	850224	372	0.5-	0.0				

1985 PZ1 = 1978 TF7 = 1978 TO9
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden
M 334.26218 (1950.0) P Q
n 0.26952696 Peri. 145.04499 +0.32271852 +0.94232792
a 2.3735703 Node 143.55154 -0.89883610 +0.33448801
e 0.1477115 Incl. 8.58820 -0.29655763 +0.01165632
P 3.66 H 13.5 G 0.25
Residuals in seconds of arc

781002	095	0.4+	1.7-	850817	095	0.5+	0.2+	850919	095	0.5+	0.8+
781008	095	0.3-	1.5+	850819	095	0.1+	1.7-	850920	095	0.5-	0.1-
850813	095	1.0-	1.1+	850824	095	1.8+	0.5-				
850815	095	1.0-	0.4+	850911	095	0.6-	0.1-				

1985 PC2 = 1980 VO2 = 1980 WJ
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden
M 177.08192 (1950.0) P Q
n 0.18235372 Peri. 261.03348 +0.93494449 -0.34707705
a 3.0798329 Node 119.24555 +0.34954895 +0.86555202
e 0.2488792 Incl. 4.83848 +0.06078095 +0.36105016
P 5.40 H 13.0 G 0.25

Residuals in seconds of arc

801111 330	0.5+	0.6-	850817 095	0.9-	0.8-	850919 095	0.4-	0.2-
801130 330	0.4-	0.3+	850819 095	1.3+	0.4-	850920 095	0.4+	0.7+
850813 095	1.6-	0.3-	850824 095	0.5+	0.4+			
850815 095	0.5+	1.2-	850911 095	0.0	1.7+			

1985 PD2 = 1969 VN1 = 1974 FH1 = 1977 DA1 = 1977 EE2 = 1979 YX7 = 1980 BA4

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Marsden	
M 288.97541		(1950.0)		P	Q
n 0.30315766	Peri.	274.65833	+0.79552551	-0.60000971	
a 2.1946127	Node	122.23683	+0.58793161	+0.73068000	
e 0.1462802	Incl.	5.72825	+0.14654552	+0.32572241	
P 3.25	H	14.0	G	0.25	

Residuals in seconds of arc

691113 095	0.8-	1.5+	770313 095	1.8-	2.3+	850819 095	1.4+	0.9-
740321 095	4.0+	3.2-	791223 095	2.1+	0.3+	850824 095	1.3-	0.1-
770218 381	2.2-	1.0-	800122 095	2.0+	3.5-	850911 095	0.3+	2.3+
770218 381	3.2-	1.8-	850813 095	0.9+	0.1-	850919 095	1.1-	1.5-
770219 381	0.5-	1.1+	850815 095	0.5+	2.9-	850920 095	0.7-	0.4+
770219 381	0.4-	0.1+	850817 095	1.3+	2.3-			

1985 PE2 = 1948 GA = 1970 KF = 1984 EV1 = 1984 FM1

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Marsden	
M 25.45128		(1950.0)		P	Q
n 0.27235153	Peri.	117.09273	-0.60080961	+0.79124644	
a 2.3571309	Node	115.51805	-0.77079900	-0.53567317	
e 0.1952556	Incl.	7.24617	-0.21188843	-0.29492935	
P 3.62	H	13.0	G	0.25	

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

480402 008(0.08-	0.04+)X		840305 095	4.2+	2.8+	850824 095	0.3+	0.3-
700531 095	0.0	0.5+	840321 095	4.4-	2.6-	850919 095	0.5-	1.8+
700611 095	0.1+	0.3+	850813 095	0.5+	3.4-	850920 095	0.3-	2.2+

1985 QM4 = 1936 VF = 1974 VD1 = 1983 CQ

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Marsden	
M 242.90762		(1950.0)		P	Q
n 0.25984309	Peri.	349.99639	+0.76622603	-0.64095825	
a 2.4321823	Node	49.96646	+0.59354964	+0.67886823	
e 0.1689420	Incl.	3.40678	+0.24616358	+0.35820448	
P 3.79	H	13.5	G	0.25	

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

361109 020(39.4+	7.8-)		830215 688	0.6+	1.6-	850911 095	3.4-	3.6-
361115 020(0.03+	0.00+)		830215 688	0.5+	1.4-	850919 095	0.8+	1.2-
361116 020	0.9-	2.8+	830219 688	3.7-	2.0-	850920 095	3.3+	1.4-
741112 095	0.7-	1.2+	830219 688	0.6+	3.4-			
741117 095	0.0	0.3-	850824 095	3.2+	1.3-			

1985 RU3 = A911 UF = 1952 BU1 = 1972 RY1 = 1981 UP15 = 1983 EO1

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Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Bardwell	
M 169.20512		(1950.0)		P	Q
n 0.22611435	Peri.	274.38312	-0.02203666	-0.99968384	
a 2.6684035	Node	176.80357	+0.98159305	-0.02393280	
e 0.1393004	Incl.	12.54149	+0.18970892	+0.00770959	
P 4.36	H	12.5	G	0.25	

Residuals in seconds of arc

111029	024(17.8+	36.2-)X	850915	809	0.9+	0.7+	850919	809	0.2-	0.2-
520128	711	1.1-	1.4- Y	850915	809	1.0+	0.7+	850919	809	0.4-	0.2-
720911	095	3.1+	1.8-	850915	809	1.3+	0.5+	850919	809	0.5-	0.2-
811023	095	0.9+	1.9+	850915	809	1.2+	1.0+	850920	809	0.3-	0.0
830311	381	0.9-	0.2-	850915	809	1.6+	1.1+	850920	809	0.1-	0.1+
830311	381	1.2+	1.8-	850915	809	2.1+	1.2+	850920	809	0.2-	0.1+
850907	809	0.7-	1.0-	850916	809	0.4+	1.0+	850920	809	0.1+	0.1+
850907	809	0.7-	1.1-	850916	809	0.5+	0.9+	850920	809	0.3+	0.1-
850907	809	0.7-	1.1-	850916	809	0.6+	0.7+	850920	809	0.3+	0.1-
850908	809	0.7-	1.2-	850918	809	1.1-	0.6-	850921	809	0.3-	0.1-
850908	809	0.5-	1.1-	850918	809	0.9-	0.6-	850921	809	0.0	0.0
850908	809	0.4-	1.2-	850918	809	0.7-	0.5-	850921	809	0.1-	0.0
850911	809	0.9-	0.2+	850918	809	1.0-	0.3-	850921	809	0.1+	0.2-
850911	809	0.8-	0.3+	850918	809	0.5-	0.1-	850921	809	0.2+	0.5-
850911	809	0.4-	0.4+	850918	809	0.0	0.3-	850921	809	0.3+	0.4-
850914	809	0.1+	0.2+	850919	809	1.0-	0.1-	850922	809	0.1+	0.1+
850914	809	0.1+	0.0	850919	809	0.9-	0.2-	850922	809	0.0	0.1+
850914	809	0.3+	0.2-	850919	809	0.7-	0.3-				

1985 RD4 = 1972 XO = 1977 FY2 = 1978 NE6

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5	(J-P)		Marsden	
M 250.06842	(1950.0)	P	Q	
n 0.29493278	Peri. 84.65290	+0.32127614	-0.94687249	
a 2.2352266	Node 346.57917	+0.84191298	+0.29266930	
e 0.1176260	Incl. 3.61469	+0.43354836	+0.13333105	
P 3.34	H 13.5	G 0.25		

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

721202	095	0.1+	2.4-	850814	095	0.1+	1.6-	850916	809	0.1-	1.2+
721206	095	1.0+	2.5-	850818	095	1.3-	0.3-	850916	809	0.2+	1.5+
770326	095	0.7+	1.0+	850910	809(0.10-		0.12-)	850916	809	0.6+	1.8+
780710	675	0.4+	5.7- Y	850910	809(0.10-		0.12-)	850920	095	2.4-	2.1+
780711	675(16.9-		1.5-)Y	850910	809(0.10-		0.12-)				
780713	675	1.9+	1.2- Y	850915	095	0.2-	0.8+				

1985 SR = 1977 HQ

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5	(J-P)		Marsden	
M 329.75659	(1950.0)	P	Q	
n 0.26668043	Peri. 248.25559	+0.29446640	+0.95513167	
a 2.3904306	Node 38.91489	-0.85697015	+0.27865022	
e 0.1953214	Incl. 2.90433	-0.42295592	+0.10038697	
P 3.70	H 14.0	G 0.25		

Residuals in seconds of arc

770424	675	0.0	0.3-	850817	095	2.1+	0.5+	850919	095	2.1-	1.2+
770425	675	0.0	0.3+	850824	095	0.6-	1.1-	850920	095	1.9+	0.5-
850815	095	1.6-	0.6+	850917	801	0.4+	0.7-				

1985 UT3 = 1947 TB = 1951 SU = 1961 AG = 1970 EX1 = 1979 HJ4 = 1981 WG4 = 1981 WX7 = 1983 ER1

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5	(J-P)		Marsden	
M 211.17737	(1950.0)	P	Q	
n 0.23295848	Peri. 227.46890	+0.36346294	-0.92791027	
a 2.6158805	Node 201.64544	+0.90698731	+0.37278231	
e 0.1593417	Incl. 12.99253	+0.21276443	-0.00398484	
P 4.23	H 12.0	G 0.25		

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

471111	078(59.5+	34.0+)X	790424	095	1.5+	1.5-	851024	049	2.0-	1.0+
510929	094(0.00- | 0.04-)X	811119	808(34.1+ | 29.1+)		851024	049	1.6-	0.3+
610110	690	5.9+ 8.6- Y	811125	095	0.1+	6.4+	851024	049	1.4+	1.9-
610110	690	7.9- 0.3- Y	830311	381	1.4-	2.2+	851024	049	1.6+	0.5-
700303	805	1.1+ 1.6+	830311	381	2.0-	2.1+	851112	095	0.6+	0.5+
700303	805	1.5+ 1.5+	850921	095	0.7-	1.6+				
700303	805	0.8+ 1.8+	851018	095	0.6+	2.5+				

1986 CS1 = 1988 RV3

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	275.80983		(1950.0)	P	Q
n	0.25964731	Peri.	285.14891	-0.08029966	-0.99672203
a	2.4334048	Node	169.44216	+0.93389266	-0.07868707
e	0.1420754	Incl.	3.08368	+0.34841995	-0.01880250
P	3.80	H	15.0	G 0.25	

Residuals in seconds of arc

860206	809	1.4- 0.1-	860212	809	0.4-	0.0	860215	809	0.0	0.3-
860206	809	1.1- 0.2-	860212	809	0.4-	0.0	860215	809	0.1+	0.3-
860206	809	1.0- 0.2-	860212	809	0.5-	0.0	860215	809	0.4+	0.2-
860208	809	0.6+ 0.2-	860212	809	1.1+	0.1+	860217	809	0.9-	0.0
860208	809	0.9+ 0.1-	860212	809	1.2+	0.1+	860217	809	0.8-	0.4+
860208	809	1.0+ 0.1-	860212	809	1.4+	0.2+	860217	809	0.7-	0.4+
860209	809	0.1- 0.2-	860213	809	0.1+	0.6-	880908	033	0.2-	0.1-
860209	809	0.1+ 0.1-	860213	809	0.1+	0.5-	880909	033	0.4+	0.3+
860209	809	0.4+ 0.0	860213	809	0.2+	0.5-	880909	033	0.8+	0.6+
860210	809	0.1- 0.6+	860214	809	0.4-	0.5+	880910	033	0.3-	0.4-
860210	809	0.2+ 0.4+	860214	809	0.2-	0.3+	880910	033	0.6-	0.8-
860210	809	0.3+ 0.5+	860214	809	0.1-	0.2+	880911	033	0.2-	0.4+

1986 ET = 1988 VY3

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Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	281.42769		(1950.0)	P	Q
n	0.27589603	Peri.	136.00627	-0.56638554	-0.82393344
a	2.3368991	Node	348.45108	+0.72831368	-0.48991544
e	0.1279074	Incl.	5.29312	+0.38570273	-0.28480967
P	3.57	H	13.0	G 0.25	

Residuals in seconds of arc

860305	688	0.7- 0.1-	860314	809	0.4-	0.1-	881113	400	2.5-	1.3+
860305	688	1.8+ 0.0	860314	809	0.4-	0.1-	881114	400	1.6+	0.4+
860309	809	0.8- 0.2+	881113	400	0.6+	1.7+	881114	400	0.1+	1.3-
860309	809	0.5+ 0.1+	881113	400	0.7-	0.6+	881114	400	1.0+	2.7-

1986 EZ1 = 1975 EZ4 = 1982 BV8 = 1988 VO4

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	278.35525		(1950.0)	P	Q
n	0.26903764	Peri.	187.05311	-0.51787677	-0.85500860
a	2.3764475	Node	294.14027	+0.78629858	-0.46303564
e	0.1666655	Incl.	1.73566	+0.33695430	-0.23357718
P	3.66	H	13.0	G 0.25	

Residuals in seconds of arc

750315	095	1.5- 3.1-	860402	046	0.3+	0.5-	881111	399	1.1+	0.2-
820119	095	0.5+ 2.8+	860408	046	0.2+	0.7+	881111	399	0.2-	0.1+
860306	688	1.8- 0.9+	860408	046	0.3+	1.0+	881114	399	3.0-	3.3-
860306	688	1.7- 1.2+	881108	399	3.1+	0.7+	881114	399	0.2+	0.1-
860401	046	0.6+ 1.5-	881108	399	1.8+	1.5+	881114	399	0.4-	2.6-
860401	046	0.8+ 0.4-	881111	399	0.5-	0.3-				
860402	046	1.8+ 1.2-	881111	399	1.2-	0.9+				

1986 GG = 1972 VC = 1980 XG1 = 1984 YG2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	104.67825	(1950.0)	P	Q
n	0.25759871	Peri. 283.35557	+0.74301305	+0.66518784
a	2.4462843	Node 35.03224	-0.55336284	+0.67265801
e	0.0572254	Incl. 7.39359	-0.37645873	+0.32412396
P	3.83	H 12.5	G 0.25	

Residuals in seconds of arc

721108	095	0.0 1.5-	860305	688	2.0- 0.0	860409	688	0.0 1.5-
801212	330	1.6+ 2.5+	860403	054	0.8+ 1.4+	860410	054	0.2- 1.0-
841223	095	1.5- 1.6-	860405	054	1.5- 1.2+			
860305	688	0.7+ 0.7+	860409	688	1.9+ 1.3-			

1987 OA
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Green

M	170.93338	(1950.0)	P	Q
n	0.53834359	Peri. 235.30073	+0.57279036	-0.81970161
a	1.4965676	Node 179.75114	+0.79397811	+0.55460830
e	0.5953895	Incl. 9.02664	+0.20373993	+0.14317435
P	1.83	H 18.5	G 0.25	

From 11 observations 1987 July 18-Aug. 25, mean residual 1".7.

1987 QB
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Marsden

M	82.10705	(1950.0)	P	Q
n	0.21007524	Peri. 156.01180	+0.62983502	+0.77624490
a	2.8025463	Node 153.00130	-0.72201297	+0.59811583
e	0.5936808	Incl. 3.46244	-0.28636536	+0.19925188
P	4.69	H 19.0	G 0.25	

From 16 observations 1987 May 31-Nov. 19, mean residual 1".0.

1988 DO
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden

M	73.86854	(1950.0)	P	Q
n	0.28156471	Peri. 187.95751	-0.59027996	-0.79647736
a	2.3054273	Node 298.31592	+0.74851640	-0.47929248
e	0.1398299	Incl. 8.56582	+0.30214693	-0.36864961
P	3.50	H 14.5	G 0.25	

Residuals in seconds of arc

861004	413	0.6- 0.5+	880223	413	0.6+ 0.6+	880420	413	0.4+ 1.1+
861004	413	0.7+ 0.6-	880225	413	1.3- 0.4-	880420	413	0.3- 0.3+
880219	413	2.0- 0.3+	880225	413	1.0+ 0.4-	880420	413	0.6+ 0.5-
880219	413	3.3+ 1.0-	880310	413	0.5- 0.1-	880420	413	0.2- 1.1-
880222	413	2.7- 0.7+	880310	413	1.3+ 0.6-	880420	413	0.6- 0.7+
880222	413	1.4+ 0.5+	880412	413	0.7- 0.3-			
880223	413	0.7- 0.1+	880414	413	0.3+ 0.1-			

1988 QC
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell

M	350.77848	(1950.0)	P	Q
n	0.22966079	Peri. 213.05850	+0.99448884	-0.07837430
a	2.6408566	Node 151.19301	+0.09477692	+0.95603188
e	0.4402345	Incl. 8.30940	-0.04482509	+0.28259604
P	4.29	H 17.5	G 0.25	

From 14 observations 1988 Aug. 18-Oct. 10, mean residual 0".6.

1988 RA
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell

M	326.64046	(1950.0)	P	Q
n	0.21215136	Peri. 79.89947	+0.14720044	-0.98898473
a	2.7842325	Node 1.86125	+0.61073828	+0.07852805
e	0.4684893	Incl. 28.56815	+0.77803007	+0.12546931
P	4.65	H 13.0	G 0.25	

From 6 observations 1988 Sept. 7-Nov. 6, mean residual 0".3.

1988 RO1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Green

M	1.41074	(1950.0)	P	Q
n	0.22519033	Peri. 153.88777	+0.90919803	+0.41633015
a	2.6756927	Node 181.53907	-0.40816061	+0.88869520
e	0.5093153	Incl. 11.39361	-0.08224268	+0.19206784
P	4.38	H 18.0	G 0.25	

From 12 observations 1988 Aug. 18-Nov. 2, mean residual 0".9.

1988 TA
Epoch 1988 Oct. 6.0 ET = JDE 2447400.5 Bardwell

M	28.29734	(1950.0)	P	Q
n	0.52289076	Peri. 104.44082	+0.48572473	+0.87404152
a	1.5259094	Node 194.63459	-0.81790198	+0.44997880
e	0.4720655	Incl. 2.51498	-0.30839560	+0.18322255
P	1.88	H 21.0	G 0.25	

From 30 observations 1988 Oct. 5-22.

1988 TV2
Epoch 1988 Oct. 6.0 ET = JDE 2447400.5 Marsden

M	359.57464	(1950.0)	P	Q
n	0.23836744	Peri. 111.11079	+0.91020391	-0.40719539
a	2.5761516	Node 272.98281	+0.34628366	+0.84841277
e	0.3646864	Incl. 4.34364	+0.22719255	+0.33821249
P	4.13	H 15.5	G 0.25	

From 30 observations 1988 Oct. 7-Nov. 6.

1988 US = 1953 TM2 = 1981 UK12
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	21.10872	(1950.0)	P	Q
n	0.28264639	Peri. 76.93836	+0.99650238	+0.05243851
a	2.2995371	Node 280.02785	-0.07450406	+0.91013099
e	0.1533627	Incl. 3.78843	+0.03784374	+0.41098879
P	3.49	H 13.5	G 0.25	

Residuals in seconds of arc

531013	760	0.8+	0.2-	811024	095	0.0	0.5-	881103	887	1.5+	2.2-
531018	760	0.4-	0.3+	881031	887	0.9-	0.1-	881110	887	1.7+	1.3+
531018	760	0.6-	0.0	881031	887	0.6-	0.1-	881110	887	1.3+	2.1+
811022	095	1.2+	1.0+	881103	887	0.8-	1.1-				

1988 VC = 1980 FX5 = 1985 DW2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Marsden

M	338.80252	(1950.0)	P	Q
n	0.19093140	Peri. 76.80596	+0.60397119	-0.79418279
a	2.9868862	Node 335.65429	+0.65365193	+0.54170076
e	0.1122158	Incl. 9.35723	+0.45602407	+0.27537971
P	5.16	H 12.0	G 0.25	

Residuals in seconds of arc

800323 809	0.8+	0.3-	850227 675	5.8+	1.4+	881107 054	0.2+	0.1-
800323 808	0.6-	0.5-	850227 675	6.0+	0.3+	881107 054	2.8-	1.4-
800323 808	0.6-	0.1+	881103 054	0.5+	0.5+	881109 054	1.4-	1.2-
850224 675	6.3-	0.3-	881103 054	0.5+	0.4-	881113 054	1.9+	0.3+
850224 675	5.0-	0.7-	881104 054	0.1-	1.1+	881113 054	1.1+	1.1+

1988 VL = 1954 PD = 1979 ON14

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M 18.59919		(1950.0)		P	Q
n 0.23495542	Peri.	161.59884	+0.99123595		+0.12641278
a 2.6010323	Node	191.34567	-0.13172779		+0.96771750
e 0.1696164	Incl.	11.24266	+0.00995400		+0.21804277
P 4.19	H	12.5	G	0.25	

Residuals in seconds of arc

540803 024	0.1+	0.2+	881103 897	1.0+	0.2+	881107 897	0.8-	0.8+
790720 095	0.5+	0.9+	881103 897	1.2-	0.7-	881114 897	0.6+	1.3+
790801 095	0.1-	1.0-	881107 897	1.3+	0.8-	881114 897	0.9+	0.5-

1988 VP = 1984 WO

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M 353.09030		(1950.0)		P	Q
n 0.24374963	Peri.	345.54183	+0.76604992		-0.61055112
a 2.5380884	Node	53.88903	+0.61166531		+0.59630888
e 0.0673041	Incl.	14.40541	+0.19756790		+0.52119387
P 4.04	H	12.5	G	0.25	

Residuals in seconds of arc

841118 688	0.7+	0.4-	881112 875	0.3-	1.6+	881117 399	0.5+	1.0-
841118 688	0.8-	0.4-	881112 875	1.4+	0.2-	881117 399	0.9+	1.0-
841124 688	0.2+	1.2+	881114 875	0.3-	0.1-	881117 399	0.4+	0.9+
841124 688	0.7-	1.0+	881114 897	3.4-	0.8+	881130 399	0.2-	0.9-
881103 875	0.3-	0.9+	881114 875	0.7+	0.4+	881130 399	0.9+	0.1-
881103 875	0.4-	0.8+	881114 897	2.8-	0.6+	881130 399	0.2+	0.1-
881106 875	1.3-	1.4-	881114 399	0.2+	0.0	881202 399	0.8+	0.2+
881106 875	1.1-	1.1-	881114 399	0.6+	0.9-	881202 399	0.2-	1.1+
881110 897	0.5+	0.7+	881114 399	1.7+	0.5-	881202 399	0.6+	0.2+
881110 897	0.0	1.3-	881117 399	0.4+	0.3-	881202 399	1.3+	0.3-

1988 VR = 1973 QE1

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M 351.90851		(1950.0)		P	Q
n 0.26771407	Peri.	325.48959	+0.90344747		-0.41191768
a 2.3842738	Node	59.26372	+0.41783952		+0.78413084
e 0.1618939	Incl.	7.94262	+0.09587914		+0.46417955
P 3.68	H	13.5	G	0.25	

Residuals in seconds of arc

730828 095	0.2-	0.2+	881103 896	(2.2-	6.3+)Y	881107 896	1.3-	1.8+
730901 095	0.2+	0.2-	881105 896	0.7+	3.0+ Y	881112 386	0.1+	0.7-
881102 896	2.9-	1.5-	881105 386	0.0	1.9-	881112 386	0.4-	0.0
881102 896	2.1+	1.1+	881105 896	1.9+	1.8- Y			
881103 896	0.5-	0.1+ Y	881107 896	0.3+	0.2-			

1988 VS = 1972 TG3 = 1980 UO

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M 330.77410		(1950.0)		P	Q
n 0.12635975	Peri.	217.03075	+0.15990805		-0.98507306
a 3.9330567	Node	223.87030	+0.92623772		+0.17205230
e 0.1616364	Incl.	5.27562	+0.34134017		-0.00539114
P 7.80	H	11.5	G	0.25	

Residuals in seconds of arc

721005	095	1.2+	0.1+		881108	875	0.4+	1.1-		881112	888	0.7-	0.3+
721013	095	1.9-	1.0+		881108	875	0.1-	1.2-		881112	875	1.8-	0.9+
801017	095	0.2+	2.0-		881110	897	1.2+	0.8+		881112	875	0.8-	1.2+
881103	875	0.1+	0.8-	Y	881110	897	0.4-	0.1-		881114	888	1.1-	0.8-
881103	875	1.8+	0.7+	Y	881111	888	1.0-	0.8+		881114	888	0.6-	0.8-
881106	875	0.2+	0.8-		881111	888	1.2+	0.7+					
881106	875	1.0-	1.3-		881112	888	0.1-	0.5+					

1988 VD1 = 1963 SY

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Marsden	
M	50.09127	(1950.0)		P	Q
n	0.20003017	Peri.	329.86404	+0.83903461	+0.54395025
a	2.8956089	Node	357.10066	-0.44090236	+0.66706670
e	0.1111366	Incl.	13.48115	-0.31878837	+0.50905809
P	4.93	H	11.0	G 0.25	

Residuals in seconds of arc

630926	760	2.1-	0.0		881103	054	0.3+	0.1-		881107	054	0.4-	0.5-
630926	760	4.1+	0.6+		881103	054	0.1+	0.3-		881109	054	0.6+	0.3+
631014	760	0.3-	0.3+		881104	054	0.3-	0.2+		881113	054	0.1-	0.1-
631014	760	1.8-	0.9-		881107	054	0.3-	0.2+		881113	054	0.2+	0.3+

1988 VF1 = 1959 RO = 1972 TH4 = 1972 VM = 1980 BW2

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Nakano	
M	3.32948	(1950.0)		P	Q
n	0.30854398	Peri.	124.48012	+0.98182836	-0.18325071
a	2.1689965	Node	246.12296	+0.15156845	+0.91361465
e	0.1934153	Incl.	3.09168	+0.11419318	+0.36294275
P	3.19	H	14.0	G 0.25	

Residuals in seconds of arc

590909	760	1.0-	3.2-		881103	385	2.0+	0.5+		881110	385	2.5-	0.1-
590909	760	0.2+	1.1+		881106	385	1.8+	2.1+		881111	888	0.9+	1.0+
590911	760	0.5+	0.7+		881106	385	(1.0+	5.9-)		881111	888	1.9+	1.4+
590911	760	0.9+	0.6-		881107	385	3.2-	2.2-		881113	385	1.7+	2.7+
721005	095	1.4+	3.4+		881107	385	3.2-	2.2-		881113	385	(4.7+	0.4+)
721108	095	0.9-	3.1-		881107	385	1.4-	1.4-		881113	385	0.2+	0.3-
800124	095	1.0-	2.6-		881107	385	1.4-	1.4-		881127	385	0.6+	1.8+
881103	385	1.4+	3.0-		881110	385	(4.6-	0.2-)		881127	385	0.9+	2.1+

1988 VH1 = 1984 YO2

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5				Kobayashi	
M	335.54712	(1950.0)		P	Q
n	0.24101319	Peri.	181.40839	+0.50113470	-0.86275003
a	2.5572637	Node	238.52084	+0.79469126	+0.48958572
e	0.2959970	Incl.	4.52468	+0.34253441	+0.12636537
P	4.09	H	13.5	G 0.25	

Residuals in seconds of arc

841223	095	0.1-	0.5+		881106	875	0.9+	0.2+		881112	875	1.0-	0.9-
841227	095	(11.7-	3.9-)		881108	875	0.5+	0.2+		881201	875	0.8-	0.4-
841230	095	0.0	0.9-		881108	875	0.1+	0.5-		881201	875	0.9+	2.1+
881106	875	1.0-	0.9+		881112	875	0.2-	1.4-					

1988 VO1 = 1980 LQ = 1981 WF2

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5				Kobayashi	
M	70.25559	(1950.0)		P	Q
n	0.27446819	Peri.	71.34966	+0.45121840	+0.88956504
a	2.3449920	Node	225.68873	-0.85168133	+0.40540483
e	0.1190133	Incl.	5.71426	-0.26653494	+0.21052544
P	3.59	H	13.0	G 0.25	

Residuals in seconds of arc

800610 675	1.3+	1.2+	881102 399	0.1-	1.0-	881111 399	0.2+	0.7-
800611 675	1.0-	0.8-	881106 399	1.8+	0.2+	881111 399	0.6-	1.8-
800612 675	(6.2+	3.1-)	881106 399	0.7-	0.6+	881111 399	0.9-	1.9-
811123 046	0.9-	0.2+	881106 399	2.8+	2.2+	881114 399	1.4-	0.5-
811123 046	0.9+	1.2+	881108 399	1.6+	1.1+	881114 399	0.3+	2.1-
881102 399	0.9+	2.2+	881108 399	0.2+	0.6+	881114 399	2.0-	2.0-
881102 399	2.2-	1.7+	881111 399	1.6+	0.8+			

1988 VY1 = 1962 XE1 = 1968 DF = 1975 WL = 1977 FH3

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Green
M 265.37453		(1950.0)	P	Q
n 0.22579159	Peri.	259.53485	-0.82308195	-0.55876099
a 2.6709458	Node	246.42408	+0.55471734	-0.75262134
e 0.1725896	Incl.	6.36438	+0.12175700	-0.34834936
P 4.37	H	11.5	G 0.25	

Residuals in seconds of arc

621203 760	(10.4-	51.4-)X	881107 552	0.5-	0.6-	881114 888	0.4+	1.6-
680222 095	0.0	0.3-	881107 552	(3.1-	0.9+)	881126 552	0.9+	1.1+
751128 095	0.4-	1.5+	881107 552	2.7-	0.3-	881126 552	0.8+	0.8+
751202 095	(1.3+	5.3+)	881112 888	(5.0-	1.2+)	881127 552	0.5+	0.1+
770326 095	0.1-	0.0	881112 888	(5.4-	0.5+)	881127 552	0.5+	0.3+
881106 552	0.4+	0.6-	881114 888	(1.7-	2.8+)	881207 552	1.1-	0.5-
881106 552	0.8+	0.7+	881114 888	1.6+	0.9-	881207 552	0.2-	0.4-
881107 552	0.2-	0.8-	881114 888	0.7-	1.5+			

1988 VM2 = 1963 TA1

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5				Kobayashi
M 345.46495		(1950.0)	P	Q
n 0.23778628	Peri.	353.17984	+0.68674084	-0.70515322
a 2.5803475	Node	53.26306	+0.67686067	+0.53180698
e 0.3016515	Incl.	12.72195	+0.26504083	+0.46897790
P 4.14	H	13.5	G 0.25	

Residuals in seconds of arc

631014 760	1.8+	0.3+	881110 875	0.3+	0.4-	881127 897	1.3-	1.4+
631014 760	1.9+	1.3-	881111 897	1.7+	0.6+	881127 897	1.6+	1.5-
631018 760	3.5-	1.3+	881111 897	0.7-	0.1-	881130 875	0.5+	0.6+
631018 760	(1.3+	22.3-)	881112 875	(1.3+	6.6-)			
881110 875	0.4-	0.1+	881112 875	(2.3+	5.1-)			

1988 VZ2 = 1972 YH = 1977 AF1 = 1984 WX2

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5				Kobayashi
M 331.84948		(1950.0)	P	Q
n 0.24316292	Peri.	159.26258	+0.36057676	-0.92291215
a 2.5421693	Node	269.40262	+0.83557988	+0.38392382
e 0.2225884	Incl.	7.75745	+0.41447637	+0.02890791
P 4.05	H	12.5	G 0.25	

Residuals in seconds of arc

721229 095	1.6-	2.8-	881110 897	1.7+	2.4-	881114 400	2.4+	2.1+
770113 095	2.4+	2.0+	881113 400	0.4-	0.8-	881114 400	2.3+	2.1+
770120 095	0.2-	1.3+	881113 400	1.0-	0.0	881114 897	1.0-	1.1-
841127 010	1.1-	0.9+	881113 400	2.6-	2.1-	881127 897	0.5-	0.5-
841128 010	0.3-	2.1-	881114 897	1.7-	0.8+	881127 897	1.1-	0.4+
881110 897	0.7-	0.3-	881114 400	2.9+	2.7+			

1988 VD3 = 1973 SH2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Kobayashi

M	0.50260	(1950.0)	P	Q
n	0.26786729	Peri. 41.38812	+0.93156222	-0.36342118
a	2.3833597	Node 339.91448	+0.32473551	+0.84503556
e	0.2176509	Incl. 1.80394	+0.16351964	+0.39222436
P	3.68	H 14.0	G 0.25	

Residuals in seconds of arc

730922	095	0.7-	0.8-	881111	897	0.2-	1.1-	881115	897	0.5-	0.5+
730923	095	0.6+	0.2+	881111	897	0.2-	0.1-	881127	897	0.8-	0.9+
730925	095	0.6-	0.4+	881115	897	0.3-	1.0-	881127	897	0.2-	0.3+

1988 VN4
Epoch 1988 Oct. 6.0 ET = JDE 2447400.5 Marsden

M	315.97668	(1950.0)	P	Q
n	0.40475594	Peri. 230.45250	-0.10939038	-0.96785341
a	1.8099805	Node 227.41696	+0.97996045	-0.06685058
e	0.3202064	Incl. 17.91430	+0.16646699	-0.24246810
P	2.44	H 17.0	G 0.25	

From 6 observations 1988 Oct. 8-Nov. 9.

1988 VP4
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 Bardwell

M	308.71915	(1950.0)	P	Q
n	0.28960525	Peri. 215.51826	-0.72765448	-0.65688095
a	2.2625513	Node 282.15968	+0.66673677	-0.60963729
e	0.6527619	Incl. 11.65890	+0.16118633	-0.44367758
P	3.40	H 15.5	G 0.25	

From 8 observations 1988 Sept. 13-Nov. 6, mean residual 0".8.

1988 WC
Epoch 1988 Nov. 15.0 ET = JDE 2447400.5 Marsden

M	323.03611	(1950.0)	P	Q
n	0.30192392	Peri. 252.72420	-0.62395750	-0.71020433
a	2.2005827	Node 240.47082	+0.77973836	-0.59348025
e	0.4022287	Incl. 22.00495	-0.05181820	-0.37867003
P	3.26	H 14.5	G 0.25	

From 12 observations 1988 Nov. 29-Dec. 7.

1988 XB
Epoch 1988 Dec. 5.0 ET = JDE 2447400.5 Marsden

M	33.70143	(1950.0)	P	Q
n	0.55998136	Peri. 279.87935	+0.99107031	+0.12301715
a	1.4577633	Node 73.06810	-0.09118320	+0.90675829
e	0.4763536	Incl. 3.08253	-0.09728958	+0.40330656
P	1.76	H 18.0	G 0.25	

From 14 observations 1988 Dec. 5-9.

4271 T-3 = 1988 TZ2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P) Nakano

M	328.83003	(1950.0)	P	Q
n	0.08247571	Peri. 313.90853	+0.94174878	-0.30663676
a	5.2270046	Node 64.39303	+0.33537531	+0.82551481
e	0.1131583	Incl. 8.81171	+0.02515233	+0.47381345
P	11.95	H 10.0	G 0.25	

Residuals in seconds of arc

771007	675	0.5+	0.6-	771017	675	0.1-	0.3-	880914	675	1.1-	0.1-
771011	675	0.8+	0.1+	771017	675	1.0-	0.2+	881007	675	0.1+	0.4-
771011	675	0.7+	0.0	771021	675	0.3-	0.1+	881008	675	0.6-	0.6+
771012	675	0.0	0.8-	771021	675	0.3-	1.2-	881009	675	1.8+	0.5-
771012	675	0.7-	0.7-	771022	675	0.1-	0.7-	881010	675	0.3+	0.8+
771016	675	0.5+	0.5+	771022	675	0.4-	2.0+				
771016	675	0.3+	1.3+	880914	675	0.3-	0.4-				

5191 T-3 = 1988 RX

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5		(J-P)		Bardwell	
M 23.43011		(1950.0)		P	Q
n 0.08224739	Peri.	170.95509	+0.66486042		+0.73364486
a 5.2366735	Node	140.52738	-0.69837387		+0.67723106
e 0.1308036	Incl.	12.76380	-0.26501804		+0.05588659
P 11.98	H	10.5	G	0.25	

Residuals in seconds of arc

771016	675	2.5+	1.4-	771022	675	2.6-	1.1+	881008	675	0.3-	1.4+
771016	675	1.9+	1.6-	771022	675	0.1+	0.3+	881010	675	1.8-	0.4+
771017	675	1.1-	1.0+	880913	675	1.3+	0.0				
771017	675	0.5-	0.9+	880916	675	0.7+	0.2-				

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NEW NAMES OF MINOR PLANETS.

(2848) ASP = 1959 VF

Discovered 1959 Nov. 8 at the Goethe Link Observatory, Indiana University.

Named in honor of the Astronomical Society of the Pacific on the 100th aniversary of its founding, 1889 Feb. 7. The A.S.P., composed of both professional and amateur astronomers from around the world, has worked throughout its existence to promote the field of astronomy and to improve public understanding of it, through the Publications of the A.S.P., Mercury magazine and its newsletter for teachers (The Universe in the Classroom). Name proposed by F. K. Edmondson. Citation prepared by K. Bracher.

(3605) Davy = 1932 WB

Discovered 1932 Nov. 28 by E. Delporte at Uccle.

Named for Davy DeWinter, son of the current administrator of the Royal Observatory of Belgium, Mrs. Asselberghs. Name proposed by G. Roland.

(3687) Dzus = A908 TC

Discovered 1908 Oct. 7 by A. Kopff at Heidelberg.

Named in honor of Paul K. Dzus in appreciation of his helpful assistance at the Minor Planet Center since October 1987, much of the time as a volunteer. Named by B. G. Marsden, who found the identifications involving this minor planet, on Dzus' departure for the University of Arizona.

(3849) Incidentia = 1984 FC

Discovered 1984 Mar. 31 by E. Bowell at the Anderson Mesa Station of Lowell Observatory.

Named in honor of Roger W. Martin, a graduate of the Electrical and Computer Engineering Department at the University of California, San Diego.

He has creatively contributed to asteroid science by his analysis of the spectra of (2201) Oljato and objects near the 3:1 Kirkwood gap, exhibiting both a wide range of technical expertise and an infectiously high-spirited nature. Incidentia is named after the school of music developed by Martin, who is also a talented musician. The name is quite the antithesis of the effects of Martin's efforts in whatever he undertakes. Name proposed and citation provided by L. A. McFadden.

(3857) Cellino = 1984 CD1

Discovered 1984 Feb. 8 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Alberto Cellino, an astronomer at the Osservatorio Astronomico di Torino. Cellino has been involved in several minor planet photometric campaigns. He has also studied in detail the processes connected with catastrophic collisional break-up and how they can affect minor planet evolution. Name suggested and citation provided by V. Zappala.

(3860) Plovdiv = 1986 PM4

Discovered 1986 Aug. 8 by E. W. Elst and V. Ivanova at Rozhen.

Named for an ancient town in Bulgaria.

(3867) Shiretoko = 1988 HG

Discovered 1988 Apr. 16 by M. Yanai and K. Watanabe at Kitami.

Shiretoko is the name of the peninsula in northeastern Hokkaido, not far from the city of Kitami. Established as a national park in 1964, Shiretoko is a land of mystery, still in a pristine state.

(3870) Mayre = 1988 CG3

Discovered 1988 Feb. 13 by E. W. Elst at the European Southern Observatory.

Named in honor of the discoverer's youngest daughter.

(3900) Knezevic = 1985 RK

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

Named in honor of Zoran Knezevic, an astronomer at the Astronomical Observatory of Belgrade. Knezevic has studied the physical properties of minor planets using both observational and theoretical approaches. He has analyzed the evolution of minor planet families and has investigated high-order perturbation theories with a view to improving the determination of proper elements. Citation prepared by V. Zappala at the request of the discoverer.

(3915) Fukushima = 1988 PA1

Discovered 1988 Aug. 15 by M. Yanai and K. Watanabe at Kitami.

Named in honor of Hisao Fukushima (1910-), professor emeritus at Hokkaido University, famous for his research in hydrodynamics. An active amateur astronomer, he is a representive of the Hokkaido Astronomical Liaison Group. He works particularly on astronomical history and is a great source of inspiration to younger amateur astronomers.

(3918) Brel = 1988 PE1

Discovered 1988 Aug. 13 by E. W. Elst and G. Sause at Haute Provence.

Named in memory of the well-known Belgian artist Jacques Brel (1929-1978), famous also for his songs and poems. The songs "Marieke" and "Le plat pays" are a tribute to Flanders.

EPHEMERIDES.

1988 VP4 a,e,i = 2.26, 0.65, 12 Elements MPC 14028

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	23 27.41	+18 02.3	0.680	1.346	106.4	44.6	16.8
1988 12 15	23 29.69	+15 23.4					
1988 12 25	23 37.21	+13 06.3	0.644	1.150	87.3	58.7	16.8
1989 01 04	23 49.13	+11 02.0					
1989 01 14	00 04.58	+08 53.2	0.566	0.967	71.5	74.7	16.6
1989 01 24	00 22.34	+06 09.9					
1989 02 03	00 40.51	+02 02.7	0.436	0.829	56.5	97.5	16.6
1989 02 13	00 56.04	-04 44.6					
1989 02 23	01 03.94	-15 52.7	0.292	0.787	39.6	126.7	17.6

1988 VN4 a,e,i = 1.81, 0.32, 18 Elements MPC 14028

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	01 41.75	-00 58.6	0.427	1.301	129.8	35.6	17.0
1988 12 15	01 53.69	-05 47.1					
1988 12 25	02 10.00	-09 04.6	0.491	1.256	112.4	46.4	17.5
1989 01 04	02 29.80	-11 04.1					
1989 01 14	02 52.47	-12 00.0	0.568	1.233	101.9	51.3	17.9
1989 01 24	03 17.46	-12 06.2					
1989 02 03	03 44.31	-11 34.0	0.646	1.234	96.1	52.6	18.2
1989 02 13	04 12.74	-10 32.3					
1989 02 23	04 42.50	-09 10.2	0.728	1.260	93.2	51.6	18.5
1989 03 05	05 13.28	-07 35.3					
1989 03 15	05 44.88	-05 55.4	0.821	1.307	91.6	49.5	18.8
1989 03 25	06 16.95	-04 18.2					
1989 04 04	06 49.14	-02 49.9	0.939	1.371	90.0	46.8	19.1
1989 04 14	07 21.14	-01 35.9					
1989 04 24	07 52.62	-00 39.9	1.088	1.447	87.3	44.0	19.5

Periodic Comet Ge-Wang (1988o) Elements MPC 13996

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1988 12 05	02 36.12	+02 05.4	2.063	2.910	142.9	11.8	17.2
1988 12 15	02 34.46	+02 08.0					
1988 12 25	02 34.82	+02 26.4	2.327	2.983	123.4	16.0	17.6
1989 01 04	02 37.16	+02 57.7					
1989 01 14	02 41.36	+03 39.3	2.647	3.060	105.5	18.0	18.0
1989 01 24	02 47.23	+04 28.3					
1989 02 03	02 54.54	+05 22.4	2.995	3.140	89.2	18.3	18.4
1989 02 13	03 03.12	+06 19.4					
1989 02 23	03 12.76	+07 17.4	3.347	3.222	74.2	17.2	18.7
1989 03 05	03 23.29	+08 14.9					
1989 03 15	03 34.56	+09 10.7	3.686	3.307	60.2	15.1	19.0
1989 03 25	03 46.45	+10 03.7					
1989 04 04	03 58.81	+10 52.8	3.996	3.393	46.9	12.4	19.3
1989 04 14	04 11.57	+11 37.6					
1989 04 24	04 24.60	+12 17.3	4.264	3.480	34.3	9.4	19.6

1988 WC a,e,i = 2.20, 0.40, 22 Elements MPC 14028

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	03 20.61	+14 32.4	0.651	1.609	158.7	12.8	15.3
1988 12 15	03 12.69	+09 11.4					
1988 12 25	03 09.28	+04 32.2	0.673	1.518	132.0	28.8	15.7
1989 01 04	03 10.88	+00 51.5					
1989 01 14	03 17.39	-01 49.4	0.747	1.438	111.7	39.4	16.0
1989 01 24	03 28.35	-03 39.1					
1989 02 03	03 43.18	-04 48.1	0.833	1.375	97.9	45.2	16.3

1989 02 13	04 01.42	-05 26.2					
1989 02 23	04 22.65	-05 42.0	0.911	1.333	89.0	47.9	16.5

1988 XB a,e,i = 1.46, 0.48, 3 Elements MPC 14028

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	07 57.56	+22 40.7	0.119	1.074	135.6	40.0	14.9
1988 12 15	06 50.13	+27 20.9					
1988 12 25	06 12.20	+28 40.4	0.245	1.228	174.7	4.2	15.7
1989 01 04	05 51.86	+28 52.3					
1989 01 14	05 42.91	+28 42.4	0.426	1.376	152.5	19.3	17.7
1989 01 24	05 41.80	+28 27.1					
1989 02 03	05 46.08	+28 11.4	0.656	1.512	133.1	28.4	19.1
1989 02 13	05 54.26	+27 55.8					
1989 02 23	06 05.27	+27 39.4	0.926	1.636	117.3	32.5	20.1

1979 VA a,e,i = 2.64, 0.62, 3 Elements MPC 14014

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1988 12 05	09 56.88	+10 27.2	2.030	2.473	-0.69	+3.5	20.8
1988 12 15	09 56.01	+10 17.6					
1988 12 25	09 52.11	+10 24.0	1.905	2.610	-0.80	+3.9	20.6
1989 01 04	09 45.29	+10 46.1					
1989 01 14	09 35.91	+11 22.0	1.840	2.740	-0.95	+4.3	20.4
1989 01 24	09 24.75	+12 07.5					
1989 02 03	09 12.84	+12 57.4	1.879	2.863	-1.05	+4.3	20.1
1989 02 13	09 01.33	+13 46.3					
1989 02 23	08 51.31	+14 29.5	2.044	2.981	-1.04	+4.0	20.7
1989 03 05	08 43.47	+15 04.5					
1989 03 15	08 38.18	+15 30.1	2.317	3.092	-0.94	+3.4	21.3

Comet Shoemaker-Holt (1988g) Elements MPC 13452

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 02 23	22 05.18	+48 36.2	5.247	4.810	58.8	10.1	16.9
1989 03 05	22 17.91	+49 45.2					
1989 03 15	22 30.31	+51 01.5	5.499	5.001	55.4	9.4	17.2
1989 03 25	22 42.32	+52 23.8					
1989 04 04	22 53.87	+53 51.3	5.715	5.189	53.9	9.0	17.4
1989 04 14	23 04.88	+55 23.2					
1989 04 24	23 15.23	+56 58.6	5.892	5.375	54.8	8.8	17.7
1989 05 04	23 24.82	+58 36.7					
1989 05 14	23 33.50	+60 16.7	6.030	5.559	57.9	8.9	17.9
1989 05 24	23 41.11	+61 57.6					
1989 06 03	23 47.42	+63 38.4	6.132	5.741	62.9	9.0	18.0
1989 06 13	23 52.17	+65 18.2					
1989 06 23	23 55.04	+66 55.5	6.201	5.920	69.4	9.2	18.2
1989 07 03	23 55.67	+68 28.9					
1989 07 13	23 53.65	+69 56.5	6.246	6.098	77.0	9.3	18.3
1989 07 23	23 48.6	+71 15.8					
1989 08 02	23 40.2	+72 24.2	6.278	6.273	85.1	9.3	18.5
1989 08 12	23 28.5	+73 18.6					
1989 08 22	23 14.0	+73 56.1	6.310	6.447	93.3	9.0	18.6
1989 09 01	22 57.5	+74 14.3					
1989 09 11	22 40.6	+74 12.1	6.356	6.619	100.8	8.6	18.7
1989 09 21	22 24.8	+73 50.1					
1989 10 01	22 11.4	+73 10.6	6.432	6.789	106.7	8.1	18.9
1989 10 11	22 01.2	+72 17.1					
1989 10 21	21 54.5	+71 13.4	6.550	6.957	110.2	7.7	19.0
1989 10 31	21 51.1	+70 03.5					
1989 11 10	21 50.72	+68 51.0	6.717	7.124	110.5	7.5	19.2
1989 11 20	21 52.82	+67 39.1					

1989 11 30	21 57.02	+66 30.2	6.935	7.289	107.3	7.4	19.3
1989 12 10	22 02.92	+65 26.6					
1989 12 20	22 10.17	+64 29.9	7.200	7.453	101.1	7.4	19.5
1989 12 30	22 18.49	+63 41.1					
1990 01 09	22 27.64	+63 01.3	7.498	7.615	93.1	7.4	19.7
1990 01 19	22 37.42	+62 30.6					
1990 01 29	22 47.67	+62 09.4	7.815	7.776	84.1	7.2	19.9

Comet Levy (1987 XXX) Elements MPC 13452

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 02 23	22 21.04	+52 53.1	5.904	5.525	63.0	9.2	17.8
1989 03 05	22 33.40	+53 42.3					
1989 03 15	22 45.50	+54 39.2	6.170	5.707	58.1	8.5	18.0
1989 03 25	22 57.28	+55 42.8					
1989 04 04	23 08.68	+56 52.3	6.400	5.887	55.2	8.0	18.2
1989 04 14	23 19.60	+58 06.7					
1989 04 24	23 29.95	+59 25.3	6.588	6.065	54.8	7.8	18.4
1989 05 04	23 39.63	+60 47.3					
1989 05 14	23 48.51	+62 11.9	6.734	6.241	57.0	7.8	18.6
1989 05 24	23 56.43	+63 38.2					
1989 06 03	00 03.20	+65 05.4	6.839	6.415	61.4	8.0	18.7
1989 06 13	00 08.58	+66 32.5					
1989 06 23	00 12.29	+67 58.3	6.907	6.587	67.6	8.2	18.9
1989 07 03	00 14.00	+69 21.6					
1989 07 13	00 13.3	+70 40.8	6.946	6.757	75.2	8.4	19.0
1989 07 23	00 09.9	+71 54.0					
1989 08 02	00 03.5	+72 58.8	6.967	6.926	83.5	8.4	19.1
1989 08 12	23 53.8	+73 52.5					
1989 08 22	23 41.2	+74 32.5	6.985	7.093	92.0	8.2	19.2
1989 09 01	23 26.2	+74 56.3					
1989 09 11	23 10.1	+75 02.2	7.014	7.258	100.1	7.8	19.3
1989 09 21	22 54.2	+74 49.8					
1989 10 01	22 40.1	+74 20.5	7.071	7.422	106.8	7.4	19.5
1989 10 11	22 28.6	+73 36.7					
1989 10 21	22 20.2	+72 41.6	7.169	7.585	111.1	7.0	19.6
1989 10 31	22 15.2	+71 38.9					
1989 11 10	22 13.1	+70 31.9	7.318	7.746	112.1	6.8	19.7
1989 11 20	22 13.69	+69 23.8					
1989 11 30	22 16.52	+68 17.2	7.522	7.906	109.5	6.8	19.9
1989 12 10	22 21.21	+67 14.4					
1989 12 20	22 27.39	+66 17.2	7.776	8.064	103.6	6.8	20.0
1989 12 30	22 34.77	+65 26.8					
1990 01 09	22 43.09	+64 44.2	8.068	8.221	95.5	6.8	20.2
1990 01 19	22 52.14	+64 10.1					
1990 01 29	23 01.75	+63 44.6	8.383	8.377	86.3	6.7	20.3

Periodic Comet Kopff (1988k) Elements MPC 12123

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 02 23	11 45.37	+06 59.0	2.239	3.184	159.4	6.3	20.3
1989 03 05	11 38.16	+08 01.8					
1989 03 15	11 29.84	+09 07.3	2.085	3.075	173.1	2.2	20.0
1989 03 25	11 21.21	+10 09.4					
1989 04 04	11 13.11	+11 02.4	2.050	2.963	150.8	9.5	19.8
1989 04 14	11 06.34	+11 41.7					
1989 04 24	11 01.54	+12 04.7	2.113	2.849	128.4	16.1	19.7
1989 05 04	10 59.04	+12 10.9					
1989 05 14	10 58.98	+12 00.5	2.236	2.732	108.6	20.5	19.6
1989 05 24	11 01.34	+11 34.7					
1989 06 03	11 05.93	+10 55.0	2.384	2.615	91.5	22.8	19.6

1989 06 13	11 12.60	+10 02.4						
1989 06 23	11 21.11	+08 58.3	2.527	2.496	76.6	23.3	19.5	
1989 07 03	11 31.27	+07 43.7						
1989 07 13	11 42.94	+06 19.4	2.647	2.376	63.6	22.5	19.4	
1989 07 23	11 55.96	+04 46.4						
1989 08 02	12 10.24	+03 05.4	2.734	2.257	52.1	20.8	19.2	
1989 08 12	12 25.72	+01 17.2						
1989 08 22	12 42.35	-00 37.2	2.786	2.141	41.8	18.3	19.0	
1989 09 01	13 00.13	-02 36.9						
1989 09 11	13 19.07	-04 40.7	2.803	2.027	32.5	15.5	18.8	

Periodic Comet Tempel 1 (1987e1) Elements MPC 11501

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 02 23	20 09.77	-23 52.9	2.289	1.577	34.5	20.8	17.3	
1989 03 05	20 40.33	-22 55.7						
1989 03 15	21 09.24	-21 44.7	2.268	1.649	40.8	23.2	17.5	
1989 03 25	21 36.43	-20 24.2						
1989 04 04	22 01.86	-18 58.4	2.239	1.738	48.1	25.4	17.7	
1989 04 14	22 25.53	-17 31.0						
1989 04 24	22 47.47	-16 05.6	2.193	1.839	56.4	27.1	17.9	
1989 05 04	23 07.69	-14 45.1						
1989 05 14	23 26.19	-13 32.1	2.125	1.948	66.1	28.3	18.0	
1989 05 24	23 42.93	-12 28.9						
1989 06 03	23 57.87	-11 37.6	2.034	2.062	77.2	28.7	18.2	
1989 06 13	00 10.86	-11 00.1						
1989 06 23	00 21.77	-10 37.7	1.924	2.180	90.2	27.8	18.3	
1989 07 03	00 30.41	-10 31.9						
1989 07 13	00 36.53	-10 43.5	1.807	2.298	105.5	25.2	18.4	
1989 07 23	00 39.92	-11 12.3						
1989 08 02	00 40.38	-11 57.2	1.705	2.416	123.4	20.5	18.5	
1989 08 12	00 37.81	-12 55.2						
1989 08 22	00 32.39	-14 01.1	1.649	2.533	143.3	13.8	18.6	
1989 09 01	00 24.53	-15 08.0						
1989 09 11	00 14.99	-16 07.7	1.675	2.649	161.4	7.0	18.9	
1989 09 21	00 04.83	-16 52.8						
1989 10 01	23 55.10	-17 18.6	1.806	2.761	158.4	7.7	19.2	
1989 10 11	23 46.77	-17 23.1						
1989 10 21	23 40.50	-17 07.5	2.040	2.872	139.6	13.0	19.6	
1989 10 31	23 36.56	-16 34.4						
1989 11 10	23 35.02	-15 47.1	2.355	2.979	120.2	16.7	20.1	
1989 11 20	23 35.71	-14 48.7						
1989 11 30	23 38.38	-13 41.9	2.720	3.083	102.2	18.2	20.6	

Comet Shoemaker-Holt-Rodriquez (1988h) Elements MPC 13843

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1989 02 23	20 35.48	-31 01.2	3.526	2.744	32.5	11.2	12.1	
1989 03 05	20 49.60	-32 55.6						
1989 03 15	21 04.48	-35 05.4	3.216	2.658	48.2	16.2	11.8	
1989 03 25	21 20.29	-37 35.2						
1989 04 04	21 37.35	-40 29.6	2.870	2.587	63.7	20.3	11.4	
1989 04 14	21 56.08	-43 53.5						
1989 04 24	22 17.24	-47 50.8	2.531	2.532	78.6	22.9	11.1	
1989 05 04	22 42.03	-52 23.2						
1989 05 14	23 12.51	-57 27.1	2.253	2.495	91.6	23.9	10.7	
1989 05 24	23 52.29	-62 49.0						
1989 06 03	00 47.52	-67 59.9	2.094	2.476	99.7	23.8	10.5	
1989 06 13	02 06.2	-72 08.6						
1989 06 23	03 48.3	-74 09.2	2.088	2.477	100.1	23.8	10.5	
1989 07 03	05 30.2	-73 35.2						

1989 07 13	06 48.3	-71 19.2	2.219	2.496	93.5	24.0	10.7
1989 07 23	07 42.12	-68 31.1					
1989 08 02	08 19.81	-65 51.8	2.431	2.535	84.0	23.5	11.0
1989 08 12	08 47.43	-63 38.7					
1989 08 22	09 08.53	-61 56.5	2.666	2.591	74.7	22.1	11.3
1989 09 01	09 25.09	-60 45.0					
1989 09 11	09 38.17	-60 02.2	2.878	2.662	67.6	20.5	11.5
1989 09 21	09 48.32	-59 44.8					
1989 10 01	09 55.76	-59 49.8	3.038	2.749	63.9	19.1	11.8
1989 10 11	10 00.42	-60 14.1					
1989 10 21	10 02.08	-60 54.0	3.136	2.847	64.2	18.3	12.0
1989 10 31	10 00.29	-61 45.9					
1989 11 10	09 54.41	-62 44.6	3.171	2.957	68.6	18.2	12.2
1989 11 20	09 43.77	-63 43.4					
1989 11 30	09 27.72	-64 33.6	3.158	3.076	76.2	18.1	12.4
1989 12 10	09 06.09	-65 03.6					
1989 12 20	08 39.73	-65 00.5	3.122	3.202	85.7	17.8	12.5
1989 12 30	08 10.77	-64 12.3					
1990 01 09	07 42.26	-62 31.7	3.100	3.335	95.1	17.1	12.7
1990 01 19	07 17.05	-59 59.0					
1990 01 29	06 56.81	-56 41.6	3.133	3.473	101.9	16.1	12.9
1990 02 08	06 41.94	-52 51.1					
1990 02 18	06 32.01	-48 40.9	3.252	3.615	103.6	15.4	13.1
1990 02 28	06 26.23	-44 23.4					
1990 03 10	06 23.82	-40 09.2	3.466	3.760	99.5	15.1	13.5
1990 03 20	06 24.05	-36 06.5					
1990 03 30	06 26.33	-32 20.6	3.765	3.908	90.8	14.8	13.8
1990 04 09	06 30.19	-28 55.0					
1990 04 19	06 35.25	-25 51.0	4.118	4.058	79.6	14.1	14.2
1990 04 29	06 41.23	-23 08.8					
1990 05 09	06 47.88	-20 47.8	4.493	4.210	67.4	12.8	14.5
1990 05 19	06 55.00	-18 46.7					
1990 05 29	07 02.44	-17 04.1	4.858	4.363	55.4	11.0	14.8
1990 06 08	07 10.07	-15 38.4					
1990 06 18	07 17.75	-14 28.1	5.185	4.516	44.5	9.1	15.1
1990 06 28	07 25.40	-13 31.7					
1990 07 08	07 32.92	-12 47.8	5.454	4.671	36.0	7.4	15.4

Periodic Comet Clark Elements MPC 12128

Date ET	R. A. (1950) Decl.	Delta	r	Elong.	Phase	m2
1989 03 15	10 57.31 +22 13.8	1.736	2.684	158.0	8.0	21.0
1989 03 25	10 47.44 +22 46.3					
1989 04 04	10 39.05 +22 55.6	1.748	2.574	137.2	15.3	20.8
1989 04 14	10 33.01 +22 41.2					
1989 04 24	10 29.81 +22 05.2	1.836	2.462	117.1	21.3	20.7
1989 05 04	10 29.58 +21 10.6					
1989 05 14	10 32.26 +20 00.0	1.961	2.349	99.5	25.1	20.7
1989 05 24	10 37.58 +18 35.7					
1989 06 03	10 45.26 +16 59.4	2.093	2.237	84.5	26.8	20.6
1989 06 13	10 55.02 +15 12.2					
1989 06 23	11 06.59 +13 14.9	2.212	2.125	71.7	27.0	20.5
1989 07 03	11 19.76 +11 08.1					
1989 07 13	11 34.37 +08 52.2	2.308	2.016	60.7	26.1	20.4
1989 07 23	11 50.29 +06 27.8					
1989 08 02	12 07.44 +03 55.6	2.377	1.912	51.1	24.4	20.2
1989 08 12	12 25.79 +01 16.2					
1989 08 22	12 45.33 -01 29.1	2.422	1.815	42.8	22.2	20.0
1989 09 01	13 06.10 -04 19.1					
1989 09 11	13 28.14 -07 12.1	2.447	1.728	35.4	19.7	19.8

Periodic Comet du Toit-Neujmin-Delporte Elements MPC 12135

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1989 04 04	15 44.81	-17 25.4	1.599	2.418	135.7	16.8	20.9
1989 04 14	15 44.25	-17 02.8					
1989 04 24	15 40.93	-16 30.2	1.356	2.312	156.3	10.1	20.3
1989 05 04	15 35.09	-15 48.7					
1989 05 14	15 27.37	-15 01.3	1.199	2.209	176.3	1.7	19.8
1989 05 24	15 18.86	-14 13.1					
1989 06 03	15 10.85	-13 30.1	1.139	2.110	156.8	10.9	19.5
1989 06 13	15 04.65	-12 58.7					
1989 06 23	15 01.26	-12 43.5	1.162	2.016	135.4	20.7	19.4
1989 07 03	15 01.22	-12 46.5					
1989 07 13	15 04.76	-13 07.6	1.240	1.931	117.4	27.9	19.3
1989 07 23	15 11.83	-13 44.6					
1989 08 02	15 22.19	-14 34.4	1.346	1.857	102.8	32.2	19.3
1989 08 12	15 35.63	-15 33.4					
1989 08 22	15 51.85	-16 37.3	1.465	1.795	91.1	34.3	19.4
1989 09 01	16 10.59	-17 42.2					
1989 09 11	16 31.61	-18 43.9	1.590	1.750	81.4	34.7	19.4
1989 09 21	16 54.64	-19 38.3					
1989 10 01	17 19.41	-20 21.9	1.720	1.723	73.3	33.8	19.5
1989 10 11	17 45.62	-20 51.2					
1989 10 21	18 12.92	-21 03.6	1.859	1.716	66.0	32.0	19.7
1989 10 31	18 40.98	-20 57.3					
1989 11 10	19 09.46	-20 31.4	2.011	1.728	59.2	29.5	19.9
1989 11 20	19 38.00	-19 45.8					
1989 11 30	20 06.32	-18 41.5	2.176	1.760	52.6	26.4	20.1
1989 12 10	20 34.17	-17 20.1					
1989 12 20	21 01.36	-15 43.9	2.354	1.810	45.7	22.9	20.4
1989 12 30	21 27.79	-13 55.3					
1990 01 09	21 53.38	-11 57.0	2.541	1.875	38.5	19.1	20.8

1980 BB a,e,i = 2.86, 0.07, 3 Elements MPC 14014

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	04 09.34	+19 56.2	1.876	2.854	171.5	2.9	16.3
1988 12 15	04 00.75	+19 43.8					
1988 12 25	03 53.90	+19 35.1	1.989	2.868	147.6	10.6	16.8
1989 01 04	03 49.37	+19 32.3					
1989 01 14	03 47.45	+19 36.7	2.195	2.882	125.7	16.1	17.2
1989 01 24	03 48.16	+19 48.3					
1989 02 03	03 51.34	+20 06.6	2.458	2.896	106.4	19.1	17.5
1989 02 13	03 56.77	+20 30.4					
1989 02 23	04 04.18	+20 58.1	2.747	2.909	89.3	19.9	17.8
1989 03 05	04 13.30	+21 28.2					
1989 03 15	04 23.90	+21 59.2	3.036	2.922	74.0	19.1	18.0

1983 VP1 a,e,i = 2.89, 0.01, 12 Elements MPC 14018

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	04 11.13	+19 24.4	1.895	2.874	171.7	2.8	15.4
1988 12 15	04 02.92	+18 25.3					
1988 12 25	03 56.40	+17 33.3	1.993	2.873	147.7	10.6	15.9
1989 01 04	03 52.11	+16 51.6					
1989 01 14	03 50.36	+16 22.1	2.186	2.872	125.6	16.2	16.3
1989 01 24	03 51.17	+16 04.5					
1989 02 03	03 54.39	+15 57.8	2.436	2.872	106.2	19.2	16.6
1989 02 13	03 59.80	+16 00.0					
1989 02 23	04 07.15	+16 08.9	2.711	2.871	89.1	20.2	16.8
1989 03 05	04 16.17	+16 22.4					
1989 03 15	04 26.64	+16 38.3	2.984	2.871	73.8	19.4	17.0

1980 SJ a,e,i = 2.41, 0.14, 5 Elements MPC 14015

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	06 36.53	+18 08.4	1.328	2.253	153.4	11.3	16.5
1988 12 15	06 27.05	+17 45.1					
1988 12 25	06 16.24	+17 27.2	1.303	2.283	174.0	2.6	16.1
1989 01 04	06 05.61	+17 15.0					
1989 01 14	05 56.60	+17 09.0	1.385	2.315	155.2	10.3	16.6
1989 01 24	05 50.31	+17 09.3					
1989 02 03	05 47.24	+17 15.2	1.560	2.346	133.0	17.9	17.1
1989 02 13	05 47.48	+17 25.5					
1989 02 23	05 50.83	+17 38.4	1.799	2.378	113.9	22.4	17.6
1989 03 05	05 56.90	+17 51.9					
1989 03 15	06 05.33	+18 04.1	2.071	2.410	97.4	24.2	18.0
1989 03 25	06 15.71	+18 13.2					
1989 04 04	06 27.68	+18 17.8	2.353	2.441	83.0	24.0	18.3
1989 04 14	06 40.96	+18 16.7					
1989 04 24	06 55.26	+18 09.0	2.629	2.472	70.0	22.5	18.5
1989 05 04	07 10.35	+17 54.1					
1989 05 14	07 26.07	+17 31.6	2.886	2.502	58.0	20.0	18.7

1986 GG a,e,i = 2.45, 0.06, 7 Elements MPC 14023

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	07 13.40	+32 05.5	1.667	2.541	145.6	12.6	16.3
1988 12 15	07 05.06	+32 54.1					
1988 12 25	06 54.27	+33 34.7	1.584	2.550	166.3	5.2	15.9
1989 01 04	06 42.29	+34 01.5					
1989 01 14	06 30.72	+34 11.9	1.611	2.558	160.0	7.5	16.1
1989 01 24	06 21.05	+34 06.6					
1989 02 03	06 14.32	+33 49.5	1.743	2.565	138.3	14.8	16.5
1989 02 13	06 11.04	+33 25.0					
1989 02 23	06 11.27	+32 56.8	1.951	2.571	118.2	19.8	16.9
1989 03 05	06 14.71	+32 27.0					
1989 03 15	06 21.01	+31 56.5	2.201	2.576	100.5	22.3	17.2
1989 03 25	06 29.73	+31 25.1					
1989 04 04	06 40.44	+30 52.1	2.464	2.580	85.1	22.7	17.5
1989 04 14	06 52.79	+30 16.5					
1989 04 24	07 06.44	+29 37.5	2.721	2.583	71.4	21.7	17.7
1989 05 04	07 21.12	+28 54.2					
1989 05 14	07 36.61	+28 05.9	2.958	2.585	58.9	19.6	17.8

1981 EZ47 a,e,i = 2.63, 0.25, 2 Elements MPC 14016

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 12 05	08 06.57	+23 41.5	1.333	2.135	133.7	19.5	17.6
1988 12 15	08 03.11	+24 00.5					
1988 12 25	07 56.17	+24 25.4	1.242	2.179	156.3	10.4	17.2
1989 01 04	07 46.64	+24 51.1					
1989 01 14	07 35.91	+25 12.2	1.243	2.225	176.1	1.7	16.9
1989 01 24	07 25.70	+25 24.7					
1989 02 03	07 17.49	+25 27.7	1.349	2.275	153.7	11.1	17.5
1989 02 13	07 12.28	+25 22.0					
1989 02 23	07 10.48	+25 09.6	1.544	2.326	132.1	18.4	18.1
1989 03 05	07 12.01	+24 51.8					
1989 03 15	07 16.56	+24 29.6	1.800	2.378	113.5	22.5	18.6
1989 03 25	07 23.69	+24 03.1					
1989 04 04	07 32.92	+23 32.1	2.089	2.432	97.6	24.1	19.0
1989 04 14	07 43.85	+22 56.1					
1989 04 24	07 56.11	+22 14.9	2.390	2.485	83.5	23.7	19.4
1989 05 04	08 09.37	+21 28.0					
1989 05 14	08 23.39	+20 35.3	2.688	2.539	70.6	22.1	19.6

1980 BM a,e,i = 2.67, 0.21, 13 Elements MPC 14015

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	12 05	10 22.20	+10 54.5	2.669	2.989	99.2	19.0	17.7
1988	12 15	10 26.02	+11 03.9					
1988	12 25	10 27.73	+11 28.1	2.425	3.020	118.4	16.6	17.4
1989	01 04	10 27.16	+12 08.2					
1989	01 14	10 24.26	+13 03.7	2.227	3.048	140.1	11.9	17.1
1989	01 24	10 19.15	+14 12.3					
1989	02 03	10 12.19	+15 29.6	2.116	3.075	163.6	5.2	16.7
1989	02 13	10 04.02	+16 49.6					
1989	02 23	09 55.48	+18 05.4	2.121	3.099	169.6	3.3	16.7
1989	03 05	09 47.46	+19 11.5					
1989	03 15	09 40.76	+20 03.7	2.243	3.121	146.5	10.1	17.1
1989	03 25	09 35.99	+20 40.3					
1989	04 04	09 33.41	+21 01.6	2.459	3.141	125.0	15.1	17.5
1989	04 14	09 33.13	+21 08.5					
1989	04 24	09 35.02	+21 02.8	2.732	3.159	105.9	17.8	17.8
1989	05 04	09 38.87	+20 46.1					
1989	05 14	09 44.46	+20 19.7	3.028	3.174	88.9	18.6	18.1

1980 PB2 a,e,i = 3.18, 0.10, 11 Elements MPC 14015

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	12 05	10 23.94	+00 53.3	3.265	3.492	95.0	16.3	18.1
1988	12 15	10 27.19	+00 20.8					
1988	12 25	10 28.71	-00 01.3	2.973	3.487	113.7	15.0	17.8
1989	01 04	10 28.41	-00 11.3					
1989	01 14	10 26.22	-00 07.5	2.722	3.480	134.2	11.7	17.5
1989	01 24	10 22.25	+00 10.9					
1989	02 03	10 16.75	+00 43.8	2.549	3.472	156.0	6.6	17.2
1989	02 13	10 10.17	+01 29.6					
1989	02 23	10 03.12	+02 25.0	2.484	3.464	170.9	2.6	16.9
1989	03 05	09 56.26	+03 25.9					
1989	03 15	09 50.26	+04 27.5	2.538	3.455	153.2	7.5	17.2
1989	03 25	09 45.67	+05 25.3					
1989	04 04	09 42.81	+06 15.9	2.696	3.444	131.8	12.5	17.5
1989	04 14	09 41.88	+06 57.0					
1989	04 24	09 42.87	+07 27.2	2.926	3.433	112.1	15.7	17.8
1989	05 04	09 45.69	+07 46.4					
1989	05 14	09 50.18	+07 54.6	3.193	3.421	94.4	17.1	18.0

1983 RQ4 a,e,i = 2.47, 0.15, 7 Elements MPC 14018

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	12 05	10 31.47	+02 05.3	2.199	2.468	93.8	23.5	17.8
1988	12 15	10 37.80	+01 13.9					
1988	12 25	10 41.88	+00 36.1	1.974	2.501	111.0	21.5	17.6
1989	01 04	10 43.46	+00 14.5					
1989	01 14	10 42.36	+00 12.0	1.777	2.532	130.8	17.1	17.3
1989	01 24	10 38.58	+00 30.3					
1989	02 03	10 32.39	+01 09.6	1.644	2.563	153.3	10.0	16.9
1989	02 13	10 24.39	+02 07.5					
1989	02 23	10 15.51	+03 18.6	1.608	2.593	173.0	2.7	16.6
1989	03 05	10 06.84	+04 35.7					
1989	03 15	09 59.42	+05 51.0	1.685	2.622	155.3	9.1	17.0
1989	03 25	09 54.06	+06 57.6					
1989	04 04	09 51.17	+07 51.4	1.860	2.649	133.4	15.9	17.4
1989	04 14	09 50.89	+08 30.1					
1989	04 24	09 53.09	+08 53.3	2.102	2.675	114.1	20.1	17.8
1989	05 04	09 57.51	+09 01.6					
1989	05 14	10 03.86	+08 56.0	2.379	2.699	97.2	21.8	18.2

1983 RC2 a,e,i = 2.38, 0.09, 2 Elements MPC 14018

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	12 05	10 45.35	+05 58.5	2.363	2.592	92.0	22.3	17.9
1988	12 15	10 52.16	+05 07.6					
1988	12 25	10 56.96	+04 28.0	2.091	2.585	109.1	21.1	17.6
1989	01 04	10 59.48	+04 01.7					
1989	01 14	10 59.43	+03 51.0	1.846	2.578	128.6	17.3	17.2
1989	01 24	10 56.69	+03 57.4					
1989	02 03	10 51.31	+04 21.0	1.662	2.568	151.0	10.7	16.7
1989	02 13	10 43.66	+05 00.3					
1989	02 23	10 34.51	+05 50.8	1.570	2.557	174.8	2.0	16.2
1989	03 05	10 24.91	+06 46.6					
1989	03 15	10 16.03	+07 40.8	1.591	2.545	159.1	8.0	16.5
1989	03 25	10 08.90	+08 26.9					
1989	04 04	10 04.20	+09 01.0	1.713	2.532	136.2	15.9	16.9
1989	04 14	10 02.27	+09 20.9					
1989	04 24	10 03.12	+09 26.0	1.905	2.517	116.2	21.0	17.3
1989	05 04	10 06.53	+09 16.8					
1989	05 14	10 12.24	+08 54.2	2.132	2.501	99.2	23.5	17.6

1983 RR4 a,e,i = 2.37, 0.18, 14 Elements MPC 14018

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	12 25	11 36.60	-01 46.1	2.411	2.721	97.5	21.0	18.5
1989	01 04	11 41.25	-01 55.2					
1989	01 14	11 43.73	-01 46.7	2.160	2.741	116.2	18.8	18.2
1989	01 24	11 43.86	-01 18.8					
1989	02 03	11 41.53	-00 30.2	1.950	2.759	137.6	13.9	17.9
1989	02 13	11 36.81	+00 38.7					
1989	02 23	11 30.08	+02 05.0	1.818	2.774	161.5	6.5	17.4
1989	03 05	11 21.99	+03 42.7					
1989	03 15	11 13.41	+05 23.9	1.796	2.786	173.3	2.4	17.2
1989	03 25	11 05.35	+06 59.8					
1989	04 04	10 58.67	+08 23.3	1.890	2.795	149.0	10.6	17.7
1989	04 14	10 53.97	+09 29.4					
1989	04 24	10 51.61	+10 16.2	2.079	2.802	127.0	16.7	18.1
1989	05 04	10 51.61	+10 43.9					
1989	05 14	10 53.88	+10 53.7	2.325	2.806	107.9	20.0	18.5
1989	05 24	10 58.18	+10 47.7					
1989	06 03	11 04.26	+10 27.9	2.596	2.808	91.3	21.2	18.7

1976 SZ3 a,e,i = 2.36, 0.16, 1 Elements MPC 10756

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 03	14 13.83	-12 58.9	1.956	2.309	98.0	25.0	18.3
1989	02 13	14 20.79	-13 34.3					
1989	02 23	14 25.19	-13 56.3	1.747	2.346	115.3	22.4	18.0
1989	03 05	14 26.71	-14 04.2					
1989	03 15	14 25.13	-13 57.2	1.571	2.383	135.3	17.1	17.7
1989	03 25	14 20.52	-13 35.4					
1989	04 04	14 13.25	-13 00.2	1.462	2.419	158.2	8.8	17.3
1989	04 14	14 04.12	-12 14.6					
1989	04 24	13 54.27	-11 24.1	1.449	2.454	177.3	1.1	16.9
1989	05 04	13 44.92	-10 35.0					
1989	05 14	13 37.15	-09 53.9	1.542	2.488	153.5	10.5	17.5
1989	05 24	13 31.68	-09 25.3					
1989	06 03	13 28.85	-09 11.5	1.725	2.520	132.1	17.4	18.0
1989	06 13	13 28.68	-09 13.1					
1989	06 23	13 31.02	-09 29.1	1.968	2.551	113.6	21.4	18.4
1989	07 03	13 35.59	-09 57.6					
1989	07 13	13 42.13	-10 36.8	2.242	2.579	97.5	23.0	18.8

1985 PC2 a,e,i = 3.08, 0.25, 5 Elements MPC 14019

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 32.17	-13 47.3	3.486	3.780	99.7	15.0	19.3
1989 03 05	15 34.81	-13 43.7					
1989 03 15	15 35.68	-13 33.5	3.181	3.762	118.8	13.4	19.1
1989 03 25	15 34.67	-13 17.1					
1989 04 04	15 31.79	-12 55.0	2.926	3.743	139.5	10.0	18.8
1989 04 14	15 27.13	-12 28.2					
1989 04 24	15 21.01	-11 58.4	2.756	3.722	161.2	5.0	18.4
1989 05 04	15 13.84	-11 27.4					
1989 05 14	15 06.21	-10 57.8	2.696	3.699	171.7	2.3	18.2
1989 05 24	14 58.76	-10 32.2					
1989 06 03	14 52.07	-10 12.8	2.753	3.674	151.2	7.6	18.5
1989 06 13	14 46.64	-10 01.6					
1989 06 23	14 42.80	-09 59.5	2.908	3.648	130.2	12.3	18.8
1989 07 03	14 40.72	-10 06.6					
1989 07 13	14 40.47	-10 22.6	3.130	3.619	110.8	15.2	19.0
1989 07 23	14 42.01	-10 46.7					
1989 08 02	14 45.21	-11 17.8	3.386	3.589	93.2	16.4	19.2

1982 FZ1 a,e,i = 2.24, 0.08, 4 Elements MPC 12131

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 13.96	-16 19.2	1.604	2.070	103.3	27.7	17.2
1989 03 05	15 23.68	-16 29.5					
1989 03 15	15 30.73	-16 25.3	1.389	2.067	119.4	24.8	16.8
1989 03 25	15 34.71	-16 06.6					
1989 04 04	15 35.28	-15 33.4	1.210	2.067	138.3	18.8	16.3
1989 04 14	15 32.33	-14 47.2					
1989 04 24	15 26.24	-13 50.7	1.095	2.069	160.0	9.6	15.8
1989 05 04	15 17.83	-12 48.8					
1989 05 14	15 08.41	-11 48.5	1.066	2.073	172.7	3.5	15.5
1989 05 24	14 59.52	-10 57.6					
1989 06 03	14 52.45	-10 22.1	1.131	2.079	151.4	13.5	16.0
1989 06 13	14 48.13	-10 05.9					
1989 06 23	14 46.96	-10 09.2	1.272	2.087	131.2	21.5	16.5
1989 07 03	14 48.92	-10 30.2					
1989 07 13	14 53.83	-11 06.1	1.465	2.097	114.2	26.2	17.0
1989 07 23	15 01.36	-11 53.4					
1989 08 02	15 11.16	-12 48.7	1.685	2.109	99.7	28.3	17.4

1982 UA7 a,e,i = 2.59, 0.19, 14 Elements MPC 11431

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 37.58	-10 52.5	2.718	3.034	99.0	18.8	18.4
1989 03 05	15 41.60	-11 04.1					
1989 03 15	15 43.48	-11 09.7	2.430	3.019	117.3	17.0	18.1
1989 03 25	15 43.02	-11 10.3					
1989 04 04	15 40.10	-11 06.7	2.186	3.001	137.6	13.0	17.8
1989 04 14	15 34.74	-11 00.2					
1989 04 24	15 27.24	-10 52.4	2.018	2.981	159.6	6.8	17.3
1989 05 04	15 18.15	-10 45.3					
1989 05 14	15 08.26	-10 41.2	1.956	2.959	171.7	2.8	17.1
1989 05 24	14 58.53	-10 42.6					
1989 06 03	14 49.84	-10 51.3	2.006	2.935	151.0	9.6	17.4
1989 06 13	14 42.91	-11 08.8					
1989 06 23	14 38.20	-11 35.6	2.152	2.909	129.7	15.6	17.7
1989 07 03	14 35.89	-12 11.6					
1989 07 13	14 36.00	-12 56.0	2.360	2.880	110.7	19.3	18.0
1989 07 23	14 38.40	-13 47.8					
1989 08 02	14 42.92	-14 45.7	2.598	2.850	93.7	20.8	18.2

1981 EZ27 a,e,i = 2.44, 0.12, 1 Elements MPC 12706

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 21.35	-17 43.1	2.003	2.401	101.3	23.8	18.9
1989 03 05	15 29.06	-18 12.1					
1989 03 15	15 34.42	-18 32.2	1.738	2.374	118.1	21.7	18.5
1989 03 25	15 37.07	-18 43.2					
1989 04 04	15 36.73	-18 44.5	1.513	2.348	137.3	16.8	18.0
1989 04 14	15 33.27	-18 36.0					
1989 04 24	15 26.93	-18 17.9	1.354	2.322	159.3	8.8	17.5
1989 05 04	15 18.36	-17 51.5					
1989 05 14	15 08.63	-17 19.6	1.288	2.297	176.9	1.4	17.0
1989 05 24	14 59.09	-16 47.1					
1989 06 03	14 51.02	-16 19.1	1.321	2.274	153.3	11.5	17.5
1989 06 13	14 45.39	-16 00.6					
1989 06 23	14 42.75	-15 54.7	1.439	2.251	132.2	19.5	17.9
1989 07 03	14 43.23	-16 02.2					
1989 07 13	14 46.75	-16 22.8	1.612	2.230	114.2	24.6	18.3
1989 07 23	14 53.05	-16 54.6					
1989 08 02	15 01.83	-17 35.3	1.814	2.211	98.9	27.0	18.6

1986 RB a,e,i = 2.34, 0.26, 25 Elements MPC 13039

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 41.03	-45 15.1	2.615	2.796	90.1	20.7	17.7
1989 03 05	15 48.92	-47 19.6					
1989 03 15	15 54.37	-49 24.4	2.341	2.763	104.5	20.4	17.4
1989 03 25	15 56.75	-51 27.5					
1989 04 04	15 55.37	-53 25.2	2.096	2.726	119.0	18.7	17.1
1989 04 14	15 49.61	-55 11.4					
1989 04 24	15 39.24	-56 37.6	1.903	2.685	132.3	16.1	16.8
1989 05 04	15 24.70	-57 34.0					
1989 05 14	15 07.45	-57 51.7	1.783	2.642	140.5	14.1	16.6
1989 05 24	14 49.87	-57 27.1					
1989 06 03	14 34.44	-56 23.8	1.747	2.596	138.6	15.0	16.5
1989 06 13	14 23.04	-54 51.5					
1989 06 23	14 16.52	-53 03.1	1.790	2.547	128.2	18.3	16.6
1989 07 03	14 14.86	-51 10.5					
1989 07 13	14 17.66	-49 22.6	1.894	2.495	114.6	21.7	16.8
1989 07 23	14 24.28	-47 45.1					
1989 08 02	14 34.13	-46 20.1	2.038	2.442	100.9	24.1	17.0

1973 SO4 a,e,i = 2.27, 0.20, 4 Elements MPC 13474

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 36.92	-23 38.9	2.404	2.697	96.3	21.4	19.0
1989 03 05	15 42.55	-24 14.8					
1989 03 15	15 45.76	-24 43.6	2.144	2.706	114.0	19.6	18.7
1989 03 25	15 46.25	-25 04.5					
1989 04 04	15 43.84	-25 16.1	1.920	2.712	134.0	15.4	18.3
1989 04 14	15 38.49	-25 16.7					
1989 04 24	15 30.56	-25 04.8	1.764	2.714	156.1	8.6	17.9
1989 05 04	15 20.69	-24 39.6					
1989 05 14	15 09.91	-24 02.6	1.706	2.713	173.8	2.3	17.6
1989 05 24	14 59.43	-23 17.6					
1989 06 03	14 50.32	-22 29.7	1.759	2.710	154.4	9.3	17.9
1989 06 13	14 43.41	-21 45.0					
1989 06 23	14 39.16	-21 08.2	1.908	2.703	132.8	16.0	18.3
1989 07 03	14 37.69	-20 42.1					
1989 07 13	14 38.91	-20 27.9	2.120	2.693	113.6	20.2	18.7
1989 07 23	14 42.60	-20 25.4					
1989 08 02	14 48.51	-20 33.4	2.364	2.679	96.7	22.1	18.9

1981 EE1 a,e,i = 2.45, 0.13, 3 Elements MPC 10820

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 23.05	-15 16.6	1.780	2.202	101.5	26.1	18.5
1989	03 05	15 31.47	-15 28.1					
1989	03 15	15 37.20	-15 27.8	1.574	2.223	118.1	23.2	18.2
1989	03 25	15 39.90	-15 16.1					
1989	04 04	15 39.35	-14 53.8	1.405	2.246	137.4	17.5	17.8
1989	04 14	15 35.55	-14 22.2					
1989	04 24	15 28.95	-13 43.9	1.302	2.271	159.3	9.0	17.4
1989	05 04	15 20.33	-13 02.6					
1989	05 14	15 10.91	-12 23.2	1.290	2.297	173.5	2.9	17.1
1989	05 24	15 02.01	-11 51.1					
1989	06 03	14 54.74	-11 30.6	1.377	2.324	152.4	11.7	17.7
1989	06 13	14 49.91	-11 24.3					
1989	06 23	14 47.88	-11 32.7	1.548	2.352	131.9	18.7	18.1
1989	07 03	14 48.65	-11 54.7					
1989	07 13	14 52.09	-12 28.4	1.776	2.381	114.2	22.9	18.6
1989	07 23	14 57.91	-13 11.2					
1989	08 02	15 05.82	-14 00.9	2.036	2.410	98.8	24.6	19.0

1967 JP a,e,i = 3.12, 0.11, 4 Elements MPC 9416

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 25.36	-23 11.3	2.456	2.786	98.9	20.5	18.1
1989	03 05	15 31.69	-23 52.9					
1989	03 15	15 35.81	-24 27.3	2.193	2.780	116.3	18.7	17.8
1989	03 25	15 37.48	-24 53.9					
1989	04 04	15 36.52	-25 11.4	1.972	2.776	135.6	14.6	17.4
1989	04 14	15 32.95	-25 18.7					
1989	04 24	15 27.09	-25 14.5	1.821	2.773	156.7	8.2	17.0
1989	05 04	15 19.53	-24 58.5					
1989	05 14	15 11.15	-24 32.1	1.766	2.772	173.5	2.4	16.7
1989	05 24	15 03.00	-23 58.4					
1989	06 03	14 56.01	-23 21.8	1.817	2.773	155.7	8.7	17.0
1989	06 13	14 50.95	-22 47.2					
1989	06 23	14 48.24	-22 18.7	1.962	2.775	135.1	15.0	17.4
1989	07 03	14 48.03	-21 58.9					
1989	07 13	14 50.29	-21 49.1	2.173	2.780	116.5	19.1	17.8
1989	07 23	14 54.86	-21 49.1					
1989	08 02	15 01.50	-21 57.9	2.424	2.786	100.0	21.0	18.1

1988 CH2 a,e,i = 2.31, 0.13, 7 Elements MPC 13477

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 31.78	-10 36.8	2.222	2.591	100.5	22.1	18.1
1989	03 05	15 37.91	-10 23.3					
1989	03 15	15 41.70	-09 59.1	1.960	2.580	117.9	19.9	17.8
1989	03 25	15 42.88	-09 25.0					
1989	04 04	15 41.27	-08 42.4	1.738	2.566	137.5	15.3	17.4
1989	04 14	15 36.85	-07 53.7					
1989	04 24	15 29.91	-07 02.8	1.589	2.550	158.2	8.4	16.9
1989	05 04	15 21.08	-06 14.2					
1989	05 14	15 11.31	-05 33.6	1.538	2.533	166.9	5.2	16.7
1989	05 24	15 01.73	-05 05.8					
1989	06 03	14 53.41	-04 54.2	1.591	2.513	148.7	12.1	17.0
1989	06 13	14 47.15	-05 00.1					
1989	06 23	14 43.45	-05 22.8	1.729	2.492	128.5	18.6	17.4
1989	07 03	14 42.46	-06 00.5					
1989	07 13	14 44.13	-06 50.8	1.922	2.468	110.5	22.7	17.7
1989	07 23	14 48.29	-07 50.8					
1989	08 02	14 54.70	-08 58.0	2.141	2.444	94.7	24.4	18.0

(3828) 1986 WC a,e,i = 3.17, 0.02, 6 Elements MPC 13150

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 29.88	-19 34.0	2.852	3.159	98.8	18.0	17.1
1989	03 05	15 34.62	-19 38.8					
1989	03 15	15 37.32	-19 34.9	2.583	3.163	117.2	16.2	16.8
1989	03 25	15 37.83	-19 22.2					
1989	04 04	15 36.08	-19 00.6	2.358	3.167	137.4	12.3	16.5
1989	04 14	15 32.19	-18 30.2					
1989	04 24	15 26.49	-17 52.2	2.210	3.171	159.5	6.4	16.2
1989	05 04	15 19.49	-17 08.4					
1989	05 14	15 11.92	-16 21.7	2.166	3.176	177.0	0.9	15.8
1989	05 24	15 04.58	-15 36.0					
1989	06 03	14 58.17	-14 54.9	2.234	3.180	154.5	7.9	16.2
1989	06 13	14 53.28	-14 21.7					
1989	06 23	14 50.27	-13 58.5	2.399	3.184	133.3	13.4	16.6
1989	07 03	14 49.29	-13 46.1					
1989	07 13	14 50.36	-13 44.4	2.633	3.188	114.2	16.9	16.9
1989	07 23	14 53.38	-13 52.6					
1989	08 02	14 58.18	-14 09.3	2.904	3.192	97.1	18.4	17.2

1984 DX a,e,i = 2.58, 0.24, 4 Elements MPC 13475

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 39.17	-15 13.8	2.706	3.003	97.7	19.1	19.4
1989	03 05	15 43.33	-15 11.6					
1989	03 15	15 45.27	-15 01.1	2.460	3.034	116.3	17.1	19.2
1989	03 25	15 44.85	-14 42.8					
1989	04 04	15 42.00	-14 17.1	2.256	3.063	136.8	12.9	18.9
1989	04 14	15 36.84	-13 45.2					
1989	04 24	15 29.75	-13 08.7	2.129	3.090	159.1	6.7	18.5
1989	05 04	15 21.32	-12 30.3					
1989	05 14	15 12.32	-11 53.1	2.108	3.113	173.1	2.2	18.3
1989	05 24	15 03.63	-11 20.7					
1989	06 03	14 56.00	-10 56.0	2.200	3.134	152.4	8.6	18.7
1989	06 13	14 50.04	-10 41.3					
1989	06 23	14 46.09	-10 37.5	2.389	3.153	131.2	14.0	19.1
1989	07 03	14 44.28	-10 44.5					
1989	07 13	14 44.60	-11 01.6	2.644	3.168	112.0	17.3	19.4
1989	07 23	14 46.92	-11 27.5					
1989	08 02	14 51.05	-12 00.7	2.931	3.181	94.8	18.5	19.7

1988 AG a,e,i = 2.81, 0.17, 9 Elements MPC 12944

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 36.80	-27 55.6	2.539	2.808	95.2	20.5	17.7
1989	03 05	15 42.48	-28 53.3					
1989	03 15	15 45.75	-29 45.1	2.307	2.842	112.6	18.8	17.4
1989	03 25	15 46.37	-30 29.9					
1989	04 04	15 44.17	-31 05.8	2.111	2.876	131.8	15.0	17.1
1989	04 14	15 39.20	-31 30.1					
1989	04 24	15 31.82	-31 40.4	1.981	2.909	152.2	9.3	16.8
1989	05 04	15 22.70	-31 34.9					
1989	05 14	15 12.81	-31 13.5	1.947	2.941	167.1	4.4	16.6
1989	05 24	15 03.26	-30 38.9					
1989	06 03	14 55.01	-29 55.8	2.022	2.972	155.0	8.3	16.9
1989	06 13	14 48.80	-29 10.0					
1989	06 23	14 45.04	-28 26.9	2.194	3.002	135.3	13.8	17.3
1989	07 03	14 43.81	-27 50.2					
1989	07 13	14 45.05	-27 22.3	2.437	3.031	116.6	17.4	17.6
1989	07 23	14 48.56	-27 04.1					
1989	08 02	14 54.09	-26 55.2	2.720	3.059	99.7	19.1	18.0

1981 EJ22 a,e,i = 2.44, 0.23, 6 Elements MPC 10619

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 14.88	-15 44.9	1.841	2.281	103.2	25.0	19.1
1989	03 05	15 24.06	-15 47.3					
1989	03 15	15 31.05	-15 35.6	1.566	2.230	119.5	22.8	18.7
1989	03 25	15 35.45	-15 09.5					
1989	04 04	15 36.93	-14 28.7	1.331	2.180	138.0	17.9	18.1
1989	04 14	15 35.25	-13 34.1					
1989	04 24	15 30.57	-12 28.0	1.162	2.131	158.9	9.8	17.5
1989	05 04	15 23.41	-11 15.2					
1989	05 14	15 14.79	-10 02.7	1.080	2.085	171.5	4.1	17.1
1989	05 24	15 06.12	-08 59.0					
1989	06 03	14 58.75	-08 11.7	1.092	2.042	151.6	13.7	17.4
1989	06 13	14 53.82	-07 45.9					
1989	06 23	14 52.00	-07 43.1	1.179	2.002	131.4	22.4	17.8
1989	07 03	14 53.49	-08 01.9					
1989	07 13	14 58.23	-08 39.3	1.316	1.967	114.4	28.1	18.2
1989	07 23	15 05.99	-09 31.3					
1989	08 02	15 16.43	-10 33.9	1.479	1.938	100.3	31.0	18.5

(3946) 1983 EL2 a,e,i = 3.08, 0.14, 1 Elements MPC 14007

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 25.84	-19 32.7	2.349	2.699	99.8	21.2	17.0
1989	03 05	15 32.66	-20 00.6					
1989	03 15	15 37.29	-20 20.2	2.086	2.687	117.0	19.3	16.7
1989	03 25	15 39.47	-20 31.5					
1989	04 04	15 39.03	-20 34.0	1.864	2.678	136.4	14.9	16.3
1989	04 14	15 35.96	-20 27.4					
1989	04 24	15 30.54	-20 11.8	1.712	2.671	157.9	8.1	15.9
1989	05 04	15 23.35	-19 48.1					
1989	05 14	15 15.25	-19 18.5	1.655	2.665	178.4	0.6	15.4
1989	05 24	15 07.29	-18 46.8					
1989	06 03	15 00.42	-18 17.1	1.704	2.663	156.0	8.9	15.9
1989	06 13	14 55.43	-17 53.4					
1989	06 23	14 52.78	-17 38.7	1.844	2.662	135.0	15.7	16.3
1989	07 03	14 52.64	-17 34.5					
1989	07 13	14 55.01	-17 40.9	2.050	2.664	116.5	20.0	16.7
1989	07 23	14 59.70	-17 57.1					
1989	08 02	15 06.50	-18 21.5	2.294	2.668	100.2	22.0	17.0

5568 P-L a,e,i = 2.64, 0.12, 8 Elements MPC 12583

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 38.61	-20 35.8	2.564	2.853	96.6	20.2	18.7
1989	03 05	15 44.35	-21 18.0					
1989	03 15	15 47.92	-21 55.3	2.277	2.834	114.2	18.7	18.4
1989	03 25	15 49.06	-22 27.6					
1989	04 04	15 47.55	-22 54.2	2.026	2.813	133.8	14.9	18.0
1989	04 14	15 43.30	-23 13.9					
1989	04 24	15 36.52	-23 25.6	1.845	2.792	155.6	8.6	17.6
1989	05 04	15 27.73	-23 28.3					
1989	05 14	15 17.76	-23 22.1	1.761	2.769	175.0	1.8	17.1
1989	05 24	15 07.72	-23 08.8					
1989	06 03	14 58.66	-22 51.6	1.787	2.746	156.3	8.5	17.5
1989	06 13	14 51.50	-22 34.9					
1989	06 23	14 46.82	-22 22.6	1.909	2.722	134.8	15.4	17.8
1989	07 03	14 44.84	-22 17.5					
1989	07 13	14 45.61	-22 21.2	2.097	2.697	115.6	19.9	18.1
1989	07 23	14 48.96	-22 34.0					
1989	08 02	14 54.66	-22 55.1	2.321	2.671	98.8	22.1	18.4

1980 FH5 a,e,i = 2.59, 0.16, 14 Elements MPC 12126

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 44.79	-30 52.8	2.672	2.895	92.8	20.0	18.8
1989	03 05	15 50.44	-32 06.4					
1989	03 15	15 53.75	-33 16.5	2.420	2.914	110.0	18.7	18.6
1989	03 25	15 54.40	-34 22.0					
1989	04 04	15 52.15	-35 20.6	2.201	2.931	128.6	15.5	18.3
1989	04 14	15 46.93	-36 08.8					
1989	04 24	15 38.99	-36 42.8	2.046	2.946	147.8	10.5	18.0
1989	05 04	15 28.94	-36 58.8					
1989	05 14	15 17.75	-36 54.6	1.984	2.960	161.5	6.2	17.8
1989	05 24	15 06.64	-36 31.4					
1989	06 03	14 56.75	-35 53.2	2.028	2.971	153.5	8.8	17.9
1989	06 13	14 48.99	-35 06.1					
1989	06 23	14 43.90	-34 16.9	2.171	2.980	135.3	13.9	18.3
1989	07 03	14 41.63	-33 30.9					
1989	07 13	14 42.13	-32 52.2	2.385	2.987	117.0	17.6	18.6
1989	07 23	14 45.19	-32 22.8					
1989	08 02	14 50.52	-32 03.1	2.640	2.993	100.3	19.5	18.9

1988 DQ1 a,e,i = 3.05, 0.04, 10 Elements MPC 13054

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 31.89	-11 51.8	2.580	2.922	100.2	19.5	17.2
1989	03 05	15 37.61	-11 29.1					
1989	03 15	15 41.24	-10 55.9	2.319	2.920	117.9	17.5	17.0
1989	03 25	15 42.61	-10 12.9					
1989	04 04	15 41.63	-09 21.7	2.103	2.919	137.4	13.4	16.6
1989	04 14	15 38.36	-08 24.5					
1989	04 24	15 33.11	-07 24.9	1.963	2.918	157.5	7.6	16.3
1989	05 04	15 26.40	-06 27.0					
1989	05 14	15 18.94	-05 35.8	1.924	2.918	167.2	4.4	16.1
1989	05 24	15 11.60	-04 55.4					
1989	06 03	15 05.15	-04 29.1	1.991	2.919	150.7	9.8	16.4
1989	06 13	15 00.22	-04 18.4					
1989	06 23	14 57.23	-04 23.1	2.149	2.920	131.1	15.2	16.7
1989	07 03	14 56.35	-04 41.9					
1989	07 13	14 57.62	-05 12.9	2.370	2.922	113.0	18.7	17.0
1989	07 23	15 00.93	-05 53.6					
1989	08 02	15 06.12	-06 41.8	2.625	2.924	96.8	20.2	17.3

1988 CL a,e,i = 2.70, 0.24, 10 Elements MPC 12946

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 46.63	-30 22.4	3.026	3.226	92.6	17.8	18.8
1989	03 05	15 51.16	-31 13.2					
1989	03 15	15 53.50	-31 59.3	2.765	3.248	110.4	16.7	18.5
1989	03 25	15 53.42	-32 39.5					
1989	04 04	15 50.79	-33 12.1	2.537	3.268	129.7	13.6	18.3
1989	04 14	15 45.63	-33 34.4					
1989	04 24	15 38.24	-33 43.9	2.376	3.286	149.9	8.8	18.0
1989	05 04	15 29.18	-33 38.6					
1989	05 14	15 19.25	-33 17.9	2.314	3.301	165.1	4.5	17.8
1989	05 24	15 09.42	-32 43.6					
1989	06 03	15 00.60	-31 59.4	2.363	3.313	155.6	7.3	17.9
1989	06 13	14 53.50	-31 10.4					
1989	06 23	14 48.59	-30 21.8	2.515	3.323	136.2	12.2	18.3
1989	07 03	14 46.04	-29 37.6					
1989	07 13	14 45.84	-29 01.0	2.742	3.331	117.1	15.8	18.6
1989	07 23	14 47.87	-28 33.4					
1989	08 02	14 51.91	-28 15.0	3.013	3.336	99.6	17.5	18.8

(3842) Harlansmith a,e,i = 2.35, 0.12, 4 Elements MPC 13296

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 40.11	-23 10.4	2.155	2.458	95.7	23.6	17.8
1989	03 05	15 47.44	-23 55.4					
1989	03 15	15 52.26	-24 33.5	1.922	2.481	112.6	21.7	17.5
1989	03 25	15 54.24	-25 04.0					
1989	04 04	15 53.11	-25 25.9	1.721	2.503	131.9	17.3	17.2
1989	04 14	15 48.80	-25 37.5					
1989	04 24	15 41.58	-25 37.0	1.582	2.523	153.6	10.2	16.8
1989	05 04	15 32.11	-25 23.2					
1989	05 14	15 21.47	-24 56.7	1.535	2.542	173.5	2.6	16.4
1989	05 24	15 10.95	-24 20.7					
1989	06 03	15 01.77	-23 40.4	1.594	2.559	157.1	8.9	16.8
1989	06 13	14 54.86	-23 01.8					
1989	06 23	14 50.72	-22 29.8	1.748	2.575	135.7	16.0	17.2
1989	07 03	14 49.48	-22 07.5					
1989	07 13	14 51.05	-21 56.4	1.967	2.588	116.7	20.5	17.6
1989	07 23	14 55.18	-21 56.1					
1989	08 02	15 01.57	-22 05.5	2.223	2.600	100.1	22.6	18.0

1985 RT2 a,e,i = 2.92, 0.06, 3 Elements MPC 13159

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 38.36	-15 55.0	2.680	2.979	97.7	19.2	17.4
1989	03 05	15 43.93	-16 05.2					
1989	03 15	15 47.44	-16 07.9	2.400	2.968	115.5	17.6	17.1
1989	03 25	15 48.70	-16 03.6					
1989	04 04	15 47.56	-15 52.4	2.160	2.956	135.3	13.8	16.7
1989	04 14	15 44.02	-15 35.0					
1989	04 24	15 38.34	-15 12.6	1.992	2.944	157.0	7.7	16.3
1989	05 04	15 30.98	-14 46.8					
1989	05 14	15 22.69	-14 20.1	1.923	2.932	175.9	1.4	15.9
1989	05 24	15 14.36	-13 55.8					
1989	06 03	15 06.84	-13 36.8	1.964	2.920	156.0	8.1	16.3
1989	06 13	15 00.87	-13 25.8					
1989	06 23	14 56.94	-13 24.6	2.102	2.908	134.7	14.4	16.6
1989	07 03	14 55.27	-13 33.6					
1989	07 13	14 55.93	-13 52.6	2.308	2.895	115.6	18.5	17.0
1989	07 23	14 58.82	-14 20.6					
1989	08 02	15 03.76	-14 56.0	2.551	2.883	98.6	20.4	17.2

1979 MK7 a,e,i = 3.09, 0.10, 3 Elements MPC 13164

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 39.37	-19 58.5	2.682	2.963	96.6	19.4	18.9
1989	03 05	15 45.09	-20 11.7					
1989	03 15	15 48.68	-20 17.0	2.431	2.982	114.4	17.7	18.6
1989	03 25	15 49.94	-20 14.2					
1989	04 04	15 48.79	-20 03.2	2.217	3.002	134.2	13.8	18.3
1989	04 14	15 45.26	-19 44.0					
1989	04 24	15 39.66	-19 17.1	2.075	3.022	156.1	7.7	18.0
1989	05 04	15 32.52	-18 44.0					
1989	05 14	15 24.56	-18 06.8	2.031	3.042	179.1	0.3	17.5
1989	05 24	15 16.67	-17 28.9					
1989	06 03	15 09.64	-16 53.9	2.099	3.062	157.8	7.2	18.0
1989	06 13	15 04.14	-16 25.1					
1989	06 23	15 00.59	-16 05.0	2.266	3.082	136.4	13.2	18.4
1989	07 03	14 59.16	-15 54.6					
1989	07 13	14 59.89	-15 54.2	2.504	3.102	117.1	17.0	18.7
1989	07 23	15 02.67	-16 03.1					
1989	08 02	15 07.33	-16 20.0	2.784	3.122	99.8	18.7	19.0

1975 SA1 a,e,i = 2.99, 0.06, 10 Elements MPC 13683

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 41.12	-22 09.2	2.571	2.845	95.7	20.3	17.7
1989	03 05	15 47.40	-23 04.2					
1989	03 15	15 51.56	-23 55.4	2.299	2.838	112.9	18.8	17.4
1989	03 25	15 53.31	-24 42.4					
1989	04 04	15 52.43	-25 24.5	2.063	2.832	132.1	15.2	17.1
1989	04 14	15 48.84	-26 00.3					
1989	04 24	15 42.73	-26 27.9	1.894	2.827	153.0	9.3	16.7
1989	05 04	15 34.58	-26 45.7					
1989	05 14	15 25.20	-26 52.6	1.820	2.823	171.5	3.0	16.3
1989	05 24	15 15.66	-26 49.6					
1989	06 03	15 06.98	-26 39.4	1.853	2.820	158.1	7.7	16.6
1989	06 13	15 00.09	-26 25.9					
1989	06 23	14 55.57	-26 13.5	1.985	2.817	137.3	14.1	16.9
1989	07 03	14 53.66	-26 05.4					
1989	07 13	14 54.43	-26 03.9	2.187	2.816	118.4	18.5	17.3
1989	07 23	14 57.71	-26 09.8					
1989	08 02	15 03.29	-26 23.1	2.430	2.815	101.6	20.7	17.6

1988 CJ5 a,e,i = 2.61, 0.16, 14 Elements MPC 13160

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 42.63	-09 29.8	2.697	3.000	98.1	19.1	17.9
1989	03 05	15 47.97	-08 51.6					
1989	03 15	15 51.28	-08 02.3	2.418	2.988	115.8	17.4	17.6
1989	03 25	15 52.37	-07 02.9					
1989	04 04	15 51.12	-05 54.9	2.181	2.974	135.0	13.8	17.3
1989	04 14	15 47.53	-04 41.3					
1989	04 24	15 41.85	-03 26.2	2.020	2.958	154.2	8.5	16.9
1989	05 04	15 34.55	-02 14.5					
1989	05 14	15 26.32	-01 11.9	1.960	2.940	162.7	5.9	16.7
1989	05 24	15 18.00	-00 23.4					
1989	06 03	15 10.42	+00 07.7	2.007	2.921	148.5	10.4	16.9
1989	06 13	15 04.28	+00 19.9					
1989	06 23	15 00.07	+00 13.8	2.145	2.899	129.4	15.7	17.2
1989	07 03	14 58.03	-00 08.5					
1989	07 13	14 58.23	-00 44.6	2.344	2.876	111.4	19.2	17.5
1989	07 23	15 00.58	-01 31.6					
1989	08 02	15 04.95	-02 26.8	2.574	2.851	95.2	20.8	17.7

(3821) 1985 RC3 a,e,i = 3.25, 0.18, 1 Elements MPC 13048

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 47.22	-19 22.9	3.434	3.654	94.9	15.7	18.3
1989	03 05	15 50.86	-19 33.0					
1989	03 15	15 52.65	-19 37.3	3.162	3.676	113.6	14.4	18.1
1989	03 25	15 52.51	-19 35.7					
1989	04 04	15 50.38	-19 28.1	2.931	3.696	134.0	11.2	17.9
1989	04 14	15 46.37	-19 14.7					
1989	04 24	15 40.73	-18 55.8	2.774	3.715	155.9	6.3	17.6
1989	05 04	15 33.88	-18 32.5					
1989	05 14	15 26.39	-18 06.1	2.723	3.733	178.7	0.4	17.2
1989	05 24	15 18.90	-17 39.0					
1989	06 03	15 12.03	-17 13.5	2.788	3.750	158.4	5.7	17.6
1989	06 13	15 06.31	-16 52.0					
1989	06 23	15 02.11	-16 36.3	2.959	3.765	136.9	10.6	17.9
1989	07 03	14 59.62	-16 27.7					
1989	07 13	14 58.94	-16 26.7	3.207	3.779	117.0	13.9	18.2
1989	07 23	15 00.02	-16 33.1					
1989	08 02	15 02.76	-16 46.3	3.499	3.791	98.9	15.3	18.5

(3843) OISCA a,e,i = 4.01, 0.13, 4 Elements MPC 13296

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 50.01	-21 24.9	4.345	4.520	93.8	12.6	17.7
1989	03 05	15 52.73	-21 40.2					
1989	03 15	15 53.93	-21 51.2	4.043	4.523	112.9	11.7	17.5
1989	03 25	15 53.54	-21 57.7					
1989	04 04	15 51.56	-21 59.6	3.782	4.525	133.2	9.3	17.3
1989	04 14	15 48.07	-21 56.6					
1989	04 24	15 43.26	-21 48.8	3.597	4.526	154.6	5.5	17.0
1989	05 04	15 37.47	-21 36.5					
1989	05 14	15 31.09	-21 20.5	3.518	4.527	176.2	0.8	16.7
1989	05 24	15 24.63	-21 02.1					
1989	06 03	15 18.54	-20 42.9	3.557	4.527	160.7	4.3	17.0
1989	06 13	15 13.27	-20 24.8					
1989	06 23	15 09.15	-20 09.6	3.706	4.526	139.4	8.4	17.2
1989	07 03	15 06.39	-19 58.5					
1989	07 13	15 05.12	-19 52.7	3.939	4.525	119.4	11.3	17.5
1989	07 23	15 05.36	-19 52.4					
1989	08 02	15 07.06	-19 57.7	4.222	4.522	100.7	12.7	17.7

1980 DA1 a,e,i = 3.99, 0.16, 10 Elements MPC 13051

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 50.65	-21 27.6	3.707	3.897	93.7	14.7	16.5
1989	03 05	15 54.17	-21 56.0					
1989	03 15	15 55.96	-22 20.3	3.438	3.925	112.3	13.6	16.3
1989	03 25	15 55.92	-22 40.3					
1989	04 04	15 54.01	-22 55.6	3.209	3.953	132.4	10.8	16.1
1989	04 14	15 50.30	-23 05.7					
1989	04 24	15 45.05	-23 10.5	3.053	3.980	153.8	6.4	15.9
1989	05 04	15 38.61	-23 09.8					
1989	05 14	15 31.49	-23 04.0	3.000	4.007	174.7	1.3	15.6
1989	05 24	15 24.31	-22 54.5					
1989	06 03	15 17.63	-22 43.0	3.063	4.034	160.7	4.8	15.8
1989	06 13	15 11.96	-22 31.4					
1989	06 23	15 07.69	-22 21.9	3.234	4.061	139.5	9.4	16.1
1989	07 03	15 05.01	-22 16.1					
1989	07 13	15 04.05	-22 15.2	3.488	4.088	119.7	12.5	16.4
1989	07 23	15 04.78	-22 19.7					
1989	08 02	15 07.12	-22 29.6	3.791	4.114	101.4	14.0	16.7

1981 KE a,e,i = 1.91, 0.15, 26 Elements MPC 7460

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	16 08.46	-01 53.8	1.522	1.862	93.2	32.1	17.5
1989	03 05	16 17.55	-02 50.6					
1989	03 15	16 23.61	-03 47.1	1.337	1.900	108.2	29.8	17.2
1989	03 25	16 26.11	-04 47.3					
1989	04 04	16 24.50	-05 55.5	1.165	1.937	126.7	24.5	16.8
1989	04 14	16 18.34	-07 15.7					
1989	04 24	16 07.60	-08 50.5	1.040	1.973	149.5	15.0	16.3
1989	05 04	15 52.88	-10 39.1					
1989	05 14	15 35.64	-12 37.4	1.001	2.008	173.2	3.4	15.8
1989	05 24	15 18.05	-14 38.3					
1989	06 03	15 02.29	-16 35.6	1.072	2.041	156.0	11.7	16.3
1989	06 13	14 50.01	-18 26.2					
1989	06 23	14 41.98	-20 10.2	1.238	2.071	133.2	21.0	17.0
1989	07 03	14 38.26	-21 48.9					
1989	07 13	14 38.55	-23 24.3	1.465	2.098	114.3	26.2	17.5
1989	07 23	14 42.36	-24 57.3					
1989	08 02	14 49.17	-26 28.7	1.720	2.123	98.5	28.2	17.9

1976 QZ1 a,e,i = 2.25, 0.06, 7 Elements MPC 13477

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 41.56	-15 27.5	1.956	2.298	97.1	25.3	18.1
1989	03 05	15 50.43	-16 01.6					
1989	03 15	15 56.99	-16 29.1	1.702	2.285	113.2	23.6	17.7
1989	03 25	16 00.84	-16 50.7					
1989	04 04	16 01.62	-17 06.9	1.479	2.271	131.8	19.2	17.3
1989	04 14	15 59.04	-17 18.2					
1989	04 24	15 53.17	-17 24.9	1.313	2.257	153.3	11.6	16.8
1989	05 04	15 44.43	-17 27.5					
1989	05 14	15 33.77	-17 26.9	1.233	2.243	176.8	1.4	16.2
1989	05 24	15 22.60	-17 25.5					
1989	06 03	15 12.37	-17 26.1	1.253	2.228	158.6	9.6	16.6
1989	06 13	15 04.36	-17 32.3					
1989	06 23	14 59.38	-17 46.9	1.363	2.214	136.6	18.4	17.0
1989	07 03	14 57.72	-18 11.0					
1989	07 13	14 59.38	-18 44.9	1.534	2.200	117.8	24.1	17.4
1989	07 23	15 04.13	-19 27.4					
1989	08 02	15 11.64	-20 16.7	1.739	2.187	101.9	27.0	17.8

1986 RS2 a,e,i = 2.42, 0.21, 4 Elements MPC 11349

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 47.97	-17 01.3	2.561	2.828	95.2	20.4	19.2
1989	03 05	15 54.37	-17 03.4					
1989	03 15	15 58.70	-16 56.9	2.263	2.802	112.7	19.1	18.9
1989	03 25	16 00.69	-16 41.8					
1989	04 04	16 00.11	-16 18.3	1.999	2.773	132.2	15.5	18.5
1989	04 14	15 56.86	-15 46.7					
1989	04 24	15 51.06	-15 08.0	1.802	2.741	153.9	9.3	18.0
1989	05 04	15 43.13	-14 24.1					
1989	05 14	15 33.80	-13 38.1	1.699	2.707	174.3	2.1	17.5
1989	05 24	15 24.08	-12 54.2					
1989	06 03	15 14.99	-12 16.6	1.706	2.670	157.1	8.5	17.8
1989	06 13	15 07.49	-11 49.3					
1989	06 23	15 02.23	-11 34.8	1.811	2.632	135.2	15.8	18.1
1989	07 03	14 59.54	-11 33.9					
1989	07 13	14 59.52	-11 46.2	1.982	2.591	115.7	20.7	18.5
1989	07 23	15 02.09	-12 10.2					
1989	08 02	15 07.04	-12 44.0	2.188	2.548	98.7	23.2	18.7

1978 RY5 a,e,i = 2.57, 0.15, 10 Elements MPC 11344

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 56.07	-26 04.6	2.738	2.935	91.5	19.7	18.9
1989	03 05	16 02.13	-26 57.1					
1989	03 15	16 06.03	-27 46.0	2.470	2.946	108.9	18.6	18.6
1989	03 25	16 07.48	-28 30.8					
1989	04 04	16 06.26	-29 10.4	2.232	2.955	128.0	15.5	18.3
1989	04 14	16 02.25	-29 42.8					
1989	04 24	15 55.62	-30 05.7	2.056	2.962	148.8	10.1	18.0
1989	05 04	15 46.81	-30 16.6					
1989	05 14	15 36.59	-30 14.0	1.972	2.967	167.7	4.2	17.7
1989	05 24	15 26.02	-29 58.5					
1989	06 03	15 16.17	-29 32.7	1.999	2.970	159.5	6.9	17.8
1989	06 13	15 07.98	-29 01.2					
1989	06 23	15 02.10	-28 29.1	2.128	2.971	139.0	13.0	18.2
1989	07 03	14 58.80	-28 00.7					
1989	07 13	14 58.16	-27 39.0	2.334	2.970	119.5	17.3	18.5
1989	07 23	15 00.06	-27 25.7					
1989	08 02	15 04.26	-27 20.9	2.584	2.966	102.0	19.6	18.8

(3762) 1976 QN1 a,e,i = 2.27, 0.08, 1 Elements MPC 12793

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 43.21	-18 24.5	2.084	2.400	96.0	24.2	18.0
1989	03 05	15 51.91	-18 43.8					
1989	03 15	15 58.36	-18 54.2	1.823	2.387	112.5	22.6	17.6
1989	03 25	16 02.19	-18 55.5					
1989	04 04	16 03.08	-18 48.0	1.592	2.373	131.2	18.5	17.2
1989	04 14	16 00.79	-18 31.4					
1989	04 24	15 55.42	-18 06.3	1.419	2.358	152.6	11.3	16.7
1989	05 04	15 47.39	-17 33.7					
1989	05 14	15 37.59	-16 55.9	1.333	2.342	175.8	1.8	16.2
1989	05 24	15 27.28	-16 17.2					
1989	06 03	15 17.78	-15 42.5	1.350	2.326	159.2	8.9	16.5
1989	06 13	15 10.25	-15 16.6					
1989	06 23	15 05.45	-15 02.9	1.458	2.309	137.2	17.4	16.9
1989	07 03	15 03.70	-15 02.8					
1989	07 13	15 05.02	-15 16.1	1.630	2.291	118.1	23.0	17.3
1989	07 23	15 09.23	-15 41.1					
1989	08 02	15 16.04	-16 15.7	1.837	2.273	101.8	25.9	17.6

1988 DS4 a,e,i = 3.02, 0.09, 10 Elements MPC 13458

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 44.00	-20 56.3	2.660	2.922	95.3	19.7	17.8
1989	03 05	15 50.91	-20 56.4					
1989	03 15	15 55.82	-20 47.0	2.373	2.905	112.7	18.4	17.5
1989	03 25	15 58.49	-20 27.6					
1989	04 04	15 58.74	-19 58.0	2.121	2.887	132.0	14.9	17.2
1989	04 14	15 56.53	-19 18.1					
1989	04 24	15 52.04	-18 28.7	1.936	2.871	153.4	9.0	16.8
1989	05 04	15 45.67	-17 31.5					
1989	05 14	15 38.10	-16 29.5	1.846	2.855	175.5	1.6	16.3
1989	05 24	15 30.23	-15 27.0					
1989	06 03	15 22.94	-14 28.9	1.865	2.839	159.9	7.1	16.6
1989	06 13	15 17.03	-13 39.5					
1989	06 23	15 13.07	-13 02.1	1.984	2.824	138.2	13.9	16.9
1989	07 03	15 11.33	-12 38.0					
1989	07 13	15 11.94	-12 27.3	2.176	2.811	118.8	18.5	17.3
1989	07 23	15 14.81	-12 28.9					
1989	08 02	15 19.78	-12 40.9	2.409	2.798	101.7	20.8	17.5

1980 TY14 a,e,i = 2.24, 0.15, 6 Elements MPC 10153

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 55.78	-24 05.2	2.334	2.566	92.0	22.7	18.5
1989	03 05	16 03.56	-24 53.6					
1989	03 15	16 09.07	-25 37.2	2.072	2.569	108.7	21.5	18.3
1989	03 25	16 11.95	-26 16.1					
1989	04 04	16 11.89	-26 49.3	1.836	2.570	127.5	18.0	17.9
1989	04 14	16 08.63	-27 15.2					
1989	04 24	16 02.25	-27 31.7	1.655	2.568	148.6	11.8	17.5
1989	05 04	15 53.15	-27 36.1					
1989	05 14	15 42.17	-27 26.9	1.563	2.564	169.7	4.0	17.0
1989	05 24	15 30.59	-27 04.8					
1989	06 03	15 19.72	-26 33.1	1.576	2.556	160.9	7.4	17.2
1989	06 13	15 10.76	-25 57.3					
1989	06 23	15 04.51	-25 23.3	1.689	2.547	139.2	15.1	17.6
1989	07 03	15 01.30	-24 55.8					
1989	07 13	15 01.18	-24 37.7	1.874	2.535	119.6	20.4	18.0
1989	07 23	15 03.96	-24 30.0					
1989	08 02	15 09.35	-24 32.3	2.099	2.520	102.4	23.2	18.3

1985 PL1 a,e,i = 2.88, 0.06, 12 Elements MPC 13449

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 48.90	-13 57.6	2.678	2.945	95.7	19.5	19.3
1989 03 05	15 55.45	-13 33.3					
1989 03 15	16 00.02	-12 58.4	2.398	2.933	113.1	18.2	19.1
1989 03 25	16 02.40	-12 13.4					
1989 04 04	16 02.44	-11 19.3	2.155	2.922	132.2	14.7	18.7
1989 04 14	16 00.10	-10 17.7					
1989 04 24	15 55.56	-09 11.4	1.981	2.910	152.4	9.2	18.3
1989 05 04	15 49.22	-08 04.2					
1989 05 14	15 41.70	-07 00.8	1.903	2.898	167.5	4.3	18.0
1989 05 24	15 33.84	-06 06.0					
1989 06 03	15 26.48	-05 24.0	1.933	2.886	155.3	8.4	18.2
1989 06 13	15 20.38	-04 57.4					
1989 06 23	15 16.09	-04 47.1	2.060	2.874	135.4	14.4	18.6
1989 07 03	15 13.92	-04 52.2					
1989 07 13	15 13.99	-05 11.3	2.256	2.861	116.8	18.5	18.9
1989 07 23	15 16.25	-05 41.7					
1989 08 02	15 20.56	-06 21.2	2.491	2.849	100.1	20.5	19.1

(3874) 1986 TJ1 a,e,i = 2.68, 0.05, 8 Elements MPC 13461

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	15 46.17	-27 25.4	2.288	2.545	93.3	22.8	17.1
1989 03 05	15 55.28	-28 06.3					
1989 03 15	16 02.18	-28 39.5	2.033	2.543	109.5	21.6	16.8
1989 03 25	16 06.52	-29 04.3					
1989 04 04	16 08.00	-29 19.5	1.805	2.542	127.6	18.2	16.4
1989 04 14	16 06.42	-29 23.3					
1989 04 24	16 01.88	-29 13.6	1.633	2.542	148.0	12.1	16.0
1989 05 04	15 54.81	-28 48.7					
1989 05 14	15 46.01	-28 08.3	1.544	2.543	168.7	4.5	15.6
1989 05 24	15 36.67	-27 14.5					
1989 06 03	15 28.00	-26 12.3	1.558	2.545	162.8	6.8	15.7
1989 06 13	15 21.06	-25 08.3					
1989 06 23	15 16.58	-24 08.8	1.670	2.547	141.8	14.3	16.2
1989 07 03	15 14.87	-23 18.6					
1989 07 13	15 15.97	-22 40.3	1.857	2.551	122.5	19.6	16.5
1989 07 23	15 19.73	-22 14.4					
1989 08 02	15 25.86	-22 00.0	2.090	2.555	105.5	22.5	16.9

1988 EU a,e,i = 3.19, 0.12, 5 Elements MPC 13161

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	16 02.36	-22 16.5	3.410	3.565	90.8	16.1	17.7
1989 03 05	16 07.14	-22 41.9					
1989 03 15	16 10.12	-23 03.0	3.120	3.570	109.0	15.3	17.5
1989 03 25	16 11.13	-23 19.8					
1989 04 04	16 10.05	-23 32.0	2.862	3.573	128.7	12.6	17.2
1989 04 14	16 06.88	-23 38.8					
1989 04 24	16 01.78	-23 39.9	2.669	3.575	150.0	8.1	16.9
1989 05 04	15 55.07	-23 34.8					
1989 05 14	15 47.29	-23 23.8	2.573	3.576	172.1	2.2	16.5
1989 05 24	15 39.13	-23 08.0					
1989 06 03	15 31.29	-22 49.1	2.591	3.577	163.8	4.5	16.7
1989 06 13	15 24.44	-22 29.8					
1989 06 23	15 19.10	-22 12.6	2.719	3.575	142.1	10.1	17.0
1989 07 03	15 15.59	-21 59.6					
1989 07 13	15 14.06	-21 52.4	2.931	3.573	121.9	14.0	17.3
1989 07 23	15 14.52	-21 51.8					
1989 08 02	15 16.87	-21 57.7	3.195	3.570	103.5	16.0	17.5

1977 DN4 a,e,i = 3.14, 0.12, 3 Elements MPC 12451

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 58.11	-17 37.7	2.699	2.919	92.7	19.8	18.3
1989	03 05	16 04.94	-17 51.7					
1989	03 15	16 09.74	-17 59.1	2.447	2.939	110.0	18.5	18.0
1989	03 25	16 12.29	-18 00.5					
1989	04 04	16 12.44	-17 56.1	2.226	2.961	129.1	15.2	17.7
1989	04 14	16 10.13	-17 46.4					
1989	04 24	16 05.54	-17 32.2	2.067	2.982	150.3	9.6	17.4
1989	05 04	15 59.06	-17 14.3					
1989	05 14	15 51.31	-16 54.3	2.000	3.005	172.6	2.5	17.0
1989	05 24	15 43.13	-16 34.5					
1989	06 03	15 35.36	-16 17.2	2.042	3.027	163.3	5.5	17.2
1989	06 13	15 28.80	-16 05.0					
1989	06 23	15 24.00	-15 59.7	2.187	3.050	141.7	11.9	17.7
1989	07 03	15 21.28	-16 02.4					
1989	07 13	15 20.77	-16 13.3	2.412	3.074	122.0	16.3	18.0
1989	07 23	15 22.42	-16 31.8					
1989	08 02	15 26.08	-16 56.9	2.686	3.097	104.3	18.5	18.3

7604 P-L a,e,i = 2.42, 0.05, 4 Elements MPC 12584

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	15 55.37	-16 55.2	2.108	2.383	93.5	24.5	18.5
1989	03 05	16 04.51	-17 18.3					
1989	03 15	16 11.40	-17 34.0	1.870	2.395	109.6	23.0	18.2
1989	03 25	16 15.67	-17 42.9					
1989	04 04	16 17.03	-17 45.5	1.658	2.407	128.1	19.1	17.9
1989	04 14	16 15.25	-17 42.5					
1989	04 24	16 10.42	-17 34.4	1.500	2.419	149.1	12.3	17.4
1989	05 04	16 02.90	-17 22.1					
1989	05 14	15 53.49	-17 07.1	1.426	2.431	172.1	3.3	17.0
1989	05 24	15 43.37	-16 51.8					
1989	06 03	15 33.76	-16 39.1	1.455	2.443	163.1	6.9	17.2
1989	06 13	15 25.81	-16 32.3					
1989	06 23	15 20.31	-16 34.0	1.580	2.455	141.0	15.1	17.7
1989	07 03	15 17.62	-16 45.1					
1989	07 13	15 17.83	-17 05.8	1.777	2.466	121.5	20.6	18.1
1989	07 23	15 20.78	-17 35.1					
1989	08 02	15 26.23	-18 11.4	2.017	2.477	104.7	23.4	18.5

(3845) 1979 SA10 a,e,i = 3.40, 0.19, 6 Elements MPC 13298

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	16 05.59	-16 56.8	3.719	3.868	91.1	14.8	18.1
1989	03 05	16 09.70	-16 51.9					
1989	03 15	16 12.14	-16 41.2	3.439	3.887	109.6	13.9	17.9
1989	03 25	16 12.80	-16 25.3					
1989	04 04	16 11.63	-16 04.4	3.192	3.906	129.5	11.4	17.7
1989	04 14	16 08.67	-15 39.2					
1989	04 24	16 04.09	-15 10.6	3.015	3.923	150.8	7.2	17.4
1989	05 04	15 58.22	-14 39.9					
1989	05 14	15 51.49	-14 08.8	2.937	3.939	171.5	2.2	17.1
1989	05 24	15 44.46	-13 39.3					
1989	06 03	15 37.69	-13 13.5	2.975	3.954	162.4	4.5	17.3
1989	06 13	15 31.71	-12 53.1					
1989	06 23	15 26.94	-12 39.6	3.124	3.968	141.2	9.2	17.6
1989	07 03	15 23.64	-12 33.6					
1989	07 13	15 21.97	-12 35.2	3.357	3.980	121.2	12.6	17.9
1989	07 23	15 21.97	-12 44.1					
1989	08 02	15 23.57	-12 59.5	3.643	3.991	102.7	14.4	18.1

1988 DJ a,e,i = 3.07, 0.05, 9 Elements MPC 13053

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	16 01.68	-23 14.5	2.934	3.109	90.8	18.6	19.1
1989 03 05	16 08.32	-23 22.6					
1989 03 15	16 13.01	-23 23.5	2.662	3.120	108.2	17.6	18.9
1989 03 25	16 15.53	-23 17.1					
1989 04 04	16 15.73	-23 02.9	2.418	3.129	127.5	14.7	18.6
1989 04 14	16 13.55	-22 40.7					
1989 04 24	16 09.16	-22 10.4	2.236	3.139	148.7	9.6	18.3
1989 05 04	16 02.91	-21 32.4					
1989 05 14	15 55.37	-20 48.1	2.145	3.148	171.5	2.7	17.9
1989 05 24	15 47.35	-20 00.1					
1989 06 03	15 39.65	-19 11.7	2.166	3.157	165.3	4.7	18.0
1989 06 13	15 33.02	-18 26.7					
1989 06 23	15 28.05	-17 48.3	2.293	3.166	143.1	11.1	18.4
1989 07 03	15 25.06	-17 18.8					
1989 07 13	15 24.21	-16 59.2	2.504	3.174	123.0	15.6	18.8
1989 07 23	15 25.48	-16 49.4					
1989 08 02	15 28.73	-16 48.8	2.766	3.182	104.9	18.0	19.0

4113 P-L a,e,i = 2.43, 0.14, 2 Elements MPC 8145

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	16 01.08	-20 06.4	2.135	2.378	91.6	24.6	19.0
1989 03 05	16 10.52	-20 24.0					
1989 03 15	16 17.62	-20 33.0	1.912	2.409	107.7	23.2	18.8
1989 03 25	16 22.05	-20 34.0					
1989 04 04	16 23.52	-20 26.9	1.712	2.439	126.2	19.3	18.5
1989 04 14	16 21.84	-20 12.1					
1989 04 24	16 17.11	-19 49.8	1.563	2.470	147.3	12.7	18.1
1989 05 04	16 09.72	-19 20.6					
1989 05 14	16 00.48	-18 46.1	1.497	2.499	170.6	3.8	17.7
1989 05 24	15 50.51	-18 09.3					
1989 06 03	15 41.02	-17 34.2	1.534	2.528	165.1	5.9	17.9
1989 06 13	15 33.09	-17 05.0					
1989 06 23	15 27.48	-16 44.9	1.672	2.556	142.7	13.9	18.4
1989 07 03	15 24.53	-16 35.5					
1989 07 13	15 24.33	-16 37.4	1.885	2.582	122.9	19.3	18.8
1989 07 23	15 26.74	-16 49.3					
1989 08 02	15 31.50	-17 09.9	2.144	2.607	105.6	22.0	19.2

(3811) 1953 TH a,e,i = 2.58, 0.13, 10 Elements MPC 13036

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 02 23	16 10.33	-31 08.8	2.780	2.908	87.4	19.9	17.1
1989 03 05	16 18.24	-32 07.5					
1989 03 15	16 24.13	-33 03.6	2.504	2.907	103.9	19.4	16.9
1989 03 25	16 27.65	-33 56.6					
1989 04 04	16 28.50	-34 45.5	2.249	2.904	121.9	17.0	16.6
1989 04 14	16 26.42	-35 28.2					
1989 04 24	16 21.40	-36 01.6	2.046	2.899	141.3	12.5	16.2
1989 05 04	16 13.67	-36 22.0					
1989 05 14	16 03.86	-36 25.8	1.924	2.893	159.7	7.0	15.9
1989 05 24	15 52.97	-36 11.5					
1989 06 03	15 42.21	-35 40.0	1.905	2.885	161.4	6.4	15.8
1989 06 13	15 32.74	-34 55.3					
1989 06 23	15 25.47	-34 03.7	1.991	2.875	143.9	12.0	16.1
1989 07 03	15 20.91	-33 11.3					
1989 07 13	15 19.26	-32 23.1	2.159	2.863	124.7	17.0	16.4
1989 07 23	15 20.43	-31 42.5					
1989 08 02	15 24.21	-31 10.9	2.381	2.849	107.1	19.9	16.7

1965 UA a,e,i = 2.31, 0.23, 5 Elements MPC 11430

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	16 02.49	-23 58.1	2.379	2.584	90.5	22.5	19.4
1989	03 05	16 11.65	-24 43.8					
1989	03 15	16 18.91	-25 25.4	2.075	2.544	106.5	22.0	19.0
1989	03 25	16 23.88	-26 03.1					
1989	04 04	16 26.17	-26 36.8	1.796	2.501	124.4	19.3	18.6
1989	04 14	16 25.39	-27 05.5					
1989	04 24	16 21.37	-27 27.4	1.566	2.456	144.7	13.7	18.1
1989	05 04	16 14.19	-27 39.9					
1989	05 14	16 04.35	-27 40.5	1.415	2.409	166.4	5.7	17.6
1989	05 24	15 52.91	-27 27.8					
1989	06 03	15 41.26	-27 03.0	1.364	2.360	165.5	6.2	17.5
1989	06 13	15 30.90	-26 30.3					
1989	06 23	15 23.04	-25 56.0	1.412	2.310	143.4	15.2	17.8
1989	07 03	15 18.39	-25 25.9					
1989	07 13	15 17.26	-25 04.2	1.535	2.258	123.2	22.1	18.1
1989	07 23	15 19.58	-24 53.2					
1989	08 02	15 25.10	-24 52.7	1.699	2.206	106.0	26.2	18.4

1980 DL5 a,e,i = 2.59, 0.10, 3 Elements MPC 11144

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	16 03.66	-21 18.6	2.504	2.704	90.7	21.5	18.1
1989	03 05	16 12.13	-21 50.9					
1989	03 15	16 18.64	-22 17.8	2.218	2.686	107.2	20.7	17.8
1989	03 25	16 22.89	-22 39.8					
1989	04 04	16 24.56	-22 56.8	1.958	2.666	125.5	17.8	17.4
1989	04 14	16 23.42	-23 08.4					
1989	04 24	16 19.44	-23 14.0	1.751	2.646	146.2	12.2	17.0
1989	05 04	16 12.82	-23 12.6					
1989	05 14	16 04.13	-23 03.9	1.627	2.626	168.9	4.3	16.5
1989	05 24	15 54.33	-22 48.3					
1989	06 03	15 44.56	-22 28.1	1.607	2.605	166.9	5.1	16.5
1989	06 13	15 35.95	-22 06.6					
1989	06 23	15 29.44	-21 48.0	1.689	2.583	144.4	13.3	16.9
1989	07 03	15 25.55	-21 35.5					
1989	07 13	15 24.53	-21 31.2	1.849	2.562	124.1	19.2	17.2
1989	07 23	15 26.35	-21 35.8					
1989	08 02	15 30.81	-21 48.8	2.058	2.541	106.6	22.5	17.5

1931 TE4 a,e,i = 2.28, 0.25, 3 Elements MPC 9471

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	02 23	16 10.05	-18 10.0	2.581	2.761	89.9	21.0	19.7
1989	03 05	16 17.76	-18 23.6					
1989	03 15	16 23.54	-18 31.0	2.278	2.734	106.6	20.4	19.4
1989	03 25	16 27.07	-18 32.5					
1989	04 04	16 28.05	-18 28.4	1.998	2.703	125.4	17.6	19.0
1989	04 14	16 26.24	-18 18.7					
1989	04 24	16 21.58	-18 03.9	1.772	2.669	146.5	12.0	18.5
1989	05 04	16 14.24	-17 44.3					
1989	05 14	16 04.77	-17 20.8	1.631	2.632	169.5	4.0	18.0
1989	05 24	15 54.10	-16 55.6					
1989	06 03	15 43.34	-16 31.4	1.597	2.591	165.2	5.7	18.0
1989	06 13	15 33.68	-16 11.9					
1989	06 23	15 26.07	-16 00.1	1.667	2.547	142.2	14.2	18.3
1989	07 03	15 21.10	-15 58.4					
1989	07 13	15 19.06	-16 07.6	1.814	2.501	121.6	20.3	18.7
1989	07 23	15 19.93	-16 27.3					
1989	08 02	15 23.55	-16 56.4	2.004	2.451	103.7	23.7	18.9

1969 TR1 a,e,i = 2.27, 0.27, 2 Elements MPC 11341

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 03 15	16 16.72	-23 14.4	1.888	2.383	107.4	23.5	18.2
1989 03 25	16 22.97	-23 41.7					
1989 04 04	16 26.58	-24 03.6	1.603	2.325	124.9	20.7	17.8
1989 04 14	16 27.12	-24 19.5					
1989 04 24	16 24.30	-24 28.5	1.366	2.264	144.8	14.8	17.2
1989 05 04	16 18.08	-24 28.8					
1989 05 14	16 08.85	-24 18.7	1.204	2.202	167.4	5.7	16.5
1989 05 24	15 57.65	-23 57.6					
1989 06 03	15 45.92	-23 27.4	1.137	2.138	167.2	6.0	16.3
1989 06 13	15 35.34	-22 52.9					
1989 06 23	15 27.36	-22 20.4	1.165	2.075	144.0	16.7	16.7
1989 07 03	15 22.83	-21 55.7					
1989 07 13	15 22.17	-21 42.7	1.261	2.011	123.7	24.9	17.0
1989 07 23	15 25.34	-21 42.4					
1989 08 02	15 32.06	-21 54.0	1.395	1.949	106.9	29.9	17.3
1989 08 12	15 42.03	-22 15.4					
1989 08 22	15 54.89	-22 43.5	1.544	1.890	93.0	32.3	17.5

1986 VW6 a,e,i = 2.71, 0.14, 4 Elements MPC 12584

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 03 15	16 25.27	-18 06.3	2.624	3.056	106.3	18.2	18.4
1989 03 25	16 28.10	-18 06.1					
1989 04 04	16 28.64	-18 01.0	2.357	3.046	125.3	15.6	18.1
1989 04 14	16 26.74	-17 51.4					
1989 04 24	16 22.46	-17 37.8	2.146	3.034	146.3	10.6	17.8
1989 05 04	16 16.04	-17 20.8					
1989 05 14	16 07.96	-17 01.6	2.023	3.021	168.7	3.8	17.3
1989 05 24	15 59.01	-16 41.8					
1989 06 03	15 50.04	-16 23.6	2.011	3.006	166.6	4.5	17.4
1989 06 13	15 41.94	-16 09.6					
1989 06 23	15 35.45	-16 01.9	2.105	2.990	144.3	11.4	17.7
1989 07 03	15 31.03	-16 01.8					
1989 07 13	15 28.94	-16 10.3	2.284	2.972	123.8	16.5	18.0
1989 07 23	15 29.22	-16 26.9					
1989 08 02	15 31.76	-16 50.8	2.514	2.953	105.6	19.3	18.3
1989 08 12	15 36.42	-17 21.0					
1989 08 22	15 42.99	-17 55.9	2.766	2.933	89.3	20.2	18.5

1983 HJ a,e,i = 3.17, 0.14, 2 Elements MPC 12959

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 03 15	16 22.23	-19 01.1	2.389	2.842	106.9	19.6	17.0
1989 03 25	16 26.14	-19 03.5					
1989 04 04	16 27.62	-19 00.4	2.164	2.862	125.4	16.6	16.7
1989 04 14	16 26.56	-18 52.3					
1989 04 24	16 23.05	-18 39.6	1.993	2.883	146.1	11.2	16.4
1989 05 04	16 17.36	-18 23.1					
1989 05 14	16 10.07	-18 04.1	1.908	2.905	168.3	4.0	16.0
1989 05 24	16 01.99	-17 44.2					
1989 06 03	15 53.99	-17 25.7	1.929	2.928	167.9	4.2	16.1
1989 06 13	15 46.95	-17 11.2					
1989 06 23	15 41.55	-17 02.7	2.054	2.952	146.0	11.1	16.5
1989 07 03	15 38.22	-17 01.6					
1989 07 13	15 37.14	-17 08.5	2.264	2.977	126.0	16.0	16.9
1989 07 23	15 38.33	-17 22.9					
1989 08 02	15 41.65	-17 43.9	2.528	3.002	108.1	18.7	17.2
1989 08 12	15 46.95	-18 10.4					
1989 08 22	15 53.99	-18 40.7	2.820	3.028	92.0	19.5	17.5

1981 FP a,e,i = 2.44, 0.14, 2 Elements MPC 10825

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 14.96	-19 14.3	1.584	2.121	108.5	26.4	18.7
1989	03 25	16 22.50	-19 14.6					
1989	04 04	16 26.98	-19 05.7	1.390	2.133	125.5	22.4	18.3
1989	04 14	16 28.07	-18 48.2					
1989	04 24	16 25.71	-18 23.2	1.242	2.148	145.5	15.4	17.9
1989	05 04	16 20.15	-17 52.1					
1989	05 14	16 12.12	-17 17.2	1.167	2.166	167.8	5.7	17.4
1989	05 24	16 02.83	-16 42.2					
1989	06 03	15 53.67	-16 11.2	1.185	2.186	167.2	5.9	17.5
1989	06 13	15 45.99	-15 48.6					
1989	06 23	15 40.79	-15 37.6	1.296	2.209	145.4	15.1	18.0
1989	07 03	15 38.53	-15 39.2					
1989	07 13	15 39.35	-15 53.0	1.478	2.234	126.2	21.5	18.5
1989	07 23	15 43.09	-16 17.3					
1989	08 02	15 49.44	-16 49.5	1.707	2.261	109.7	25.0	18.9
1989	08 12	15 58.13	-17 27.3					
1989	08 22	16 08.82	-18 08.0	1.962	2.289	95.3	26.1	19.3

1981 UT15 a,e,i = 2.85, 0.07, 2 Elements MPC 10757

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 26.36	-23 11.2	2.560	2.980	105.3	18.8	18.3
1989	03 25	16 30.05	-23 27.0					
1989	04 04	16 31.40	-23 38.1	2.294	2.969	123.9	16.2	17.9
1989	04 14	16 30.21	-23 43.9					
1989	04 24	16 26.50	-23 44.1	2.081	2.958	144.5	11.4	17.6
1989	05 04	16 20.49	-23 37.9					
1989	05 14	16 12.66	-23 25.1	1.952	2.946	166.9	4.4	17.1
1989	05 24	16 03.79	-23 06.2					
1989	06 03	15 54.82	-22 43.0	1.930	2.933	169.2	3.7	17.1
1989	06 13	15 46.70	-22 18.5					
1989	06 23	15 40.23	-21 56.0	2.015	2.920	146.8	11.0	17.4
1989	07 03	15 35.93	-21 38.3					
1989	07 13	15 34.07	-21 27.5	2.186	2.906	126.3	16.4	17.8
1989	07 23	15 34.69	-21 24.6					
1989	08 02	15 37.67	-21 29.4	2.412	2.892	108.0	19.5	18.1
1989	08 12	15 42.87	-21 41.2					
1989	08 22	15 50.04	-21 58.6	2.663	2.878	91.8	20.6	18.3

1986 WP8 a,e,i = 3.12, 0.13, 2 Elements MPC 13163

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 27.77	-19 18.6	2.742	3.157	105.5	17.7	18.2
1989	03 25	16 30.59	-19 16.6					
1989	04 04	16 31.18	-19 09.6	2.505	3.181	124.6	15.0	17.9
1989	04 14	16 29.45	-18 57.9					
1989	04 24	16 25.51	-18 42.1	2.325	3.205	145.5	10.2	17.6
1989	05 04	16 19.63	-18 22.7					
1989	05 14	16 12.33	-18 00.7	2.233	3.228	167.8	3.8	17.3
1989	05 24	16 04.30	-17 37.9					
1989	06 03	15 56.31	-17 16.3	2.250	3.250	168.3	3.6	17.3
1989	06 13	15 49.13	-16 58.1					
1989	06 23	15 43.38	-16 45.3	2.377	3.272	146.4	9.9	17.7
1989	07 03	15 39.45	-16 39.4					
1989	07 13	15 37.57	-16 40.9	2.592	3.293	126.0	14.5	18.1
1989	07 23	15 37.75	-16 49.7					
1989	08 02	15 39.93	-17 05.2	2.863	3.314	107.5	17.0	18.4
1989	08 12	15 43.97	-17 26.4					
1989	08 22	15 49.68	-17 51.9	3.162	3.334	90.8	17.7	18.6

(3817) Lencarter a,e,i = 2.27, 0.11, 3 Elements MPC 13047

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 14.08	-17 04.0	1.531	2.081	109.1	26.9	18.0
1989	03 25	16 22.39	-16 59.7					
1989	04 04	16 27.82	-16 46.0	1.314	2.063	125.6	23.2	17.5
1989	04 14	16 29.95	-16 24.0					
1989	04 24	16 28.58	-15 55.4	1.143	2.049	144.9	16.4	17.0
1989	05 04	16 23.78	-15 22.3					
1989	05 14	16 16.11	-14 47.8	1.040	2.036	166.3	6.8	16.5
1989	05 24	16 06.74	-14 16.2					
1989	06 03	15 57.11	-13 51.9	1.027	2.027	166.6	6.7	16.4
1989	06 13	15 48.80	-13 39.5					
1989	06 23	15 43.04	-13 41.5	1.101	2.021	145.3	16.7	16.9
1989	07 03	15 40.47	-13 58.3					
1989	07 13	15 41.36	-14 28.8	1.243	2.018	126.2	24.0	17.4
1989	07 23	15 45.58	-15 10.4					
1989	08 02	15 52.82	-15 59.9	1.427	2.018	110.3	28.1	17.8
1989	08 12	16 02.76	-16 54.2					
1989	08 22	16 15.04	-17 50.2	1.635	2.021	96.7	29.8	18.1

1988 CH a,e,i = 2.56, 0.23, 5 Elements MPC 13052

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 35.34	-16 46.6	2.624	3.024	104.1	18.6	18.3
1989	03 25	16 38.06	-16 30.8					
1989	04 04	16 38.43	-16 09.7	2.384	3.048	123.1	16.0	18.1
1989	04 14	16 36.35	-15 43.9					
1989	04 24	16 31.89	-15 14.4	2.198	3.070	144.1	11.1	17.8
1989	05 04	16 25.30	-14 42.6					
1989	05 14	16 17.11	-14 10.3	2.099	3.089	165.9	4.6	17.4
1989	05 24	16 08.06	-13 40.0					
1989	06 03	15 59.00	-13 13.9	2.110	3.105	166.5	4.4	17.4
1989	06 13	15 50.76	-12 54.7					
1989	06 23	15 44.03	-12 44.0	2.230	3.119	145.1	10.7	17.8
1989	07 03	15 39.25	-12 42.7					
1989	07 13	15 36.66	-12 50.8	2.438	3.130	124.7	15.5	18.2
1989	07 23	15 36.29	-13 07.4					
1989	08 02	15 38.05	-13 31.4	2.699	3.138	106.2	18.1	18.5
1989	08 12	15 41.78	-14 01.3					
1989	08 22	15 47.29	-14 35.7	2.984	3.143	89.5	18.8	18.7

1984 HL a,e,i = 2.79, 0.11, 6 Elements MPC 13455

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 28.61	-14 53.5	2.228	2.677	105.9	20.9	16.8
1989	03 25	16 33.08	-14 33.0					
1989	04 04	16 35.03	-14 06.0	2.008	2.699	124.1	17.9	16.5
1989	04 14	16 34.31	-13 34.0					
1989	04 24	16 30.96	-12 58.8	1.840	2.720	144.2	12.5	16.1
1989	05 04	16 25.27	-12 22.6					
1989	05 14	16 17.77	-11 48.4	1.754	2.742	164.8	5.6	15.8
1989	05 24	16 09.31	-11 19.1					
1989	06 03	16 00.81	-10 57.8	1.772	2.765	165.1	5.4	15.8
1989	06 13	15 53.23	-10 46.7					
1989	06 23	15 47.32	-10 47.1	1.892	2.787	145.1	12.1	16.2
1989	07 03	15 43.54	-10 58.8					
1989	07 13	15 42.11	-11 21.0	2.094	2.809	125.5	17.1	16.6
1989	07 23	15 43.05	-11 52.0					
1989	08 02	15 46.21	-12 30.0	2.349	2.830	107.9	20.0	17.0
1989	08 12	15 51.43	-13 12.9					
1989	08 22	15 58.48	-13 59.0	2.630	2.852	92.1	20.8	17.3

1982 US6 a,e,i = 2.53, 0.16, 8 Elements MPC 11431

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 33.88	-22 36.2	2.397	2.804	103.6	20.2	19.0
1989	03 25	16 38.21	-23 07.8					
1989	04 04	16 40.10	-23 37.1	2.119	2.780	121.9	17.8	18.7
1989	04 14	16 39.27	-24 03.9					
1989	04 24	16 35.60	-24 27.5	1.890	2.755	142.3	12.9	18.2
1989	05 04	16 29.19	-24 46.5					
1989	05 14	16 20.45	-24 59.5	1.740	2.728	164.7	5.6	17.8
1989	05 24	16 10.20	-25 05.3					
1989	06 03	15 59.50	-25 04.1	1.695	2.700	170.0	3.7	17.6
1989	06 13	15 49.54	-24 57.9					
1989	06 23	15 41.38	-24 49.9	1.757	2.671	147.5	11.8	18.0
1989	07 03	15 35.70	-24 43.6					
1989	07 13	15 32.90	-24 42.0	1.904	2.640	126.7	18.0	18.3
1989	07 23	15 33.04	-24 46.8					
1989	08 02	15 35.98	-24 58.5	2.103	2.608	108.4	21.7	18.6
1989	08 12	15 41.53	-25 16.7					
1989	08 22	15 49.42	-25 40.2	2.326	2.575	92.4	23.1	18.9

1986 RQ a,e,i = 2.31, 0.19, 9 Elements MPC 11342

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 19.57	-18 57.9	1.809	2.311	107.5	24.2	18.1
1989	03 25	16 26.77	-18 27.8					
1989	04 04	16 31.36	-17 44.6	1.545	2.268	124.7	21.3	17.6
1989	04 14	16 32.96	-16 48.4					
1989	04 24	16 31.39	-15 40.0	1.330	2.225	144.2	15.3	17.1
1989	05 04	16 26.68	-14 21.4					
1989	05 14	16 19.26	-12 56.6	1.190	2.182	164.9	6.9	16.5
1989	05 24	16 10.09	-11 31.9					
1989	06 03	16 00.42	-10 14.7	1.145	2.140	164.5	7.3	16.4
1989	06 13	15 51.70	-09 12.9					
1989	06 23	15 45.13	-08 31.4	1.192	2.098	143.5	16.7	16.8
1989	07 03	15 41.48	-08 12.1					
1989	07 13	15 41.12	-08 14.3	1.308	2.058	124.2	24.1	17.1
1989	07 23	15 44.06	-08 34.6					
1989	08 02	15 50.08	-09 09.3	1.463	2.021	107.9	28.6	17.5
1989	08 12	15 58.92	-09 54.3					
1989	08 22	16 10.27	-10 45.8	1.636	1.986	94.2	30.5	17.7

1986 RW2 a,e,i = 2.36, 0.17, 2 Elements MPC 11519

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 28.92	-22 03.2	2.080	2.525	104.9	22.4	18.0
1989	03 25	16 34.69	-22 21.8					
1989	04 04	16 37.89	-22 35.5	1.808	2.493	122.5	19.8	17.6
1989	04 14	16 38.18	-22 44.1					
1989	04 24	16 35.37	-22 47.5	1.583	2.459	142.7	14.4	17.2
1989	05 04	16 29.50	-22 44.6					
1989	05 14	16 20.98	-22 34.8	1.433	2.424	165.3	6.1	16.6
1989	05 24	16 10.71	-22 18.2					
1989	06 03	15 59.90	-21 56.4	1.382	2.388	170.4	4.1	16.4
1989	06 13	15 49.94	-21 32.9					
1989	06 23	15 42.02	-21 12.0	1.432	2.352	147.1	13.6	16.8
1989	07 03	15 36.92	-20 57.5					
1989	07 13	15 35.05	-20 52.2	1.561	2.314	126.4	20.7	17.2
1989	07 23	15 36.41	-20 56.7					
1989	08 02	15 40.84	-21 10.7	1.738	2.277	108.7	25.0	17.5
1989	08 12	15 48.08	-21 32.6					
1989	08 22	15 57.81	-22 00.2	1.936	2.239	93.5	26.8	17.7

1981 EQ12 a,e,i = 2.39, 0.27, 6 Elements MPC 10821

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 24.02	-23 43.4	1.974	2.439	105.7	23.1	19.4
1989	03 25	16 30.94	-23 45.3					
1989	04 04	16 35.37	-23 38.1	1.683	2.380	123.0	20.6	18.9
1989	04 14	16 36.91	-23 21.2					
1989	04 24	16 35.30	-22 53.6	1.438	2.320	142.7	15.2	18.4
1989	05 04	16 30.50	-22 14.6					
1989	05 14	16 22.82	-21 24.0	1.267	2.258	165.2	6.6	17.7
1989	05 24	16 13.13	-20 23.5					
1989	06 03	16 02.66	-19 17.1	1.190	2.197	170.5	4.4	17.4
1989	06 13	15 52.92	-18 11.4					
1989	06 23	15 45.26	-17 13.1	1.210	2.135	146.9	15.1	17.8
1989	07 03	15 40.58	-16 28.0					
1989	07 13	15 39.35	-15 59.0	1.305	2.075	126.2	23.3	18.1
1989	07 23	15 41.63	-15 46.3					
1989	08 02	15 47.24	-15 48.3	1.444	2.016	108.9	28.4	18.4
1989	08 12	15 55.92	-16 02.2					
1989	08 22	16 07.33	-16 24.6	1.600	1.961	94.6	30.9	18.7

1986 VE a,e,i = 2.55, 0.18, 13 Elements MPC 13467

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 36.34	-25 17.8	2.579	2.961	102.7	19.1	19.3
1989	03 25	16 40.38	-25 08.6					
1989	04 04	16 42.02	-24 51.8	2.297	2.943	121.3	16.9	18.9
1989	04 14	16 41.07	-24 26.8					
1989	04 24	16 37.50	-23 52.9	2.063	2.922	142.0	12.2	18.5
1989	05 04	16 31.47	-23 09.6					
1989	05 14	16 23.44	-22 17.3	1.912	2.900	164.9	5.2	18.1
1989	05 24	16 14.17	-21 17.7					
1989	06 03	16 04.62	-20 14.2	1.869	2.875	171.2	3.1	17.9
1989	06 13	15 55.77	-19 11.2					
1989	06 23	15 48.51	-18 13.6	1.936	2.849	147.9	10.9	18.3
1989	07 03	15 43.40	-17 25.0					
1989	07 13	15 40.76	-16 47.9	2.092	2.820	126.7	16.8	18.6
1989	07 23	15 40.66	-16 22.8					
1989	08 02	15 42.99	-16 09.2	2.303	2.790	108.0	20.2	18.9
1989	08 12	15 47.58	-16 05.7					
1989	08 22	15 54.22	-16 10.2	2.539	2.758	91.5	21.5	19.1

1983 BE a,e,i = 2.88, 0.13, 13 Elements MPC 11853

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 32.11	-06 41.8	2.100	2.558	105.9	22.0	16.6
1989	03 25	16 37.23	-06 15.1					
1989	04 04	16 39.82	-05 44.4	1.889	2.573	122.9	19.0	16.3
1989	04 14	16 39.68	-05 12.4					
1989	04 24	16 36.83	-04 42.9	1.727	2.591	141.5	14.0	16.0
1989	05 04	16 31.49	-04 19.7					
1989	05 14	16 24.17	-04 06.8	1.641	2.609	158.9	8.0	15.7
1989	05 24	16 15.70	-04 07.7					
1989	06 03	16 07.05	-04 24.2	1.652	2.630	160.3	7.5	15.7
1989	06 13	15 59.21	-04 56.6					
1989	06 23	15 53.01	-05 43.5	1.763	2.652	143.8	13.1	16.0
1989	07 03	15 48.96	-06 42.2					
1989	07 13	15 47.35	-07 50.0	1.953	2.675	125.5	18.0	16.4
1989	07 23	15 48.20	-09 03.8					
1989	08 02	15 51.39	-10 21.1	2.199	2.698	108.5	20.9	16.8
1989	08 12	15 56.73	-11 39.8					
1989	08 22	16 04.00	-12 57.8	2.473	2.723	93.2	21.8	17.1

1988 AC a,e,i = 2.79, 0.17, 7 Elements MPC 12796

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 37.72	-20 51.5	2.299	2.703	103.0	21.0	16.9
1989	03 25	16 42.50	-20 36.6					
1989	04 04	16 44.71	-20 14.6	2.082	2.738	121.3	18.2	16.6
1989	04 14	16 44.19	-19 45.9					
1989	04 24	16 40.99	-19 11.2	1.912	2.773	141.8	13.0	16.3
1989	05 04	16 35.34	-18 31.2					
1989	05 14	16 27.79	-17 47.8	1.822	2.808	164.1	5.7	15.9
1989	05 24	16 19.15	-17 03.4					
1989	06 03	16 10.37	-16 21.1	1.836	2.842	170.6	3.3	15.9
1989	06 13	16 02.39	-15 44.5					
1989	06 23	15 56.01	-15 16.2	1.958	2.876	148.8	10.6	16.3
1989	07 03	15 51.70	-14 57.8					
1989	07 13	15 49.71	-14 50.1	2.167	2.908	128.3	15.9	16.8
1989	07 23	15 50.06	-14 52.2					
1989	08 02	15 52.63	-15 02.9	2.434	2.940	110.0	18.9	17.1
1989	08 12	15 57.23	-15 20.6					
1989	08 22	16 03.64	-15 43.3	2.730	2.971	93.6	19.9	17.4

1931 UE a,e,i = 2.39, 0.19, 10 Elements MPC 10829

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 45.56	-33 34.8	2.425	2.767	99.4	20.8	18.5
1989	03 25	16 50.51	-34 19.6					
1989	04 04	16 52.72	-35 00.8	2.185	2.785	117.0	18.7	18.3
1989	04 14	16 51.88	-35 36.9					
1989	04 24	16 47.88	-36 05.2	1.986	2.802	136.4	14.3	17.9
1989	05 04	16 40.84	-36 22.0					
1989	05 14	16 31.25	-36 23.5	1.860	2.815	156.3	8.3	17.6
1989	05 24	16 20.08	-36 07.0					
1989	06 03	16 08.54	-35 32.5	1.834	2.826	164.9	5.4	17.5
1989	06 13	15 57.90	-34 43.4					
1989	06 23	15 49.24	-33 45.5	1.915	2.834	148.8	10.7	17.8
1989	07 03	15 43.22	-32 45.4					
1989	07 13	15 40.14	-31 48.7	2.087	2.840	129.1	16.1	18.1
1989	07 23	15 39.98	-30 59.3					
1989	08 02	15 42.51	-30 19.0	2.319	2.842	110.8	19.5	18.5
1989	08 12	15 47.49	-29 48.1					
1989	08 22	15 54.62	-29 26.0	2.581	2.842	94.3	20.8	18.7

1978 NY7 a,e,i = 3.19, 0.19, 3 Elements MPC 11146

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 34.09	-19 43.5	2.595	2.996	104.0	18.8	17.8
1989	03 25	16 38.88	-19 50.7					
1989	04 04	16 41.52	-19 53.7	2.303	2.958	122.0	16.7	17.4
1989	04 14	16 41.81	-19 52.9					
1989	04 24	16 39.66	-19 48.5	2.062	2.921	142.1	12.2	17.0
1989	05 04	16 35.17	-19 40.8					
1989	05 14	16 28.67	-19 30.3	1.900	2.884	164.0	5.6	16.6
1989	05 24	16 20.81	-19 17.9					
1989	06 03	16 12.40	-19 04.8	1.840	2.849	172.5	2.7	16.3
1989	06 13	16 04.41	-18 53.3					
1989	06 23	15 57.73	-18 45.5	1.887	2.815	150.2	10.3	16.7
1989	07 03	15 52.98	-18 43.5					
1989	07 13	15 50.62	-18 48.6	2.022	2.782	129.5	16.4	17.0
1989	07 23	15 50.77	-19 01.0					
1989	08 02	15 53.43	-19 20.5	2.215	2.750	111.2	20.1	17.3
1989	08 12	15 58.45	-19 45.9					
1989	08 22	16 05.65	-20 15.9	2.439	2.721	95.0	21.7	17.5

1985 PM a,e,i = 2.72, 0.19, 6 Elements MPC 11350

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 30.54	-28 31.5	2.132	2.553	103.4	22.3	17.5
1989	03 25	16 37.68	-29 15.0					
1989	04 04	16 42.38	-29 54.7	1.856	2.513	120.2	20.1	17.1
1989	04 14	16 44.24	-30 30.0					
1989	04 24	16 43.02	-30 59.1	1.624	2.474	139.1	15.4	16.7
1989	05 04	16 38.66	-31 19.7					
1989	05 14	16 31.45	-31 28.3	1.463	2.435	159.4	8.4	16.2
1989	05 24	16 22.20	-31 22.4					
1989	06 03	16 12.08	-31 01.3	1.395	2.399	169.0	4.6	15.9
1989	06 13	16 02.52	-30 27.4					
1989	06 23	15 54.84	-29 45.8	1.426	2.364	150.5	12.2	16.2
1989	07 03	15 49.94	-29 02.7					
1989	07 13	15 48.30	-28 23.7	1.539	2.331	130.6	19.3	16.5
1989	07 23	15 50.00	-27 52.1					
1989	08 02	15 54.86	-27 29.4	1.707	2.302	113.0	23.9	16.9
1989	08 12	16 02.61	-27 15.1					
1989	08 22	16 12.92	-27 07.8	1.904	2.275	97.9	26.1	17.1

(3847) 1982 DY1 a,e,i = 3.14, 0.09, 3 Elements MPC 13298

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 41.40	-21 25.6	3.027	3.378	102.1	16.7	17.2
1989	03 25	16 44.71	-21 35.8					
1989	04 04	16 45.98	-21 42.7	2.746	3.369	120.8	14.8	17.0
1989	04 14	16 45.05	-21 46.3					
1989	04 24	16 41.94	-21 46.6	2.516	3.360	141.3	10.8	16.6
1989	05 04	16 36.80	-21 43.5					
1989	05 14	16 29.97	-21 36.8	2.368	3.350	163.5	4.9	16.3
1989	05 24	16 22.06	-21 27.0					
1989	06 03	16 13.76	-21 14.9	2.329	3.339	173.5	2.0	16.1
1989	06 13	16 05.88	-21 02.3					
1989	06 23	15 59.12	-20 51.2	2.402	3.327	151.0	8.5	16.4
1989	07 03	15 54.01	-20 43.4					
1989	07 13	15 50.90	-20 40.4	2.569	3.315	130.0	13.6	16.7
1989	07 23	15 49.93	-20 43.2					
1989	08 02	15 51.09	-20 51.8	2.800	3.302	111.0	16.7	17.0
1989	08 12	15 54.30	-21 05.9					
1989	08 22	15 59.38	-21 24.7	3.063	3.288	93.8	17.9	17.2

1978 GR3 a,e,i = 3.05, 0.12, 1 Elements MPC 14012

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 36.38	-20 48.6	2.330	2.736	103.3	20.7	16.9
1989	03 25	16 41.82	-20 52.8					
1989	04 04	16 44.84	-20 51.8	2.095	2.749	121.2	18.1	16.6
1989	04 14	16 45.23	-20 45.7					
1989	04 24	16 42.97	-20 35.1	1.907	2.764	141.2	13.2	16.3
1989	05 04	16 38.24	-20 20.2					
1989	05 14	16 31.46	-20 01.6	1.797	2.780	163.3	6.0	15.9
1989	05 24	16 23.40	-19 40.6					
1989	06 03	16 14.99	-19 18.9	1.787	2.797	173.2	2.5	15.7
1989	06 13	16 07.20	-18 59.1					
1989	06 23	16 00.88	-18 43.8	1.883	2.815	150.9	10.1	16.2
1989	07 03	15 56.61	-18 35.0					
1989	07 13	15 54.69	-18 33.7	2.068	2.835	130.4	15.9	16.6
1989	07 23	15 55.21	-18 40.0					
1989	08 02	15 58.05	-18 53.4	2.313	2.855	112.2	19.2	17.0
1989	08 12	16 03.05	-19 12.6					
1989	08 22	16 10.00	-19 36.1	2.591	2.876	95.9	20.5	17.3

(3809) Amici a,e,i = 2.69, 0.10, 7 Elements MPC 13036

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 44.07	-15 05.0	2.578	2.953	102.2	19.2	17.9
1989	03 25	16 48.11	-14 53.7					
1989	04 04	16 49.88	-14 38.0	2.325	2.960	120.4	16.9	17.6
1989	04 14	16 49.22	-14 19.1					
1989	04 24	16 46.10	-13 58.2	2.118	2.965	140.6	12.4	17.2
1989	05 04	16 40.68	-13 36.8					
1989	05 14	16 33.35	-13 16.6	1.992	2.969	161.8	6.1	16.9
1989	05 24	16 24.79	-12 59.6					
1989	06 03	16 15.82	-12 47.7	1.970	2.972	168.8	3.8	16.7
1989	06 13	16 07.34	-12 42.8					
1989	06 23	16 00.16	-12 46.0	2.057	2.973	148.7	10.2	17.1
1989	07 03	15 54.85	-12 58.0					
1989	07 13	15 51.75	-13 18.4	2.233	2.972	128.3	15.6	17.5
1989	07 23	15 50.99	-13 46.5					
1989	08 02	15 52.51	-14 21.0	2.469	2.971	109.8	18.7	17.8
1989	08 12	15 56.19	-15 00.4					
1989	08 22	16 01.83	-15 43.3	2.734	2.968	93.2	19.9	18.0

1985 CN1 a,e,i = 2.30, 0.10, 3 Elements MPC 10029

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 38.60	-24 17.4	1.763	2.201	102.3	26.2	18.6
1989	03 25	16 46.51	-24 52.0					
1989	04 04	16 51.48	-25 22.2	1.558	2.223	119.1	23.2	18.3
1989	04 14	16 53.09	-25 47.8					
1989	04 24	16 51.13	-26 08.3	1.390	2.245	138.6	17.2	17.9
1989	05 04	16 45.64	-26 21.9					
1989	05 14	16 37.09	-26 26.4	1.289	2.267	160.7	8.5	17.4
1989	05 24	16 26.53	-26 20.4					
1989	06 03	16 15.36	-26 04.4	1.280	2.290	172.9	3.1	17.2
1989	06 13	16 05.14	-25 41.6					
1989	06 23	15 57.14	-25 16.8	1.370	2.312	151.1	12.3	17.7
1989	07 03	15 52.12	-24 54.9					
1989	07 13	15 50.40	-24 39.3	1.542	2.335	130.6	19.3	18.2
1989	07 23	15 51.91	-24 31.8					
1989	08 02	15 56.35	-24 32.3	1.768	2.356	112.9	23.4	18.7
1989	08 12	16 03.43	-24 39.6					
1989	08 22	16 12.78	-24 52.0	2.024	2.377	97.4	25.0	19.0

1985 PG1 a,e,i = 3.00, 0.10, 10 Elements MPC 10943

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 42.54	-14 35.2	2.860	3.227	102.6	17.5	18.1
1989	03 25	16 46.32	-14 04.3					
1989	04 04	16 48.06	-13 27.4	2.583	3.213	120.9	15.5	17.8
1989	04 14	16 47.61	-12 45.6					
1989	04 24	16 44.98	-12 00.4	2.356	3.199	140.7	11.5	17.5
1989	05 04	16 40.31	-11 13.7					
1989	05 14	16 33.96	-10 28.0	2.213	3.184	160.6	6.0	17.2
1989	05 24	16 26.49	-09 46.4					
1989	06 03	16 18.60	-09 11.7	2.175	3.168	165.9	4.5	17.0
1989	06 13	16 11.06	-08 46.5					
1989	06 23	16 04.58	-08 32.4	2.245	3.152	147.7	9.9	17.3
1989	07 03	15 59.69	-08 29.9					
1989	07 13	15 56.76	-08 38.8	2.405	3.134	127.9	14.8	17.6
1989	07 23	15 55.93	-08 57.7					
1989	08 02	15 57.20	-09 24.9	2.625	3.116	109.6	17.9	17.9
1989	08 12	16 00.49	-09 58.6					
1989	08 22	16 05.65	-10 36.9	2.874	3.098	93.1	19.0	18.1

(3813) 1970 QA1 a,e,i = 2.19, 0.18, 4 Elements MPC 13037

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 24.60	-27 04.5	1.612	2.101	105.0	27.2	17.0
1989	03 25	16 34.73	-27 52.4					
1989	04 04	16 42.29	-28 35.1	1.363	2.060	120.5	24.7	16.6
1989	04 14	16 46.72	-29 12.3					
1989	04 24	16 47.55	-29 42.8	1.153	2.020	138.5	19.3	16.0
1989	05 04	16 44.50	-30 03.8					
1989	05 14	16 37.67	-30 11.5	1.004	1.981	159.0	10.5	15.4
1989	05 24	16 27.92	-30 02.1					
1989	06 03	16 16.73	-29 34.1	0.936	1.944	170.8	4.8	15.0
1989	06 13	16 06.08	-28 50.6					
1989	06 23	15 57.82	-27 59.1	0.955	1.910	151.3	14.8	15.3
1989	07 03	15 53.17	-27 08.0					
1989	07 13	15 52.71	-26 24.5	1.047	1.880	131.3	24.0	15.8
1989	07 23	15 56.42	-25 52.1					
1989	08 02	16 03.94	-25 31.0	1.184	1.854	114.7	29.8	16.2
1989	08 12	16 14.86	-25 19.7					
1989	08 22	16 28.69	-25 15.0	1.347	1.833	101.1	32.8	16.5

1986 QL1 a,e,i = 2.53, 0.16, 5 Elements MPC 12133

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 50.35	-26 48.6	2.404	2.746	99.4	20.9	18.0
1989	03 25	16 55.48	-27 21.6					
1989	04 04	16 58.04	-27 51.8	2.168	2.772	117.2	18.7	17.7
1989	04 14	16 57.77	-28 18.7					
1989	04 24	16 54.57	-28 41.1	1.972	2.796	137.3	14.1	17.4
1989	05 04	16 48.55	-28 57.1					
1989	05 14	16 40.11	-29 04.3	1.851	2.818	159.0	7.4	17.1
1989	05 24	16 30.06	-29 01.3					
1989	06 03	16 19.45	-28 47.9	1.830	2.838	171.8	2.9	16.8
1989	06 13	16 09.43	-28 26.2					
1989	06 23	16 01.03	-27 59.7	1.919	2.856	152.0	9.6	17.2
1989	07 03	15 54.92	-27 32.8					
1989	07 13	15 51.47	-27 09.1	2.100	2.872	131.1	15.5	17.6
1989	07 23	15 50.75	-26 51.1					
1989	08 02	15 52.62	-26 39.8	2.343	2.886	112.4	19.0	18.0
1989	08 12	15 56.89	-26 35.4					
1989	08 22	16 03.27	-26 36.9	2.618	2.898	95.7	20.3	18.3

1984 DF1 a,e,i = 2.68, 0.11, 4 Elements MPC 9474

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 45.13	-26 02.2	2.177	2.555	100.6	22.5	18.2
1989	03 25	16 51.58	-26 31.6					
1989	04 04	16 55.40	-26 57.0	1.953	2.578	118.0	20.0	17.9
1989	04 14	16 56.28	-27 18.3					
1989	04 24	16 54.12	-27 34.3	1.769	2.602	137.6	15.1	17.6
1989	05 04	16 48.99	-27 43.6					
1989	05 14	16 41.33	-27 44.4	1.656	2.626	159.3	7.8	17.2
1989	05 24	16 31.97	-27 35.5					
1989	06 03	16 22.01	-27 17.2	1.641	2.651	173.3	2.6	16.9
1989	06 13	16 12.65	-26 52.1					
1989	06 23	16 04.96	-26 24.0	1.730	2.675	152.9	10.0	17.4
1989	07 03	15 59.64	-25 57.0					
1989	07 13	15 57.04	-25 34.6	1.909	2.699	132.2	16.2	17.8
1989	07 23	15 57.23	-25 18.7					
1989	08 02	16 00.04	-25 10.0	2.150	2.722	113.8	19.9	18.2
1989	08 12	16 05.26	-25 08.1					
1989	08 22	16 12.59	-25 11.8	2.424	2.746	97.5	21.4	18.5

1976 YF5 a,e,i = 2.33, 0.04, 2 Elements MPC 13167

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 43.85	-24 45.0	2.011	2.409	101.1	23.9	17.9
1989	03 25	16 51.23	-25 09.4					
1989	04 04	16 55.99	-25 29.4	1.767	2.405	118.0	21.5	17.6
1989	04 14	16 57.74	-25 44.9					
1989	04 24	16 56.25	-25 55.4	1.561	2.400	137.5	16.5	17.1
1989	05 04	16 51.48	-25 59.6					
1989	05 14	16 43.75	-25 55.7	1.422	2.395	159.4	8.5	16.7
1989	05 24	16 33.89	-25 42.7					
1989	06 03	16 23.08	-25 20.8	1.377	2.389	174.8	2.2	16.3
1989	06 13	16 12.74	-24 52.6					
1989	06 23	16 04.18	-24 22.7	1.434	2.383	152.6	11.3	16.8
1989	07 03	15 58.28	-23 55.6					
1989	07 13	15 55.53	-23 35.0	1.576	2.376	131.6	18.7	17.2
1989	07 23	15 55.98	-23 23.0					
1989	08 02	15 59.46	-23 19.6	1.775	2.368	113.3	23.2	17.6
1989	08 12	16 05.70	-23 23.9					
1989	08 22	16 14.39	-23 34.3	2.004	2.361	97.6	25.1	17.9

1988 AJ5 a,e,i = 3.18, 0.16, 1 Elements MPC 13450

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 38.97	-20 55.9	2.257	2.659	102.7	21.4	17.8
1989	03 25	16 45.57	-21 02.3					
1989	04 04	16 49.81	-21 03.5	2.014	2.659	120.0	19.0	17.5
1989	04 14	16 51.43	-21 00.0					
1989	04 24	16 50.34	-20 52.1	1.815	2.661	139.5	14.2	17.1
1989	05 04	16 46.65	-20 40.2					
1989	05 14	16 40.70	-20 24.9	1.690	2.666	161.1	7.1	16.7
1989	05 24	16 33.20	-20 07.0					
1989	06 03	16 25.07	-19 48.1	1.661	2.674	175.5	1.7	16.4
1989	06 13	16 17.34	-19 30.6					
1989	06 23	16 10.96	-19 16.9	1.737	2.684	153.4	9.8	16.9
1989	07 03	16 06.59	-19 09.1					
1989	07 13	16 04.64	-19 08.5	1.901	2.697	132.8	16.1	17.3
1989	07 23	16 05.22	-19 15.3					
1989	08 02	16 08.26	-19 28.9	2.127	2.712	114.6	19.9	17.7
1989	08 12	16 13.60	-19 48.1					
1989	08 22	16 20.99	-20 11.3	2.390	2.730	98.5	21.5	18.0

1985 RC4 a,e,i = 2.90, 0.07, 3 Elements MPC 13475

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 44.83	-19 06.2	2.477	2.848	101.6	20.0	18.1
1989	03 25	16 50.36	-19 05.4					
1989	04 04	16 53.65	-19 00.1	2.208	2.835	119.3	17.9	17.8
1989	04 14	16 54.47	-18 50.7					
1989	04 24	16 52.74	-18 38.0	1.984	2.822	139.0	13.5	17.4
1989	05 04	16 48.52	-18 22.5					
1989	05 14	16 42.13	-18 05.1	1.835	2.809	160.7	6.8	17.0
1989	05 24	16 34.19	-17 47.0					
1989	06 03	16 25.55	-17 29.9	1.786	2.797	174.0	2.2	16.7
1989	06 13	16 17.19	-17 15.7					
1989	06 23	16 10.03	-17 06.7	1.843	2.785	152.5	9.7	17.1
1989	07 03	16 04.76	-17 04.5					
1989	07 13	16 01.84	-17 10.0	1.992	2.774	131.7	15.9	17.5
1989	07 23	16 01.42	-17 23.2					
1989	08 02	16 03.49	-17 43.4	2.202	2.763	113.2	19.7	17.8
1989	08 12	16 07.90	-18 09.5					
1989	08 22	16 14.46	-18 39.7	2.445	2.753	96.7	21.4	18.1

(3764) 1980 TL15 a,e,i = 2.25, 0.09, 5 Elements MPC 12794

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 47.63	-16 29.9	1.919	2.326	101.2	24.8	17.6
1989	03 25	16 54.66	-16 16.3					
1989	04 04	16 58.98	-15 56.4	1.700	2.344	118.2	22.1	17.2
1989	04 14	17 00.26	-15 31.6					
1989	04 24	16 58.34	-15 03.5	1.518	2.361	137.7	16.7	16.9
1989	05 04	16 53.28	-14 34.0					
1989	05 14	16 45.47	-14 05.1	1.405	2.377	159.3	8.7	16.4
1989	05 24	16 35.75	-13 39.8					
1989	06 03	16 25.28	-13 20.6	1.386	2.392	170.3	4.1	16.2
1989	06 13	16 15.35	-13 10.3					
1989	06 23	16 07.13	-13 10.8	1.468	2.405	150.5	12.0	16.7
1989	07 03	16 01.37	-13 22.5					
1989	07 13	15 58.51	-13 45.0	1.634	2.416	130.0	18.8	17.1
1989	07 23	15 58.59	-14 16.8					
1989	08 02	16 01.46	-14 55.9	1.856	2.426	112.1	22.8	17.5
1989	08 12	16 06.89	-15 40.1					
1989	08 22	16 14.57	-16 27.2	2.106	2.435	96.4	24.4	17.8

1984 QS a,e,i = 3.18, 0.21, 2 Elements MPC 12455

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 41.46	-21 45.5	2.492	2.869	102.0	19.8	18.6
1989	03 25	16 47.48	-22 00.1					
1989	04 04	16 51.36	-22 11.0	2.200	2.830	119.5	17.9	18.3
1989	04 14	16 52.83	-22 18.4					
1989	04 24	16 51.75	-22 22.4	1.953	2.791	139.0	13.7	17.9
1989	05 04	16 48.12	-22 22.9					
1989	05 14	16 42.20	-22 19.5	1.780	2.754	160.6	7.0	17.4
1989	05 24	16 34.56	-22 12.4					
1989	06 03	16 26.06	-22 02.0	1.705	2.718	176.4	1.3	17.0
1989	06 13	16 17.70	-21 50.1					
1989	06 23	16 10.52	-21 39.1	1.735	2.685	153.7	9.6	17.4
1989	07 03	16 05.28	-21 31.3					
1989	07 13	16 02.51	-21 29.0	1.856	2.653	132.8	16.3	17.7
1989	07 23	16 02.44	-21 33.3					
1989	08 02	16 05.05	-21 44.1	2.038	2.624	114.3	20.6	18.0
1989	08 12	16 10.22	-22 00.8					
1989	08 22	16 17.72	-22 22.1	2.254	2.598	98.1	22.7	18.3

1985 CR2 a,e,i = 2.26, 0.06, 1 Elements MPC 12708

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 46.53	-22 54.9	1.918	2.319	100.7	24.9	18.3
1989	03 25	16 54.18	-23 08.4					
1989	04 04	16 59.10	-23 16.6	1.691	2.330	117.6	22.4	17.9
1989	04 14	17 00.91	-23 19.8					
1989	04 24	16 59.39	-23 17.9	1.501	2.341	137.1	17.0	17.5
1989	05 04	16 54.54	-23 10.5					
1989	05 14	16 46.71	-22 56.8	1.377	2.350	159.5	8.7	17.1
1989	05 24	16 36.76	-22 36.8					
1989	06 03	16 25.91	-22 11.7	1.346	2.359	176.4	1.5	16.7
1989	06 13	16 15.58	-21 44.5					
1989	06 23	16 07.06	-21 19.3	1.417	2.367	152.9	11.3	17.2
1989	07 03	16 01.18	-20 59.7					
1989	07 13	15 58.39	-20 48.3	1.573	2.374	131.7	18.6	17.7
1989	07 23	15 58.75	-20 46.2					
1989	08 02	16 02.05	-20 52.6	1.786	2.380	113.5	23.0	18.1
1989	08 12	16 08.04	-21 06.3					
1989	08 22	16 16.39	-21 25.3	2.029	2.384	97.7	24.9	18.4

1982 RK1 a,e,i = 2.40, 0.21, 4 Elements MPC 11154

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 03 15	16 30.42	-26 18.8	1.774	2.231	103.8	25.6	18.5
1989 03 25	16 40.12	-26 51.3					
1989 04 04	16 47.40	-27 17.7	1.510	2.185	119.7	23.4	18.1
1989 04 14	16 51.77	-27 37.9					
1989 04 24	16 52.84	-27 50.9	1.285	2.140	137.8	18.4	17.5
1989 05 04	16 50.38	-27 55.0					
1989 05 14	16 44.48	-27 47.9	1.123	2.097	158.7	10.1	16.9
1989 05 24	16 35.86	-27 27.5					
1989 06 03	16 25.77	-26 53.5	1.045	2.057	174.1	2.9	16.4
1989 06 13	16 15.86	-26 09.1					
1989 06 23	16 07.82	-25 20.4	1.058	2.019	153.5	13.0	16.8
1989 07 03	16 02.82	-24 34.2					
1989 07 13	16 01.53	-23 56.2	1.149	1.986	133.0	22.0	17.2
1989 07 23	16 04.06	-23 29.3					
1989 08 02	16 10.19	-23 13.7	1.290	1.958	115.8	27.8	17.6
1989 08 12	16 19.60	-23 07.7					
1989 08 22	16 31.85	-23 08.5	1.460	1.935	101.5	30.8	17.9

1983 VC7 a,e,i = 2.21, 0.22, 3 Elements MPC 12954

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 03 15	16 46.72	-23 11.0	2.078	2.464	100.6	23.4	18.0
1989 03 25	16 54.04	-23 35.9					
1989 04 04	16 58.93	-23 57.7	1.792	2.423	117.6	21.5	17.6
1989 04 14	17 00.99	-24 16.8					
1989 04 24	16 59.87	-24 33.1	1.545	2.380	136.9	16.8	17.1
1989 05 04	16 55.39	-24 45.5					
1989 05 14	16 47.66	-24 52.5	1.364	2.335	158.9	9.0	16.5
1989 05 24	16 37.33	-24 52.2					
1989 06 03	16 25.49	-24 43.7	1.275	2.288	175.6	2.0	16.0
1989 06 13	16 13.68	-24 28.4					
1989 06 23	16 03.43	-24 09.8	1.287	2.238	152.4	12.1	16.4
1989 07 03	15 55.91	-23 52.7					
1989 07 13	15 51.85	-23 41.3	1.384	2.188	130.8	20.6	16.8
1989 07 23	15 51.47	-23 38.1					
1989 08 02	15 54.63	-23 43.7	1.533	2.136	112.3	26.1	17.1
1989 08 12	16 01.10	-23 57.5					
1989 08 22	16 10.53	-24 17.4	1.706	2.084	96.8	28.8	17.4

1957 UK1 a,e,i = 2.85, 0.06, 2 Elements MPC 13050

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989 03 15	16 51.22	-20 55.8	2.680	3.014	99.9	19.0	18.4
1989 03 25	16 56.05	-20 56.2					
1989 04 04	16 58.69	-20 52.5	2.413	3.015	117.9	17.0	18.1
1989 04 14	16 58.92	-20 44.9					
1989 04 24	16 56.69	-20 33.7	2.191	3.014	138.0	12.9	17.8
1989 05 04	16 52.09	-20 19.1					
1989 05 14	16 45.45	-20 01.4	2.043	3.013	160.0	6.6	17.4
1989 05 24	16 37.36	-19 41.5					
1989 06 03	16 28.61	-19 20.5	1.998	3.011	175.9	1.4	17.1
1989 06 13	16 20.11	-19 00.5					
1989 06 23	16 12.73	-18 43.8	2.064	3.008	153.6	8.6	17.5
1989 07 03	16 07.08	-18 32.2					
1989 07 13	16 03.61	-18 27.3	2.224	3.005	132.4	14.5	17.8
1989 07 23	16 02.49	-18 29.4					
1989 08 02	16 03.69	-18 38.5	2.449	3.000	113.4	18.1	18.2
1989 08 12	16 07.11	-18 53.7					
1989 08 22	16 12.55	-19 13.6	2.709	2.996	96.4	19.6	18.4

1988 DD3 a,e,i = 2.98, 0.04, 9 Elements MPC 13681

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 49.98	-28 30.3	2.604	2.933	99.2	19.6	18.3
1989	03 25	16 55.61	-28 40.6					
1989	04 04	16 58.90	-28 45.7	2.348	2.940	116.9	17.7	18.0
1989	04 14	16 59.60	-28 45.0					
1989	04 24	16 57.66	-28 37.5	2.134	2.947	136.6	13.6	17.7
1989	05 04	16 53.16	-28 22.0					
1989	05 14	16 46.48	-27 57.6	1.992	2.955	158.2	7.3	17.3
1989	05 24	16 38.28	-27 23.8					
1989	06 03	16 29.44	-26 41.9	1.951	2.962	174.8	1.8	17.0
1989	06 13	16 20.94	-25 54.5					
1989	06 23	16 13.69	-25 05.7	2.019	2.970	154.8	8.4	17.4
1989	07 03	16 08.33	-24 19.3					
1989	07 13	16 05.27	-23 38.7	2.182	2.978	133.8	14.3	17.8
1989	07 23	16 04.64	-23 05.8					
1989	08 02	16 06.38	-22 41.5	2.414	2.985	114.8	18.0	18.1
1989	08 12	16 10.34	-22 25.3					
1989	08 22	16 16.30	-22 16.1	2.683	2.993	97.8	19.6	18.4

1988 CJ a,e,i = 2.76, 0.04, 3 Elements MPC 12952

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 46.48	-24 28.6	2.273	2.642	100.5	21.7	17.3
1989	03 25	16 53.17	-24 39.4					
1989	04 04	16 57.42	-24 44.8	2.024	2.643	117.8	19.6	17.0
1989	04 14	16 58.95	-24 45.0					
1989	04 24	16 57.62	-24 39.7	1.816	2.645	137.4	14.9	16.6
1989	05 04	16 53.48	-24 28.3					
1989	05 14	16 46.86	-24 10.2	1.679	2.648	159.2	7.8	16.2
1989	05 24	16 38.48	-23 45.5					
1989	06 03	16 29.30	-23 15.5	1.637	2.651	177.0	1.1	15.8
1989	06 13	16 20.46	-22 42.7					
1989	06 23	16 13.00	-22 10.9	1.702	2.655	154.4	9.5	16.3
1989	07 03	16 07.65	-21 43.3					
1989	07 13	16 04.88	-21 22.7	1.857	2.659	133.3	16.1	16.7
1989	07 23	16 04.82	-21 10.4					
1989	08 02	16 07.36	-21 06.2	2.075	2.664	114.7	20.2	17.1
1989	08 12	16 12.33	-21 09.3					
1989	08 22	16 19.48	-21 18.2	2.328	2.670	98.4	22.0	17.4

1977 CZ a,e,i = 3.09, 0.11, 2 Elements MPC 12438

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 46.95	-20 53.6	2.429	2.793	100.9	20.5	16.5
1989	03 25	16 53.30	-20 54.6					
1989	04 04	16 57.42	-20 50.7	2.166	2.782	118.2	18.5	16.2
1989	04 14	16 59.06	-20 42.3					
1989	04 24	16 58.11	-20 29.9	1.945	2.773	137.7	14.1	15.9
1989	05 04	16 54.62	-20 13.8					
1989	05 14	16 48.87	-19 54.7	1.797	2.765	159.2	7.5	15.5
1989	05 24	16 41.48	-19 33.3					
1989	06 03	16 33.26	-19 11.3	1.745	2.759	176.4	1.3	15.1
1989	06 13	16 25.21	-18 50.8					
1989	06 23	16 18.27	-18 34.2	1.800	2.754	154.8	9.0	15.5
1989	07 03	16 13.16	-18 23.6					
1989	07 13	16 10.36	-18 20.3	1.946	2.751	134.0	15.4	15.9
1989	07 23	16 10.06	-18 24.7					
1989	08 02	16 12.23	-18 36.3	2.157	2.750	115.4	19.5	16.2
1989	08 12	16 16.76	-18 53.9					
1989	08 22	16 23.43	-19 16.0	2.405	2.750	98.9	21.3	16.5

(3782) 1986 TE a,e,i = 2.41, 0.10, 5 Elements MPC 12938

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 39.49	-26 51.2	1.766	2.196	101.7	26.3	16.8
1989	03 25	16 49.37	-27 11.1					
1989	04 04	16 56.56	-27 23.2	1.539	2.190	117.6	23.9	16.4
1989	04 14	17 00.62	-27 27.5					
1989	04 24	17 01.23	-27 23.3	1.347	2.186	136.1	18.6	16.0
1989	05 04	16 58.30	-27 09.4					
1989	05 14	16 52.07	-26 44.2	1.216	2.184	157.4	10.2	15.5
1989	05 24	16 43.38	-26 07.2					
1989	06 03	16 33.48	-25 19.7	1.172	2.185	176.4	1.7	15.0
1989	06 13	16 23.92	-24 25.9					
1989	06 23	16 16.13	-23 31.8	1.223	2.188	155.3	11.2	15.5
1989	07 03	16 11.08	-22 43.5					
1989	07 13	16 09.28	-22 05.1	1.358	2.193	134.5	19.3	16.0
1989	07 23	16 10.79	-21 38.3					
1989	08 02	16 15.38	-21 22.7	1.551	2.201	116.6	24.3	16.5
1989	08 12	16 22.76	-21 16.8					
1989	08 22	16 32.55	-21 17.8	1.777	2.211	101.4	26.6	16.8

1988 EK1 a,e,i = 2.37, 0.30, 4 Elements MPC 13469

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 04.38	-20 39.3	2.783	3.065	96.8	18.8	17.5
1989	03 25	17 08.60	-20 31.8					
1989	04 04	17 10.61	-20 20.3	2.507	3.069	115.2	17.1	17.2
1989	04 14	17 10.18	-20 05.1					
1989	04 24	17 07.24	-19 46.4	2.270	3.070	135.6	13.3	16.9
1989	05 04	17 01.83	-19 24.5					
1989	05 14	16 54.25	-18 59.6	2.107	3.067	157.9	7.1	16.5
1989	05 24	16 45.07	-18 32.7					
1989	06 03	16 35.08	-18 05.0	2.048	3.060	175.6	1.5	16.2
1989	06 13	16 25.21	-17 38.8					
1989	06 23	16 16.38	-17 16.3	2.103	3.049	154.0	8.4	16.5
1989	07 03	16 09.27	-16 59.8					
1989	07 13	16 04.36	-16 50.7	2.257	3.035	132.2	14.4	16.9
1989	07 23	16 01.85	-16 49.5					
1989	08 02	16 01.75	-16 56.1	2.478	3.017	112.6	18.1	17.2
1989	08 12	16 03.95	-17 09.5					
1989	08 22	16 08.26	-17 28.5	2.732	2.995	95.1	19.7	17.4

1972 RF2 a,e,i = 2.30, 0.25, 4 Elements MPC 11438

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 43.37	-19 12.1	1.909	2.328	101.9	24.7	19.3
1989	03 25	16 52.29	-19 04.2					
1989	04 04	16 58.96	-18 48.4	1.623	2.272	118.0	22.9	18.9
1989	04 14	17 02.95	-18 25.3					
1989	04 24	17 03.90	-17 55.6	1.375	2.214	136.4	18.3	18.3
1989	05 04	17 01.57	-17 20.3					
1989	05 14	16 55.98	-16 40.9	1.189	2.156	157.3	10.4	17.7
1989	05 24	16 47.62	-15 59.7					
1989	06 03	16 37.48	-15 20.1	1.088	2.099	173.1	3.3	17.2
1989	06 13	16 26.98	-14 46.5					
1989	06 23	16 17.70	-14 23.4	1.082	2.042	153.3	12.9	17.5
1989	07 03	16 10.92	-14 14.1					
1989	07 13	16 07.52	-14 20.0	1.155	1.986	132.3	22.3	17.8
1989	07 23	16 07.82	-14 40.3					
1989	08 02	16 11.79	-15 12.7	1.277	1.933	114.6	28.5	18.2
1989	08 12	16 19.23	-15 54.2					
1989	08 22	16 29.80	-16 41.2	1.424	1.884	100.0	31.9	18.4

1980 TP a,e,i = 2.16, 0.19, 2 Elements MPC 8284

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 49.35	-20 32.1	1.896	2.294	100.4	25.2	19.2
1989	03 25	16 58.36	-20 36.5					
1989	04 04	17 05.03	-20 35.0	1.622	2.253	116.5	23.4	18.8
1989	04 14	17 08.90	-20 28.3					
1989	04 24	17 09.61	-20 17.2	1.382	2.211	135.0	18.8	18.3
1989	05 04	17 06.89	-20 02.0					
1989	05 14	17 00.74	-19 43.3	1.203	2.167	156.4	10.8	17.7
1989	05 24	16 51.68	-19 21.6					
1989	06 03	16 40.72	-18 58.3	1.109	2.123	176.8	1.5	17.0
1989	06 13	16 29.37	-18 35.9					
1989	06 23	16 19.27	-18 18.2	1.111	2.077	155.0	11.9	17.5
1989	07 03	16 11.74	-18 08.7					
1989	07 13	16 07.65	-18 09.9	1.196	2.032	133.3	21.4	17.8
1989	07 23	16 07.33	-18 22.3					
1989	08 02	16 10.70	-18 44.8	1.332	1.988	115.1	27.6	18.2
1989	08 12	16 17.53	-19 15.4					
1989	08 22	16 27.46	-19 51.2	1.495	1.944	100.0	30.8	18.5

1981 EH13 a,e,i = 2.40, 0.22, 3 Elements MPC 10770

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 44.36	-24 03.1	1.907	2.314	101.1	24.9	19.7
1989	03 25	16 54.03	-24 16.3					
1989	04 04	17 01.44	-24 23.0	1.629	2.265	117.0	23.2	19.3
1989	04 14	17 06.14	-24 23.4					
1989	04 24	17 07.76	-24 17.7	1.387	2.216	135.1	18.7	18.8
1989	05 04	17 06.03	-24 05.2					
1989	05 14	17 00.95	-23 45.2	1.205	2.168	156.1	10.9	18.2
1989	05 24	16 53.02	-23 17.1					
1989	06 03	16 43.22	-22 41.7	1.107	2.122	179.4	0.3	17.4
1989	06 13	16 33.01	-22 01.5					
1989	06 23	16 24.01	-21 21.4	1.104	2.077	156.8	11.1	17.9
1989	07 03	16 17.50	-20 46.5					
1989	07 13	16 14.34	-20 21.1	1.183	2.036	135.3	20.6	18.3
1989	07 23	16 14.87	-20 07.1					
1989	08 02	16 19.01	-20 04.4	1.318	1.997	117.2	26.9	18.7
1989	08 12	16 26.51	-20 11.2					
1989	08 22	16 37.02	-20 24.5	1.482	1.964	102.3	30.2	19.0

(3923) 1976 SN3 a,e,i = 3.96, 0.22, 3 Elements MPC 13846

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 06.34	-19 12.7	4.597	4.812	96.5	11.8	18.7
1989	03 25	17 08.31	-19 07.8					
1989	04 04	17 08.84	-19 00.9	4.301	4.819	115.7	10.8	18.5
1989	04 14	17 07.86	-18 52.4					
1989	04 24	17 05.43	-18 42.4	4.051	4.825	136.0	8.3	18.3
1989	05 04	17 01.63	-18 31.4					
1989	05 14	16 56.70	-18 19.7	3.882	4.830	157.3	4.6	18.0
1989	05 24	16 50.93	-18 07.8					
1989	06 03	16 44.72	-17 56.2	3.822	4.834	175.7	0.9	17.8
1989	06 13	16 38.49	-17 45.8					
1989	06 23	16 32.68	-17 37.4	3.880	4.836	157.8	4.5	18.0
1989	07 03	16 27.66	-17 31.7					
1989	07 13	16 23.73	-17 29.4	4.046	4.838	136.9	8.3	18.3
1989	07 23	16 21.08	-17 30.7					
1989	08 02	16 19.82	-17 35.9	4.293	4.838	116.9	10.8	18.5
1989	08 12	16 19.99	-17 44.6					
1989	08 22	16 21.54	-17 56.7	4.587	4.837	98.3	11.9	18.7

1988 EB a,e,i = 2.84, 0.22, 7 Elements MPC 13054

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 10.58	-26 02.7	2.967	3.209	94.9	18.0	17.7
1989	03 25	17 15.11	-26 28.4					
1989	04 04	17 17.45	-26 52.9	2.716	3.242	113.1	16.5	17.5
1989	04 14	17 17.43	-27 16.0					
1989	04 24	17 14.95	-27 37.0	2.502	3.272	133.1	13.0	17.2
1989	05 04	17 10.08	-27 54.7					
1989	05 14	17 03.07	-28 07.5	2.359	3.301	154.7	7.5	16.9
1989	05 24	16 54.48	-28 14.0					
1989	06 03	16 45.04	-28 13.4	2.317	3.327	173.9	1.8	16.6
1989	06 13	16 35.62	-28 06.0					
1989	06 23	16 27.08	-27 53.7	2.389	3.352	157.7	6.6	17.0
1989	07 03	16 20.11	-27 38.8					
1989	07 13	16 15.18	-27 24.1	2.564	3.374	136.4	12.0	17.3
1989	07 23	16 12.51	-27 11.9					
1989	08 02	16 12.11	-27 03.5	2.814	3.394	116.8	15.5	17.6
1989	08 12	16 13.90	-26 59.6					
1989	08 22	16 17.71	-27 00.2	3.107	3.413	98.9	17.0	17.9

(3812) 1965 AK1 a,e,i = 3.18, 0.11, 18 Elements MPC 13037

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 06.59	-03 58.7	2.754	3.048	97.5	18.9	17.6
1989	03 25	17 11.50	-03 25.2					
1989	04 04	17 14.36	-02 48.9	2.521	3.068	114.1	17.3	17.3
1989	04 14	17 15.00	-02 12.3					
1989	04 24	17 13.39	-01 38.4	2.326	3.089	131.9	14.0	17.1
1989	05 04	17 09.60	-01 10.6					
1989	05 14	17 03.90	-00 52.3	2.198	3.110	149.2	9.6	16.8
1989	05 24	16 56.77	-00 46.7					
1989	06 03	16 48.86	-00 55.9	2.165	3.131	158.6	6.8	16.7
1989	06 13	16 40.92	-01 20.8					
1989	06 23	16 33.71	-02 00.7	2.235	3.152	149.4	9.5	16.9
1989	07 03	16 27.82	-02 53.5					
1989	07 13	16 23.72	-03 56.6	2.400	3.173	132.2	13.7	17.2
1989	07 23	16 21.62	-05 06.8					
1989	08 02	16 21.59	-06 21.6	2.636	3.194	114.6	16.8	17.5
1989	08 12	16 23.58	-07 38.4					
1989	08 22	16 27.46	-08 55.3	2.914	3.215	98.0	18.1	17.8

1986 RR2 a,e,i = 2.27, 0.24, 6 Elements MPC 11349

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	16 59.64	-16 36.7	2.130	2.478	98.3	23.4	18.6
1989	03 25	17 07.82	-16 18.5					
1989	04 04	17 13.84	-15 53.4	1.836	2.429	114.6	22.0	18.2
1989	04 14	17 17.32	-15 22.6					
1989	04 24	17 17.95	-14 47.4	1.576	2.378	133.0	18.0	17.7
1989	05 04	17 15.50	-14 09.3					
1989	05 14	17 09.96	-13 30.7	1.377	2.325	153.4	11.2	17.1
1989	05 24	17 01.73	-12 54.4					
1989	06 03	16 51.59	-12 23.6	1.264	2.270	169.9	4.5	16.6
1989	06 13	16 40.76	-12 02.1					
1989	06 23	16 30.66	-11 52.8	1.250	2.213	155.0	11.2	16.8
1989	07 03	16 22.52	-11 57.7					
1989	07 13	16 17.28	-12 17.0	1.323	2.156	133.9	19.9	17.2
1989	07 23	16 15.40	-12 49.3					
1989	08 02	16 16.94	-13 32.3	1.453	2.099	115.4	25.9	17.5
1989	08 12	16 21.81	-14 23.2					
1989	08 22	16 29.74	-15 19.1	1.611	2.042	99.7	29.2	17.7

1977 RB7 a,e,i = 2.69, 0.03, 2 Elements MPC 12941

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 06.34	-23 53.4	2.449	2.739	96.1	21.2	17.5
1989	03 25	17 13.40	-24 01.1					
1989	04 04	17 18.19	-24 05.1	2.191	2.744	113.2	19.6	17.3
1989	04 14	17 20.41	-24 05.7					
1989	04 24	17 19.90	-24 03.2	1.968	2.748	132.4	15.7	16.9
1989	05 04	17 16.62	-23 57.1					
1989	05 14	17 10.73	-23 46.8	1.808	2.752	153.9	9.3	16.5
1989	05 24	17 02.80	-23 32.0					
1989	06 03	16 53.60	-23 12.8	1.742	2.755	177.0	1.1	16.0
1989	06 13	16 44.18	-22 50.5					
1989	06 23	16 35.63	-22 27.5	1.783	2.758	159.6	7.4	16.4
1989	07 03	16 28.80	-22 06.3					
1989	07 13	16 24.30	-21 49.7	1.922	2.761	137.8	14.3	16.8
1989	07 23	16 22.42	-21 39.2					
1989	08 02	16 23.16	-21 35.3	2.132	2.763	118.4	18.8	17.2
1989	08 12	16 26.41	-21 37.7					
1989	08 22	16 31.96	-21 45.2	2.383	2.765	101.3	21.0	17.5

1974 VG a,e,i = 3.17, 0.08, 10 Elements MPC 9354

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 15.04	-25 45.0	3.222	3.437	94.0	16.8	18.0
1989	03 25	17 19.89	-26 14.7					
1989	04 04	17 22.79	-26 44.2	2.936	3.437	111.9	15.7	17.8
1989	04 14	17 23.55	-27 13.4					
1989	04 24	17 22.06	-27 42.0	2.686	3.436	131.5	12.7	17.5
1989	05 04	17 18.30	-28 09.0					
1989	05 14	17 12.45	-28 32.9	2.505	3.434	152.6	7.8	17.2
1989	05 24	17 04.91	-28 51.9					
1989	06 03	16 56.28	-29 04.7	2.423	3.431	172.4	2.3	16.8
1989	06 13	16 47.34	-29 10.7					
1989	06 23	16 38.94	-29 10.8	2.455	3.428	160.1	5.8	17.0
1989	07 03	16 31.80	-29 06.5					
1989	07 13	16 26.48	-29 00.2	2.591	3.423	139.0	11.2	17.3
1989	07 23	16 23.30	-28 54.1					
1989	08 02	16 22.38	-28 50.1	2.806	3.418	119.2	15.0	17.6
1989	08 12	16 23.71	-28 49.0					
1989	08 22	16 27.15	-28 51.4	3.068	3.412	101.2	16.9	17.9

1972 GL a,e,i = 2.24, 0.10, 8 Elements MPC 12948

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 01.85	-22 51.2	1.697	2.072	97.2	28.4	17.3
1989	03 25	17 12.75	-23 41.3					
1989	04 04	17 21.02	-24 31.0	1.492	2.091	112.5	26.2	17.0
1989	04 14	17 26.15	-25 21.6					
1989	04 24	17 27.74	-26 13.9	1.315	2.111	130.4	21.3	16.6
1989	05 04	17 25.47	-27 07.1					
1989	05 14	17 19.35	-27 58.6	1.190	2.132	151.3	13.2	16.2
1989	05 24	17 09.94	-28 44.0					
1989	06 03	16 58.39	-29 18.7	1.145	2.154	171.9	3.8	15.8
1989	06 13	16 46.34	-29 40.0					
1989	06 23	16 35.61	-29 49.0	1.197	2.177	159.2	9.5	16.1
1989	07 03	16 27.54	-29 49.4					
1989	07 13	16 22.97	-29 46.1	1.336	2.201	138.2	17.9	16.7
1989	07 23	16 22.14	-29 43.2					
1989	08 02	16 24.86	-29 43.0	1.538	2.224	119.8	23.3	17.1
1989	08 12	16 30.81	-29 46.1					
1989	08 22	16 39.54	-29 51.9	1.777	2.248	104.0	25.9	17.5

1955 EH a,e,i = 2.38, 0.15, 7 Elements MPC 13169

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 14.31	-15 13.7	2.461	2.732	94.9	21.3	18.1
1989	03 25	17 20.74	-14 52.5					
1989	04 04	17 24.96	-14 26.9	2.202	2.738	112.0	19.8	17.8
1989	04 14	17 26.70	-13 58.0					
1989	04 24	17 25.79	-13 27.4	1.974	2.741	131.0	16.1	17.4
1989	05 04	17 22.18	-12 56.9					
1989	05 14	17 16.03	-12 28.5	1.810	2.742	151.7	10.1	17.0
1989	05 24	17 07.82	-12 04.3					
1989	06 03	16 58.29	-11 46.4	1.738	2.740	168.8	4.1	16.7
1989	06 13	16 48.42	-11 36.9					
1989	06 23	16 39.26	-11 37.1	1.773	2.736	156.6	8.5	16.9
1989	07 03	16 31.67	-11 47.4					
1989	07 13	16 26.29	-12 07.6	1.906	2.730	135.9	15.0	17.3
1989	07 23	16 23.45	-12 36.4					
1989	08 02	16 23.21	-13 12.2	2.109	2.721	116.8	19.4	17.7
1989	08 12	16 25.51	-13 53.3					
1989	08 22	16 30.14	-14 37.6	2.349	2.710	99.7	21.6	17.9

1983 VM7 a,e,i = 2.26, 0.15, 4 Elements MPC 13158

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 10.35	-22 15.4	2.244	2.538	95.3	23.0	18.2
1989	03 25	17 18.34	-22 32.1					
1989	04 04	17 24.09	-22 46.6	1.970	2.520	111.9	21.6	17.9
1989	04 14	17 27.19	-22 59.8					
1989	04 24	17 27.36	-23 12.2	1.725	2.500	130.7	17.7	17.5
1989	05 04	17 24.38	-23 23.7					
1989	05 14	17 18.25	-23 33.5	1.539	2.479	152.2	11.0	17.0
1989	05 24	17 09.41	-23 40.3					
1989	06 03	16 58.66	-23 42.8	1.442	2.455	175.7	1.8	16.4
1989	06 13	16 47.24	-23 40.7					
1989	06 23	16 36.54	-23 35.5	1.449	2.429	159.9	8.3	16.7
1989	07 03	16 27.78	-23 29.6					
1989	07 13	16 21.82	-23 26.2	1.551	2.401	137.5	16.6	17.1
1989	07 23	16 19.10	-23 27.5					
1989	08 02	16 19.65	-23 34.5	1.719	2.371	118.0	22.2	17.5
1989	08 12	16 23.33	-23 47.3					
1989	08 22	16 29.85	-24 04.7	1.924	2.340	101.2	25.1	17.8

1988 BV a,e,i = 2.33, 0.20, 3 Elements MPC 12945

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1989	03 15	17 17.83	-21 38.3	2.522	2.769	93.6	21.0	18.6
1989	03 25	17 24.20	-21 45.6					
1989	04 04	17 28.31	-21 50.6	2.261	2.781	111.0	19.6	18.4
1989	04 14	17 29.86	-21 54.1					
1989	04 24	17 28.66	-21 56.3	2.029	2.789	130.5	15.9	18.0
1989	05 04	17 24.64	-21 57.3					
1989	05 14	17 17.93	-21 56.5	1.860	2.795	152.4	9.7	17.6
1989	05 24	17 09.03	-21 53.4					
1989	06 03	16 58.72	-21 47.7	1.785	2.798	176.0	1.5	17.2
1989	06 13	16 48.03	-21 39.8					
1989	06 23	16 38.10	-21 31.3	1.821	2.797	160.0	7.1	17.5
1989	07 03	16 29.84	-21 24.1					
1989	07 13	16 23.94	-21 20.5	1.957	2.794	137.7	14.2	17.9
1989	07 23	16 20.71	-21 21.9					
1989	08 02	16 20.20	-21 28.7	2.167	2.788	117.7	18.8	18.2
1989	08 12	16 22.32	-21 41.0					
1989	08 22	16 26.84	-21 57.7	2.416	2.778	100.2	21.0	18.5