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

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TWX 710-320-6842 ASTROGRAM CAM ** Brian G. Marsden, Director
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EDITORIAL NOTICE.

This batch of MPCs includes the results of the "Third Trojan Survey" (T-3) of measurements at the Leiden Observatory of plates taken with the 1.2-m Schmidt at Palomar in 1977. Like the original Palomar-Leiden Survey of 1960, the minor planets found in the T-3 Survey have not been given provisional designations by the Minor Planet Center: they are designated with four-figure numbers (the first digit indicating in which of the five fields selected a particular object was found) followed by the notation T-3. The plates were taken by T. Gehrels, and positions and magnitudes were measured by I. van Houten-Groeneveld and A. Wisse, respectively. Preliminary orbits were determined by C. M. Bardwell at the Minor Planet Center. Observations are included in these MPCs of 56 T-3 objects (including periodic comet Kopff, 32 numbered minor planets and 17 previously reported 1977 discoveries, among them 1977 VA, for which some earlier published observations are corrected) that could be immediately identified, and detailed orbital data are shown for the ten new multiple-opposition orbits. Also included in these MPCs are 14 cases of identifications (six of them with P-L discoveries) in which the T-3 numbers have been retained, and the corresponding observations are also supplied. Finally, there are 1422 new one-opposition orbits, including six cases where other 1977 observations were known. The 15 156 observations corresponding to the one-opposition orbits with only T-3 designations will be incorporated in the next edition of the complete magnetic tape of observational data. In the mean time, the Minor Planet Center will try to respond to reasonable requests for observations of specific objects.

* * * * *

ERRATA.

MPC	Line	
12379	21	Add P. Birch, C. Cable, V. Candy, G. Dixon, S. Ewing, J. Johnston, G. Kinnear, R. Martin, M. Sultana, K. Truman, L. Walsh

* * * * *

CRITICAL LIST OF MINOR PLANETS.

The following list updates and is in the same form as that on MPC 11375:

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

2. Objects observed at only two oppositions:
2608 3270 3271 3352 3360 3551 3553 3554 3671 3688

3. Objects accurately observed at only three oppositions:

1538 2059 2061 2062 2076 2101 2135 2148 2198 2202 2272 2327
2340 2552 2596 2629 2671 2695 2703 2765 2876 2895 2904 2915
2937 2948 2968 2986 3004 3013 3025 3037 3040 3041 3043 3073
3075 3079 3086 3087 3101 3102 3119 3122 3144 3160 3169 3198
3199 3204 3206 3211 3212 3217 3218 3245 3252 3254 3255 3273
3284 3287 3288 3289 3307 3336 3343 3344 3361 3374 3383 3392
3398 3401 3402 3410 3416 3426 3446 3468 3473 3476 3480 3489
3512 3524 3531 3532 3537 3538 3542 3552 3556 3563 3579 3626
3629 3632 3635 3655 3677 3693 3712

4. Objects observed at four or more oppositions, last during 1973-1975:

1134 1710 1871 1876 1883

5. Objects observed at four or more oppositions, last during 1976-1977:

879 1205 1222 1580 1709 1816 1919

* * * * *

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object		Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N	Obs.
1977 VA		1977 10	12.33125	00 53 52.37	+16 31 55.0	MPC 4529		1	675
1977 VA		1977 10	16.25156	01 05 16.55	+16 28 39.9	MPC 4529		2	675
1987 TA	*	1987 10	12.59363	01 30 58.55	+16 53 27.5	MPC12429	16		887
1987 TA		1987 10	12.61817	01 30 57.11	+16 53 27.2	MPC12429			887
1987 TA		1987 10	12.64729	01 30 55.24	+16 53 24.9	MPC12429			887
1987 UZ	*	1987 10	21.67222	01 04 58.98	+08 34 31.6	MPC12396	18		372
1987 UZ		1987 10	21.68403	01 04 58.29	+08 34 35.5	MPC12396			372
1332		1985 08	20.26319	22 40 28.13	-11 08 42.7	MPC10014			688

Note 1: time corrected from 1977 10 12.32778. 2: from 1977 10 16.25145.

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 12360.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1980 UD1	*	1980 10	17.89933	02 31 46.43	+15 51 44.3	1980 TX1	17.0	095
1981 SG9	*	1981 09	26.17507	22 26 43.52	-11 19 34.1	1981 QU1	17.2	688
1981 SG9		1981 09	26.24097	22 26 41.11	-11 19 54.9	1981 QU1		688
1984 NE	*	1984 07	02.94936	19 42 32.75	-13 30 16.9	1984 MT	17.0	095

* * * * *

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

024 Heidelberg. Observers S. Dobereiner, J. Heidt and H. Mandel.
046 Klet. Observer A. Mrkos.
051 Cape. Observer J. Churms.
323 Perth. Observers M. P. Candy, P. Jekabsons and J. Johnston.
372 Geisei. Observer T. Seki.
376 Uenohara. Observer N. Kawasato.
381 Tokyo Observatory, Kiso Station. 1.05-m Schmidt. Observer K.

Tarusawa. Measured by I. Sato. Communicated by H. Kosai.
391 Sendai Observatory, Ayashi Station. Observer M. Koishikawa.
397 Sapporo Science Center. 0.60-m reflector. Observer K. Watanabe.
399 Kushiro. 0.16-m reflector. Observer S. Ueda. Measured by H. Kaneda.
400 Kitami. Observers K. Endate, T. Fujii and M. Yanai. Measured by K. Watanabe. In part from Nihondaira Obs. Circ.
413 Siding Spring Observatory. Observer R. H. McNaught.
415 Kambah, near Canberra. Observer D. Herald.
474 Mt. John. Observers A. C. Gilmore and P. M. Kilmartin.
494 Stakenbridge. 0.26-m reflector. Observer B. Manning.
503 Cambridge. Observer J. D. Shanklin.
657 Victoria. Observers D. D. Balam and J. Tatum.
675 Palomar. 1.2-m Schmidt and 1.5-m reflector + CCD. Observers T. Gehrels and I. van Houten-Groeneveld (comet 1977 V), J. Gibson (comets 1987u and 1987c1), A. Maury and J. Mueller (comet 1987a1).
691 University of Arizona, Kitt Peak. 0.91-m SPACEWATCH telescope, CCD in scanning mode. Observer J. Scotti.
801 Oak Ridge Observatory. Observers R. E. McCrosky and C.-Y. Shao.
877 Okutama. Observer T. Hioki. Measured by N. Kawasato.
883 Shizuoka. 0.13-m hyperboloid astrocamera. Observer W. Kakkei. Measured by M. Kizawa. From Nihondaira Obs. Circ.
892 YGCO Hoshikawa and Nagano Stations. Observers S. Hayakawa and T. Kojima. In part from Nihondaira Obs. Circ.
893 Sendai. 0.41-m reflector. Observer T. Usa. Measured by M. Koishikawa. Communicated by Y. Torii.
895 Hatamae, Sendai. Observer T. Sato. Long. and Parallax 140.72, -335, -263 (see MPC 11200).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Schwassmann-Wachmann 1					
/1974 II	1987	10 22.51180	20 07 00.68	-20 44 06.2			323
/1974 II	1987	10 26.52153	20 08 11.18	-20 37 20.1			323
		Periodic Comet Kopff					
/1977 V	1977	10 07.28125	01 19 04.85	+00 08 13.3			675
/1977 V	1977	10 11.30000	01 15 19.94	-00 14 00.6			675
/1977 V	1977	10 11.36771	01 15 16.03	-00 14 21.6			675
/1977 V	1977	10 12.29826	01 14 24.73	-00 19 14.3			675
/1977 V	1977	10 12.36441	01 14 20.96	-00 19 33.5			675
/1977 V	1977	10 16.28368	01 10 49.04	-00 38 47.3			675
/1977 V	1977	10 16.34931	01 10 45.46	-00 39 04.7			675
		Comet Shoemaker (1985 XII)					
/1985 XII	1987	10 16.33757	04 16 23.20	+02 48 44.3			691
/1985 XII	1987	10 16.39319	04 16 21.28	+02 48 42.0	16.9T		691
/1985 XII	1987	10 16.40663	04 16 20.83	+02 48 41.3		1	691
/1985 XII	1987	10 27.41155	04 09 44.98	+02 40 43.1	17.1T		691
		Periodic Comet Forbes					
/1986g	1987	10 16.35100	02 53 56.60	+18 31 51.3	18.4T	2	691
/1986g	1987	10 16.36808	02 53 55.64	+18 31 48.7			691
/1986g	1987	10 16.38238	02 53 54.79	+18 31 46.5			691
		Periodic Comet Kohoutek					
/1986k	1987	10 16.41387	07 35 39.09	+23 01 56.1			691
/1986k	1987	10 16.42791	07 35 40.87	+23 01 50.0	16.1T	3	691
/1986k	1987	10 16.43383	07 35 41.61	+23 01 46.9			691
/1986k	1987	10 22.40769	07 48 05.53	+22 11 28.7			801

/1986k	1987	10	26.41906	07	55	59.46	+21	35	46.1		691
/1986k	1987	10	26.43094	07	56	00.86	+21	35	39.4		691
/1986k	1987	10	29.18449	08	01	12.74	+21	10	22.7	13.0T	503
			Comet Wilson (1986l)								
/1986l	1987	10	17.80190	09	47	25.18	+01	52	49.1		892
/1986l	1987	10	17.83194	09	47	25.04	+01	52	53.0		892
/1986l	1987	10	24.77292	09	46	27.23	+02	07	34.3		400
/1986l	1987	10	24.78611	09	46	27.03	+02	07	35.8		400
/1986l	1987	10	26.74479	09	46	00.95	+02	12	22.3		400
/1986l	1987	10	26.74479	09	46	00.82	+02	12	23.8		400
			Periodic Comet Howell								
/1987h	1987	10	19.20660	00	41	08.88	-04	36	09.4		657
/1987h	1987	10	19.23094	00	41	07.48	-04	36	06.2		801
/1987h	1987	10	25.53698	00	36	45.93	-04	38	10.9	14.0T	399
/1987h	1987	10	25.55226	00	36	45.37	-04	38	11.8		399
/1987h	1987	10	27.58403	00	35	33.22	-04	37	09.6		323
			Periodic Comet Klemola								
/1987i	1987	09	29.26569	00	24	48.04	-01	25	51.0		657
/1987i	1987	10	14.80903	00	22	18.69	-04	13	56.5		046
/1987i	1987	10	14.82315	00	22	18.67	-04	14	04.1		046
/1987i	1987	10	19.16638	00	22	06.61	-04	48	33.6		801
/1987i	1987	10	21.89933	00	22	08.89	-05	07	09.5		494
/1987i	1987	10	22.58958	00	22	10.73	-05	11	10.2		323
			Periodic Comet Reinmuth 2								
/1987l	1987	07	24.54375	20	23	24.22	-17	50	12.6		376
/1987l	1987	09	26.05263	20	10	33.87	-14	05	07.5		801
/1987l	1987	10	15.13245	20	30	38.37	-12	29	04.0	4	691
/1987l	1987	10	15.14399	20	30	39.19	-12	28	59.5	15.6T	691
/1987l	1987	10	15.15591	20	30	40.10	-12	28	55.6		691
/1987l	1987	10	22.01557	20	40	04.32	-11	47	51.6		801
			Periodic Comet Brooks 2								
/1987m	1987	09	21.33255	00	31	56.40	+02	04	09.7		657
/1987m	1987	09	27.29444	00	30	24.40	+01	14	57.6		657
/1987m	1987	09	29.25597	00	29	50.56	+00	58	27.4		657
/1987m	1987	10	01.37576	00	29	12.68	+00	40	39.3		657
/1987m	1987	10	03.69861	00	28	31.41	+00	21	23.8		400
/1987m	1987	10	03.71323	00	28	31.12	+00	21	16.2		400
/1987m	1987	10	14.80903	00	25	39.64	-01	03	33.9		046
/1987m	1987	10	14.82315	00	25	39.40	-01	03	38.1		046
/1987m	1987	10	16.96111	00	25	16.16	-01	17	39.1	13.0T	503
/1987m	1987	10	17.65052	00	25	09.22	-01	21	55.4		892
/1987m	1987	10	17.67876	00	25	09.05	-01	22	06.7		892
/1987m	1987	10	19.18912	00	24	56.31	-01	31	15.4	5	801
/1987m	1987	10	21.95091	00	24	41.06	-01	46	30.0		494
/1987m	1987	10	24.25069	00	24	35.67	-01	57	41.2		657
/1987m	1987	10	28.50868	00	24	45.45	-02	14	40.9		892
/1987m	1987	10	29.02436	00	24	48.45	-02	16	22.9	14 T 6	503
/1987m	1987	11	10.49739	00	28	14.15	-02	34	29.9		892
/1987m	1987	11	17.17403	00	31	49.10	-02	26	10.6		657
			Periodic Comet Borrelly								
/1987p	1987	09	01.76595	03	12	02.0	-34	35	28	15 T	372
/1987p	1987	10	17.70029	03	37	45.39	-38	34	58.6		892
/1987p	1987	10	17.73732	03	37	43.98	-38	34	52.5		892

/1987p	1987	10	24.63403	03	32	34.66	-37	53	53.4		323
/1987p	1987	10	27.62917	03	29	30.82	-37	22	24.1		323
/1987p	1987	11	20.98256	02	52	50.18	-25	30	08.0		503

Comet Bradfield (1987s)

/1987s	1987	09	26.74525	15	38	08.08	-12	31	10.8		051
/1987s	1987	09	26.74983	15	38	08.79	-12	31	06.6		051
/1987s	1987	10	03.74034	15	56	43.48	-10	36	52.4		051
/1987s	1987	10	03.74867	15	56	44.86	-10	36	43.4		051
/1987s	1987	10	04.39931	15	58	33.11	-10	25	36.3		400
/1987s	1987	10	08.38576	16	09	52.25	-09	14	14.5		400
/1987s	1987	10	08.38657	16	09	52.33	-09	14	13.3		400
/1987s	1987	10	09.37604	16	12	45.44	-08	55	46.5		400
/1987s	1987	10	09.37743	16	12	45.67	-08	55	45.3		400
/1987s	1987	10	13.38993	16	24	46.46	-07	37	55.4		400
/1987s	1987	10	13.39549	16	24	47.45	-07	37	48.8		400
/1987s	1987	10	13.75318	16	25	53.11	-07	30	28.8		051
/1987s	1987	10	15.40764	16	31	00.51	-06	56	47.4		400
/1987s	1987	10	15.41250	16	31	01.53	-06	56	44.9		400
/1987s	1987	10	17.47639	16	37	32.00	-06	12	59.4		323
/1987s	1987	10	18.40451	16	40	30.92	-05	53	01.7		892
/1987s	1987	10	19.47778	16	43	59.58	-05	29	19.1		323
/1987s	1987	10	20.75133	16	48	10.49	-05	00	44.8		051
/1987s	1987	10	22.48542	16	53	57.34	-04	20	52.7		323
/1987s	1987	10	24.49375	17	00	47.62	-03	33	18.1		323
/1987s	1987	10	25.40225	17	03	56.30	-03	11	11.6		415
/1987s	1987	10	25.40326	17	03	56.52	-03	11	10.1		415
/1987s	1987	10	25.42089	17	04	00.50	-03	10	57.3		895
/1987s	1987	10	26.49514	17	07	45.74	-02	44	16.5		323
/1987s	1987	10	27.40802	17	10	59.54	-02	21	24.9		415
/1987s	1987	10	27.40844	17	10	59.57	-02	21	22.4		415
/1987s	1987	10	27.49653	17	11	18.47	-02	19	12.1		323
/1987s	1987	10	28.37500	17	14	27.15	-01	57	02.9	6 T	391
/1987s	1987	10	28.40000	17	14	32.55	-01	56	23.2		391
/1987s	1987	10	28.40162	17	14	32.83	-01	56	21.1		892
/1987s	1987	10	28.41464	17	14	35.62	-01	56	00.1		895
/1987s	1987	10	29.41179	17	18	12.27	-01	30	08.9		415
/1987s	1987	10	30.41537	17	21	52.74	-01	03	49.3		415
/1987s	1987	10	31.72118	17	26	43.73	-00	29	12.0	5.4T	046
/1987s	1987	10	31.72222	17	26	44.02	-00	29	11.1		046
/1987s	1987	10	31.76152	17	26	52.85	-00	27	56.6		051
/1987s	1987	11	01.36910	17	29	09.91	-00	11	40.1	6 T	391
/1987s	1987	11	01.39896	17	29	16.64	-00	10	51.0		391
/1987s	1987	11	01.41427	17	29	20.04	-00	10	15.7		415
/1987s	1987	11	02.41325	17	33	07.61	+00	17	02.6		415
/1987s	1987	11	04.71366	17	42	03.16	+01	21	15.0		046
/1987s	1987	11	04.71424	17	42	03.30	+01	21	17.1		046
/1987s	1987	11	04.72623	17	42	06.36	+01	21	38.7		024
/1987s	1987	11	04.73484	17	42	08.11	+01	21	50.9		046
/1987s	1987	11	04.73600	17	42	08.38	+01	21	53.1		046
/1987s	1987	11	05.71841	17	46	02.42	+01	50	02.8		024
/1987s	1987	11	05.77181	17	46	15.04	+01	51	31.0		503
/1987s	1987	11	05.78020	17	46	16.98	+01	51	45.0		503
/1987s	1987	11	06.70961	17	50	01.09	+02	18	39.7		046
/1987s	1987	11	06.71030	17	50	01.30	+02	18	40.9		046
/1987s	1987	11	07.38021	17	52	44.70	+02	38	20.3		391
/1987s	1987	11	07.70608	17	54	04.74	+02	47	52.5		046
/1987s	1987	11	07.70683	17	54	04.92	+02	47	53.9		046
/1987s	1987	11	07.71499	17	54	06.90	+02	48	09.2		046

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/1987s     1987 11 07.71557  17 54 07.05  +02 48 10.5                    046
/1987s     1987 11 08.35511  17 56 45.25  +03 07 07.6                    892
/1987s     1987 11 08.35590  17 56 45.42  +03 07 09.4                    892
/1987s     1987 11 08.38480  17 56 52.59  +03 08 00.6                    892
/1987s     1987 11 08.38530  17 56 52.64  +03 08 01.2                    391
/1987s     1987 11 08.39236  17 56 54.41  +03 08 13.7                    892
/1987s     1987 11 08.72749  17 58 18.00  +03 18 12.0                    046
/1987s     1987 11 08.72812  17 58 18.20  +03 18 12.9                    046
/1987s     1987 11 09.36875  18 00 58.97  +03 37 26.1                    391
/1987s     1987 11 09.42882  18 01 13.83  +03 39 10.0                    883
/1987s     1987 11 09.43738  18 01 16.01  +03 39 27.5                    883
/1987s     1987 11 10.35590  18 05 09.72  +04 07 17.8                    391
/1987s     1987 11 10.37951  18 05 15.71  +04 08 00.2                    391
/1987s     1987 11 10.39756  18 05 20.28  +04 08 33.2                    892
/1987s     1987 11 10.40312  18 05 21.74  +04 08 44.2                    391
/1987s     1987 11 10.40480  18 05 22.16  +04 08 46.6                    892
/1987s     1987 11 10.40694  18 05 22.55  +04 08 46.4                    883
/1987s     1987 11 10.41701  18 05 25.38  +04 09 07.4                    883
/1987s     1987 11 10.73209  18 06 46.39  +04 18 44.5                    494
/1987s     1987 11 10.73606  18 06 47.40  +04 18 52.0                    494
/1987s     1987 11 11.36146  18 09 29.08  +04 38 03.0                    391
/1987s     1987 11 11.38438  18 09 35.01  +04 38 44.4                    391
/1987s     1987 11 11.39931  18 09 38.99  +04 39 06.3                    883
/1987s     1987 11 11.40104  18 09 39.35  +04 39 15.6                    391
/1987s     1987 11 11.41458  18 09 43.09  +04 39 37.6                    883
/1987s     1987 11 12.76318  18 15 37.47  +05 21 22.8                    503
/1987s     1987 11 13.44340  18 18 39.08  +05 42 41.3                    400
/1987s     1987 11 13.74025  18 19 59.22  +05 52 00.5                    503
/1987s     1987 11 14.35076  18 22 44.78  +06 11 16.9                    397
/1987s     1987 11 14.36715  18 22 49.19  +06 11 47.7                    397
/1987s     1987 11 14.73522  18 24 29.96  +06 23 27.9                    503
/1987s     1987 11 16.73849  18 33 49.10  +07 27 36.2                    494
/1987s     1987 11 16.80089  18 34 06.74  +07 29 38.2                    494
/1987s     1987 11 16.80474  18 34 07.82  +07 29 45.8                    494
/1987s     1987 11 20.34531  18 51 25.86  +09 25 37.4                    397
/1987s     1987 11 20.36198  18 51 30.89  +09 26 10.0                    397
/1987s     1987 11 20.73811  18 53 25.22  +09 38 36.6                    503
/1987s     1987 11 24.34003  19 12 19.51  +11 38 55.0                    397
/1987s     1987 11 24.35747  19 12 25.19  +11 39 30.2                    397

                Comet Rudenko (1987u)
/1987u     1987 08 31.46007  13 38 11.62  +30 40 17.9          9  T      372
/1987u     1987 08 31.47431  13 38 09.67  +30 40 04.0                    372
/1987u     1987 10 24.81563  11 34 11.54  -00 21 07.4                    400
/1987u     1987 10 24.82014  11 34 11.05  -00 21 27.0                    400
/1987u     1987 11 03.54583  11 15 37.11  -13 54 07.7                    675
/1987u     1987 11 03.54777  11 15 36.88  -13 54 18.6                    675
/1987u     1987 11 03.54916  11 15 36.71  -13 54 26.5                    675
/1987u     1987 11 08.81545  11 04 36.96  -22 44 07.3                    892
/1987u     1987 11 23.59787  10 15 06.16  -50 48 33.1                    415

                Periodic Comet Gehrels 1
/1987v     1987 10 16.22786  04 32 18.56  +30 51 32.8                    691
/1987v     1987 10 16.31199  04 32 18.19  +30 51 53.3       17.1T        691
/1987v     1987 10 16.32447  04 32 18.15  +30 51 56.9             7      691

                Comet Levy (1987y)
/1987y     1987 10 22.76854  15 39 14.87  +15 08 59.2                    494
/1987y     1987 10 24.76719  15 49 26.86  +14 41 10.1                    494
```

/1987y	1987	11	17.06759	17	24	57.90	+09	36	02.8			8	691
/1987y	1987	11	17.08435	17	25	01.01	+09	35	52.7			8	691
			Periodic Comet Shoemaker-Holt										
/1987z	1987	10	21.29521	01	06	22.47	+08	33	25.5				657
/1987z	1987	10	21.67222	01	06	09.13	+08	31	32.4	17	T		372
/1987z	1987	10	21.68403	01	06	08.88	+08	31	29.6				372
/1987z	1987	10	23.72153	01	04	57.26	+08	21	25.9	15	T		399
/1987z	1987	10	23.73681	01	04	56.87	+08	21	22.1				399
/1987z	1987	10	24.25281	01	04	39.21	+08	18	49.9				801
/1987z	1987	10	28.73889	01	02	09.89	+07	57	12.7	18	T		372
/1987z	1987	10	28.75000	01	02	09.29	+07	57	09.1				372
/1987z	1987	11	20.45556	00	53	27.58	+06	30	16.9	17	T		372
/1987z	1987	11	20.46997	00	53	27.44	+06	30	13.2				372
			Periodic Comet Mueller										
/1987a1	1987	10	28.37500	01	05	29.0	+12	14	55				675
/1987a1	1987	10	28.38889	01	05	28.5	+12	14	52				675
			Comet McNaught (1987b1)										
/1987b1	1987	10	21.47708	14	37	51.66	-50	19	43.8				323
/1987b1	1987	10	22.47708	14	42	37.88	-49	46	01.4				323
/1987b1	1987	10	24.48542	14	51	53.53	-48	36	57.2				323
/1987b1	1987	10	25.40743	14	55	59.67	-48	04	35.5				415
/1987b1	1987	10	25.42407	14	56	04.69	-48	03	57.2				415
/1987b1	1987	10	26.45462	15	00	33.83	-47	27	19.6				415
/1987b1	1987	10	26.48680	15	00	41.72	-47	26	12.0				323
/1987b1	1987	10	27.41588	15	04	39.01	-46	52	48.3				415
/1987b1	1987	10	27.48819	15	04	57.24	-46	50	11.7				323
/1987b1	1987	10	28.48819	15	09	06.61	-46	13	51.0				323
/1987b1	1987	10	29.41685	15	12	52.97	-45	39	46.8				413
/1987b1	1987	10	29.41796	15	12	53.35	-45	39	44.1				413
/1987b1	1987	10	30.41937	15	16	52.48	-45	02	37.0				415
/1987b1	1987	10	31.41834	15	20	45.66	-44	25	14.4				415
/1987b1	1987	11	01.41909	15	24	33.90	-43	47	29.4				415
/1987b1	1987	11	02.42887	15	28	18.75	-43	09	07.3			9	415
/1987b1	1987	11	04.41354	15	35	27.90	-41	52	45.7			A	413
/1987b1	1987	11	04.41539	15	35	28.57	-41	52	41.7			A	413
			Periodic Comet Longmore										
/1987c1	1986	12	29.38052	04	36	44.50	+51	08	15.4			B	691
/1987c1	1986	12	29.39525	04	36	43.83	+51	08	14.0			B	691
/1987c1	1986	12	29.39916	04	36	43.41	+51	08	13.0	20.5	T		691
/1987c1	1987	10	26.48773	10	16	26.66	+34	01	35.8				691
/1987c1	1987	10	26.49874	10	16	27.58	+34	01	33.5				691
/1987c1	1987	11	03.51010	10	26	39.87	+33	39	00.4	19.5	N	C	675
/1987c1	1987	11	03.51416	10	26	40.17	+33	38	59.7			C	675
/1987c1	1987	11	03.51814	10	26	40.47	+33	38	58.7			C	675
/1987c1	1987	11	03.52219	10	26	40.77	+33	38	58.4			C	675
/1987c1	1987	11	19.48628	10	44	59.06	+33	09	09.2				691
/1987c1	1987	11	19.49076	10	44	59.38	+33	09	08.7	18.9	T	D	691
/1987c1	1987	11	19.49715	10	44	59.82	+33	09	07.4	19	T		675
/1987c1	1987	11	19.50139	10	45	00.09	+33	09	07.3				675
/1987c1	1987	11	19.50773	10	45	00.44	+33	09	07.6				691
/1987c1	1987	11	19.50810	10	45	00.50	+33	09	06.9				675
/1987c1	1987	11	19.51190	10	45	00.70	+33	09	07.6				691
/1987c1	1987	11	19.51655	10	45	00.96	+33	09	07.3				691
/1987c1	1987	11	19.52146	10	45	01.28	+33	09	07.1				691

Comet Ichimura (1987d1)

/1987d1	1987	11	23.44844	03	52	08.09	-21	26	16.1	9	415
/1987d1	1987	11	23.47254	03	51	58.75	-21	30	00.3		415
/1987d1	1987	11	23.59134	03	51	10.72	-21	48	39.2		415
/1987d1	1987	11	24.29198	03	46	20.77	-23	41	42.2		691
/1987d1	1987	11	24.30346	03	46	15.72	-23	43	35.8		691
/1987d1	1987	11	24.31366	03	46	11.23	-23	45	17.8		691
/1987d1	1987	11	24.43456	03	45	19.83	-24	04	39.7		415
/1987d1	1987	11	24.44543	03	45	15.40	-24	06	23.4		415
/1987d1	1987	11	24.48471	03	44	57.27	-24	12	54.7	12 T	474
/1987d1	1987	11	24.53629	03	44	34.81	-24	21	31.8		413
/1987d1	1987	11	24.54541	03	44	30.73	-24	23	01.2	9	413
/1987d1	1987	11	24.56493	03	44	21.95	-24	26	42.9		400
/1987d1	1987	11	24.57396	03	44	17.79	-24	28	11.2		400
/1987d1	1987	11	24.61396	03	44	00.03	-24	34	47.0	7 T	381
/1987d1	1987	11	24.64409	03	43	45.36	-24	39	19.2		474
/1987d1	1987	11	24.64582	03	43	44.49	-24	39	36.7		474
/1987d1	1987	11	24.69042	03	43	24.8	-24	47	35	9.7T	893
/1987d1	1987	11	24.70436	03	43	18.2	-24	49	54		893
/1987d1	1987	11	24.73410	03	43	04.82	-24	54	23.5		413
/1987d1	1987	11	24.73765	03	43	03.26	-24	54	57.4	9	413
/1987d1	1987	11	24.73869	03	43	02.65	-24	55	10.5		413
/1987d1	1987	11	25.47103	03	37	21.46	-26	59	50.0	9	413
/1987d1	1987	11	25.63498	03	35	59.66	-27	28	44.9	7 T	381
/1987d1	1987	11	27.71780	03	16	32.54	-33	45	04.8		413
/1987d1	1987	11	27.71890	03	16	31.79	-33	45	17.6		413

Periodic Comet Tempel 1

/1987e1	1987	10	27.43524	08	52	34.76	+25	19	04.0	20.9T	691
/1987e1	1987	10	27.46073	08	52	35.85	+25	19	04.5		691
/1987e1	1987	11	24.43729	09	06	56.08	+25	57	27.6	20.4T	691
/1987e1	1987	11	24.46997	09	06	56.68	+25	57	33.4		691

Comet Furuyama (1987f1)

/1987f1	1987	11	21.78021	05	20	25.9	+25	45	57		877
/1987f1	1987	11	21.79074	05	20	23.8	+25	45	32		877
/1987f1	1987	11	22.41354	05	17	38.28	+25	20	18.7		675
/1987f1	1987	11	25.16670	05	05	03.65	+23	20	46.3		801
/1987f1	1987	11	25.51701	05	03	25.29	+23	04	39.6	11 T	892
/1987f1	1987	11	25.53402	05	03	20.63	+23	03	52.4		892
/1987f1	1987	11	25.67830	05	02	39.53	+22	57	21.9		413
/1987f1	1987	11	25.67951	05	02	39.20	+22	57	18.4	9	413
/1987f1	1987	11	27.71069	04	52	58.67	+21	19	53.9		413
/1987f1	1987	11	27.71226	04	52	58.25	+21	19	49.0		413
/1987f1	1987	11	28.29045	04	50	11.03	+20	50	51.7		675

Note 1: faint tail > 89" long in p.a. 126 . 2: 68" tail in p.a. 243 . 3: 93" tail in p.a. 278 . 4: 56" tail in p.a. 72 . 5: poor star configuration. 6: very weak image. 7: 84" tail in p.a. 256 . 8: image diffuse and uncondensed. 9: poor; weak image. A: poor; moonlight. B: image fairly faint, measurement difficult; appearance essentially stellar. C: image stellar within the limits of seeing. D: 18" tail in p.a. 299 .

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OBSERVATIONS OF MINOR PLANETS.

The observations are listed separately for each observatory code. Alphabetic note codes shown with some of the observations are defined

according to the scheme below. Numerical codes are defined in the headings for the individual observatories.

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

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
010 Caussols								
J.-L. Heudier, CERGA Caussols, F-06460 Saint Vallier de Thiey, France								
Observers R. Chemin, J.-L. Heudier, C. Labeyrie, T. Laverge, C. Pollas								
0.9-m Schmidt telescope								
Observations in association with INAS								
1981 EH4		1987 09	21.98403	00 20 41.24	+14 36 55.3			010
1981 EH4		1987 09	22.01528	00 20 40.07	+14 36 42.3			010
1982 TT		1987 09	21.98403	00 10 55.06	+18 05 59.0			010
1982 TT		1987 09	22.01528	00 10 53.59	+18 05 48.8			010
1987 MK		1987 07	29.08402	22 07 58.92	-16 30 40.8			010
1987 MK		1987 07	29.10486	22 07 57.95	-16 30 38.4			010
1987 OP1	*	1987 07	29.08402	21 57 26.39	-18 11 11.1			010
1987 OP1		1987 07	29.10486	21 57 25.63	-18 11 16.6			010
1987 OQ1	*	1987 07	29.08402	21 58 52.98	-18 03 21.1			010
1987 OQ1		1987 07	29.10486	21 58 52.26	-18 03 31.0			010
1987 OR1	*	1987 07	29.08402	22 03 49.94	-20 52 38.2			010
1987 OR1		1987 07	29.10486	22 03 49.11	-20 52 32.1			010
1987 OS1	*	1987 07	29.08402	22 06 36.81	-19 31 01.5			010
1987 OS1		1987 07	29.10486	22 06 36.32	-19 31 08.8			010
1987 PC	*	1987 08	06.10139	22 45 28.15	+05 33 05.1			010
1987 PC		1987 08	06.11875	22 45 27.62	+05 33 10.1			010
1987 PC		1987 08	06.12847	22 45 27.30	+05 33 13.2			010

1987	PD	*	1987	08	06.10139	22	46	32.13	+06	45	55.2	010
1987	PD		1987	08	06.11875	22	46	31.83	+06	45	54.3	010
1987	PD		1987	08	06.12847	22	46	31.48	+06	45	53.5	010
1987	PE	*	1987	08	06.10139	22	47	32.76	+03	49	04.8	010
1987	PE		1987	08	06.11875	22	47	32.42	+03	49	02.2	010
1987	PE		1987	08	06.12847	22	47	32.07	+03	49	00.8	010
1987	PF	*	1987	08	06.10139	22	48	28.37	+05	47	03.0	010
1987	PF		1987	08	06.11875	22	48	27.92	+05	47	02.7	010
1987	PF		1987	08	06.12847	22	48	27.52	+05	47	02.6	010
1987	PG	*	1987	08	06.10139	22	49	59.22	+03	16	08.0	010
1987	PG		1987	08	06.11875	22	49	58.27	+03	16	17.4	010
1987	PG		1987	08	06.12847	22	49	57.60	+03	16	24.5	010
1987	PH	*	1987	08	06.10139	22	52	05.75	+05	26	03.2	010
1987	PH		1987	08	06.11875	22	52	05.27	+05	26	04.4	010
1987	PH		1987	08	06.12847	22	52	05.01	+05	26	05.8	010
1987	PJ	*	1987	08	06.10139	22	55	08.38	+04	49	39.1	010
1987	PJ		1987	08	06.11875	22	55	08.01	+04	49	37.5	010
1987	PJ		1987	08	06.12847	22	55	07.64	+04	49	35.8	010
1987	PK	*	1987	08	06.10139	22	56	48.93	+07	29	25.4	010
1987	PK		1987	08	06.11875	22	56	48.49	+07	29	22.5	010
1987	PK		1987	08	06.12847	22	56	48.23	+07	29	20.6	010
1987	PL	*	1987	08	06.10139	22	58	14.08	+03	01	08.2	010
1987	PL		1987	08	06.11875	22	58	13.78	+03	01	11.0	010
1987	PL		1987	08	06.12847	22	58	13.41	+03	01	12.5	010
1987	PM	*	1987	08	06.10139	23	03	46.53	+04	20	29.5	010
1987	PM		1987	08	06.11875	23	03	46.15	+04	20	30.9	010
1987	PM		1987	08	06.12847	23	03	45.82	+04	20	32.7	010
1987	QW		1987	09	18.87430	21	25	30.11	+00	46	19.7	010
1987	QW		1987	09	18.89514	21	25	29.74	+00	46	05.8	010
1987	QW		1987	09	18.90555	21	25	29.58	+00	45	59.8	010
1987	QG6		1987	09	18.00347	00	16	46.92	-16	35	46.3	E 010
1987	QG6		1987	09	18.02431	00	16	46.84	-16	36	30.0	E 010
1987	QG6		1987	09	18.03125	00	16	46.82	-16	36	45.9	E 010
1987	QG6		1987	09	18.03819	00	16	46.80	-16	36	59.4	E 010
1987	QG6		1987	09	19.01319	00	16	40.98	-17	11	26.9	010
1987	QG6		1987	09	19.03403	00	16	40.76	-17	12	09.5	010
1987	QB8	*	1987	08	17.92917	19	53	42.52	-13	04	01.8	010
1987	QB8		1987	08	17.95000	19	53	41.65	-13	04	03.4	010
1987	QB8		1987	08	17.96042	19	53	41.20	-13	04	03.4	010
1987	QC8	*	1987	08	17.92917	19	54	35.78	-12	33	04.8	010
1987	QC8		1987	08	17.95000	19	54	34.89	-12	33	09.4	010
1987	QC8		1987	08	17.96042	19	54	34.38	-12	33	11.2	010
1987	QD8	*	1987	08	17.92917	19	56	52.45	-10	45	48.8	010
1987	QD8		1987	08	17.95000	19	56	51.67	-10	45	51.5	010
1987	QD8		1987	08	17.96042	19	56	51.23	-10	45	55.1	010
1987	QE8	*	1987	08	17.92917	19	57	12.95	-11	14	18.0	010
1987	QE8		1987	08	17.95000	19	57	12.10	-11	14	16.8	010
1987	QE8		1987	08	17.96042	19	57	11.65	-11	14	15.9	010
1987	QF8	*	1987	08	17.92917	19	57	55.11	-14	18	57.6	010
1987	QF8		1987	08	17.95000	19	57	54.41	-14	18	52.4	010
1987	QF8		1987	08	17.96042	19	57	53.86	-14	18	48.0	010
1987	QG8	*	1987	08	17.92917	19	58	03.18	-13	58	31.9	010
1987	QG8		1987	08	17.95000	19	58	02.86	-13	58	33.0	010
1987	QG8		1987	08	17.96042	19	58	02.51	-13	58	33.9	010
1987	QH8	*	1987	08	17.92917	19	58	14.60	-13	38	06.9	010
1987	QH8		1987	08	17.95000	19	58	13.88	-13	38	13.2	010
1987	QH8		1987	08	17.96042	19	58	13.35	-13	38	17.4	010
1987	QJ8	*	1987	08	17.92917	20	01	32.58	-12	30	05.2	010
1987	QJ8		1987	08	17.95000	20	01	31.81	-12	29	59.0	010

1987	QJ8		1987	08	17.96042	20	01	31.32	-12	29	55.2	010
1987	QK8	*	1987	08	17.92917	20	03	04.21	-14	45	36.6	010
1987	QK8		1987	08	17.95000	20	03	03.51	-14	45	44.2	010
1987	QK8		1987	08	17.96042	20	03	03.17	-14	45	47.5	010
1987	QL8	*	1987	08	17.92917	20	04	36.95	-12	27	27.7	010
1987	QL8		1987	08	17.95000	20	04	36.00	-12	27	24.7	010
1987	QL8		1987	08	17.96042	20	04	35.41	-12	27	23.0	010
1987	QM8	*	1987	08	17.92917	20	05	19.54	-13	21	48.3	010
1987	QM8		1987	08	17.95000	20	05	19.07	-13	21	55.4	010
1987	QM8		1987	08	17.96042	20	05	18.65	-13	21	59.9	010
1987	QN8	*	1987	08	17.92917	20	07	21.86	-10	59	12.8	010
1987	QN8		1987	08	17.95000	20	07	21.23	-10	59	16.8	010
1987	QN8		1987	08	17.96042	20	07	20.76	-10	59	18.5	010
1987	QO8	*	1987	08	17.92917	20	07	53.92	-12	13	58.8	010
1987	QO8		1987	08	17.95000	20	07	53.19	-12	14	00.6	010
1987	QO8		1987	08	17.96042	20	07	52.70	-12	14	03.6	010
1987	QP8	*	1987	08	17.92917	20	08	52.40	-10	10	09.4	010
1987	QP8		1987	08	17.95000	20	08	51.40	-10	10	16.0	010
1987	QP8		1987	08	17.96042	20	08	51.05	-10	10	18.7	010
1987	QQ8	*	1987	08	17.92917	20	09	13.65	-11	09	21.6	010
1987	QQ8		1987	08	17.96042	20	09	12.17	-11	09	31.8	010
1987	QR8	*	1987	08	17.92917	20	11	18.44	-12	49	09.3	010
1987	QR8		1987	08	17.95000	20	11	17.60	-12	49	16.7	010
1987	QR8		1987	08	17.96042	20	11	17.03	-12	49	21.5	010
1987	QS8	*	1987	08	17.92917	20	11	25.29	-13	35	00.9	010
1987	QS8		1987	08	17.95000	20	11	24.54	-13	35	13.8	010
1987	QS8		1987	08	17.96042	20	11	24.12	-13	35	19.9	010
1987	QT8	*	1987	08	17.92917	20	12	43.02	-12	18	32.2	010
1987	QT8		1987	08	17.96042	20	12	41.68	-12	18	33.6	010
1987	QU8	*	1987	08	20.89028	19	55	24.17	-15	58	43.1	010
1987	QU8		1987	08	20.91111	19	55	23.69	-15	58	50.0	010
1987	QV8	*	1987	08	20.89028	20	05	58.72	-18	37	55.6	010
1987	QV8		1987	08	20.91111	20	05	58.17	-18	38	07.7	010
1987	QW8	*	1987	08	20.89028	20	07	50.12	-15	05	37.3	010
1987	QW8		1987	08	20.91111	20	07	49.32	-15	05	42.1	010
1987	QX8	*	1987	08	20.89028	20	09	48.86	-16	10	54.1	010
1987	QX8		1987	08	20.91111	20	09	48.14	-16	10	56.4	010
1987	ST1		1987	09	21.98403	00	05	36.14	+15	15	02.9	010
1987	ST1		1987	09	22.01528	00	05	34.79	+15	14	57.1	010
1987	SU1		1987	09	21.98403	00	06	20.89	+13	37	24.7	010
1987	SU1		1987	09	22.01528	00	06	19.28	+13	37	12.1	010
1987	SD4		1987	09	21.98403	00	15	11.22	+17	08	02.8	010
1987	SD4		1987	09	22.01528	00	15	09.41	+17	07	57.1	010
1987	SK7	*	1987	09	18.00347	00	17	24.99	-13	39	51.5	E 010
1987	SK7		1987	09	18.02431	00	17	23.96	-13	39	59.7	E 010
1987	SK7		1987	09	18.03125	00	17	23.48	-13	40	03.3	E 010
1987	SK7		1987	09	18.03819	00	17	23.19	-13	40	06.4	010
1987	SL7	*	1987	09	18.00347	00	17	37.67	-14	18	27.4	E 010
1987	SL7		1987	09	18.03819	00	17	36.02	-14	18	38.1	E 010
1987	SM7	*	1987	09	18.00347	00	17	46.20	-14	54	53.8	E 010
1987	SM7		1987	09	18.02431	00	17	45.35	-14	55	03.9	E 010
1987	SM7		1987	09	18.03125	00	17	45.08	-14	55	05.9	E 010
1987	SM7		1987	09	18.03819	00	17	44.77	-14	55	09.6	E 010
1987	SN7	*	1987	09	18.00347	00	21	52.87	-14	04	53.4	010
1987	SN7		1987	09	18.02431	00	21	52.09	-14	05	04.7	010
1987	SN7		1987	09	18.03472	00	21	51.52	-14	05	11.9	010
1987	SO7	*	1987	09	18.00347	00	22	12.39	-13	20	58.8	010
1987	SO7		1987	09	18.02431	00	22	11.45	-13	21	07.5	010
1987	SO7		1987	09	18.03125	00	22	11.18	-13	21	09.7	010

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1987 SO7    1987 09 18.03819  00 22 10.85  -13 21 12.4                    010
1987 SP7  * 1987 09 18.00347  00 23 18.07  -13 27 41.2                 W 010
1987 SP7    1987 09 18.02431  00 23 16.89  -13 27 46.5                 W 010
1987 SP7    1987 09 18.03125  00 23 16.38  -13 27 47.6                 W 010
1987 SP7    1987 09 18.03819  00 23 16.12  -13 27 49.3                 W 010
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1987 SQ7    1987 09 18.02431  00 24 35.63  -12 56 32.4                   010
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1987 SR7    1987 09 18.02431  00 25 22.38  -15 40 15.1                   010
1987 SR7    1987 09 18.03125  00 25 22.10  -15 40 16.8                   010
1987 SR7    1987 09 18.03819  00 25 21.78  -15 40 19.7                   010
1987 SR7    1987 09 19.01319  00 24 38.55  -15 46 12.8                   010
1987 SR7    1987 09 19.03403  00 24 37.70  -15 46 18.5                   010
1987 SS7  * 1987 09 18.00347  00 25 35.24  -14 27 09.5                 p 010
1987 SS7    1987 09 18.02431  00 25 34.21  -14 27 09.5                 p 010
1987 ST7  * 1987 09 18.00347  00 25 55.41  -15 07 43.7                   010
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1987 ST7    1987 09 18.03472  00 25 54.14  -15 07 54.4                   010
1987 SU7  * 1987 09 18.00347  00 28 01.53  -12 59 00.8                   010
1987 SU7    1987 09 18.02431  00 28 00.43  -12 59 03.5                   010
1987 SU7    1987 09 18.03125  00 28 00.02  -12 59 04.4                   010
1987 SU7    1987 09 18.03819  00 27 59.61  -12 59 06.2                   010
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1987 SV7    1987 09 18.02431  00 29 39.58  -14 18 41.5                   010
1987 SV7    1987 09 18.03125  00 29 39.09  -14 18 41.7                   010
1987 SV7    1987 09 18.03819  00 29 38.67  -14 18 43.8                   010
1987 SW7  * 1987 09 18.00347  00 30 47.75  -13 10 07.2                   010
1987 SW7    1987 09 18.02431  00 30 46.73  -13 10 11.9                   010
1987 SW7    1987 09 18.03472  00 30 46.07  -13 10 14.6                   010
1987 SX7  * 1987 09 18.00347  00 31 05.99  -17 13 20.6                   010
1987 SX7    1987 09 18.02431  00 31 05.18  -17 13 27.1                   010
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1987 SY7    1987 09 18.03472  00 32 14.18  -13 27 40.6                 p 010
1987 SZ7  * 1987 09 18.00347  00 32 26.77  -13 18 44.7                   010
1987 SZ7    1987 09 18.02431  00 32 25.56  -13 18 49.4                   010
1987 SZ7    1987 09 18.03125  00 32 25.19  -13 18 50.6                   010
1987 SZ7    1987 09 18.03819  00 32 24.80  -13 18 52.5                   010
1987 SA8  * 1987 09 18.00347  00 33 40.95  -12 12 18.3                   010
1987 SA8    1987 09 18.02431  00 33 39.97  -12 12 26.0                   010
1987 SB8  * 1987 09 18.00347  00 36 00.04  -12 39 10.2                   010
1987 SB8    1987 09 18.02431  00 35 59.34  -12 39 16.9                   010
1987 SC8  * 1987 09 18.00347  00 37 44.05  -13 46 30.4                   010
1987 SC8    1987 09 18.02431  00 37 43.13  -13 46 36.2                   010
1987 SC8    1987 09 18.03125  00 37 42.78  -13 46 38.1                   010
1987 SC8    1987 09 18.03819  00 37 42.47  -13 46 40.3                   010
1987 SD8  * 1987 09 18.02431  00 17 25.51  -17 56 21.3                 E 010
1987 SD8    1987 09 18.03125  00 17 25.08  -17 56 23.9                 E 010
1987 SE8  * 1987 09 18.87430  21 08 14.96  -01 36 38.1                 E 010
1987 SE8    1987 09 18.89514  21 08 14.74  -01 36 50.1                 E 010
1987 SE8    1987 09 18.90555  21 08 14.65  -01 36 55.0                 E 010
1987 SF8  * 1987 09 18.87430  21 20 01.95  -02 30 03.1                   010
1987 SF8    1987 09 18.89514  21 20 01.72  -02 30 09.9                   010
1987 SF8    1987 09 18.90555  21 20 01.54  -02 30 14.8                   010
1987 SG8  * 1987 09 18.87430  21 21 31.39  -03 38 03.4                   010
1987 SG8    1987 09 18.89514  21 21 31.09  -03 38 04.5                   010
1987 SG8    1987 09 18.90555  21 21 30.83  -03 38 05.2                   010
1987 SH8  * 1987 09 18.87430  21 22 09.67  +00 43 35.1                   010
1987 SH8    1987 09 18.90555  21 22 08.43  +00 43 30.5                   010
1987 SJ8  * 1987 09 18.87430  21 24 01.21  -01 16 51.3                   010
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1987	SJ8		1987	09	18.89514	21	24	00.76	-01	16	58.1	010
1987	SJ8		1987	09	18.90555	21	24	00.54	-01	17	02.4	010
1987	SK8	*	1987	09	19.01319	00	06	05.68	-19	32	51.2	E 010
1987	SK8		1987	09	19.03403	00	06	05.01	-19	32	57.7	E 010
1987	SL8	*	1987	09	19.01319	00	07	07.57	-19	24	24.1	E 010
1987	SL8		1987	09	19.03403	00	07	06.95	-19	24	38.0	E 010
1987	SM8	*	1987	09	19.01319	00	07	41.18	-19	18	20.8	E 010
1987	SM8		1987	09	19.03403	00	07	40.52	-19	18	27.1	E 010
1987	SN8	*	1987	09	19.01319	00	08	29.43	-17	17	11.4	010
1987	SN8		1987	09	19.03403	00	08	28.66	-17	17	25.3	010
1987	SO8	*	1987	09	19.01319	00	08	57.06	-17	36	25.4	010
1987	SO8		1987	09	19.03403	00	08	56.01	-17	36	29.7	010
1987	SP8	*	1987	09	19.01319	00	09	17.10	-17	23	26.4	010
1987	SP8		1987	09	19.03403	00	09	16.38	-17	23	34.6	010
1987	SQ8	*	1987	09	19.01319	00	12	20.74	-17	07	16.7	010
1987	SQ8		1987	09	19.03403	00	12	19.71	-17	07	20.5	010
1987	SR8	*	1987	09	19.01319	00	13	06.93	-15	29	41.2	010
1987	SR8		1987	09	19.03403	00	13	06.24	-15	29	59.6	010
1987	SS8	*	1987	09	19.01319	00	14	31.78	-15	34	59.9	010
1987	SS8		1987	09	19.03403	00	14	30.44	-15	34	57.0	010
1987	ST8	*	1987	09	19.01319	00	15	09.73	-16	56	43.0	010
1987	ST8		1987	09	19.03403	00	15	08.45	-16	56	45.6	010
1987	SU8	*	1987	09	19.01319	00	15	16.34	-15	29	25.9	010
1987	SU8		1987	09	19.03403	00	15	15.08	-15	29	28.5	010
1987	SV8	*	1987	09	19.01319	00	16	09.32	-17	52	58.2	010
1987	SV8		1987	09	19.03403	00	16	08.65	-17	53	06.4	010
1987	SW8	*	1987	09	19.01319	00	17	26.24	-18	55	03.5	010
1987	SW8		1987	09	19.03403	00	17	25.19	-18	55	05.5	010
1987	SX8	*	1987	09	19.01319	00	21	05.58	-18	34	11.0	010
1987	SX8		1987	09	19.03403	00	21	04.85	-18	34	13.5	010
1987	SY8	*	1987	09	19.01319	00	24	24.15	-15	38	02.7	010
1987	SY8		1987	09	19.03403	00	24	23.24	-15	38	15.2	010
1987	SZ8	*	1987	09	19.01319	00	24	24.36	-17	27	57.1	010
1987	SZ8		1987	09	19.03403	00	24	23.49	-17	28	04.0	010
1987	SA9	*	1987	09	19.01319	00	27	02.24	-18	07	59.2	010
1987	SA9		1987	09	19.03403	00	27	01.35	-18	08	05.3	010
1987	SB9	*	1987	09	21.98403	00	11	01.74	+14	33	50.1	010
1987	SB9		1987	09	22.01528	00	11	00.68	+14	33	25.8	010
1987	SC9	*	1987	09	21.98403	00	12	46.06	+17	58	14.7	010
1987	SC9		1987	09	22.01528	00	12	44.18	+17	58	11.5	010
1987	SD9	*	1987	09	21.98403	00	13	15.03	+14	05	12.8	010
1987	SD9		1987	09	22.01528	00	13	13.66	+14	05	06.5	010
1987	SE9	*	1987	09	21.98403	00	16	11.33	+13	46	56.6	010
1987	SE9		1987	09	22.01528	00	16	09.92	+13	46	53.4	010
1987	SF9	*	1987	09	21.98403	00	19	27.64	+18	07	20.9	010
1987	SF9		1987	09	22.01528	00	19	26.23	+18	07	10.5	010
1987	SG9	*	1987	09	21.98403	00	25	15.46	+15	26	45.6	010
1987	SG9		1987	09	22.01528	00	25	14.16	+15	26	30.2	010
1987	SH9	*	1987	09	23.92569	00	01	14.01	+06	36	06.7	010
1987	SH9		1987	09	23.94722	00	01	13.44	+06	36	05.7	010
1987	SH9		1987	09	23.95903	00	01	13.14	+06	36	05.3	010
1987	SJ9	*	1987	09	23.92569	00	02	45.87	+09	23	36.5	010
1987	SJ9		1987	09	23.94722	00	02	45.50	+09	23	25.7	010
1987	SJ9		1987	09	23.95903	00	02	45.23	+09	23	18.4	010
1987	SK9	*	1987	09	23.92569	00	09	02.58	+09	30	56.0	010
1987	SK9		1987	09	23.94722	00	09	01.77	+09	30	50.1	010
1987	SK9		1987	09	23.95903	00	09	01.23	+09	30	45.2	010
1987	SL9	*	1987	09	23.92569	00	09	40.71	+11	11	12.0	010
1987	SL9		1987	09	23.94722	00	09	39.79	+11	11	05.0	010

1987	SL9		1987	09	23.95903	00	09	39.12	+11	11	00.3	010
1987	SM9	*	1987	09	23.92569	23	53	38.85	+09	31	59.8	010
1987	SM9		1987	09	23.94722	23	53	38.24	+09	31	52.6	010
1987	SM9		1987	09	23.95903	23	53	37.90	+09	31	49.2	010
1987	SN9	*	1987	09	23.92569	23	57	36.84	+07	00	44.6	010
1987	SN9		1987	09	23.94722	23	57	36.54	+07	00	30.3	010
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39			1987	10	23.86875	23	34	43.45	-10	55	56.4	010
39			1987	10	23.90000	23	34	43.14	-10	56	01.9	010
49			1987	08	20.89028	20	02	13.55	-18	38	10.9	010
49			1987	08	20.91111	20	02	12.98	-18	38	12.5	010
168			1987	08	17.92917	20	12	49.60	-13	22	00.4	010
168			1987	08	17.95000	20	12	49.00	-13	22	03.5	010
168			1987	08	17.96042	20	12	48.55	-13	22	06.0	010
283			1987	08	20.89028	20	11	24.00	-18	39	08.1	010
283			1987	08	20.91111	20	11	23.46	-18	39	07.2	010
476			1987	08	17.92917	20	05	56.45	-12	44	22.9	010
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476			1987	08	17.96042	20	05	55.09	-12	44	21.5	010
552			1987	09	21.98403	00	14	43.66	+13	27	17.3	010
552			1987	09	22.01528	00	14	42.50	+13	27	09.6	010
552			1987	10	23.92569	23	53	39.48	+10	35	37.1	010
552			1987	10	23.94722	23	53	38.76	+10	35	29.1	010
552			1987	10	23.95903	23	53	38.33	+10	35	24.1	010
733			1987	09	21.98403	00	14	00.54	+14	39	24.2	010
733			1987	09	22.01528	00	13	59.11	+14	39	22.2	010
871			1987	08	20.89028	20	07	58.08	-16	53	47.3	010
871			1987	08	20.91111	20	07	57.36	-16	53	52.8	010
891			1987	09	19.01319	00	09	53.79	-20	15	54.3	010
891			1987	09	19.03403	00	09	53.12	-20	16	01.0	010
961			1987	10	23.86875	23	42	38.93	-08	13	08.6	010
961			1987	10	23.88958	23	42	38.39	-08	13	05.3	010
961			1987	10	23.90000	23	42	37.95	-08	13	02.4	010
1194			1987	08	06.10139	23	02	18.04	+05	43	11.6	010
1194			1987	08	06.11875	23	02	17.60	+05	43	12.7	010
1194			1987	08	06.12847	23	02	17.18	+05	43	14.3	010
1323			1987	09	19.01319	00	18	36.29	-19	28	54.5	010
1323			1987	09	19.03403	00	18	35.62	-19	28	57.6	010
1336			1987	10	23.86875	23	43	52.74	-06	50	49.6	010
1336			1987	10	23.88958	23	43	52.28	-06	50	50.8	010
1336			1987	10	23.90000	23	43	51.85	-06	50	50.7	010
1681			1987	07	29.08402	22	06	51.49	-19	40	36.8	010
1681			1987	07	29.10486	22	06	50.77	-19	40	43.4	010
1692			1987	08	20.89028	20	01	40.52	-16	43	15.9	010
1692			1987	08	20.91111	20	01	39.95	-16	43	19.0	010
1842			1987	10	23.86875	23	35	13.51	-08	08	30.7	010
1842			1987	10	23.90000	23	35	13.01	-08	08	33.9	010
2116			1987	08	17.92917	20	13	17.89	-10	14	29.1	010
2116			1987	08	17.95000	20	13	17.07	-10	14	36.6	010
2116			1987	08	17.96042	20	13	16.52	-10	14	41.5	010
2494			1987	09	18.87430	21	11	46.04	-03	43	41.1	M 010
2494			1987	09	18.89514	21	11	45.73	-03	43	43.5	M 010
2494			1987	09	18.90555	21	11	45.50	-03	43	45.0	M 010
2575			1987	10	23.92569	00	02	13.81	+06	52	37.7	010
2575			1987	10	23.94722	00	02	13.03	+06	52	32.2	010
2575			1987	10	23.95903	00	02	12.58	+06	52	29.2	010
2633			1987	07	29.08402	22	08	55.28	-17	57	02.7	010
2633			1987	07	29.10486	22	08	54.72	-17	57	08.2	010
2658			1987	09	18.87430	21	19	26.50	-04	03	23.4	M 010

2658		1987 09 18.89514	21	19	26.16	-04	03	27.7		M	010
2687		1987 09 18.00347	00	21	26.07	-12	58	32.7			010
2687		1987 09 18.02431	00	21	24.79	-12	58	37.3			010
2687		1987 09 18.03125	00	21	24.34	-12	58	37.5			010
2687		1987 09 18.03819	00	21	23.90	-12	58	39.6			010
2969		1987 08 20.89028	20	05	48.79	-18	01	15.1			010
2969		1987 08 20.91111	20	05	48.24	-18	01	17.9			010
3045		1987 07 29.08402	22	08	02.99	-16	42	00.8			010
3045		1987 07 29.10486	22	08	02.27	-16	42	04.5			010
3119		1987 10 23.86875	23	42	43.32	-09	07	24.0			010
3119		1987 10 23.90000	23	42	42.50	-09	07	26.4			010
3452		1987 10 23.86875	23	29	13.33	-06	39	12.2			010
3452		1987 10 23.90000	23	29	12.64	-06	39	12.3			010

026 Zimmerwald
P. Wild, Astronomisches Institut der Universitat, Sidlerstrasse 5, CH-3012 Berne, Switzerland
Observer P. Wild
Measurer U. Hugentobler
0.4-m Schmidt telescope

1987 SB2		1987 10 01.03368	01	13	49.18	+03	42	35.4	15		026

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

1987 RG		1987 10 14.80903	00	20	57.31	-03	22	43.8	16.6		046
1987 RG		1987 10 14.82315	00	20	56.66	-03	22	44.5			046
1987 TE	*	1987 10 14.84549	01	07	59.83	+00	49	38.8	16.6		046
1987 TE		1987 10 14.85961	01	07	59.10	+00	49	34.0			046
1987 TF	*	1987 10 14.84549	01	11	16.91	+03	15	01.6	16.7		046
1987 TF		1987 10 14.85961	01	11	16.27	+03	14	56.1			046
1987 TG	*	1987 10 14.84549	01	12	46.79	+03	02	26.7	16.4		046
1987 TG		1987 10 14.85961	01	12	45.86	+03	02	29.5			046
750		1987 10 14.80903	00	25	29.67	-03	06	04.7			046
750		1987 10 14.82315	00	25	28.82	-03	06	07.9			046

054 Brorfelde
H. G. Fogh Olsen, Copenhagen University Observatory, Brorfelde, DK-4340 Tollose, Denmark
Observers K. Augustesen, P. Jensen
Measurer P. Jensen
0.45-m Schmidt
Observations in part in association with INAS

1987 SP3		1987 09 29.90762	22	36	43.29	-01	08	59.6	18.5	V	054
1987 SP3		1987 09 29.92498	22	36	42.56	-01	09	06.2			054
1987 SQ3		1987 09 29.90762	22	37	36.01	-01	38	02.2			054
1987 SQ3		1987 09 29.92498	22	37	35.26	-01	38	06.0			054
1987 SQ3		1987 10 01.89107	22	36	22.03	-01	40	46.6			054
1987 SC5		1987 09 29.90762	22	37	14.47	-02	00	09.9			054
1987 SC5		1987 09 29.92498	22	37	13.86	-02	00	18.3			054
1987 SC5		1987 10 01.89107	22	36	01.63	-02	13	37.5			054
1987 UF1	*	1987 10 27.00307	02	11	53.24	+03	18	13.1	16.0		054
1987 UF1		1987 10 27.02043	02	11	52.18	+03	18	09.6			054
1987 UG1	*	1987 10 27.00307	02	24	54.09	+04	08	48.6	16.5		054
1987 UG1		1987 10 27.02043	02	24	53.04	+04	08	42.5			054
51		1987 10 27.00307	02	16	59.38	+03	02	40.6			054

51		1987	10	27.02043	02	16	58.36	+03 02 30.9		054
213		1987	10	27.00307	02	15	42.82	+02 31 19.1		054
213		1987	10	27.02043	02	15	41.89	+02 31 13.8		054
1114		1987	09	29.90762	22	35	50.15	-01 06 26.8		054
1114		1987	09	29.92498	22	35	49.61	-01 06 36.8		054
1114		1987	10	01.89107	22	34	56.31	-01 21 00.7		054
1167		1987	10	01.89107	22	31	56.51	-01 59 02.3		054
2365		1987	10	01.89107	22	26	38.54	-01 59 02.6		054

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1967	UV	1987	11	13.74306	23	52	07.46	-05 36 55.8		071
1967	UV	1987	11	13.77566	23	52	07.29	-05 36 49.3		071
1967	UV	1987	11	13.79529	23	52	07.23	-05 36 45.6		071
1967	UV	1987	11	15.81860	23	52	10.25	-05 28 38.4		071
1967	UV	1987	11	15.83943	23	52	10.27	-05 28 31.9		071
1967	UV	1987	11	15.85938	23	52	10.36	-05 28 27.0		071
1967	UV	1987	11	16.76169	23	52	14.42	-05 24 34.7		071
1967	UV	1987	11	16.78495	23	52	14.52	-05 24 28.9		071

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

1981	EM	1987	09	26.25694	23	54	52.06	+00 53 13.9		293
1981	EM	1987	09	26.27083	23	54	51.18	+00 53 14.9		293
1983	QF	1987	09	26.34514	00	30	48.43	-08 32 10.9		293
1983	QF	1987	09	26.35556	00	30	47.87	-08 32 20.8		293
1184		1987	09	26.25694	23	52	34.08	+00 46 02.8		293
1184		1987	09	26.27083	23	52	33.32	+00 46 02.1		293
1371		1987	09	26.25694	23	51	40.22	+01 42 05.2		293
1371		1987	09	26.27083	23	51	39.84	+01 41 57.7		293

372 Geisei
T. Seki, Kamimachi 2-9-35, Kochi, Japan
0.60-m reflector
Copied from Nihondaira Obs. Circ.

1987	UZ		1987	10	27.70174	00	58	45.50	+08 44 35.9	18	d	372
1987	UZ		1987	10	27.71424	00	58	44.80	+08 44 38.0		d	372
1987	UM1	*	1987	10	27.70174	00	56	48.49	+09 03 12.6	16		372
1987	UM1		1987	10	27.71424	00	56	47.61	+09 03 04.7			372
1987	UM1		1987	10	28.76789	00	55	54.30	+08 55 51.6			372
1987	US1	*	1987	10	28.73889	01	03	10.88	+08 07 28.2	16.5		372
1987	US1		1987	10	28.75000	01	03	10.49	+08 07 27.3			372
1987	VE	*	1987	11	11.52083	00	43	15.53	+08 55 57.7	18		372
1987	VE		1987	11	11.53194	00	43	15.43	+08 56 00.2			372
248			1987	11	11.52083	00	42	14.24	+08 53 04.2	16		372
248			1987	11	11.53194	00	42	14.05	+08 53 01.1			372
615			1987	11	13.53333	00	53	56.11	+06 46 38.5	16.5		372
615			1987	11	13.54479	00	53	55.29	+06 46 37.2			372
615			1987	11	16.50312	00	52	36.23	+06 40 11.4	16.5		372
3233			1987	11	11.52483	00	42	09.71	+09 17 37.2	17		372
3233			1987	11	11.53194	00	42	09.43	+09 17 35.9			372
3233			1987	11	13.49931	00	41	25.27	+09 13 29.3	17		372
3233			1987	11	13.51666	00	41	24.87	+09 13 27.5			372
3233			1987	11	16.55139	00	40	32.46	+09 08 23.6	17.5		372

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

1984 YY		1987 11 11.43507	02 23 39.19	+13 16 47.2			376
1984 YY		1987 11 11.48125	02 23 36.26	+13 16 38.3			376

386 Yatsugatake-Kobuchizawa
O. Muramatsu, 119-1, 2-8 Sakurazutsumi, Musashino-city, Tokyo 150, Japan
Observers M. Inoue, O. Muramatsu
0.31-m reflector

1987 WE	*	1987 11 22.60868	05 07 46.78	+28 14 07.5		16.0	386
1987 WE		1987 11 22.63924	05 07 44.50	+28 14 19.5		16.0	386

392 JCPM Sapporo Station
H. Kaneda, 8-8-B210, 10 Chome, Kashiwaoka, Makomanai,
Minami-Ku, Sapporo 005, Japan

1987 US		1987 11 14.46498	01 52 29.5	+17 11 49		15.5	392
1987 US		1987 11 14.47326	01 52 29.3	+17 11 43			392
1987 UB1		1987 11 14.46498	01 52 48.09	+17 03 24.0		15	392
1987 UB1		1987 11 14.47326	01 52 47.78	+17 03 24.7			392
1987 UB1		1987 11 15.44086	01 52 06.10	+17 03 06.6			392

399 Kushiro
H. Kaneda, 8-8-B210, 10 Chome, Kashiwaoka, Makomanai,
Minami-Ku, Sapporo 005, Japan
Observer S. Ueda
Measurer H. Kaneda
0.16-m reflector

1987 UJ		1987 10 25.65560	02 01 58.9	+16 31 27		16.5	399
1987 UJ		1987 10 25.67297	02 01 57.7	+16 31 23			399
1987 UJ		1987 10 25.68964	02 01 56.7	+16 31 20			399
1987 UJ		1987 10 31.76134	01 56 15.9	+16 05 33		16.5	399
1987 UJ		1987 10 31.77639	01 56 14.9	+16 05 30			399
1987 UJ		1987 10 31.79097	01 56 14.1	+16 05 25			399
1987 US		1987 10 28.52512	02 06 07.58	+18 46 17.8		15.5	399
1987 US		1987 10 28.54051	02 06 06.74	+18 46 14.3			399
1987 US		1987 10 28.55706	02 06 05.72	+18 46 08.9			399
1987 US		1987 10 31.72743	02 03 16.35	+18 29 28.3		15.5	399
1987 US		1987 10 31.74213	02 03 15.39	+18 29 24.2			399
1987 US		1987 11 13.57310	01 53 04.26	+17 16 47.7		15.5	399
1987 US		1987 11 13.61713	01 53 02.52	+17 16 32.7			399
1987 UB1		1987 10 31.76134	02 05 00.20	+17 06 43.1		15	399
1987 UB1		1987 10 31.77639	02 04 59.31	+17 06 42.2			399
1987 UB1		1987 10 31.79097	02 04 58.39	+17 06 43.3			399
1987 UB1		1987 11 13.57310	01 53 27.63	+17 03 42.6		15	399
1987 UB1		1987 11 13.61713	01 53 25.49	+17 03 42.4			399
1987 UL1	*	1987 10 21.50556	01 32 11.32	+10 03 29.2		16.5	399
1987 UL1		1987 10 21.52222	01 32 10.40	+10 03 29.7			399
1987 UL1		1987 10 21.53889	01 32 09.51	+10 03 31.1			399
1987 UN1	*	1987 10 28.52512	02 04 59.98	+18 13 38.9		16.5	399
1987 UN1		1987 10 28.54051	02 04 59.18	+18 13 28.0			399
1987 UN1		1987 10 28.55706	02 04 58.36	+18 13 14.6			399
1987 UN1		1987 10 31.76134	02 02 31.4	+17 35 12		16.5	399
1987 UN1		1987 10 31.77639	02 02 30.6	+17 35 03			399
1987 UO1	*	1987 10 28.52512	02 09 04.97	+19 10 21.4		16.5	399
1987 UO1		1987 10 28.54051	02 09 04.29	+19 10 17.0			399
1987 UO1		1987 10 28.55706	02 09 03.51	+19 10 12.3			399
1987 UP1	*	1987 10 28.58290	02 49 12.49	+23 55 54.1		16	399

1987	UP1		1987	10	28.58290	02	49	12.49	+23	55	54.1	16	399
1987	UP1		1987	10	28.59902	02	49	11.53	+23	55	54.3		399
1987	UP1		1987	10	28.59902	02	49	11.53	+23	55	54.3		399
1987	UP1		1987	10	28.61481	02	49	10.66	+23	55	56.0		399
1987	UP1		1987	10	28.61481	02	49	10.66	+23	55	56.0		399
1987	UQ1	*	1987	10	28.58290	02	55	43.62	+21	58	35.2	16	399
1987	UQ1		1987	10	28.59902	02	55	42.77	+21	58	32.5		399
1987	UQ1		1987	10	28.61481	02	55	41.84	+21	58	32.5		399
1987	UR1	*	1987	10	28.58290	02	57	31.25	+21	43	17.6	16	399
1987	UR1		1987	10	28.59902	02	57	30.07	+21	43	15.5		399
1987	UR1		1987	10	28.61481	02	57	29.09	+21	43	16.7		399
1987	UU1	*	1987	10	23.67049	01	25	01.85	+14	12	00.6	16	399
1987	UU1		1987	10	23.68634	01	25	00.73	+14	11	55.6		399
1987	UU1		1987	10	23.70139	01	24	59.65	+14	11	51.5		399
1987	UU1		1987	11	14.43692	01	04	03.3	+12	24	22	16	399
1987	UU1		1987	11	14.45208	01	04	02.8	+12	24	15		399
1987	UU1		1987	11	14.46806	01	04	02.3	+12	24	10		399
1987	UV1	*	1987	10	25.65560	02	02	26.8	+15	44	20	16.5	399
1987	UV1		1987	10	25.67297	02	02	25.8	+15	44	14		399
1987	UV1		1987	10	25.68964	02	02	24.9	+15	44	10		399
1987	UV1		1987	10	31.76134	01	56	33.1	+15	15	18	16.5	399
1987	UV1		1987	10	31.79097	01	56	31.3	+15	15	13		399
1987	UW1	*	1987	10	28.52512	02	16	25.0	+17	36	42	16	399
1987	UW1		1987	10	28.54051	02	16	24.1	+17	36	33		399
1987	UW1		1987	10	28.55706	02	16	23.3	+17	36	22		399
1987	UX1	*	1987	10	28.52512	02	18	47.6	+20	14	58	16	399
1987	UX1		1987	10	28.54051	02	18	46.7	+20	14	51		399
1987	UX1		1987	10	28.55706	02	18	45.7	+20	14	44		399
1987	VB	*	1987	11	14.43692	01	01	40.78	+12	07	24.0	16	399
1987	VC	*	1987	11	15.53889	02	48	09.0	+23	43	06	16.5	399
1987	VD	*	1987	11	15.53889	02	50	13.79	+24	34	49.3	16.5	399
1987	WD	*	1987	11	17.50278	02	17	36.9	+22	37	03	16.5	399

400 Kitami
H. Kaneda, 8-8-B210, 10 Chome, Kashiwaoka, Makomanai,
Minami-Ku, Sapporo 005, Japan
Observer K. Endate
Measurers H. Kaneda, K. Watanabe
0.2-m reflector

1931	TC4		1987	11	15.56389	01	43	32.63	+12	49	42.0	16	400
1931	TC4		1987	11	15.58194	01	43	31.87	+12	49	41.8		400
1931	TC4		1987	11	15.59792	01	43	31.09	+12	49	41.3		400
1987	UA1		1987	10	31.64421	01	51	32.76	+19	38	43.0	16	400
1987	UA1		1987	10	31.65799	01	51	32.04	+19	38	32.5		400
1987	UA1		1987	10	31.67049	01	51	31.39	+19	38	23.3		400
1987	UQ1		1987	11	13.59792	02	39	52.41	+21	00	00.8	15.5	400
1987	UQ1		1987	11	13.61458	02	39	51.40	+20	59	55.7		400
1987	UQ1		1987	11	13.62569	02	39	50.72	+20	59	52.4		400
1987	UQ1		1987	11	14.64931	02	38	50.76	+20	55	15.6		400
1987	UQ1		1987	11	14.66528	02	38	49.77	+20	55	12.0		400
1987	UQ1		1987	11	14.67639	02	38	49.08	+20	55	07.9		400
1987	UQ1		1987	11	15.65590	02	37	52.36	+20	50	39.4		400
1987	UQ1		1987	11	15.66806	02	37	51.68	+20	50	36.1		400
1987	UQ1		1987	11	15.68090	02	37	50.90	+20	50	32.1		400
1987	UR1		1987	11	13.59792	02	39	08.71	+21	14	12.6	16	400
1987	UR1		1987	11	13.61458	02	39	07.49	+21	14	10.0		400
1987	UR1		1987	11	13.62569	02	39	06.81	+21	14	07.6		400
1987	UR1		1987	11	14.64931	02	37	58.71	+21	11	30.9		400
1987	UR1		1987	11	14.66528	02	37	57.71	+21	11	29.4		400

1987	UR1		1987 11 14.67639	02 37 56.86	+21 11 26.8					400
1987	UR1		1987 11 15.65590	02 36 52.46	+21 08 53.5					400
1987	UR1		1987 11 15.66806	02 36 51.57	+21 08 52.0					400
1987	UR1		1987 11 15.68090	02 36 50.73	+21 08 49.4					400
1987	VA	*	1987 11 15.62153	01 50 38.11	+13 33 03.7			15		400
1987	VA		1987 11 15.63681	01 50 37.36	+13 33 05.1					400
1256			1987 11 14.53194	01 46 49.85	+13 20 26.5			15		400
1256			1987 11 14.55139	01 46 49.18	+13 20 23.1					400
1256			1987 11 14.56736	01 46 48.58	+13 20 20.5					400
1256			1987 11 15.56389	01 46 17.48	+13 16 16.0			15		400
1256			1987 11 15.58194	01 46 16.89	+13 16 12.9					400
1256			1987 11 15.59792	01 46 16.37	+13 16 06.9					400

493 Calar Alto
H. Weiland, Radioastronomisches Institut der Universitat Bonn,
Auf dem Hugel 71, D-53 Bonn, Federal Republic of Germany
Observers D. Engels, F. Toussaint
Measurers H. Weiland, E. Jatzen, M. Geffert
0.80-m Schmidt
AGK3

1986	VU8	*	1986 11 03.90069	02 39 19.28	+00 17 47.9					493
1986	VU8		1986 11 03.94444	02 39 17.06	+00 17 42.0					493

552 San Vittore
E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy
Observers C. Vacchi, G. Sassi
Measurers C. Vacchi, V. Goretti, E. Colombini
AGK3, SAOC

1983	VE		1987 08 30.94236	22 58 11.58	+00 11 09.4			16.5	E	552
1983	VE		1987 08 30.96319	22 58 10.57	+00 11 02.9				E	552
1987	UD1		1987 10 19.93958	01 41 15.50	+08 57 23.3			17.0		552
1987	UD1		1987 10 19.97222	01 41 13.23	+08 57 11.8					552
1987	UK1	*	1987 10 19.93958	01 41 20.02	+08 32 11.0			17.5		552
1987	UK1		1987 10 19.97222	01 41 17.29	+08 32 03.5					552
2365			1987 10 18.86181	22 20 14.12	-02 59 39.3			16.9		552
2365			1987 10 18.90208	22 20 13.73	-02 59 46.5					552
2365			1987 10 19.87014	22 20 04.73	-03 02 16.9			17.0		552
2365			1987 10 19.91181	22 20 04.37	-03 02 22.5					552

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

1985	JV1		1987 11 18.89653	03 28 15.30	+17 07 59.3			16.0		567
1985	JV1		1987 11 18.91180	03 28 14.37	+17 07 58.4					567
1987	WA	*	1987 11 18.89653	03 30 51.67	+17 42 06.2			17.7		567
1987	WA		1987 11 18.91180	03 30 50.75	+17 42 05.3					567
1987	WA		1987 11 20.87847	03 28 50.98	+17 40 47.5			17.7		567
1987	WA		1987 11 20.89792	03 28 49.93	+17 40 46.1					567
1987	WA		1987 11 20.92014	03 28 48.73	+17 40 44.5					567
1987	WA		1987 11 21.89236	03 27 49.77	+17 40 09.4					567
1987	WA		1987 11 21.90903	03 27 48.85	+17 40 08.3					567
1987	WB	*	1987 11 18.89653	03 32 28.94	+18 24 38.1			16.9		567
1987	WB		1987 11 18.91180	03 32 28.13	+18 24 31.3					567
1987	WB		1987 11 20.87847	03 30 49.56	+18 13 27.5			16.9		567
1987	WB		1987 11 20.89792	03 30 48.50	+18 13 20.6					567
1987	WB		1987 11 20.92014	03 30 47.42	+18 13 13.1					567

1987	WB	1987	11	21.89236	03	29	58.68	+18 07 43.3		567
1987	WB	1987	11	21.90903	03	29	57.70	+18 07 36.5		567
798		1987	11	17.90000	03	09	35.71	+13 41 19.7		567
798		1987	11	17.91666	03	09	34.88	+13 41 13.5	15.0	567
1157		1987	10	31.95069	03	15	02.41	+31 21 30.5	16.2	567
1157		1987	10	31.97153	03	15	01.34	+31 21 27.9		567
1157		1987	10	31.98750	03	15	00.49	+31 21 26.5		567
1289		1987	11	18.89653	03	29	10.55	+17 15 22.1	15.2	567
1289		1987	11	18.91180	03	29	09.76	+17 15 18.1		567
1289		1987	11	20.87847	03	27	24.61	+17 08 20.8	15.2	567
1289		1987	11	20.89792	03	27	23.56	+17 08 15.3		567
1289		1987	11	20.92014	03	27	22.25	+17 08 09.9		567
1576		1987	11	18.89653	03	30	47.24	+17 33 53.7	15.2	567
1576		1987	11	18.91180	03	30	46.47	+17 33 51.5		567
1576		1987	11	20.87847	03	29	06.87	+17 27 40.3	15.0	567
1576		1987	11	20.89792	03	29	05.84	+17 27 36.2		567
1576		1987	11	20.92014	03	29	04.69	+17 27 32.1		567
1576		1987	11	21.89236	03	28	15.85	+17 24 31.9		567
1576		1987	11	21.90903	03	28	14.79	+17 24 28.2		567
2685		1987	11	17.90000	03	10	38.99	+12 01 54.8		567
2685		1987	11	17.91666	03	10	37.99	+12 01 46.8	16.8	567
3179		1987	11	18.93263	03	50	29.09	+17 43 07.4	17.6	567
3179		1987	11	18.94792	03	50	28.37	+17 43 06.4		567
3179		1987	11	20.93958	03	48	45.91	+17 36 50.2	17.6	567
3179		1987	11	21.92847	03	47	54.61	+17 33 44.3		567
3179		1987	11	21.94375	03	47	53.89	+17 33 42.2		567
3409		1987	11	18.89653	03	27	58.02	+17 57 00.2	16.6	567
3409		1987	11	18.91180	03	27	57.16	+17 56 57.3		567

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

665		1987	10	17.76181	23	51	53.65	+20 33 30.3		573
665		1987	10	17.76563	23	51	53.50	+20 33 29.3		573
665		1987	10	17.76962	23	51	53.34	+20 33 28.5		573
665		1987	10	18.76204	23	51	15.76	+20 27 49.6		573
665		1987	10	18.76759	23	51	15.53	+20 27 46.9		573
665		1987	10	18.77326	23	51	15.31	+20 27 44.2		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

1927	UE	1987	10	19.22326	22	45	33.10	+02 03 03.7		657
1983	XM1	1987	09	22.30111	02	08	47.03	+24 20 48.1		657
1983	XM1	1987	09	22.37333	02	08	45.21	+24 20 59.3		657
1983	XM1	1987	09	23.35528	02	08	19.34	+24 22 45.4		657
1983	XM1	1987	09	23.41986	02	08	17.50	+24 22 51.2		657
1983	XM1	1987	09	28.48681	02	05	37.08	+24 28 46.9		657
1983	XM1	1987	09	29.37681	02	05	04.92	+24 29 13.7		657
1983	XM1	1987	10	16.30875	01	51	43.38	+24 03 47.9		657
1984	YY	1987	09	29.39764	02	58	43.89	+15 19 36.6		657
1984	YY	1987	10	01.39729	02	58	14.90	+15 18 19.8		657
1984	YY	1987	10	01.43549	02	58	14.32	+15 18 16.8		657
42		1987	10	22.44035	07	42	28.72	+22 43 13.4		657
161		1987	09	29.26569	00	25	48.24	-01 23 33.7		657
769		1987	10	24.25069	00	29	26.54	-01 42 43.6		657
1679		1987	09	29.26569	00	28	35.32	-01 09 31.1		657

675 Palomar
E. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A. (2)
C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A. (3)
C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands (4)
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A. (6)
A. Maury, Palomar Observatory, Palomar Mountain, CA 92060, U.S.A. (7)
Observers T. Gehrels (4, L), E. Helin (2, S), C. Kowal (6, L), A. Maury (7, L), J. Mueller (7, L), J. Phinney (7, L), D. Schneeberger (2, S), C. Shoemaker (3, S), E. Shoemaker (3, S), S. Singer-Brewster (2, S).
Measurers J. Alu (2), E. Bowell (6), S. J. Bus (6), L. Fisher (2), C. Shoemaker (3), S. Singer-Brewster (2), C. J. van Houten (4), I. van Houten-Groeneveld (4)
1.2-m (L) and 0.46-m (S) Schmidt telescopes

1976 GK2	1977 10 16.27309	01 25 29.45	+06 31 51.5			16.9	4	675
1976 GK2	1977 10 16.33872	01 25 25.30	+06 31 28.8				4	675
1976 GK2	1977 10 17.27552	01 24 28.82	+06 26 10.5				4	675
1976 GK2	1977 10 17.34236	01 24 24.62	+06 25 48.1				4	675
1976 GK2	1977 10 21.39792	01 20 22.33	+06 03 15.9				4	675
1976 GK2	1977 10 21.45799	01 20 18.63	+06 02 54.7				4	675
1976 GK2	1977 10 22.39844	01 19 23.76	+05 57 49.4				4	675
1976 GK2	1977 10 22.45920	01 19 20.06	+05 57 29.5				4	675
1977 RV1	1977 09 08.24584	22 14 22.75	-10 48 55.1			16.8	6	675
1977 RV1	1977 09 09.17222	22 13 54.44	-11 02 11.8				6	675
1977 RY1	1977 09 08.24584	22 24 55.05	-09 07 38.3			16.8	6	675
1977 RY1	1977 09 09.17222	22 24 01.35	-09 06 46.2				6	675
1977 RJ6	1977 10 07.27031	01 18 37.10	+07 10 28.8				4	675
1977 RJ6	1977 10 11.28819	01 14 07.83	+06 55 52.5				4	675
1977 RJ6	1977 10 11.35642	01 14 03.10	+06 55 37.1				4	675
1977 RJ6	1977 10 12.28681	01 13 00.97	+06 52 10.3				4	675
1977 RJ6	1977 10 12.35347	01 12 56.32	+06 51 56.2				4	675
1977 RJ6	1977 10 16.27309	01 08 35.82	+06 37 41.0			17.2	4	675
1977 RJ6	1977 10 16.33872	01 08 31.40	+06 37 26.5				4	675
1977 RJ6	1977 10 17.27552	01 07 30.24	+06 34 07.3				4	675
1977 RJ6	1977 10 17.34236	01 07 25.64	+06 33 54.4				4	675
1977 RJ6	1977 10 21.39792	01 03 07.27	+06 19 56.2				4	675
1977 RJ6	1977 10 21.45799	01 03 03.53	+06 19 44.6				4	675
1977 RJ6	1977 10 22.39844	01 02 05.93	+06 16 39.4				4	675
1977 RJ6	1977 10 22.45920	01 02 02.15	+06 16 26.4				4	675
1977 RY6	1977 10 07.25868	01 00 44.76	+09 40 36.2				4	675
1977 RY6	1977 10 11.27743	00 56 50.02	+09 37 47.8				4	675
1977 RY6	1977 10 11.34375	00 56 46.03	+09 37 44.1				4	675
1977 RY6	1977 10 12.27587	00 55 51.96	+09 36 58.2				4	675
1977 RY6	1977 10 12.34271	00 55 47.92	+09 36 54.6				4	675
1977 RY6	1977 10 16.26233	00 52 03.69	+09 33 19.2			16.9	4	675
1977 RY6	1977 10 16.32795	00 51 59.74	+09 33 15.3				4	675
1977 RY6	1977 10 21.40868	00 47 22.96	+09 28 21.6				4	675
1977 RY6	1977 10 21.46910	00 47 19.74	+09 28 18.3				4	675
1977 RB7	1977 10 07.25868	01 07 38.45	+10 07 10.8				4	675
1977 RB7	1977 10 11.27743	01 04 13.67	+09 45 38.2				4	675
1977 RB7	1977 10 11.34375	01 04 10.03	+09 45 14.8				4	675
1977 RB7	1977 10 12.27587	01 03 22.53	+09 40 07.1				4	675
1977 RB7	1977 10 12.34271	01 03 18.94	+09 39 44.4				4	675
1977 RB7	1977 10 16.26233	01 00 00.26	+09 17 56.5			17.0	4	675
1977 RB7	1977 10 16.32795	00 59 56.82	+09 17 34.9				4	675
1977 RB7	1977 10 17.26458	00 59 10.05	+09 12 21.7				4	675
1977 RB7	1977 10 17.33177	00 59 06.57	+09 12 00.0				4	675

1977	RB7	1977	10	21.40868	00	55	47.22	+08	49	19.1		4 675
1977	RB7	1977	10	21.46910	00	55	44.29	+08	48	59.4		4 675
1977	RB7	1977	10	22.41528	00	54	59.39	+08	43	49.1		4 675
1977	RB7	1977	10	22.46962	00	54	56.81	+08	43	31.5		4 675
1977	RD7	1977	10	07.25868	01	06	24.29	+10	23	09.1		4 675
1977	RD7	1977	10	11.27743	01	02	29.29	+10	00	42.5		4 675
1977	RD7	1977	10	11.34375	01	02	25.33	+10	00	20.3		4 675
1977	RD7	1977	10	12.27587	01	01	30.91	+09	55	00.4		4 675
1977	RD7	1977	10	12.34271	01	01	26.82	+09	54	37.6		4 675
1977	RD7	1977	10	16.26233	00	57	39.93	+09	31	50.3	17.3	4 675
1977	RD7	1977	10	16.32795	00	57	35.98	+09	31	28.6		4 675
1977	RD7	1977	10	17.26458	00	56	42.80	+09	26	00.0		4 675
1977	RD7	1977	10	17.33177	00	56	38.77	+09	25	38.2		4 675
1977	RD7	1977	10	21.40868	00	52	53.02	+09	01	57.2		4 675
1977	RD7	1977	10	21.46910	00	52	49.63	+09	01	34.0		4 675
1977	RD7	1977	10	22.41528	00	51	59.10	+08	56	12.1		4 675
1977	RD7	1977	10	22.46962	00	51	56.16	+08	55	51.6		4 675
1977	RL7	1977	10	07.27031	01	24	45.46	+06	46	34.1		4 675
1977	RL7	1977	10	11.28819	01	22	24.13	+05	47	50.8		4 675
1977	RL7	1977	10	11.35642	01	22	21.46	+05	46	51.9		4 675
1977	RL7	1977	10	12.28681	01	21	48.24	+05	33	11.0		4 675
1977	RL7	1977	10	12.35347	01	21	45.56	+05	32	12.1		4 675
1977	RL7	1977	10	16.27309	01	19	22.99	+04	34	53.0	16.3	4 675
1977	RL7	1977	10	16.33872	01	19	20.43	+04	33	55.9		4 675
1977	RL7	1977	10	17.27552	01	18	46.46	+04	20	23.6		4 675
1977	RL7	1977	10	17.34236	01	18	43.89	+04	19	26.7		4 675
1977	RL7	1977	10	21.38698	01	16	20.07	+03	21	58.7		4 675
1977	RL7	1977	10	21.39792	01	16	19.51	+03	21	52.6		4 675
1977	RL7	1977	10	21.44705	01	16	17.83	+03	21	08.7		4 675
1977	RL7	1977	10	21.45799	01	16	17.39	+03	21	03.7		4 675
1977	RL7	1977	10	22.38542	01	15	45.62	+03	08	10.9		4 675
1977	RL7	1977	10	22.39844	01	15	45.30	+03	08	01.4		4 675
1977	RL7	1977	10	22.44878	01	15	43.45	+03	07	19.3		4 675
1977	RL7	1977	10	22.45920	01	15	43.10	+03	07	11.1		4 675
1977	RO7	1977	10	07.27031	01	21	24.45	+06	54	11.2		4 675
1977	RO7	1977	10	11.28819	01	17	43.72	+06	23	21.9		4 675
1977	RO7	1977	10	11.35642	01	17	39.75	+06	22	49.9		4 675
1977	RO7	1977	10	12.28681	01	16	48.82	+06	15	41.8		4 675
1977	RO7	1977	10	12.35347	01	16	44.98	+06	15	11.1		4 675
1977	RO7	1977	10	16.27309	01	13	10.85	+05	45	35.6	17.0	4 675
1977	RO7	1977	10	16.33872	01	13	07.03	+05	45	05.9		4 675
1977	RO7	1977	10	17.27552	01	12	16.78	+05	38	10.9		4 675
1977	RO7	1977	10	17.34236	01	12	13.09	+05	37	40.7		4 675
1977	RO7	1977	10	21.39792	01	08	40.59	+05	08	35.0		4 675
1977	RO7	1977	10	21.45799	01	08	37.39	+05	08	09.5		4 675
1977	RO7	1977	10	22.39844	01	07	50.21	+05	01	37.7		4 675
1977	RO7	1977	10	22.45920	01	07	47.16	+05	01	13.5		4 675
1977	RP7	1977	10	07.25868	01	16	08.28	+12	36	30.8		4 675
1977	RP7	1977	10	11.27743	01	11	15.52	+12	55	35.0		4 675
1977	RP7	1977	10	11.34375	01	11	10.43	+12	55	52.4		4 675
1977	RP7	1977	10	12.27587	01	10	03.00	+12	59	53.9		4 675
1977	RP7	1977	10	12.34271	01	09	57.87	+13	00	10.7		4 675
1977	RP7	1977	10	16.26233	01	05	17.14	+13	15	51.2	16.4	4 675
1977	RP7	1977	10	16.32795	01	05	12.17	+13	16	06.2		4 675
1977	RP7	1977	10	17.26458	01	04	06.78	+13	19	35.3		4 675
1977	RP7	1977	10	17.33177	01	04	01.86	+13	19	49.4		4 675
1977	RP7	1977	10	21.40868	00	59	26.96	+13	33	37.5		4 675
1977	RP7	1977	10	21.46910	00	59	22.95	+13	33	48.8		4 675
1977	RP7	1977	10	22.41528	00	58	22.26	+13	36	46.6		4 675

1977	RP7		1977	10	22.46962	00	58	18.81	+13	36	57.2		4 675
1977	RR7		1977	10	07.27031	01	25	20.78	+08	23	01.0		4 675
1977	RR7		1977	10	11.28819	01	21	51.21	+08	17	33.1		4 675
1977	RR7		1977	10	11.35642	01	21	47.58	+08	17	27.3		4 675
1977	RR7		1977	10	12.28681	01	20	58.68	+08	16	07.3		4 675
1977	RR7		1977	10	12.35347	01	20	55.20	+08	16	02.2		4 675
1977	RR7		1977	10	16.27309	01	17	28.67	+08	10	19.7	17.2	4 675
1977	RR7		1977	10	16.33872	01	17	25.15	+08	10	13.6		4 675
1977	RR7		1977	10	17.27552	01	16	35.93	+08	08	52.6		4 675
1977	RR7		1977	10	17.34236	01	16	32.31	+08	08	47.4		4 675
1977	RR7		1977	10	21.39792	01	13	01.82	+08	02	56.5		4 675
1977	RR7		1977	10	21.45799	01	12	58.69	+08	02	49.9		4 675
1977	RR7		1977	10	22.39844	01	12	10.89	+08	01	31.4		4 675
1977	RR7		1977	10	22.45920	01	12	07.77	+08	01	26.1		4 675
1977	RU8	*	1977	09	08.24584	22	21	15.21	-09	37	28.2	18.2	6 675
1977	RU8		1977	09	09.17222	22	20	36.83	-09	41	32.6		6 675
1977	RV8	*	1977	09	08.24584	22	22	04.51	-08	27	21.3	17.5	6 675
1977	RV8		1977	09	09.17222	22	21	22.78	-08	31	33.3		6 675
1977	RW8	*	1977	09	08.24584	22	30	13.05	-09	47	58.8	19.0	6 675
1977	RW8		1977	09	09.17222	22	29	32.28	-09	52	19.3		6 675
1977	RX8	*	1977	09	08.24584	22	31	32.48	-07	18	22.1	16.8	6 675
1977	RX8		1977	09	09.17222	22	30	56.05	-07	24	23.0		6 675
1977	RY8	*	1977	09	08.24584	22	33	09.85	-09	30	58.9	19.5	6 675
1977	RY8		1977	09	09.17222	22	32	26.98	-09	34	14.4		6 675
1977	RZ8	*	1977	09	08.24584	22	35	09.14	-09	30	12.2	17.2	6 675
1977	RZ8		1977	09	09.17222	22	34	16.38	-09	30	03.1		6 675
1977	RA9	*	1977	09	08.24584	22	35	29.51	-08	13	37.2	17.0	6 675
1977	RA9		1977	09	09.17222	22	34	45.32	-08	21	45.8		6 675
1977	RB9	*	1977	09	08.24584	22	35	47.62	-07	57	01.3	17.2	6 675
1977	RB9		1977	09	09.17222	22	35	04.55	-08	01	05.9		6 675
1977	RC9	*	1977	09	08.24584	22	36	43.61	-07	49	08.5	19.5	6 675
1977	RC9		1977	09	09.17222	22	35	53.19	-07	53	42.5		6 675
1977	SS2		1977	10	11.31111	01	35	31.53	-05	47	16.1		4 675
1977	SS2		1977	10	11.37865	01	35	28.83	-05	47	56.4		4 675
1977	SS2		1977	10	12.30885	01	34	52.71	-05	56	51.3		4 675
1977	SS2		1977	10	12.37500	01	34	50.09	-05	57	29.4		4 675
1977	SS2		1977	10	16.29444	01	32	15.86	-06	33	32.0	15.2	4 675
1977	SS2		1977	10	16.36024	01	32	13.10	-06	34	06.1		4 675
1977	SS2		1977	10	17.29688	01	31	36.09	-06	42	20.5		4 675
1977	SS2		1977	10	17.36372	01	31	33.28	-06	42	55.9		4 675
1977	SS2		1977	10	21.37622	01	28	55.10	-07	16	08.6		4 675
1977	SS2		1977	10	21.43611	01	28	52.70	-07	16	39.3		4 675
1977	SS2		1977	10	22.37274	01	28	16.32	-07	23	56.1		4 675
1977	SS2		1977	10	22.43872	01	28	13.70	-07	24	26.4		4 675
1977	SD3		1977	10	07.28125	01	38	11.90	+00	34	47.9		4 675
1977	SD3		1977	10	11.30000	01	35	27.54	-00	11	35.0		4 675
1977	SD3		1977	10	12.29826	01	34	45.58	-00	23	00.4		4 675
1977	SD3		1977	10	12.36441	01	34	42.65	-00	23	45.8		4 675
1977	SD3		1977	10	16.28368	01	31	53.82	-01	07	31.0	15.5	4 675
1977	SD3		1977	10	16.34931	01	31	50.77	-01	08	14.6		4 675
1977	SD3		1977	10	17.28628	01	31	10.15	-01	18	27.1		4 675
1977	SD3		1977	10	17.35313	01	31	07.11	-01	19	08.7		4 675
1977	SD3		1977	10	21.37622	01	28	12.84	-02	01	27.7		4 675
1977	SD3		1977	10	21.38698	01	28	12.35	-02	01	35.1		4 675
1977	SD3		1977	10	21.43611	01	28	10.14	-02	02	03.8		4 675
1977	SD3		1977	10	21.44705	01	28	09.59	-02	02	11.0		4 675
1977	SD3		1977	10	22.37274	01	27	30.07	-02	11	26.7		4 675
1977	SD3		1977	10	22.38542	01	27	29.63	-02	11	38.7		4 675
1977	SD3		1977	10	22.43872	01	27	27.16	-02	12	10.5		4 675

1977	SD3	1977	10	22.44878	01	27	26.65	-02	12	16.1		4 675
1977	SG3	1977	10	11.31111	01	43	30.43	-01	50	21.3		4 675
1977	SG3	1977	10	11.37865	01	43	26.13	-01	50	29.4		4 675
1977	SG3	1977	10	12.30885	01	42	29.70	-01	52	19.5		4 675
1977	SG3	1977	10	12.37500	01	42	25.36	-01	52	26.1		4 675
1977	SG3	1977	10	16.29444	01	38	20.81	-01	58	35.7	16.1	4 675
1977	SG3	1977	10	16.36024	01	38	16.47	-01	58	40.3		4 675
1977	SG3	1977	10	17.29688	01	37	17.23	-01	59	45.6		4 675
1977	SG3	1977	10	17.36372	01	37	12.84	-01	59	50.1		4 675
1977	SG3	1977	10	21.37622	01	32	57.87	-02	02	38.5		4 675
1977	SG3	1977	10	21.38698	01	32	57.25	-02	02	42.1		4 675
1977	SG3	1977	10	21.43611	01	32	53.88	-02	02	39.6		4 675
1977	SG3	1977	10	21.44705	01	32	53.17	-02	02	44.1		4 675
1977	SG3	1977	10	22.38542	01	31	54.12	-02	02	55.7		4 675
1977	SG3	1977	10	22.43872	01	31	50.73	-02	02	54.4		4 675
1977	SG3	1977	10	22.44878	01	31	50.07	-02	02	55.3		4 675
1977	TO6	1977	10	11.31111	01	36	17.94	-03	50	18.8		4 675
1977	TO6	1977	10	11.37865	01	36	13.72	-03	50	30.1		4 675
1977	TO6	1977	10	12.30885	01	35	19.36	-03	53	07.5		4 675
1977	TO6	1977	10	12.37500	01	35	15.27	-03	53	18.0		4 675
1977	TO6	1977	10	16.29444	01	31	23.20	-04	02	26.6	17.1	4 675
1977	TO6	1977	10	16.36024	01	31	19.11	-04	02	34.4		4 675
1977	TO6	1977	10	17.29688	01	30	23.91	-04	04	16.5		4 675
1977	TO6	1977	10	17.36372	01	30	19.78	-04	04	23.0		4 675
1977	TO6	1977	10	21.37622	01	26	25.63	-04	09	15.2		4 675
1977	TO6	1977	10	21.43611	01	26	22.12	-04	09	17.6		4 675
1977	TO6	1977	10	22.37274	01	25	28.84	-04	09	51.2		4 675
1977	TO6	1977	10	22.43872	01	25	25.00	-04	09	54.7		4 675
1977	TQ6	1977	10	11.31111	01	43	41.84	-03	09	10.8		4 675
1977	TQ6	1977	10	11.37865	01	43	37.50	-03	09	08.8		4 675
1977	TQ6	1977	10	12.30885	01	42	40.36	-03	08	22.1		4 675
1977	TQ6	1977	10	12.37500	01	42	36.10	-03	08	18.6		4 675
1977	TQ6	1977	10	16.29444	01	38	31.41	-03	03	32.6	16.5	4 675
1977	TQ6	1977	10	16.36024	01	38	27.06	-03	03	26.5		4 675
1977	TQ6	1977	10	17.29688	01	37	28.30	-03	01	56.4		4 675
1977	TQ6	1977	10	17.36372	01	37	23.87	-03	01	49.5		4 675
1977	TQ6	1977	10	21.37622	01	33	12.79	-02	53	43.2		4 675
1977	TQ6	1977	10	21.43611	01	33	08.94	-02	53	35.6		4 675
1977	TQ6	1977	10	22.37274	01	32	11.23	-02	51	18.0		4 675
1977	TQ6	1977	10	22.43872	01	32	07.11	-02	51	11.2		4 675
1977	TG7	1977	10	07.27031	01	16	40.03	+04	14	17.2		4 675
1977	TG7	1977	10	11.28819	01	13	33.50	+03	57	11.1		4 675
1977	TG7	1977	10	11.30000	01	13	33.05	+03	57	07.6		4 675
1977	TG7	1977	10	11.35642	01	13	30.13	+03	56	53.6		4 675
1977	TG7	1977	10	11.36771	01	13	29.81	+03	56	51.2		4 675
1977	TG7	1977	10	12.28681	01	12	46.74	+03	52	55.4		4 675
1977	TG7	1977	10	12.29826	01	12	46.23	+03	52	51.5		4 675
1977	TG7	1977	10	12.35347	01	12	43.55	+03	52	38.6		4 675
1977	TG7	1977	10	12.36441	01	12	43.00	+03	52	36.2		4 675
1977	TG7	1977	10	16.27309	01	09	39.34	+03	36	22.0	16.6	4 675
1977	TG7	1977	10	16.33872	01	09	36.11	+03	36	06.4		4 675
1977	TG7	1977	10	17.27552	01	08	52.41	+03	32	19.1		4 675
1977	TG7	1977	10	17.34236	01	08	49.18	+03	32	02.9		4 675
1977	TG7	1977	10	21.39792	01	05	42.10	+03	16	14.6		4 675
1977	TG7	1977	10	21.45799	01	05	39.32	+03	15	59.8		4 675
1977	TG7	1977	10	22.39844	01	04	57.03	+03	12	28.9		4 675
1977	TG7	1977	10	22.45920	01	04	54.16	+03	12	14.7		4 675
1977	UD	1977	10	12.36441	01	30	24.08	+04	11	49.6		4 675
1977	UD	1977	10	16.27309	01	26	38.02	+03	56	23.1	16.7	4 675

1977	UD	1977	10	16.28368	01	26	37.34	+03	56	21.9		4 675
1977	UD	1977	10	16.33872	01	26	33.94	+03	56	08.5		4 675
1977	UD	1977	10	16.34931	01	26	33.25	+03	56	08.0		4 675
1977	UD	1977	10	17.27552	01	25	39.30	+03	52	33.1		4 675
1977	UD	1977	10	17.28628	01	25	38.74	+03	52	29.5		4 675
1977	UD	1977	10	17.34236	01	25	35.17	+03	52	18.1		4 675
1977	UD	1977	10	17.35313	01	25	34.61	+03	52	13.4		4 675
1977	UD	1977	10	21.38698	01	21	39.19	+03	37	27.7		4 675
1977	UD	1977	10	21.39792	01	21	38.31	+03	37	27.2		4 675
1977	UD	1977	10	21.44705	01	21	35.50	+03	37	13.5		4 675
1977	UD	1977	10	21.45799	01	21	34.76	+03	37	14.7		4 675
1977	UD	1977	10	22.38542	01	20	41.33	+03	34	00.2		4 675
1977	UD	1977	10	22.39844	01	20	40.62	+03	33	58.8		4 675
1977	UD	1977	10	22.44878	01	20	37.81	+03	33	47.0		4 675
1977	UD	1977	10	22.45920	01	20	36.98	+03	33	47.0		4 675
1977	VL1	1977	10	07.28125	01	35	02.34	+03	30	21.2		4 675
1977	VL1	1977	10	11.30000	01	31	31.32	+03	24	53.7		4 675
1977	VL1	1977	10	11.36771	01	31	27.50	+03	24	49.5		4 675
1977	VL1	1977	10	12.29826	01	30	37.37	+03	23	38.4		4 675
1977	VL1	1977	10	12.36441	01	30	33.56	+03	23	33.4		4 675
1977	VL1	1977	10	16.27309	01	27	00.28	+03	19	17.1	16.4	4 675
1977	VL1	1977	10	16.28368	01	26	59.55	+03	19	16.9		4 675
1977	VL1	1977	10	16.33872	01	26	56.51	+03	19	11.8		4 675
1977	VL1	1977	10	16.34931	01	26	55.74	+03	19	12.4		4 675
1977	VL1	1977	10	17.27552	01	26	05.21	+03	18	22.6		4 675
1977	VL1	1977	10	17.28628	01	26	04.53	+03	18	20.0		4 675
1977	VL1	1977	10	17.34236	01	26	01.40	+03	18	20.3		4 675
1977	VL1	1977	10	17.35313	01	26	00.72	+03	18	16.7		4 675
1977	VL1	1977	10	21.38698	01	22	21.74	+03	15	33.4		4 675
1977	VL1	1977	10	21.39792	01	22	21.29	+03	15	35.3		4 675
1977	VL1	1977	10	21.44705	01	22	18.28	+03	15	32.6		4 675
1977	VL1	1977	10	21.45799	01	22	17.97	+03	15	32.9		4 675
1977	VL1	1977	10	22.38542	01	21	28.45	+03	15	10.1		4 675
1977	VL1	1977	10	22.39844	01	21	27.80	+03	15	10.2		4 675
1977	VL1	1977	10	22.44878	01	21	25.16	+03	15	07.4		4 675
1977	VL1	1977	10	22.45920	01	21	24.44	+03	15	08.4		4 675
1978	TP6	1984	11	19.41910	04	50	33.31	+29	39	18.4	17.0	6 675
1978	TP6	1984	11	21.43299	04	48	52.58	+29	38	22.0		6 675
1980	FG12	1977	10	07.27031	01	14	47.89	+07	41	03.9		4 675
1980	FG12	1977	10	11.28819	01	11	38.96	+06	17	39.7		4 675
1980	FG12	1977	10	11.35642	01	11	35.63	+06	16	16.4		4 675
1980	FG12	1977	10	12.28681	01	10	52.53	+05	57	07.5		4 675
1980	FG12	1977	10	12.35347	01	10	49.33	+05	55	46.2		4 675
1980	FG12	1977	10	16.27309	01	07	49.97	+04	36	43.9	15.6	4 675
1980	FG12	1977	10	16.33872	01	07	46.90	+04	35	27.1		4 675
1980	FG12	1977	10	17.27552	01	07	05.40	+04	17	01.1		4 675
1980	FG12	1977	10	17.34236	01	07	02.17	+04	15	41.8		4 675
1981	EK5	1984	11	19.39306	04	58	53.57	+29	03	48.5		6 675
1981	EK5	1984	11	21.43299	04	57	14.57	+29	00	56.7		6 675
1981	EY26	1977	09	09.17222	22	37	00.08	-08	45	25.7	18.0	6 675
1981	ER35	1979	12	20.36250	06	52	47.05	+25	45	53.4		6 675
1981	ER35	1979	12	20.41458	06	52	44.19	+25	45	51.2		6 675
1981	ER35	1984	11	21.40694	05	17	40.66	+30	32	12.5		6 675
1981	ER35	1984	11	21.45903	05	17	38.15	+30	32	07.1		6 675
1981	EG39	1984	11	19.41910	05	14	55.59	+30	09	28.5		6 675
1981	EG39	1984	11	21.43299	05	13	15.85	+30	09	58.2		6 675
1981	EF47	1984	11	19.41910	05	03	47.74	+27	15	33.7		6 675
1981	EF47	1984	11	21.43299	05	02	06.27	+27	15	43.9		6 675
1981	FQ	1977	09	08.24584	22	18	07.86	-10	58	13.6	17.8	6 675

1981	FQ		1977	09	09.17222	22	17	28.68	-11	01	49.9		6 675
1981	QF		1977	10	07.25868	01	14	13.69	+12	34	25.7		4 675
1981	QF		1977	10	11.27743	01	10	41.97	+12	24	33.0		4 675
1981	QF		1977	10	11.34375	01	10	38.25	+12	24	22.0		4 675
1981	QF		1977	10	12.27587	01	09	49.13	+12	21	47.5		4 675
1981	QF		1977	10	12.34271	01	09	45.41	+12	21	36.5		4 675
1981	QF		1977	10	16.26233	01	06	19.78	+12	10	04.7	16.7	4 675
1981	QF		1977	10	16.32795	01	06	16.16	+12	09	52.8		4 675
1981	QF		1977	10	17.26458	01	05	28.00	+12	07	01.6		4 675
1981	QF		1977	10	17.33177	01	05	24.25	+12	06	48.2		4 675
1981	QF		1977	10	21.40868	01	02	01.18	+11	53	49.7		4 675
1981	QF		1977	10	21.46910	01	01	58.16	+11	53	37.6		4 675
1981	QF		1977	10	22.41528	01	01	13.24	+11	50	35.7		4 675
1981	QF		1977	10	22.46962	01	01	10.63	+11	50	23.6		4 675
1981	TQ1		1977	09	08.24584	22	12	16.07	-10	30	23.5	16.8	6 675
1981	TQ1		1977	09	09.17222	22	11	26.36	-10	32	17.1		6 675
1981	WG9		1977	09	08.24584	22	37	12.45	-09	33	57.6	16.5	6 675
1981	WG9		1977	09	09.17222	22	36	26.82	-09	40	23.2		6 675
1982	BG1		1977	10	07.24652	00	50	11.18	+15	48	20.3		4 675
1982	BG1		1977	10	11.26632	00	46	01.79	+15	25	60.0		4 675
1982	BG1		1977	10	11.33351	00	45	57.48	+15	25	35.4		4 675
1982	BG1		1977	10	12.26510	00	45	00.22	+15	20	03.8		4 675
1982	BG1		1977	10	12.33125	00	44	55.97	+15	19	41.1		4 675
1982	BG1		1977	10	16.25156	00	40	58.41	+14	55	11.5	16.5	4 675
1982	BG1		1977	10	16.31684	00	40	54.35	+14	54	46.5		4 675
1982	BG1		1984	11	19.41910	04	53	47.98	+30	15	29.1		6 675
1982	BG1		1984	11	21.43299	04	51	45.92	+30	10	29.8		6 675
1982	XB		1987	11	19.41563	05	47	43.49	+11	13	54.5	16.0	2 675
1982	XB		1987	11	19.44479	05	47	58.57	+11	14	47.0		2 675
1982	XB		1987	11	20.40903	05	57	04.9	+11	45	25		7 675
1982	XB		1987	11	20.41597	05	57	08.5	+11	45	37		7 675
1983	PA		1987	10	28.51615	07	23	42.54	+41	44	08.5	16.0	2 675
1983	PA		1987	10	28.52882	07	23	43.11	+41	44	04.3		2 675
1984	EZ		1977	10	12.30885	01	44	30.34	-04	25	30.5		4 675
1984	EZ		1977	10	12.37500	01	44	27.10	-04	26	00.7		4 675
1984	EZ		1977	10	16.29444	01	41	20.02	-04	54	59.4	17.4	4 675
1984	EZ		1977	10	16.36024	01	41	16.78	-04	55	29.0		4 675
1984	EZ		1977	10	17.29688	01	40	31.67	-05	02	06.3		4 675
1984	EZ		1977	10	17.36372	01	40	28.30	-05	02	33.8		4 675
1984	EZ		1977	10	21.37622	01	37	14.96	-05	29	29.7		4 675
1984	EZ		1977	10	21.43611	01	37	11.94	-05	29	52.4		4 675
1984	EZ		1977	10	22.37274	01	36	27.19	-05	35	48.8		4 675
1984	EZ		1977	10	22.43872	01	36	23.93	-05	36	14.5		4 675
1984	WB		1984	11	19.39306	05	10	51.10	+24	58	50.9		6 675
1984	WB		1984	11	19.44514	05	10	47.53	+24	57	52.1		6 675
1984	WA4		1984	11	19.41910	04	51	47.85	+30	44	38.8	17.5	6 675
1984	WA4		1984	11	21.43299	04	49	42.10	+30	44	47.6		6 675
1984	WB4		1984	11	19.41910	04	52	18.44	+30	44	37.5	17.2	6 675
1984	WB4		1984	11	21.43299	04	50	16.57	+30	27	28.4		6 675
1984	WH4	*	1984	11	19.39306	05	04	57.40	+28	22	56.0	16.5	6 675
1984	WH4		1984	11	19.44514	05	04	26.84	+28	43	44.0		6 675
1984	WJ4	*	1984	11	19.41910	04	56	09.10	+26	17	08.3	16.8	6 675
1984	WJ4		1984	11	21.43299	04	54	26.74	+26	08	33.9		6 675
1984	WK4	*	1984	11	19.41910	04	57	01.97	+28	59	08.0	17.8	6 675
1984	WK4		1984	11	21.43299	04	54	43.37	+29	00	33.0		6 675
1984	WL4	*	1984	11	19.41910	05	06	00.17	+29	33	35.6	17.2	6 675
1984	WL4		1984	11	21.43299	05	04	05.78	+29	48	03.0		6 675
1984	WM4	*	1984	11	19.41910	05	10	50.97	+26	19	11.7	17.0	6 675
1984	WM4		1984	11	21.43299	05	09	02.20	+26	15	02.6		6 675

1984	YH1		1984	11	19.41910	05	09	31.08	+26	17	46.5	17.2	6 675
1984	YH1		1984	11	21.43299	05	07	46.15	+26	15	20.9		6 675
1984	YU1		1984	11	19.41910	05	06	03.78	+26	31	16.6	17.0	6 675
1984	YU1		1984	11	21.43299	05	04	02.72	+26	31	55.1		6 675
1984	YY1		1984	11	19.41910	05	17	27.25	+27	15	22.3	17.5	6 675
1984	YY1		1984	11	21.43299	05	15	38.26	+27	17	46.8		6 675
1985	FA		1987	10	20.47969	05	37	47.72	+20	27	53.3		3 675
1985	FA		1987	10	20.51701	05	37	48.70	+20	28	24.1		3 675
1985	TE1		1977	09	08.24584	22	35	40.78	-08	13	59.6	17.5	6 675
1985	TE1		1977	09	09.17222	22	34	52.87	-08	19	08.2		6 675
1985	TE3		1987	10	20.48637	06	31	19.82	+02	07	29.5		3 675
1985	TE3		1987	10	20.52414	06	31	20.06	+02	07	17.4		3 675
1987	SB		1987	10	17.26163	23	59	39.37	-06	23	47.9	18	3 675
1987	SB		1987	10	18.26181	23	58	46.15	-06	24	56.5		3 675
1987	SB		1987	10	19.28698	23	57	54.63	-06	25	51.2		3 675
1987	SL		1987	10	18.36336	00	29	49.84	+32	22	03.9		3 675
1987	SL		1987	10	20.36111	00	27	12.47	+32	25	32.8		3 675
1987	SY		1987	10	17.21579	23	06	53.22	+08	12	46.0	18.5	3 675
1987	SY		1987	10	18.18107	23	06	42.89	+08	01	02.8		3 675
1987	SY		1987	10	19.19600	23	06	35.11	+07	49	15.6	19	3 675
1987	SG3		1987	09	20.35920	00	11	14.68	+07	51	18.8	16.0	2 675
1987	SG3		1987	09	20.38125	00	11	14.02	+07	50	39.2		2 675
1987	SG3		1987	10	17.26163	00	00	35.30	-04	08	24.1	17	3 675
1987	SG3		1987	10	18.26181	00	00	26.87	-04	28	50.6		3 675
1987	SG3		1987	10	19.28698	00	00	19.86	-04	49	10.6		3 675
1987	SH3		1987	10	17.25121	23	52	44.85	-02	15	20.2	17.4	3 675
1987	SH3		1987	10	18.29184	23	52	11.99	-02	41	05.0		3 675
1987	SH3		1987	10	19.31180	23	51	41.74	-03	05	54.2		3 675
1987	SH3		1987	10	20.20243	23	51	17.36	-03	27	11.3		3 675
1987	SJ3		1987	10	17.25121	00	05	25.79	-01	20	49.7	16.5	3 675
1987	SJ3		1987	10	18.29184	00	03	48.20	-01	05	18.3		3 675
1987	SJ3		1987	10	19.31180	00	02	15.22	-00	50	04.0		3 675
1987	SJ3		1987	10	20.20243	00	00	56.70	-00	36	45.9		3 675
1987	SW3		1977	10	07.25868	01	06	57.35	+14	34	45.9		4 675
1987	SW3		1977	10	11.27743	01	02	48.62	+14	08	40.3		4 675
1987	SW3		1977	10	11.34375	01	02	44.32	+14	08	12.8		4 675
1987	SW3		1977	10	12.27587	01	01	47.14	+14	01	55.1		4 675
1987	SW3		1977	10	12.34271	01	01	42.90	+14	01	27.6		4 675
1987	SW3		1977	10	16.26233	00	57	46.30	+13	34	12.8	16.3	4 675
1987	SW3		1977	10	16.32795	00	57	42.30	+13	33	45.0		4 675
1987	SW3		1977	10	17.26458	00	56	47.37	+13	27	10.8		4 675
1987	SW3		1977	10	17.33177	00	56	43.15	+13	26	41.5		4 675
1987	SW3		1977	10	21.40868	00	52	51.83	+12	57	40.1		4 675
1987	SW3		1977	10	21.46910	00	52	48.49	+12	57	14.9		4 675
1987	SW3		1977	10	22.41528	00	51	57.11	+12	50	33.8		4 675
1987	SW3		1977	10	22.46962	00	51	54.04	+12	50	09.9		4 675
1987	SE7	*	1987	09	20.35920	23	49	18.78	+09	18	05.9	17.0	2 675
1987	SE7		1987	09	20.38125	23	49	17.55	+09	18	00.9		2 675
1987	SF7	*	1987	09	26.18889	21	54	55.36	+33	17	58.1	16.5	3 675
1987	SF7		1987	10	18.14375	21	53	05.53	+30	03	18.8	17	3 675
1987	SF7		1987	10	20.15816	21	54	10.55	+29	40	59.5		3 675
1987	SG7	*	1987	09	26.23924	22	20	50.44	+27	28	59.1	16.5	3 675
1987	SG7		1987	10	18.12361	22	01	29.57	+26	33	37.6	17	3 675
1987	SG7		1987	10	20.15816	22	00	57.91	+26	24	06.4		3 675
1987	SH7	*	1987	09	26.23924	22	22	17.10	+29	54	38.3	17	3 675
1987	SH7		1987	10	18.12361	22	11	47.05	+26	42	30.6	17.5	3 675
1987	SH7		1987	10	20.15816	22	11	57.82	+26	21	40.2		3 675
1987	SJ7	*	1987	09	26.23924	22	32	24.40	+26	24	45.1	16	3 675
1987	SJ7		1987	10	18.13767	22	18	10.77	+24	04	58.7	16.5	3 675

1987	SJ7		1987	10	20.13941	22	18	01.64	+23	48	43.6		3 675
1987	UG		1987	10	28.40451	02	53	28.98	+15	54	33.8	16.0	2 675
1987	UG		1987	10	28.43368	02	53	27.41	+15	54	24.8		2 675
1987	UL		1987	10	18.28125	00	04	09.46	-19	14	15.3		3 675
1987	UL		1987	10	19.26805	00	04	10.43	-18	58	54.6		3 675
1987	UL		1987	10	20.23003	00	04	13.39	-18	43	36.5		3 675
1987	UW		1987	10	20.40972	02	35	32.33	+06	32	26.3	17.7	3 675
1987	UW		1987	10	20.44565	02	35	30.60	+06	31	36.5		3 675
1987	UX		1987	10	20.40972	02	44	46.16	+07	36	46.6	17	3 675
1987	UE1		1987	09	25.37326	01	28	45.46	+12	22	23.6	18	3 675
1987	UE1		1987	09	25.40608	01	28	44.69	+12	21	35.7		3 675
1987	UE1	*	1987	10	17.34531	01	17	26.59	+02	27	27.6	17.5	3 675
1987	UE1		1987	10	18.34392	01	16	51.32	+02	00	01.9		3 675
1987	UE1		1987	10	19.37274	01	16	15.26	+01	32	02.5		3 675
1987	UE1		1987	10	20.27188	01	15	44.46	+01	07	43.6		3 675
1987	UE1		1987	10	21.32795	01	15	08.31	+00	39	30.8		3 675
1987	UH1	*	1987	10	28.39757	01	05	01.77	+00	20	03.0	17.0	2 675
1987	UH1		1987	10	28.42795	01	05	00.40	+00	19	49.9		2 675
1987	UJ1	*	1987	10	28.39757	01	17	40.37	+00	36	38.8	16.8	2 675
1987	UJ1		1987	10	28.42795	01	17	38.29	+00	36	47.1		2 675
1987	UT1		1987	09	24.25191	23	12	29.62	+10	04	31.0	17.5	3 675
1987	UT1		1987	09	24.27969	23	12	28.51	+10	04	28.6		3 675
1987	UT1	*	1987	10	17.21579	23	07	57.45	+09	04	18.2	18	3 675
1987	UT1		1987	10	18.18107	23	08	11.16	+09	01	41.7		3 675
1987	UT1		1987	10	19.19600	23	08	27.56	+08	59	01.3		3 675
1987	UY1	*	1987	10	18.45521	02	33	23.33	+17	53	36.2	18	3 675
1987	UY1		1987	10	19.45990	02	32	48.63	+17	24	42.4		3 675
1987	UZ1	*	1987	10	19.42014	02	34	32.21	+26	43	53.3	17	3 675
1987	UZ1		1987	10	19.45382	02	34	30.40	+26	42	57.7		3 675
1987	UA2	*	1987	10	17.28940	23	37	38.57	-20	29	20.2	17.7	3 675
1987	UA2		1987	10	18.28125	23	37	09.76	-20	26	47.7		3 675
1987	UB2	*	1987	10	17.28940	23	43	04.73	-22	06	09.6	17.9	3 675
1987	UB2		1987	10	18.28125	23	42	29.93	-21	57	28.3		3 675
1987	UC2	*	1987	10	17.28940	23	47	23.48	-21	11	31.4	17.8	3 675
1987	UC2		1987	10	18.28125	23	46	57.03	-21	10	45.7		3 675
1987	WC	*	1987	11	21.32014	04	29	45.0	+38	05	12	19	7 675
1987	WC		1987	11	21.36389	04	29	35.0	+38	08	00		7 675
1987	WC		1987	11	23.35903	04	22	19.7	+40	17	57		7 675
1987	WC		1987	11	23.36944	04	22	17.1	+40	18	40		7 675
2024	P-L	*	1960	09	24.45000	00	55	49.87	+08	13	30.3	17.8	4 675
2024	P-L		1960	09	26.37010	00	53	57.94	+08	06	24.7		4 675
2024	P-L		1960	09	28.45140	00	51	53.62	+07	58	19.6		4 675
2024	P-L		1960	09	29.44510	00	50	53.52	+07	54	19.3		4 675
2024	P-L		1960	10	17.30420	00	32	50.13	+06	35	32.2		4 675
2024	P-L		1960	10	22.27920	00	28	19.91	+06	14	17.9		4 675
2024	P-L		1960	10	25.37570	00	25	45.92	+06	01	58.8		4 675
2024	P-L		1960	10	26.36840	00	24	59.28	+05	58	14.5		4 675
2121	P-L	*	1960	09	24.45000	00	49	18.76	+06	09	02.9	19.4	4 675
2121	P-L		1960	09	26.37010	00	47	16.79	+06	12	27.3		4 675
2121	P-L		1960	09	26.37988	00	47	16.17	+06	12	29.9		4 675
2121	P-L		1960	09	28.45140	00	45	01.15	+06	15	53.3		4 675
2121	P-L		1960	09	29.44510	00	43	55.50	+06	17	25.9		4 675
2121	P-L		1960	10	17.30420	00	24	03.67	+06	40	47.2		4 675
2121	P-L		1960	10	22.27920	00	19	05.93	+06	47	29.4		4 675
2121	P-L		1960	10	26.36840	00	15	25.14	+06	53	47.2		4 675
2142	P-L	*	1960	09	24.45000	00	54	20.92	+06	43	36.0	17.4	4 675
2142	P-L		1960	09	26.37010	00	53	02.38	+06	28	27.1		4 675
2142	P-L		1960	09	28.43822	00	51	34.77	+06	11	40.8		4 675
2142	P-L		1960	09	28.45140	00	51	34.18	+06	11	33.5		4 675

2142	P-L		1960	09	29.44510	00	50	51.23	+06	03	19.7		4 675
2142	P-L		1960	10	22.26809	00	34	16.23	+02	50	07.7		4 675
2142	P-L		1960	10	25.30351	00	32	25.25	+02	26	56.0		4 675
2142	P-L		1960	10	26.35766	00	31	48.90	+02	19	10.1		4 675
2208	P-L	*	1960	09	24.37573	00	35	54.52	+09	20	04.3	19.5	4 675
2208	P-L		1960	09	24.45000	00	35	50.84	+09	19	36.8		4 675
2208	P-L		1960	09	25.42780	00	35	05.00	+09	13	19.3		4 675
2208	P-L		1960	09	26.30558	00	34	23.58	+09	07	31.8		4 675
2208	P-L		1960	09	28.36808	00	32	43.64	+08	53	30.4		4 675
2208	P-L		1960	10	17.30420	00	17	29.99	+06	28	18.2		4 675
2208	P-L		1960	10	22.22293	00	14	11.84	+05	50	47.2		4 675
2208	P-L		1960	10	22.27920	00	14	09.71	+05	50	22.6		4 675
2208	P-L		1960	10	25.37570	00	12	21.17	+05	27	51.9		4 675
2208	P-L		1960	10	26.32573	00	11	50.93	+05	21	17.0		4 675
2208	P-L		1960	10	26.36840	00	11	49.49	+05	20	58.2		4 675
2574	P-L	*	1960	09	24.46184	00	49	17.05	+02	50	17.8	18.7	4 675
2574	P-L		1960	09	26.37988	00	47	31.60	+02	50	29.8		4 675
2574	P-L		1960	09	28.43822	00	45	36.60	+02	50	38.1		4 675
2574	P-L		1960	09	29.39514	00	44	42.79	+02	50	42.7		4 675
2574	P-L		1960	10	17.31529	00	27	57.30	+02	53	36.7		4 675
2574	P-L		1960	10	22.26809	00	23	42.94	+02	56	20.2		4 675
2574	P-L		1960	10	25.30351	00	21	16.81	+02	58	40.3		4 675
2574	P-L		1960	10	26.35766	00	20	27.95	+02	59	38.0		4 675
3108	P-L	*	1960	09	24.27708	00	10	09.82	+18	56	35.1	17.2	4 675
3108	P-L		1960	09	24.36250	00	10	05.43	+18	55	56.9		4 675
3108	P-L		1960	09	25.36042	00	09	16.16	+18	48	04.0		4 675
3108	P-L		1960	09	25.46250	00	09	11.02	+18	47	14.2		4 675
3108	P-L		1960	09	26.24514	00	08	32.77	+18	40	55.8		4 675
3108	P-L		1960	09	26.40208	00	08	24.76	+18	39	40.1		4 675
3108	P-L		1960	09	27.44444	00	07	33.33	+18	31	03.4		4 675
3108	P-L		1960	09	28.40764	00	06	46.20	+18	22	57.1		4 675
3108	P-L		1960	09	28.46181	00	06	43.47	+18	22	29.6		4 675
4153	P-L	*	1960	09	24.33613	00	11	53.35	+04	29	47.5	17.6	4 675
4153	P-L		1960	09	24.37573	00	11	50.83	+04	29	41.4		4 675
4153	P-L		1960	09	25.32502	00	10	50.73	+04	27	02.0		4 675
4153	P-L		1960	09	26.27573	00	09	50.43	+04	24	17.7		4 675
4153	P-L		1960	09	28.32780	00	07	39.88	+04	18	16.5		4 675
4153	P-L		1960	10	22.15559	23	45	39.03	+03	12	11.2		4 675
4153	P-L		1960	10	24.18787	23	44	18.73	+03	08	20.9		4 675
4153	P-L		1960	10	26.26113	23	43	03.90	+03	04	55.6		4 675
4665	P-L	*	1960	09	24.41183	00	29	03.85	-02	11	22.8	17.2	4 675
4665	P-L		1960	09	26.31530	00	27	18.17	-02	18	08.8		4 675
4665	P-L		1960	09	27.40836	00	26	16.70	-02	21	57.7		4 675
4665	P-L		1960	10	17.28198	00	09	03.06	-03	09	23.4		4 675
4665	P-L		1960	10	22.23406	00	05	49.47	-03	11	54.0		4 675
4665	P-L		1960	10	25.25350	00	04	10.83	-03	11	08.8		4 675
4665	P-L		1960	10	26.31531	00	03	39.79	-03	10	28.1		4 675
4831	P-L	*	1960	09	24.41183	00	30	45.16	+00	24	47.2	19.0	4 675
4831	P-L		1960	09	26.31530	00	28	50.22	+00	21	47.1		4 675
4831	P-L		1960	09	27.40836	00	27	43.52	+00	20	04.9		4 675
4831	P-L		1960	09	28.39725	00	26	42.89	+00	18	32.7		4 675
4831	P-L		1960	10	22.23406	00	03	54.98	-00	04	31.0		4 675
4831	P-L		1960	10	25.25350	00	01	36.08	-00	04	03.4		4 675
5568	P-L	*	1960	10	17.31529	00	32	09.09	-00	49	27.5	17.3	4 675
5568	P-L		1960	10	22.26809	00	28	09.59	-00	49	40.2		4 675
5568	P-L		1960	10	25.30351	00	25	57.56	-00	48	07.8		4 675
5568	P-L		1960	10	26.35766	00	25	14.62	-00	47	17.2		4 675
6568	P-L	*	1960	09	24.35002	23	52	10.52	-00	53	18.3	17.6	4 675
6568	P-L		1960	09	26.28543	23	50	11.93	-01	00	59.9		4 675

6568	P-L		1960	09	27.34237	23	49	07.50	-01	05	07.7		4 675
6568	P-L		1960	09	28.33822	23	48	07.22	-01	08	58.7		4 675
6568	P-L		1960	10	17.21390	23	31	58.19	-02	05	41.1		4 675
6568	P-L		1960	10	22.15559	23	29	09.55	-02	12	42.2		4 675
6568	P-L		1960	10	24.18787	23	28	13.22	-02	14	23.5		4 675
6568	P-L		1960	10	26.26113	23	27	23.80	-02	15	23.5		4 675
6575	P-L	*	1960	09	24.35002	00	00	52.44	-03	08	54.9	18.0	4 675
6575	P-L		1960	09	26.28543	23	59	25.17	-03	15	48.1		4 675
6575	P-L		1960	09	27.34237	23	58	37.54	-03	19	29.9		4 675
6575	P-L		1960	09	28.33822	23	57	52.90	-03	22	55.9		4 675
6575	P-L		1960	10	17.22501	23	45	06.31	-04	15	45.0		4 675
6575	P-L		1960	10	22.16324	23	42	28.70	-04	24	05.8		4 675
6575	P-L		1960	10	24.23753	23	41	29.89	-04	26	46.6		4 675
6575	P-L		1960	10	26.27157	23	40	36.43	-04	28	53.8		4 675
6608	P-L	*	1960	09	24.35002	23	56	32.17	-03	30	58.3	18.6	4 675
6608	P-L		1960	09	26.28543	23	54	38.18	-03	33	41.5		4 675
6608	P-L		1960	09	27.34237	23	53	35.77	-03	35	03.6		4 675
6608	P-L		1960	09	28.33822	23	52	37.32	-03	36	17.3		4 675
6608	P-L		1960	10	17.22501	23	36	43.24	-03	36	03.7		4 675
6608	P-L		1960	10	22.16324	23	34	00.75	-03	26	30.0		4 675
6608	P-L		1960	10	24.23753	23	33	07.08	-03	21	09.3		4 675
6608	P-L		1960	10	26.27157	23	32	23.32	-03	15	05.0		4 675
7571	P-L		1984	11	19.41910	04	52	35.27	+28	38	02.5		6 675
7571	P-L		1984	11	21.43299	04	50	32.08	+28	42	00.3		6 675
7604	P-L	*	1960	10	17.28198	00	08	32.43	-05	50	52.3	18.3	4 675
7604	P-L		1960	10	22.23406	00	05	04.80	-06	03	28.8		4 675
7604	P-L		1960	10	25.25350	00	03	13.74	-06	08	52.8		4 675
7604	P-L		1960	10	26.31531	00	02	37.68	-06	10	20.3		4 675
7618	P-L	*	1960	10	17.28198	00	11	54.15	-05	57	56.4	18.0	4 675
7618	P-L		1960	10	22.23406	00	09	07.37	-06	15	16.4		4 675
7618	P-L		1960	10	25.25350	00	07	36.22	-06	24	03.7		4 675
7618	P-L		1960	10	26.31531	00	07	06.26	-06	26	50.5		4 675
1059	T-3		1977	10	07.24652	00	56	19.88	+20	04	34.3		4 675
1059	T-3		1977	10	11.26632	00	52	58.90	+19	29	56.7		4 675
1059	T-3		1977	10	11.33351	00	52	55.33	+19	29	19.8		4 675
1059	T-3		1977	10	12.26510	00	52	09.20	+19	20	59.0		4 675
1059	T-3		1977	10	12.33125	00	52	05.79	+19	20	24.0		4 675
1059	T-3		1977	10	16.25156	00	48	54.76	+18	44	11.5		4 675
1059	T-3		1977	10	16.31684	00	48	51.47	+18	43	35.0		4 675
1059	T-3	*	1977	10	17.25365	00	48	06.99	+18	34	45.3	17.0	4 675
1059	T-3		1977	10	17.32083	00	48	03.70	+18	34	06.7		4 675
1059	T-3		1977	10	22.42812	00	44	10.31	+17	44	47.3		4 675
1059	T-3		1977	10	22.48003	00	44	08.16	+17	44	15.6		4 675
2013	T-3		1977	10	07.25868	01	15	10.04	+10	39	07.1		4 675
2013	T-3		1977	10	11.27743	01	10	55.41	+10	36	32.2		4 675
2013	T-3		1977	10	11.34375	01	10	50.94	+10	36	29.3		4 675
2013	T-3		1977	10	12.27587	01	09	51.38	+10	35	42.6		4 675
2013	T-3		1977	10	12.34271	01	09	46.96	+10	35	39.1		4 675
2013	T-3	*	1977	10	16.26233	01	05	35.20	+10	32	01.5	18.4	4 675
2013	T-3		1977	10	16.32795	01	05	30.83	+10	31	57.7		4 675
2013	T-3		1977	10	17.26458	01	04	30.93	+10	31	05.3		4 675
2013	T-3		1977	10	17.33177	01	04	26.51	+10	31	00.6		4 675
2013	T-3		1977	10	21.40868	01	00	08.37	+10	26	37.1		4 675
2013	T-3		1977	10	21.46910	01	00	04.63	+10	26	33.7		4 675
2013	T-3		1977	10	22.41528	00	59	05.86	+10	25	29.9		4 675
2013	T-3		1977	10	22.46962	00	59	02.54	+10	25	27.2		4 675
2041	T-3		1977	10	07.25868	01	11	43.59	+11	31	50.2		4 675
2041	T-3		1977	10	11.27743	01	08	28.45	+11	09	31.5		4 675
2041	T-3		1977	10	11.34375	01	08	25.07	+11	09	08.3		4 675

2041	T-3		1977	10	12.27587	01	07	39.82	+11	03	49.4		4 675
2041	T-3		1977	10	12.34271	01	07	36.39	+11	03	26.9		4 675
2041	T-3	*	1977	10	16.26233	01	04	26.69	+10	40	43.9	17.3	4 675
2041	T-3		1977	10	16.32795	01	04	23.36	+10	40	21.8		4 675
2041	T-3		1977	10	17.26458	01	03	38.47	+10	34	55.9		4 675
2041	T-3		1977	10	17.33177	01	03	35.10	+10	34	32.4		4 675
2041	T-3		1977	10	21.40868	01	00	23.57	+10	10	38.9		4 675
2041	T-3		1977	10	21.46910	01	00	20.75	+10	10	18.0		4 675
2041	T-3		1977	10	22.41528	00	59	37.54	+10	04	47.9		4 675
2041	T-3		1977	10	22.46962	00	59	34.95	+10	04	28.4		4 675
2141	T-3		1977	10	07.25868	01	02	18.10	+14	39	39.7		4 675
2141	T-3		1977	10	11.27743	00	58	51.70	+14	13	17.6		4 675
2141	T-3		1977	10	11.34375	00	58	48.11	+14	12	51.2		4 675
2141	T-3		1977	10	12.27587	00	58	00.32	+14	06	22.5		4 675
2141	T-3		1977	10	12.34271	00	57	56.73	+14	05	54.1		4 675
2141	T-3	*	1977	10	16.26233	00	54	37.49	+13	37	31.3	16.6	4 675
2141	T-3		1977	10	16.32795	00	54	34.05	+13	37	02.0		4 675
2141	T-3		1977	10	17.26458	00	53	47.53	+13	30	04.9		4 675
2141	T-3		1977	10	17.33177	00	53	44.05	+13	29	34.9		4 675
2141	T-3		1977	10	21.40868	00	50	28.73	+12	58	36.5		4 675
2141	T-3		1977	10	21.46910	00	50	25.91	+12	58	06.5		4 675
2141	T-3		1977	10	22.41528	00	49	42.69	+12	50	55.6		4 675
2141	T-3		1977	10	22.46962	00	49	40.08	+12	50	29.7		4 675
2146	T-3		1977	10	07.25868	01	02	52.17	+11	03	47.7		4 675
2146	T-3		1977	10	11.27743	00	59	34.01	+10	33	47.9		4 675
2146	T-3		1977	10	11.34375	00	59	30.51	+10	33	16.9		4 675
2146	T-3		1977	10	12.27587	00	58	44.36	+10	26	05.9		4 675
2146	T-3		1977	10	12.34271	00	58	40.81	+10	25	34.9		4 675
2146	T-3	*	1977	10	16.26233	00	55	26.97	+09	54	34.4	19.0	4 675
2146	T-3		1977	10	16.32795	00	55	23.53	+09	54	03.9		4 675
2146	T-3		1977	10	17.26458	00	54	37.99	+09	46	35.3		4 675
2146	T-3		1977	10	17.33177	00	54	34.46	+09	46	02.0		4 675
2146	T-3		1977	10	21.40868	00	51	20.88	+09	13	13.5		4 675
2146	T-3		1977	10	21.46910	00	51	17.99	+09	12	43.5		4 675
2146	T-3		1977	10	22.41528	00	50	34.73	+09	05	10.6		4 675
2146	T-3		1977	10	22.46962	00	50	32.16	+09	04	44.8		4 675
2215	T-3		1977	10	07.25868	01	10	46.85	+13	14	30.9		4 675
2215	T-3		1977	10	11.27743	01	06	10.51	+13	23	19.9		4 675
2215	T-3		1977	10	11.34375	01	06	05.68	+13	23	28.9		4 675
2215	T-3		1977	10	12.27587	01	05	01.00	+13	25	15.7		4 675
2215	T-3		1977	10	12.34271	01	04	56.08	+13	25	22.0		4 675
2215	T-3	*	1977	10	16.26233	01	00	23.25	+13	32	01.1	19.0	4 675
2215	T-3		1977	10	16.32795	01	00	18.55	+13	32	07.0		4 675
2215	T-3		1977	10	17.26458	00	59	13.76	+13	33	33.9		4 675
2215	T-3		1977	10	17.33177	00	59	08.93	+13	33	39.0		4 675
2215	T-3		1977	10	21.40868	00	54	31.06	+13	38	58.6		4 675
2215	T-3		1977	10	21.46910	00	54	26.82	+13	39	02.2		4 675
2215	T-3		1977	10	22.41528	00	53	23.88	+13	40	11.1		4 675
2215	T-3		1977	10	22.46962	00	53	20.19	+13	40	14.1		4 675
2295	T-3		1977	10	07.25868	01	16	16.99	+09	07	55.6		4 675
2295	T-3		1977	10	07.27031	01	16	16.22	+09	07	54.6		4 675
2295	T-3		1977	10	11.27743	01	12	35.29	+09	10	25.7		4 675
2295	T-3		1977	10	11.28819	01	12	34.60	+09	10	26.7		4 675
2295	T-3		1977	10	11.34375	01	12	31.30	+09	10	27.6		4 675
2295	T-3		1977	10	11.35642	01	12	30.54	+09	10	29.4		4 675
2295	T-3		1977	10	12.27587	01	11	38.86	+09	10	54.2		4 675
2295	T-3		1977	10	12.28681	01	11	38.20	+09	10	55.4		4 675
2295	T-3		1977	10	12.34271	01	11	34.78	+09	10	55.4		4 675
2295	T-3		1977	10	12.35347	01	11	34.14	+09	10	57.0		4 675

2295	T-3	*	1977	10	16.26233	01	07	51.35	+09	12	27.6	18.1	4 675
2295	T-3		1977	10	16.27309	01	07	50.68	+09	12	30.6		4 675
2295	T-3		1977	10	16.32795	01	07	47.32	+09	12	29.9		4 675
2295	T-3		1977	10	16.33872	01	07	46.69	+09	12	31.5		4 675
2295	T-3		1977	10	17.26458	01	06	54.03	+09	12	51.4		4 675
2295	T-3		1977	10	17.27552	01	06	53.40	+09	12	50.1		4 675
2295	T-3		1977	10	17.33177	01	06	50.00	+09	12	52.9		4 675
2295	T-3		1977	10	17.34236	01	06	49.32	+09	12	52.0		4 675
2295	T-3		1977	10	21.39792	01	03	01.53	+09	14	18.1		4 675
2295	T-3		1977	10	21.40868	01	03	00.96	+09	14	16.1		4 675
2295	T-3		1977	10	21.45799	01	02	57.94	+09	14	19.3		4 675
2295	T-3		1977	10	21.46910	01	02	57.65	+09	14	16.8		4 675
2295	T-3		1977	10	22.39844	01	02	06.72	+09	14	39.4		4 675
2295	T-3		1977	10	22.41528	01	02	05.94	+09	14	38.2		4 675
2295	T-3		1977	10	22.45920	01	02	03.41	+09	14	40.5		4 675
2295	T-3		1977	10	22.46962	01	02	02.76	+09	14	39.0		4 675
2321	T-3		1977	10	07.25868	01	17	32.49	+14	54	11.0		4 675
2321	T-3		1977	10	11.27743	01	13	51.59	+14	25	05.9		4 675
2321	T-3		1977	10	11.34375	01	13	47.64	+14	24	37.0		4 675
2321	T-3		1977	10	12.27587	01	12	56.41	+14	17	37.4		4 675
2321	T-3		1977	10	12.34271	01	12	52.56	+14	17	07.1		4 675
2321	T-3	*	1977	10	16.26233	01	09	18.00	+13	46	55.5	16.8	4 675
2321	T-3		1977	10	16.32795	01	09	14.30	+13	46	24.2		4 675
2321	T-3		1977	10	17.26458	01	08	23.85	+13	39	06.7		4 675
2321	T-3		1977	10	17.33177	01	08	19.97	+13	38	34.8		4 675
2321	T-3		1977	10	21.40868	01	04	44.97	+13	06	18.9		4 675
2321	T-3		1977	10	21.46910	01	04	41.84	+13	05	49.5		4 675
2321	T-3		1977	10	22.41528	01	03	53.48	+12	58	20.2		4 675
2321	T-3		1977	10	22.46962	01	03	50.72	+12	57	53.5		4 675
2368	T-3		1977	10	07.25868	01	21	05.30	+13	36	56.2		4 675
2368	T-3		1977	10	11.27743	01	17	08.85	+13	40	17.9		4 675
2368	T-3		1977	10	11.34375	01	17	04.80	+13	40	21.4		4 675
2368	T-3		1977	10	12.27587	01	16	09.43	+13	40	56.8		4 675
2368	T-3		1977	10	12.34271	01	16	05.33	+13	40	58.3		4 675
2368	T-3	*	1977	10	16.26233	01	12	11.37	+13	42	53.3	18.6	4 675
2368	T-3		1977	10	16.32795	01	12	07.32	+13	42	55.2		4 675
2368	T-3		1977	10	17.26458	01	11	11.52	+13	43	16.9		4 675
2368	T-3		1977	10	17.33177	01	11	07.28	+13	43	18.7		4 675
2368	T-3		1977	10	21.40868	01	07	06.10	+13	44	10.4		4 675
2368	T-3		1977	10	21.46910	01	07	02.55	+13	44	10.0		4 675
2368	T-3		1977	10	22.41528	01	06	07.27	+13	44	19.5		4 675
2368	T-3		1977	10	22.46962	01	06	04.13	+13	44	19.1		4 675
2402	T-3		1977	10	12.27587	01	17	30.33	+12	23	07.4		4 675
2402	T-3		1977	10	12.34271	01	17	25.95	+12	22	45.6		4 675
2402	T-3	*	1977	10	16.26233	01	13	17.88	+12	00	01.1	17.0	4 675
2402	T-3		1977	10	16.32795	01	13	13.52	+11	59	36.2		4 675
2402	T-3		1977	10	17.26458	01	12	14.52	+11	54	04.9		4 675
2402	T-3		1977	10	17.33177	01	12	10.16	+11	53	39.9		4 675
2402	T-3		1977	10	21.40868	01	07	57.46	+11	29	05.8		4 675
2402	T-3		1977	10	21.46910	01	07	53.66	+11	28	42.6		4 675
2402	T-3		1977	10	22.41528	01	06	56.42	+11	23	00.1		4 675
2402	T-3		1977	10	22.46962	01	06	53.03	+11	22	38.9		4 675
2480	T-3	*	1977	10	16.26233	01	13	54.27	+14	32	48.0	17.4	4 675
2480	T-3		1977	10	16.32795	01	13	50.06	+14	32	33.9		4 675
2480	T-3		1977	10	17.26458	01	12	52.07	+14	29	11.0		4 675
2480	T-3		1977	10	17.33177	01	12	47.81	+14	28	56.7		4 675
2480	T-3		1977	10	21.40868	01	08	38.86	+14	13	33.2		4 675
2480	T-3		1977	10	21.46910	01	08	35.20	+14	13	17.4		4 675
2480	T-3		1977	10	22.41528	01	07	38.60	+14	09	40.2		4 675

2480	T-3		1977	10	22.46962	01	07	35.36	+14	09	26.4		4 675
2672	T-3		1977	10	07.25868	01	17	39.99	+09	53	20.4		4 675
2672	T-3		1977	10	07.27031	01	17	39.45	+09	53	13.8		4 675
2672	T-3	*	1977	10	11.27743	01	14	52.88	+09	12	50.2	17.5	4 675
2672	T-3		1977	10	11.28819	01	14	52.22	+09	12	45.9		4 675
2672	T-3		1977	10	11.34375	01	14	49.95	+09	12	10.4		4 675
2672	T-3		1977	10	11.35642	01	14	49.18	+09	12	04.3		4 675
2672	T-3		1977	10	12.27587	01	14	11.25	+09	02	46.2		4 675
2672	T-3		1977	10	12.28681	01	14	10.74	+09	02	38.6		4 675
2672	T-3		1977	10	12.34271	01	14	08.27	+09	02	04.4		4 675
2672	T-3		1977	10	12.35347	01	14	07.79	+09	01	58.3		4 675
2672	T-3		1977	10	16.27309	01	11	26.12	+08	22	27.0		4 675
2672	T-3		1977	10	16.33872	01	11	23.37	+08	21	47.9		4 675
2672	T-3		1977	10	17.27552	01	10	45.41	+08	12	24.8		4 675
2672	T-3		1977	10	17.34236	01	10	42.52	+08	11	47.1		4 675
2672	T-3		1977	10	21.39792	01	08	02.57	+07	31	54.4		4 675
2672	T-3		1977	10	21.45799	01	08	00.22	+07	31	19.5		4 675
2672	T-3		1977	10	22.39844	01	07	24.74	+07	22	15.1		4 675
2672	T-3		1977	10	22.45920	01	07	22.54	+07	21	40.8		4 675
3134	T-3		1977	10	07.27031	01	29	03.48	+07	52	00.8		4 675
3134	T-3		1977	10	11.28819	01	25	17.95	+07	16	11.0		4 675
3134	T-3		1977	10	11.35642	01	25	13.87	+07	15	35.2		4 675
3134	T-3		1977	10	12.28681	01	24	21.48	+07	07	14.9		4 675
3134	T-3		1977	10	12.35347	01	24	17.40	+07	06	39.0		4 675
3134	T-3	*	1977	10	16.27309	01	20	36.24	+06	32	05.4	16.7	4 675
3134	T-3		1977	10	16.33872	01	20	32.41	+06	31	30.5		4 675
3134	T-3		1977	10	17.27552	01	19	40.35	+06	23	25.9		4 675
3134	T-3		1977	10	17.34236	01	19	36.38	+06	22	52.6		4 675
3134	T-3		1977	10	21.39792	01	15	56.91	+05	48	57.2		4 675
3134	T-3		1977	10	21.45799	01	15	53.61	+05	48	28.5		4 675
3134	T-3		1977	10	22.39844	01	15	04.91	+05	40	50.9		4 675
3134	T-3		1977	10	22.45920	01	15	01.62	+05	40	22.1		4 675
5142	T-3		1977	10	11.31111	01	42	25.91	-06	24	48.4		4 675
5142	T-3		1977	10	11.37865	01	42	22.63	-06	25	04.6		4 675
5142	T-3		1977	10	12.30885	01	41	38.68	-06	28	40.6		4 675
5142	T-3		1977	10	12.37500	01	41	35.39	-06	28	56.0		4 675
5142	T-3	*	1977	10	16.29444	01	38	26.87	-06	42	44.1	16.4	4 675
5142	T-3		1977	10	16.36024	01	38	23.53	-06	42	57.5		4 675
5142	T-3		1977	10	17.29688	01	37	38.28	-06	45	54.5		4 675
5142	T-3		1977	10	17.36372	01	37	34.85	-06	46	07.9		4 675
5142	T-3		1977	10	21.37622	01	34	20.51	-06	57	10.0		4 675
5142	T-3		1977	10	21.43611	01	34	17.58	-06	57	16.6		4 675
5142	T-3		1977	10	22.37274	01	33	32.83	-06	59	27.2		4 675
5142	T-3		1977	10	22.43872	01	33	29.58	-06	59	38.1		4 675
93			1977	10	16.26233	01	16	35.25	+12	36	24.4	12.3	4 675
93			1977	10	16.32795	01	16	31.53	+12	36	13.0		4 675
93			1977	10	17.26458	01	15	38.62	+12	33	36.5		4 675
93			1977	10	17.33177	01	15	34.71	+12	33	23.7		4 675
93			1977	10	21.40868	01	11	47.97	+12	21	30.4		4 675
93			1977	10	21.46910	01	11	44.53	+12	21	18.1		4 675
93			1977	10	22.41528	01	10	53.11	+12	18	30.5		4 675
93			1977	10	22.46962	01	10	50.13	+12	18	21.5		4 675
283			1977	10	16.25156	01	05	24.33	+20	33	16.6	12.8	4 675
283			1977	10	16.31684	01	05	20.92	+20	32	59.3		4 675
283			1977	10	17.25365	01	04	34.75	+20	28	47.8		4 675
283			1977	10	17.32083	01	04	31.20	+20	28	29.1		4 675
283			1977	10	22.42812	01	00	24.64	+20	03	41.7		4 675
283			1977	10	22.48003	01	00	22.09	+20	03	24.9		4 675
327			1977	10	07.25868	01	20	37.32	+13	39	32.9		4 675

327		1977	10	11.27743	01	16	57.64	+13	28	52.0		4 675
327		1977	10	11.34375	01	16	53.86	+13	28	42.0		4 675
327		1977	10	12.27587	01	16	02.55	+13	25	59.9		4 675
327		1977	10	12.34271	01	15	58.76	+13	25	48.6		4 675
327		1977	10	16.26233	01	12	22.94	+13	13	52.7	14.3	4 675
327		1977	10	16.32795	01	12	19.25	+13	13	39.8		4 675
327		1977	10	17.26458	01	11	28.03	+13	10	43.2		4 675
327		1977	10	17.33177	01	11	24.21	+13	10	30.8		4 675
327		1977	10	21.40868	01	07	44.73	+12	57	06.2		4 675
327		1977	10	21.46910	01	07	41.37	+12	56	53.7		4 675
327		1977	10	22.41528	01	06	51.54	+12	53	44.4		4 675
327		1977	10	22.46962	01	06	48.64	+12	53	32.6		4 675
438		1984	11	19.41910	04	52	36.89	+26	25	01.9		6 675
438		1984	11	21.43299	04	50	35.71	+26	27	37.8		6 675
485		1977	10	07.27031	01	18	56.24	+06	29	30.3		4 675
485		1977	10	11.28819	01	15	55.49	+05	47	15.6		4 675
485		1977	10	11.35642	01	15	52.33	+05	46	32.7		4 675
485		1977	10	12.28681	01	15	10.10	+05	36	38.3		4 675
485		1977	10	12.35347	01	15	06.86	+05	35	56.8		4 675
485		1977	10	16.27309	01	12	07.11	+04	54	22.0	12.2	4 675
485		1977	10	16.33872	01	12	03.93	+04	53	40.2		4 675
485		1977	10	17.27552	01	11	21.12	+04	43	47.1		4 675
485		1977	10	17.34236	01	11	18.02	+04	43	04.8		4 675
485		1977	10	21.39792	01	08	14.37	+04	00	45.5		4 675
485		1977	10	21.45799	01	08	11.63	+04	00	08.6		4 675
485		1977	10	22.39844	01	07	30.17	+03	50	27.0		4 675
485		1977	10	22.45920	01	07	27.48	+03	49	50.7		4 675
667		1977	09	08.24584	22	33	08.54	-12	52	50.5		6 675
667		1977	09	09.17222	22	32	31.36	-13	01	31.0		6 675
758		1977	10	07.28125	01	21	43.13	-00	38	59.3		4 675
758		1977	10	11.30000	01	18	44.33	-00	57	57.3		4 675
758		1977	10	11.36771	01	18	41.14	-00	58	15.7		4 675
758		1977	10	12.29826	01	17	59.33	-01	02	27.9		4 675
758		1977	10	12.36441	01	17	56.28	-01	02	46.4		4 675
758		1977	10	16.28368	01	14	59.03	-01	19	47.6	12.9	4 675
758		1977	10	16.34931	01	14	55.98	-01	20	03.6		4 675
758		1977	10	17.28628	01	14	13.91	-01	23	57.1		4 675
758		1977	10	17.35313	01	14	10.82	-01	24	12.5		4 675
758		1977	10	21.38698	01	11	11.08	-01	39	45.9		4 675
758		1977	10	21.44705	01	11	08.34	-01	39	58.2		4 675
758		1977	10	22.38542	01	10	27.42	-01	43	20.2		4 675
758		1977	10	22.44878	01	10	24.64	-01	43	32.5		4 675
823		1977	10	07.25868	01	19	26.36	+14	14	35.1		4 675
823		1977	10	11.27743	01	15	31.45	+13	48	23.6		4 675
823		1977	10	11.34375	01	15	27.37	+13	47	57.5		4 675
823		1977	10	12.27587	01	14	32.14	+13	41	32.7		4 675
823		1977	10	12.34271	01	14	28.06	+13	41	05.3		4 675
823		1977	10	16.26233	01	10	34.78	+13	13	04.3	14.0	4 675
823		1977	10	16.32795	01	10	30.72	+13	12	35.2		4 675
823		1977	10	17.26458	01	09	35.22	+13	05	43.9		4 675
823		1977	10	17.33177	01	09	31.12	+13	05	14.0		4 675
823		1977	10	21.40868	01	05	33.11	+12	34	35.1		4 675
823		1977	10	21.46910	01	05	29.57	+12	34	07.1		4 675
823		1977	10	22.41528	01	04	35.75	+12	26	55.3		4 675
823		1977	10	22.46962	01	04	32.67	+12	26	29.3		4 675
885		1977	10	16.27309	01	24	39.29	+04	20	47.7	14.6	4 675
885		1977	10	16.33872	01	24	36.29	+04	20	26.3		4 675
885		1977	10	17.27552	01	23	54.22	+04	15	32.8		4 675
885		1977	10	17.34236	01	23	51.11	+04	15	12.2		4 675

885		1977	10	21.39792	01	20	50.58	+03	54	40.7		4 675
885		1977	10	21.45799	01	20	47.93	+03	54	23.5		4 675
885		1977	10	22.39844	01	20	06.86	+03	49	46.7		4 675
885		1977	10	22.45920	01	20	04.16	+03	49	28.7		4 675
954		1977	10	07.27031	01	13	54.02	+06	47	37.4		4 675
954		1977	10	11.28819	01	10	50.16	+06	27	39.4		4 675
954		1977	10	11.35642	01	10	46.92	+06	27	18.5		4 675
954		1977	10	12.28681	01	10	04.53	+06	22	40.0		4 675
954		1977	10	12.35347	01	10	01.38	+06	22	21.2		4 675
954		1977	10	16.27309	01	07	03.11	+06	03	02.2	14.4	4 675
954		1977	10	16.33872	01	07	00.01	+06	02	42.4		4 675
954		1977	10	17.27552	01	06	18.02	+05	58	11.4		4 675
954		1977	10	17.34236	01	06	14.92	+05	57	51.8		4 675
954		1977	10	21.39792	01	03	17.04	+05	38	38.5		4 675
954		1977	10	21.45799	01	03	14.43	+05	38	23.7		4 675
954		1977	10	22.39844	01	02	34.64	+05	34	04.1		4 675
954		1977	10	22.45920	01	02	31.99	+05	33	47.2		4 675
1100		1977	09	09.17222	22	37	03.43	-07	41	15.5		6 675
1152		1977	09	08.24584	22	35	56.70	-07	25	45.7		6 675
1152		1977	09	09.17222	22	35	04.51	-07	28	56.5		6 675
1186		1977	10	07.28125	01	40	36.33	+03	31	02.2		4 675
1186		1977	10	12.29826	01	36	15.02	+03	23	03.0		4 675
1186		1977	10	12.36441	01	36	11.43	+03	22	56.7		4 675
1186		1977	10	16.28368	01	32	42.20	+03	17	18.4	13.9	4 675
1186		1977	10	16.34931	01	32	38.62	+03	17	12.5		4 675
1186		1977	10	17.28628	01	31	48.34	+03	15	57.0		4 675
1186		1977	10	17.35313	01	31	44.66	+03	15	52.4		4 675
1186		1977	10	21.38698	01	28	09.34	+03	11	07.1		4 675
1186		1977	10	21.44705	01	28	06.20	+03	11	04.3		4 675
1186		1977	10	22.44878	01	27	13.20	+03	10	06.0		4 675
1309		1977	10	07.25868	01	19	08.85	+10	16	32.8		4 675
1309		1977	10	11.27743	01	16	22.04	+09	47	13.7		4 675
1309		1977	10	11.34375	01	16	19.11	+09	46	43.3		4 675
1309		1977	10	12.27587	01	15	40.14	+09	39	46.9		4 675
1309		1977	10	12.28681	01	15	39.61	+09	39	42.8		4 675
1309		1977	10	12.34271	01	15	37.21	+09	39	17.2		4 675
1309		1977	10	12.35347	01	15	36.75	+09	39	14.0		4 675
1309		1977	10	16.26233	01	12	52.06	+09	09	48.1	15.1	4 675
1309		1977	10	16.27309	01	12	51.55	+09	09	45.9		4 675
1309		1977	10	16.32795	01	12	49.18	+09	09	19.0		4 675
1309		1977	10	16.33872	01	12	48.65	+09	09	14.8		4 675
1309		1977	10	17.26458	01	12	09.83	+09	02	15.5		4 675
1309		1977	10	17.27552	01	12	09.41	+09	02	11.7		4 675
1309		1977	10	17.33177	01	12	06.87	+09	01	44.9		4 675
1309		1977	10	17.34236	01	12	06.41	+09	01	40.8		4 675
1309		1977	10	21.39792	01	09	17.89	+08	31	00.2		4 675
1309		1977	10	21.40868	01	09	17.74	+08	30	52.8		4 675
1309		1977	10	21.45799	01	09	15.40	+08	30	33.3		4 675
1309		1977	10	21.46910	01	09	15.20	+08	30	26.8		4 675
1309		1977	10	22.39844	01	08	37.29	+08	23	28.1		4 675
1309		1977	10	22.45920	01	08	34.71	+08	22	59.2		4 675
1466		1987	10	28.50955	04	59	48.49	+03	53	54.2	16.8	2 675
1466		1987	10	28.52240	04	59	48.01	+03	53	50.2		2 675
1470		1977	09	08.24584	22	33	41.17	-10	50	41.8		6 675
1470		1977	09	09.17222	22	32	59.79	-10	53	41.3		6 675
1553		1977	09	08.24584	22	28	52.76	-13	13	51.3		6 675
1553		1977	09	09.17222	22	28	11.18	-13	18	06.9		6 675
1754		1977	09	08.24584	22	23	04.45	-08	20	07.0		6 675
1754		1977	09	09.17222	22	22	33.83	-08	25	50.0		6 675

1762	1977	09	08.24584	22	19	49.97	-10	12	09.3		6 675
1762	1977	09	09.17222	22	19	09.08	-10	16	52.5		6 675
1774	1977	09	08.24584	22	16	17.05	-09	47	35.5		6 675
1774	1977	09	09.17222	22	15	36.18	-09	52	06.5		6 675
1844	1977	10	11.31111	01	41	18.12	-07	39	22.7		4 675
1844	1977	10	11.37865	01	41	14.87	-07	39	39.5		4 675
1844	1977	10	12.30885	01	40	31.90	-07	43	40.1		4 675
1844	1977	10	12.37500	01	40	28.70	-07	43	56.1		4 675
1844	1977	10	16.29444	01	37	24.87	-07	59	28.6	16.1	4 675
1844	1977	10	16.36024	01	37	21.57	-07	59	44.0		4 675
1844	1977	10	17.29688	01	36	37.32	-08	03	08.0		4 675
1844	1977	10	17.36372	01	36	34.16	-08	03	22.1		4 675
1844	1977	10	21.37622	01	33	24.28	-08	16	24.7		4 675
1844	1977	10	21.43611	01	33	21.34	-08	16	35.4		4 675
1844	1977	10	22.37274	01	32	37.43	-08	19	18.2		4 675
1844	1977	10	22.43872	01	32	34.37	-08	19	27.2		4 675
1873	1977	10	07.27031	01	29	16.13	+07	06	25.7		4 675
1873	1977	10	12.28681	01	27	03.18	+06	43	08.5		4 675
1873	1977	10	12.35347	01	27	01.37	+06	42	49.9		4 675
1873	1977	10	16.27309	01	25	16.53	+06	24	34.9	18.4	4 675
1873	1977	10	16.33872	01	25	14.68	+06	24	16.9		4 675
1873	1977	10	17.27552	01	24	49.56	+06	19	56.5		4 675
1873	1977	10	17.34236	01	24	47.70	+06	19	38.5		4 675
1873	1977	10	21.39792	01	22	59.37	+06	00	55.6		4 675
1873	1977	10	21.45799	01	22	57.83	+06	00	39.0		4 675
1873	1977	10	22.39844	01	22	32.84	+05	56	20.6		4 675
1873	1977	10	22.45920	01	22	31.08	+05	56	04.0		4 675
1957	1977	10	07.28125	01	28	41.78	-00	23	47.8		4 675
1957	1977	10	11.30000	01	25	19.10	-00	33	42.5		4 675
1957	1977	10	11.36771	01	25	15.61	-00	33	51.5		4 675
1957	1977	10	12.29826	01	24	28.26	-00	36	01.6		4 675
1957	1977	10	12.36441	01	24	24.72	-00	36	11.4		4 675
1957	1977	10	16.28368	01	21	04.54	-00	44	32.0	16.2	4 675
1957	1977	10	16.34931	01	21	01.14	-00	44	40.7		4 675
1957	1977	10	17.28628	01	20	13.52	-00	46	30.2		4 675
1957	1977	10	17.35313	01	20	09.98	-00	46	39.0		4 675
1957	1977	10	21.38698	01	16	46.34	-00	53	33.1		4 675
1957	1977	10	21.44705	01	16	43.25	-00	53	38.6		4 675
1957	1977	10	22.38542	01	15	56.81	-00	55	00.6		4 675
1957	1977	10	22.44878	01	15	53.61	-00	55	07.8		4 675
2040	1977	10	07.28125	01	40	10.63	+02	53	24.1		4 675
2040	1977	10	12.29826	01	35	52.49	+02	45	20.9		4 675
2040	1977	10	12.36441	01	35	48.86	+02	45	13.9		4 675
2040	1977	10	16.28368	01	32	20.73	+02	39	28.2	16.1	4 675
2040	1977	10	16.34931	01	32	17.15	+02	39	22.3		4 675
2040	1977	10	17.28628	01	31	26.94	+02	38	04.8		4 675
2040	1977	10	17.35313	01	31	23.27	+02	37	58.8		4 675
2040	1977	10	21.38698	01	27	46.40	+02	32	59.4		4 675
2040	1977	10	21.44705	01	27	43.17	+02	32	54.6		4 675
2040	1977	10	22.38542	01	26	52.70	+02	31	54.1		4 675
2040	1977	10	22.44878	01	26	49.45	+02	31	52.1		4 675
2041	1977	10	16.27309	01	25	03.55	+04	06	56.5	16.2	4 675
2041	1977	10	16.28368	01	25	03.05	+04	06	55.0		4 675
2041	1977	10	16.33872	01	25	00.49	+04	06	37.1		4 675
2041	1977	10	16.34931	01	25	00.04	+04	06	35.6		4 675
2041	1977	10	17.27552	01	24	18.39	+04	01	59.7		4 675
2041	1977	10	17.28628	01	24	18.00	+04	01	56.1		4 675
2041	1977	10	17.34236	01	24	15.38	+04	01	39.1		4 675
2041	1977	10	17.35313	01	24	14.86	+04	01	35.9		4 675

2041	1977	10	21.39792	01	21	13.65	+03	42	09.0		4 675
2041	1977	10	21.45799	01	21	10.95	+03	41	53.1		4 675
2041	1977	10	22.38542	01	20	30.16	+03	37	30.8		4 675
2041	1977	10	22.39844	01	20	29.46	+03	37	30.3		4 675
2041	1977	10	22.44878	01	20	27.47	+03	37	13.1		4 675
2041	1977	10	22.45920	01	20	26.77	+03	37	13.7		4 675
2065	1977	10	16.25156	01	07	04.09	+17	58	35.4	14.5	4 675
2065	1977	10	16.31684	01	07	00.31	+17	58	25.7		4 675
2065	1977	10	17.25365	01	06	10.01	+17	56	01.6		4 675
2065	1977	10	17.32083	01	06	06.19	+17	55	51.2		4 675
2065	1977	10	22.42812	01	01	38.13	+17	40	48.1		4 675
2065	1977	10	22.48003	01	01	35.44	+17	40	36.0		4 675
2214	1977	10	07.27031	01	13	32.84	+04	41	51.7		4 675
2214	1977	10	11.28819	01	10	49.18	+04	00	24.6		4 675
2214	1977	10	11.30000	01	10	48.80	+04	00	17.7		4 675
2214	1977	10	11.35642	01	10	46.26	+03	59	43.6		4 675
2214	1977	10	11.36771	01	10	46.00	+03	59	36.4		4 675
2214	1977	10	12.28681	01	10	08.78	+03	50	12.2	15.7	4 675
2214	1977	10	12.35347	01	10	05.95	+03	49	31.2		4 675
2240	1977	09	08.24584	22	36	28.33	-10	05	24.7		6 675
2240	1977	09	09.17222	22	35	47.51	-10	09	21.7		6 675
2255	1977	10	07.28125	01	36	14.72	+00	45	21.7		4 675
2255	1977	10	11.30000	01	32	35.47	+00	45	02.9		4 675
2255	1977	10	11.36771	01	32	31.62	+00	45	02.7		4 675
2255	1977	10	12.29826	01	31	39.99	+00	45	05.3		4 675
2255	1977	10	12.36441	01	31	36.19	+00	45	04.9		4 675
2255	1977	10	16.28368	01	27	55.88	+00	46	06.9	15.4	4 675
2255	1977	10	16.34931	01	27	52.12	+00	46	08.4		4 675
2255	1977	10	17.28628	01	26	59.18	+00	46	31.7		4 675
2255	1977	10	17.35313	01	26	55.33	+00	46	34.4		4 675
2255	1977	10	21.38698	01	23	08.96	+00	49	14.5		4 675
2255	1977	10	21.44705	01	23	05.51	+00	49	19.2		4 675
2255	1977	10	22.38542	01	22	13.46	+00	50	08.0		4 675
2255	1977	10	22.44878	01	22	10.04	+00	50	13.8		4 675
2300	1977	10	07.27031	01	30	27.77	+08	39	42.2		4 675
2300	1977	10	11.28819	01	27	08.37	+08	24	00.8		4 675
2300	1977	10	11.35642	01	27	04.74	+08	23	44.4		4 675
2300	1977	10	12.28681	01	26	17.85	+08	20	01.6		4 675
2300	1977	10	12.35347	01	26	14.44	+08	19	45.2		4 675
2300	1977	10	16.27309	01	22	55.17	+08	03	54.0	15.9	4 675
2300	1977	10	16.33872	01	22	51.69	+08	03	39.3		4 675
2300	1977	10	17.27552	01	22	04.01	+07	59	53.2		4 675
2300	1977	10	17.34236	01	22	00.56	+07	59	36.7		4 675
2300	1977	10	21.39792	01	18	35.59	+07	43	22.7		4 675
2300	1977	10	21.45799	01	18	32.60	+07	43	08.1		4 675
2300	1977	10	22.39844	01	17	45.93	+07	39	24.7		4 675
2300	1977	10	22.45920	01	17	42.81	+07	39	09.4		4 675
2309	1977	10	11.31111	01	39	47.21	-02	10	17.8		4 675
2309	1977	10	11.37865	01	39	44.21	-02	10	49.4		4 675
2309	1977	10	12.30885	01	39	04.93	-02	17	53.0		4 675
2309	1977	10	12.37500	01	39	02.01	-02	18	22.4		4 675
2309	1977	10	16.29444	01	36	12.88	-02	47	07.5	15.9	4 675
2309	1977	10	16.36024	01	36	09.97	-02	47	35.7		4 675
2309	1977	10	17.29688	01	35	29.03	-02	54	11.5		4 675
2309	1977	10	17.36372	01	35	26.06	-02	54	40.3		4 675
2309	1977	10	21.37622	01	32	30.61	-03	21	47.3		4 675
2309	1977	10	21.43611	01	32	27.91	-03	22	08.7		4 675
2309	1977	10	22.37274	01	31	47.38	-03	28	08.8		4 675
2309	1977	10	22.43872	01	31	44.46	-03	28	37.0		4 675

2318	1977	10	16.28368	01	35	13.66	+03	54	42.2		17.9	4 675
2318	1977	10	16.34931	01	35	09.97	+03	54	13.6			4 675
2318	1977	10	17.28628	01	34	20.27	+03	47	28.2			4 675
2318	1977	10	17.35313	01	34	16.50	+03	46	59.4			4 675
2318	1977	10	21.38698	01	30	41.64	+03	18	54.6			4 675
2318	1977	10	21.44705	01	30	38.30	+03	18	29.7			4 675
2318	1977	10	22.38542	01	29	49.08	+03	12	15.9			4 675
2318	1977	10	22.44878	01	29	45.55	+03	11	52.8			4 675
2357	1977	10	07.27031	01	26	12.07	+07	42	23.4			4 675
2357	1977	10	11.28819	01	24	16.44	+07	29	44.9			4 675
2357	1977	10	11.35642	01	24	14.40	+07	29	33.0			4 675
2357	1977	10	12.28681	01	23	47.60	+07	26	35.2			4 675
2357	1977	10	12.35347	01	23	45.47	+07	26	22.6			4 675
2357	1977	10	16.27309	01	21	51.39	+07	13	56.3		16.7	4 675
2357	1977	10	16.33872	01	21	49.45	+07	13	44.2			4 675
2357	1977	10	17.27552	01	21	22.16	+07	10	47.8			4 675
2357	1977	10	17.34236	01	21	20.12	+07	10	35.8			4 675
2357	1977	10	21.39792	01	19	22.83	+06	57	51.4			4 675
2357	1977	10	21.45799	01	19	20.98	+06	57	40.8			4 675
2357	1977	10	22.39844	01	18	54.06	+06	54	44.2			4 675
2357	1977	10	22.45920	01	18	52.34	+06	54	33.6			4 675
2458	1977	10	07.27031	01	09	08.21	+04	13	25.1			4 675
2458	1977	10	11.28819	01	06	05.89	+03	53	46.9			4 675
2458	1977	10	11.35642	01	06	02.75	+03	53	28.0			4 675
2458	1977	10	12.28681	01	05	20.76	+03	48	58.7			4 675
2458	1977	10	12.35347	01	05	17.62	+03	48	39.8			4 675
2458	1977	10	16.27309	01	02	21.91	+03	30	10.9		16.6	4 675
2458	1977	10	16.33872	01	02	18.87	+03	29	52.4			4 675
2458	1977	10	17.27552	01	01	37.64	+03	25	34.7			4 675
2458	1977	10	17.34236	01	01	34.64	+03	25	15.7			4 675
2458	1977	10	21.39792	00	58	40.00	+03	07	23.9			4 675
2458	1977	10	21.45799	00	58	37.45	+03	07	10.9			4 675
2479	1977	09	08.24584	22	23	12.70	-08	02	16.8			6 675
2479	1977	09	09.17222	22	22	20.76	-08	06	30.1			6 675
2614	1977	10	11.31111	01	29	13.06	-05	09	49.3			4 675
2614	1977	10	11.37865	01	29	09.05	-05	10	07.8			4 675
2614	1977	10	12.30885	01	28	16.96	-05	14	34.3			4 675
2614	1977	10	12.37500	01	28	13.00	-05	14	51.4			4 675
2614	1977	10	16.29444	01	24	32.50	-05	31	19.3		16.2	4 675
2614	1977	10	16.36024	01	24	28.62	-05	31	33.7			4 675
2614	1977	10	17.29688	01	23	36.43	-05	34	59.2			4 675
2614	1977	10	17.36372	01	23	32.46	-05	35	12.9			4 675
2614	1977	10	21.37622	01	19	52.71	-05	47	13.1			4 675
2614	1977	10	21.43611	01	19	49.42	-05	47	22.1			4 675
2614	1977	10	22.37274	01	18	59.64	-05	49	34.1			4 675
2614	1977	10	22.43872	01	18	56.18	-05	49	44.9			4 675
2659	1977	09	08.24584	22	23	53.89	-10	01	44.2			6 675
2659	1977	09	09.17222	22	23	15.09	-10	05	44.5			6 675
2737	1977	10	07.24652	01	06	06.49	+17	09	01.3			4 675
2737	1977	10	11.26632	01	02	11.36	+17	02	36.2			4 675
2737	1977	10	11.33351	01	02	07.23	+17	02	28.9			4 675
2737	1977	10	12.26510	01	01	12.36	+17	00	37.7			4 675
2737	1977	10	12.33125	01	01	08.28	+17	00	29.6			4 675
2737	1977	10	16.25156	00	57	17.01	+16	51	26.0		15.7	4 675
2737	1977	10	16.31684	00	57	12.99	+16	51	16.9			4 675
2737	1977	10	17.25365	00	56	18.34	+16	48	49.2			4 675
2737	1977	10	17.32083	00	56	14.22	+16	48	38.8			4 675
2737	1977	10	22.42812	00	51	22.49	+16	33	46.9			4 675
2737	1977	10	22.48003	00	51	19.68	+16	33	35.6			4 675

2747	1977	10	07.25868	01	11	37.98	+12	38	18.4		4 675
2747	1977	10	11.27743	01	08	21.68	+12	24	48.1		4 675
2747	1977	10	11.34375	01	08	18.33	+12	24	34.3		4 675
2747	1977	10	12.27587	01	07	32.93	+12	21	16.0		4 675
2747	1977	10	12.34271	01	07	29.53	+12	21	01.5		4 675
2747	1977	10	16.26233	01	04	19.38	+12	06	49.3	16.8	4 675
2747	1977	10	16.32795	01	04	16.13	+12	06	34.6		4 675
2747	1977	10	17.26458	01	03	31.23	+12	03	08.9		4 675
2747	1977	10	17.33177	01	03	27.89	+12	02	54.1		4 675
2747	1977	10	21.40868	01	00	16.18	+11	47	38.1		4 675
2747	1977	10	21.46910	01	00	13.35	+11	47	23.3		4 675
2747	1977	10	22.41528	00	59	30.19	+11	43	49.2		4 675
2747	1977	10	22.46962	00	59	27.67	+11	43	37.1		4 675
2876	1977	10	16.25156	01	04	30.90	+15	37	18.8	16.5	4 675
2876	1977	10	16.31684	01	04	26.39	+15	37	18.4		4 675
2876	1977	10	17.25365	01	03	23.72	+15	37	04.4		4 675
2876	1977	10	17.32083	01	03	19.02	+15	37	02.6		4 675
2876	1977	10	22.42812	00	57	42.58	+15	34	32.4		4 675
2876	1977	10	22.48003	00	57	39.14	+15	34	28.9		4 675
2919	1977	09	08.24584	22	20	24.42	-10	09	29.1		6 675
2919	1977	09	09.17222	22	19	46.12	-10	13	37.6		6 675
3047	1977	09	08.24584	22	28	17.00	-08	32	35.2		6 675
3047	1977	09	09.17222	22	27	31.01	-08	36	34.0		6 675
3054	1977	10	07.27031	01	11	32.15	+04	50	06.8		4 675
3054	1977	10	11.28819	01	08	28.54	+04	29	09.7		4 675
3054	1977	10	11.35642	01	08	25.26	+04	28	47.5		4 675
3054	1977	10	12.28681	01	07	42.99	+04	23	58.6		4 675
3054	1977	10	12.35347	01	07	39.67	+04	23	37.7		4 675
3054	1977	10	16.27309	01	04	42.81	+04	03	50.6	15.6	4 675
3054	1977	10	16.33872	01	04	39.72	+04	03	31.5		4 675
3054	1977	10	17.27552	01	03	58.21	+03	58	56.3		4 675
3054	1977	10	17.34236	01	03	55.16	+03	58	37.3		4 675
3054	1977	10	21.39792	01	01	00.01	+03	39	33.1		4 675
3054	1977	10	21.45799	01	00	57.45	+03	39	17.5		4 675
3054	1977	10	22.39844	01	00	18.53	+03	35	03.8		4 675
3054	1977	10	22.45920	01	00	15.98	+03	34	48.2		4 675
3164	1977	10	07.27031	01	15	01.11	+05	14	10.4		4 675
3164	1977	10	11.28819	01	11	56.65	+04	56	58.7		4 675
3164	1977	10	11.35642	01	11	53.41	+04	56	39.9		4 675
3164	1977	10	12.28681	01	11	10.65	+04	52	39.4		4 675
3164	1977	10	12.35347	01	11	07.42	+04	52	22.6		4 675
3164	1977	10	16.27309	01	08	05.76	+04	35	42.1	17.3	4 675
3164	1977	10	16.33872	01	08	02.57	+04	35	26.4		4 675
3164	1977	10	17.27552	01	07	19.37	+04	31	32.4		4 675
3164	1977	10	17.34236	01	07	16.19	+04	31	15.5		4 675
3164	1977	10	21.39792	01	04	11.30	+04	14	41.2		4 675
3164	1977	10	21.45799	01	04	08.47	+04	14	27.0		4 675
3164	1977	10	22.39844	01	03	26.61	+04	10	42.0		4 675
3164	1977	10	22.45920	01	03	23.97	+04	10	28.4		4 675
3187	1977	10	16.26233	01	14	38.18	+13	03	52.1	15.9	4 675
3187	1977	10	16.32795	01	14	34.02	+13	03	32.0		4 675
3187	1977	10	17.26458	01	13	38.19	+12	58	28.6		4 675
3187	1977	10	17.33177	01	13	33.99	+12	58	07.0		4 675
3187	1977	10	21.40868	01	09	34.26	+12	35	26.1		4 675
3187	1977	10	21.46910	01	09	30.62	+12	35	05.6		4 675
3187	1977	10	22.41528	01	08	36.27	+12	29	45.8		4 675
3187	1977	10	22.46962	01	08	33.14	+12	29	26.0		4 675
3350	1984	11	19.41910	04	53	42.12	+28	10	24.8		6 675
3350	1984	11	21.43299	04	51	22.45	+28	09	01.9		6 675

3396	1984	11	19.41910	05	03	55.03	+29 26 57.4		6 675
3396	1984	11	21.43299	05	02	12.19	+29 30 05.5		6 675
3439	1984	11	19.41910	05	07	10.01	+29 05 27.7		6 675
3439	1984	11	21.43299	05	05	19.32	+29 05 59.8		6 675
3448	1984	11	19.41910	05	15	15.55	+25 40 49.7		6 675
3448	1984	11	21.43299	05	13	19.58	+25 44 36.2		6 675
3462	1977	10	11.31111	01	31	46.53	-03 08 33.1		4 675
3462	1977	10	11.37865	01	31	42.98	-03 08 55.1		4 675
3462	1977	10	12.30885	01	30	57.73	-03 13 42.3		4 675
3462	1977	10	12.37500	01	30	54.27	-03 14 02.2		4 675
3462	1977	10	16.29444	01	27	40.66	-03 32 21.6	16.1	4 675
3462	1977	10	16.36024	01	27	37.29	-03 32 38.1		4 675
3462	1977	10	17.29688	01	26	50.95	-03 36 32.5		4 675
3462	1977	10	17.36372	01	26	47.54	-03 36 48.4		4 675
3462	1977	10	21.37622	01	23	31.47	-03 51 05.8		4 675
3462	1977	10	21.43611	01	23	28.51	-03 51 15.6		4 675
3462	1977	10	22.37274	01	22	44.08	-03 54 01.4		4 675
3462	1977	10	22.43872	01	22	40.81	-03 54 13.8		4 675
3538	1977	09	08.24584	22	19	39.11	-08 51 02.6		6 675
3538	1977	09	09.17222	22	18	52.23	-08 57 20.7		6 675
3659	1977	10	11.28819	01	24	35.52	+07 43 06.8		4 675
3659	1977	10	11.35642	01	24	31.93	+07 42 39.0		4 675
3659	1977	10	12.28681	01	23	44.38	+07 36 10.3		4 675
3659	1977	10	12.35347	01	23	40.80	+07 35 43.1		4 675
3659	1977	10	16.27309	01	20	17.82	+07 08 19.4	17.5	4 675
3659	1977	10	16.33872	01	20	14.30	+07 07 50.5		4 675
3659	1977	10	17.27552	01	19	25.75	+07 01 18.8		4 675
3659	1977	10	17.34236	01	19	22.00	+07 00 50.8		4 675
3659	1977	10	21.39792	01	15	53.18	+06 32 45.3		4 675
3659	1977	10	21.45799	01	15	50.02	+06 32 21.2		4 675
3659	1977	10	22.39844	01	15	02.51	+06 25 54.6		4 675
3659	1977	10	22.45920	01	14	59.30	+06 25 29.8		4 675

688 Lowell Observatory, Anderson Mesa Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observers B. A. Skiff, E. Bowell
Measurer E. Bowell
0.33-m photographic telescope
PDS scanning microdensitometer
AGK3 and Perth 70 secondary nets, global solutions
See also MPC 9533

1987 SJ	1987	09	26.32997	00	42	12.57	+05 55 39.8	16.0	688
1987 SJ	1987	09	26.37418	00	42	10.68	+05 55 15.0		688

691 Kitt Peak, Steward Observatory
T. Gehrels, Space Sciences Building, University of Arizona,
Tucson, AZ 85721, U.S.A.
Observer J. V. Scotti
0.91-m SPACEWATCH telescope, CCD in scanning mode
SAOC 1984
See also MPC 9198, MPC 10373 and Astron. J. 91, 1242, 1986

1982 XB	1987	11	24.31900	06	38	31.66	+13 56 06.9	s	691
1982 XB	1987	11	24.32752	06	38	37.31	+13 56 25.0	s	691
1982 XB	1987	11	24.33593	06	38	42.65	+13 56 41.8	s	691
1987 SF3	1987	10	26.29672	00	57	29.21	+01 23 17.9		691
1987 SF3	1987	10	26.30263	00	57	29.43	+01 23 18.3		691
1987 SF3	1987	10	26.31638	00	57	30.02	+01 23 20.9		691

760 Goethe Link
F. K. Edmondson, Swain Hall West 319A, Indiana University,
Bloomington, IN 47401, U.S.A.
Measurer D. Owings et al.

1953	VN	1953	11	02.08330	00	14	55.31	+11	40	37.2	760
1953	VN	1953	11	02.12775	00	14	54.19	+11	40	22.3	760
1953	VY3	1953	11	06.24163	02	57	12.90	+14	39	59.6	760
1953	VY3	1953	11	06.28676	02	57	09.90	+14	39	33.6	760
1955	QG1	1955	08	25.26733	22	39	54.61	-11	37	14.5	760
1955	QG1	1955	08	25.30274	22	39	52.05	-11	37	25.2	760
1962	BC	1962	01	28.15903	09	15	53.93	+14	02	31.6	760
1962	BC	1962	01	28.20208	09	15	51.73	+14	02	47.3	760
1962	CA	1962	02	04.16321	08	45	05.83	+08	12	33.1	760
1962	CA	1962	02	04.20765	08	45	02.77	+08	12	38.1	760
1962	CB	1962	02	04.16321	08	41	48.40	+05	12	20.4	760
1962	CB	1962	02	04.20765	08	41	46.18	+05	12	27.1	760
1962	CD	1962	02	04.16321	08	41	07.06	+08	56	45.7	760
1962	CD	1962	02	04.20765	08	41	04.46	+08	56	45.8	760
1962	CH	1962	02	04.25869	10	36	55.74	+18	36	45.9	760
1962	CH	1962	02	04.30243	10	36	53.89	+18	37	18.5	760
1962	CJ	1962	02	04.25869	10	35	07.29	+20	02	27.1	760
1962	CJ	1962	02	04.30243	10	35	05.27	+20	02	51.0	760
1962	CK	1962	02	04.36181	10	30	36.68	+13	11	21.7	A 760
1962	CK	1962	02	04.41042	10	30	34.73	+13	11	33.4	A 760
1962	CM	1962	02	04.36181	10	24	13.37	+08	41	18.3	760
1962	CM	1962	02	04.41042	10	24	11.62	+08	41	34.7	760
1962	PB	1962	08	01.19783	20	13	02.20	-18	14	25.5	760
1962	PE	1962	08	01.24870	21	57	18.82	-10	50	48.4	760
1962	PE	1962	08	01.29783	21	57	16.90	-10	51	10.4	760
1962	PF	1962	08	01.29783	21	51	46.68	-09	25	48.1	760
1962	PL	1962	08	03.22910	21	26	44.82	-14	00	17.9	760
1962	PL	1962	08	03.27354	21	26	42.85	-14	00	39.3	760
1962	PM	1962	08	03.22910	21	25	09.62	-17	00	39.8	760
1962	PM	1962	08	03.27354	21	25	07.50	-17	00	49.5	760
1962	PO	1962	08	03.22910	21	15	13.25	-16	09	10.8	A 760
1962	PO	1962	08	03.27354	21	15	11.04	-16	09	15.0	A 760
1962	PP	1962	08	09.27135	21	12	52.35	-10	59	37.8	760
1962	QA	1962	08	27.22100	22	36	50.63	-19	15	36.0	760
1962	QB	1962	08	28.26737	22	13	05.57	-22	25	06.1	760
1962	QD	1962	08	29.30533	22	02	54.50	-01	31	17.0	760
1962	QD	1962	08	29.35062	22	02	51.98	-01	31	22.2	760
1962	QN	1962	08	29.30533	22	13	11.17	+01	07	54.7	760
1962	QN	1962	08	29.35062	22	13	08.77	+01	07	41.4	760
1962	RB	1962	09	06.22606	21	55	56.33	-04	07	22.0	A 760
1962	RB	1962	09	06.26466	21	55	54.32	-04	07	33.8	A 760
1962	SJ	1962	09	30.30618	01	51	28.49	+16	25	34.8	A 760
1962	SJ	1962	09	30.35201	01	51	26.93	+16	25	12.3	A 760
1962	SN	1962	09	30.30618	01	35	48.31	+16	29	02.7	760
1962	SN	1962	09	30.35201	01	35	46.43	+16	28	48.1	760
1962	TA	1962	10	01.24437	01	07	00.55	-00	26	28.9	760
1962	TA	1962	10	01.28743	01	06	58.31	-00	26	49.6	760
1962	TC	1962	10	01.24437	01	04	21.60	+03	38	10.6	A 760
1962	TC	1962	10	01.28743	01	04	19.47	+03	37	58.1	A 760
1962	TF	1962	10	01.24437	00	54	50.58	+03	52	08.1	760
1962	TF	1962	10	01.28743	00	54	48.56	+03	51	53.8	760
1962	TJ	1962	10	04.22702	00	48	47.82	+09	01	28.7	A 760
1962	TJ	1962	10	04.42660	00	48	46.24	+09	01	04.1	A 760
1962	TM	1962	10	04.22702	00	35	57.55	+14	08	36.5	760
1962	TM	1962	10	04.26660	00	35	55.14	+14	08	24.0	760

1962	TN	1962	10	04.22702	00	34	06.50	+12	20	33.0	760
1962	TN	1962	10	04.26660	00	34	04.00	+12	20	33.9	760
1962	TO	1962	10	04.22702	00	33	40.71	+13	03	08.9	760
1962	TO	1962	10	04.26660	00	33	39.05	+13	02	52.3	760
1962	UD	1962	10	31.08357	01	13	40.79	+21	46	30.5	760
1962	UD	1962	10	31.12873	01	13	38.75	+21	46	14.4	760
1962	UE	1962	10	31.08357	01	12	50.73	+25	09	16.3	A 760
1962	UE	1962	10	31.12873	01	12	48.53	+25	08	59.6	A 760
1962	UG	1962	10	31.18178	02	35	11.46	-01	26	57.6	760
1962	UG	1962	10	31.22623	02	35	09.38	-01	27	19.3	760
1962	VJ	1962	11	01.14786	01	04	18.42	+06	44	58.4	760
1962	WB	1962	11	23.23259	04	06	00.23	+12	26	22.9	760
1962	WB	1962	11	23.28815	04	05	57.34	+12	26	05.1	760
1962	WD	1962	11	23.23259	03	59	11.83	+13	41	29.6	760
1962	WD	1962	11	23.28815	03	59	09.00	+13	41	11.1	760
1963	SJ	1963	09	19.18750	23	56	44.99	+02	49	56.4	760
1963	SJ	1963	09	19.23090	23	56	42.84	+02	49	45.6	760
1964	TM	1964	10	12.09743	23	27	31.34	-02	40	08.7	760
1964	TM	1964	10	12.14118	23	27	29.75	-02	40	10.0	760

801 Oak Ridge
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60 Garden Street, Cambridge, MA 02138, U.S.A.
Observers R. E. McCrosky, C.-Y. Shao, K. Watanabe
1.5-m reflector
AC

1927	UE	1987	10	22.08041	22	46	25.09	+01	44	17.1	801
1964	TC1	1987	10	24.31496	02	42	44.64	+16	12	01.0	801
1966	PK	1987	10	24.17371	23	45	13.57	-04	57	11.2	801
1974	QT1	1987	08	26.28365	23	21	37.10	-05	32	47.5	801
1974	QT1	1987	10	19.05183	22	42	05.09	-04	08	53.8	801
1974	QT1	1987	10	23.07191	22	42	30.70	-03	51	07.6	801
1977	RE2	1987	09	25.33034	01	28	36.91	+00	23	40.8	801
1977	RE2	1987	10	23.22418	01	01	52.12	-02	22	27.9	801
1980	PF	1987	10	23.24928	00	50	45.52	+22	14	07.5	801
1981	EA11	1987	08	26.22108	22	42	58.05	-12	21	34.0	801
1981	EW32	1987	08	26.26274	23	22	51.46	+09	28	35.7	801
1981	EW32	1987	09	26.20244	23	08	00.64	+03	47	47.3	801
1981	EW32	1987	10	22.12337	23	05	59.23	-01	46	52.0	801
1981	SW6	1987	10	20.34624	03	54	25.89	+09	08	53.4	801
1981	SW6	1987	10	22.34646	03	53	28.91	+08	58	29.9	801
1982	XB	1987	11	22.24032	06	15	35.04	+12	45	29.8	801
1982	XB	1987	11	23.23903	06	26	20.77	+13	19	12.7	801
1983	PA	1987	10	19.40623	07	13	36.95	+42	37	32.4	801
1983	VE	1985	04	25.13847	12	14	21.07	-04	45	32.2	801
1983	VE	1987	08	25.29115	23	02	29.30	+00	36	44.7	801
1985	AF	1987	10	24.18959	23	46	37.69	+08	24	03.8	801
1985	YP	1987	08	25.21498	21	38	43.96	+25	38	35.7	801
1987	SL	1987	10	19.20674	00	28	41.70	+32	23	47.4	801
1987	SY	1987	10	19.08374	23	06	35.92	+07	50	30.0	801
1987	UE	1987	10	24.33195	02	46	52.25	+15	28	47.2	16.5 801
2126	P-L	1987	10	24.15550	23	33	26.37	+02	46	30.9	801
9527	P-L	1987	08	24.23533	21	51	14.23	-09	56	43.1	801
9527	P-L	1987	09	26.13397	21	30	50.14	-12	27	10.2	801
392		1987	10	24.29832	02	23	33.82	+12	04	10.9	801
3469		1987	10	24.31496	02	43	33.61	+15	52	07.6	15.5 801
3712		1987	10	23.02236	20	17	43.13	+04	15	59.2	801

881 Toyota
T. Urata, 6-1-303, 1 Chome, Muramatsuhara, Shimizu, Shizuoka-ken, 424 Japan
Observers K. Suzuki, T. Urata
Measurer M. Kizawa
0.31-m f/5.7 reflector
Copied from Nihondaira Obs. Circ.

1987 SJ	1987 10 22.56667	00 27 05.56	+02 07 30.2		15.5		881
1987 SJ	1987 10 22.58924	00 27 05.03	+02 07 21.1				881
1987 SK	1987 10 22.55347	00 17 13.71	+02 46 28.0		17		881
1987 SK	1987 10 22.57813	00 17 12.68	+02 46 23.5				881
1987 SK	1987 10 28.53576	00 13 56.94	+02 30 27.5		16.5	5	881
1987 SK	1987 10 28.56563	00 13 56.15	+02 30 25.6				881
1987 SB2	1987 10 27.50313	00 48 20.43	+04 56 37.6		15.5	1	881
1987 SB2	1987 10 27.53021	00 48 19.03	+04 56 43.2				881
1987 SB2	1987 10 28.60382	00 47 26.21	+05 00 22.0				881
1987 UB	1987 10 27.48785	00 22 05.77	+02 31 34.2		17		881
1987 UB	1987 10 27.51632	00 22 05.2	+02 31 23			F	881
1987 UJ	1987 10 27.54688	02 00 11.69	+16 23 39.5		16.5	3	881
1987 UJ	1987 10 27.58160	02 00 09.79	+16 23 32.4				881
1987 UK	1987 10 27.56458	02 24 28.82	+14 43 59.4		16	4	881
1987 UK	1987 10 27.59514	02 24 27.05	+14 43 44.2				881
1987 UK	1987 11 16.58785	02 07 38.56	+11 55 14.8		16		881
1987 UK	1987 11 16.62951	02 07 36.75	+11 54 55.3				881
1987 UR	1987 10 27.50313	00 47 35.91	+04 44 20.4		16.5	2	881
1987 UR	1987 10 27.53021	00 47 34.66	+04 44 20.1				881
1987 UR	1987 10 28.60382	00 46 49.80	+04 44 01.1				881
1987 UV1	1987 10 27.54688	02 00 36.29	+15 35 34.7		17	F	881
1987 UV1	1987 10 27.58160	02 00 34.49	+15 35 24.9			F	881
2946	1987 10 28.53576	00 14 00.86	+02 26 52.9		17	F	881
2946	1987 10 28.56563	00 13 59.97	+02 26 47.8			F	881

887 Ojima
T. Urata, 6-1-303, 1 Chome, Muramatsuhara, Shimizu, Shizuoka-ken, 424 Japan
Observers T. Niijima and T. Urata
0.30-m f/5.8 reflector
Copied from Nihondaira Obs. Circ.

1987 TA	1987 10 25.53480	01 18 50.45	+16 24 27.7		16		887
1987 TA	1987 10 25.55520	01 18 49.35	+16 24 20.7				887
902	1987 10 25.53480	01 20 21.31	+16 16 37.0		15.5		887
902	1987 10 25.55520	01 20 20.04	+16 16 34.7				887

* * * * *

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The columns headed Arc and O give 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 other multiple) designations, E means that the value of the eccentricity was assumed, F means both; the designations are listed at the end.

The orbit computers (column C) are B = C. M. Bardwell, d = P. K. Dzus, G = D. W. E. Green, I = H. Oishi, M = B. G. Marsden, N = S. Nakano.

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1977 RB7	12.5	770914	272.83	195.56	266.97	1.81	0.0293	2.6880	41	0		B
1977 RL7	13.5	770914	348.57	194.71	193.60	13.29	0.2393	2.6635	41	0		B

1977	RP7	14.5	770914	15.88	330.52	8.01	11.57	0.2785	2.4197	41	0		B
1977	TO6	14.5	771004	23.69	257.63	84.04	6.93	0.1849	2.2952	13	0		B
1977	UD	13.5	771004	307.94	25.45	61.20	4.18	0.1621	2.4472	10	0		B
1977	VL1	14.0	771024	4.39	327.60	49.94	5.80	0.2274	2.6110	35	0		B
1984	WA4	13.5	841116	40.98	29.82	349.71	4.92	0.0749	2.4584	9	4		M
1984	WB4	14.0	841116	30.23	105.77	267.00	12.73	0.2777	2.6716	9	4		M
1984	YU1	13.0	841116	254.77	162.53	19.20	2.81	0.0772	2.2690	34	3		M
1984	YY1	15.0	841116	21.45	23.33	13.11	2.52	0.1740	2.2322	34	3		M
1986	WW10	11.2	861126	57.40	338.03	11.69	2.06	0.1346	2.9226	61	6	D	I
1987	QW	14.5	870902	33.37	81.62	202.43	12.47	0.1841	2.5384	27	7		G
1987	SG3	14.5	870922	27.42	121.09	186.79	22.47	0.3225	2.3589	29	9		M
1987	SH3	15.0	870922	279.09	265.52	189.39	24.10	0.1118	1.8874	24	6		M
1987	SJ3	14.0	870922	12.39	332.14	14.49	24.59	0.0977	1.9863	23	0		M
1987	SQ3	13.5	870922	338.23	59.35	320.78	6.75	0.1655	2.4434	6	7	E	d
1987	SC5	13.5	870922	238.25	259.61	218.61	5.12	0.0895	2.3255	2	5	E	d
1987	SF7	14.0	871012	346.25	115.04	274.72	19.58	0.2842	2.2835	24	3		B
1987	SH7	14.5	871012	18.26	54.57	289.12	18.66	0.0789	1.9395	24	3		B
1987	TA	14.0	871012	14.73	17.28	340.15	4.54	0.2423	2.3101	13	7		M
1987	UL	16.0	871012	359.17	300.86	70.14	8.04	0.4156	2.5659	4	5		M
1987	UR	13.0	871101	344.65	31.53	23.63	5.90	0.3353	3.1785	6	5		N
1987	UW	14.0	871012	19.61	158.41	205.63	32.36	0.1681	2.6340	10	8		B
1987	UX	14.5	871012	15.90	158.55	204.69	24.34	0.2487	2.3880	10	7		B
1987	UB1	12.5	871101	15.27	353.72	17.22	6.06	0.2420	2.4422	21	0		N
1987	UE1	15.5	870922	351.01	188.76	195.60	24.69	0.1927	2.3096	26	7		M
1987	UT1	16.0	870922	8.53	41.61	297.55	6.05	0.3180	2.3074	25	5		M
1987	UV1	15.0	871101	11.95	54.72	323.49	1.34	0.1750	2.0152	6	7		N
1987	WA	16.0	871101	349.45	356.77	66.83	2.97	0.2027	2.3067	3	7	E	M
1987	WB	16.0	871101	334.86	225.66	226.45	1.73	0.2966	2.1689	3	7	E	M
1004	T-3	14.5	771024	38.64	40.79	281.28	8.44	0.2278	2.9861	9	7		B
1008	T-3	14.7	771024	359.75	148.36	231.94	12.46	0.1693	3.1095	15	0		B
1010	T-3	16.2	771024	318.28	111.09	320.09	5.93	0.0957	2.2907	10	9		B
1012	T-3	15.5	771024	51.58	326.01	338.91	12.36	0.2347	3.1066	6	8	E	B
1014	T-3	15.7	771024	19.52	7.44	346.42	11.52	0.1868	2.6150	15	0		B
1016	T-3	15.5	771024	44.84	48.10	270.45	7.68	0.1876	2.7575	6	8		B
1017	T-3	13.5	771024	55.79	27.08	284.17	7.76	0.1352	2.7750	15	0		B
1019	T-3	13.5	771024	347.70	106.32	293.25	9.02	0.1808	3.2274	15	0		B
1020	T-3	15.5	771024	2.57	135.42	243.16	6.56	0.1263	2.2614	10	9		B
1021	T-3	13.7	771024	141.74	266.44	325.23	7.32	0.0983	2.7412	10	9		B
1022	T-3	14.6	771024	350.92	55.14	336.19	9.99	0.0783	3.0990	15	0		B
1023	T-3	15.5	771024	178.61	288.59	273.08	5.84	0.0896	2.2833	10	9		B
1027	T-3	15.2	771024	33.71	75.90	243.10	10.61	0.3184	3.0636	15	0		B
1028	T-3	15.4	771024	21.80	62.03	290.85	7.93	0.1350	2.9889	6	8		B
1029	T-3	16.2	771024	10.90	132.01	230.20	14.33	0.2585	3.2114	10	9		B
1030	T-3	14.0	771024	49.07	105.05	217.83	20.61	0.0778	3.0967	15	0		B
1031	T-3	15.0	771024	108.42	329.47	289.96	7.80	0.1345	2.3867	6	8		B
1032	T-3	13.6	771024	221.05	200.66	322.90	10.35	0.0474	2.9831	11	0		B
1033	T-3	14.1	771024	80.91	299.39	351.34	16.44	0.0854	3.1464	11	0		B
1034	T-3	15.4	771024	57.34	51.93	251.32	7.83	0.1811	3.0712	6	6		B
1035	T-3	16.4	771024	134.98	353.43	247.51	7.30	0.0677	2.2014	10	7		B
1036	T-3	13.9	771024	307.90	122.86	332.69	8.92	0.2142	3.0628	15	0		B
1037	T-3	16.0	771024	25.47	51.07	297.84	5.56	0.1383	2.3593	15	0		B
1039	T-3	14.4	771024	58.82	324.56	345.63	12.65	0.1256	2.6499	15	0		B
1041	T-3	15.6	771024	9.91	37.41	330.09	7.33	0.1966	2.6516	11	0		B
1043	T-3	14.3	771024	326.02	95.97	323.82	8.20	0.0752	3.2068	15	0		B
1044	T-3	16.0	771024	357.14	143.24	242.51	6.92	0.1247	2.3389	10	9		B
1045	T-3	14.8	771024	310.01	102.57	330.52	7.99	0.0319	3.0903	11	0		B
1046	T-3	15.5	771024	10.73	8.82	356.52	11.69	0.2289	2.6429	15	0		B
1047	T-3	14.1	771024	54.05	42.14	272.42	6.33	0.1225	2.7476	15	0		B
1048	T-3	15.0	771024	67.47	349.06	309.71	6.62	0.1443	2.2808	15	0		B

1049	T-3	16.1	771024	350.17	44.61	351.72	14.74	0.1548	2.8369	15	0		B
1050	T-3	14.2	771024	110.74	349.94	276.21	8.58	0.0361	3.1628	10	9		B
1051	T-3	14.7	771024	8.19	143.62	226.96	14.05	0.1828	2.4367	11	0		B
1053	T-3	15.9	771024	38.58	77.97	234.13	12.66	0.3229	2.6498	10	8		B
1054	T-3	16.5	771024	62.42	311.45	3.50	19.86	0.0704	1.9005	11	0		B
1055	T-3	14.9	771024	123.44	272.42	324.09	11.41	0.2808	2.6008	5	6	E	B
1056	T-3	15.8	771024	46.65	13.92	299.92	7.89	0.2239	2.6051	11	0		B
1057	T-3	14.2	771024	100.20	283.14	336.17	13.27	0.2148	3.0320	11	0		B
1058	T-3	14.8	771024	52.06	338.14	332.59	11.61	0.1877	3.2387	6	8		B
1060	T-3	15.5	771024	268.18	237.92	243.38	9.71	0.0731	2.4760	11	0		B
1061	T-3	14.3	771024	321.92	177.02	247.63	9.60	0.0764	2.9927	15	0		B
1062	T-3	16.5	771024	39.10	63.86	267.97	6.19	0.1415	2.3003	15	0		B
1063	T-3	15.0	771024	61.32	56.90	254.66	8.72	0.0742	2.9817	10	9		B
1064	T-3	16.7	771024	11.52	128.05	237.16	8.96	0.2006	2.4619	5	6		B
1067	T-3	15.3	771024	356.31	29.27	359.06	16.40	0.2206	3.1605	10	9		B
1068	T-3	13.0	771024	290.96	112.40	1.59	20.86	0.2053	3.1258	15	0		B
1071	T-3	14.8	771024	42.84	2.74	323.99	5.86	0.1426	2.3744	15	0		B
1072	T-3	15.2	771024	320.66	189.00	232.86	9.79	0.0330	2.8404	9	5		B
1073	T-3	15.1	771024	72.80	61.51	220.46	14.23	0.2189	2.7014	5	6		B
1076	T-3	14.0	771024	8.76	63.33	308.20	6.64	0.1807	2.2515	15	0		B
1078	T-3	14.1	771024	238.89	271.94	237.01	14.19	0.0704	2.6067	10	8		B
1079	T-3	14.4	771024	62.79	57.16	243.69	11.76	0.1641	2.6879	11	9		B
1080	T-3	13.2	771024	147.32	257.66	331.64	11.06	0.1006	2.6043	15	0		B
1081	T-3	13.1	771024	40.05	88.41	234.06	12.04	0.2167	2.5971	15	0		B
1082	T-3	16.0	771024	333.35	131.81	289.59	6.48	0.1866	2.6093	15	0		B
1083	T-3	16.1	771024	344.54	86.23	318.47	5.03	0.1781	2.5329	10	0		B
1084	T-3	13.9	771024	359.67	132.63	248.83	8.31	0.1015	2.9838	15	0		B
1085	T-3	14.4	771024	76.49	22.46	270.46	6.31	0.1110	2.3096	15	0		B
1086	T-3	16.0	771024	18.50	115.02	235.05	9.58	0.2775	2.5828	15	0		B
1087	T-3	15.6	771024	141.04	272.08	316.84	6.33	0.1859	2.2466	6	8		B
1088	T-3	14.5	771024	330.28	69.50	346.54	9.02	0.0750	2.6008	10	0		B
1089	T-3	14.8	771024	24.20	67.05	280.70	4.44	0.1892	2.3107	15	0		B
1090	T-3	16.0	771024	42.52	330.38	355.14	12.97	0.1625	2.6036	11	0		B
1091	T-3	14.6	771024	329.34	167.76	249.32	9.29	0.0842	3.0930	11	0		B
1092	T-3	16.3	771024	313.79	117.77	316.96	5.66	0.0697	2.2863	10	9		B
1093	T-3	14.9	771024	51.91	346.60	328.59	6.76	0.1491	2.5563	15	0		B
1094	T-3	16.2	771024	47.22	327.39	349.77	10.25	0.1833	2.6141	10	9		B
1095	T-3	16.1	771024	359.58	23.62	359.03	14.39	0.0582	2.5961	10	0		B
1096	T-3	14.3	771024	84.55	50.62	228.01	10.79	0.1530	2.6215	10	9		B
1097	T-3	14.2	771024	343.98	158.79	244.63	8.12	0.1449	2.7430	15	0		B
1098	T-3	15.8	771024	358.39	143.43	239.81	9.78	0.1106	3.0046	6	8		B
1100	T-3	15.1	771024	101.40	28.59	242.69	12.25	0.0816	2.7004	6	8		B
1101	T-3	17.3	771024	331.98	113.11	313.00	6.55	0.2026	2.2835	11	0		B
1102	T-3	13.5	771024	246.15	260.05	249.35	11.40	0.1520	3.0945	15	0		B
1103	T-3	15.2	771024	60.68	55.52	250.24	6.18	0.1470	2.2491	15	0		B
1104	T-3	15.8	771024	332.80	135.01	289.51	6.57	0.2127	2.7691	15	0		B
1105	T-3	15.2	771024	83.64	289.56	343.94	14.26	0.2315	2.6650	10	5		B
1106	T-3	14.4	771024	36.91	94.73	242.44	11.37	0.1149	2.4287	6	6		B
1107	T-3	13.1	771024	19.31	116.25	242.73	12.37	0.0921	2.8438	6	6		B
1108	T-3	14.4	771024	10.68	107.86	260.29	9.67	0.1435	3.0467	6	6		B
1109	T-3	16.0	771024	271.54	195.21	281.40	6.10	0.0514	2.3889	10	7		B
1110	T-3	14.8	771024	199.36	278.31	266.65	5.50	0.0772	2.2712	15	0		B
1111	T-3	13.8	771024	68.18	338.73	334.10	10.81	0.0097	3.2558	15	0		B
1112	T-3	15.6	771024	80.56	54.85	235.59	13.50	0.0941	2.6632	10	8		B
1113	T-3	13.8	771024	53.86	327.27	352.02	15.45	0.0966	3.1594	6	8		B
1114	T-3	16.3	771024	15.70	100.27	261.85	5.47	0.1337	2.4445	15	0		B
1115	T-3	15.1	771024	158.48	276.09	304.33	5.96	0.0737	2.4705	15	0		B
1117	T-3	15.0	771024	11.19	65.57	303.61	6.09	0.1327	2.3128	15	0		B
1118	T-3	14.5	771024	301.51	146.85	301.80	8.27	0.0779	3.1719	15	0		B

1119	T-3	14.8	771024	336.61	78.09	349.34	12.46	0.3025	3.1574	15	0 B
1120	T-3	14.1	771024	344.70	106.96	297.62	7.43	0.1570	2.7807	15	0 B
1121	T-3	17.0	771024	17.90	47.26	301.67	5.95	0.3224	2.6853	15	0 B
1122	T-3	13.9	771024	77.44	42.75	255.69	8.16	0.0479	3.1821	15	0 B
1123	T-3	14.9	771024	69.54	325.84	338.74	8.01	0.0675	2.9929	14	0 B
1124	T-3	16.1	771024	345.22	92.76	308.15	4.84	0.0906	2.3132	15	0 B
1125	T-3	16.0	771024	345.74	112.95	292.88	5.83	0.2297	3.1785	10	9 B
1127	T-3	15.1	771024	63.31	24.06	287.65	8.30	0.0775	2.6640	6	6 B
1128	T-3	13.7	771024	47.87	334.23	348.36	13.30	0.1330	3.1533	15	0 B
1131	T-3	17.7	771024	3.61	140.66	236.50	8.61	0.3232	2.6814	15	0 B
1132	T-3	15.9	771024	10.77	124.59	241.69	7.64	0.2500	2.3589	15	0 B
1134	T-3	15.6	771024	66.82	26.18	275.39	5.80	0.1306	2.4118	11	0 B
1135	T-3	14.5	771024	115.90	300.50	319.08	6.13	0.0723	2.3770	15	0 B
1136	T-3	14.8	771024	147.54	318.78	268.38	4.94	0.1332	2.2490	11	0 B
1137	T-3	15.3	771024	344.26	64.22	337.23	8.81	0.0918	3.1137	6	8 B
1138	T-3	15.7	771024	59.50	310.10	358.39	15.24	0.1441	2.6761	6	8 B
1140	T-3	14.1	771024	6.07	110.58	263.94	6.84	0.1347	3.0010	15	0 B
1141	T-3	14.8	771024	46.30	54.48	269.25	7.60	0.1340	3.0908	11	0 B
1142	T-3	13.6	771024	64.64	10.92	297.16	6.61	0.0997	2.3869	15	0 B
1143	T-3	17.9	771024	26.59	86.50	253.96	6.21	0.2579	2.1831	6	8 B
1144	T-3	13.9	771024	336.24	73.44	336.11	8.53	0.0651	2.9712	11	0 B
1148	T-3	13.8	771024	18.70	79.89	273.01	6.16	0.2409	2.7862	15	0 B
1149	T-3	13.3	771024	351.30	132.34	260.27	8.57	0.0911	3.4933	15	0 B
1150	T-3	16.3	771024	34.55	7.99	333.06	7.63	0.1211	2.2143	15	0 B
1151	T-3	16.1	771024	27.16	100.10	248.98	10.94	0.1137	2.9888	6	5 B
1152	T-3	16.2	771024	78.99	347.42	294.98	6.75	0.1945	2.3001	6	8 B
1153	T-3	16.0	771024	27.78	24.09	314.87	6.42	0.2488	2.5256	15	0 B
1155	T-3	14.8	771024	358.27	45.40	342.31	10.76	0.2690	3.1620	15	0 B
1156	T-3	14.0	771024	14.48	89.30	278.98	8.87	0.0178	2.9946	6	6 B
1157	T-3	14.0	771024	358.45	120.64	264.57	8.74	0.0998	2.9845	15	0 B
1158	T-3	13.3	771024	152.87	324.17	260.57	9.91	0.1012	3.0677	15	0 B
1159	T-3	15.1	771024	29.10	107.09	234.64	12.60	0.1816	2.7669	11	0 B
1161	T-3	16.0	771024	346.26	40.60	1.51	14.76	0.1485	2.8331	11	0 B
1163	T-3	13.8	771024	304.30	99.48	356.81	17.10	0.1592	3.1786	11	0 B
1164	T-3	13.6	771024	82.72	45.98	244.21	10.96	0.0830	2.9871	15	0 B
1165	T-3	16.0	771024	358.44	157.35	229.35	11.82	0.1786	2.3226	15	0 B
1167	T-3	14.0	771024	196.47	215.09	336.43	10.70	0.1643	2.5607	11	0 B
1168	T-3	14.6	771024	345.08	50.13	355.24	13.16	0.1621	2.6759	15	0 B
1169	T-3	17.1	771024	344.12	63.16	346.27	8.38	0.2075	2.3765	6	8 B
1171	T-3	14.7	771024	21.03	134.59	222.26	13.80	0.0893	2.9853	15	0 B
1172	T-3	15.8	771024	2.66	161.29	216.79	17.13	0.2423	3.1359	10	9 B
1173	T-3	15.1	771024	60.57	52.20	255.55	8.96	0.1422	2.5958	15	0 B
1174	T-3	16.0	771024	358.17	115.20	272.01	6.54	0.2303	2.9005	10	9 B
1175	T-3	12.7	771024	51.17	19.86	303.30	6.50	0.0887	3.1241	15	0 B
1176	T-3	15.1	771024	274.94	242.86	238.70	9.34	0.1199	2.5335	15	0 B
1177	T-3	13.0	771024	229.10	240.80	285.01	7.55	0.1633	3.1135	15	0 B
1179	T-3	13.6	771024	288.35	195.61	271.61	9.13	0.1070	3.0323	6	6 B
1180	T-3	15.4	771024	341.41	129.00	279.32	8.23	0.1311	3.0092	6	6 B
1181	T-3	14.0	771024	214.72	205.81	324.22	9.58	0.0150	3.1038	15	0 B
1182	T-3	14.4	771024	87.96	322.61	330.65	8.49	0.0182	2.9631	15	0 B
1183	T-3	16.1	771024	351.20	114.78	281.10	3.89	0.1442	2.3536	15	0 B
1184	T-3	15.1	771024	324.36	217.99	221.98	13.57	0.2507	3.0669	15	0 B
1186	T-3	14.5	771024	26.25	0.13	352.74	15.97	0.1042	3.0829	10	8 B
1188	T-3	15.5	771024	49.26	14.43	309.44	6.20	0.1170	2.4668	10	8 B
1189	T-3	15.2	771024	58.40	10.63	291.72	4.01	0.2070	2.4476	10	0 B
1190	T-3	17.0	771024	8.10	118.34	253.91	5.76	0.2223	2.3227	11	0 B
1191	T-3	15.3	771024	264.11	239.17	258.48	8.51	0.1721	2.9964	5	6 B
1193	T-3	12.9	771024	33.82	107.52	227.62	20.21	0.1658	5.2681	15	0 B
1194	T-3	14.3	771024	51.44	9.75	311.46	6.16	0.1219	2.3465	6	6 B

1195	T-3	15.8	771024	347.37	169.76	227.26	14.91	0.0407	2.6148	10	8	B
1197	T-3	12.6	771024	19.10	88.27	267.18	7.86	0.1656	5.3005	10	8	B
1199	T-3	14.4	771024	38.60	87.70	242.08	7.55	0.1759	2.7896	10	8	B
1202	T-3	15.8	771024	44.32	20.74	315.66	5.38	0.0449	2.1996	6	6	B
1206	T-3	16.1	771024	26.01	82.67	258.79	4.17	0.2536	2.3692	6	0	B
1208	T-3	14.8	771024	286.01	129.17	337.54	10.90	0.0704	2.9039	6	6	B
1209	T-3	16.7	771024	347.07	98.69	303.72	6.03	0.1348	2.3735	6	6	B
1211	T-3	17.0	771024	12.06	21.62	342.78	5.70	0.2624	2.4181	6	6	B
1213	T-3	16.5	771024	344.54	110.20	293.54	5.75	0.0938	2.3293	6	6	B
1214	T-3	12.7	771024	345.77	77.78	325.13	8.88	0.1146	3.0038	6	6	B
1215	T-3	15.3	771024	36.02	335.23	356.84	14.93	0.2132	2.6129	6	6	B
1216	T-3	16.5	771024	25.84	108.59	232.09	12.30	0.2639	2.7235	6	6	B
1217	T-3	15.9	771024	288.34	155.54	316.85	5.46	0.1458	2.4102	6	6	B
1218	T-3	15.0	771024	24.61	2.74	349.02	9.12	0.1350	3.0213	6	6	B
1219	T-3	15.7	771024	108.15	293.09	330.31	5.29	0.1181	2.2691	6	0	B
1222	T-3	13.6	771024	339.02	82.18	329.14	6.00	0.1400	3.1957	6	9	B
1223	T-3	14.8	771024	352.99	154.38	238.44	7.65	0.1411	2.9863	6	8	B
1224	T-3	14.7	771024	337.95	184.23	229.11	11.00	0.1478	2.8318	6	6	B
1227	T-3	12.4	771024	32.09	83.46	258.67	7.94	0.1442	2.7841	6	6	B
1228	T-3	15.1	771024	282.34	131.46	345.23	11.51	0.1216	2.7150	6	6	B
1229	T-3	16.6	771024	351.93	52.62	347.86	8.36	0.2540	2.3476	6	6	B
1230	T-3	15.8	771024	341.68	134.95	276.74	4.91	0.1845	2.4888	6	6	B
1232	T-3	13.9	771024	239.80	170.82	344.72	11.27	0.1809	2.6927	5	6	B
1233	T-3	14.0	771024	302.83	153.94	298.99	9.29	0.1283	3.0563	6	6	B
1302	T-3	12.7	771024	29.81	85.87	256.64	9.04	0.0881	5.3354	6	8	E B
1304	T-3	14.5	771024	25.54	73.82	272.65	7.88	0.1552	3.2400	15	0	B
1305	T-3	12.0	771024	30.06	74.81	275.20	7.96	0.0018	5.3893	10	9	E B
1366	T-3	14.9	771024	77.89	298.27	354.42	12.88	0.0945	3.2402	6	0	B
1526	T-3	16.0	771024	45.96	322.48	348.33	13.27	0.2690	2.6584	11	8	B
1793	T-3	16.7	771024	318.20	159.23	286.54	6.29	0.2203	2.5259	6	8	B
1802	T-3	14.8	771024	313.14	234.36	214.50	25.17	0.2135	3.1231	10	9	B
1837	T-3	16.7	771024	54.65	72.94	230.12	12.42	0.2390	2.3824	11	8	B
1849	T-3	14.5	771024	33.24	109.45	236.84	14.32	0.0481	3.1599	11	0	B
1852	T-3	14.2	771024	98.95	271.18	2.61	22.85	0.1110	3.1965	10	8	B
1880	T-3	15.4	771024	37.49	7.31	333.23	9.78	0.0907	2.9686	6	6	B
1887	T-3	14.2	771024	194.63	226.78	325.68	8.72	0.1294	3.0410	6	6	B
1892	T-3	15.7	771024	224.31	220.13	303.35	5.64	0.0443	2.3201	6	6	B
1901	T-3	13.7	771024	298.63	170.45	295.68	8.06	0.1849	3.3236	6	6	B
1904	T-3	16.1	771024	131.82	280.80	326.27	5.20	0.0605	2.3225	6	0	B
1917	T-3	17.3	771024	344.09	139.03	275.80	6.76	0.3001	2.8028	11	8	B
2005	T-3	17.8	771024	15.15	130.21	231.42	5.73	0.2054	2.2166	11	0	B
2007	T-3	15.4	771024	22.42	353.12	348.32	5.21	0.3161	2.5770	11	0	B
2008	T-3	16.2	771024	79.71	22.10	261.05	3.88	0.1749	2.4397	11	0	B
2014	T-3	15.3	771024	322.84	77.26	348.63	3.24	0.0916	2.9759	15	0	B
2017	T-3	15.1	771024	359.22	19.31	4.12	6.56	0.2164	2.5158	14	9	B
2023	T-3	16.2	771024	38.58	109.67	213.72	6.10	0.2364	2.3703	15	0	B
2025	T-3	15.6	771024	345.19	175.15	229.32	4.18	0.1602	2.2842	15	0	B
2026	T-3	16.2	771024	17.09	50.16	307.21	2.74	0.2062	2.6401	15	0	B
2027	T-3	15.5	771024	141.38	252.69	341.72	4.93	0.1103	2.2097	15	0	B
2029	T-3	13.9	771024	267.35	136.43	355.76	9.14	0.1502	2.7363	15	0	B
2031	T-3	14.6	771024	261.43	164.11	320.57	4.35	0.0218	2.2099	15	0	B
2032	T-3	14.4	771024	312.64	109.36	325.14	5.18	0.0492	2.8620	15	0	B
2033	T-3	16.6	771024	333.68	176.81	240.57	5.30	0.1225	2.2887	11	0	B
2034	T-3	16.8	771024	41.39	54.47	262.60	3.90	0.2623	2.5338	10	0	B
2035	T-3	11.8	771024	56.82	327.27	337.95	6.67	0.1797	5.1888	15	0	B
2049	T-3	15.7	771024	35.08	62.02	257.86	2.72	0.3020	3.1814	10	0	B
2053	T-3	14.2	771024	43.20	52.64	273.07	4.06	0.1497	3.1399	15	0	B
2058	T-3	14.3	771024	215.74	267.08	266.73	4.35	0.1380	3.1023	15	0	B
2059	T-3	16.0	771024	25.97	104.73	239.41	3.69	0.2092	2.4344	15	0	B

2061	T-3	16.5	771024	60.77	69.52	227.63	3.77	0.2156	2.3315	14	0		B
2065	T-3	16.4	771024	56.04	356.81	329.18	4.58	0.0169	2.1574	15	0		B
2067	T-3	15.9	771024	292.36	209.67	248.19	3.36	0.0730	2.5492	15	0		B
2075	T-3	14.1	771024	359.30	83.59	300.81	1.84	0.1763	2.5482	15	0		B
2077	T-3	15.5	771024	167.89	207.09	3.27	9.22	0.2117	2.3140	6	8	E	B
2078	T-3	12.9	771024	165.04	230.03	344.09	7.31	0.1506	2.5650	15	0		B
2100	T-3	16.1	771024	306.97	240.71	210.13	21.53	0.1547	2.5816	11	0		B
2103	T-3	13.6	771024	313.54	195.81	233.63	8.80	0.0321	2.9615	15	0		B
2107	T-3	15.7	771024	3.50	36.52	341.25	6.93	0.0462	2.5137	9	7		B
2108	T-3	17.5	771024	32.79	73.14	259.46	3.84	0.2216	2.2790	10	8		B
2109	T-3	16.9	771024	34.26	337.05	351.41	7.49	0.2371	2.5236	9	7		B
2110	T-3	14.9	771024	118.81	253.03	354.72	9.34	0.1541	2.5367	14	9		B
2112	T-3	16.8	771024	324.96	170.72	264.47	2.93	0.2215	2.4999	5	6		B
2114	T-3	12.7	771024	42.63	113.51	216.05	8.83	0.0889	2.9911	15	0		B
2120	T-3	15.7	771024	74.69	71.59	211.81	11.74	0.1849	3.0550	6	7		B
2121	T-3	14.2	771024	275.66	109.20	7.48	15.01	0.1093	3.1146	15	0		B
2122	T-3	16.5	771024	201.81	295.80	243.86	2.45	0.0131	2.2134	9	7		B
2124	T-3	15.4	771024	330.88	211.83	217.36	14.56	0.2522	3.0906	11	0		B
2125	T-3	16.4	771024	30.25	356.89	346.17	6.27	0.1351	2.4017	15	0		B
2126	T-3	16.4	771024	15.84	31.04	324.49	3.75	0.2551	2.6426	15	0		B
2127	T-3	14.2	771024	284.42	109.63	5.02	11.24	0.1605	2.6530	15	0		B
2128	T-3	14.8	771024	69.48	81.01	217.10	7.75	0.1060	3.1493	15	0		B
2129	T-3	15.2	771024	356.27	120.20	264.80	2.06	0.1466	3.2593	6	8		B
2130	T-3	16.8	771024	348.68	166.26	232.40	4.55	0.1594	2.2068	15	0		B
2131	T-3	11.7	771024	86.38	38.22	247.82	7.44	0.0562	5.2265	15	0		B
2134	T-3	14.3	771024	311.42	110.12	339.87	7.16	0.1943	2.7622	15	0		B
2135	T-3	14.7	771024	347.71	174.45	219.21	7.04	0.0570	3.0374	15	0		B
2136	T-3	17.3	771024	28.05	120.20	218.66	4.36	0.2211	2.3350	10	9		B
2137	T-3	14.7	771024	281.91	262.04	213.26	6.15	0.1475	2.5400	9	7		B
2138	T-3	17.5	771024	14.91	141.17	219.51	5.47	0.1992	2.1918	14	0		B
2139	T-3	14.0	771024	242.57	248.58	254.62	3.55	0.0537	2.6426	15	0		B
2140	T-3	11.7	771024	44.92	105.71	217.84	16.46	0.1141	5.2324	15	0		B
2142	T-3	16.3	771024	70.80	30.79	255.16	5.29	0.2173	2.4881	15	0		B
2143	T-3	15.7	771024	57.43	309.41	359.75	10.25	0.1387	2.8516	15	0		B
2144	T-3	14.3	771024	42.78	87.45	229.86	6.11	0.2233	2.7647	15	0		B
2145	T-3	17.7	771024	358.92	143.23	241.00	2.49	0.1771	2.3054	14	0		B
2147	T-3	15.2	771024	25.88	135.35	213.70	9.32	0.1160	2.4595	15	0		B
2148	T-3	15.4	771024	252.15	172.61	322.95	3.69	0.0707	2.9594	10	9		B
2149	T-3	15.8	771024	67.56	79.96	217.98	10.69	0.1364	2.7260	15	0		B
2150	T-3	15.5	771024	328.96	194.23	225.13	8.81	0.1132	3.0590	14	0		B
2151	T-3	15.0	771024	151.01	231.24	357.57	9.46	0.0405	2.2835	15	0		B
2152	T-3	14.8	771024	43.94	108.87	214.88	14.80	0.1423	3.0864	14	0		B
2154	T-3	16.9	771024	350.22	54.24	342.78	4.88	0.1598	2.2589	15	0		B
2155	T-3	14.0	771024	250.65	261.84	237.91	6.02	0.1017	3.2500	10	9		B
2156	T-3	14.4	771024	305.66	238.93	213.74	12.52	0.1628	2.5255	15	0		B
2157	T-3	14.8	771024	329.77	179.33	240.30	4.04	0.1085	2.2731	15	0		B
2158	T-3	14.5	771024	85.00	357.73	284.01	1.76	0.1292	2.1782	15	0		B
2159	T-3	17.3	771024	22.37	13.40	332.68	2.63	0.2452	2.4045	11	0		B
2160	T-3	14.7	771024	3.20	122.82	253.93	4.16	0.1750	3.1134	15	0		B
2161	T-3	12.3	771024	18.34	150.49	208.65	26.39	0.0214	5.1199	15	0		B
2162	T-3	15.6	771024	55.77	69.08	243.43	5.54	0.1336	2.4298	15	0		B
2164	T-3	14.8	771024	325.98	217.79	212.09	7.12	0.1867	2.7076	10	9		B
2165	T-3	14.6	771024	355.23	31.71	355.49	4.83	0.1203	2.8502	15	0		B
2167	T-3	16.3	771024	343.98	58.87	345.54	6.15	0.1415	2.4183	15	0		B
2171	T-3	16.4	771024	335.13	201.95	223.74	6.78	0.2646	2.5130	15	0		B
2172	T-3	14.0	771024	356.21	165.90	218.35	11.23	0.0276	3.2736	10	0		B
2173	T-3	15.1	771024	347.60	187.61	211.51	8.34	0.1380	2.2386	15	0		B
2174	T-3	14.7	771024	302.25	85.51	10.40	13.03	0.1589	2.7206	15	0		B
2178	T-3	14.5	771024	17.11	136.18	217.88	10.83	0.2338	3.0013	15	0		B

2181	T-3	15.7	771024	6.26	138.10	233.13	5.39	0.3354	2.5942	15	0	B
2182	T-3	15.2	771024	131.49	4.48	237.52	2.58	0.0969	2.2388	15	0	B
2184	T-3	17.0	771024	349.02	159.24	238.82	3.70	0.1643	2.4742	15	0	B
2188	T-3	15.8	771024	42.92	325.74	5.33	15.15	0.1054	2.5291	10	9	B
2189	T-3	15.4	771024	9.07	121.60	247.37	3.05	0.1967	2.5763	15	0	B
2190	T-3	15.4	771024	129.00	7.06	237.12	4.13	0.1003	2.3042	15	0	B
2191	T-3	15.3	771024	308.20	103.33	341.15	3.75	0.1155	2.7481	10	9	B
2192	T-3	16.5	771024	5.87	104.30	269.54	1.17	0.2293	2.3332	14	0	B
2193	T-3	15.6	771024	317.85	84.75	358.67	3.53	0.2079	2.5274	14	0	B
2194	T-3	15.4	771024	80.72	275.91	12.88	13.85	0.0979	2.8394	10	0	B
2195	T-3	16.7	771024	24.71	76.97	271.24	2.05	0.1584	2.5990	10	9	B
2197	T-3	17.2	771024	19.20	81.68	270.54	2.27	0.2383	2.3469	10	9	B
2198	T-3	14.2	771024	126.48	9.09	229.74	7.94	0.1895	3.0627	10	0	B
2200	T-3	14.4	771024	32.04	110.67	214.84	13.11	0.2979	2.6539	11	0	B
2202	T-3	15.2	771024	298.26	227.78	222.46	8.90	0.0727	3.1094	15	0	B
2203	T-3	13.6	771024	257.05	279.23	214.85	11.96	0.0996	3.1606	15	0	B
2204	T-3	16.0	771024	152.87	357.14	226.40	6.22	0.1030	2.4114	15	0	B
2205	T-3	17.1	771024	38.98	39.86	284.48	1.92	0.2171	2.4132	6	8	B
2206	T-3	14.9	771024	347.18	138.42	259.07	2.62	0.1057	2.7934	15	0	B
2208	T-3	14.4	771024	96.61	268.40	9.30	10.28	0.0555	3.0463	15	0	B
2210	T-3	15.9	771024	53.01	73.24	252.21	3.58	0.0439	2.2340	15	0	B
2211	T-3	15.9	771024	123.89	328.41	281.45	3.40	0.0879	2.5576	14	0	B
2212	T-3	13.7	771024	26.68	15.17	336.26	4.88	0.0704	2.7392	11	0	B
2213	T-3	15.7	771024	321.44	189.84	237.96	5.18	0.0861	2.3979	15	0	B
2214	T-3	15.2	771024	168.50	325.13	246.37	5.91	0.0987	2.3688	15	0	B
2216	T-3	14.7	771024	108.17	297.85	323.96	2.99	0.1173	2.2156	15	0	B
2217	T-3	14.1	771024	11.33	68.37	298.96	2.39	0.1232	2.7642	11	0	B
2218	T-3	15.2	771024	326.27	68.90	1.06	6.00	0.1693	2.2398	15	0	B
2219	T-3	15.2	771024	1.29	51.94	328.62	2.77	0.0590	2.5113	15	0	B
2220	T-3	15.4	771024	358.31	154.46	229.59	4.36	0.1746	3.0721	14	9	B
2222	T-3	14.7	771024	7.28	78.12	294.16	1.14	0.1190	2.7019	9	0	B
2223	T-3	16.7	771024	336.53	203.02	210.46	5.87	0.1405	2.3647	10	0	B
2224	T-3	15.5	771024	212.96	205.27	325.14	3.75	0.0242	2.5343	10	9	B
2225	T-3	16.7	771024	329.31	113.18	316.78	3.31	0.2141	2.4844	15	0	B
2226	T-3	16.6	771024	320.76	82.83	346.54	5.85	0.0927	2.4626	10	9	B
2227	T-3	15.0	771024	9.63	11.35	359.65	11.42	0.0883	3.0163	15	0	B
2228	T-3	16.5	771024	332.42	185.58	229.76	6.60	0.0831	2.3231	15	0	B
2229	T-3	14.3	771024	195.50	187.04	3.95	13.36	0.1976	2.6483	15	0	B
2231	T-3	16.3	771024	60.43	350.63	308.33	1.34	0.2036	2.4203	14	0	B
2232	T-3	17.1	771024	343.54	48.84	352.96	4.92	0.0727	2.3454	5	6	E B
2233	T-3	17.7	771024	359.55	71.91	312.84	2.10	0.2282	2.3687	15	0	B
2234	T-3	17.3	771024	62.24	31.64	269.56	2.44	0.1771	2.1613	9	7	B
2235	T-3	15.8	771024	7.16	146.24	225.05	7.07	0.2344	2.7811	15	0	B
2238	T-3	16.6	771024	1.28	140.40	242.06	4.58	0.2571	2.3786	15	0	B
2239	T-3	14.8	771024	243.76	186.91	322.19	4.98	0.1113	2.6775	15	0	B
2240	T-3	15.5	771024	154.70	328.31	254.68	4.64	0.1113	2.1817	10	0	B
2241	T-3	15.8	771024	337.48	106.95	303.34	2.02	0.1096	2.5577	15	0	B
2242	T-3	13.9	771024	49.93	324.67	355.91	8.47	0.1199	3.1001	15	0	B
2244	T-3	16.0	771024	1.34	138.25	244.13	4.69	0.2111	2.3233	11	0	B
2246	T-3	15.9	771024	71.24	344.78	326.36	4.84	0.0079	2.3201	11	0	B
2247	T-3	14.4	771024	94.64	318.37	306.01	4.11	0.2177	2.3643	15	0	B
2248	T-3	14.0	771024	60.53	92.53	224.29	10.62	0.0419	3.1202	11	0	B
2250	T-3	14.6	771024	289.48	222.07	244.82	3.46	0.1349	3.1410	14	0	B
2251	T-3	14.7	771024	36.31	314.50	14.88	12.69	0.1995	2.6329	15	0	B
2254	T-3	16.3	771024	353.51	14.74	16.82	21.42	0.0629	1.9139	15	0	B
2256	T-3	15.7	771024	129.66	247.25	357.25	6.95	0.1024	2.2747	11	0	B
2259	T-3	17.3	771024	38.92	95.71	231.14	4.99	0.2067	2.2023	14	0	B
2264	T-3	17.2	771024	46.01	327.17	356.51	3.40	0.1475	2.1506	14	0	B
2265	T-3	17.7	771024	346.40	44.68	1.82	3.81	0.2298	2.2514	5	5	E B

2266	T-3	14.9	771024	355.82	180.20	206.39	15.30	0.0677	2.7318	15	0		B
2268	T-3	13.5	771024	356.88	162.11	224.80	9.95	0.1247	3.0682	15	0		B
2269	T-3	14.6	771024	345.07	174.90	224.91	9.58	0.0739	3.0994	15	0		B
2271	T-3	13.7	771024	1.61	127.89	252.03	1.12	0.0805	2.9430	15	0		B
2272	T-3	15.1	771024	325.75	66.96	2.17	4.83	0.1484	2.3050	15	0		B
2276	T-3	14.4	771024	8.08	58.04	314.81	3.24	0.1664	2.4459	15	0		B
2277	T-3	16.7	771024	328.31	84.46	340.71	4.51	0.1318	2.2687	15	0		B
2279	T-3	14.8	771024	7.59	157.28	216.17	8.92	0.0693	3.0436	15	0		B
2280	T-3	16.4	771024	38.72	66.67	269.84	1.76	0.1014	2.3600	11	0		B
2281	T-3	15.6	771024	112.99	28.14	216.88	5.73	0.2593	2.5718	6	8	E	B
2282	T-3	15.2	771024	283.20	270.18	206.60	7.57	0.1539	2.4523	15	0		B
2283	T-3	13.5	771024	206.25	166.56	13.51	15.46	0.1007	3.1157	11	0		B
2284	T-3	14.2	771024	147.51	11.06	209.52	18.45	0.2755	3.0081	6	6		B
2286	T-3	17.1	771024	346.46	53.43	348.08	4.45	0.1160	2.2284	5	6		B
2287	T-3	13.5	771024	81.89	335.81	300.63	3.45	0.2150	2.6951	15	0		B
2288	T-3	14.9	771024	17.59	6.82	351.58	5.11	0.1973	2.3116	15	0		B
2290	T-3	15.4	771024	33.15	32.26	313.80	4.55	0.0670	2.7104	10	0		B
2291	T-3	16.6	771024	356.26	37.13	352.35	6.78	0.1126	2.2754	11	9		B
2293	T-3	14.2	771024	343.33	36.56	4.57	12.16	0.0415	3.1734	15	0		B
2294	T-3	16.3	771024	34.61	103.48	233.12	2.90	0.1547	2.5956	15	0		B
2298	T-3	17.3	771024	9.13	157.46	209.59	4.74	0.2921	2.5751	15	0		B
2299	T-3	12.3	771024	35.03	125.03	215.95	7.64	0.0670	5.3208	15	0	E	B
2300	T-3	16.1	771024	342.30	37.66	12.35	10.58	0.1961	2.7641	10	9		B
2302	T-3	17.2	771024	343.79	42.09	10.15	8.98	0.2599	2.6460	11	0		B
2303	T-3	16.1	771024	4.74	160.49	216.93	5.77	0.1843	2.2855	15	0		B
2304	T-3	14.9	771024	52.85	102.72	215.16	10.69	0.1182	2.9720	11	0		B
2305	T-3	17.1	771024	19.36	359.78	0.75	3.96	0.0868	2.2457	5	5		B
2307	T-3	15.1	771024	155.03	274.62	313.33	4.26	0.0265	2.2133	6	8		B
2308	T-3	16.3	771024	3.31	7.07	12.24	14.55	0.1784	2.6865	15	0		B
2309	T-3	15.3	771024	18.61	348.81	10.53	13.05	0.1322	2.7466	15	0		B
2311	T-3	13.8	771024	82.64	83.24	211.68	8.83	0.0390	2.9653	15	0		B
2312	T-3	15.4	771024	53.01	328.09	357.15	2.67	0.0531	2.2046	15	0		B
2315	T-3	15.0	771024	336.42	193.94	220.86	1.94	0.1425	2.3800	15	0		B
2316	T-3	16.8	771024	1.53	6.41	15.89	7.69	0.2037	2.2287	15	0		B
2317	T-3	15.1	771024	233.11	156.96	1.24	2.83	0.1059	2.4143	15	0		B
2318	T-3	13.6	771024	130.41	10.62	224.13	3.18	0.2266	2.7130	15	0		B
2319	T-3	15.4	771024	241.80	138.94	10.91	16.17	0.0901	2.8397	10	9		B
2320	T-3	15.7	771024	70.27	295.68	4.92	11.35	0.1148	2.6399	11	0		B
2323	T-3	16.2	771024	13.16	31.27	332.75	3.72	0.2160	2.5489	15	0		B
2324	T-3	14.8	771024	100.19	284.41	341.38	4.54	0.1646	2.2835	15	0		B
2326	T-3	15.0	771024	21.39	78.98	280.77	2.28	0.0496	2.5155	15	0		B
2327	T-3	14.1	771024	350.38	137.31	257.76	2.60	0.1044	2.7912	15	0		B
2330	T-3	15.5	771024	58.79	52.64	248.85	1.44	0.2083	2.3977	15	0		B
2331	T-3	15.6	771024	48.93	110.53	213.48	3.79	0.1093	2.3407	15	0		B
2332	T-3	14.2	771024	175.11	350.84	215.82	5.47	0.0765	2.4603	15	0		B
2335	T-3	14.9	771024	205.92	288.42	250.15	2.96	0.0409	2.8122	15	0		B
2336	T-3	17.4	771024	21.91	16.30	333.91	3.16	0.2250	2.3710	15	0		B
2338	T-3	14.4	771024	62.02	285.73	2.97	11.68	0.2937	2.5625	15	0		B
2339	T-3	15.6	771024	322.69	148.80	284.58	4.04	0.1527	3.0609	11	0		B
2342	T-3	15.5	771024	329.85	80.10	346.21	3.44	0.1675	2.2887	15	0		B
2343	T-3	15.4	771024	0.40	39.23	342.83	1.27	0.1070	2.9383	15	0		B
2346	T-3	13.2	771024	0.66	134.70	245.81	2.43	0.0762	5.0743	5	6	E	B
2348	T-3	17.4	771024	26.99	359.30	346.76	5.62	0.1891	2.3110	10	0		B
2349	T-3	12.9	771024	338.68	184.13	223.65	9.31	0.0713	2.9976	15	0		B
2351	T-3	15.8	771024	78.11	66.64	221.78	7.03	0.1485	2.3611	6	8		B
2352	T-3	15.9	771024	346.15	68.36	334.59	2.86	0.1368	2.2891	15	0		B
2353	T-3	17.2	771024	336.92	175.92	240.23	3.44	0.1655	2.6079	5	6		B
2354	T-3	14.9	771024	13.25	8.27	354.03	4.63	0.2272	3.1050	15	0		B
2355	T-3	14.2	771024	301.58	87.12	12.41	11.52	0.1657	2.7211	15	0		B

2356	T-3	15.4	771024	259.43	269.45	223.01	2.21	0.0800	2.2758	15	0	B
2357	T-3	17.0	771024	351.21	189.83	209.37	4.60	0.2329	2.3442	15	0	B
2358	T-3	16.5	771024	13.83	16.80	348.27	1.48	0.1641	2.2275	15	0	B
2360	T-3	17.9	771024	13.70	4.80	356.63	3.90	0.2621	2.3576	5	6	B
2361	T-3	14.9	771024	100.96	47.01	214.35	11.24	0.1948	2.5888	14	0	B
2364	T-3	14.8	771024	122.15	243.42	2.97	9.47	0.1704	2.7571	10	9	B
2366	T-3	17.8	771024	357.32	34.77	356.03	6.19	0.2551	2.3305	11	0	B
2367	T-3	15.4	771024	259.05	242.22	253.79	4.62	0.0994	2.2803	10	0	B
2369	T-3	15.4	771024	257.07	220.24	275.96	3.01	0.0856	2.2916	15	0	B
2370	T-3	13.9	771024	53.92	91.73	221.55	8.05	0.1570	2.8151	15	0	B
2371	T-3	15.8	771024	341.84	184.17	223.46	5.72	0.1268	2.4310	15	0	B
2372	T-3	14.1	771024	47.08	54.54	250.04	3.00	0.2980	3.0823	15	0	B
2373	T-3	14.8	771024	324.82	192.98	226.10	4.75	0.0163	2.9303	11	0	B
2374	T-3	14.4	771024	305.45	228.95	219.10	4.80	0.0988	2.3704	15	0	B
2375	T-3	15.0	771024	30.81	336.08	3.73	3.83	0.1859	2.4510	15	0	B
2377	T-3	12.2	771024	90.96	264.33	17.06	17.86	0.0791	5.1483	15	0	B
2380	T-3	16.1	771024	351.25	173.67	222.68	4.78	0.1578	2.5079	15	0	B
2381	T-3	16.4	771024	26.73	99.33	247.67	2.22	0.1739	2.2457	15	0	B
2382	T-3	14.5	771024	134.92	293.67	310.69	2.35	0.0483	2.7453	15	0	B
2383	T-3	15.0	771024	354.05	82.11	308.14	2.52	0.0748	2.9901	15	0	B
2384	T-3	15.5	771024	0.94	152.19	231.43	3.91	0.1463	2.2267	15	0	B
2387	T-3	14.1	771024	41.94	74.94	257.62	3.78	0.1047	3.1408	15	0	B
2389	T-3	14.1	771024	12.32	359.53	10.23	15.92	0.1017	2.5826	10	0	B
2390	T-3	13.7	771024	137.37	226.59	14.08	7.52	0.0688	2.3855	15	0	B
2391	T-3	14.7	771024	7.87	17.16	356.24	1.46	0.0839	2.9168	15	0	B
2393	T-3	15.5	771024	218.83	178.50	355.50	4.06	0.1596	2.4977	5	6	B
2394	T-3	14.9	771024	342.73	31.66	16.19	19.93	0.1596	3.0202	10	0	B
2395	T-3	13.7	771024	25.92	72.95	283.81	2.74	0.0065	3.2515	15	0	B
2396	T-3	15.3	771024	113.47	281.53	338.49	3.95	0.1023	2.5282	10	0	B
2397	T-3	16.2	771024	357.58	172.58	213.92	13.81	0.0648	2.6391	9	7	B
2398	T-3	15.8	771024	347.54	57.87	353.27	5.00	0.3159	2.4564	10	0	B
2399	T-3	15.8	771024	72.71	56.63	233.43	5.78	0.1887	2.2849	10	0	B
2400	T-3	14.1	771024	152.66	273.27	317.75	3.58	0.0123	2.4119	10	0	B
2401	T-3	16.9	771024	16.16	352.43	8.67	9.30	0.1852	2.5598	9	8	B
2404	T-3	15.6	771024	24.68	16.11	334.15	3.10	0.1517	3.0696	6	8	E B
2405	T-3	16.6	771024	11.28	14.30	348.97	1.92	0.2923	2.7923	15	0	B
2407	T-3	15.0	771024	20.98	2.42	356.05	1.34	0.0765	2.8996	15	0	B
2408	T-3	15.6	771024	332.45	41.83	16.16	16.30	0.1122	2.8407	6	8	E B
2409	T-3	16.6	771024	4.53	55.06	323.97	1.63	0.0731	2.2606	6	7	B
2410	T-3	14.0	771024	184.98	332.40	227.01	5.82	0.1105	2.4366	10	0	B
2412	T-3	14.7	771024	28.30	121.95	221.22	8.30	0.1900	2.7274	15	0	B
2413	T-3	16.0	771024	69.14	73.42	223.29	7.71	0.1626	2.3887	6	8	B
2414	T-3	14.7	771024	33.67	78.50	257.33	2.44	0.1870	2.8019	15	0	B
2415	T-3	15.2	771024	263.54	273.57	214.02	7.54	0.0694	2.5800	10	7	B
2416	T-3	13.9	771024	291.45	199.55	273.23	1.41	0.1799	2.3959	6	8	B
2418	T-3	15.9	771024	59.18	55.93	250.71	2.28	0.1671	2.5296	6	7	B
2424	T-3	14.2	771024	306.97	194.23	247.17	1.91	0.0481	2.4495	6	8	E B
2426	T-3	15.3	771024	315.62	205.71	240.40	1.48	0.1862	2.4093	6	0	B
2428	T-3	15.5	771024	1.50	17.72	3.87	2.81	0.2421	2.9977	6	0	B
2430	T-3	13.4	771024	0.83	173.80	208.60	13.14	0.1389	3.0553	6	8	B
2432	T-3	15.2	771024	66.08	358.41	300.11	2.01	0.1712	2.6686	6	8	B
2433	T-3	14.8	771024	56.20	95.07	209.76	14.82	0.2107	2.6475	6	8	B
2434	T-3	15.4	771024	169.59	218.66	355.17	4.92	0.0441	2.2744	6	8	B
2436	T-3	16.6	771024	2.96	132.79	248.45	3.60	0.1328	2.4039	6	8	B
2437	T-3	15.1	771024	279.66	151.05	335.11	4.18	0.1874	2.6568	6	7	B
2438	T-3	13.4	771024	98.70	245.38	9.82	9.33	0.2853	2.9145	6	8	E B
2439	T-3	15.8	771024	311.65	119.99	323.19	2.63	0.1148	2.8280	6	7	B
2440	T-3	15.8	771024	4.95	149.62	227.61	3.75	0.2505	2.3979	6	8	B
2443	T-3	15.4	771024	3.41	28.92	351.42	4.90	0.1321	2.6656	6	8	B

2445	T-3	13.5	771024	334.59	45.83	10.77	17.77	0.1089	3.1775	6	8	B
2447	T-3	16.0	771024	27.38	345.08	358.98	5.09	0.1977	2.8238	6	8 E	B
2448	T-3	15.5	771024	318.59	89.85	354.54	4.22	0.2028	2.7969	6	8	B
2449	T-3	14.9	771024	80.87	333.95	309.36	1.38	0.1727	2.3810	6	8	B
2451	T-3	15.5	771024	34.80	93.34	249.85	2.50	0.0919	2.3881	6	8	B
2455	T-3	16.0	771024	345.01	197.29	215.08	12.52	0.2768	2.7674	6	6	B
2456	T-3	15.0	771024	326.84	78.21	352.82	5.59	0.1632	2.3173	6	8	B
2458	T-3	15.4	771024	349.95	54.67	344.48	3.48	0.1782	2.9863	6	8	B
2459	T-3	17.3	771024	355.42	52.52	339.65	2.17	0.1902	2.4110	6	7	B
2462	T-3	16.3	771024	80.27	310.34	337.21	1.70	0.1431	2.3046	6	8 E	B
2465	T-3	16.2	771024	329.88	129.38	295.20	2.02	0.1369	2.2821	6	8	B
2466	T-3	13.4	771024	105.03	252.30	9.30	14.56	0.1745	2.9999	6	8	B
2484	T-3	14.7	771024	283.35	122.09	352.13	5.07	0.1528	3.1402	11	0	B
2487	T-3	14.5	771024	100.70	48.18	211.93	18.06	0.2049	3.1332	6	6 E	B
2488	T-3	15.4	771024	86.46	31.02	259.44	4.50	0.0463	2.7470	15	0	B
2491	T-3	15.7	771024	1.68	89.29	292.41	4.10	0.0937	2.6327	6	0	B
2492	T-3	13.6	771024	16.31	354.44	7.18	11.85	0.1320	3.0738	15	0	B
2493	T-3	16.2	771024	348.86	37.24	0.68	6.88	0.1169	2.4042	15	0	B
2494	T-3	14.8	771024	221.42	207.49	320.68	3.15	0.0957	2.2357	15	0	B
2495	T-3	15.0	771024	3.01	94.62	285.24	2.85	0.0933	2.4733	15	0	B
2496	T-3	13.9	771024	114.20	47.13	218.33	8.90	0.0211	2.9802	15	0	B
2498	T-3	15.9	771024	71.99	274.20	10.14	8.01	0.2248	2.6812	11	0	B
2499	T-3	15.0	771024	150.56	242.33	341.29	2.29	0.1453	2.8400	6	8	B
2536	T-3	15.7	771024	116.31	258.28	355.83	8.67	0.1544	2.6045	5	6 E	B
2546	T-3	13.8	771024	5.80	357.40	18.50	10.80	0.2553	2.3426	5	6	B
2583	T-3	14.7	771024	332.54	201.07	219.17	13.20	0.1337	2.6204	5	6	B
2602	T-3	14.8	771024	191.26	336.79	214.82	7.36	0.1354	2.4837	10	9	B
2603	T-3	14.0	771024	196.67	327.36	219.59	14.25	0.0973	3.0794	15	0	B
2604	T-3	17.6	771024	351.01	111.92	289.64	3.32	0.2917	2.5498	15	0	B
2605	T-3	17.1	771024	30.80	68.60	269.59	3.35	0.1993	2.4193	14	0	B
2607	T-3	16.9	771024	104.10	43.89	228.05	3.96	0.0601	2.1636	5	6	B
2608	T-3	16.9	771024	61.01	45.48	252.14	5.10	0.2257	2.3201	6	9	B
2609	T-3	15.6	771024	74.93	71.13	214.42	7.27	0.1854	2.8903	10	9	B
2610	T-3	15.5	771024	235.82	204.74	312.95	1.90	0.1303	2.3871	15	0	B
2612	T-3	15.0	771024	315.26	85.14	353.71	9.94	0.1161	3.1622	6	7	B
2613	T-3	15.3	771024	296.01	178.48	271.75	4.48	0.0268	2.7206	11	0	B
2614	T-3	14.5	771024	106.04	258.63	1.69	8.76	0.1551	3.1625	10	0	B
2615	T-3	16.3	771024	314.32	99.48	351.33	4.82	0.2193	2.7300	6	8	B
2616	T-3	15.1	771024	239.48	263.02	245.35	5.38	0.0386	2.3619	10	9	B
2617	T-3	15.2	771024	35.79	9.33	327.56	4.45	0.1463	3.1014	11	0	B
2619	T-3	14.3	771024	269.60	285.41	205.81	16.97	0.1638	3.1337	10	9	B
2620	T-3	16.3	771024	17.20	345.06	11.03	12.97	0.2407	3.1600	6	8 E	B
2621	T-3	15.1	771024	157.62	5.01	214.27	13.19	0.1794	2.3582	6	8	B
2622	T-3	15.9	771024	359.49	144.13	241.00	5.23	0.1786	3.1604	5	6	B
2625	T-3	15.1	771024	311.57	84.98	2.37	10.03	0.1469	3.0453	6	8	B
2626	T-3	16.7	771024	346.74	36.29	11.19	11.59	0.2407	2.8288	6	8	B
2629	T-3	17.0	771024	17.38	348.34	11.77	7.21	0.1261	2.4239	14	0	B
2633	T-3	16.8	771024	18.58	151.49	208.71	7.77	0.0898	2.5021	10	0	B
2634	T-3	15.6	771024	171.20	337.43	231.56	2.60	0.0915	2.6425	9	0	B
2635	T-3	16.7	771024	56.67	81.12	228.57	2.10	0.1574	2.6378	10	0	B
2637	T-3	16.6	771024	13.05	77.75	288.21	0.54	0.1256	2.9570	6	0	B
2639	T-3	17.7	771024	9.29	159.85	208.26	4.56	0.2671	2.5799	11	0	B
2640	T-3	17.4	771024	14.01	156.94	209.04	4.84	0.1451	2.2008	6	0	B
2641	T-3	18.3	771024	348.06	45.26	359.12	1.00	0.2200	2.2584	6	4	B
2642	T-3	15.9	771024	11.28	162.09	205.92	8.63	0.1280	3.0365	10	0	B
2664	T-3	15.6	771024	322.69	77.19	353.82	2.29	0.1446	2.3459	5	0	B
2665	T-3	17.4	771024	10.33	130.02	236.37	1.22	0.2526	2.1778	5	7	B
2666	T-3	14.5	771024	163.48	216.53	357.98	3.09	0.0975	2.3313	5	0	B
2673	T-3	17.1	771024	352.24	185.67	211.30	1.73	0.2318	2.4284	15	0	B

2674	T-3	15.9	771024	316.74	226.17	207.69	4.22	0.0975	2.7142	14	0		B
2676	T-3	14.9	771024	122.26	37.27	211.60	4.02	0.1175	2.3258	15	0		B
2677	T-3	16.3	771024	9.91	165.12	204.79	6.82	0.1327	2.3074	14	0		B
2678	T-3	18.1	771024	18.49	148.53	203.79	9.69	0.2585	2.2624	10	0		B
2681	T-3	16.1	771024	29.27	356.15	341.84	2.98	0.1941	2.9119	5	5	E	B
2682	T-3	12.9	771024	78.23	90.27	201.62	22.03	0.0882	3.0774	5	7		B
3006	T-3	13.2	771024	359.89	354.06	31.09	8.21	0.0834	2.3162	6	8		B
3007	T-3	15.0	771024	193.53	138.34	55.08	2.84	0.1294	2.5698	5	6		B
3009	T-3	14.9	771024	33.88	299.35	34.22	14.95	0.1982	3.1319	11	0		B
3015	T-3	16.5	771024	45.04	115.37	194.12	11.85	0.2939	2.5021	6	8		B
3016	T-3	15.8	771024	339.87	287.38	126.90	1.82	0.1888	2.7183	6	8	E	B
3019	T-3	12.7	771024	61.94	113.94	191.98	9.59	0.1500	2.8180	6	8	E	B
3020	T-3	16.4	771024	314.71	30.80	57.39	2.38	0.1886	2.4259	6	8	E	B
3021	T-3	17.1	771024	355.36	200.88	189.70	6.36	0.1104	2.6250	5	6	E	B
3023	T-3	14.5	771024	78.01	264.91	31.36	7.87	0.0855	2.9266	6	8		B
3025	T-3	15.9	771024	358.91	223.87	163.64	0.52	0.2424	2.7007	6	8	E	B
3026	T-3	18.6	771024	18.55	248.23	107.07	0.12	0.2490	2.2202	6	6		B
3027	T-3	14.7	771024	23.06	328.65	26.77	2.72	0.1205	3.1216	6	8		B
3028	T-3	16.3	771024	329.79	49.97	21.67	1.64	0.2105	2.2795	6	8	E	B
3030	T-3	17.1	771024	356.66	8.34	23.30	0.67	0.2466	2.6141	6	8	E	B
3031	T-3	17.7	771024	336.17	216.16	202.35	1.87	0.1603	2.3592	5	6		B
3032	T-3	16.7	771024	32.39	135.31	200.95	4.29	0.2212	2.2270	6	8		B
3033	T-3	15.9	771024	352.45	197.38	200.74	5.27	0.2241	2.4379	6	8	E	B
3035	T-3	15.7	771024	350.82	355.59	42.59	1.37	0.1859	3.2546	6	7		B
3037	T-3	16.8	771024	348.68	8.50	36.52	2.89	0.2586	2.8205	5	6	E	B
3038	T-3	15.9	771024	71.80	232.67	44.43	5.63	0.3011	2.6200	5	6	E	B
3039	T-3	14.6	771024	335.16	267.49	145.37	3.42	0.0800	2.6758	6	0		B
3040	T-3	11.2	771024	174.98	176.90	28.50	29.44	0.0779	5.0498	15	0	E	B
3041	T-3	14.5	771024	278.23	57.64	59.46	5.10	0.1050	2.6694	11	0		B
3042	T-3	14.9	771024	216.08	129.65	46.47	7.57	0.1573	2.3082	15	0		B
3043	T-3	17.7	771024	347.79	260.83	143.27	2.57	0.2088	2.3089	5	0		B
3045	T-3	11.9	771024	56.98	284.97	32.91	15.11	0.0763	3.2475	15	0		B
3046	T-3	15.7	771024	220.70	111.30	58.69	4.34	0.1056	2.2300	6	8		B
3047	T-3	14.6	771024	15.18	323.73	41.21	6.96	0.1159	2.4848	6	8		B
3049	T-3	14.7	771024	61.47	119.74	168.33	3.84	0.2974	2.8379	6	8		B
3050	T-3	12.3	771024	278.04	343.63	129.43	2.36	0.0680	3.1133	6	8		B
3052	T-3	15.3	771024	249.87	346.63	161.86	2.20	0.1427	2.4291	6	8		B
3054	T-3	13.1	771024	146.01	198.24	24.89	14.87	0.2950	2.9465	6	8	E	B
3055	T-3	17.0	771024	354.93	193.32	199.19	3.99	0.1603	2.4360	6	7	E	B
3057	T-3	17.5	771024	3.54	177.48	202.44	3.05	0.2823	2.3869	6	8		B
3058	T-3	18.2	771024	31.23	313.54	22.73	4.33	0.2393	2.1741	5	6		B
3059	T-3	16.8	771024	318.91	228.21	202.86	5.28	0.0599	2.2372	6	7		B
3062	T-3	16.9	771024	69.51	266.11	22.54	1.83	0.2318	2.4282	5	5	E	B
3064	T-3	15.2	771024	203.68	166.88	23.63	14.27	0.3112	2.6015	5	5		B
3065	T-3	17.1	771024	8.95	181.87	189.93	3.37	0.1796	2.6948	6	6	E	B
3066	T-3	12.6	771024	133.37	212.44	24.92	21.48	0.1780	2.6279	6	8	E	B
3067	T-3	17.2	771024	356.65	270.87	120.88	0.74	0.2760	2.6196	5	6	E	B
3068	T-3	15.2	771024	251.68	319.72	183.42	4.04	0.1042	2.5100	5	6		B
3071	T-3	16.2	771024	25.05	295.03	48.55	3.63	0.2447	2.6314	6	8		B
3072	T-3	14.5	771024	245.09	348.96	160.94	3.65	0.1201	2.6476	5	6	E	B
3076	T-3	15.7	771024	73.43	125.01	174.13	5.66	0.1006	2.3438	6	0		B
3078	T-3	15.1	771024	358.34	193.18	193.31	18.68	0.2010	3.2000	15	0		B
3079	T-3	14.6	771024	1.08	190.19	192.80	8.32	0.2225	2.8063	15	0		B
3080	T-3	15.7	771024	57.15	114.22	191.84	7.53	0.1924	2.7905	5	6	E	B
3081	T-3	15.1	771024	49.93	277.57	49.83	2.81	0.0690	2.8800	6	7		B
3082	T-3	14.4	771024	109.64	217.50	30.44	8.77	0.2761	2.5315	6	8		B
3083	T-3	15.4	771024	62.35	264.11	27.86	10.95	0.2608	2.5146	6	8		B
3084	T-3	16.4	771024	52.90	276.85	33.99	1.28	0.2021	2.3105	6	8		B
3086	T-3	14.3	771024	30.21	114.42	230.24	0.33	0.1397	3.1643	15	0		B

3087	T-3	16.0	771024	10.96	359.21	13.35	1.32	0.0560	2.4385	9	8	E	B
3088	T-3	15.6	771024	331.85	198.06	221.85	0.32	0.1102	2.3858	10	9	E	B
3089	T-3	17.1	771024	333.07	220.69	201.39	5.94	0.1595	2.3575	11	0		B
3090	T-3	16.4	771024	42.68	300.31	23.44	10.39	0.1968	2.5843	6	8		B
3091	T-3	17.6	771024	354.79	191.89	200.58	4.77	0.1384	2.1890	5	6	E	B
3093	T-3	15.0	771024	28.27	152.99	194.86	6.08	0.1362	2.4066	15	0		B
3094	T-3	14.7	771024	141.81	205.96	29.36	7.86	0.1000	2.5793	10	0		B
3095	T-3	14.3	771024	257.70	101.13	34.60	5.34	0.0892	2.5502	10	0		B
3098	T-3	16.3	771024	344.65	225.46	180.98	4.81	0.1751	2.5936	15	0		B
3100	T-3	14.8	771024	144.81	78.21	151.84	3.02	0.1433	2.4283	15	0		B
3101	T-3	14.7	771024	53.89	281.09	38.94	8.68	0.0974	2.3104	15	0		B
3102	T-3	15.9	771024	7.52	261.98	111.34	2.38	0.1805	2.4018	15	0		B
3103	T-3	14.3	771024	200.16	356.77	190.72	14.30	0.1427	2.7136	15	0		B
3104	T-3	10.8	771024	124.33	56.48	194.48	18.68	0.0780	5.2396	15	0		B
3105	T-3	14.4	771024	31.84	168.36	171.29	2.83	0.1767	2.4218	15	0		B
3107	T-3	12.4	771024	304.52	64.31	31.92	2.66	0.1617	3.0803	15	0		B
3108	T-3	11.5	771024	128.40	212.80	33.79	1.90	0.0931	5.0612	15	0	E	B
3109	T-3	13.8	771024	168.04	218.05	354.91	0.30	0.1183	3.2052	15	0		B
3110	T-3	15.3	771024	339.44	54.18	359.68	1.27	0.1577	2.2260	6	7	E	B
3111	T-3	16.1	771024	359.73	168.89	217.15	1.56	0.1655	2.2222	6	8		B
3112	T-3	17.2	771024	6.99	355.26	19.09	2.65	0.2250	2.4018	15	0		B
3113	T-3	16.6	771024	22.83	327.81	21.60	8.13	0.2261	2.3114	10	0		B
3114	T-3	16.5	771024	9.68	182.76	185.63	0.09	0.2414	2.9681	10	0		B
3115	T-3	15.8	771024	271.68	315.51	187.45	2.87	0.2819	2.4760	6	8		B
3117	T-3	17.3	771024	339.00	247.49	167.24	1.20	0.1732	2.3714	10	0		B
3118	T-3	16.7	771024	305.45	263.31	188.71	3.37	0.1319	2.5519	10	0		B
3119	T-3	18.2	771024	334.62	246.38	200.42	22.76	0.4231	2.6871	11	0		B
3121	T-3	14.6	771024	33.94	311.97	29.08	10.00	0.1133	3.1661	15	0		B
3122	T-3	15.7	771024	341.16	4.42	39.23	4.26	0.0308	2.5631	15	0		B
3123	T-3	14.3	771024	152.91	37.10	189.77	8.14	0.0626	3.0807	15	0		B
3124	T-3	14.9	771024	290.74	297.13	164.07	2.61	0.0796	2.9247	15	0		B
3125	T-3	18.2	771024	356.75	229.44	160.86	1.68	0.1906	2.1546	6	6		B
3126	T-3	15.9	771024	337.87	17.03	36.60	5.88	0.1495	2.7262	15	0		B
3127	T-3	16.6	771024	41.26	295.31	35.98	5.69	0.1358	2.3130	11	0		B
3128	T-3	12.9	771024	316.48	7.79	72.77	2.35	0.1540	3.1198	15	0		B
3129	T-3	14.7	771024	347.89	313.80	86.62	2.07	0.1486	2.5466	15	0		B
3130	T-3	15.3	771024	318.48	2.05	70.39	3.02	0.0961	2.9815	10	0		B
3131	T-3	14.4	771024	41.14	120.94	194.60	24.61	0.2737	3.2420	15	0		B
3132	T-3	15.1	771024	38.46	305.35	30.93	16.38	0.0937	3.1273	14	0		B
3133	T-3	13.6	771024	96.41	130.70	128.83	2.30	0.2487	3.0595	15	0		B
3135	T-3	14.1	771024	305.27	258.24	185.39	3.41	0.0555	2.7369	15	0		B
3136	T-3	18.4	771024	26.69	295.77	49.20	1.50	0.2059	2.2015	6	8		B
3137	T-3	12.9	771024	347.80	14.62	24.62	11.07	0.1217	3.0494	15	0		B
3138	T-3	15.4	771024	246.79	312.93	195.91	2.47	0.1196	2.3850	15	0		B
3139	T-3	15.8	771024	18.00	341.68	19.08	1.66	0.1257	2.9404	11	0		B
3140	T-3	16.1	771024	40.80	71.28	268.90	0.24	0.0478	2.1822	11	0		B
3141	T-3	18.0	771024	10.74	158.50	211.66	2.22	0.1764	2.1800	5	6	E	B
3143	T-3	17.5	771024	23.79	157.81	197.18	0.86	0.1156	2.1921	6	6	E	B
3144	T-3	16.0	771024	18.25	165.71	195.32	3.83	0.1169	2.5344	11	0		B
3145	T-3	15.2	771024	35.70	304.00	23.97	16.43	0.2353	2.8322	11	0		B
3147	T-3	15.7	771024	31.10	271.51	61.61	1.47	0.2474	3.1120	10	0		B
3148	T-3	16.5	771024	297.63	76.06	28.54	7.03	0.1658	2.3147	11	0		B
3149	T-3	16.1	771024	299.74	287.60	173.89	1.98	0.1583	2.3282	15	0		B
3150	T-3	14.6	771024	2.60	253.63	126.71	1.34	0.0685	2.7789	15	0		B
3151	T-3	15.1	771024	114.62	77.71	187.93	5.56	0.0314	2.3904	15	0		B
3152	T-3	13.8	771024	85.00	236.52	49.70	2.96	0.1007	2.9115	15	0		B
3153	T-3	17.3	771024	344.62	285.02	122.89	1.50	0.1986	2.2977	15	0		B
3156	T-3	16.8	771024	32.73	284.16	48.89	4.33	0.2260	2.5302	10	9		B
3157	T-3	15.0	771024	183.13	141.98	58.34	3.92	0.1308	2.1983	15	0		B

3159	T-3	15.9	771024	351.21	319.77	73.44	2.88	0.0853	2.8166	10	0	B
3160	T-3	15.9	771024	324.35	296.10	130.01	2.27	0.0996	2.5801	15	0	B
3161	T-3	16.0	771024	323.78	305.66	126.85	2.00	0.1586	2.4459	15	0	B
3163	T-3	13.7	771024	180.06	173.71	27.55	20.30	0.1176	3.1989	15	0	B
3164	T-3	13.7	771024	358.40	189.79	195.85	13.22	0.1053	2.6880	15	0	B
3165	T-3	17.1	771024	5.19	349.45	26.82	8.51	0.2398	2.4119	15	0	B
3166	T-3	15.6	771024	272.37	309.95	179.51	2.54	0.1624	2.4030	14	0	B
3167	T-3	17.0	771024	9.78	330.12	40.78	2.11	0.1390	2.6197	10	0	B
3168	T-3	16.1	771024	17.98	329.38	27.63	4.49	0.2161	2.2837	15	0	B
3169	T-3	16.0	771024	303.35	283.39	184.49	1.40	0.2481	2.6494	6	8	B
3170	T-3	15.4	771024	71.89	263.61	26.24	3.98	0.1937	2.3352	15	0	B
3171	T-3	18.4	771024	22.68	151.52	199.61	3.52	0.2016	2.2224	6	8	E B
3172	T-3	16.8	771024	3.88	56.67	322.74	0.58	0.1864	2.4202	6	8	B
3173	T-3	14.8	771024	346.84	192.97	205.53	7.57	0.0586	2.7706	10	0	B
3174	T-3	17.4	771024	359.21	177.40	208.31	0.73	0.2101	2.7008	10	8	B
3175	T-3	14.6	771024	6.33	351.66	24.58	2.25	0.0517	2.9424	15	0	B
3176	T-3	12.8	771024	205.81	133.48	49.08	0.46	0.1320	2.9817	15	0	B
3177	T-3	15.5	771024	350.30	200.93	198.76	8.10	0.2192	2.8034	15	0	B
3178	T-3	13.6	771024	209.45	128.80	49.72	1.05	0.1039	2.8934	11	0	E B
3179	T-3	15.1	771024	154.69	190.63	32.69	3.12	0.1219	2.3059	14	0	B
3180	T-3	16.4	771024	346.19	15.90	27.27	6.26	0.1535	2.4668	15	0	B
3181	T-3	14.3	771024	324.20	56.60	25.48	13.82	0.2627	3.1599	15	0	B
3182	T-3	16.7	771024	317.03	55.14	29.24	7.06	0.1890	2.4247	10	8	B
3184	T-3	13.6	771024	60.53	284.24	26.07	20.18	0.0971	5.0235	11	9	B
3185	T-3	15.4	771024	24.68	259.16	93.47	2.14	0.1065	2.6038	11	0	B
3186	T-3	14.2	771024	338.38	1.48	54.64	3.27	0.1934	2.3651	15	0	B
3187	T-3	15.1	771024	11.65	175.34	192.78	15.56	0.1397	2.5550	15	0	B
3188	T-3	14.7	771024	142.10	102.18	127.56	2.86	0.1687	2.6015	15	0	B
3190	T-3	17.6	771024	337.79	270.08	147.22	2.72	0.2019	2.4871	10	0	B
3191	T-3	16.0	771024	330.55	20.77	38.87	7.49	0.1094	2.3681	15	0	B
3192	T-3	15.7	771024	308.64	294.37	166.39	4.04	0.2433	2.3032	15	0	B
3193	T-3	14.1	771024	188.77	154.61	40.91	7.97	0.2286	2.6980	15	0	B
3194	T-3	15.1	771024	84.93	242.31	41.10	6.73	0.1239	2.4164	15	0	B
3195	T-3	14.8	771024	102.08	70.50	189.02	12.18	0.1984	2.6525	15	0	B
3196	T-3	14.6	771024	60.78	221.28	79.68	2.39	0.1926	2.4379	15	0	B
3197	T-3	13.4	771024	2.18	308.68	70.79	2.90	0.1762	3.1120	15	0	B
3198	T-3	16.4	771024	357.02	197.96	188.43	8.44	0.0319	2.3717	14	0	B
3199	T-3	16.0	771024	17.75	179.04	182.45	5.86	0.0924	2.7818	10	0	B
3200	T-3	16.5	771024	337.31	20.10	32.80	7.52	0.1259	2.2947	11	0	B
3202	T-3	14.3	771024	150.82	200.41	25.21	21.76	0.0999	3.1335	10	9	B
3204	T-3	16.9	771024	18.56	318.75	37.23	3.28	0.2054	2.4559	15	0	B
3205	T-3	16.9	771024	36.39	295.53	37.09	1.90	0.1821	2.5134	6	8	B
3206	T-3	17.2	771024	359.36	359.29	26.35	4.98	0.1695	2.2868	10	9	B
3207	T-3	16.3	771024	36.27	144.80	193.85	2.00	0.1123	2.7215	14	0	B
3209	T-3	14.3	771024	47.54	296.99	22.40	11.35	0.1676	3.0824	15	0	B
3210	T-3	17.4	771024	15.24	337.09	27.68	0.99	0.1278	2.2690	10	9	B
3211	T-3	15.8	771024	40.85	137.00	200.10	4.39	0.0689	2.6858	10	9	B
3212	T-3	16.2	771024	13.06	164.33	201.21	7.12	0.1610	2.8876	10	0	B
3217	T-3	15.0	771024	123.15	31.61	213.34	1.82	0.1781	2.4458	15	0	B
3218	T-3	16.1	771024	330.44	46.28	20.76	10.74	0.1974	3.1435	10	8	B
3219	T-3	16.3	771024	347.73	209.94	191.21	0.72	0.1736	2.9794	6	8	B
3220	T-3	13.6	771024	95.70	92.98	179.11	0.99	0.1324	3.1326	15	0	B
3221	T-3	14.3	771024	11.41	178.37	191.09	1.91	0.0869	2.9393	15	0	B
3223	T-3	16.0	771024	13.22	330.17	35.74	5.31	0.1244	2.7636	14	0	B
3224	T-3	14.8	771024	332.89	246.43	165.10	3.46	0.0211	2.1803	15	0	B
3226	T-3	13.5	771024	306.42	58.48	32.27	11.19	0.1454	2.6056	15	0	B
3227	T-3	16.4	771024	54.36	279.04	34.44	9.24	0.1395	2.7375	10	0	B
3228	T-3	15.8	771024	23.71	310.85	43.56	3.92	0.0931	2.6035	10	0	B
3229	T-3	15.8	771024	353.66	342.92	51.11	2.45	0.2219	2.5972	15	0	B

3230	T-3	15.0	771024	321.78	42.25	31.47	5.75	0.1570	3.1097	14	0		B
3231	T-3	13.1	771024	210.10	2.35	172.08	2.34	0.0439	2.9110	15	0		B
3232	T-3	14.9	771024	306.11	253.38	190.34	1.83	0.0725	2.8795	15	0		B
3235	T-3	16.5	771024	100.96	66.53	203.35	5.99	0.1135	2.4620	14	0		B
3237	T-3	14.7	771024	143.51	203.95	19.51	4.75	0.2901	2.7568	10	7		B
3238	T-3	15.4	771024	292.56	73.49	22.09	15.22	0.0480	2.6304	15	0		B
3239	T-3	16.6	771024	0.48	350.21	32.64	1.24	0.1859	2.8196	6	6	E	B
3241	T-3	14.8	771024	4.74	340.67	36.67	2.34	0.2118	2.2494	15	0		B
3243	T-3	16.4	771024	269.80	329.17	161.30	2.25	0.1570	2.3991	6	7		B
3244	T-3	15.6	771024	299.83	290.70	164.18	2.89	0.1098	2.2671	15	0		B
3245	T-3	15.9	771024	334.88	9.96	51.66	3.55	0.2065	2.3504	15	0		B
3246	T-3	15.2	771024	38.54	138.53	182.78	5.16	0.2596	2.3209	15	0		B
3247	T-3	16.2	771024	51.53	142.35	170.48	3.07	0.1833	2.3439	14	0		B
3248	T-3	14.2	771024	190.92	130.82	62.15	2.20	0.1401	3.0753	14	0		B
3249	T-3	14.8	771024	236.04	141.27	21.03	6.33	0.1891	2.3398	11	0		B
3250	T-3	11.6	771024	20.96	336.28	20.11	13.49	0.0913	5.3158	15	0		B
3251	T-3	18.4	771024	356.51	153.67	237.26	0.39	0.2240	2.2288	5	6	E	B
3252	T-3	17.0	771024	306.29	248.96	208.17	0.24	0.1862	2.2790	14	0		B
3253	T-3	17.7	771024	340.39	358.00	50.40	0.89	0.1182	2.4377	14	0		B
3256	T-3	13.1	771024	21.90	203.80	153.46	2.40	0.0585	2.9397	15	0		B
3257	T-3	15.3	771024	257.50	336.16	160.14	2.63	0.1102	2.6078	15	0		B
3258	T-3	16.3	771024	53.11	282.42	31.97	6.32	0.1515	2.3857	15	0		B
3259	T-3	17.5	771024	351.74	220.17	176.09	2.14	0.1929	2.4604	10	9		B
3261	T-3	13.7	771024	109.58	193.07	71.98	1.30	0.0681	3.0359	15	0		B
3262	T-3	15.7	771024	86.43	250.08	27.27	3.64	0.1653	2.5566	10	9		B
3264	T-3	14.8	771024	305.91	73.61	19.64	0.27	0.1620	3.1774	14	0		B
3265	T-3	15.9	771024	7.50	171.04	202.40	4.78	0.1403	2.6532	15	0		B
3266	T-3	15.9	771024	18.91	339.72	16.18	4.19	0.1744	3.2041	6	8		B
3267	T-3	16.5	771024	292.56	186.91	290.36	0.38	0.2332	2.5512	6	6		B
3268	T-3	16.3	771024	227.06	314.60	205.11	5.85	0.0444	2.3066	14	0		B
3273	T-3	17.6	771024	27.32	100.57	243.47	0.50	0.1952	2.3466	11	0		B
3275	T-3	17.0	771024	39.15	297.90	26.05	2.84	0.2294	2.3654	15	0		B
3276	T-3	17.1	771024	347.86	2.14	40.16	1.47	0.2106	2.7497	6	8		B
3277	T-3	16.6	771024	4.53	337.70	39.32	2.22	0.1164	2.7305	15	0		B
3278	T-3	15.2	771024	303.06	55.58	32.72	4.10	0.0921	3.0279	11	9		B
3279	T-3	13.0	771024	249.03	128.42	25.05	11.81	0.2241	3.1209	15	0		B
3280	T-3	15.7	771024	309.08	259.74	189.11	3.95	0.1504	2.4689	15	0		B
3282	T-3	15.9	771024	342.86	267.44	137.51	1.73	0.1409	3.0046	6	6		B
3283	T-3	14.9	771024	214.56	0.47	173.47	4.31	0.1226	2.6493	6	8		B
3285	T-3	17.7	771024	21.63	309.95	40.99	5.22	0.2032	2.2521	10	0		B
3286	T-3	15.3	771024	220.69	129.51	32.23	11.10	0.0203	2.7736	10	0		B
3288	T-3	17.0	771024	12.58	164.68	200.30	3.93	0.1894	2.5537	15	0		B
3290	T-3	16.6	771024	317.83	58.76	18.81	16.17	0.1354	2.5100	10	0		B
3300	T-3	14.8	771024	304.72	98.39	343.63	1.24	0.0445	2.9374	14	0		B
3305	T-3	18.3	771024	357.06	197.91	191.47	3.39	0.2396	2.3508	6	8	E	B
3306	T-3	18.3	771024	2.01	274.87	106.52	0.74	0.2412	2.2168	14	0		B
3307	T-3	17.1	771024	39.43	156.86	167.93	1.90	0.2164	2.2414	14	0		B
3308	T-3	18.4	771024	357.12	246.51	142.76	1.15	0.2224	2.1902	10	9		B
3310	T-3	15.5	771024	294.13	59.30	40.56	4.87	0.1167	3.1381	14	0		B
3312	T-3	17.6	771024	26.47	194.70	150.72	1.80	0.1841	2.2348	14	0		B
3314	T-3	15.8	771024	4.57	229.72	146.48	2.40	0.1024	2.8186	14	0		B
3315	T-3	15.3	771024	288.18	24.24	75.18	2.91	0.0577	2.8318	14	0		B
3317	T-3	14.4	771024	258.19	71.91	69.86	3.07	0.1775	2.4482	10	0		B
3318	T-3	17.4	771024	19.14	303.27	50.45	3.32	0.2094	2.4081	14	0		B
3319	T-3	13.1	771024	138.07	57.05	176.64	5.78	0.1282	3.1584	15	0		B
3320	T-3	14.8	771024	8.48	293.63	77.72	2.05	0.1266	2.5780	15	0		B
3322	T-3	14.2	771024	324.21	241.56	191.45	11.57	0.1824	2.6579	15	0		B
3323	T-3	16.6	771024	29.47	304.26	37.16	4.81	0.1806	2.2239	15	0		B
3324	T-3	15.2	771024	0.84	190.27	190.61	9.94	0.1817	3.0766	14	0		B

3325	T-3	16.0	771024	332.69	29.58	27.36	6.62	0.1181	2.5744	10	0		B
3326	T-3	15.2	771024	72.28	93.98	197.46	9.66	0.1657	2.3501	15	0		B
3336	T-3	16.4	771024	51.30	195.47	125.65	1.19	0.1080	2.1999	15	0		B
3337	T-3	15.5	771024	353.17	289.62	100.62	1.47	0.0890	2.6341	15	0		B
3339	T-3	14.8	771024	52.97	268.97	39.64	4.35	0.1936	2.7070	15	0		B
3340	T-3	15.3	771024	137.01	66.99	167.56	2.69	0.1386	2.6155	10	9		B
3342	T-3	16.7	771024	80.51	133.28	154.77	1.31	0.1198	2.3499	6	8		B
3343	T-3	18.4	771024	6.29	348.24	26.69	4.32	0.1873	2.1785	6	8		B
3344	T-3	16.0	771024	17.51	167.36	192.12	3.60	0.1385	2.6222	14	0		B
3345	T-3	17.3	771024	8.80	204.48	168.03	0.88	0.0965	2.2769	5	6	E	B
3346	T-3	16.4	771024	341.80	30.72	20.80	3.81	0.2036	2.4109	15	0		B
3348	T-3	14.1	771024	65.52	292.70	11.64	0.87	0.1082	3.1305	15	0		B
3355	T-3	14.8	771024	105.95	65.14	202.31	8.71	0.0790	2.7928	14	0		B
3357	T-3	13.1	771024	179.49	186.60	15.50	2.69	0.0623	2.8406	15	0	E	B
3358	T-3	16.2	771024	287.30	91.12	19.24	2.70	0.1331	2.4299	14	0		B
3359	T-3	17.5	771024	334.77	214.01	206.75	0.47	0.1928	2.3891	11	0		B
3360	T-3	15.1	771024	21.96	180.54	168.85	0.18	0.1984	3.1405	15	0		B
3361	T-3	15.6	771024	1.02	188.61	192.00	3.80	0.1987	3.1797	11	0		B
3362	T-3	18.5	771024	336.16	20.67	38.57	2.15	0.1956	2.2117	5	6		B
3364	T-3	17.2	771024	342.02	253.74	158.09	1.86	0.2155	2.2713	10	9		B
3365	T-3	10.7	771024	23.50	330.01	23.41	20.13	0.0492	5.2449	15	0		B
3367	T-3	15.2	771024	97.84	274.13	5.91	1.81	0.0366	2.7712	15	0		B
3368	T-3	15.9	771024	20.01	97.77	262.35	1.09	0.0459	3.0695	5	6		B
3375	T-3	18.6	771024	14.40	344.29	16.84	2.62	0.2341	2.2059	11	0	E	B
3378	T-3	15.3	771024	255.73	5.67	137.26	0.87	0.1614	2.3230	15	0		B
3379	T-3	17.0	771024	13.91	179.19	180.64	2.72	0.2388	2.7238	14	0		B
3380	T-3	16.4	771024	40.52	192.35	140.69	1.26	0.1021	2.6114	6	8		B
3381	T-3	15.6	771024	325.58	29.97	37.93	3.28	0.1447	2.3995	15	0		B
3382	T-3	15.4	771024	100.14	78.09	192.07	6.01	0.1070	2.3060	15	0		B
3383	T-3	17.8	771024	13.34	165.38	193.28	3.78	0.2947	2.5842	14	0		B
3384	T-3	15.3	771024	119.45	186.44	54.55	1.05	0.2468	2.3596	10	9	E	B
3386	T-3	16.9	771024	24.36	331.85	19.11	8.50	0.1458	2.3022	15	0		B
3387	T-3	16.3	771024	61.66	290.41	8.23	1.63	0.2068	2.1526	15	0		B
3388	T-3	17.3	771024	29.54	327.85	19.08	12.54	0.1093	2.2528	6	8		B
3391	T-3	17.8	771024	340.70	205.66	206.13	1.83	0.1827	2.2974	6	8		B
3393	T-3	13.6	771024	39.41	138.14	195.52	9.26	0.1037	3.0127	15	0		B
3394	T-3	16.6	771024	21.55	196.86	154.14	1.44	0.1974	2.3519	14	0		B
3395	T-3	14.4	771024	226.47	340.39	178.36	4.61	0.0454	2.3170	15	0		B
3396	T-3	16.5	771024	352.28	341.68	52.86	3.01	0.2109	2.6415	15	0		B
3397	T-3	16.9	771024	28.14	296.02	46.94	3.87	0.1716	2.3798	15	0		B
3398	T-3	14.6	771024	332.36	267.13	151.05	2.23	0.1289	2.2613	14	0		B
3399	T-3	16.8	771024	290.48	277.27	181.69	6.02	0.0692	2.3129	10	9		B
3402	T-3	15.9	771024	28.77	298.84	40.96	3.01	0.1957	2.7122	15	0		B
3403	T-3	14.4	771024	39.98	304.32	24.34	11.21	0.1569	2.5427	15	0		B
3410	T-3	17.5	771024	43.05	324.88	0.34	0.70	0.1657	2.2327	6	8		B
3411	T-3	17.5	771024	336.76	31.96	23.21	4.79	0.1647	2.4820	10	8		B
3412	T-3	15.1	771024	25.70	154.48	193.72	8.54	0.1377	2.7218	14	0		B
3414	T-3	14.6	771024	173.78	13.36	193.02	12.61	0.0726	2.6039	15	0		B
3415	T-3	14.8	771024	24.02	301.95	35.30	4.75	0.3007	3.0856	15	0		B
3417	T-3	13.8	771024	267.64	101.82	24.84	16.05	0.1195	2.5670	15	0		B
3418	T-3	14.7	771024	41.22	229.95	105.40	1.95	0.0505	3.0394	10	8		B
3420	T-3	15.1	771024	296.60	314.64	144.37	2.31	0.1297	2.4403	14	0		B
3422	T-3	12.7	771024	49.63	299.43	28.61	10.80	0.0332	2.7356	15	0		B
3423	T-3	15.7	771024	314.38	340.84	102.51	1.61	0.1700	2.5602	15	0		B
3424	T-3	15.0	771024	54.68	171.12	151.96	2.29	0.0349	2.6307	15	0		B
3425	T-3	14.7	771024	4.36	177.96	197.23	16.83	0.2145	3.0438	15	0		B
3426	T-3	18.0	771024	356.70	6.76	22.38	2.68	0.2274	2.4125	14	0		B
3433	T-3	17.3	771024	19.34	338.67	18.25	15.93	0.1525	2.4152	10	9		B
3434	T-3	15.7	771024	318.91	228.30	210.77	2.75	0.1765	2.7169	14	0		B

3435	T-3	14.7	771024	26.54	142.36	201.61	12.63	0.1915	2.5644	15	0	B
3437	T-3	14.8	771024	69.29	285.09	13.18	2.39	0.1287	2.5209	15	0	B
3439	T-3	13.9	771024	256.62	298.34	194.63	1.20	0.0769	2.6706	15	0	B
3441	T-3	16.5	771024	46.15	289.61	31.70	1.53	0.1630	2.2284	15	0	B
3442	T-3	16.6	771024	353.32	7.50	26.59	4.10	0.2561	2.9574	10	9	B
3444	T-3	15.7	771024	11.49	174.66	190.78	5.92	0.1545	3.1445	10	8	B
3445	T-3	17.5	771024	54.18	129.97	176.20	2.46	0.2098	2.1523	10	9	E B
3446	T-3	14.1	771024	140.72	63.65	174.31	4.02	0.0267	2.7755	15	0	B
3447	T-3	14.9	771024	57.66	143.51	173.10	3.68	0.0682	2.5797	15	0	B
3448	T-3	16.1	771024	350.24	238.22	156.52	2.61	0.1334	2.5256	14	0	B
3449	T-3	13.3	771024	25.73	306.81	37.82	6.59	0.1659	3.1851	15	0	B
3450	T-3	17.1	771024	29.54	299.56	32.23	6.53	0.2713	2.5296	11	0	B
3452	T-3	16.0	771024	335.67	10.35	44.41	3.42	0.1528	2.5623	15	0	B
3453	T-3	15.2	771024	103.71	76.54	186.85	6.37	0.1334	2.3062	15	0	B
3455	T-3	15.4	771024	346.79	6.79	31.37	2.20	0.1086	2.7430	11	0	B
3457	T-3	16.9	771024	17.20	164.73	191.22	1.88	0.2249	2.3751	15	0	B
3458	T-3	17.5	771024	343.68	28.21	21.29	3.02	0.2270	2.4827	6	7	B
3459	T-3	17.5	771024	349.18	199.91	200.27	1.89	0.1971	2.2404	14	0	B
3460	T-3	13.6	771024	13.02	75.08	288.06	0.45	0.1698	3.1829	15	0	B
3463	T-3	15.5	771024	186.24	183.44	13.19	6.51	0.1034	2.2855	15	0	B
3464	T-3	16.1	771024	14.68	353.81	6.89	2.49	0.2115	2.4127	15	0	B
3465	T-3	13.8	771024	51.13	292.71	22.88	10.83	0.1408	3.0509	15	0	B
3466	T-3	15.3	771024	358.15	328.50	56.00	1.23	0.2053	3.0397	15	0	B
3468	T-3	15.4	771024	123.60	196.29	51.10	1.92	0.1127	2.3931	14	0	B
3469	T-3	15.6	771024	43.80	133.27	192.55	9.53	0.1298	2.7678	14	0	B
3470	T-3	14.5	771024	59.98	274.10	24.41	13.92	0.2010	2.7478	15	0	B
3471	T-3	15.7	771024	45.62	277.74	46.55	3.26	0.1242	2.5561	15	0	B
3472	T-3	13.9	771024	17.68	333.97	24.95	15.99	0.0894	3.0950	15	0	B
3474	T-3	15.1	771024	179.54	139.65	60.67	3.10	0.1379	2.4224	9	7	B
3475	T-3	15.6	771024	337.58	234.12	177.97	5.29	0.1624	2.8399	6	8	B
3476	T-3	14.8	771024	24.54	257.63	93.40	1.41	0.1284	2.1242	15	0	B
3477	T-3	14.1	771024	120.82	209.46	45.45	4.02	0.0410	3.0249	15	0	B
3479	T-3	15.9	771024	356.83	200.33	188.98	3.95	0.2830	2.5494	15	0	B
3480	T-3	17.6	771024	18.38	273.14	84.91	0.70	0.1537	2.1591	10	9	E B
3481	T-3	15.8	771024	336.74	33.33	18.46	5.25	0.1178	2.4009	15	0	B
3482	T-3	15.1	771024	340.96	75.43	334.80	0.32	0.1978	3.0797	15	0	B
3486	T-3	15.4	771024	327.98	107.87	321.24	0.67	0.2056	3.1950	14	0	B
3487	T-3	14.8	771024	321.08	56.57	12.68	3.35	0.1093	2.7159	15	0	B
3488	T-3	17.8	771024	18.05	143.35	212.71	0.53	0.1990	2.3098	14	0	B
3491	T-3	17.2	771024	288.79	79.32	26.19	1.88	0.1111	2.3104	6	8	B
3493	T-3	18.7	771024	20.92	304.12	44.62	1.17	0.2503	2.2155	6	8	E B
3494	T-3	17.4	771024	31.52	199.25	132.11	0.71	0.2472	2.4929	6	8	B
3495	T-3	15.8	771024	39.87	280.10	36.68	2.86	0.2665	2.5666	14	0	B
3496	T-3	14.1	771024	46.64	106.78	193.11	8.88	0.3273	2.5794	15	0	B
3497	T-3	15.6	771024	350.41	222.34	169.59	2.53	0.0595	2.5459	14	0	B
3498	T-3	14.6	771024	357.40	232.64	151.00	2.62	0.0938	2.8697	10	9	B
3499	T-3	16.7	771024	23.48	308.00	32.09	4.94	0.2862	2.5742	15	0	B
3500	T-3	15.6	771024	35.73	306.57	28.96	6.76	0.1365	2.3400	15	0	B
3501	T-3	16.1	771024	26.93	296.88	43.52	2.51	0.2208	2.4435	14	0	B
3502	T-3	16.1	771024	237.62	101.84	45.79	1.63	0.0394	2.1656	14	0	B
3503	T-3	16.1	771024	12.02	186.53	176.99	1.30	0.2401	2.3022	15	0	B
3504	T-3	16.9	771024	37.40	300.01	24.96	5.70	0.2287	2.3622	14	0	B
3505	T-3	16.4	771024	343.33	27.83	21.40	2.30	0.2171	2.3893	14	0	B
3506	T-3	17.8	771024	8.41	350.93	19.90	6.72	0.1983	2.2136	14	0	B
3507	T-3	14.8	771024	61.33	83.91	202.83	5.44	0.3009	2.1089	15	0	B
3508	T-3	15.0	771024	291.58	255.01	205.53	5.09	0.0929	2.3470	15	0	B
3509	T-3	14.2	771024	357.42	8.98	14.82	10.25	0.0841	3.4166	15	0	B
3510	T-3	15.4	771024	224.34	153.45	9.48	3.81	0.0706	2.1658	14	0	B
3511	T-3	15.1	771024	281.58	241.25	233.96	1.87	0.1389	2.9789	6	0	B

3516	T-3	16.6	771024	341.11	38.47	16.36	7.19	0.2517	2.5950	9	8 B
3517	T-3	14.1	771024	355.70	352.55	34.18	2.04	0.1095	2.6181	15	0 B
3518	T-3	16.6	771024	359.71	292.83	89.67	1.56	0.1976	2.4570	9	7 B
3521	T-3	18.2	771024	347.12	344.54	68.63	1.15	0.3643	2.4327	14	9 B
3523	T-3	15.7	771024	2.67	3.12	13.92	0.25	0.1831	3.1986	14	0 B
3524	T-3	16.5	771024	350.39	190.78	206.02	2.26	0.1770	2.3434	15	0 B
3525	T-3	16.2	771024	348.68	134.55	265.72	0.47	0.2309	3.0088	10	0 B
3526	T-3	16.3	771024	76.51	275.02	7.62	2.21	0.1945	2.3763	14	0 B
3527	T-3	15.9	771024	265.70	275.13	205.12	5.66	0.0378	2.2927	14	0 B
3528	T-3	15.6	771024	27.01	141.61	209.21	4.47	0.0619	2.6874	14	0 B
3530	T-3	15.0	771024	298.11	179.14	270.58	0.93	0.0679	2.9399	14	9 B
3532	T-3	16.8	771024	39.66	106.72	226.88	1.73	0.1095	2.3029	5	8 B
3533	T-3	16.4	771024	340.87	43.64	7.19	0.62	0.1890	2.3764	14	9 B
3534	T-3	16.5	771024	13.54	340.84	19.81	3.29	0.2406	2.3881	14	9 B
3535	T-3	12.4	771024	258.61	129.94	20.73	6.70	0.2942	2.6065	9	7 B
3536	T-3	15.9	771024	0.88	350.19	29.72	6.37	0.1261	2.5823	9	7 B
3552	T-3	14.1	771024	244.21	107.19	48.91	3.04	0.1843	3.0465	6	8 B
3554	T-3	15.0	771024	99.04	82.51	195.22	9.15	0.0574	2.9744	15	0 B
3556	T-3	15.1	771024	232.89	12.95	150.99	2.51	0.1570	2.2828	5	6 B
3559	T-3	18.4	771024	340.21	68.94	344.51	0.79	0.1779	2.3024	11	0 B
3562	T-3	16.0	771024	32.24	285.72	58.18	4.94	0.1004	2.7771	6	0 B
3564	T-3	15.1	771024	70.00	117.38	184.07	9.85	0.0883	3.0968	10	0 B
3574	T-3	13.5	771024	272.63	299.67	187.39	12.90	0.1689	3.0928	5	7 B
3578	T-3	16.0	771024	354.72	4.79	24.12	5.56	0.1537	2.6258	5	5 B
3650	T-3	14.6	771024	77.70	241.18	32.98	7.96	0.2837	2.4330	5	6 B
3700	T-3	18.8	771024	335.05	227.16	192.83	2.47	0.1841	2.1316	5	6 B
3704	T-3	16.8	771024	49.71	348.76	327.22	0.69	0.1725	2.3831	6	0 B
3716	T-3	17.9	771024	27.55	322.21	17.14	3.10	0.2382	2.4094	6	6 B
3727	T-3	14.1	771024	336.37	33.83	16.12	16.46	0.0981	3.1833	15	0 B
3731	T-3	16.1	771024	82.10	271.75	15.38	6.10	0.1162	2.4522	14	0 B
3735	T-3	16.3	771024	75.63	269.93	23.06	6.96	0.1134	2.3875	10	9 B
3752	T-3	16.4	771024	354.23	15.27	16.30	11.02	0.1907	2.6340	14	0 B
3756	T-3	16.3	771024	35.98	297.59	41.21	3.07	0.0887	2.5840	14	0 B
3761	T-3	17.3	771024	323.20	317.38	108.57	1.58	0.0917	2.1560	6	8 B
3763	T-3	16.5	771024	13.76	94.65	270.03	0.94	0.1367	2.8411	10	0 B
3765	T-3	15.4	771024	345.94	211.97	188.46	8.92	0.1539	3.0212	10	0 B
3768	T-3	14.5	771024	90.07	194.87	64.68	1.65	0.2774	3.1740	6	6 B
3774	T-3	15.3	771024	83.34	242.04	34.81	0.10	0.1805	3.0284	5	6 B
3777	T-3	17.5	771024	350.18	342.57	59.26	1.06	0.2766	2.7199	6	6 B
3782	T-3	17.2	771024	304.45	243.06	217.52	1.47	0.2016	2.4437	10	0 B
3790	T-3	17.6	771024	359.78	3.25	20.73	7.33	0.1679	2.6257	5	6 B
3807	T-3	17.0	771024	342.69	350.88	54.27	3.16	0.1166	2.3472	14	0 B
3808	T-3	14.0	771024	264.76	110.64	25.23	23.13	0.1798	3.0990	15	0 B
3810	T-3	16.5	771024	338.37	349.57	70.74	1.44	0.2642	3.1028	6	8 B
3813	T-3	17.1	771024	38.33	308.96	24.55	1.79	0.1416	2.5659	10	9 B
3823	T-3	16.4	771024	353.73	192.03	200.30	3.28	0.1354	2.4555	14	0 B
3826	T-3	16.5	771024	83.13	266.44	26.08	7.39	0.0652	2.4022	10	0 B
3827	T-3	17.3	771024	359.39	344.72	40.22	1.82	0.1821	2.4603	14	0 B
3829	T-3	17.5	771024	13.92	336.01	30.25	4.28	0.1222	2.2331	10	0 B
3833	T-3	15.2	771024	309.69	344.69	92.07	1.86	0.0460	2.7801	15	0 B
3834	T-3	16.0	771024	299.35	36.02	63.47	3.29	0.1503	2.4739	14	0 B
3837	T-3	14.8	771024	128.91	213.95	33.26	9.03	0.0667	2.7943	10	9 B
3840	T-3	16.9	771024	1.91	356.72	24.16	1.79	0.1728	2.8790	10	0 B
3851	T-3	15.4	771024	330.52	225.72	198.57	7.24	0.1712	3.1268	10	0 B
3853	T-3	14.6	771024	16.96	319.88	39.67	5.52	0.1445	3.2185	15	0 B
3854	T-3	14.6	771024	278.91	340.60	133.09	2.20	0.0930	3.1929	10	0 B
3855	T-3	15.6	771024	331.73	24.91	33.95	8.93	0.1383	3.6275	9	8 B
3856	T-3	14.3	771024	156.84	33.89	188.20	9.64	0.0711	3.0341	11	0 B
3892	T-3	14.7	771024	162.20	26.59	190.17	15.75	0.1073	2.8562	10	0 B

3918	T-3	15.1	771024	47.58	295.02	27.39	12.91	0.1457	3.0603	5	6		B
3922	T-3	15.6	771024	121.11	233.05	24.20	2.30	0.0549	2.8581	10	0		B
3923	T-3	16.0	771024	294.15	60.60	30.67	4.96	0.0190	2.7761	10	0		B
3931	T-3	16.6	771024	55.57	125.68	197.63	21.09	0.0601	1.9606	15	0		B
3935	T-3	16.6	771024	356.48	341.00	48.74	3.03	0.1649	2.7025	5	6		B
3939	T-3	16.7	771024	59.12	277.04	29.31	6.40	0.1791	2.3803	5	6		B
3952	T-3	16.7	771024	328.35	47.89	17.30	4.09	0.1233	2.3892	6	7		B
3964	T-3	14.0	771024	234.57	337.57	192.49	18.55	0.2945	3.1184	10	7	E	B
3965	T-3	16.4	771024	59.61	269.24	37.72	5.66	0.1674	2.3173	5	6		B
3970	T-3	15.2	771024	296.77	266.03	199.90	16.23	0.1708	3.1293	11	0		B
3980	T-3	16.3	771024	14.36	169.43	196.59	1.20	0.1230	2.8929	5	5	E	B
3981	T-3	16.4	771024	358.02	285.17	102.14	0.53	0.1184	2.5602	6	5	E	B
3991	T-3	14.5	771024	35.62	294.41	33.01	13.37	0.2352	3.1040	15	0		B
3992	T-3	15.1	771024	41.75	261.10	63.73	3.57	0.1912	2.5118	6	0		B
4002	T-3	14.5	771024	98.99	105.36	166.84	6.74	0.0916	2.3097	9	7		B
4003	T-3	16.3	771024	347.30	257.99	143.28	4.71	0.2146	3.0088	5	6		B
4008	T-3	13.8	771024	196.23	88.75	98.70	4.90	0.1108	2.1862	9	7		B
4009	T-3	16.3	771024	17.66	312.42	44.49	8.37	0.1792	2.2713	5	6		B
4012	T-3	13.3	771024	38.58	293.62	42.05	10.12	0.0755	3.0526	9	7		B
4017	T-3	14.6	771024	111.70	219.23	46.40	5.22	0.0453	2.1863	10	0		B
4018	T-3	17.0	771024	3.54	316.93	61.20	3.13	0.1831	2.3137	6	8		B
4019	T-3	14.2	771024	44.03	160.30	166.62	5.03	0.1208	2.7020	10	0		B
4021	T-3	16.4	771024	0.91	315.16	66.53	3.50	0.1754	2.3351	10	9		B
4022	T-3	15.1	771024	32.82	277.07	51.58	8.97	0.2361	2.9908	14	0		B
4026	T-3	14.9	771024	27.94	292.57	49.83	8.43	0.1779	2.2762	10	0		B
4027	T-3	16.5	771024	16.15	203.83	154.96	5.45	0.1965	2.2361	14	0		B
4028	T-3	14.3	771024	69.69	217.70	64.52	7.38	0.2430	2.7959	14	0		B
4029	T-3	13.8	771024	218.12	107.46	56.83	9.94	0.0638	3.8719	6	8		B
4030	T-3	14.8	771024	272.12	338.26	135.00	4.34	0.0395	2.6766	11	0		B
4031	T-3	15.6	771024	15.10	208.67	153.50	4.02	0.1519	2.3372	15	0		B
4032	T-3	14.7	771024	2.80	324.33	54.74	4.63	0.1767	2.3058	14	0		B
4035	T-3	11.4	771024	132.02	206.08	29.95	19.24	0.1355	5.1521	10	0		B
4036	T-3	15.2	771024	28.00	295.32	49.25	6.14	0.1338	3.1915	10	0		B
4039	T-3	15.3	771024	102.92	148.54	119.72	2.63	0.1023	2.1464	14	0		B
4040	T-3	16.1	771024	16.81	299.98	57.02	3.83	0.2142	2.4213	15	0		B
4041	T-3	15.1	771024	328.00	245.25	180.17	9.26	0.1644	3.1514	6	8		B
4042	T-3	15.5	771024	66.97	237.33	58.01	5.20	0.1683	2.6943	6	8		B
4043	T-3	16.0	771024	330.85	262.44	152.42	5.09	0.0624	2.3371	10	0		B
4044	T-3	14.9	771024	234.64	80.44	70.91	6.55	0.0611	2.3419	14	0		B
4045	T-3	13.9	771024	145.57	112.12	115.55	5.73	0.1233	2.3815	15	0		B
4046	T-3	14.6	771024	85.61	165.05	111.98	5.15	0.1618	2.2876	15	0		B
4047	T-3	15.6	771024	35.97	257.25	66.49	5.83	0.2574	2.3504	14	0		B
4048	T-3	15.6	771024	351.47	256.06	139.87	5.14	0.2216	2.6585	15	0		B
4049	T-3	15.1	771024	311.98	41.67	59.73	7.17	0.3001	2.5991	15	0		B
4050	T-3	14.5	771024	332.00	283.19	135.49	5.10	0.1420	2.5524	15	0		B
4051	T-3	14.3	771024	68.35	127.94	178.71	13.18	0.0592	2.5499	14	0		B
4052	T-3	14.8	771024	168.49	156.61	54.57	7.69	0.0559	2.2807	14	0		B
4053	T-3	13.8	771024	310.84	281.82	155.44	6.72	0.0819	3.1954	11	0		B
4054	T-3	13.2	771024	64.73	261.81	42.28	10.64	0.1045	3.0868	15	0		B
4055	T-3	14.3	771024	189.62	149.95	41.13	9.77	0.0243	3.0623	10	0		B
4056	T-3	16.4	771024	103.18	221.35	42.74	7.91	0.1331	2.3444	10	0		B
4057	T-3	15.4	771024	88.69	221.58	59.98	4.28	0.1033	2.2535	14	0		B
4059	T-3	13.0	771024	125.66	189.85	59.27	4.35	0.0760	2.5457	15	0		B
4060	T-3	15.2	771024	90.72	178.60	103.88	3.33	0.0691	2.8917	10	0		B
4062	T-3	14.6	771024	85.97	188.81	94.60	4.69	0.0990	2.7215	11	0		B
4063	T-3	16.4	771024	352.43	225.96	168.63	8.25	0.2244	2.7771	10	0		B
4064	T-3	13.8	771024	354.74	216.21	171.16	11.07	0.0943	3.0465	15	0		B
4065	T-3	14.0	771024	182.88	90.71	106.28	6.29	0.1269	3.1498	10	0		B
4066	T-3	16.1	771024	7.49	320.69	51.39	8.84	0.1194	2.4243	10	0		B

4069	T-3	16.3	771024	10.55	217.35	149.50	5.29	0.1886	2.5579	11	0	B
4070	T-3	12.6	771024	254.62	309.80	188.15	23.66	0.1068	3.1709	15	0	B
4071	T-3	14.5	771024	315.44	17.85	62.20	4.99	0.1433	2.2866	15	0	B
4072	T-3	13.6	771024	298.10	298.84	159.21	5.89	0.1376	3.0750	15	0	B
4074	T-3	14.5	771024	185.90	101.55	95.06	3.36	0.1098	2.3929	15	0	B
4075	T-3	14.9	771024	224.82	46.39	118.02	2.64	0.0973	2.2800	15	0	B
4076	T-3	13.6	771024	128.16	98.90	137.20	3.50	0.2187	3.0958	14	0	B
4079	T-3	14.0	771024	183.97	160.27	36.87	11.63	0.0806	2.9742	10	0	B
4080	T-3	13.6	771024	130.81	202.26	38.27	11.81	0.1135	3.0502	11	0	B
4081	T-3	16.5	771024	354.27	227.21	168.73	5.08	0.3226	2.6346	15	0	B
4082	T-3	14.2	771024	156.20	35.88	183.02	14.10	0.1565	2.6844	11	0	B
4084	T-3	17.5	771024	4.88	287.69	88.46	3.14	0.1941	2.3406	10	0	B
4085	T-3	16.3	771024	75.47	200.07	76.12	4.55	0.2597	2.4201	6	8	B
4086	T-3	16.4	771024	47.87	204.78	111.49	3.74	0.1887	2.2019	15	0	B
4087	T-3	15.7	771024	56.27	110.45	181.35	15.66	0.2969	2.9286	10	9 E	B
4088	T-3	16.1	771024	12.01	194.51	169.33	10.32	0.1980	2.8049	10	9	B
4089	T-3	16.2	771024	88.87	211.26	64.78	6.84	0.1467	2.1895	10	0	B
4091	T-3	13.4	771024	130.74	176.01	52.26	10.00	0.2973	3.0845	6	8	B
4092	T-3	13.0	771024	208.10	357.71	180.53	13.37	0.1020	2.6712	15	0	B
4093	T-3	15.0	771024	162.58	167.31	47.77	7.71	0.1212	2.3407	10	0	B
4094	T-3	14.9	771024	43.26	272.94	59.91	5.04	0.0715	2.5212	15	0	B
4096	T-3	14.6	771024	130.56	63.20	168.45	6.06	0.2710	2.7428	6	8	B
4101	T-3	11.6	771024	144.04	205.13	28.20	25.46	0.0272	5.1973	15	0	B
4102	T-3	14.9	771024	278.31	45.43	65.56	4.18	0.0580	2.1625	15	0	B
4103	T-3	16.8	771024	8.48	200.90	167.17	4.99	0.2916	2.5868	11	0	B
4106	T-3	16.7	771024	341.46	314.83	97.31	3.53	0.2234	2.7763	10	8	B
4107	T-3	15.4	771024	233.31	1.70	151.80	5.08	0.0521	2.2812	11	0	B
4109	T-3	14.8	771024	276.66	9.98	101.33	4.36	0.0585	2.7398	11	0	B
4112	T-3	16.1	771024	2.77	229.96	148.13	6.34	0.1754	2.7618	10	9	B
4114	T-3	16.7	771024	3.35	319.73	58.52	7.47	0.0884	2.2177	10	0	B
4116	T-3	15.6	771024	49.35	266.70	37.17	12.81	0.2738	2.3428	15	0	B
4117	T-3	15.5	771024	112.71	137.91	129.57	5.03	0.0107	2.7603	6	8	B
4118	T-3	13.7	771024	24.36	173.93	178.21	11.57	0.1001	3.0751	15	0	B
4119	T-3	17.2	771024	4.53	333.45	43.06	8.04	0.2083	2.3670	6	8	B
4120	T-3	14.9	771024	278.63	344.47	125.43	4.12	0.0598	2.7174	15	0	B
4121	T-3	15.9	771024	10.61	181.10	183.96	13.15	0.2376	3.2462	9	8	B
4122	T-3	16.5	771024	302.51	4.37	90.44	3.14	0.1376	2.3616	10	0	B
4123	T-3	15.2	771024	313.47	266.61	189.67	16.95	0.2642	3.1289	14	0	B
4124	T-3	15.3	771024	53.80	189.92	127.25	3.32	0.1102	2.9486	10	0	B
4125	T-3	15.0	771024	13.04	324.80	34.06	9.94	0.2982	2.7274	15	0	B
4134	T-3	15.3	771024	342.64	337.90	70.82	3.71	0.1905	2.7299	15	0	B
4135	T-3	15.4	771024	134.27	77.45	166.77	7.24	0.0408	2.8651	10	0	B
4136	T-3	16.7	771024	45.46	228.12	83.96	3.71	0.2541	2.3475	11	0	B
4137	T-3	14.8	771024	29.12	239.23	100.78	4.13	0.1883	2.8414	15	0	B
4138	T-3	13.1	771024	340.96	12.87	34.66	19.24	0.1692	3.1513	15	0	B
4139	T-3	15.8	771024	347.04	274.53	126.55	5.01	0.1742	2.5908	11	0	B
4140	T-3	14.6	771024	240.37	39.91	116.37	5.97	0.1808	2.5916	11	0	B
4141	T-3	14.2	771024	355.15	269.40	118.85	6.03	0.1738	3.1449	15	0	B
4142	T-3	16.0	771024	311.00	16.33	64.94	7.43	0.1122	2.4692	11	0	B
4143	T-3	14.3	771024	169.69	45.22	162.59	10.64	0.1989	2.7284	6	8	B
4147	T-3	15.1	771024	33.69	159.17	179.39	12.58	0.1364	2.9732	10	0	B
4149	T-3	15.6	771024	78.23	146.94	134.50	2.97	0.2012	2.3662	15	0	B
4150	T-3	17.6	771024	3.96	340.42	37.36	7.64	0.2297	2.4002	10	0	B
4154	T-3	17.3	771024	27.90	159.77	178.31	6.46	0.2507	2.4804	6	8	B
4156	T-3	13.4	771024	231.11	30.88	126.53	3.67	0.0754	2.5980	15	0	B
4157	T-3	14.8	771024	242.53	346.56	163.55	5.97	0.1052	2.2762	15	0	B
4158	T-3	16.9	771024	34.08	170.49	169.12	6.61	0.1334	2.2665	10	0	B
4161	T-3	16.3	771024	46.75	246.85	69.55	5.34	0.1993	2.4269	10	0	B
4162	T-3	16.5	771024	337.40	304.94	112.82	4.26	0.2129	2.6161	10	0	B

4163	T-3	16.1	771024	39.53	271.65	59.10	7.11	0.1461	2.4013	15	0	B
4164	T-3	15.7	771024	17.60	245.83	113.13	4.50	0.1583	2.2747	15	0	B
4165	T-3	15.4	771024	67.79	234.77	58.73	8.08	0.1829	2.2389	15	0	B
4166	T-3	14.6	771024	311.40	349.89	83.99	5.71	0.0372	2.4731	15	0	B
4167	T-3	15.4	771024	4.51	253.93	122.65	5.29	0.0935	2.7523	11	0	B
4169	T-3	17.6	771024	2.90	293.67	85.75	3.54	0.3015	2.3151	15	0	B
4170	T-3	14.9	771024	314.78	334.85	108.97	4.17	0.1668	2.3849	15	0	B
4171	T-3	14.0	771024	280.94	50.00	58.63	5.90	0.0591	2.2206	15	0	B
4172	T-3	15.1	771024	25.98	308.95	36.96	10.37	0.1781	2.7608	15	0	B
4175	T-3	15.7	771024	47.63	288.69	31.68	15.77	0.1483	3.2009	6	0	B
4179	T-3	11.7	771024	177.25	129.66	73.52	5.36	0.0728	4.9629	15	0	B
4180	T-3	15.3	771024	153.25	134.30	87.81	4.00	0.1492	2.7298	6	8	E B
4181	T-3	16.0	771024	29.04	236.08	102.16	2.77	0.2327	2.3296	15	0	B
4182	T-3	14.9	771024	122.74	101.91	142.78	4.93	0.1729	2.4164	10	0	B
4183	T-3	16.4	771024	354.60	209.04	183.67	11.17	0.1968	2.3087	11	0	B
4185	T-3	15.8	771024	5.93	296.67	76.62	6.51	0.1636	3.2424	10	8	B
4186	T-3	15.8	771024	198.97	53.82	131.78	5.51	0.0696	2.2817	10	0	B
4187	T-3	15.3	771024	46.46	195.61	121.47	5.34	0.1932	2.5650	11	0	B
4188	T-3	16.0	771024	30.35	233.76	104.81	4.68	0.2007	2.2463	15	0	B
4190	T-3	13.5	771024	318.10	22.10	59.79	8.90	0.1979	2.7660	15	0	B
4192	T-3	16.2	771024	33.61	287.14	44.83	10.56	0.2136	2.6226	10	0	B
4193	T-3	15.3	771024	47.42	269.21	37.86	15.06	0.2603	3.2957	6	6	B
4194	T-3	17.5	771024	349.54	233.80	165.01	5.70	0.1595	2.2603	10	0	B
4195	T-3	14.0	771024	107.70	80.07	184.03	13.92	0.1088	2.3615	15	0	B
4196	T-3	15.1	771024	342.35	255.64	148.71	4.85	0.0929	2.5928	11	0	B
4197	T-3	13.9	771024	19.38	289.54	69.36	4.71	0.1082	2.6239	15	0	B
4198	T-3	13.6	771024	250.96	319.62	185.66	15.56	0.1363	3.1180	10	0	B
4199	T-3	16.0	771024	337.34	19.40	34.39	12.76	0.1492	2.6203	10	9	B
4203	T-3	14.2	771024	195.64	4.75	185.47	13.19	0.1101	2.5960	15	0	B
4204	T-3	15.9	771024	338.40	249.83	180.69	7.64	0.3513	2.5243	11	0	B
4205	T-3	13.8	771024	47.86	216.64	97.56	3.58	0.2109	2.5775	15	0	B
4206	T-3	17.2	771024	39.36	288.41	42.58	8.56	0.1594	2.1827	10	0	B
4207	T-3	13.6	771024	267.23	359.52	135.65	4.86	0.1822	2.8327	15	0	B
4208	T-3	14.6	771024	5.97	318.48	56.03	6.46	0.2002	2.5429	15	0	B
4209	T-3	17.4	771024	352.47	267.80	133.40	3.62	0.3459	2.7040	11	0	B
4210	T-3	14.0	771024	333.38	243.60	172.89	11.55	0.1292	3.5466	11	0	B
4211	T-3	14.6	771024	34.36	290.83	51.50	10.65	0.0653	3.1611	6	8	B
4212	T-3	15.6	771024	342.71	1.67	45.77	12.76	0.1947	3.1937	10	0	B
4213	T-3	16.2	771024	11.80	292.68	74.38	5.91	0.1536	2.3451	15	0	B
4215	T-3	15.2	771024	57.92	214.55	92.14	5.55	0.1694	2.3227	15	0	B
4216	T-3	15.6	771024	285.36	352.55	119.68	3.52	0.1244	2.2913	10	0	B
4217	T-3	15.5	771024	306.45	30.45	51.96	6.61	0.0566	2.2486	15	0	B
4218	T-3	16.2	771024	323.81	302.03	135.82	3.46	0.2075	2.3291	15	0	B
4219	T-3	17.0	771024	45.96	205.36	114.77	3.16	0.1854	2.3457	10	0	B
4220	T-3	13.1	771024	309.21	54.35	30.28	22.86	0.1232	3.1551	15	0	B
4221	T-3	13.9	771024	226.08	350.45	177.07	9.48	0.1514	2.7427	15	0	B
4222	T-3	14.3	771024	139.25	193.17	39.97	10.78	0.1514	2.7429	10	0	B
4229	T-3	14.6	771024	201.02	350.03	195.85	22.38	0.0599	1.9566	6	0	E B
4232	T-3	16.2	771024	43.57	272.03	57.20	6.24	0.1158	2.7979	6	8	B
4233	T-3	15.3	771024	55.14	272.37	35.47	14.42	0.1860	2.7316	10	0	B
4234	T-3	14.4	771024	299.96	280.90	193.02	22.53	0.2608	2.2996	11	0	B
4235	T-3	13.9	771024	293.87	25.09	67.44	5.13	0.0296	2.3666	15	0	B
4236	T-3	13.1	771024	154.49	154.97	65.69	6.64	0.1550	3.1057	11	0	B
4237	T-3	14.8	771024	272.51	37.53	89.89	4.80	0.1506	2.3702	15	0	B
4238	T-3	15.2	771024	130.14	119.93	130.77	5.25	0.0174	2.7700	10	8	B
4239	T-3	15.5	771024	17.37	199.64	162.26	7.65	0.0989	2.7222	10	0	B
4240	T-3	15.7	771024	270.95	36.01	82.17	5.51	0.0564	2.3509	10	0	B
4241	T-3	15.7	771024	303.81	358.49	100.98	5.78	0.1903	2.3625	11	0	B
4243	T-3	12.1	771024	107.94	94.88	171.53	13.90	0.0740	3.1415	15	0	B

4245	T-3	14.5	771024	322.83	8.39	61.65	7.56	0.1265	2.4232	15	0		B
4246	T-3	14.2	771024	196.60	90.70	96.85	6.25	0.0870	3.1170	10	0		B
4247	T-3	13.9	771024	82.76	254.79	34.56	22.50	0.0765	3.1359	11	0		B
4248	T-3	17.6	771024	15.84	186.35	174.20	7.17	0.2051	2.3187	9	7		B
4249	T-3	15.3	771024	78.03	178.80	112.63	4.06	0.1189	2.5689	11	0		B
4250	T-3	14.7	771024	8.05	229.49	143.09	3.56	0.1878	2.4509	15	0		B
4251	T-3	14.8	771024	355.66	312.77	75.50	4.11	0.0680	2.8200	11	0		B
4257	T-3	15.6	771024	324.91	279.40	145.65	4.98	0.0907	2.6406	10	0		B
4259	T-3	14.6	771024	110.58	176.45	68.45	6.85	0.2890	2.6402	6	6		B
4260	T-3	15.6	771024	55.78	266.98	38.66	14.82	0.1967	2.6647	6	8		B
4261	T-3	16.5	771024	10.88	208.53	159.14	6.08	0.1977	2.5805	11	0		B
4262	T-3	16.3	771024	352.44	330.21	65.47	6.09	0.2107	2.5640	11	0		B
4264	T-3	15.4	771024	345.38	337.10	62.16	8.79	0.0788	2.8026	10	0		B
4265	T-3	14.7	771024	90.93	239.31	34.88	23.50	0.1406	2.5853	11	0		B
4266	T-3	13.2	771024	46.31	280.56	41.79	18.11	0.1329	3.0931	11	0		B
4268	T-3	15.5	771024	271.48	65.93	65.05	7.80	0.1750	2.2619	10	0		B
4269	T-3	15.6	771024	7.55	188.97	185.05	16.39	0.1418	2.6158	11	0		B
4270	T-3	14.5	771024	84.24	202.25	87.87	5.80	0.0715	2.7482	15	0		B
4271	T-3	10.0	771024	3.92	312.18	64.13	8.87	0.1079	5.2060	15	0		B
4272	T-3	14.2	771024	178.40	38.82	164.64	8.79	0.2119	2.7757	10	0		B
4273	T-3	14.1	771024	102.01	214.38	45.41	12.27	0.1906	3.1637	6	8		B
4274	T-3	16.8	771024	332.89	299.03	127.24	3.19	0.2142	2.3618	14	0		B
4275	T-3	15.7	771024	127.03	165.58	69.18	5.06	0.2871	2.3199	6	6		B
4276	T-3	15.5	771024	295.13	66.41	36.78	13.32	0.1377	2.6792	10	0		B
4280	T-3	13.0	771024	40.24	178.97	151.48	4.94	0.1491	3.2350	15	0		B
4282	T-3	14.9	771024	99.17	95.17	180.81	11.95	0.0756	2.6791	10	0		B
4283	T-3	13.9	771024	60.75	268.18	32.93	22.80	0.1822	3.1888	11	0		B
4284	T-3	16.1	771024	353.93	281.01	111.00	4.11	0.1364	2.5639	14	0		B
4285	T-3	14.8	771024	30.99	155.40	186.10	16.46	0.1628	2.8438	15	0		B
4287	T-3	14.7	771024	100.73	202.53	49.96	11.52	0.2825	2.7852	10	0		B
4288	T-3	13.8	771024	103.68	140.73	128.44	5.75	0.0906	2.7379	11	0		B
4289	T-3	15.0	771024	326.02	297.35	137.46	7.23	0.2230	3.1345	11	0		B
4290	T-3	12.5	771024	84.84	129.48	152.71	9.71	0.1333	3.1103	15	0		B
4291	T-3	16.7	771024	302.24	306.29	162.75	8.27	0.2452	2.2303	6	6		B
4292	T-3	14.9	771024	71.08	133.22	168.42	8.91	0.0957	2.7464	11	0		B
4293	T-3	13.3	771024	160.07	65.23	149.83	6.60	0.2455	3.0403	6	8	E	B
4294	T-3	17.7	771024	7.17	321.72	50.87	6.19	0.2646	2.3827	6	8		B
4295	T-3	14.9	771024	7.17	312.73	62.23	5.89	0.1129	2.4837	15	0		B
4297	T-3	15.1	771024	301.37	288.01	168.53	6.41	0.1273	2.2563	15	0		B
4298	T-3	14.9	771024	116.93	215.62	35.86	16.38	0.1521	2.6491	10	8		B
4299	T-3	15.8	771024	285.62	60.93	53.98	6.38	0.1455	2.3269	11	0		B
4300	T-3	12.9	771024	86.87	94.97	186.48	13.83	0.1343	3.1429	11	0		B
4301	T-3	15.4	771024	260.27	330.45	156.45	4.84	0.0311	2.7348	10	9		B
4302	T-3	16.1	771024	66.24	162.29	126.08	3.14	0.2574	2.4129	10	9		B
4303	T-3	14.3	771024	260.69	92.83	41.50	10.63	0.1078	3.0138	10	0		B
4304	T-3	14.3	771024	204.01	62.49	118.13	4.53	0.0293	2.7056	11	0		B
4305	T-3	14.3	771024	278.98	95.50	33.21	23.17	0.2256	3.1367	6	8		B
4306	T-3	15.4	771024	15.86	304.90	58.72	10.16	0.0889	2.7166	14	0		B
4307	T-3	17.2	771024	56.57	170.27	136.97	5.92	0.1864	2.3749	6	6		B
4308	T-3	15.9	771024	28.63	270.90	76.24	5.97	0.1224	2.7413	10	0		B
4309	T-3	14.6	771024	14.18	210.17	153.78	5.46	0.1748	2.7183	15	0		B
4310	T-3	14.4	771024	144.55	167.99	65.71	5.61	0.0894	2.2842	15	0		B
4311	T-3	15.1	771024	321.29	245.04	189.08	17.15	0.1352	3.0920	10	0		B
4312	T-3	14.3	771024	133.11	190.88	46.19	10.14	0.1750	3.0930	6	8		B
4313	T-3	14.5	771024	333.94	302.08	116.37	2.95	0.1253	2.2233	15	0		B
4314	T-3	14.2	771024	353.81	275.64	117.18	2.95	0.1419	2.8135	6	8		B
4316	T-3	15.3	771024	72.81	247.96	56.73	5.88	0.0586	2.5616	10	0		B
4317	T-3	12.4	771024	39.99	161.36	170.37	9.45	0.1364	5.2151	11	0		B
4318	T-3	16.9	771024	47.49	269.20	53.47	6.97	0.1494	2.3251	9	7		B

4319	T-3	16.7	771024	47.29	267.29	51.79	8.39	0.1826	2.2709	10	0		B
4320	T-3	16.0	771024	21.61	223.92	131.48	5.35	0.1355	2.7953	10	0		B
4321	T-3	15.6	771024	101.53	107.33	156.83	7.56	0.1688	2.3541	6	7		B
4322	T-3	15.1	771024	9.27	285.12	87.83	6.35	0.0417	2.7429	10	9		B
4323	T-3	16.1	771024	325.34	295.99	125.36	6.08	0.0463	2.3694	10	0		B
4324	T-3	14.0	771024	19.83	265.61	95.85	6.14	0.0466	2.7586	11	0		B
4325	T-3	15.9	771024	36.02	188.01	142.86	5.45	0.2103	2.4761	11	0		B
4326	T-3	14.9	771024	4.13	308.79	70.01	5.74	0.1563	2.4191	15	0		B
4327	T-3	14.3	771024	184.17	143.64	55.95	9.26	0.1068	2.5736	11	0		B
4328	T-3	14.6	771024	87.51	234.27	34.52	20.32	0.2399	2.2682	6	8		B
4329	T-3	14.5	771024	84.35	143.73	131.86	5.46	0.2065	2.8187	10	0		B
4330	T-3	14.9	771024	24.93	197.27	154.81	5.68	0.1243	3.2500	6	8		B
4331	T-3	16.1	771024	338.65	287.46	129.11	2.74	0.1826	2.3013	6	8		B
4332	T-3	13.5	771024	238.55	126.03	35.17	18.01	0.1960	3.1076	10	9		B
4333	T-3	13.0	771024	24.63	215.13	138.75	4.93	0.1003	3.4553	15	0		B
4335	T-3	14.0	771024	270.36	305.57	173.23	11.47	0.0476	3.0421	11	0		B
4336	T-3	14.9	771024	172.30	49.41	161.58	7.76	0.0528	2.2973	15	0		B
4340	T-3	15.5	771024	22.05	297.42	58.20	6.52	0.1398	2.3269	6	8		B
4341	T-3	14.4	771024	344.24	11.63	36.37	16.76	0.2039	2.9274	6	8		B
4342	T-3	15.7	771024	357.00	244.32	143.94	4.78	0.0892	2.5409	10	9		B
4343	T-3	12.6	771024	197.45	15.64	176.89	10.22	0.2211	2.8001	15	0		B
4345	T-3	17.1	771024	358.93	209.67	178.22	6.04	0.1985	2.1854	6	7		B
4346	T-3	15.7	771024	358.21	247.76	140.68	3.26	0.2229	2.6092	10	0		B
4347	T-3	15.4	771024	355.67	236.88	154.51	3.86	0.1669	2.6715	6	7		B
4352	T-3	14.9	771024	355.22	340.75	49.88	7.32	0.0983	2.6106	6	8		B
4353	T-3	12.6	771024	169.52	148.83	64.12	6.69	0.0595	3.1657	15	0		B
4354	T-3	14.7	771024	2.71	250.37	131.65	3.88	0.0866	2.1492	6	8		B
4355	T-3	16.8	771024	14.56	303.06	58.26	7.51	0.2298	2.4534	5	6		B
4356	T-3	14.5	771024	337.98	246.92	163.98	11.08	0.1045	2.9901	10	0		B
4357	T-3	16.0	771024	23.70	174.27	168.14	9.60	0.2834	2.8877	5	6	E	B
4358	T-3	14.6	771024	39.71	270.41	61.85	9.80	0.1341	3.0704	6	7		B
4359	T-3	15.3	771024	8.62	302.09	71.80	6.54	0.0817	2.6691	6	7		B
4362	T-3	17.2	771024	355.96	221.42	173.66	5.51	0.3290	2.5599	10	0		B
4364	T-3	16.5	771024	27.64	289.20	43.08	9.36	0.3195	2.9268	5	6		B
4366	T-3	16.0	771024	337.09	324.46	94.28	3.16	0.1810	2.3525	6	8		B
4367	T-3	15.4	771024	304.03	54.22	38.47	14.80	0.1220	2.6706	5	6		B
4368	T-3	17.2	771024	1.32	262.27	121.61	3.25	0.2009	2.3583	5	6		B
4369	T-3	12.1	771024	35.91	176.63	164.39	8.83	0.0937	5.1600	6	8		B
4370	T-3	15.9	771024	349.83	296.33	100.76	4.34	0.0864	2.3524	5	6		B
4371	T-3	17.0	771024	18.05	196.17	158.86	5.34	0.2547	2.4551	6	7		B
4372	T-3	15.4	771024	72.10	190.75	93.22	5.26	0.2434	2.6339	5	6		B
4373	T-3	14.7	771024	351.84	220.62	177.21	12.88	0.2023	2.5812	6	0		B
4374	T-3	15.0	771024	93.38	106.55	170.69	12.85	0.1221	2.5418	6	0		B
4375	T-3	15.0	771024	300.66	352.85	92.17	7.21	0.0229	2.7875	5	6		B
4377	T-3	15.1	771024	109.95	194.00	68.30	7.19	0.1167	2.2507	6	8		B
4378	T-3	16.0	771024	1.02	305.56	77.75	5.81	0.1478	2.6760	5	6		B
4379	T-3	14.2	771024	287.35	315.55	152.53	5.16	0.0907	2.2591	6	8		B
4380	T-3	15.3	771024	338.38	341.59	73.07	4.78	0.1539	2.6762	6	8		B
4381	T-3	15.2	771024	121.07	122.04	138.14	3.68	0.0411	2.2908	6	7		B
4384	T-3	14.3	771024	254.61	74.60	65.01	5.66	0.0870	2.3195	6	8		B
4385	T-3	16.1	771024	354.44	231.20	162.93	5.41	0.1783	2.3225	6	8		B
4386	T-3	15.2	771024	81.84	162.49	135.71	5.24	0.0413	2.4440	6	7		B
4388	T-3	15.4	771024	16.58	225.21	137.75	5.98	0.1340	2.6644	6	8		B
4389	T-3	14.8	771024	48.51	289.33	34.50	24.41	0.1169	2.4501	6	7		B
4390	T-3	14.9	771024	290.33	320.37	141.18	6.66	0.0667	2.3567	6	8		B
4391	T-3	16.1	771024	27.69	240.64	95.98	5.11	0.2824	2.3106	11	0		B
4416	T-3	14.5	771024	3.82	208.94	170.35	10.97	0.1484	3.4882	5	6		B
4418	T-3	14.5	771024	20.76	301.86	54.86	8.04	0.1531	2.4809	6	8		B
4430	T-3	14.9	771024	351.38	318.76	74.35	3.96	0.1127	2.2251	5	5		B

4432	T-3	15.6	771024	5.76	236.59	137.77	5.19	0.2375	2.3903	15	0	B
4433	T-3	14.1	771024	238.17	358.49	158.59	10.79	0.1315	3.0787	5	6	B
4443	T-3	16.0	771024	359.76	296.53	88.60	4.06	0.1007	2.7226	5	5	B
4445	T-3	14.0	771024	99.39	228.04	40.75	11.75	0.1486	2.5982	6	7	B
4459	T-3	16.9	771024	20.59	269.56	86.77	4.83	0.1627	2.2810	6	8	B
4460	T-3	14.2	771024	98.19	165.96	101.97	6.38	0.1546	3.1403	10	0	B
4467	T-3	16.0	771024	266.92	58.79	65.21	5.56	0.0574	2.2677	9	7	B
4485	T-3	16.7	771024	31.33	202.29	132.90	4.44	0.2327	2.6425	10	0	B
4501	T-3	17.5	771024	19.39	286.60	68.22	6.30	0.2082	2.2608	5	6	B
4502	T-3	15.8	771024	90.83	199.22	80.19	6.40	0.1159	2.1824	10	0	B
4503	T-3	17.5	771024	355.53	294.98	97.34	3.67	0.2172	2.3313	10	0	B
4506	T-3	15.2	771024	176.65	159.86	46.07	9.73	0.0797	2.7751	10	0	B
4514	T-3	15.1	771024	69.18	260.17	36.09	24.01	0.1375	3.1708	10	0	B
4515	T-3	15.0	771024	308.37	257.26	184.82	23.05	0.0839	3.2521	6	8	B
4517	T-3	15.9	771024	128.76	77.59	164.82	7.67	0.1328	2.2732	5	6	B
4518	T-3	16.6	771024	329.21	21.62	43.96	10.50	0.1549	2.3354	11	0	B
4520	T-3	15.7	771024	101.63	119.11	143.40	5.38	0.1811	2.5590	6	6	B
4530	T-3	17.0	771024	343.07	352.94	53.05	7.31	0.1445	2.3298	6	8	B
4537	T-3	16.4	771024	65.26	242.50	55.65	5.88	0.1700	2.5740	5	6	B
4539	T-3	16.3	771024	58.51	217.65	84.65	6.52	0.2002	2.5629	6	0	B
4541	T-3	17.1	771024	300.50	328.86	123.13	4.59	0.0938	2.2243	5	6	B
4542	T-3	16.4	771024	75.13	127.97	163.59	10.01	0.1420	2.5159	6	0	B
4544	T-3	16.4	771024	340.09	10.47	42.05	12.42	0.1872	2.6138	6	8	B
4557	T-3	15.4	771024	134.83	129.00	111.28	3.62	0.1078	2.5207	6	8	B
4569	T-3	16.1	771024	278.27	347.61	142.24	6.72	0.2244	2.4858	5	6	B
4571	T-3	17.5	771024	22.37	273.42	70.07	5.36	0.2877	2.5467	11	0	B
4583	T-3	15.2	771024	299.81	45.46	39.79	12.83	0.0455	3.1131	6	8	B
4589	T-3	15.9	771024	324.67	341.09	90.23	4.73	0.1797	2.7398	14	0	B
4592	T-3	16.8	771024	46.74	211.85	102.98	3.77	0.2104	2.4170	10	0	B
4608	T-3	16.6	771024	284.68	53.63	65.23	5.01	0.1881	2.3076	6	8	B
4610	T-3	14.8	771024	196.98	127.62	58.63	7.34	0.0966	2.7052	5	6	B
4611	T-3	14.3	771024	339.37	1.15	44.69	11.51	0.1058	3.1171	15	0	B
4642	T-3	14.0	771024	137.85	53.50	173.43	12.45	0.2422	3.0858	6	8 E	B
4651	T-3	14.8	771024	88.14	87.67	185.59	12.69	0.1731	3.1340	10	0	B
4658	T-3	18.2	771024	16.13	308.54	51.30	3.62	0.1951	2.1388	10	9	B
4670	T-3	14.5	771024	358.50	348.75	38.27	14.28	0.1905	3.1056	5	6	B
4672	T-3	15.2	771024	290.97	34.22	76.46	5.14	0.1487	2.6280	5	6	B
4673	T-3	16.8	771024	22.89	297.60	56.75	5.93	0.1583	2.2373	5	5	B
4679	T-3	15.4	771024	349.69	356.99	43.29	12.60	0.1890	2.5414	5	6	B
4680	T-3	15.2	771024	31.16	240.62	104.79	5.92	0.1186	2.4502	5	6	B
4702	T-3	14.8	771024	129.19	61.56	185.97	13.81	0.0727	3.0334	10	8	B
5002	T-3	14.8	771024	16.64	266.36	96.21	6.65	0.0515	2.7590	5	6	B
5004	T-3	13.4	771024	201.01	126.01	55.58	13.75	0.0924	2.5634	5	6	B
5007	T-3	15.6	771024	23.20	235.03	102.12	7.55	0.3147	2.8317	11	9	B
5009	T-3	16.2	771024	1.59	305.76	74.20	6.95	0.1668	2.6486	11	0	B
5010	T-3	10.3	771024	355.26	231.33	153.77	12.12	0.0423	5.1997	11	0	B
5011	T-3	15.5	771024	23.85	207.36	142.99	6.95	0.1516	2.4557	11	0	B
5013	T-3	15.4	771024	2.84	267.09	110.91	6.91	0.0868	2.7532	11	0	B
5014	T-3	14.9	771024	338.67	292.91	112.61	6.64	0.0525	2.3070	10	0	B
5015	T-3	16.2	771024	341.20	263.56	148.03	7.45	0.2007	2.3205	11	0	B
5016	T-3	13.6	771024	185.73	56.55	139.32	9.88	0.1290	2.7540	11	0	B
5017	T-3	16.2	771024	14.83	221.91	138.48	9.71	0.1664	2.7727	6	8	B
5018	T-3	14.3	771024	299.76	34.17	53.29	15.64	0.0766	2.6447	10	0	B
5019	T-3	13.4	771024	341.77	247.19	155.69	14.33	0.0958	3.1700	11	0	B
5020	T-3	15.6	771024	355.67	258.66	128.81	8.71	0.1804	3.1723	6	8	B
5021	T-3	14.1	771024	348.11	246.95	151.94	9.49	0.1604	2.5744	11	0	B
5022	T-3	13.7	771024	141.58	93.79	143.49	10.15	0.0254	3.0777	11	0	B
5027	T-3	16.3	771024	68.43	171.56	124.71	5.80	0.1578	2.2788	11	0	B
5028	T-3	13.7	771024	82.44	104.64	166.71	14.34	0.2465	2.4666	11	0	B

5029	T-3	13.6	771024	101.48	141.67	132.57	10.06	0.0411	3.0812	11	0 B
5030	T-3	13.5	771024	43.27	168.88	150.15	11.70	0.1999	3.1159	11	0 B
5034	T-3	13.2	771024	287.54	297.36	169.28	14.66	0.1074	2.8514	11	0 B
5035	T-3	14.4	771024	103.04	207.75	63.21	10.72	0.0635	2.5706	11	0 B
5036	T-3	14.1	771024	318.88	357.17	71.92	11.05	0.0949	3.0934	11	0 B
5037	T-3	15.8	771024	343.41	270.82	136.15	9.18	0.2013	2.9707	10	0 B
5038	T-3	13.4	771024	91.45	156.80	126.75	10.37	0.0467	2.9681	11	0 B
5039	T-3	14.8	771024	79.09	130.71	156.51	13.65	0.1298	3.1187	10	0 B
5041	T-3	12.6	771024	97.56	125.14	150.82	11.32	0.0697	3.0451	11	0 B
5042	T-3	17.0	771024	331.13	326.15	97.29	6.21	0.1720	2.3921	10	8 B
5043	T-3	14.7	771024	64.09	133.28	174.82	16.39	0.0942	3.0913	10	0 B
5046	T-3	15.7	771024	286.97	352.88	116.39	6.13	0.1199	2.2946	11	0 B
5047	T-3	16.2	771024	352.01	259.98	134.99	6.55	0.1720	2.3660	10	0 B
5048	T-3	13.1	771024	272.98	66.61	55.53	14.62	0.1361	3.4200	11	0 B
5049	T-3	16.8	771024	12.35	242.48	122.01	7.13	0.1952	2.3829	10	0 B
5050	T-3	15.1	771024	342.79	264.52	146.21	9.29	0.2204	2.3350	5	6 B
5051	T-3	13.2	771024	325.48	1.18	66.25	10.34	0.1500	2.7683	11	0 B
5052	T-3	15.0	771024	31.40	267.23	68.65	8.58	0.2050	2.4793	11	0 B
5053	T-3	17.2	771024	21.33	257.50	97.49	6.32	0.1365	2.3593	10	0 B
5058	T-3	16.2	771024	25.47	291.84	52.99	11.07	0.1953	2.7116	10	0 B
5059	T-3	18.2	771024	353.54	323.64	71.16	6.13	0.2224	2.2613	6	8 B
5061	T-3	15.0	771024	24.14	282.89	62.01	8.50	0.2298	2.4473	11	0 B
5062	T-3	16.2	771024	39.14	205.83	116.90	9.28	0.2216	2.7656	10	0 B
5064	T-3	16.7	771024	1.22	290.77	90.59	7.15	0.1323	2.3666	10	0 B
5066	T-3	15.6	771024	7.64	303.57	68.00	10.72	0.1197	3.0274	6	6 B
5068	T-3	15.5	771024	312.21	31.23	54.70	12.00	0.1664	2.6478	11	0 B
5069	T-3	17.5	771024	23.62	272.64	80.09	6.67	0.1277	2.4810	6	9 B
5071	T-3	15.5	771024	340.64	299.48	109.28	5.89	0.1289	2.2943	11	0 B
5073	T-3	17.2	771024	352.00	282.35	115.99	6.31	0.2554	2.2786	10	0 B
5075	T-3	16.6	771024	329.98	258.18	161.53	11.05	0.0949	2.3043	10	0 B
5076	T-3	14.8	771024	77.82	218.98	73.17	10.82	0.0960	3.0761	6	8 B
5077	T-3	14.8	771024	314.41	282.24	163.10	12.79	0.1779	3.0256	11	0 B
5078	T-3	12.6	771024	56.05	254.54	68.65	10.51	0.0222	3.1141	11	0 B
5079	T-3	16.2	771024	58.27	234.68	76.53	7.70	0.1278	2.3806	10	9 B
5080	T-3	17.2	771024	21.59	214.16	138.76	5.85	0.1864	2.2510	10	0 B
5082	T-3	15.7	771024	22.10	246.31	107.87	5.59	0.1477	2.3171	15	0 B
5083	T-3	16.2	771024	279.47	345.42	128.82	7.34	0.0925	2.2544	10	0 B
5084	T-3	17.3	771024	4.27	264.71	112.51	5.91	0.2461	2.3452	11	0 B
5086	T-3	14.7	771024	251.41	75.16	60.04	15.94	0.0661	3.1380	10	0 B
5087	T-3	16.7	771024	348.98	279.31	119.31	8.71	0.1779	2.7914	6	8 B
5088	T-3	15.9	771024	17.69	292.40	66.82	11.71	0.1189	2.7132	10	0 B
5089	T-3	15.8	771024	55.29	195.53	119.37	7.34	0.1264	2.2836	11	0 B
5090	T-3	15.1	771024	244.26	66.77	80.72	10.02	0.1070	2.7782	9	8 B
5092	T-3	13.5	771024	267.50	338.94	146.63	12.22	0.0976	2.9847	11	0 B
5094	T-3	15.0	771024	43.12	245.87	82.48	8.45	0.1270	2.7608	10	0 B
5095	T-3	15.1	771024	76.06	223.25	69.38	9.68	0.1201	2.7041	10	0 B
5096	T-3	16.0	771024	147.85	141.11	91.34	7.61	0.0471	2.2881	10	8 B
5098	T-3	16.4	771024	32.59	223.81	114.36	6.15	0.1808	2.2086	11	0 B
5099	T-3	14.4	771024	277.46	342.18	131.63	10.37	0.0805	3.1107	10	0 B
5100	T-3	16.0	771024	0.38	213.01	170.50	15.60	0.2664	3.0612	10	0 B
5101	T-3	15.0	771024	293.68	342.83	134.84	10.02	0.2515	2.7890	10	0 B
5102	T-3	15.9	771024	9.27	315.73	51.54	14.36	0.2466	2.6140	11	0 B
5103	T-3	15.1	771024	258.59	70.71	62.98	15.00	0.1068	2.5698	10	0 B
5104	T-3	15.0	771024	352.18	261.74	130.50	10.79	0.1175	3.0278	10	0 B
5105	T-3	14.5	771024	20.79	226.36	131.54	9.60	0.0877	2.9829	10	0 B
5106	T-3	15.7	771024	18.27	228.14	131.40	7.39	0.1445	2.4170	11	0 B
5107	T-3	15.7	771024	105.75	160.31	101.91	6.66	0.1492	2.2733	10	0 B
5109	T-3	17.6	771024	15.95	222.87	136.03	5.59	0.2390	2.3880	5	0 B
5110	T-3	14.6	771024	305.71	26.51	51.69	15.69	0.0223	3.1500	10	9 B

5111	T-3	14.4	771024	40.66	282.58	49.02	14.80	0.1256	2.5635	11	0		B
5112	T-3	14.8	771024	72.04	190.43	110.23	8.15	0.0899	2.7375	11	0		B
5118	T-3	16.1	771024	51.87	214.47	98.69	8.41	0.1787	2.2201	10	0		B
5119	T-3	13.6	771024	307.03	282.04	181.30	22.45	0.2354	2.2704	11	0		B
5120	T-3	14.6	771024	329.85	29.68	37.17	29.62	0.2191	3.1609	11	0		B
5121	T-3	14.7	771024	340.00	333.79	72.28	11.62	0.0920	3.0800	11	0		B
5122	T-3	14.9	771024	53.24	194.15	111.56	6.89	0.2328	2.3335	11	0		B
5123	T-3	14.9	771024	322.89	321.59	106.84	7.08	0.0994	2.4217	11	0		B
5124	T-3	14.9	771024	240.10	47.09	102.27	7.15	0.0632	2.3649	11	0		B
5127	T-3	15.0	771024	13.79	230.70	133.68	7.28	0.1824	2.4689	11	0		B
5128	T-3	15.5	771024	69.20	191.88	90.20	10.83	0.2658	2.7307	10	0		B
5129	T-3	16.1	771024	3.67	259.97	118.98	6.93	0.2306	2.3161	11	0		B
5130	T-3	15.4	771024	308.43	355.68	92.22	8.29	0.1288	2.2934	11	0		B
5131	T-3	15.6	771024	54.49	214.97	100.93	7.72	0.1306	2.2858	11	0		B
5132	T-3	13.8	771024	338.18	336.37	73.31	10.82	0.1067	3.0628	11	0		B
5134	T-3	16.0	771024	330.52	290.11	134.77	6.45	0.1561	2.2811	11	0		B
5135	T-3	15.7	771024	337.23	329.45	83.64	7.51	0.1226	2.5948	11	0		B
5137	T-3	16.0	771024	29.75	269.72	76.26	9.34	0.1180	2.7534	10	0		B
5138	T-3	15.2	771024	258.96	76.12	61.65	12.77	0.1310	2.5959	11	0		B
5139	T-3	15.5	771024	301.57	307.50	152.74	10.68	0.1645	2.6048	10	0		B
5141	T-3	15.5	771024	343.41	302.31	104.11	9.86	0.1670	2.8091	10	0		B
5143	T-3	15.4	771024	318.42	276.96	161.83	14.95	0.1513	2.8721	10	0		B
5145	T-3	18.0	771024	16.13	245.81	113.73	6.24	0.2243	2.2441	10	0		B
5146	T-3	15.4	771024	273.41	76.52	42.98	21.94	0.0966	2.6140	10	9		B
5148	T-3	17.3	771024	353.52	298.92	98.23	6.07	0.2774	2.6006	10	0		B
5149	T-3	17.1	771024	49.69	224.79	90.79	6.04	0.1939	2.1800	10	0		B
5151	T-3	16.9	771024	355.11	302.17	88.63	7.10	0.1152	2.3933	10	0		B
5154	T-3	17.1	771024	17.78	247.78	103.72	9.62	0.2757	3.0920	6	8		B
5155	T-3	14.2	771024	345.44	290.16	110.74	10.88	0.1085	3.0103	11	9		B
5156	T-3	15.0	771024	321.23	348.18	80.80	12.87	0.1040	3.1709	10	0		B
5157	T-3	16.2	771024	334.74	265.33	150.02	12.11	0.1082	2.6558	6	8		B
5158	T-3	15.4	771024	322.75	249.78	175.55	22.48	0.0445	2.6330	10	9		B
5160	T-3	14.4	771024	68.62	135.40	155.83	13.69	0.2098	2.8345	10	0		B
5161	T-3	14.8	771024	21.81	271.08	83.40	10.86	0.1317	2.9710	11	0		B
5162	T-3	15.7	771024	83.70	238.55	47.53	16.08	0.1194	2.4323	9	8		B
5165	T-3	14.9	771024	30.92	254.64	87.85	7.08	0.1619	2.4312	10	0		B
5166	T-3	13.5	771024	74.82	129.66	162.43	12.54	0.1547	2.5804	11	0		B
5167	T-3	14.1	771024	62.95	176.69	136.49	10.14	0.0711	3.1484	11	0		B
5168	T-3	13.5	771024	224.59	50.69	109.77	10.35	0.0265	2.9790	11	0		B
5170	T-3	14.9	771024	231.67	13.91	150.05	10.29	0.1399	2.6554	9	8		B
5171	T-3	15.3	771024	39.06	184.39	153.84	10.30	0.0930	3.0016	10	0		B
5172	T-3	13.1	771024	134.99	124.28	121.22	9.99	0.0376	3.0308	10	0		B
5173	T-3	16.6	771024	280.20	290.56	184.27	22.13	0.0761	1.9011	5	6		B
5174	T-3	12.2	771024	125.16	158.43	82.97	13.12	0.1878	3.1366	10	9		B
5175	T-3	14.7	771024	234.03	61.67	102.21	11.21	0.1908	2.4252	5	6		B
5176	T-3	15.5	771024	14.83	252.32	104.49	8.50	0.2930	2.7974	6	8		B
5177	T-3	14.7	771024	1.75	237.37	144.69	11.87	0.1241	2.8714	6	7		B
5179	T-3	13.8	771024	261.66	35.09	112.95	10.12	0.2523	2.7899	6	7		B
5180	T-3	14.8	771024	24.04	162.73	185.60	29.10	0.2255	3.1431	10	9		B
5181	T-3	14.6	771024	341.87	255.96	151.62	11.86	0.1186	3.1506	6	8		B
5182	T-3	11.8	771024	33.62	173.48	170.69	17.63	0.1012	3.3164	10	0		B
5183	T-3	14.9	771024	8.53	217.31	155.68	10.49	0.1701	2.8077	5	6		B
5184	T-3	15.7	771024	92.31	147.78	128.49	7.56	0.1450	2.2160	6	7		B
5185	T-3	14.9	771024	22.29	220.74	133.02	8.40	0.1610	3.2383	5	6		B
5187	T-3	12.7	771024	263.05	75.21	63.82	18.11	0.1936	3.2065	6	8	E	B
5188	T-3	14.1	771024	357.19	222.10	167.39	17.84	0.1964	3.1725	6	8		B
5191	T-3	10.7	771024	0.13	244.74	138.92	12.57	0.0416	5.1812	6	6	E	B
5192	T-3	12.5	771024	257.21	65.72	66.02	12.03	0.0462	2.9929	6	8		B
5193	T-3	12.8	771024	144.96	80.87	149.91	12.07	0.1541	3.0137	6	8		B

5195	T-3	15.1	771024	11.80	273.83	91.51	8.87	0.2343	2.8184	6	8 B
5235	T-3	14.8	771024	262.23	317.92	175.30	14.63	0.0960	2.5489	5	5 B
5236	T-3	13.4	771024	349.81	321.87	73.40	11.89	0.1207	5.3269	10	8 E B
5278	T-3	14.8	771024	23.89	255.20	98.12	9.12	0.1345	2.4799	5	5 B
5282	T-3	14.3	771024	308.80	23.06	64.45	15.07	0.1339	2.5738	5	5 B
5291	T-3	14.7	771024	93.04	217.19	62.35	12.85	0.0755	3.2515	6	6 B
5400	T-3	18.5	771024	12.60	275.30	88.46	4.47	0.2327	2.1920	5	0 B
5601	T-3	15.6	771024	114.09	93.90	165.14	12.53	0.1144	2.6439	9	8 B
5602	T-3	15.2	771024	337.03	266.70	138.47	10.44	0.0403	2.9822	10	0 B
5622	T-3	15.3	771024	236.78	71.27	75.75	10.54	0.0391	2.5299	6	8 B
5628	T-3	15.3	771024	37.77	271.06	56.87	12.33	0.1845	2.6392	10	0 B
5630	T-3	17.9	771024	33.92	262.64	62.40	7.16	0.2872	2.1708	6	8 B
5644	T-3	14.3	771024	110.96	105.73	151.66	10.94	0.1304	3.1450	10	0 B
5646	T-3	16.0	771024	35.71	240.10	97.24	7.01	0.1189	2.7972	10	0 B
5650	T-3	15.4	771024	172.18	115.37	91.03	9.85	0.1616	2.3495	10	7 B
5684	T-3	17.1	771024	37.83	219.45	107.10	5.20	0.2301	2.1580	10	0 B
5687	T-3	14.9	771024	301.33	290.32	161.50	14.56	0.0990	3.1564	6	8 B
5693	T-3	16.4	771024	12.10	199.02	167.52	12.71	0.1927	2.4124	11	0 B
5694	T-3	14.2	771024	117.97	114.00	132.57	10.90	0.1930	3.1391	6	8 B
5701	T-3	15.0	771024	8.80	292.21	80.17	10.32	0.0374	3.1338	10	0 B
5706	T-3	16.2	771024	310.51	332.26	120.28	7.58	0.1927	2.5782	6	8 B
5710	T-3	15.2	771024	228.50	105.29	51.75	14.50	0.0385	2.6643	10	0 B
5721	T-3	14.7	771024	184.59	84.91	114.29	7.58	0.0700	2.7784	10	0 B
5727	T-3	14.9	771024	222.04	100.87	67.02	14.35	0.1262	2.6915	10	0 B
5728	T-3	15.5	771024	321.40	307.13	120.33	11.12	0.0851	3.1497	10	0 B
5739	T-3	14.2	771024	190.82	112.68	82.49	8.60	0.1256	2.5552	6	8 B
5741	T-3	16.2	771024	359.06	260.23	125.92	7.00	0.1659	2.7103	10	0 B
5772	T-3	14.5	771024	54.09	233.22	87.09	9.12	0.0977	3.0671	5	6 B

1986 WW10 = 1987 BH (H. Oishi)

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ORBITAL ELEMENTS BY L. D. SCHMADEL, ASTRONOMISCHES RECHEN-INSTITUT.

(363) Padua
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	148.74748	(1950.0)	P	Q	
n	0.21655836	Peri.	293.13422	+0.99467525	+0.04316257
a	2.7463301	Node	64.50158	+0.00204862	+0.89961161
e	0.0722819	Incl.	5.95136	-0.10303863	+0.43455259
P	4.55	H	8.97	G 0.15	

From 93 observations at 38 oppositions 1891-1985, mean residual 1".3.

1987 SW1 = 1980 TS12 = 1980 UD1
The identifications are by L. D. Schmadel.
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	83.35000	(1950.0)	P	Q	
n	0.27643790	Peri.	163.05667	+0.94890942	-0.29782595
a	2.3338395	Node	214.82236	+0.26417911	+0.93051398
e	0.1581132	Incl.	10.52037	+0.17256975	+0.21317466
P	3.57	H	14.0	G 0.25	

Residuals in seconds of arc

801010	095	0.8+	1.3+	870921	688	0.5+	0.9-	871016	688	0.2+	1.0-
801017	095	0.8-	1.5-	870929	688	0.4+	0.6-	871016	688	0.0	1.5+
870921	688	1.9-	1.3-	870929	688	0.8+	2.4+				

ORBITAL ELEMENTS BY E. GOFFIN, AGVA-GEFFERT N.V., MORTSEL, BELGIUM.

(1049) Gotho
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	185.16234		(1950.0)	P	Q
n	0.18079057	Peri.	35.55149	+0.94283195	-0.32425489
a	3.0975539	Node	342.86529	+0.21168228	+0.76107980
e	0.1296307	Incl.	15.14740	+0.25740731	+0.56179739
P	5.45	H	10.6	G 0.25	

From 38 observations at 14 oppositions 1925-1985, mean residual 0".9.

(2280) Kunikov
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	89.44063		(1950.0)	P	Q
n	0.30654364	Peri.	263.65546	+0.98376126	-0.16920797
a	2.1784178	Node	106.07433	+0.17919000	+0.90692459
e	0.1413533	Incl.	3.57120	+0.01023389	+0.38581919
P	3.22	H	14.14	G 0.25	

From 25 observations at 8 oppositions 1970-1984, mean residual 1".1.

(2488) Bryan
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	204.85302		(1950.0)	P	Q
n	0.28931757	Peri.	300.41508	+0.99360664	-0.03899726
a	2.2640508	Node	62.00506	+0.08259455	+0.89087414
e	0.2239902	Incl.	6.89143	-0.07696747	+0.45257318
P	3.41	H	14.0	G 0.25	

From 15 observations at 4 oppositions 1952-1986, mean residual 0".7.

(2520) Novorossijsk
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	82.18182		(1950.0)	P	Q
n	0.17944933	Peri.	322.82287	+0.86038349	+0.50949524
a	3.1129692	Node	6.58285	-0.43758222	+0.75102074
e	0.0937425	Incl.	6.23158	-0.26127006	+0.41997911
P	5.49	H	11.73	G 0.15	

From 24 observations at 5 oppositions 1976-1985, mean residual 0".9.

(2542) Calpurnia
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	174.62265		(1950.0)	P	Q
n	0.17868164	Peri.	35.68454	-0.99845428	+0.03259859
a	3.1218792	Node	146.09884	-0.04583386	-0.94105753
e	0.0858714	Incl.	4.62921	+0.03143739	-0.33667202
P	5.52	H	11.47	G 0.14	

From 24 observations at 5 oppositions 1972-1986, mean residual 1".0.

(2560) 1932 CW
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	220.45683		(1950.0)	P	Q
n	0.21616665	Peri.	286.20400	+0.26788208	-0.96190052
a	2.7496469	Node	148.09587	+0.91870774	+0.23794471
e	0.0349728	Incl.	5.93530	+0.29019867	+0.13464662
P	4.56	H	11.81	G 0.15	

From 58 observations at 6 oppositions 1932-1987, mean residual 0".7.

(2562) 1973 FF1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	311.83804	(1950.0)	P	Q
n	0.18899401	Peri. 241.87894	-0.74278982	+0.66667407
a	3.0072580	Node 339.73146	-0.53457507	-0.64604708
e	0.0485072	Incl. 10.26236	-0.40310392	-0.37171072
P	5.22	H 10.56	G 0.25	

From 24 observations at 7 oppositions 1952-1985, mean residual 0".9.

(2567) Elba
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	318.77743	(1950.0)	P	Q
n	0.21757501	Peri. 190.37110	+0.88748410	+0.45103765
a	2.7377684	Node 142.35288	-0.41093049	+0.86739169
e	0.1388558	Incl. 8.90372	-0.20858594	+0.21023010
P	4.53	H 11.75	G 0.15	

From 42 observations at 5 oppositions 1979-1984, mean residual 0".9.

(2593) Buryatia
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	18.38537	(1950.0)	P	Q
n	0.30842436	Peri. 75.20418	-0.75505546	-0.65565233
a	2.1695530	Node 63.82657	+0.60007902	-0.69310230
e	0.0785951	Incl. 0.21439	+0.26419012	-0.29954837
P	3.20	H 14.01	G 0.25	

From 21 observations at 4 oppositions 1976-1985, mean residual 0".9.

(2619) Skalnate Pleso
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	298.46745	(1950.0)	P	Q
n	0.18892077	Peri. 61.21098	-0.08101759	+0.99668094
a	3.0080351	Node 204.14586	-0.92106681	-0.07791546
e	0.0459680	Incl. 1.11400	-0.38088329	-0.02358556
P	5.22	H 12.6	G 0.25	

From 16 observations at 4 oppositions 1975-1985, mean residual 0".9.

(2631) Zhejiang
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	227.53354	(1950.0)	P	Q
n	0.21046520	Peri. 18.45180	+0.73297657	-0.67671838
a	2.7990835	Node 24.56636	+0.60123161	+0.59683055
e	0.1593523	Incl. 9.59035	+0.31822303	+0.43109805
P	4.68	H 11.79	G 0.15	

From 16 observations at 7 oppositions 1973-1987, mean residual 1".2.

(2643) 1973 SD
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	357.05010	(1950.0)	P	Q
n	0.26879273	Peri. 65.59439	+0.57713483	-0.81267562
a	2.3778860	Node 348.10472	+0.53309205	+0.44954564
e	0.2737981	Incl. 22.97600	+0.61865034	+0.37076549
P	3.67	H 14.8	G 0.25	

From 22 observations at 4 oppositions 1973-1984, mean residual 0".7.

(2674) Pandarus
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	128.43160	(1950.0)	P	Q
n	0.08363383	Peri. 37.01669	-0.80680010	+0.59082434
a	5.1786280	Node 179.19842	-0.54951822	-0.75011195
e	0.0665947	Incl. 1.85885	-0.21703301	-0.29708359
P	11.78	H 9.05	G 0.15	

From 29 observations at 7 oppositions 1972-1987, mean residual 0".9.

(2729) 1979 UA2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	338.01983	(1950.0)	P	Q
n	0.20084028	Peri. 263.83330	+0.84473850	+0.53285983
a	2.8878115	Node 63.95778	-0.46647265	+0.77868692
e	0.0673596	Incl. 3.17562	-0.26233592	+0.33122059
P	4.91	H 11.62	G 0.25	

From 19 observations at 6 oppositions 1952-1987, mean residual 0".9.

(2733) Hamina
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	53.47403	(1950.0)	P	Q
n	0.27407127	Peri. 352.42025	-0.40018207	-0.90328920
a	2.3472555	Node 121.05327	+0.84996355	-0.42893677
e	0.1356132	Incl. 10.40148	+0.34266059	+0.00904824
P	3.60	H 13.39	G 0.33	

From 28 observations at 3 oppositions 1938-1985, mean residual 1".0.

(2757) Crisser
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	314.78084	(1950.0)	P	Q
n	0.17539592	Peri. 53.29580	+0.45171524	-0.89215984
a	3.1607470	Node 9.85104	+0.81465248	+0.41153773
e	0.2042070	Incl. 0.68311	+0.36372336	+0.18624584
P	5.62	H 11.56	G 0.15	

From 35 observations at 5 oppositions 1949-1984, mean residual 0".9.

(2773) 1981 JZ2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	210.03730	(1950.0)	P	Q
n	0.27739505	Peri. 296.08369	+0.79795623	-0.59942732
a	2.3284679	Node 100.80862	+0.57330563	+0.72269191
e	0.1421351	Incl. 3.66981	+0.18597449	+0.34409780
P	3.55	H 13.24	G 0.25	

From 23 observations at 7 oppositions 1929-1986, mean residual 1".0.

(2798) 2009 P-L
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	132.64632	(1950.0)	P	Q
n	0.26222985	Peri. 172.81364	+0.84711590	-0.52815791
a	2.4173969	Node 219.25021	+0.48280071	+0.81106413
e	0.0588605	Incl. 5.32192	+0.22203183	+0.25144423
P	3.76	H 13.0	G 0.25	

From 57 observations at 6 oppositions 1960-1986, mean residual 0".8.

(2828) Iku-Turso
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	4.20469	(1950.0)	P	Q
n	0.29366179	Peri. 23.04630	-0.12230047	-0.99094191
a	2.2416669	Node 74.01479	+0.90132678	-0.13429073
e	0.0902288	Incl. 3.30777	+0.41551490	-0.00036781
P	3.36	H 13.7	G 0.25	

From 18 observations at 6 oppositions 1942-1984, mean residual 1".0.

(2839) Annette
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	275.33750	(1950.0)	P	Q
n	0.29870252	Peri. 6.26417	+0.63761299	-0.76813968
a	2.2163761	Node 44.14168	+0.70306322	+0.54925078
e	0.1497956	Incl. 4.81061	+0.31488377	+0.32906687
P	3.30	H 12.7	G 0.25	

From 17 observations at 6 oppositions 1929-1985, mean residual 1".1.

(2860) Pasacentennium
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	264.46700	(1950.0)	P	Q
n	0.27669093	Peri. 70.49027	+0.68021721	-0.71337445
a	2.3324165	Node 334.10370	+0.43914734	+0.58068575
e	0.2149469	Incl. 22.69790	+0.58690218	+0.39230213
P	3.56	H 13.02	G 0.25	

From 52 observations at 4 oppositions 1978-1985, mean residual 0".9.

(2874) Jim Young
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	252.43103	(1950.0)	P	Q
n	0.29303246	Peri. 322.04266	+0.75473068	-0.65067786
a	2.2448753	Node 78.76309	+0.62081803	+0.66716108
e	0.1337856	Incl. 4.89332	+0.21205321	+0.36264916
P	3.36	H 13.58	G 0.25	

From 19 observations at 7 oppositions 1962-1987, mean residual 0".7.

(2875) Lagerkvist
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	56.84206	(1950.0)	P	Q
n	0.21074340	Peri. 171.01186	-0.87582280	-0.47964594
a	2.7966195	Node 340.05213	+0.43244382	-0.73056550
e	0.1022918	Incl. 9.04108	+0.21430531	-0.48601833
P	4.68	H 12.39	G 0.15	

From 28 observations at 6 oppositions 1955-1986, mean residual 1".1.

(2886) 1965 YG
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	96.40872	(1950.0)	P	Q
n	0.27074952	Peri. 331.59788	+0.19149595	-0.98125088
a	2.3664151	Node 107.35510	+0.90472916	+0.16785703
e	0.1549671	Incl. 1.30980	+0.38051866	+0.09471393
P	3.64	H 13.5	G 0.25	

From 37 observations at 5 oppositions 1965-1985, mean residual 0".9.

(2909) Hoshi-No-Ie
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	243.65446	(1950.0)	P	Q
n	0.18747192	Peri. 284.20905	+0.96693255	-0.16095732
a	3.0235134	Node 85.33610	+0.23012815	+0.88498657
e	0.1113871	Incl. 11.44814	-0.10992034	+0.43691133
P	5.26	H 11.49	G 0.25	

From 19 observations at 7 oppositions 1948-1987, mean residual 1".1.

(2917) Sawyer Hogg
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	212.91804	(1950.0)	P	Q
n	0.21073693	Peri. 37.97960	+0.89250778	-0.44883463
a	2.7966768	Node 348.43719	+0.34006435	+0.73440987
e	0.1094671	Incl. 12.81747	+0.29628720	+0.50910668
P	4.68	H 11.89	G 0.15	

From 22 observations at 4 oppositions 1980-1985, mean residual 0".9.

(2952) Lilliputia
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	166.61572	(1950.0)	P	Q
n	0.28003392	Peri. 78.05996	+0.75353844	-0.65647872
a	2.3138167	Node 322.95605	+0.57835701	+0.68721248
e	0.1706755	Incl. 3.31774	+0.31254279	+0.31108633
P	3.52	H 14.2	G 0.25	

From 32 observations at 6 oppositions 1965-1986, mean residual 1".0.

(2961) Katsurahama
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	247.80307	(1950.0)	P	Q
n	0.28853519	Peri. 195.84700	+0.55281547	-0.83170205
a	2.2681417	Node 220.63112	+0.77286160	+0.53490387
e	0.1374371	Incl. 4.54847	+0.31157665	+0.14882725
P	3.42	H 13.0	G 0.25	

From 33 observations at 6 oppositions 1941-1985, mean residual 1".0.

(2966) 1977 EB2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	310.93815	(1950.0)	P	Q
n	0.25740356	Peri. 197.96670	-0.43672844	+0.89902334
a	2.4475206	Node 46.15194	-0.81977529	-0.38306889
e	0.1408265	Incl. 2.54477	-0.37045478	-0.21216800
P	3.83	H 13.58	G 0.25	

From 25 observations at 4 oppositions 1977-1986, mean residual 1".1.

(2983) Poltava
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	164.24470	(1950.0)	P	Q
n	0.20534891	Peri. 86.34857	+0.89591361	+0.43887759
a	2.8453855	Node 247.60875	-0.43134761	+0.82246478
e	0.0608436	Incl. 4.26364	-0.10619814	+0.36185375
P	4.80	H 11.12	G 0.15	

From 18 observations at 7 oppositions 1933-1984, mean residual 1".0.

(3029) 1981 EA8
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 41.75237		(1950.0)	P	Q
n 0.29406343	Peri.	268.60901	-0.74317003	+0.66769148
a 2.2396253	Node	313.27771	-0.58768673	-0.68239756
e 0.1124566	Incl.	3.42013	-0.31987908	-0.29752590
P 3.35	H	13.2	G 0.25	

From 48 observations at 6 oppositions 1944-1986, mean residual 1".0.

(3121) 1981 EV
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 44.32130		(1950.0)	P	Q
n 0.29640569	Peri.	87.54210	-0.83727094	+0.53920943
a 2.2278111	Node	125.07303	-0.53531108	-0.77451865
e 0.0863102	Incl.	6.36436	-0.11144246	-0.33071749
P 3.33	H	13.62	G 0.25	

From 43 observations at 5 oppositions 1978-1985, mean residual 0".6.

(3124) Kansas
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 238.61237		(1950.0)	P	Q
n 0.21662118	Peri.	169.16978	+0.86450578	+0.50145870
a 2.7457992	Node	160.61874	-0.46848512	+0.82856401
e 0.0786928	Incl.	5.91349	-0.18207541	+0.24903985
P 4.55	H	13.24	G 0.15	

From 44 observations at 5 oppositions 1981-1986, mean residual 0".9.

(3162) Nostalgia
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 158.46779		(1950.0)	P	Q
n 0.17503222	Peri.	316.71370	+0.05887561	-0.96871462
a 3.1651239	Node	128.41376	+0.97910048	+0.00893949
e 0.1438753	Incl.	17.92037	+0.19466872	+0.24801626
P 5.63	H	11.46	G 0.15	

From 16 observations at 4 oppositions 1980-1985, mean residual 1".1.

(3375) Amy
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 159.40024		(1950.0)	P	Q
n 0.30799420	Peri.	352.39617	-0.94616497	-0.32366378
a 2.1715726	Node	168.71711	+0.29794435	-0.87532057
e 0.0263650	Incl.	1.08045	+0.12649512	-0.35924317
P 3.20	H	13.8	G 0.25	

From 27 observations at 4 oppositions 1955-1985, mean residual 0".7.

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ORBITAL ELEMENTS BY D. W. E. GREEN, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

(3715)* 1980 DS = 1978 QQ1 = 1985 PZ
Discovered 1980 Feb. 19 by A. Mrkos at Klet. The identifications are by L. D. Schmadel and K. Hurukawa (MPC 10292).

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	269.25998	(1950.0)		P	Q
n	0.27972580	Peri.	236.28998	+0.93040562	-0.36164879
a	2.3155156	Node	144.80606	+0.36111136	+0.87656189
e	0.0987406	Incl.	5.93841	+0.06280108	+0.31756796
P	3.52	H	13.7	G 0.25	

Residuals in seconds of arc

780831 095	0.9-	1.4+	850912 809	2.3-	0.8-	850917 809	0.3+	0.1+
800124 095	1.7+	1.9+	850912 809	2.0-	0.8-	850920 809	2.1+	0.3-
800219 046	(1.4+	5.6-)	850912 809	1.7-	0.6-	850920 809	2.2+	0.4-
800219 046	(3.4+	4.9-)	850914 688	0.9+	0.4-	850920 809	2.1+	0.5-
800220 095	(2.2-	4.1-)	850914 809	2.2-	0.4+	850922 809	1.8+	0.5-
800221 046	(0.0	3.8-)	850914 809	2.0-	0.3+	850922 809	2.0+	0.5-
800221 046	(3.0-	1.6-)	850914 809	1.8-	0.3+	850922 809	2.1+	0.5-
800223 046	0.2-	1.8-	850914 688	0.5-	0.2+	870224 046	1.9+	1.3-
800223 046	1.0-	1.4-	850915 809	1.1-	0.6+	870224 046	2.0-	0.1+
850814 688	1.4-	0.8-	850915 809	1.0-	0.9+	870225 046	1.4-	0.4+
850814 688	1.8+	0.8-	850915 809	0.6-	0.7+	870225 046	0.4-	1.2-
850820 688	0.5+	0.3+	850917 809	0.2+	0.1+	870227 801	1.0+	0.8+
850820 688	2.0+	1.2-	850917 809	0.3+	0.2+			

(3716)* 1980 TG = 1980 RE2 = 1969 UC1 = 1972 JY = 1976 OA1 = 1983 HB

Discovered 1980 Oct. 2 by A. Mrkos at Klet. The double designation 1980 TG = 1980 RE2 is by F. Bowman (MPC 5788). The remaining identifications are by T. Vinogradova (MPC 10958).

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	99.10817	(1950.0)		P	Q
n	0.26511840	Peri.	150.29185	+0.32454551	+0.94542177
a	2.3998060	Node	138.62693	-0.87623190	+0.31210248
e	0.2130323	Incl.	2.52499	-0.35621325	+0.09364683
P	3.72	H	14.0	G 0.25	

Residuals in seconds of arc

691016 095	3.0+	1.8-	800915 511	0.5+	0.4+	801005 046	0.3+	0.5-
720512 095	1.5-	1.4+	801002 046	2.6-	1.1+	830418 688	1.5-	0.5-
760729 095	0.7+	2.4+	801003 046	0.5-	1.5-	830418 688	0.7+	3.9-
800907 095	1.7-	0.5+	801003 046	0.2-	2.7-	870531 801	0.8+	1.2-
800915 511	0.6+	1.2+	801003 046	1.6-	3.2-	870621 801	0.3-	1.4-
800915 511	0.6+	0.9+	801005 046	3.0+	0.1-			

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ORBITAL ELEMENTS BY C. M. BARDWELL, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

The identifications are by C. M. Bardwell unless otherwise stated.

1977 RJ6 = 1984 WK4 = 1986 HM

The identifications 1986 HM = 1984 WK4 and 1986 HM = 1977 RJ6 were also found by S. J. Bus and B. G. Marsden, respectively.

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

M	207.30927	(1950.0)		P	Q
n	0.30116674	Peri.	245.16838	-0.02456122	+0.99895815
a	2.2042740	Node	23.52086	-0.87884156	-0.00323820
e	0.1650530	Incl.	5.53060	-0.47648112	-0.04552072
P	3.27	H	13.5	G 0.25	

Residuals in seconds of arc

770911 095	0.2-	0.6+	771017 675	0.6-	0.6+	860409 071	0.9-	0.9-
771007 675	0.5-	1.0-	771021 675	1.1-	1.4-	860409 071	0.2+	1.3-
771011 675	0.7-	1.0+	771021 675	0.0	0.9-	860409 071	2.6+	1.0-
771011 675	0.5-	0.6+	771022 675	2.3+	1.5-	860409 071	1.2-	3.1-
771012 675	1.4+	1.5-	771022 675	2.5+	2.6-	860430 675	2.0-	0.7-
771012 675	1.1+	0.9-	841119 675	0.0	0.2-	860430 675	0.3-	0.5+
771016 675	0.2+	1.4-	841121 675	0.7-	0.4-	860503 675	2.2-	1.2+
771016 675	0.9+	1.8-	860408 071	0.8+	0.7-			
771017 675	0.7+	0.7-	860408 071	0.6+	1.5-			

1977 RY6 = 1986 RH5

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

M 139.61919		(1950.0)		P	Q
n 0.21361373	Peri.	355.73637	+0.99977314	-0.01553332	
a 2.7715165	Node	5.22079	+0.02094004	+0.84199893	
e 0.1678542	Incl.	9.21622	-0.00389740	+0.53925551	
P 4.61	H 13.5		G 0.25		

Residuals in seconds of arc

770911 095	2.9-	0.2+	860904 809	1.2+	1.2-	860909 809	0.4-	0.0
771007 675	1.2+	0.5+	860904 809	1.1+	1.4-	860909 809	0.2-	0.4-
771011 675	0.4-	1.3+	860906 809	0.5+	0.4-	860909 809	0.2-	0.4-
771011 675	0.0	0.8+	860906 809	0.6+	0.3-	860910 809	0.4-	1.2+
771012 675	0.5-	1.1+	860906 809	0.6+	0.3-	860910 809	0.3-	1.2+
771012 675	0.6-	0.9+	860907 809	0.3+	0.1-	860910 809	0.6-	0.9+
771016 675	1.0+	1.2-	860907 809	0.3+	0.0	860911 809	1.2-	0.6+
771016 675	0.5-	1.3-	860907 809	0.2+	0.3-	860911 809	1.3-	0.5+
771021 675	1.1+	1.3-	860907 809	0.2-	0.6+	860911 809	0.9-	0.5+
771021 675	1.3+	0.9-	860907 809	0.1-	0.5+			
860904 809	1.2+	1.2-	860907 809	0.1+	0.4+			

1977 RD7 = 1972 EO = 1979 DO = 1979 FO1 = 1986 CS

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

M 208.26867		(1950.0)		P	Q
n 0.27833917	Peri.	250.33986	-0.96033960	+0.27753851	
a 2.3232041	Node	305.76459	-0.24181838	-0.87690847	
e 0.0279439	Incl.	1.89535	-0.13882265	-0.39243332	
P 3.54	H 13.5		G 0.25		

Residuals in seconds of arc

720314 095	4.9+	4.1+	771016 675	0.3+	1.4-	771022 675	0.8-	0.1-
770911 095	0.5+	0.8+	771016 675	0.4-	0.1-	790226 330	2.1-	2.4+
771007 675	0.1-	0.5+	771017 675	0.2+	0.7-	790323 095	4.0-	0.7-
771011 675	0.5-	0.2+	771017 675	0.9-	1.0+	860214 046	0.1+	0.6-
771011 675	0.5+	0.7+	771021 675	1.2+	0.4+	860214 046	1.5+	2.9-
771012 675	0.0	1.0+	771021 675	0.2+	1.7-			
771012 675	0.5-	1.3+	771022 675	0.8-	1.6+			

1977 RO7 = 1976 GP5 = 1980 KE2

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

M 34.51386		(1950.0)		P	Q
n 0.26496182	Peri.	111.74324	+0.44280822	+0.89660065	
a 2.4007561	Node	184.55049	-0.84532738	+0.41549838	
e 0.1838873	Incl.	3.83445	-0.29890217	+0.15319387	
P 3.72	H 13.5		G 0.25		

Residuals in seconds of arc

760402	095	0.7-	2.1-	771012	675	0.6+	0.7-	771021	675	1.8-	0.5+
770911	095	2.0+	0.3+	771016	675	0.9+	0.0	771022	675	1.4+	1.6-
771007	675	0.2-	1.7-	771016	675	0.9-	0.4-	771022	675	2.6+	0.7-
771011	675	1.3-	0.8+	771017	675	0.5-	0.6+	800518	808	0.1-	0.6-
771011	675	1.9-	0.2+	771017	675	0.3+	0.0				
771012	675	0.8+	0.6-	771021	675	1.0-	0.8+				

1977 RR7 = 1981 JN1 = 1981 KV
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	41.23481		(1950.0)	P	Q
n	0.17808977	Peri.	295.56551	+0.72072321	+0.68923900
a	3.1287985	Node	21.12757	-0.53883493	+0.62434452
e	0.0867838	Incl.	11.88184	-0.43613642	+0.36761871
P	5.53	H	12.0	G 0.25	

Residuals in seconds of arc

770911	095	0.8+	0.4-	771016	675	1.0+	0.3-	771022	675	0.6+	0.7-
771007	675	0.1-	0.4-	771016	675	1.5+	0.6-	771022	675	0.9+	0.8-
771011	675	1.8-	0.5+	771017	675	0.2-	0.5+	810509	808	0.3+	0.3+
771011	675	0.8-	0.5+	771017	675	0.4-	1.1+	810509	808	0.4-	0.9-
771012	675	1.2-	0.0	771021	675	0.5-	0.5+	810528	809	0.1+	0.6+
771012	675	0.8+	0.6+	771021	675	0.4-	0.9-				

1977 SS2 = 1977 TM6 = 1948 OF = 1965 PA = 1971 ON1 = 1971 PA
= 1980 DR5 = 1980 FS10
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	337.82343		(1950.0)	P	Q
n	0.17498865	Peri.	209.39262	+0.96990979	-0.23113743
a	3.1656556	Node	163.43570	+0.24026753	+0.95945564
e	0.1843158	Incl.	15.56283	-0.03932577	+0.16130829
P	5.63	H	11.0	G 0.25	

Residuals in seconds of arc

480731	094	1.6-	2.7+	771011	675	0.0	0.5+	771021	675	0.6-	1.9+
480804	094	(11.0+	0.7-)	771011	675	0.6+	0.7-	771021	675	0.2-	0.6-
480808	094	1.4+	1.2+	771012	675	0.8-	1.0-	771022	675	1.1-	0.6-
650802	095	0.3+	4.2-	771012	675	0.5+	1.4-	771022	675	0.6-	0.7-
710729	095	(0.1+	8.3-)	771016	675	1.4+	0.6-	800221	095	0.6+	0.3+
710801	095	(9.0+	1.0+)	771016	675	1.0+	0.3+	800316	095	0.6-	0.3-
770919	095	1.0-	1.7+	771017	675	0.8+	0.8-				
771008	095	0.3-	3.5+	771017	675	0.3+	1.4-				

1977 SD3 = 1977 TN6 = 1953 FK = 1980 KN1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	157.16444		(1950.0)	P	Q
n	0.22546082	Peri.	231.87534	+0.68023113	-0.73276317
a	2.6735575	Node	175.13664	+0.72214507	+0.66560888
e	0.1543501	Incl.	12.63210	+0.12566668	+0.14150251
P	4.37	H	12.0	G 0.25	

Residuals in seconds of arc

530316	024	1.9-	2.8-	771012	675	3.9+	3.6-	771021	675	0.3+	0.7+
530320	024	1.5+	0.9+	771016	675	0.8-	0.8+	771021	675	0.6-	0.1+
770923	095	0.1-	1.2+	771016	675	1.4-	0.3+	771022	675	0.8-	4.1+
771007	675	2.9+	3.3-	771017	675	2.0-	0.2+	771022	675	1.1+	0.4-
771008	095	3.9-	1.2+	771017	675	1.6-	2.1+	771022	675	0.4-	0.3-
771011	675	0.7+	1.5-	771021	675	0.5+	0.3+	771022	675	1.4-	0.1+
771012	675	3.4+	3.4-	771021	675	0.4+	0.5-	800517	095	0.1-	0.7-

1977 SG3 = 1967 UP
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	43.35982	(1950.0)		P	Q
n	0.28743534	Peri.	338.38962	+0.71913321	-0.68225971
a	2.2739285	Node	65.33489	+0.65686674	+0.60559628
e	0.1285094	Incl.	8.33864	+0.22665727	+0.40960328
P	3.43	H	13.5	G 0.25	

Residuals in seconds of arc

671030	029	0.1-	0.4-	771008	095	1.9-	0.4-	771016	675	1.6+	0.6-
671030	029	0.1+	0.1+	771011	675	2.5-	0.6+	771017	675	1.0+	0.3-
671031	029	0.1+	0.0	771011	675	2.5-	0.6+	771017	675	1.8+	0.4-
671031	029	0.4-	0.2-	771012	675	0.1-	1.6-	771021	675	0.7+	1.7+
671031	029	0.5-	0.1-	771012	675	1.3-	0.8-	771021	675	0.1-	1.6+
770923	095	1.0+	0.9+	771016	675	1.3+	1.0-	771022	675	1.3+	0.3-

1983 AJ = 1987 SJ7
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	88.67268	(1950.0)		P	Q
n	0.36553906	Peri.	105.20212	+0.72289380	-0.63895238
a	1.9372294	Node	295.27939	+0.46758720	+0.73260284
e	0.1089368	Incl.	16.90847	+0.50871088	+0.23459101
P	2.70	H	14.0	G 0.25	

Residuals in seconds of arc

830109	688	0.2+	0.1-	830112	675	2.3-	2.5+	830211	688	0.1+	0.5+
830109	688	2.0-	2.2-	830116	688	0.3-	0.5-	830211	688	0.8+	0.1+
830110	675	(8.4+	1.9+)	830116	688	1.1+	0.4-	870926	675	0.6+	0.9+
830111	675	0.1-	0.1+	830121	688	0.9+	1.3-	871018	675	0.4-	0.4+
830112	675	1.9-	1.6+	830121	688	3.7+	0.8+	871020	675	0.6-	1.1-

1983 AF2 = 1987 SG7
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	76.16079	(1950.0)		P	Q
n	0.35988209	Peri.	106.21710	+0.50368793	-0.81489456
a	1.9574774	Node	309.92628	+0.57797403	+0.56460589
e	0.1396706	Incl.	21.96048	+0.64206268	+0.13102305
P	2.74	H	13.5	G 0.25	

Residuals in seconds of arc

830113	675	1.1+	0.7-	830114	675	0.5-	0.6+	871018	675	0.5-	0.3-
830113	675	2.2+	0.1+	830211	675	0.0	0.2-	871020	675	0.3+	0.1-
830114	675	2.2-	0.6-	830215	675	1.1-	0.6+				
830114	675	0.5+	0.1+	870926	675	0.3+	0.4+				

1985 TE3 = 1951 WT1 = 1961 TB = 1973 UJ3 = 1978 GO = 1980 KX1 = 1986 XO
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	14.68188	(1950.0)		P	Q
n	0.08392279	Peri.	261.47011	-0.17349697	-0.97733987
a	5.1667442	Node	199.81448	+0.98397588	-0.16688624
e	0.0921857	Incl.	20.96172	+0.04111283	-0.13021431
P	11.74	H	9.0	G 0.25	

Residuals in seconds of arc

511129	711	1.2-	4.3- Y	780407	095	0.9+	0.8+	851107	675	2.1-	1.6+
611004	760	0.6+	1.5-	800518	095	0.8-	1.6+	851107	675	0.6-	1.4+
611004	760	1.5+	0.3+	850916	675	0.1-	0.7+	861202	688	(16.7+	0.1+)
611009	760	0.4-	0.0	850916	675	0.6-	1.1+	861202	688	1.4+	0.3+
611009	760	1.3-	0.1-	851011	675	0.4+	0.3-	871020	675	0.2-	1.8+
731029	095	1.4+	0.2-	851013	675	0.9+	0.9+	871020	675	0.3-	1.6+

2121 P-L = 2215 T-3 = 1987 AF
The key identification 2121 P-L = 2215 T-3 is by C. J. van Houten.

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

M	168.71404		(1950.0)		P		Q				
n	0.23260632	Peri.	64.51150		+0.33618820		-0.94142726				
a	2.6185200	Node	6.02753		+0.74876456		+0.25023409				
e	0.1843958	Incl.	14.51034		+0.57125225		+0.22604781				
P	4.24	H	16.0	G	0.25						

Residuals in seconds of arc

600924	675	1.1+	0.7-	771007	675	0.1+	0.4+	771017	675	0.1-	0.3+
600926	675	0.4-	0.1-	771011	675	0.7-	1.0+	771021	675	2.9+	1.0-
600926	675	0.1+	1.5+	771011	675	1.5-	2.1+	771021	675	1.2+	1.3-
600928	675	0.4+	0.3-	771012	675	1.2-	0.8+	771022	675	0.3+	1.5+
600929	675	0.8+	1.5-	771012	675	2.6-	0.4-	771022	675	0.1-	1.2+
601017	675	0.1-	0.1+	771016	675	0.1+	1.7-	870103	675	4.0+	2.3-
601022	675	0.8+	0.1+	771016	675	0.5+	1.9-	870103	675	4.2-	2.0+
601026	675	1.1-	1.1-	771017	675	0.1+	1.1+				

2208 P-L = 2146 T-3

The identification is by C. J. van Houten.

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

M	167.25066		(1950.0)		P		Q				
n	0.23241696	Peri.	212.52308		+0.22191354		-0.97350120				
a	2.6199422	Node	224.72403		+0.91051189		+0.22715435				
e	0.2533213	Incl.	4.50113		+0.34888748		+0.02638777				
P	4.24	H	16.0	G	0.25						

Residuals in seconds of arc

600924	675	0.2+	0.6-	601025	675	0.1-	2.9-	771016	675	0.4+	1.8-
600924	675	0.6-	0.4+	601026	675	0.4+	0.7+	771016	675	0.3-	0.8-
600925	675	0.1+	0.5+	601026	675	0.0	0.3-	771017	675	0.3+	0.9+
600926	675	0.6+	0.4-	771007	675	0.2-	1.8-	771017	675	0.9-	0.1-
600928	675	0.0	0.3-	771011	675	0.1+	0.6+	771021	675	1.5+	0.7-
601017	675	0.2+	0.0	771011	675	0.3-	0.1+	771021	675	1.2+	1.3-
601022	675	1.2-	1.3+	771012	675	0.3+	1.3+	771022	675	0.4-	0.6+
601022	675	0.3+	1.8+	771012	675	0.4-	1.5+	771022	675	1.0-	1.2+

2574 P-L = 2368 T-3

The identification is by C. J. van Houten.

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

M	262.64576		(1950.0)		P		Q				
n	0.17604863	Peri.	95.38676		-0.29136001		-0.95307047				
a	3.1529360	Node	12.52175		+0.65603649		-0.26165279				
e	0.0855527	Incl.	22.29596		+0.69622229		-0.15229739				
P	5.60	H	13.5	G	0.25						

Residuals in seconds of arc

600924	675	0.4+	0.1-	601026	675	0.6-	0.1-	771016	675	0.3-	0.9-
600926	675	0.1+	0.3+	771007	675	2.1+	0.2-	771017	675	0.3-	1.2+
600928	675	0.1-	0.5-	771011	675	0.1+	0.8+	771017	675	2.2-	1.7+
600929	675	0.3+	0.6+	771011	675	0.1-	1.5+	771021	675	0.3+	1.4-
601017	675	1.1-	0.5-	771012	675	0.3-	0.5+	771021	675	0.9+	2.0-
601022	675	0.5+	0.7+	771012	675	0.6-	0.5-	771022	675	0.4-	0.6+
601025	675	0.6+	0.4-	771016	675	0.2+	1.3-	771022	675	0.6+	0.1+

3108 P-L = 1059 T-3 = 1976 NE = 1986 XK5

The key identification 3108 P-L = 1059 T-3 is by C. J. van Houten.

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

M	341.81465		(1950.0)		P		Q
n	0.23355397	Peri.	0.51273		-0.57810195		+0.79154595
a	2.6114321	Node	234.18555		-0.74946326		-0.61110833
e	0.1258296	Incl.	14.14172		-0.32264990		+0.00126757
P	4.22	H	12.5	G	0.25		

Residuals in seconds of arc

600924	675	0.1+	0.0	760701	095	0.4+	2.8-	771017	675	0.1+	1.1+
600924	675	0.2-	1.6+	771007	675	0.2+	0.3-	771022	675	1.1-	1.6-
600925	675	0.4-	0.6+	771011	675	1.7+	1.0+	771022	675	1.1+	2.5-
600925	675	0.3+	0.1+	771011	675	0.1+	0.0	861204	046	1.6-	3.0-
600926	675	0.3+	0.2-	771012	675	0.2-	0.1-	861204	046	0.7-	1.3-
600926	675	0.2+	0.8+	771012	675	0.5-	0.7+	861205	046	1.6+	1.1-
600927	675	0.9-	0.0	771016	675	0.2+	0.9-	861205	046	0.6+	1.0+
600928	675	0.1-	0.3-	771016	675	0.5-	0.5-	861207	046	0.5+	0.7+
600928	675	0.2-	0.1+	771017	675	0.0	1.4+	861207	046	1.0-	0.7+

4831 P-L = 2013 T-3

The identification is by C. J. van Houten.

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

M	126.39676		(1950.0)	P	Q
n	0.23400658	Peri.	108.59833	-0.49689467	-0.86656499
a	2.6080638	Node	11.53967	+0.68247038	-0.42329687
e	0.1557436	Incl.	13.43652	+0.53603159	-0.26435747
P	4.21	H	15.0	G 0.25	

Residuals in seconds of arc

600924	675	0.7+	0.1+	771011	675	0.1-	1.4+	771017	675	0.2-	1.9+
600926	675	0.1+	0.4-	771011	675	1.5-	1.5+	771021	675	0.2-	0.4-
600927	675	1.2+	0.1+	771012	675	0.6-	0.2-	771021	675	1.2+	0.4+
600928	675	0.9-	0.3+	771012	675	0.6-	0.4-	771022	675	0.3+	1.3-
601022	675	0.3+	0.0	771016	675	0.2+	2.0-	771022	675	1.6+	0.2-
601025	675	1.4-	0.1-	771016	675	0.2-	1.9-				
771007	675	0.6+	1.3-	771017	675	0.3-	2.5+				

6608 P-L = 2295 T-3

The identification is by C. J. van Houten.

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

M	186.27642		(1950.0)	P	Q
n	0.23268772	Peri.	44.11463	+0.55306802	-0.83283109
a	2.6179093	Node	12.36456	+0.73223127	+0.47299865
e	0.3083841	Incl.	6.04279	+0.39743317	+0.28751460
P	4.24	H	16.0	G 0.25	

Residuals in seconds of arc

600924	675	0.4-	0.0	771011	675	0.1+	0.7+	771017	675	0.1-	0.2+
600926	675	0.2-	0.1+	771011	675	0.1+	2.1+	771017	675	0.7-	0.9-
600927	675	0.3+	0.4+	771012	675	0.8+	0.1+	771021	675	0.2-	1.7+
600928	675	0.6+	0.8-	771012	675	0.8+	0.9+	771021	675	0.6+	0.4-
601017	675	0.3+	0.8-	771012	675	0.0	0.6-	771021	675	2.4-	2.0+
601022	675	1.4-	1.1+	771012	675	0.1+	0.7+	771021	675	2.6+	0.6-
601024	675	0.6+	0.1-	771016	675	1.2+	2.7-	771022	675	1.8-	0.6+
601026	675	0.2+	0.5+	771016	675	1.0+	0.0	771022	675	0.8+	0.9-
771007	675	0.1-	0.1+	771016	675	0.5+	1.9-	771022	675	0.1-	0.7+
771007	675	1.7-	1.5-	771016	675	0.8+	0.5-	771022	675	1.1-	0.9-
771011	675	0.5+	0.8+	771017	675	0.6-	0.1+				
771011	675	0.2-	1.5+	771017	675	0.2-	1.5-				

2041 T-3 = 1982 UL6

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

M	275.93485		(1950.0)	P	Q
n	0.21003040	Peri.	331.81725	-0.81466539	+0.57756810
a	2.8029508	Node	243.55707	-0.52047166	-0.76793743
e	0.0417481	Incl.	3.34867	-0.25579200	-0.27692452
P	4.69	H	12.5	G 0.25	

Residuals in seconds of arc

771007	675	1.3+	1.4-	771016	675	0.7+	2.3-	771022	675	0.4+	0.7-
771011	675	0.6-	0.1-	771017	675	0.4-	0.2+	821020	095	0.3+	2.7-
771011	675	1.2-	0.8-	771017	675	1.1-	0.2+	821025	095	1.8-	2.0-
771012	675	0.5-	1.1-	771021	675	0.9+	1.4-	821109	095	0.8-	1.6-
771012	675	1.4-	0.7-	771021	675	1.2+	1.0-	821114	095	0.7+	2.2-
771016	675	1.7+	3.2-	771022	675	1.5+	0.3-				

2141 T-3 = 1981 WX6 = 1986 CW1

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

M	311.31364		(1950.0)	P	Q
n	0.26449465	Peri.	147.85658	+0.70477145	-0.70562326
a	2.4035822	Node	257.21323	+0.63388143	+0.67281647
e	0.1736023	Incl.	4.31873	+0.31857736	+0.22229219
P	3.73	H	14.0	G 0.25	

Residuals in seconds of arc

771007	675	0.2+	2.1-	811124	095	0.2+	0.9+	860214	809	1.4+	0.1+
771011	675	0.6-	0.1-	860209	809	0.3+	0.8-	860214	809	0.7+	0.1+
771011	675	0.2-	0.8+	860209	809	0.3+	0.7-	860214	809	0.1+	0.1+
771012	675	0.3-	0.6+	860209	809	0.4+	0.7-	860215	809	0.3-	0.4+
771012	675	0.5+	0.3+	860210	809	0.4-	0.6+	860215	809	0.2-	0.4+
771016	675	0.3-	1.9-	860210	809	0.3-	0.5+	860215	809	0.1-	0.4+
771016	675	0.4+	1.9-	860210	809	0.1-	0.4+	860216	809	0.7-	0.4-
771017	675	1.1-	0.1+	860212	809	0.4+	0.3+	860216	809	0.6-	0.4-
771017	675	0.3-	0.3+	860212	809	0.5+	0.3+	860216	809	0.6-	0.4-
771021	675	1.6+	0.4+	860212	809	0.5+	0.3+	860217	809	1.8-	0.2+
771021	675	2.5+	1.3-	860213	809	0.8+	0.1-	860217	809	1.7-	0.1+
771022	675	0.5-	2.7+	860213	809	0.7+	0.1+	860217	809	1.5-	0.2+
771022	675	1.7-	2.3+	860213	809	0.6+	0.0				

2321 T-3 = 1972 GY = 1973 TC = 1976 JG1 = 1980 MB = 1981 WA2 = 1984 MT

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

M	43.84430		(1950.0)	P	Q
n	0.26058287	Peri.	36.49298	+0.11522936	+0.98965483
a	2.4275769	Node	240.26855	-0.93303335	+0.07830811
e	0.1269446	Incl.	5.64875	-0.34083861	+0.12021294
P	3.78	H	13.0	G 0.25	

Residuals in seconds of arc

720412	095	0.3+	2.8-	771016	675	0.8-	2.6-	800612	675	0.8-	0.7-
731001	095	2.9+	0.5+	771017	675	0.0	0.2+	800618	675	0.2-	1.9-
760502	095	2.3-	1.7+	771017	675	1.7-	0.0	800619	675	2.0+	0.4+
771007	675	2.4+	0.9-	771021	675	0.5+	0.6-	800620	675	0.6+	1.9-
771011	675	0.1+	0.1-	771021	675	1.3+	0.9-	811123	046	0.3+	0.0
771011	675	2.1-	0.7+	771022	675	0.5-	0.1+	811123	046	3.4+	1.3+
771012	675	1.6-	0.7+	771022	675	0.4+	0.5-	840628	095	0.9-	2.6+
771012	675	1.9-	0.6+	800610	675	1.1+	0.2-				
771016	675	0.8-	2.0-	800611	675	1.5-	0.2+				

2402 T-3 = 1950 BY = 1982 BO1

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

M	328.46845		(1950.0)	P	Q
n	0.30879400	Peri.	244.90332	-0.94565128	+0.32374982
a	2.1678256	Node	313.96993	-0.28098538	-0.86072002
e	0.0774266	Incl.	2.42813	-0.16367916	-0.39287034
P	3.19	H	13.5	G 0.25	

Residuals in seconds of arc

500128 760	(0.8+	42.2+)	771017 675	1.5-	0.1+	820130 688	2.0+	0.7-
500128 760	0.1-	0.3-	771021 675	1.3+	0.4+	820130 688	0.7-	1.5-
771012 675	0.1+	0.0	771021 675	0.8+	0.5-	820221 688	0.7+	0.6-
771012 675	0.2+	0.8+	771022 675	0.3+	0.9+	820221 688	0.3-	0.9+
771016 675	1.0+	0.1-	771022 675	0.4-	0.3-	820228 688	0.2-	0.4+
771016 675	0.0	1.7-	820124 688	3.0-	2.2+	820228 688	0.6+	0.7+
771017 675	1.8-	1.1+	820124 688	1.1+	0.5-			

2480 T-3 = 1983 DG
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	117.06600		(1950.0)	P	Q
n	0.26504853	Peri.	235.82582	-0.64849909	+0.76105729
a	2.4002325	Node	353.67721	-0.64375561	-0.55919556
e	0.1312568	Incl.	8.09897	-0.40623594	-0.32877367
P	3.72	H	13.5	G 0.25	

Residuals in seconds of arc

771016 675	0.3+	0.3-	830219 688	(6.4+	1.2-)	830312 046	(5.9-	0.9+)
771016 675	0.1+	0.3-	830308 046	4.2-	0.1-	830312 046	(8.7-	0.8+)
771017 675	0.9-	0.3+	830308 046	2.8-	1.1-	830313 046	4.8-	0.2-
771017 675	0.6-	0.7+	830309 688	2.9+	1.0-	830313 046	3.2-	0.2+
771021 675	0.4+	0.2-	830309 688	4.0+	0.9+	830316 688	1.0+	0.4+
771021 675	0.9+	1.7-	830309 046	0.0	0.1+	830316 688	2.0+	0.0
771022 675	0.5-	1.4+	830309 046	1.7+	1.5+	830401 688	2.5+	0.6-
771022 675	0.2+	0.6+	830310 046	2.8-	2.3+	830410 688	0.5-	0.1+
830219 688	3.9+	1.6-	830310 046	(4.8-	1.3+)	830410 688	0.3-	0.3+

2672 T-3 = 1981 ES45
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	356.54012		(1950.0)	P	Q
n	0.17197503	Peri.	117.85951	+0.75485270	+0.65058045
a	3.2025308	Node	201.88680	-0.65240702	+0.73167359
e	0.2739442	Incl.	12.91573	-0.06754617	+0.20346704
P	5.73	H	13.0	G 0.25	

Residuals in seconds of arc

771007 675	0.2+	0.3-	771012 675	0.1-	0.1-	771022 675	1.0+	0.4-
771007 675	0.4-	0.1+	771012 675	0.2-	0.3+	771022 675	3.4+	0.5+
771011 675	1.2+	0.7-	771016 675	0.0	1.1-	810209 413	1.4-	0.2-
771011 675	1.7-	1.5+	771016 675	0.8+	0.7-	810301 413	2.9-	1.8+
771011 675	0.6+	0.3-	771017 675	0.2-	2.2-	810301 413	1.9+	0.5-
771011 675	2.6-	1.3+	771017 675	1.1-	0.1+	810308 413	1.5+	1.1-
771012 675	0.9+	1.2+	771021 675	1.4-	0.6+	810312 413	0.3+	0.7-
771012 675	0.4+	0.2+	771021 675	1.1-	0.7+	810501 413	0.6+	1.4+

3134 T-3 = 1980 PP2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	206.93080		(1950.0)	P	Q
n	0.31314890	Peri.	130.09273	+0.74371266	+0.66844042
a	2.1476804	Node	187.97458	-0.63114343	+0.69771289
e	0.1967847	Incl.	3.67037	-0.22033939	+0.25765116
P	3.15	H	14.5	G 0.25	

Residuals in seconds of arc

771007 675	1.6+	0.9-	771017 675	0.6-	0.2+	800813 323	0.8-	0.1+
771011 675	1.5-	1.3+	771017 675	1.1-	1.4+	800814 323	0.8+	1.1-
771011 675	1.2-	2.1+	771021 675	0.3+	1.2+	800815 323	0.9-	0.5-
771012 675	0.8+	0.1-	771021 675	0.1+	1.9+	800818 323	1.0+	1.3+
771012 675	0.2-	0.3-	771022 675	1.0+	3.2-	800908 323	1.0+	0.1-
771016 675	0.3-	0.2-	771022 675	0.5+	2.8-	800909 323	0.7+	0.5+
771016 675	0.7+	0.9-	800812 323	0.6-	0.5+	800910 323	1.6-	0.9-

5142 T-3 = 1951 XV = 1979 BW = 1980 DL1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	42.51268		(1950.0)	P	Q
n	0.18562401	Peri.	255.78511	+0.96826550	+0.16835049
a	3.0435526	Node	94.27656	-0.08804270	+0.92147704
e	0.0894142	Incl.	10.67465	-0.23390255	+0.35005454
P	5.31	H	11.5	G 0.25	

Residuals in seconds of arc

511204	711	0.8+	1.0-	Y	771016	675	0.8+	0.5+	771022	675	0.1- 2.2+
511205	711	1.0+	4.6-	Y	771016	675	0.1+	0.1-	771022	675	0.1- 0.0
771011	675	1.1-	1.2+		771017	675	1.0+	0.4+	790124	095	0.4+ 2.6+
771011	675	0.7-	0.9+		771017	675	0.2-	0.6-	800221	033	0.6+ 1.6+
771012	675	1.0+	0.4+		771021	675	2.5-	0.1-	800222	033	0.5+ 1.5+
771012	675	0.6+	0.1+		771021	675	2.0-	1.8+	800222	033	0.5+ 1.4+

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ORBITAL ELEMENTS BY B. G. MARSDEN, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

The 1979 and 1984 identifications of the UCAS objects are by E. Bowell and S. J. Bus. The other identifications are by B. G. Marsden unless otherwise stated.

Comet Levy (1987y)
T 1987 Sept. 9.17160 ET

q	0.5151852		(1950.0)	P	Q
		Peri.	13.18333	-0.84113034	-0.08780977
		Node	143.02862	+0.37961403	-0.79867479
e	1.0	Incl.	62.54004	+0.38521805	+0.59532179

From 13 observations 1987 Oct. 13-Nov. 17.

Comet McNaught (1987b1)
T 1987 Dec. 11.92037 ET

q	0.8420474		(1950.0)	P	Q
		Peri.	17.35840	-0.19166183	-0.06813600
		Node	260.64188	-0.97628051	-0.08912720
e	1.0	Incl.	97.11511	-0.10070799	+0.99368699

From 34 observations 1987 Oct. 10-Nov. 4.

Comet Ichimura (1987d1)
T 1988 Jan. 10.09977 ET

q	0.1995057		(1950.0)	P	Q
		Peri.	329.31669	-0.87328270	+0.10555432
		Node	225.80038	-0.18673344	-0.97421310
e	1.0	Incl.	41.56405	-0.45000884	+0.19941697

From 23 observations 1987 Nov. 23-27.

Comet Furuyama (1987f1)
T 1988 Mar. 2.41525 ET

q	1.6912088		(1950.0)	P	Q
		Peri.	232.95325	+0.55595592	-0.00756613
		Node	250.06318	+0.68373570	-0.56446742
e	1.0	Incl.	117.85092	-0.47267167	-0.82542067

From 9 observations 1987 Nov. 22-28.

Periodic Comet Shoemaker-Holt (1987z)
T 1988 May 21.74150 ET

q	3.0494723	(1950.0)	P	Q
n	0.10280898	Peri. 210.56871	+0.43283547	-0.90047906
a	4.5128270	Node 213.83569	+0.84166318	+0.42048722
e	0.3242656	Incl. 4.35883	+0.32288782	+0.11103134
P	9.59			

From 23 observations 1987 Sept. 24-Nov. 20.

1978 VH8 = 1963 TH = 1977 RV8 = 1980 FQ9 = 1982 UD = 1987 SD5

The identification 1978 VH8 = 1977 RV8 is by E. Bowell. The identifications were found independently by S. Nakano.

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

M	133.45438	(1950.0)	P	Q
n	0.20459342	Peri. 56.13980	+0.50793335	+0.86124191
a	2.8523916	Node 244.39461	-0.79613310	+0.46213543
e	0.0522946	Incl. 1.03644	-0.32890090	+0.21140768
P	4.82	H 12.5	G 0.25	

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

631013	760(0.06+	0.00-)X	781107	675	0.0	0.5+	821017	688	1.2+	0.0
770908	675	0.2+	0.3+	781108	675	0.2+	0.4-	821017	688	0.1-	0.4-
770909	675	0.7-	0.2-	781129	675	0.1+	0.4+	870929	054	0.6-	0.6+
781105	675	0.1-	0.3-	781130	675	0.0	0.9-	870930	054	0.4-	0.8+
781106	675	0.1-	0.4-	800316	095	0.7+	1.8+	870930	054	0.3-	0.9+

1980 OG = 1980 RG3 = 1976 KF = 1987 UG1

The double designation 1980 OG = 1980 RG3 was found independently by B. G. Marsden and C. M. Bardwell (MPC 9203). The identification 1980 OG = 1976 KF was suggested by L. D. Schmadel.

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

M	113.56708	(1950.0)	P	Q
n	0.29146447	Peri. 228.23939	+0.99805802	+0.00242633
a	2.2529238	Node 131.52269	+0.01929418	+0.93805775
e	0.1624264	Incl. 4.76889	-0.05922777	+0.34647044
P	3.38	H 14.0	G 0.25	

Residuals in seconds of arc

760525	095	0.1+	0.4+	800808	688	0.6-	1.3-	871027	054	0.3+	0.2+
800717	688	0.0	0.2+	800904	095	1.6-	3.6+	871027	054	0.2-	0.5-
800717	688	0.2+	1.6-	800907	688	1.9+	1.1-				

1981 EK5

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

M	61.72651	(1950.0)	P	Q
n	0.17600581	Peri. 316.24640	-0.31735734	+0.94235099
a	3.1534473	Node 294.98981	-0.83462258	-0.33067949
e	0.1373963	Incl. 6.72290	-0.45021047	-0.05124145
P	5.60	H 14.0	G 0.25	

Residuals in seconds of arc

810209	413	0.3+	0.5+	810310	413	3.4+	0.5-	810409	413	0.7-	0.4-
810214	413	1.4-	1.5-	810312	413	2.0-	0.8+	810409	413	1.4+	0.5-
810302	413	1.1-	0.7-	810312	413	2.1+	0.0	810503	413	0.1-	0.7-
810302	413	2.2+	0.1-	810407	413	2.9-	0.7+	841119	675	1.6+	0.3+
810307	413	1.7-	0.7+	810407	413	0.5+	0.2-	841121	675	1.6-	0.2+
810307	413	1.4+	0.5-	810408	413	0.6-	0.5+				
810310	413	2.0-	0.4+	810408	413	1.3+	0.7+				

1981 ER35
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	286.36051	(1950.0)	P	Q
n	0.18922938	Peri. 109.96626	+0.75924199	-0.63725548
a	3.0047698	Node 289.85839	+0.53212459	+0.72474011
e	0.1086412	Incl. 8.07555	+0.37469323	+0.26202525
P	5.21	H 15.5	G 0.25	

Residuals in seconds of arc

791220	675	0.9- 1.1-	810310	413	0.4- 0.9+	810503	413	1.1+ 0.1-
791220	675	0.8+ 0.7+	810310	413	2.6- 0.3-	841121	675	1.1- 0.4-
810214	413	0.7+ 0.0	810312	413	0.2+ 0.6+	841121	675	1.1+ 0.6+
810302	413	1.2- 0.0	810409	413	0.9- 0.2+			
810302	413	3.6+ 0.1+	810502	413	0.3- 1.5-			

1981 EG39
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	313.63919	(1950.0)	P	Q
n	0.17657611	Peri. 354.65401	+0.96250917	+0.27079681
a	3.1466537	Node 349.59400	-0.24552993	+0.84525790
e	0.1559373	Incl. 4.97332	-0.11528727	+0.46066058
P	5.58	H 15.0	G 0.25	

Residuals in seconds of arc

810202	413	0.2+ 1.2+	810303	413	2.8+ 1.5-	810502	413	1.5+ 0.5-
810302	413	0.7- 0.7+	810307	413	1.0+ 1.0-	841119	675	1.8- 0.2-
810302	413	0.6+ 1.1-	810311	413	2.3- 1.8+	841121	675	1.6+ 0.7-
810303	413	2.8- 0.2+	810430	413	0.1- 0.3+			

* * * * *

ORBITAL ELEMENTS BY S. NAKANO, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

The identifications are by S. Nakano unless otherwise stated.

Periodic Comet Encke
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
T 1990 Oct. 28.54502 ET

q	0.3308858	(1950.0)	P	Q
n	0.30017126	Peri. 186.24444	-0.94035468	-0.32792239
a	2.2091404	Node 334.04096	+0.32037754	-0.76410108
e	0.8502196	Incl. 11.93911	+0.11441729	-0.55553257
P	3.28			

From 86 observations 1973-1987, mean residual 1".5. Nongravitational parameters A1 = +0.04, A2 = -0.0023.

(3717)* 1964 CG = 1975 BL = 1976 JC = 1981 ES49
Discovered 1964 Feb. 15 at the Goethe Link Observatory, Indiana University.
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	130.06772	(1950.0)	P	Q
n	0.17611172	Peri. 60.11057	-0.94586338	-0.32157504
a	3.1521766	Node 101.10152	+0.28017735	-0.87734625
e	0.1780017	Incl. 2.56727	+0.16383870	-0.35616436
P	5.60	H 12.2	G 0.25	

Residuals in seconds of arc

640215	760	1.2-	0.3+	640318	760	1.0+	1.6+	870428	046	0.2+	1.1-
640215	760	1.0-	0.4+	640318	760	(6.1-	0.3+)	870428	046	0.2-	0.3-
640306	760	2.5+	0.7+	750117	095	0.2+	1.0+	870429	046	0.1+	0.2+
640306	760	1.4+	0.5+	760501	801	1.1-	0.4+	870429	046	0.7+	0.7+
640307	760	2.0-	3.3-	810308	095	0.6-	1.6+	870531	801	0.4+	0.0
640307	760	0.6-	2.3-	870427	801	0.4+	0.1-				

(3718)* 1978 VS10 = 1969 TN1 = 1976 GL2 = 1976 JL = 1982 VQ7 = 1986 SW

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

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	228.04959	(1950.0)		P	Q
n	0.23053284	Peri.	226.90307	+0.47097205	+0.88019050
a	2.6341925	Node	71.28084	-0.79023019	+0.45055487
e	0.0530409	Incl.	3.55561	-0.39207344	+0.14921458
P	4.28	H	12.9	G 0.25	

Residuals in seconds of arc

691008	095	0.7+	0.1-	781107	675	0.5-	0.9+	860930	046	1.9-	1.1-
691016	095	0.7+	3.0-	781108	675	0.7-	0.0	860930	046	2.0+	1.3+
760401	095	0.1+	0.5-	781129	675	0.5+	0.5-	861001	046	0.1+	2.0+
760502	095	0.6-	0.3-	781130	675	0.3-	0.7-	861001	046	2.1+	1.1+
781105	675	0.6-	0.3-	821109	095	0.3-	1.6+	861003	046	1.2-	2.8-
781106	675	2.6+	0.2-	821114	095	1.9-	0.6+	861003	046	0.7-	0.3+

1931 TC2 = 1977 DQ1

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

M	32.50475	(1950.0)		P	Q
n	0.22562571	Peri.	350.22118	+0.92759827	+0.37233406
a	2.6722547	Node	347.78489	-0.33226582	+0.78497697
e	0.2506512	Incl.	8.28162	-0.17076554	+0.49515503
P	4.37	H	13.0	G 0.25	

Residuals in seconds of arc

311010	024	3.9+	1.0+	311104	024	0.6-	1.6+	770219	381	1.6-	0.0
311016	024	3.8-	1.9-	770218	381	1.0+	0.2+	770219	381	2.4-	0.6-
311019	024	0.4+	0.8-	770218	381	2.8+	0.1+				

1977 TQ6 = 1986 WZ10

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

M	196.70207	(1950.0)		P	Q
n	0.22564448	Peri.	296.73089	+0.96567235	+0.18725647
a	2.6721066	Node	53.01512	-0.07054030	+0.85606055
e	0.1926539	Incl.	13.02529	-0.25000197	+0.48176275
P	4.37	H	13.5	G 0.25	

Residuals in seconds of arc

771008	095	0.3-	0.6+	771016	675	1.2+	0.9-	771022	675	0.4+	1.8-
771011	675	0.6-	1.6+	771017	675	0.9+	0.6-	861130	381	1.2-	0.8+
771011	675	1.0-	0.4+	771017	675	0.0	0.4-	861130	381	1.1-	1.0+
771012	675	0.0	0.7-	771021	675	0.8-	1.6+	861201	381	1.0+	0.9-
771012	675	0.0	0.9-	771021	675	1.1-	0.7+	861201	381	1.3+	0.9-
771016	675	2.0+	1.0-	771022	675	0.7-	1.4+				

1977 TG7 = 1983 WV

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

M	304.79456	(1950.0)		P	Q
n	0.17771979	Peri.	359.55628	+0.27430920	-0.96054285
a	3.1331395	Node	74.52236	+0.88239236	+0.23241841
e	0.1744481	Incl.	2.73317	+0.38228025	+0.15277147
P	5.55	H	12.5	G 0.25	

Residuals in seconds of arc

771007	675	0.5+	0.5-	771016	675	1.1-	0.2+	831201	688	0.6+	0.4-
771009	095	0.1+	0.3+	771017	675	0.7-	0.7+	831204	046	0.6-	0.5+
771011	675	1.6-	1.0+	771017	675	0.6-	0.6+	831204	046	0.3+	0.3-
771011	675	0.3+	0.5+	771021	675	0.2+	1.7+	831205	046	0.4-	1.2+
771011	675	2.4-	0.8+	771021	675	0.4+	0.5+	831205	046	0.7+	0.6+
771011	675	1.0+	1.3+	771022	675	2.1+	0.4-	831208	330	2.6-	0.2-
771012	675	0.2-	1.2-	771022	675	0.9+	1.1-	831208	046	2.6+	1.3-
771012	675	0.5+	2.2-	831127	330	0.7-	1.1+	831208	046	0.8+	0.5-
771012	675	0.7+	1.1-	831129	688	0.0	0.1-	840102	688	0.8+	1.9-
771012	675	0.4+	0.7-	831129	688	0.1+	1.1-	840104	688	0.8-	1.2+
771016	675	0.5-	0.2-	831201	688	0.1-	0.8-	840104	688	0.6-	2.1+

1978 VS5 = 1938 DQ1 = 1980 FL7 = 1984 JL1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	26.74860		(1950.0)	P	Q
n	0.25907661	Peri.	13.82909	-0.42180286	+0.90635817
a	2.4369771	Node	231.22824	-0.83478133	-0.39872950
e	0.1584751	Incl.	1.79624	-0.35386789	-0.13974854
P	3.80	H	13.5	G 0.25	

Residuals in seconds of arc

380220	024	0.6+	1.4+	781129	675	0.6-	1.0-	840502	095	3.0+	1.9+
781105	675	0.7+	0.0	781130	675	1.1-	1.1-	840505	095	0.7+	1.8-
781106	675	0.5+	0.5+	800323	809	0.7-	1.3-	840506	809	4.0-	2.9+
781107	675	1.2+	0.7+	840502	809	1.8+	0.4-	840506	809	(9.5-	5.4+)
781108	675	0.4-	0.5-	840502	809	1.6+	0.5-	840518	095	3.3-	2.5-

1984 JP1 = 1930 MF = 1947 NE = 1954 RC = 1978 TT5
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	34.15506		(1950.0)	P	Q
n	0.29026193	Peri.	50.26734	+0.52348893	+0.84751439
a	2.2591420	Node	251.50928	-0.80723540	+0.46042664
e	0.2177498	Incl.	5.30159	-0.27263592	+0.26405807
P	3.40	H	13.0	G 0.25	

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

300623	690(13.2+	90.0-)X		470713	078(0.05+	0.01+)X		840502	095	0.2-	0.9+
300625	078	0.0	0.0 Y	540901	760(67.4-	45.6+)X		840505	095	1.3-	0.0
300627	690(69.3-	91.0-)X		781008	095	0.1-	0.4+	840520	095	1.8+	0.6-

1984 SX5 = 1977 SK2 = 1977 TC7 = 1979 FA2 = 1986 EE3
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	354.40760		(1950.0)	P	Q
n	0.27873398	Peri.	252.72488	+0.56584337	-0.82382181
a	2.3210098	Node	162.68676	+0.79297127	+0.53252846
e	0.1070905	Incl.	6.51142	+0.22587132	+0.19424486
P	3.54	H	14.0	G 0.25	

Residuals in seconds of arc

770919	095	0.9+	3.2-	840924	809	0.2-	0.5+	840929	809	0.8-	0.6-
771009	095	0.2-	1.3+	840924	809	0.0	0.4+	840929	809	0.6-	0.6-
790323	095	0.1+	1.2+	840924	809	0.1+	0.6+	840929	809	0.8-	0.5-
840921	809	0.2-	0.9+	840926	809	0.3-	0.2+	840930	809	0.3-	0.5-
840921	809	0.2+	0.8+	840926	809	0.0	0.1-	840930	809	0.1+	0.4-
840921	809	0.3+	0.7+	840926	809	0.2-	0.3+	840930	809	0.4+	0.4-
840922	809	0.3-	0.3-	840927	809	0.2-	0.2+	841001	809	0.3-	0.1+
840922	809	0.0	0.3-	840927	809	0.6-	0.3+	841001	809	0.2-	0.1+
840922	809	0.1-	0.1-	840927	809	0.2-	0.9+	841001	809	0.1-	0.1+
840923	809	0.2-	0.2+	840928	809	0.4+	0.0	860312	809	0.4+	0.7+
840923	809	0.3+	0.3+	840928	809	0.4+	0.1+				
840923	809	1.0+	0.7+	840928	809	1.1+	0.1+				

1984 YH1 = 1978 NC1 = 1979 SE5 = 1981 AN2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	324.58409	(1950.0)	P	Q
n	0.22663540	Peri. 114.66582	+0.55900966	-0.82820109
a	2.6643120	Node 301.28833	+0.74282926	+0.52160014
e	0.0629622	Incl. 2.67542	+0.36839231	+0.20497866
P	4.35	H 13.0	G 0.25	

Residuals in seconds of arc

780709	809	1.0- 0.5+	810108	381	1.1+ 1.4+	841217	095	0.5+ 1.7+
780710	809	0.3+ 0.2-	810108	381	0.5- 0.9+	841223	095	1.3- 2.3-
780711	809	0.9+ 1.0+	841119	675	0.8+ 0.8-	841227	095	0.7+ 1.0+
790923	095	0.7- 1.4+	841121	675	0.6- 0.6-			

1985 PO = 1973 SG6 = 1977 QS3 = 1981 QU1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5 (J-P)

M	255.74324	(1950.0)	P	Q
n	0.24300830	Peri. 200.78507	+0.96884906	+0.24527689
a	2.5432527	Node 144.96034	-0.21796069	+0.91011056
e	0.1420856	Incl. 3.41658	-0.11757822	+0.33397308
P	4.06	H 13.5	G 0.25	

Residuals in seconds of arc

730928	095	1.0- 2.1-	810830	688	0.8- 1.4-	850820	688	1.4- 1.2+
770823	095	1.4- 2.7+	850814	688	0.6- 0.4-	850822	688	3.4+ 2.2+
770909	095	2.6+ 2.9+	850814	688	0.8- 1.7-	850822	688	1.5+ 0.1-
810830	688	0.8+ 2.1-	850820	688	0.3+ 0.7-	850912	688	2.8- 0.4-

1987 UJ = 1983 VN1

The identification was found independently by T. Kobayashi.

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

M	99.46922	(1950.0)	P	Q
n	0.23800371	Peri. 20.31610	+0.99918860	+0.03622690
a	2.5787808	Node 337.58595	-0.04027574	+0.89875166
e	0.1391527	Incl. 2.64555	+0.00000087	+0.43695889
P	4.14	H 13.5	G 0.25	

Residuals in seconds of arc

831107	046	0.3+ 2.4-	871021	881	1.6- 0.7+	871027	881	0.3+ 1.0+
831107	046	1.2+ 0.7-	871021	881	0.3+ 1.0+	871031	399	1.8+ 0.5- Y
831107	046	0.5+ 1.6-	871025	399	2.5+ 1.2- Y	871031	399	0.6- 0.5+ Y
831108	046	1.9+ 0.9-	871025	399	0.0 0.9- Y	871031	399	0.4- 0.5- Y
831108	381	3.0- 2.2+	871025	399	0.4- 0.3+ Y			
831108	381	0.9- 3.3+	871027	881	1.8- 0.5-			

* * * * *

ORBITAL ELEMENTS BY T. KOBAYASHI, GUNMA, JAPAN.

The identifications are by T. Kobayashi unless otherwise stated.

(3719)* 1976 YO1 = 1979 OS7 = 1983 QK = 1987 US

Discovered 1976 Dec. 16 by L. I. Chernykh at the Crimean Astrophysical Observatory. The identification 1976 YO1 = 1979 OS7 is by S. Nakano (MPC 9753).

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	74.42952	(1950.0)	P	Q
n	0.26431606	Peri. 111.69033	+0.72004702	-0.69247094
a	2.4046600	Node 292.16768	+0.61736332	+0.66880695
e	0.2065796	Incl. 2.77919	+0.31685142	+0.27052034
P	3.73	H 13.4	G 0.25	

Residuals in seconds of arc

761216 095	0.5+	1.9-	830902 675	0.2+	0.0	871028 399	0.7-	0.6+	
761218 095	0.5-	0.4-	830902 675	0.4-	0.6+	871031 399	1.3+	0.6-	
761220 095	0.0	1.1+	871025 399	0.3-	0.5-	871031 399	1.0-	0.3+	
790724 413	0.0	0.7-	871025 399	0.1-	0.2-	871113 399	0.7-	0.2+	
790727 675	0.4+	0.9-	871025 399	0.6+	0.2-	871113 399	1.3+	0.3+	
830830 675	0.2-	0.1+	871028 399	0.1+	0.1-	871114 392	1.5-	1.4+	Y
830901 675	0.1+	0.0	871028 399	0.5+	1.0+	871114 392	0.5+	1.8-	Y

(3720)* 1987 UR1 = 1969 TF = 1980 TX13 = 1980 VJ2 = 1982 FN2

Discovered 1987 Oct. 28 by S. Ueda and H. Kaneda at Kushiro.

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 168.71253		(1950.0)		P	Q
n 0.27914521	Peri.	284.84422		+0.55356377	+0.83192388
a 2.3187251	Node	18.91903		-0.71134051	+0.49626404
e 0.1274719	Incl.	6.79081		-0.43308414	+0.24824315
P 3.53	H	12.7	G	0.25	

Residuals in seconds of arc

691007 095	0.7+	1.2-	871028 399	2.6-	1.0+	871114 400	1.7+	0.3-	
801012 095	0.1+	1.2-	871028 399	3.5-	0.2-	871114 400	2.9+	0.7+	
801110 330	0.3+	0.1-	871028 399	2.0-	1.8+	871114 400	1.6+	0.1-	
820324 033	0.3-	0.3-	871113 400	0.3+	0.6+	871115 400	0.9+	0.8-	
820324 033	0.1+	0.1-	871113 400	0.6-	0.5+	871115 400	0.1-	0.3-	
820326 033	0.2-	0.3-	871113 400	0.6+	0.2-	871115 400	0.1+	0.8-	

1967 UQ = 1985 VE3

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 230.96611		(1950.0)		P	Q
n 0.27213018	Peri.	51.58522		-0.48507194	-0.87284319
a 2.3584042	Node	67.51124		+0.78318635	-0.46078111
e 0.1651614	Incl.	3.31234		+0.38900431	-0.16070326
P 3.62	H	14.0	G	0.25	

Residuals in seconds of arc

671013 029	0.0	0.6+	671030 029	0.0	0.3-	851110 095	0.4+	0.7-	
671014 029	0.5+	0.1-	671031 029	0.3-	0.6-	851120 095	0.4-	0.7+	
671014 029	0.5-	0.1-	671031 029	0.2+	0.2+				
671030 029	0.1-	0.2+	671031 029	0.3+	0.1+				

1977 EG7 = 1985 PQ1

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 311.77273		(1950.0)		P	Q
n 0.28596738	Peri.	162.97833		+0.95698558	+0.29013536
a 2.2816992	Node	180.15641		-0.27656379	+0.91193275
e 0.1525229	Incl.	5.79978		-0.08769876	+0.29017259
P 3.45	H	14.5	G	0.25	

Residuals in seconds of arc

770312 381	1.2-	0.2+	770314 381	0.7+	0.9-	850814 010	0.2-	0.8-	
770312 381	0.0	0.4-	770315 381	0.7+	1.0-	850816 010	0.2+	0.8+	
770314 381	0.1-	0.8+	770315 381	0.1-	1.2+				

1986 EZ4 = 1974 YS

Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 278.88104		(1950.0)		P	Q
n 0.27790417	Peri.	128.34335		-0.66811562	-0.74405690
a 2.3256231	Node	3.57885		+0.67795503	-0.60926776
e 0.1864033	Incl.	0.84255		+0.30659174	-0.27417535
P 3.55	H	15.0	G	0.25	

Residuals in seconds of arc

741216	552	0.9+	1.6+		860305	809	0.7+	0.2-		860310	413	0.6-	1.7+
741216	552	0.6-	1.2+		860305	809	0.6+	0.4-		860310	413	0.4-	0.9+
741217	552	2.0+	1.3-		860309	413	1.6-	0.4+		860314	809	0.5+	1.3-
741217	552	2.3-	1.5-		860309	413	(4.6+	0.1-)		860314	809	0.4-	0.1+
860304	809	0.3+	0.6+		860310	809	0.7+	0.9-					
860304	809	0.7-	0.0		860310	809	1.1+	0.7-					

1987 SE = 1950 PS = 1971 OJ1 = 1979 BM1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	131.24777		(1950.0)	P	Q
n	0.18773005	Peri.	321.35851	+0.22592592	+0.96888859
a	3.0207412	Node	321.39643	-0.84864445	+0.14482384
e	0.0768310	Incl.	9.32114	-0.47828870	+0.20070116
P	5.25	H	12.0	G 0.25	

Residuals in seconds of arc

500814	760(72.0-	22.0-)X		870918	372	(2.3+	4.3-)Y		871001	372	0.6-	0.4-
710728	095	0.4+	0.6-	870919	372	0.7-	1.4-	Y	871016	688	1.4+	0.3-
790124	095	0.0	0.1-	870926	688	0.1+	0.5-		871016	688	1.2-	1.6+
870916	372	0.4+	2.8+ Y	870926	688	2.0+	0.1+		871026	688	0.9+	2.2-
870917	372	2.5-	0.1+ Y	870926	372	0.0	0.6+					

1987 UK = 1932 RF = 1974 SV2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	88.76552		(1950.0)	P	Q
n	0.30611110	Peri.	183.69761	+0.74729473	-0.66285180
a	2.1804694	Node	217.95567	+0.61156070	+0.71353793
e	0.1442094	Incl.	4.35177	+0.25989248	+0.22691653
P	3.22	H	14.0	G 0.25	

Residuals in seconds of arc

320908	024	0.3+	0.7-		871021	881	2.5+	1.4+		871027	881	0.6-	0.8-
740920	095	0.5+	1.3+		871021	881	0.2+	0.2-		871116	881	0.8-	0.6+
740922	095	1.0-	0.2-		871027	881	0.3-	1.3-		871116	881	0.6-	0.2-

1987 UQ1 = 1959 EJ = 1983 RT
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	62.07911		(1950.0)	P	Q
n	0.26660785	Peri.	101.33309	+0.39556206	-0.91804220
a	2.3908597	Node	325.32665	+0.82300991	+0.36735851
e	0.1464063	Incl.	2.72064	+0.40765837	+0.14915176
P	3.70	H	13.0	G 0.25	

Residuals in seconds of arc

590311	690	8.1-	0.9- Y		830908	046	1.0-	0.2+		871114	400	0.7+	0.5+
590312	690	8.7+	2.3+ Y		830908	046	2.9-	1.5+		871114	400	0.4+	1.3+
830904	688	2.1+	0.9+		871028	399	0.0	2.1-		871114	400	0.1+	0.4+
830904	688	1.7+	0.3+		871028	399	1.2+	2.3-		871115	400	1.2-	0.5-
830905	046	1.6+	1.3+		871028	399	1.1+	0.2+		871115	400	0.6-	0.4-
830906	046	0.1+	0.4-		871113	400	0.4-	1.4+		871115	400	0.8-	0.7-
830907	046	1.0-	0.6-		871113	400	0.2-	0.9+					
830907	046	1.4-	1.3-		871113	400	0.2-	0.6+					

2142 P-L = 1971 BL2 = 1979 YO6 = 1983 RF
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	305.66878		(1950.0)	P	Q
n	0.21108833	Peri.	242.15689	+0.25948077	-0.96531723
a	2.7935722	Node	192.90202	+0.92524973	+0.25704892
e	0.2117279	Incl.	7.42398	+0.27673575	+0.04569999
P	4.67	H	13.5	G 0.25	

Residuals in seconds of arc

600924	675	0.7-	0.6-	600929	675	0.8+	1.5-	710127	805	0.1-	0.2+
600926	675	0.3-	0.5+	601022	675	1.0-	0.7+	791223	095	0.3-	0.4+
600928	675	1.0+	0.8+	601025	675	0.2-	0.1+	830904	801	0.4-	0.8+
600928	675	1.0+	0.1+	601026	675	1.3-	1.0-				

4665 P-L = 1979 SM7 = 1983 YQ
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	126.12171		(1950.0)	P	Q
n	0.25995732	Peri.	328.17000	+0.98886828	-0.14066914
a	2.4314650	Node	40.00664	+0.14736800	+0.88090935
e	0.1309234	Incl.	4.32614	+0.02054761	+0.45189701
P	3.79	H	14.5	G 0.25	

Residuals in seconds of arc

600924	675	0.5+	0.5+	601022	675	0.7-	0.4-	831228	033	0.3-	0.3+
600926	675	0.1-	0.1+	601025	675	0.4-	0.2+	831229	033	0.4-	0.4-
600927	675	0.4+	0.8-	601026	675	0.2-	0.2+	831229	033	0.7+	0.3-
601017	675	0.5-	1.5+	790923	095	0.7+	1.4-				

5568 P-L = 1986 XB2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	193.58424		(1950.0)	P	Q
n	0.22970533	Peri.	322.64816	+0.98907465	+0.12951374
a	2.6405151	Node	30.13818	-0.07659348	+0.85958886
e	0.1237912	Incl.	8.06139	-0.12595543	+0.49430069
P	4.29	H	13.5	G 0.25	

Residuals in seconds of arc

601017	675	2.1-	0.9+	601026	675	1.5+	0.5-	861201	010	1.0-	1.0-
601022	675	0.2-	0.3-	861201	010	1.8+	0.6+	861203	010	1.3-	0.9+
601025	675	1.0+	0.3-	861201	010	0.1-	1.0-	861203	010	0.5+	0.6+

6568 P-L = 1986 EV
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	329.70890		(1950.0)	P	Q
n	0.28603537	Peri.	81.75586	+0.15502931	-0.98790949
a	2.2813376	Node	359.32380	+0.87485042	+0.13769621
e	0.1224188	Incl.	4.22655	+0.45891466	+0.07123621
P	3.45	H	14.5	G 0.25	

Residuals in seconds of arc

600924	675	0.4-	0.6+	601022	675	0.2+	0.1+	860314	809	0.8+	0.1-
600926	675	0.8-	0.8-	601024	675	0.4+	0.4+	860314	809	1.2-	0.7+
600927	675	0.9+	0.1-	601026	675	0.7-	0.7-	860315	809	0.1-	0.3-
600928	675	0.7+	0.5+	860305	688	1.8+	0.2-	860315	809	0.4-	0.4+
601017	675	0.7+	0.5+	860305	688	0.6-	0.6-				

6575 P-L = 1972 TD7 = 1986 EX
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	202.51829		(1950.0)	P	Q
n	0.17055620	Peri.	82.96400	-0.26549619	-0.96347066
a	3.2202608	Node	22.52781	+0.84432050	-0.24995822
e	0.1304789	Incl.	5.26509	+0.46544029	-0.09615182
P	5.78	H	12.0	G 0.25	

Residuals in seconds of arc

600924	675	0.1+	0.2+	601017	675	0.6-	0.3-	721006	095	0.1-	0.2+
600926	675	0.4+	0.1+	601022	675	2.3-	0.7-	860305	688	0.4-	0.8-
600927	675	0.7+	0.6+	601024	675	0.8+	1.0-	860305	688	0.3+	0.8+
600928	675	1.1+	1.4+	601026	675	0.6-	0.7-				

7604 P-L = 1985 GD
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 24.85413	(1950.0)		P	Q
n 0.26224730	Peri. 53.98761		-0.73636278	-0.67300018
a 2.4172897	Node 83.60219		+0.59601533	-0.69390167
e 0.0543842	Incl. 4.01459		+0.32021177	-0.25606881
P 3.76	H 14.0	G 0.25		

Residuals in seconds of arc

601017 675	1.1-	0.8+	601026 675	0.5+	0.0	850423 688	0.3-	1.4-
601022 675	0.5+	0.0	850414 688	2.9+	0.2+	850423 688	2.7-	1.3+
601025 675	0.3+	0.7-	850414 688	0.4+	0.2-			

7618 P-L = 1972 XR1 = 1977 RE3 = 1980 FD11
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 257.85592	(1950.0)		P	Q
n 0.17421036	Peri. 311.04883		+0.04308421	-0.99647379
a 3.1750707	Node 136.31910		+0.94502367	+0.01726580
e 0.0938929	Incl. 5.98385		+0.32415123	+0.08210890
P 5.66	H 12.5	G 0.25		

Residuals in seconds of arc

601017 675	1.2-	1.6+	601026 675	0.7+	1.5-	770918 095	0.3+	0.2-
601022 675	0.3+	0.4+	721201 095	0.0	0.1-	800316 095	0.3-	1.0-
601025 675	0.1+	0.0	770910 095	0.2+	1.3-			

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ORBITAL ELEMENTS BY H. OISHI, NIIZA, JAPAN.

The identifications are by H. Oishi unless otherwise stated.

1986 VV6 = 1953 VZ = 1955 FS = 1971 BB1 = 1982 VJ1
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 131.76813	(1950.0)		P	Q
n 0.24033737	Peri. 11.42103		+0.03581995	-0.99510509
a 2.5620554	Node 76.57581		+0.90922650	-0.00579847
e 0.2020169	Incl. 5.43343		+0.41475788	+0.09865210
P 4.10	H 12.4	G 0.25		

Residuals in seconds of arc

531105 760	1.8+	3.4-	710125 095	1.1-	5.7-	861130 381	0.9-	1.4+
531105 760	0.4+	1.7-	821115 688	0.6-	0.3+	861130 381	0.7-	1.2+
550329 760	2.3+	2.0+	861106 688	0.7+	1.3+	861201 381	1.2-	0.7+
550329 760	0.3-	2.3+	861106 688	0.1-	2.1+	861201 381	0.4-	0.9+

1986 VW6 = 1968 TL = 1977 VP1 = 1977 VX1 = 1983 AW2
The identification 1986 VW6 = 1983 AW2 was found independently by L. D. Schmadel.
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M 159.09275	(1950.0)		P	Q
n 0.22152259	Peri. 286.88090		+0.85294609	-0.51829885
a 2.7051460	Node 104.37601		+0.49997429	+0.77700614
e 0.1383791	Incl. 3.67220		+0.15002893	+0.35725028
P 4.45	H 13.1	G 0.25		

Residuals in seconds of arc

681002 095	0.5-	1.1-	830111 675	1.1-	2.2-	861130 381	0.1-	0.1-
771103 330	0.5+	0.9+	830112 675	1.4+	2.8+	861201 381	0.3+	0.2-
771112 330	0.4+	1.4+	861106 688	1.6+	0.3+	861201 381	0.7-	0.2-
830110 675	0.2-	0.6-	861106 688	0.8-	1.1-			
830110 675	(9.3-	0.0)	861130 381	1.0-	0.1-			

2024 P-L = 1976 JQ7 = 1986 EF2
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	251.25661	(1950.0)		P	Q
n	0.28870616	Peri.	191.23020	-0.99506049	+0.09895094
a	2.2672462	Node	354.43011	-0.08353451	-0.87794724
e	0.0838820	Incl.	4.70337	-0.05363407	-0.46842006
P	3.41	H	14.2	G 0.25	

Residuals in seconds of arc

600924	675	0.6-	0.0	601025	675	0.2+	0.9-	860308	809	1.3-	0.9+
600926	675	0.4-	0.3-	601026	675	0.5+	0.2+	860309	809	0.9-	0.3+
600928	675	0.3+	0.0	760502	809	0.1-	0.1-	860309	809	0.6-	1.0+
600929	675	0.3+	0.7-	860306	688	2.5+	1.4-	860315	809	1.0+	0.0
601017	675	0.4+	1.1+	860306	688	0.6+	1.8-	860315	809	0.7+	0.3-
601022	675	0.7-	0.3+	860308	809	2.1-	1.2+				

4153 P-L = 1971 VA1 = 1983 AE = 1987 ES
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	204.64193	(1950.0)		P	Q
n	0.27645383	Peri.	120.01723	-0.34664271	-0.93771513
a	2.3337499	Node	350.18245	+0.80737532	-0.28579704
e	0.1181421	Incl.	7.75342	+0.47747662	-0.19751048
P	3.57	H	14.0	G 0.25	

Residuals in seconds of arc

600924	675	0.1-	0.9-	601022	675	0.4+	0.9-	830109	688	0.1+	2.5-
600924	675	1.0+	0.4-	601024	675	0.9+	0.5-	870303	688	0.9-	0.2-
600925	675	0.1+	0.3+	601026	675	0.4+	0.4-	870303	688	1.6+	0.3+
600926	675	0.3-	0.8-	711111	095	1.2-	6.5+				
600928	675	0.1-	1.5-	830109	688	1.9-	1.6-				

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ORBITAL ELEMENTS BY K. ICHIKAWA, OKAZAKI, JAPAN.

1982 DV2 = 1982 BE12 = 1960 VG = 1964 UJ = 1976 SC2
The identifications are by T. Furuta.
Epoch 1988 Aug. 27.0 ET = JDE 2447400.5

M	263.72311	(1950.0)		P	Q
n	0.24167565	Peri.	265.27652	+0.12840901	-0.99171870
a	2.5525884	Node	177.34262	+0.92814714	+0.11937104
e	0.1499415	Incl.	2.80521	+0.34936230	+0.04737697
P	4.08	H	13.1	G 0.25	

Residuals in seconds of arc

601112	760	0.3-	0.3-	641106	760	0.5+	0.1-	820218	704	1.7-	0.2-
601112	760	0.1+	1.3+	760924	095	1.0-	0.2-	820220	704	1.8+	1.9-
641031	760	0.4+	0.8-	760928	095	2.6+	1.6+	820221	704	(3.1+	6.7-)
641031	760	0.2-	0.3-	760928	095	1.3-	1.8-	820222	704	1.9-	0.6+
641106	760	0.5-	0.2+	820120	095	1.7+	0.9+				

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EPHEMERIDES.

Comet Ichimura (1987d1) Elements MPC 12575

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1987	11 21	04 06.29	-15 30.3	0.390	1.325	144.3	25.8	7.7
1987	11 26	03 32.92	-28 32.4					
1987	12 01	02 34.73	-44 02.3	0.300	1.123	109.8	55.7	6.4
1987	12 06	00 53.72	-56 53.5					
1987	12 11	22 41.07	-61 13.3	0.347	0.907	67.0	92.4	5.8

1987 12 16	20 57.10	-58 28.8					
1987 12 21	19 54.28	-53 29.6	0.487	0.670	37.9	115.6	5.2
1987 12 26	19 14.96	-48 11.1					
1987 12 31	18 48.33	-42 36.7	0.686	0.408	19.6	126.1	3.8
1988 01 05	18 32.02	-36 02.0					
1988 01 10	18 34.82	-27 13.7	1.010	0.200	11.4	76.7	1.5
1988 01 15	19 02.97	-18 09.1					
1988 01 20	19 34.29	-11 27.6	1.318	0.402	11.3	28.7	5.1

Comet Furuyama (1987f1) Elements MPC 12575

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1987 11 21		05 23.86	+26 17.0	1.209	2.148	155.5	11.0	10.2
1987 11 26		05 01.15	+22 42.3					
1987 12 01		04 36.93	+18 29.7	1.089	2.073	175.6	2.1	9.9
1987 12 06		04 12.22	+13 48.1					
1987 12 11		03 48.09	+08 53.4	1.061	2.003	156.4	11.3	9.6
1987 12 16		03 25.49	+04 04.4					
1987 12 21		03 05.12	-00 22.9	1.127	1.938	133.1	21.7	9.6
1987 12 26		02 47.32	-04 18.6					
1987 12 31		02 32.17	-07 39.9	1.262	1.879	113.0	28.8	9.7
1988 01 05		02 19.51	-10 28.6					
1988 01 10		02 09.11	-12 48.7	1.435	1.826	96.3	32.4	9.9
1988 01 15		02 00.70	-14 45.0					
1988 01 20		01 54.02	-16 21.9	1.622	1.781	82.3	33.2	10.1
1988 01 25		01 48.81	-17 43.5					
1988 01 30		01 44.85	-18 53.2	1.805	1.744	70.5	32.2	10.2
1988 02 04		01 41.95	-19 53.7					
1988 02 09		01 39.96	-20 47.3	1.974	1.717	60.4	30.0	10.3

Periodic Comet Shoemaker-Holt (1987z) Elements MPC 12576

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1987 12 11		00 53.59	+06 03.3	2.612	3.180	116.8	16.0	15.1
1987 12 21		00 56.67	+06 10.3					
1987 12 31		01 01.60	+06 29.8	2.853	3.151	98.5	18.0	15.3
1988 01 10		01 08.21	+07 00.3					
1988 01 20		01 16.33	+07 40.3	3.108	3.125	81.9	18.2	15.4
1988 01 30		01 25.79	+08 28.2					
1988 02 09		01 36.40	+09 22.3	3.356	3.103	66.8	17.0	15.5
1988 02 19		01 48.05	+10 21.1					
1988 02 29		02 00.58	+11 23.0	3.578	3.084	52.9	14.8	15.7

1986 WA a,e,i = 1.51, 0.70, 29 Elements MPC 11620

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1987 12 11		08 49.59	-18 55.7	1.817	2.363	-0.63	+5.1	20.1
1987 12 21		08 42.72	-21 34.0					
1987 12 31		08 31.67	-23 56.9	1.570	2.283	-0.61	+7.3	19.7
1988 01 10		08 16.46	-25 51.1					
1988 01 20		07 57.74	-27 01.3	1.398	2.187	-0.41	+10.5	19.3
1988 01 30		07 37.12	-27 15.2					
1988 02 09		07 16.82	-26 29.0	1.318	2.076	-0.11	+13.3	19.1
1988 02 19		06 59.04	-24 49.2					
1988 02 29		06 45.38	-22 30.3	1.317	1.947	0.05	+13.5	19.1
1988 03 10		06 36.51	-19 49.4					
1988 03 20		06 32.43	-17 00.6	1.358	1.799	0.08	+11.3	19.2
1988 03 30		06 32.79	-14 14.4					
1988 04 09		06 37.07	-11 36.7	1.402	1.630	0.05	+8.1	19.1
1988 04 19		06 44.83	-09 10.1					
1988 04 29		06 55.69	-06 55.6	1.412	1.437	-0.01	+4.4	19.0
1988 05 09		07 09.38	-04 51.8					

1988 05 19	07 25.75	-02 56.0	1.365	1.217	-0.06	-0.4	18.7
1988 05 29	07 44.76	-01 03.5					
1988 06 08	08 06.37	+00 54.9	1.242	0.968	-0.04	-8.7	18.1
1988 06 18	08 30.55	+03 15.4					
1988 06 28	08 56.68	+06 31.6	1.025	0.696	0.85	-30.5	17.5

Periodic Comet Tempel 1 (1987e1) Elements MPC 11501

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1987 12 11	09 08.60	+26 58.2	2.709	3.379	125.6	13.7	21.0
1987 12 21	09 06.54	+27 49.1					
1987 12 31	09 01.97	+28 48.8	2.418	3.285	146.8	9.4	20.6
1988 01 10	08 54.97	+29 53.3					
1988 01 20	08 45.84	+30 57.2	2.225	3.188	165.7	4.4	20.3
1988 01 30	08 35.31	+31 54.0					
1988 02 09	08 24.38	+32 38.0	2.152	3.087	157.7	7.0	20.1
1988 02 19	08 14.15	+33 05.9					
1988 02 29	08 05.70	+33 16.7	2.191	2.983	135.9	13.3	20.0
1988 03 10	07 59.78	+33 12.2					
1988 03 20	07 56.77	+32 55.0	2.309	2.876	115.1	18.3	19.9
1988 03 30	07 56.78	+32 27.7					
1988 04 09	07 59.67	+31 52.5	2.466	2.767	96.6	21.1	19.9
1988 04 19	08 05.19	+31 10.4					
1988 04 29	08 13.05	+30 22.2	2.627	2.654	80.5	22.0	19.8
1988 05 09	08 22.92	+29 27.9					
1988 05 19	08 34.54	+28 27.1	2.768	2.539	66.4	21.4	19.8
1988 05 29	08 47.65	+27 19.4					
1988 06 08	09 02.02	+26 04.3	2.874	2.422	54.0	19.8	19.6
1988 06 18	09 17.50	+24 41.3					
1988 06 28	09 33.92	+23 09.8	2.941	2.304	43.0	17.5	19.5
1988 07 08	09 51.16	+21 29.5					
1988 07 18	10 09.15	+19 40.1	2.966	2.185	33.0	14.7	19.3

1982 XB a,e,i = 1.84, 0.45, 4 Elements IAUC 4495

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 12 11	10 02.01	+18 45.1	0.087	1.020	111.7	63.8	16.1
1987 12 16	10 45.37	+18 18.1					
1987 12 21	11 17.92	+17 39.5	0.109	1.017	104.4	69.6	16.8
1987 12 26	11 42.11	+17 02.8					
1987 12 31	12 00.12	+16 32.8	0.136	1.026	104.4	68.2	17.3
1988 01 05	12 13.52	+16 10.8					
1988 01 10	12 23.29	+15 57.4	0.163	1.047	108.7	62.8	17.5
1988 01 15	12 30.01	+15 52.8					
1988 01 20	12 34.04	+15 56.5	0.188	1.079	115.9	55.1	17.7
1988 01 25	12 35.63	+16 07.3					
1988 01 30	12 35.02	+16 23.5	0.212	1.121	125.2	45.9	17.8
1988 02 04	12 32.42	+16 43.3					
1988 02 09	12 28.02	+17 04.8	0.238	1.170	136.2	35.7	17.8
1988 02 14	12 22.08	+17 25.9					
1988 02 19	12 14.94	+17 43.9	0.268	1.224	148.0	25.3	17.8
1988 02 24	12 07.04	+17 56.2					
1988 02 29	11 58.87	+18 00.9	0.307	1.282	159.0	16.0	18.0
1988 03 05	11 50.88	+17 57.2					
1988 03 10	11 43.43	+17 45.1	0.359	1.343	165.4	10.8	18.2
1988 03 15	11 36.82	+17 25.0					
1988 03 20	11 31.26	+16 57.6	0.424	1.406	162.3	12.5	18.8
1988 03 25	11 26.88	+16 23.9					
1988 03 30	11 23.72	+15 44.9	0.504	1.469	154.2	17.2	19.4
1988 04 04	11 21.74	+15 01.9					
1988 04 09	11 20.85	+14 15.8	0.598	1.532	145.4	21.8	20.0

Comet Rudenko (1987u) Elements MPC 12446

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1987 12 31	02 49.47	-65 29.5	1.523	1.686	81.5	35.2	11.7
1988 01 10	02 20.27	-59 41.1					
1988 01 20	02 08.91	-54 49.3	2.007	1.981	74.3	28.6	13.0
1988 01 30	02 05.85	-50 49.9					
1988 02 09	02 07.23	-47 33.8	2.482	2.263	65.7	23.4	14.0
1988 02 19	02 11.28	-44 52.6					
1988 02 29	02 17.04	-42 40.6	2.915	2.535	58.1	19.4	14.9
1988 03 10	02 23.93	-40 53.8					
1988 03 20	02 31.59	-39 29.2	3.286	2.797	52.7	16.5	15.6
1988 03 30	02 39.77	-38 24.8					
1988 04 09	02 48.27	-37 39.4	3.587	3.051	50.6	14.7	16.1
1988 04 19	02 56.96	-37 12.1					
1988 04 29	03 05.69	-37 02.5	3.816	3.297	52.3	14.0	16.6

(3554) Amun a,e,i = 0.97, 0.28, 23 Elements MPC 11618

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 12 31	13 47.50	+09 12.4	0.859	1.157	77.5	56.0	18.0
1988 01 10	14 03.19	+05 50.3					
1988 01 20	14 17.40	+02 19.8	0.747	1.208	87.4	54.4	17.8
1988 01 30	14 29.79	-01 26.5					
1988 02 09	14 39.91	-05 40.5	0.604	1.238	99.4	51.8	17.3
1988 02 19	14 46.89	-10 39.1					
1988 02 29	14 49.17	-16 46.8	0.453	1.247	114.2	46.5	16.5
1988 03 05	14 47.80	-20 26.8					
1988 03 10	14 44.08	-24 36.4	0.384	1.243	122.6	42.3	16.1
1988 03 15	14 37.24	-29 18.6					
1988 03 20	14 26.18	-34 32.9	0.327	1.234	130.6	37.8	15.6
1988 03 25	14 09.41	-40 12.6					
1988 03 30	13 45.05	-46 00.3	0.289	1.220	134.7	35.6	15.2
1988 04 04	13 11.04	-51 25.6					
1988 04 09	12 26.40	-55 48.0	0.276	1.200	130.8	39.2	15.2
1988 04 14	11 33.62	-58 30.3					
1988 04 19	10 39.63	-59 20.1	0.285	1.175	120.5	47.4	15.4
1988 04 24	09 51.95	-58 38.2					
1988 04 29	09 14.08	-57 01.2	0.311	1.146	108.8	56.4	15.8
1988 05 04	08 45.55	-55 00.8					
1988 05 09	08 24.38	-52 56.3	0.342	1.111	98.1	64.1	16.2
1988 05 14	08 08.55	-50 57.3					
1988 05 19	07 56.46	-49 08.0	0.372	1.072	88.9	70.8	16.5
1988 05 24	07 46.85	-47 28.5					
1988 05 29	07 38.83	-45 56.8	0.396	1.028	80.9	76.8	16.7
1988 06 03	07 31.74	-44 29.3					
1988 06 08	07 25.14	-43 01.9	0.411	0.981	73.5	82.8	16.9

Comet McNaught (1987b1) Elements MPC 12575

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1987 12 31	17 54.52	+00 48.4	1.689	0.914	26.0	28.2	7.2
1988 01 05	18 06.24	+05 18.9					
1988 01 10	18 18.67	+09 59.3	1.620	0.998	35.5	34.9	7.5
1988 01 15	18 31.99	+14 49.6					
1988 01 20	18 46.36	+19 48.6	1.566	1.104	44.4	38.6	7.9
1988 01 25	19 01.96	+24 53.9					
1988 01 30	19 19.00	+30 01.7	1.542	1.222	52.3	39.7	8.3
1988 02 04	19 37.71	+35 06.8					
1988 02 09	19 58.33	+40 03.0	1.562	1.348	58.8	38.8	8.8
1988 02 14	20 21.11	+44 44.1					

1988 02 19	20 46.25	+49 03.7	1.629	1.478	63.3	36.7	9.3
1988 02 24	21 13.90	+52 56.4					
1988 02 29	21 44.04	+56 17.9	1.742	1.610	65.6	34.1	9.8
1988 03 05	22 16.46	+59 05.6					
1988 03 10	22 50.66	+61 18.7	1.894	1.742	65.9	31.4	10.3
1988 03 15	23 25.88	+62 58.2					
1988 03 20	00 01.17	+64 06.9	2.074	1.874	64.5	28.7	10.8
1988 03 25	00 35.57	+64 48.7					
1988 03 30	01 08.29	+65 08.2	2.272	2.006	61.9	26.1	11.3
1988 04 04	01 38.80	+65 10.3					
1988 04 09	02 06.87	+64 59.2	2.481	2.136	58.5	23.6	11.8

Periodic Comet Helin (1987w) Elements MPC 12440

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1988 01 20	01 35.40	+04 48.8	2.779	2.871	85.3	20.0	17.8
1988 01 30	01 46.27	+06 03.7					
1988 02 09	01 58.04	+07 20.6	3.108	2.942	71.2	18.5	18.1
1988 02 19	02 10.55	+08 38.0					
1988 02 29	02 23.68	+09 54.8	3.426	3.018	57.9	16.1	18.5
1988 03 10	02 37.32	+11 09.6					
1988 03 20	02 51.37	+12 21.6	3.719	3.099	45.2	13.2	18.8
1988 03 30	03 05.75	+13 29.8					
1988 04 09	03 20.36	+14 33.7	3.978	3.183	32.9	9.8	19.0

Periodic Comet Kohoutek (1986k) Elements IAUC 4461

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1988 01 20	08 42.14	+11 04.9	0.951	1.922	166.7	6.8	16.0
1988 01 30	08 34.13	+10 55.6					
1988 02 09	08 26.99	+10 57.4	1.025	1.994	165.2	7.3	16.3
1988 02 19	08 21.99	+11 05.2					
1988 02 29	08 19.92	+11 14.2	1.188	2.077	144.7	16.0	16.9
1988 03 10	08 20.95	+11 20.4					
1988 03 20	08 24.90	+11 21.4	1.423	2.167	126.3	21.7	17.6
1988 03 30	08 31.40	+11 15.2					
1988 04 09	08 40.00	+11 00.8	1.709	2.263	110.5	24.5	18.2
1988 04 19	08 50.24	+10 37.9					
1988 04 29	09 01.78	+10 06.5	2.027	2.363	96.5	25.0	18.7
1988 05 09	09 14.27	+09 26.8					
1988 05 19	09 27.47	+08 39.5	2.362	2.466	83.8	24.1	19.0
1988 05 29	09 41.16	+07 44.9					
1988 06 08	09 55.18	+06 44.0	2.700	2.570	71.8	22.0	19.4
1988 06 18	10 09.41	+05 37.4					
1988 06 28	10 23.76	+04 25.8	3.030	2.675	60.2	19.3	19.6
1988 07 08	10 38.15	+03 10.1					
1988 07 18	10 52.54	+01 50.9	3.341	2.780	48.9	16.0	19.8
1988 07 28	11 06.89	+00 28.9					
1988 08 07	11 21.17	-00 55.2	3.622	2.884	37.5	12.4	20.0

2041 T-3 a,e,i = 2.80, 0.04, 3 Elements MPC 12572

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	04 58.75	+22 09.7	1.943	2.898	161.8	6.1	16.7
1987 12 01	04 49.74	+21 44.6					
1987 12 11	04 40.25	+21 17.2	1.912	2.893	173.5	2.2	16.4
1987 12 21	04 31.34	+20 49.8					
1987 12 31	04 24.00	+20 25.5	1.998	2.887	149.3	10.0	16.9
1988 01 10	04 18.90	+20 06.8					
1988 01 20	04 16.38	+19 55.4	2.179	2.881	127.1	15.8	17.2
1988 01 30	04 16.55	+19 51.7					
1988 02 09	04 19.27	+19 55.1	2.420	2.875	107.5	19.1	17.6

1988 02 19	04 24.33	+20 04.5					
1988 02 29	04 31.47	+20 18.3	2.688	2.868	90.2	20.2	17.8

2402 T-3 a,e,i = 2.17, 0.08, 2 Elements MPC 12573

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	05 38.05	+26 56.0	1.334	2.256	152.3	11.7	16.5
1987 12 01	05 28.04	+26 51.0					
1987 12 11	05 16.01	+26 36.8	1.258	2.241	175.8	1.9	15.9
1987 12 21	05 03.61	+26 13.4					
1987 12 31	04 52.65	+25 44.1	1.288	2.225	156.4	10.2	16.4
1988 01 10	04 44.56	+25 14.0					
1988 01 20	04 40.11	+24 47.8	1.414	2.208	133.3	18.9	16.8
1988 01 30	04 39.55	+24 28.5					
1988 02 09	04 42.69	+24 16.9	1.601	2.190	113.5	24.4	17.2
1988 02 19	04 49.12	+24 12.0					
1988 02 29	04 58.43	+24 11.9	1.818	2.172	96.9	26.9	17.6

4665 P-L a,e,i = 2.43, 0.13, 4 Elements MPC 12583

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	05 46.38	+27 31.7	1.359	2.271	150.4	12.4	17.6
1987 12 01	05 37.04	+27 54.1					
1987 12 11	05 25.77	+28 07.9	1.318	2.299	173.3	2.9	17.2
1987 12 21	05 14.14	+28 11.6					
1987 12 31	05 03.86	+28 06.4	1.383	2.327	158.7	8.8	17.6
1988 01 10	04 56.24	+27 56.1					
1988 01 20	04 52.00	+27 44.8	1.546	2.356	136.1	16.8	18.1
1988 01 30	04 51.36	+27 35.6					
1988 02 09	04 54.13	+27 29.9	1.777	2.385	116.4	21.8	18.6
1988 02 19	04 59.92	+27 27.6					
1988 02 29	05 08.34	+27 27.8	2.045	2.414	99.4	23.9	19.0

1985 TE3 a,e,i = 5.17, 0.09, 21 Elements MPC 12570

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	06 28.04	-00 25.3	3.952	4.697	134.5	8.6	15.9
1987 12 01	06 24.27	-01 02.4					
1987 12 11	06 19.52	-01 30.5	3.817	4.695	149.9	6.0	15.7
1987 12 21	06 14.13	-01 47.9					
1987 12 31	06 08.55	-01 53.7	3.789	4.693	154.1	5.3	15.6
1988 01 10	06 03.20	-01 47.8					
1988 01 20	05 58.52	-01 31.2	3.873	4.692	142.4	7.3	15.8
1988 01 30	05 54.84	-01 05.3					
1988 02 09	05 52.43	-00 32.3	4.053	4.691	125.1	9.9	16.0
1988 02 19	05 51.41	+00 05.5					
1988 02 29	05 51.85	+00 46.1	4.301	4.690	107.2	11.6	16.1
1988 03 10	05 53.72	+01 27.4					
1988 03 20	05 56.93	+02 07.7	4.582	4.691	90.1	12.3	16.3

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
1987 11 21	06 48.05	+23 02.7	1.516	2.335	136.6	16.9	17.5
1987 12 01	06 43.61	+23 27.0					
1987 12 11	06 35.99	+23 55.2	1.377	2.325	159.6	8.5	17.0
1987 12 21	06 25.92	+24 24.1					
1987 12 31	06 14.74	+24 50.1	1.336	2.317	174.9	2.2	16.7
1988 01 10	06 04.06	+25 10.9					
1988 01 20	05 55.35	+25 26.3	1.402	2.309	150.3	12.2	17.2
1988 01 30	05 49.71	+25 37.4					
1988 02 09	05 47.64	+25 46.0	1.557	2.302	128.3	19.7	17.6
1988 02 19	05 49.15	+25 53.0					

1988 02 29	05 54.02	+25 58.6	1.767	2.297	109.5	24.0	18.0
1988 03 10	06 01.84	+26 02.2					
1988 03 20	06 12.18	+26 02.8	2.002	2.292	93.7	25.7	18.3

3134 T-3 a,e,i = 2.15, 0.20, 4 Elements MPC 12574

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	07 43.21	+16 08.4	1.727	2.409	122.6	20.2	18.5
1987 12 01	07 40.59	+15 55.7					
1987 12 11	07 34.69	+15 52.9	1.569	2.439	144.6	13.5	18.1
1987 12 21	07 25.86	+15 59.9					
1987 12 31	07 14.90	+16 15.4	1.496	2.467	168.5	4.6	17.7
1988 01 10	07 03.07	+16 37.0					
1988 01 20	06 51.78	+17 01.9	1.535	2.492	162.8	6.7	17.9
1988 01 30	06 42.36	+17 27.8					
1988 02 09	06 35.71	+17 53.3	1.682	2.513	139.3	14.8	18.4
1988 02 19	06 32.23	+18 17.2					
1988 02 29	06 31.97	+18 38.7	1.906	2.532	118.4	20.1	18.8
1988 03 10	06 34.71	+18 57.0					
1988 03 20	06 40.08	+19 11.2	2.171	2.546	100.4	22.6	19.2
1988 03 30	06 47.72	+19 20.6					
1988 04 09	06 57.26	+19 24.3	2.448	2.557	84.7	23.0	19.4

1977 RY6 a,e,i = 2.77, 0.17, 9 Elements MPC 12568

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	08 13.89	+32 00.1	2.157	2.767	118.4	18.3	18.2
1987 12 01	08 13.57	+32 36.5					
1987 12 11	08 10.09	+33 17.9	1.985	2.801	138.7	13.4	17.9
1987 12 21	08 03.54	+34 00.0					
1987 12 31	07 54.41	+34 36.8	1.894	2.835	159.4	7.0	17.6
1988 01 10	07 43.65	+35 02.3					
1988 01 20	07 32.48	+35 12.4	1.910	2.868	163.8	5.5	17.6
1988 01 30	07 22.24	+35 05.8					
1988 02 09	07 14.06	+34 44.4	2.040	2.901	144.6	11.4	18.0
1988 02 19	07 08.60	+34 11.8					
1988 02 29	07 06.15	+33 31.8	2.259	2.932	124.2	16.2	18.4
1988 03 10	07 06.64	+32 47.6					
1988 03 20	07 09.79	+32 01.1	2.534	2.962	105.6	18.9	18.7
1988 03 30	07 15.28	+31 13.1					
1988 04 09	07 22.72	+30 23.9	2.834	2.991	89.1	19.6	19.0

(3718) 1978 VS10 a,e,i = 2.63, 0.05, 4 Elements MPC 12578

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 11 21	08 19.52	+22 01.6	2.195	2.769	115.5	18.8	17.7
1987 12 01	08 20.39	+22 16.0					
1987 12 11	08 18.47	+22 40.0	1.976	2.771	136.1	14.3	17.3
1987 12 21	08 13.72	+23 12.4					
1987 12 31	08 06.42	+23 50.3	1.831	2.773	159.2	7.2	16.9
1988 01 10	07 57.23	+24 29.5					
1988 01 20	07 47.11	+25 05.2	1.793	2.774	174.1	2.1	16.6
1988 01 30	07 37.29	+25 33.6					
1988 02 09	07 28.91	+25 52.7	1.871	2.774	150.8	10.0	17.0
1988 02 19	07 22.82	+26 02.5					
1988 02 29	07 19.54	+26 03.9	2.044	2.773	128.6	16.2	17.4
1988 03 10	07 19.18	+25 58.4					
1988 03 20	07 21.60	+25 46.8	2.279	2.772	109.2	19.8	17.8
1988 03 30	07 26.57	+25 30.0					
1988 04 09	07 33.71	+25 08.0	2.542	2.769	92.3	21.2	18.0
1988 04 19	07 42.71	+24 40.9					
1988 04 29	07 53.26	+24 08.2	2.806	2.766	77.3	20.8	18.3

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
1987 12 11	10 43.55	+17 42.5	2.514	2.886	102.1	19.5	18.7
1987 12 21	10 47.51	+17 45.6					
1987 12 31	10 49.15	+18 02.3	2.270	2.901	120.9	16.9	18.4
1988 01 10	10 48.29	+18 32.0					
1988 01 20	10 44.83	+19 13.1	2.075	2.914	142.0	12.0	18.0
1988 01 30	10 38.89	+20 01.7					
1988 02 09	10 30.92	+20 52.0	1.968	2.927	163.4	5.5	17.7
1988 02 19	10 21.63	+21 37.9					
1988 02 29	10 12.01	+22 12.9	1.972	2.937	164.1	5.3	17.7
1988 03 10	10 03.10	+22 33.2					
1988 03 20	09 55.77	+22 37.0	2.088	2.946	143.2	11.7	18.1
1988 03 30	09 50.65	+22 24.9					
1988 04 09	09 47.99	+21 58.8	2.291	2.954	122.6	16.6	18.4
1988 04 19	09 47.81	+21 20.9					
1988 04 29	09 49.93	+20 33.0	2.547	2.960	104.2	19.3	18.7
1988 05 09	09 54.11	+19 37.0					
1988 05 19	10 00.05	+18 34.1	2.822	2.964	87.9	19.9	19.0

3108 P-L a,e,i = 2.61, 0.13, 14 Elements MPC 12571

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 12 11	10 38.00	-08 18.3	2.336	2.589	93.4	22.3	17.4
1987 12 21	10 44.01	-09 57.8					
1987 12 31	10 48.00	-11 29.0	2.064	2.562	109.3	21.2	17.0
1988 01 10	10 49.71	-12 48.4					
1988 01 20	10 48.94	-13 51.7	1.821	2.535	126.7	18.1	16.6
1988 01 30	10 45.60	-14 33.7					
1988 02 09	10 39.90	-14 49.6	1.637	2.508	144.8	13.1	16.2
1988 02 19	10 32.34	-14 36.1					
1988 02 29	10 23.81	-13 52.4	1.538	2.482	157.5	8.8	15.9
1988 03 10	10 15.44	-12 42.6					
1988 03 20	10 08.33	-11 14.2	1.539	2.457	150.7	11.4	16.0
1988 03 30	10 03.39	-09 37.2					
1988 04 09	10 01.14	-08 01.5	1.633	2.432	133.4	17.4	16.3
1988 04 19	10 01.76	-06 34.8					
1988 04 29	10 05.17	-05 22.5	1.793	2.409	115.8	22.1	16.6
1988 05 09	10 11.12	-04 27.2					
1988 05 19	10 19.28	-03 49.7	1.991	2.386	100.1	24.7	16.9

1977 TQ6 a,e,i = 2.67, 0.19, 13 Elements MPC 12578

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987 12 11	11 05.40	+21 33.4	2.786	3.091	98.6	18.4	19.0
1987 12 21	11 10.04	+21 55.8					
1987 12 31	11 12.55	+22 32.3	2.539	3.110	116.9	16.4	18.8
1988 01 10	11 12.72	+23 22.1					
1988 01 20	11 10.41	+24 22.8	2.338	3.128	136.7	12.5	18.5
1988 01 30	11 05.61	+25 30.0					
1988 02 09	10 58.61	+26 37.3	2.218	3.143	155.5	7.5	18.2
1988 02 19	10 49.92	+27 37.6					
1988 02 29	10 40.38	+28 23.9	2.207	3.155	159.8	6.2	18.1
1988 03 10	10 30.98	+28 51.4					
1988 03 20	10 22.62	+28 58.1	2.308	3.166	143.7	10.7	18.4
1988 03 30	10 16.05	+28 44.7					
1988 04 09	10 11.71	+28 13.8	2.501	3.175	124.3	15.1	18.7
1988 04 19	10 09.73	+27 28.5					
1988 04 29	10 10.07	+26 31.8	2.751	3.181	106.1	17.7	19.0
1988 05 09	10 12.51	+25 26.5					
1988 05 19	10 16.81	+24 14.3	3.027	3.185	89.6	18.5	19.3

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987	12 11	11 19.90	+07 14.0	2.651	2.827	89.9	20.4	18.3
1987	12 21	11 26.43	+06 48.9					
1987	12 31	11 31.06	+06 37.0	2.399	2.853	107.5	19.2	18.0
1988	01 10	11 33.58	+06 39.5					
1988	01 20	11 33.78	+06 57.5	2.173	2.877	127.3	15.8	17.7
1988	01 30	11 31.57	+07 30.7					
1988	02 09	11 27.05	+08 17.2	2.008	2.901	149.5	9.9	17.4
1988	02 19	11 20.53	+09 13.4					
1988	02 29	11 12.64	+10 13.8	1.939	2.923	172.3	2.6	17.0
1988	03 10	11 04.20	+11 12.0					
1988	03 20	10 56.14	+12 02.1	1.985	2.944	161.0	6.3	17.3
1988	03 30	10 49.29	+12 39.6					
1988	04 09	10 44.28	+13 02.2	2.138	2.964	138.6	12.9	17.7
1988	04 19	10 41.43	+13 09.4					
1988	04 29	10 40.85	+13 01.9	2.369	2.983	118.4	17.3	18.0
1988	05 09	10 42.42	+12 41.2					
1988	05 19	10 45.97	+12 08.9	2.644	2.999	100.6	19.4	18.4

(473) Nolli a,e,i = 2.66, 0.11, 13 Elements MPC 11615

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987	12 11	11 20.71	+06 21.2	2.187	2.389	89.4	24.3	16.6
1987	12 21	11 28.84	+04 50.0					
1987	12 31	11 34.89	+03 26.6	1.941	2.397	105.4	23.3	16.3
1988	01 10	11 38.55	+02 12.4					
1988	01 20	11 39.49	+01 09.1	1.717	2.407	123.8	19.9	16.0
1988	01 30	11 37.51	+00 18.3					
1988	02 09	11 32.57	-00 18.9	1.545	2.420	145.0	13.5	15.5
1988	02 19	11 24.97	-00 42.1					
1988	02 29	11 15.41	-00 52.2	1.456	2.434	167.8	4.9	15.1
1988	03 10	11 04.99	-00 52.1					
1988	03 20	10 54.98	-00 46.0	1.475	2.449	164.6	6.2	15.2
1988	03 30	10 46.56	-00 38.9					
1988	04 09	10 40.55	-00 35.4	1.597	2.466	142.3	14.4	15.7
1988	04 19	10 37.36	-00 38.8					
1988	04 29	10 37.04	-00 51.6	1.796	2.485	122.4	20.0	16.1
1988	05 09	10 39.39	-01 14.4					
1988	05 19	10 44.10	-01 47.6	2.040	2.504	105.3	22.9	16.5

1977 SD3 a,e,i = 2.67, 0.15, 13 Elements MPC 12569

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1987	12 31	12 22.26	-04 38.9	2.625	2.823	91.3	20.4	17.2
1988	01 10	12 28.44	-04 54.3					
1988	01 20	12 32.73	-04 54.6	2.373	2.851	109.2	19.0	17.0
1988	01 30	12 34.89	-04 37.9					
1988	02 09	12 34.78	-04 03.1	2.150	2.878	129.3	15.4	16.7
1988	02 19	12 32.35	-03 10.1					
1988	02 29	12 27.77	-02 00.5	1.992	2.904	151.9	9.2	16.4
1988	03 10	12 21.45	-00 38.0					
1988	03 20	12 14.03	+00 51.5	1.934	2.928	175.6	1.5	15.9
1988	03 30	12 06.36	+02 20.5					
1988	04 09	11 59.27	+03 41.6	1.992	2.951	159.3	6.9	16.3
1988	04 19	11 53.50	+04 49.3					
1988	04 29	11 49.54	+05 39.8	2.156	2.972	136.8	13.4	16.7
1988	05 09	11 47.66	+06 12.2					
1988	05 19	11 47.88	+06 26.9	2.394	2.991	116.8	17.6	17.1
1988	05 29	11 50.11	+06 25.3					
1988	06 08	11 54.16	+06 09.5	2.673	3.009	99.3	19.4	17.4

(3617) 1984 LJ a,e,i = 2.63, 0.11, 14 Elements MPC 11851

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	12 43.15	-08 26.7	1.957	2.412	105.4	23.2	16.4
1988	01 30	12 49.55	-08 24.4					
1988	02 09	12 53.69	-08 00.3	1.707	2.396	123.4	20.1	16.0
1988	02 19	12 55.30	-07 11.8					
1988	02 29	12 54.27	-05 58.0	1.506	2.382	144.3	14.0	15.6
1988	03 10	12 50.73	-04 20.6					
1988	03 20	12 45.13	-02 24.8	1.387	2.370	167.6	5.2	15.1
1988	03 30	12 38.30	-00 19.7					
1988	04 09	12 31.30	+01 42.8	1.373	2.359	166.8	5.5	15.0
1988	04 19	12 25.19	+03 31.5					
1988	04 29	12 20.89	+04 57.7	1.461	2.351	143.9	14.6	15.5
1988	05 09	12 18.94	+05 57.5					
1988	05 19	12 19.53	+06 30.4	1.626	2.345	123.8	21.0	15.9
1988	05 29	12 22.65	+06 38.3					
1988	06 08	12 28.06	+06 24.6	1.837	2.341	106.8	24.5	16.3
1988	06 18	12 35.52	+05 52.6					
1988	06 28	12 44.76	+05 05.5	2.068	2.340	92.3	25.7	16.6

1980 JE a,e,i = 2.55, 0.19, 14 Elements MPC 9028

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	12 55.34	+13 16.3	1.738	2.274	110.2	24.0	17.5
1988	01 30	13 02.04	+13 31.0					
1988	02 09	13 06.07	+14 00.4	1.503	2.237	126.7	20.7	17.0
1988	02 19	13 07.03	+14 42.4					
1988	02 29	13 04.64	+15 32.0	1.319	2.203	144.6	15.1	16.6
1988	03 10	12 58.97	+16 21.0					
1988	03 20	12 50.51	+16 59.5	1.213	2.171	158.7	9.6	16.2
1988	03 30	12 40.32	+17 16.8					
1988	04 09	12 29.83	+17 05.1	1.199	2.143	153.7	12.0	16.2
1988	04 19	12 20.54	+16 21.7					
1988	04 29	12 13.63	+15 08.4	1.273	2.119	136.4	19.1	16.5
1988	05 09	12 09.77	+13 30.5					
1988	05 19	12 09.11	+11 33.9	1.412	2.099	119.1	24.9	16.9
1988	05 29	12 11.54	+09 23.8					
1988	06 08	12 16.72	+07 04.5	1.591	2.084	104.0	28.2	17.2
1988	06 18	12 24.28	+04 38.9					
1988	06 28	12 33.88	+02 09.2	1.790	2.073	90.9	29.4	17.5

1984 WB a,e,i = 1.89, 0.13, 23 Elements MPC 9590

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	12 23.53	-37 57.4	1.221	1.639	95.5	36.7	15.8
1988	01 30	12 36.53	-41 26.8					
1988	02 09	12 47.01	-44 34.0	1.089	1.645	104.8	35.4	15.6
1988	02 19	12 54.19	-47 12.4					
1988	02 29	12 57.30	-49 12.9	0.967	1.656	115.5	32.7	15.2
1988	03 10	12 55.97	-50 24.5					
1988	03 20	12 50.42	-50 34.0	0.865	1.672	127.8	28.1	14.9
1988	03 30	12 42.08	-49 28.8					
1988	04 09	12 33.32	-47 04.2	0.802	1.694	139.6	22.6	14.6
1988	04 19	12 26.54	-43 27.0					
1988	04 29	12 23.49	-38 58.6	0.800	1.719	143.8	20.2	14.6
1988	05 09	12 24.71	-34 09.4					
1988	05 19	12 29.92	-29 28.6	0.874	1.747	135.6	23.9	14.9
1988	05 29	12 38.54	-25 18.4					
1988	06 08	12 49.82	-21 49.8	1.019	1.778	121.9	29.0	15.4
1988	06 18	13 03.12	-19 05.1					
1988	06 28	13 17.97	-17 01.5	1.213	1.810	108.2	32.2	15.9

(3567) 1930 VD a,e,i = 2.79, 0.31, 7 Elements MPC 11636

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 07.58	-15 13.1	2.961	3.234	97.2	17.6	18.3
1988	01 30	13 09.90	-15 50.8					
1988	02 09	13 10.19	-16 16.8	2.722	3.280	116.2	15.7	18.1
1988	02 19	13 08.34	-16 29.4					
1988	02 29	13 04.38	-16 27.2	2.528	3.323	137.2	11.7	17.8
1988	03 10	12 58.56	-16 09.5					
1988	03 20	12 51.29	-15 36.7	2.415	3.364	159.1	6.1	17.6
1988	03 30	12 43.20	-14 51.0					
1988	04 09	12 35.05	-13 56.2	2.413	3.403	169.3	3.1	17.4
1988	04 19	12 27.56	-12 57.2					
1988	04 29	12 21.34	-11 59.4	2.528	3.438	150.1	8.4	17.8
1988	05 09	12 16.81	-11 07.5					
1988	05 19	12 14.17	-10 24.7	2.742	3.471	129.2	13.1	18.2
1988	05 29	12 13.45	-09 53.4					
1988	06 08	12 14.58	-09 34.0	3.020	3.501	110.1	15.8	18.5
1988	06 18	12 17.39	-09 26.5					
1988	06 28	12 21.71	-09 30.3	3.331	3.529	92.8	16.7	18.7

1976 WD a,e,i = 2.26, 0.07, 9 Elements MPC 11504

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	12 59.03	-17 10.0	2.051	2.399	98.2	23.9	17.4
1988	01 30	13 05.00	-18 25.4					
1988	02 09	13 08.62	-19 28.1	1.802	2.393	115.1	21.9	17.1
1988	02 19	13 09.52	-20 14.9					
1988	02 29	13 07.49	-20 42.0	1.588	2.386	134.2	17.3	16.7
1988	03 10	13 02.55	-20 45.6					
1988	03 20	12 55.06	-20 22.9	1.439	2.378	154.8	10.3	16.2
1988	03 30	12 45.87	-19 33.6					
1988	04 09	12 36.16	-18 21.9	1.384	2.369	166.3	5.7	16.0
1988	04 19	12 27.24	-16 55.7					
1988	04 29	12 20.24	-15 25.5	1.432	2.359	150.1	12.3	16.3
1988	05 09	12 15.90	-14 01.7					
1988	05 19	12 14.51	-12 51.4	1.566	2.348	130.0	19.3	16.7
1988	05 29	12 16.06	-11 59.2					
1988	06 08	12 20.29	-11 26.2	1.756	2.335	112.1	23.8	17.0
1988	06 18	12 26.91	-11 12.0					
1988	06 28	12 35.61	-11 15.0	1.975	2.322	96.6	25.8	17.3

1986 TL4 a,e,i = 2.40, 0.20, 3 Elements MPC 11436

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 09.03	-03 30.4	2.246	2.623	101.3	21.6	18.8
1988	01 30	13 13.07	-03 45.4					
1988	02 09	13 14.71	-03 45.8	2.021	2.658	120.2	18.7	18.5
1988	02 19	13 13.72	-03 31.1					
1988	02 29	13 10.07	-03 01.7	1.842	2.690	141.6	13.2	18.2
1988	03 10	13 03.95	-02 19.8					
1988	03 20	12 55.87	-01 29.1	1.745	2.720	165.1	5.4	17.8
1988	03 30	12 46.62	-00 35.3					
1988	04 09	12 37.23	+00 15.4	1.758	2.747	168.9	4.0	17.7
1988	04 19	12 28.68	+00 57.1					
1988	04 29	12 21.80	+01 25.4	1.880	2.772	145.9	11.7	18.2
1988	05 09	12 17.10	+01 38.4					
1988	05 19	12 14.76	+01 35.8	2.089	2.795	125.0	17.3	18.6
1988	05 29	12 14.79	+01 18.3					
1988	06 08	12 17.00	+00 47.8	2.350	2.814	106.7	20.2	19.0
1988	06 18	12 21.17	+00 05.8					
1988	06 28	12 27.03	-00 45.8	2.633	2.831	90.5	21.0	19.3

1938 HE a,e,i = 2.33, 0.19, 6 Elements MPC 11856

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 02.17	-00 41.6	2.137	2.559	104.0	21.9	17.1
1988	01 30	13 07.72	-00 41.1					
1988	02 09	13 11.06	-00 23.9	1.857	2.524	122.1	19.3	16.7
1988	02 19	13 11.86	+00 10.8					
1988	02 29	13 09.91	+01 02.7	1.626	2.487	142.7	14.0	16.2
1988	03 10	13 05.23	+02 09.1					
1988	03 20	12 58.13	+03 25.1	1.475	2.449	164.3	6.3	15.7
1988	03 30	12 49.34	+04 42.7					
1988	04 09	12 39.91	+05 52.8	1.427	2.408	164.8	6.2	15.6
1988	04 19	12 31.02	+06 47.4					
1988	04 29	12 23.78	+07 20.6	1.482	2.367	143.2	14.8	15.9
1988	05 09	12 18.95	+07 30.4					
1988	05 19	12 16.89	+07 17.3	1.614	2.324	122.9	21.5	16.3
1988	05 29	12 17.67	+06 43.4					
1988	06 08	12 21.12	+05 51.8	1.789	2.281	105.5	25.4	16.6
1988	06 18	12 26.99	+04 45.2					
1988	06 28	12 35.00	+03 26.3	1.980	2.237	90.7	27.0	16.8

1985 CL a,e,i = 1.93, 0.10, 19 Elements MPC 11505

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 22.06	-07 04.2	1.595	1.973	97.0	29.7	16.6
1988	01 30	13 28.51	-09 12.2					
1988	02 09	13 32.00	-11 15.7	1.387	1.997	113.5	26.9	16.3
1988	02 19	13 31.93	-13 13.3					
1988	02 29	13 27.83	-15 02.5	1.209	2.019	133.0	21.0	15.8
1988	03 10	13 19.50	-16 39.1					
1988	03 20	13 07.25	-17 57.2	1.094	2.040	154.7	12.0	15.4
1988	03 30	12 52.21	-18 51.4					
1988	04 09	12 36.27	-19 20.0	1.073	2.058	165.6	7.0	15.2
1988	04 19	12 21.53	-19 26.3					
1988	04 29	12 09.78	-19 19.0	1.154	2.075	147.5	15.1	15.6
1988	05 09	12 01.97	-19 08.2					
1988	05 19	11 58.31	-19 01.8	1.314	2.090	127.5	22.6	16.1
1988	05 29	11 58.58	-19 05.3					
1988	06 08	12 02.25	-19 21.0	1.520	2.103	110.5	26.9	16.6
1988	06 18	12 08.83	-19 49.3					
1988	06 28	12 17.86	-20 29.9	1.746	2.113	96.2	28.6	16.9

1985 QR a,e,i = 3.03, 0.10, 10 Elements MPC 10403

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 06.25	-02 08.8	2.805	3.167	102.5	17.7	18.4
1988	01 30	13 09.86	-01 54.9					
1988	02 09	13 11.53	-01 26.9	2.553	3.183	121.7	15.3	18.1
1988	02 19	13 11.13	-00 44.9					
1988	02 29	13 08.66	+00 09.9	2.354	3.199	142.8	10.8	17.8
1988	03 10	13 04.30	+01 14.5					
1988	03 20	12 58.42	+02 24.9	2.244	3.214	164.4	4.8	17.4
1988	03 30	12 51.58	+03 35.3					
1988	04 09	12 44.51	+04 40.0	2.246	3.228	166.4	4.2	17.4
1988	04 19	12 37.90	+05 33.8					
1988	04 29	12 32.40	+06 13.2	2.361	3.242	145.6	10.1	17.8
1988	05 09	12 28.46	+06 36.5					
1988	05 19	12 26.33	+06 43.5	2.564	3.254	125.2	14.7	18.1
1988	05 29	12 26.09	+06 35.3					
1988	06 08	12 27.69	+06 13.7	2.825	3.266	106.8	17.3	18.4
1988	06 18	12 30.99	+05 40.5					
1988	06 28	12 35.83	+04 57.5	3.110	3.276	90.3	18.1	18.7

(3694) 1984 SH5 a,e,i = 3.95, 0.20, 5 Elements MPC 12311

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 09.80	-12 09.7	4.387	4.625	97.9	12.2	17.6
1988	01 30	13 11.07	-12 30.7					
1988	02 09	13 10.94	-12 43.5	4.099	4.640	117.6	10.9	17.4
1988	02 19	13 09.37	-12 47.5					
1988	02 29	13 06.41	-12 42.3	3.863	4.653	138.7	8.1	17.2
1988	03 10	13 02.24	-12 28.2					
1988	03 20	12 57.10	-12 05.8	3.715	4.665	160.5	4.1	16.9
1988	03 30	12 51.35	-11 36.7					
1988	04 09	12 45.43	-11 03.1	3.681	4.677	173.0	1.5	16.8
1988	04 19	12 39.76	-10 27.6					
1988	04 29	12 34.75	-09 53.0	3.767	4.687	153.0	5.6	17.0
1988	05 09	12 30.71	-09 21.9					
1988	05 19	12 27.86	-08 56.4	3.959	4.696	132.0	9.2	17.3
1988	05 29	12 26.32	-08 38.0					
1988	06 08	12 26.13	-08 27.5	4.223	4.704	112.4	11.5	17.5
1988	06 18	12 27.24	-08 25.1					
1988	06 28	12 29.59	-08 30.7	4.527	4.711	94.2	12.4	17.7

1978 VQ3 a,e,i = 2.55, 0.13, 9 Elements MPC 8383

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 02.35	-16 58.4	2.035	2.374	97.6	24.3	18.8
1988	01 30	13 08.96	-18 00.8					
1988	02 09	13 13.17	-18 47.9	1.816	2.399	114.5	22.0	18.5
1988	02 19	13 14.69	-19 16.8					
1988	02 29	13 13.35	-19 24.5	1.631	2.425	133.8	17.2	18.2
1988	03 10	13 09.26	-19 08.6					
1988	03 20	13 02.82	-18 27.8	1.512	2.451	155.1	9.8	17.8
1988	03 30	12 54.85	-17 23.9					
1988	04 09	12 46.42	-16 02.6	1.486	2.478	169.7	4.2	17.6
1988	04 19	12 38.68	-14 32.2					
1988	04 29	12 32.62	-13 02.6	1.566	2.505	152.9	10.5	18.0
1988	05 09	12 28.86	-11 42.5					
1988	05 19	12 27.64	-10 37.4	1.737	2.533	132.5	17.1	18.4
1988	05 29	12 28.97	-09 50.4					
1988	06 08	12 32.64	-09 22.0	1.970	2.560	114.2	21.2	18.8
1988	06 18	12 38.39	-09 11.0					
1988	06 28	12 45.95	-09 15.7	2.238	2.586	98.2	22.9	19.2

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 14.70	+01 37.4	2.915	3.263	101.9	17.2	17.7
1988	01 30	13 17.79	+01 32.4					
1988	02 09	13 18.92	+01 38.3	2.660	3.277	120.9	15.0	17.4
1988	02 19	13 17.98	+01 54.6					
1988	02 29	13 14.94	+02 19.9	2.456	3.291	141.7	10.8	17.1
1988	03 10	13 09.99	+02 51.3					
1988	03 20	13 03.46	+03 25.7	2.340	3.305	163.0	5.0	16.8
1988	03 30	12 55.92	+03 58.6					
1988	04 09	12 48.08	+04 25.7	2.335	3.318	167.0	3.9	16.8
1988	04 19	12 40.66	+04 43.5					
1988	04 29	12 34.30	+04 49.5	2.443	3.331	146.8	9.5	17.1
1988	05 09	12 29.49	+04 42.8					
1988	05 19	12 26.49	+04 23.5	2.643	3.343	126.3	14.1	17.4
1988	05 29	12 25.40	+03 52.4					
1988	06 08	12 26.17	+03 10.9	2.903	3.355	107.8	16.7	17.7
1988	06 18	12 28.68	+02 20.5					
1988	06 28	12 32.76	+01 22.5	3.191	3.365	91.0	17.6	18.0

(3583) Burdett a,e,i = 2.43, 0.18, 3 Elements MPC 11741

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 15.85	-05 58.3	2.194	2.539	98.8	22.5	18.1
1988 01 30	13 20.87	-06 28.4					
1988 02 09	13 23.50	-06 44.5	1.971	2.575	117.1	19.9	17.8
1988 02 19	13 23.49	-06 45.6					
1988 02 29	13 20.71	-06 31.6	1.787	2.609	138.0	14.7	17.5
1988 03 10	13 15.31	-06 03.3					
1988 03 20	13 07.70	-05 23.1	1.678	2.641	161.3	6.9	17.1
1988 03 30	12 58.64	-04 35.5					
1988 04 09	12 49.15	-03 46.4	1.674	2.672	173.8	2.3	16.9
1988 04 19	12 40.29	-03 01.8					
1988 04 29	12 32.97	-02 27.3	1.780	2.700	150.2	10.7	17.4
1988 05 09	12 27.79	-02 06.1					
1988 05 19	12 25.02	-01 59.8	1.976	2.727	128.8	16.8	17.8
1988 05 29	12 24.69	-02 08.3					
1988 06 08	12 26.64	-02 30.5	2.230	2.751	110.2	20.3	18.2
1988 06 18	12 30.64	-03 04.8					
1988 06 28	12 36.43	-03 49.6	2.513	2.774	93.9	21.4	18.5

1981 EF12 a,e,i = 2.29, 0.13, 5 Elements MPC 10538

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	12 55.76	-12 47.7	1.712	2.128	100.8	27.0	19.9
1988 01 30	13 04.38	-14 12.2					
1988 02 09	13 10.74	-15 24.3	1.468	2.102	116.5	24.8	19.5
1988 02 19	13 14.41	-16 21.0					
1988 02 29	13 15.01	-16 58.5	1.258	2.078	134.7	19.8	19.0
1988 03 10	13 12.37	-17 13.5					
1988 03 20	13 06.66	-17 02.6	1.109	2.057	155.5	11.6	18.4
1988 03 30	12 58.60	-16 25.2					
1988 04 09	12 49.46	-15 25.3	1.043	2.038	170.6	4.6	18.0
1988 04 19	12 40.74	-14 11.0					
1988 04 29	12 33.92	-12 53.9	1.072	2.022	153.2	13.0	18.3
1988 05 09	12 29.99	-11 45.2					
1988 05 19	12 29.38	-10 52.6	1.179	2.010	132.9	21.6	18.8
1988 05 29	12 32.13	-10 20.4					
1988 06 08	12 37.95	-10 09.2	1.339	2.000	115.7	27.2	19.2
1988 06 18	12 46.46	-10 17.6					
1988 06 28	12 57.30	-10 43.4	1.529	1.995	101.3	30.0	19.6

1985 RZ4 a,e,i = 2.68, 0.17, 13 Elements MPC 11830

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 19.57	-11 23.7	2.717	2.984	96.0	19.1	17.9
1988 01 30	13 23.54	-12 27.3					
1988 02 09	13 25.50	-13 23.2	2.415	2.959	114.1	17.7	17.6
1988 02 19	13 25.18	-14 09.8					
1988 02 29	13 22.41	-14 45.7	2.154	2.932	134.3	14.0	17.2
1988 03 10	13 17.20	-15 09.4					
1988 03 20	13 09.77	-15 19.5	1.966	2.904	156.1	8.0	16.8
1988 03 30	13 00.68	-15 15.9					
1988 04 09	12 50.77	-15 00.2	1.881	2.874	171.1	3.1	16.4
1988 04 19	12 41.02	-14 35.8					
1988 04 29	12 32.41	-14 07.8	1.909	2.844	153.0	9.3	16.7
1988 05 09	12 25.71	-13 41.6					
1988 05 19	12 21.36	-13 21.7	2.035	2.811	131.7	15.6	17.0
1988 05 29	12 19.57	-13 11.6					
1988 06 08	12 20.27	-13 12.9	2.224	2.778	112.7	19.7	17.3
1988 06 18	12 23.30	-13 26.5					
1988 06 28	12 28.45	-13 51.9	2.445	2.744	96.0	21.6	17.6

1981 EY14 a,e,i = 2.29, 0.12, 4 Elements MPC 10383

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 04.25	-11 35.4	1.667	2.069	99.3	28.0	19.3
1988 01 30	13 12.73	-12 52.0					
1988 02 09	13 18.67	-13 53.8	1.463	2.086	115.4	25.3	18.9
1988 02 19	13 21.63	-14 38.4					
1988 02 29	13 21.31	-15 02.9	1.290	2.106	134.4	19.7	18.5
1988 03 10	13 17.67	-15 05.0					
1988 03 20	13 11.03	-14 43.4	1.178	2.127	156.2	10.9	18.1
1988 03 30	13 02.27	-13 59.7					
1988 04 09	12 52.70	-12 59.7	1.153	2.150	173.0	3.2	17.8
1988 04 19	12 43.77	-11 52.0					
1988 04 29	12 36.78	-10 47.1	1.226	2.175	153.6	11.9	18.3
1988 05 09	12 32.53	-09 53.3					
1988 05 19	12 31.31	-09 15.9	1.383	2.200	132.9	19.7	18.8
1988 05 29	12 33.09	-08 57.1					
1988 06 08	12 37.58	-08 56.7	1.596	2.226	115.2	24.4	19.3
1988 06 18	12 44.43	-09 12.8					
1988 06 28	12 53.30	-09 43.3	1.841	2.252	100.0	26.4	19.6

(3670) 1983 BN a,e,i = 2.74, 0.02, 6 Elements MPC 12138

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 12.50	-00 06.9	2.348	2.724	101.8	20.7	17.0
1988 01 30	13 18.00	-00 07.2					
1988 02 09	13 21.37	+00 07.1	2.092	2.721	119.8	18.3	16.7
1988 02 19	13 22.39	+00 36.3					
1988 02 29	13 20.90	+01 19.2	1.883	2.717	140.0	13.5	16.3
1988 03 10	13 16.99	+02 12.8					
1988 03 20	13 10.96	+03 12.8	1.752	2.714	161.2	6.8	15.9
1988 03 30	13 03.43	+04 12.8					
1988 04 09	12 55.27	+05 05.8	1.726	2.711	167.0	4.8	15.8
1988 04 19	12 47.45	+05 45.9					
1988 04 29	12 40.84	+06 08.7	1.806	2.708	147.3	11.6	16.2
1988 05 09	12 36.11	+06 12.7					
1988 05 19	12 33.59	+05 58.3	1.972	2.705	127.1	17.4	16.5
1988 05 29	12 33.41	+05 27.0					
1988 06 08	12 35.48	+04 41.2	2.193	2.703	109.2	20.8	16.9
1988 06 18	12 39.60	+03 43.4					
1988 06 28	12 45.58	+02 35.6	2.442	2.701	93.4	22.1	17.1

1979 QK6 a,e,i = 2.18, 0.20, 4 Elements MPC 10037

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 14.00	-03 36.2	2.121	2.491	100.1	22.9	19.1
1988 01 30	13 20.30	-03 50.5					
1988 02 09	13 24.42	-03 49.2	1.841	2.462	117.9	20.7	18.7
1988 02 19	13 26.00	-03 30.9					
1988 02 29	13 24.76	-02 55.2	1.601	2.430	138.1	15.8	18.2
1988 03 10	13 20.62	-02 03.0					
1988 03 20	13 13.75	-00 57.4	1.433	2.396	160.7	7.9	17.7
1988 03 30	13 04.78	+00 15.4					
1988 04 09	12 54.74	+01 27.1	1.365	2.359	170.4	4.0	17.4
1988 04 19	12 44.86	+02 29.2					
1988 04 29	12 36.38	+03 13.9	1.403	2.320	148.1	13.3	17.7
1988 05 09	12 30.23	+03 37.3					
1988 05 19	12 26.91	+03 38.3	1.523	2.278	126.8	20.8	18.1
1988 05 29	12 26.57	+03 18.0					
1988 06 08	12 29.08	+02 38.8	1.692	2.235	108.7	25.5	18.4
1988 06 18	12 34.19	+01 43.5					
1988 06 28	12 41.61	+00 34.5	1.881	2.190	93.3	27.6	18.7

1979 SL11 a,e,i = 2.98, 0.29, 17 Elements MPC 9417

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 22.97	+01 10.7	2.769	3.092	99.8	18.3	18.0
1988 01 30	13 26.89	+00 46.1					
1988 02 09	13 28.87	+00 30.8	2.443	3.036	118.2	16.6	17.6
1988 02 19	13 28.65	+00 24.9					
1988 02 29	13 26.04	+00 27.4	2.162	2.978	138.6	12.7	17.2
1988 03 10	13 21.04	+00 36.8					
1988 03 20	13 13.82	+00 50.5	1.961	2.919	160.7	6.5	16.7
1988 03 30	13 04.89	+01 04.8					
1988 04 09	12 55.03	+01 15.5	1.867	2.860	170.6	3.3	16.4
1988 04 19	12 45.18	+01 18.6					
1988 04 29	12 36.32	+01 10.6	1.886	2.799	149.2	10.6	16.7
1988 05 09	12 29.23	+00 49.8					
1988 05 19	12 24.41	+00 15.7	2.000	2.739	127.7	17.0	17.0
1988 05 29	12 22.09	-00 31.4					
1988 06 08	12 22.26	-01 30.4	2.172	2.678	108.8	21.0	17.2
1988 06 18	12 24.79	-02 40.0					
1988 06 28	12 29.49	-03 59.0	2.370	2.617	92.4	22.8	17.4

1987 DM a,e,i = 4.01, 0.13, 4 Elements MPC 11862

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 19.10	-06 43.3	4.068	4.313	97.8	13.1	17.6
1988 01 30	13 21.11	-06 56.3					
1988 02 09	13 21.65	-07 00.8	3.786	4.329	117.4	11.7	17.4
1988 02 19	13 20.66	-06 56.7					
1988 02 29	13 18.17	-06 44.1	3.554	4.345	138.5	8.7	17.2
1988 03 10	13 14.32	-06 23.9					
1988 03 20	13 09.35	-05 57.5	3.408	4.361	160.8	4.3	16.9
1988 03 30	13 03.63	-05 27.1					
1988 04 09	12 57.60	-04 55.3	3.375	4.375	176.2	0.9	16.7
1988 04 19	12 51.73	-04 24.7					
1988 04 29	12 46.46	-03 58.1	3.463	4.389	153.8	5.8	17.0
1988 05 09	12 42.15	-03 37.7					
1988 05 19	12 39.06	-03 24.8	3.654	4.403	132.6	9.7	17.3
1988 05 29	12 37.32	-03 20.4					
1988 06 08	12 36.99	-03 24.7	3.919	4.415	112.9	12.2	17.5
1988 06 18	12 38.02	-03 37.4					
1988 06 28	12 40.36	-03 58.0	4.224	4.427	94.8	13.2	17.7

1981 EB28 a,e,i = 2.29, 0.16, 2 Elements MPC 8288

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 01.06	-05 01.7	1.713	2.154	102.6	26.5	18.4
1988 01 30	13 10.07	-05 42.0					
1988 02 09	13 16.91	-06 06.7	1.457	2.117	118.8	24.1	17.9
1988 02 19	13 21.15	-06 13.5					
1988 02 29	13 22.40	-06 00.9	1.239	2.082	137.7	18.7	17.4
1988 03 10	13 20.46	-05 28.6					
1988 03 20	13 15.42	-04 38.3	1.085	2.048	159.7	9.7	16.8
1988 03 30	13 07.89	-03 35.1					
1988 04 09	12 59.00	-02 27.7	1.018	2.018	174.4	2.8	16.3
1988 04 19	12 50.20	-01 26.0					
1988 04 29	12 42.98	-00 39.9	1.045	1.990	151.6	13.9	16.8
1988 05 09	12 38.43	-00 15.6					
1988 05 19	12 37.08	-00 15.4	1.149	1.965	130.8	22.9	17.2
1988 05 29	12 39.06	-00 38.7					
1988 06 08	12 44.16	-01 22.8	1.300	1.945	113.8	28.5	17.6
1988 06 18	12 52.04	-02 24.5					
1988 06 28	13 02.35	-03 40.8	1.476	1.930	99.8	31.3	18.0

1985 VE1 a,e,i = 2.86, 0.07, 3 Elements MPC 11639

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 18.27	-06 26.5	2.746	3.045	98.1	18.7	18.5
1988	01 30	13 22.87	-06 43.0					
1988	02 09	13 25.55	-06 47.2	2.466	3.038	116.6	16.9	18.2
1988	02 19	13 26.11	-06 38.0					
1988	02 29	13 24.46	-06 15.5	2.229	3.031	137.2	12.8	17.8
1988	03 10	13 20.65	-05 40.5					
1988	03 20	13 14.94	-04 54.8	2.069	3.023	159.7	6.6	17.4
1988	03 30	13 07.85	-04 02.2					
1988	04 09	13 00.09	-03 07.6	2.015	3.014	175.1	1.6	17.1
1988	04 19	12 52.48	-02 16.3					
1988	04 29	12 45.81	-01 33.5	2.074	3.004	152.6	8.9	17.5
1988	05 09	12 40.70	-01 03.0					
1988	05 19	12 37.53	-00 46.5	2.229	2.994	131.2	14.7	17.8
1988	05 29	12 36.47	-00 44.9					
1988	06 08	12 37.50	-00 57.3	2.449	2.983	112.1	18.4	18.1
1988	06 18	12 40.51	-01 22.6					
1988	06 28	12 45.32	-01 59.2	2.701	2.971	95.2	19.9	18.4

1971 QP a,e,i = 2.33, 0.20, 2 Elements MPC 8907

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 19.87	-10 51.7	2.445	2.730	96.1	21.0	19.0
1988	01 30	13 25.33	-11 29.9					
1988	02 09	13 28.74	-11 56.1	2.153	2.708	114.0	19.4	18.7
1988	02 19	13 29.81	-12 08.4					
1988	02 29	13 28.30	-12 05.1	1.898	2.684	134.1	15.4	18.3
1988	03 10	13 24.18	-11 45.3					
1988	03 20	13 17.62	-11 08.8	1.712	2.656	156.8	8.5	17.8
1988	03 30	13 09.17	-10 17.5					
1988	04 09	12 59.71	-09 15.7	1.626	2.626	176.9	1.2	17.3
1988	04 19	12 50.28	-08 09.8					
1988	04 29	12 41.97	-07 07.3	1.651	2.594	154.0	9.8	17.7
1988	05 09	12 35.61	-06 14.8					
1988	05 19	12 31.72	-05 36.7	1.771	2.558	131.8	17.2	18.1
1988	05 29	12 30.49	-05 15.5					
1988	06 08	12 31.88	-05 11.3	1.952	2.521	112.5	21.8	18.4
1988	06 18	12 35.68	-05 23.4					
1988	06 28	12 41.68	-05 50.2	2.162	2.481	95.9	24.1	18.6

(3601) 1979 SP9 a,e,i = 3.25, 0.15, 2 Elements MPC 11846

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 23.42	-06 34.0	3.319	3.573	96.9	15.9	18.3
1988	01 30	13 26.54	-06 48.7					
1988	02 09	13 27.93	-06 53.2	3.048	3.592	116.0	14.3	18.1
1988	02 19	13 27.47	-06 47.0					
1988	02 29	13 25.13	-06 30.2	2.822	3.609	136.9	10.8	17.8
1988	03 10	13 21.04	-06 03.9					
1988	03 20	13 15.47	-05 29.7	2.676	3.626	159.5	5.5	17.5
1988	03 30	13 08.85	-04 50.4					
1988	04 09	13 01.77	-04 09.6	2.641	3.641	176.3	1.0	17.3
1988	04 19	12 54.84	-03 30.9					
1988	04 29	12 48.67	-02 58.0	2.724	3.655	153.9	7.0	17.6
1988	05 09	12 43.71	-02 33.6					
1988	05 19	12 40.29	-02 19.4	2.909	3.668	132.4	11.7	18.0
1988	05 29	12 38.55	-02 16.2					
1988	06 08	12 38.52	-02 23.8	3.164	3.680	112.9	14.7	18.3
1988	06 18	12 40.13	-02 41.6					
1988	06 28	12 43.27	-03 08.7	3.457	3.691	95.2	15.9	18.5

1979 SQ11 a,e,i = 3.19, 0.17, 0 Elements MPC 10761

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 24.73	-08 26.7	3.483	3.715	95.9	15.3	18.3
1988 01 30	13 27.76	-08 43.7					
1988 02 09	13 29.12	-08 50.8	3.189	3.716	115.0	13.9	18.1
1988 02 19	13 28.70	-08 47.4					
1988 02 29	13 26.46	-08 33.4	2.940	3.716	135.9	10.7	17.8
1988 03 10	13 22.50	-08 09.4					
1988 03 20	13 17.06	-07 36.5	2.770	3.714	158.4	5.7	17.5
1988 03 30	13 10.55	-06 57.0					
1988 04 09	13 03.52	-06 14.2	2.710	3.711	178.1	0.5	17.1
1988 04 19	12 56.56	-05 31.7					
1988 04 29	12 50.28	-04 53.4	2.769	3.707	155.1	6.6	17.5
1988 05 09	12 45.15	-04 22.3					
1988 05 19	12 41.50	-04 00.6	2.932	3.701	133.4	11.5	17.8
1988 05 29	12 39.52	-03 49.6					
1988 06 08	12 39.26	-03 49.5	3.168	3.694	113.6	14.6	18.1
1988 06 18	12 40.66	-03 59.9					
1988 06 28	12 43.62	-04 20.2	3.442	3.685	95.7	15.9	18.3

1969 TJ1 a,e,i = 2.58, 0.04, 9 Elements MPC 11632

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 25.24	-03 16.9	2.298	2.617	97.7	21.9	17.8
1988 01 30	13 30.84	-03 55.6					
1988 02 09	13 34.23	-04 23.1	2.045	2.624	115.4	19.9	17.5
1988 02 19	13 35.13	-04 38.9					
1988 02 29	13 33.32	-04 42.9	1.830	2.631	135.6	15.3	17.2
1988 03 10	13 28.83	-04 36.1					
1988 03 20	13 21.90	-04 20.1	1.686	2.637	158.2	8.1	16.7
1988 03 30	13 13.13	-03 58.5					
1988 04 09	13 03.47	-03 35.5	1.643	2.643	175.9	1.5	16.4
1988 04 19	12 53.98	-03 16.1					
1988 04 29	12 45.69	-03 04.7	1.710	2.649	153.3	9.8	16.8
1988 05 09	12 39.39	-03 04.5					
1988 05 19	12 35.48	-03 16.9	1.870	2.653	131.7	16.5	17.3
1988 05 29	12 34.14	-03 42.3					
1988 06 08	12 35.25	-04 19.7	2.093	2.658	112.9	20.6	17.6
1988 06 18	12 38.63	-05 08.2					
1988 06 28	12 44.02	-06 06.1	2.348	2.662	96.5	22.3	17.9

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

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 30.19	-17 42.7	2.862	3.046	91.2	18.8	18.5
1988 01 30	13 34.50	-18 56.5					
1988 02 09	13 36.84	-20 03.1	2.574	3.041	108.9	17.9	18.3
1988 02 19	13 36.94	-21 00.9					
1988 02 29	13 34.63	-21 47.6	2.318	3.033	128.3	14.9	18.0
1988 03 10	13 29.87	-22 20.7					
1988 03 20	13 22.83	-22 37.8	2.127	3.023	148.9	9.8	17.6
1988 03 30	13 14.01	-22 37.1					
1988 04 09	13 04.20	-22 19.0	2.032	3.011	165.0	4.9	17.3
1988 04 19	12 54.32	-21 45.8					
1988 04 29	12 45.38	-21 02.5	2.051	2.997	155.6	8.0	17.4
1988 05 09	12 38.14	-20 15.4					
1988 05 19	12 33.12	-19 30.5	2.171	2.980	135.7	13.7	17.7
1988 05 29	12 30.55	-18 52.9					
1988 06 08	12 30.43	-18 25.8	2.364	2.962	116.6	17.8	18.0
1988 06 18	12 32.60	-18 10.8					
1988 06 28	12 36.87	-18 08.6	2.597	2.941	99.5	19.9	18.3

1981 EY35 a,e,i = 2.28, 0.14, 4 Elements MPC 10542

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 07.81	-06 11.8	1.684	2.101	100.6	27.4	18.3
1988 01 30	13 17.12	-07 23.5					
1988 02 09	13 24.22	-08 24.0	1.437	2.072	116.3	25.3	17.9
1988 02 19	13 28.65	-09 11.5					
1988 02 29	13 29.97	-09 44.4	1.225	2.046	134.7	20.1	17.4
1988 03 10	13 27.94	-10 01.4					
1988 03 20	13 22.57	-10 01.8	1.071	2.023	156.2	11.5	16.8
1988 03 30	13 14.41	-09 46.9					
1988 04 09	13 04.63	-09 20.7	1.001	2.002	177.7	1.2	16.2
1988 04 19	12 54.76	-08 49.7					
1988 04 29	12 46.42	-08 22.2	1.025	1.985	155.4	12.2	16.7
1988 05 09	12 40.81	-08 05.5					
1988 05 19	12 38.55	-08 04.0	1.128	1.972	134.2	21.6	17.2
1988 05 29	12 39.81	-08 19.9					
1988 06 08	12 44.34	-08 52.8	1.284	1.963	116.7	27.5	17.6
1988 06 18	12 51.79	-09 41.0					
1988 06 28	13 01.78	-10 42.4	1.470	1.958	102.3	30.5	18.0

(3616) 1984 JJ2 a,e,i = 2.60, 0.12, 13 Elements MPC 11851

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 10.83	+06 04.4	1.999	2.437	104.3	23.0	16.8
1988 01 30	13 18.66	+06 37.6					
1988 02 09	13 24.32	+07 30.0	1.752	2.414	121.1	20.5	16.4
1988 02 19	13 27.47	+08 41.1					
1988 02 29	13 27.85	+10 08.0	1.553	2.392	139.2	15.7	16.0
1988 03 10	13 25.40	+11 45.0					
1988 03 20	13 20.33	+13 23.6	1.429	2.372	155.5	10.0	15.6
1988 03 30	13 13.23	+14 52.8					
1988 04 09	13 05.11	+16 02.0	1.401	2.354	156.6	9.7	15.5
1988 04 19	12 57.08	+16 43.1					
1988 04 29	12 50.32	+16 52.3	1.465	2.337	141.2	15.7	15.8
1988 05 09	12 45.63	+16 30.5					
1988 05 19	12 43.49	+15 41.5	1.603	2.323	123.7	21.2	16.2
1988 05 29	12 44.03	+14 29.9					
1988 06 08	12 47.13	+13 00.9	1.787	2.311	107.9	24.7	16.5
1988 06 18	12 52.55	+11 18.5					
1988 06 28	13 00.02	+09 26.3	1.995	2.301	93.9	26.2	16.8

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

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 25.59	-05 55.2	2.185	2.498	96.6	23.0	18.6
1988 01 30	13 31.66	-06 09.5					
1988 02 09	13 35.43	-06 08.3	1.953	2.528	114.5	20.8	18.4
1988 02 19	13 36.59	-05 50.4					
1988 02 29	13 34.96	-05 15.9	1.756	2.555	135.0	15.9	18.0
1988 03 10	13 30.56	-04 25.9					
1988 03 20	13 23.69	-03 23.5	1.629	2.579	157.9	8.3	17.6
1988 03 30	13 15.01	-02 14.0					
1988 04 09	13 05.47	-01 04.7	1.603	2.601	173.6	2.5	17.3
1988 04 19	12 56.18	-00 02.9					
1988 04 29	12 48.16	+00 45.1	1.688	2.620	151.9	10.4	17.8
1988 05 09	12 42.15	+01 15.7					
1988 05 19	12 38.54	+01 27.6	1.865	2.636	130.4	17.0	18.2
1988 05 29	12 37.46	+01 21.4					
1988 06 08	12 38.78	+00 59.2	2.102	2.649	111.6	20.9	18.6
1988 06 18	12 42.28	+00 23.1					
1988 06 28	12 47.73	-00 24.6	2.367	2.659	95.1	22.4	18.9

1986 RC2 a,e,i = 1.92, 0.08, 27 Elements MPC 11631

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1988	01 20	13 10.99	-14 08.2	1.715	2.076	-1.23	-3.7	15.9
1988	01 30	13 20.42	-13 36.4					
1988	02 09	13 27.48	-12 34.2	1.474	2.081	-1.50	-3.8	15.5
1988	02 19	13 31.75	-10 56.6					
1988	02 29	13 32.84	-08 39.5	1.266	2.084	-1.88	-3.3	15.0
1988	03 10	13 30.61	-05 42.5					
1988	03 20	13 25.20	-02 10.6	1.128	2.084	-2.26	-2.3	14.4
1988	03 30	13 17.29	+01 42.2					
1988	04 09	13 08.04	+05 34.5	1.094	2.082	-2.44	-2.3	14.2
1988	04 19	12 58.88	+09 03.6					
1988	04 29	12 51.24	+11 52.3	1.170	2.078	-2.38	-3.5	14.7
1988	05 09	12 46.10	+13 53.6					
1988	05 19	12 43.94	+15 08.7	1.327	2.072	-2.16	-4.5	15.2
1988	05 29	12 44.87	+15 43.2					
1988	06 08	12 48.66	+15 44.7	1.526	2.063	-1.86	-4.7	15.6
1988	06 18	12 54.99	+15 19.7					
1988	06 28	13 03.53	+14 34.2	1.738	2.053	-1.58	-4.2	15.9

1982 TF2 a,e,i = 2.35, 0.17, 2 Elements MPC 11053

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 26.73	-10 51.8	2.488	2.746	94.5	20.9	19.1
1988	01 30	13 32.35	-11 32.0					
1988	02 09	13 35.94	-12 00.7	2.205	2.736	112.3	19.5	18.8
1988	02 19	13 37.21	-12 16.3					
1988	02 29	13 35.93	-12 17.4	1.955	2.723	132.4	15.6	18.4
1988	03 10	13 32.05	-12 03.0					
1988	03 20	13 25.73	-11 33.1	1.772	2.707	154.9	9.0	17.9
1988	03 30	13 17.48	-10 49.2					
1988	04 09	13 08.12	-09 55.1	1.688	2.689	177.4	1.0	17.4
1988	04 19	12 58.67	-08 56.5					
1988	04 29	12 50.18	-08 00.3	1.715	2.668	156.2	8.8	17.8
1988	05 09	12 43.50	-07 12.6					
1988	05 19	12 39.16	-06 37.8	1.841	2.645	133.9	16.0	18.2
1988	05 29	12 37.39	-06 18.5					
1988	06 08	12 38.15	-06 15.0	2.032	2.619	114.3	20.7	18.5
1988	06 18	12 41.29	-06 26.7					
1988	06 28	12 46.58	-06 52.3	2.256	2.591	97.4	22.9	18.8

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 26.81	-06 37.2	2.609	2.884	96.1	19.8	18.8
1988	01 30	13 32.20	-06 53.9					
1988	02 09	13 35.63	-06 57.7	2.325	2.874	114.2	18.2	18.5
1988	02 19	13 36.86	-06 47.6					
1988	02 29	13 35.72	-06 23.2	2.079	2.862	134.5	14.3	18.1
1988	03 10	13 32.19	-05 45.1					
1988	03 20	13 26.46	-04 55.0	1.905	2.848	156.9	7.9	17.7
1988	03 30	13 19.00	-03 56.9					
1988	04 09	13 10.57	-02 55.8	1.833	2.832	175.5	1.6	17.3
1988	04 19	13 02.05	-01 58.1					
1988	04 29	12 54.38	-01 09.5	1.874	2.815	154.3	8.9	17.6
1988	05 09	12 48.31	-00 34.5					
1988	05 19	12 44.30	-00 15.5	2.012	2.796	132.4	15.5	18.0
1988	05 29	12 42.60	-00 13.0					
1988	06 08	12 43.20	-00 26.2	2.214	2.775	113.2	19.7	18.3
1988	06 18	12 45.98	-00 53.6					
1988	06 28	12 50.76	-01 33.4	2.450	2.753	96.3	21.5	18.6

1979 SU11 a,e,i = 3.14, 0.17, 3 Elements MPC 11739

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 30.66	-06 39.4	3.425	3.648	95.2	15.6	18.7
1988 01 30	13 34.14	-06 52.8					
1988 02 09	13 35.98	-06 56.2	3.123	3.639	114.1	14.3	18.5
1988 02 19	13 36.02	-06 49.1					
1988 02 29	13 34.20	-06 31.7	2.862	3.629	134.8	11.2	18.2
1988 03 10	13 30.58	-06 04.6					
1988 03 20	13 25.36	-05 29.4	2.680	3.618	157.1	6.2	17.9
1988 03 30	13 18.93	-04 48.5					
1988 04 09	13 11.82	-04 05.4	2.604	3.605	176.7	0.9	17.5
1988 04 19	13 04.65	-03 24.0					
1988 04 29	12 58.05	-02 48.1	2.648	3.591	155.9	6.6	17.8
1988 05 09	12 52.55	-02 20.6					
1988 05 19	12 48.53	-02 03.6	2.796	3.575	134.2	11.7	18.1
1988 05 29	12 46.22	-01 58.2					
1988 06 08	12 45.68	-02 04.3	3.017	3.558	114.4	15.1	18.4
1988 06 18	12 46.88	-02 21.3					
1988 06 28	12 49.71	-02 48.3	3.277	3.540	96.5	16.6	18.6

1986 XH a,e,i = 2.61, 0.12, 12 Elements MPC 12005

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 25.04	-22 24.5	2.404	2.606	90.5	22.2	18.4
1988 01 30	13 31.81	-23 43.6					
1988 02 09	13 36.44	-24 52.0	2.170	2.632	106.9	21.0	18.2
1988 02 19	13 38.61	-25 47.3					
1988 02 29	13 38.10	-26 26.4	1.960	2.657	125.2	17.7	17.9
1988 03 10	13 34.86	-26 46.0					
1988 03 20	13 29.09	-26 42.9	1.804	2.681	144.9	12.3	17.6
1988 03 30	13 21.35	-26 15.1					
1988 04 09	13 12.55	-25 23.5	1.735	2.705	162.0	6.6	17.3
1988 04 19	13 03.73	-24 12.3					
1988 04 29	12 55.99	-22 48.9	1.771	2.729	157.5	8.1	17.4
1988 05 09	12 50.11	-21 22.2					
1988 05 19	12 46.59	-20 00.3	1.907	2.751	138.9	14.0	17.8
1988 05 29	12 45.60	-18 49.5					
1988 06 08	12 47.05	-17 53.4	2.119	2.772	120.2	18.4	18.2
1988 06 18	12 50.74	-17 13.2					
1988 06 28	12 56.44	-16 49.0	2.377	2.793	103.3	20.7	18.5

1979 WE2 a,e,i = 3.20, 0.14, 2 Elements MPC 12438

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 32.97	-09 04.1	3.461	3.660	93.8	15.6	18.3
1988 01 30	13 36.60	-09 20.8					
1988 02 09	13 38.60	-09 27.6	3.168	3.663	112.6	14.4	18.0
1988 02 19	13 38.81	-09 23.9					
1988 02 29	13 37.18	-09 09.5	2.914	3.664	133.2	11.4	17.8
1988 03 10	13 33.77	-08 44.7					
1988 03 20	13 28.78	-08 10.7	2.735	3.664	155.5	6.5	17.4
1988 03 30	13 22.57	-07 29.6					
1988 04 09	13 15.69	-06 44.6	2.662	3.663	178.3	0.5	17.0
1988 04 19	13 08.72	-05 59.4					
1988 04 29	13 02.27	-05 17.9	2.707	3.661	158.0	5.9	17.4
1988 05 09	12 56.88	-04 43.4					
1988 05 19	12 52.91	-04 18.4	2.860	3.657	136.1	11.1	17.7
1988 05 29	12 50.60	-04 04.3					
1988 06 08	12 50.00	-04 01.3	3.089	3.652	116.2	14.4	18.0
1988 06 18	12 51.10	-04 09.3					
1988 06 28	12 53.79	-04 27.5	3.361	3.646	98.1	16.0	18.2

1975 TJ6 a,e,i = 2.37, 0.18, 12 Elements MPC 8674

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 29.51	+02 28.9	1.922	2.288	98.7	25.2	17.7
1988 01 30	13 37.65	+02 57.9					
1988 02 09	13 43.34	+03 46.3	1.726	2.329	115.6	22.5	17.5
1988 02 19	13 46.25	+04 53.9					
1988 02 29	13 46.14	+06 17.8	1.568	2.370	134.5	17.3	17.2
1988 03 10	13 43.00	+07 52.9					
1988 03 20	13 37.09	+09 31.4	1.478	2.410	153.4	10.7	16.8
1988 03 30	13 29.08	+11 02.9					
1988 04 09	13 19.98	+12 17.4	1.483	2.449	160.2	8.0	16.8
1988 04 19	13 10.93	+13 07.5					
1988 04 29	13 03.07	+13 29.1	1.589	2.487	145.8	13.2	17.2
1988 05 09	12 57.19	+13 22.9					
1988 05 19	12 53.71	+12 52.2	1.778	2.523	127.4	18.6	17.6
1988 05 29	12 52.77	+12 01.2					
1988 06 08	12 54.23	+10 54.5	2.021	2.558	110.4	21.8	18.0
1988 06 18	12 57.86	+09 35.9					
1988 06 28	13 03.41	+08 08.7	2.292	2.591	95.2	23.0	18.3

1981 WG1 a,e,i = 2.81, 0.14, 9 Elements MPC 10160

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 34.16	-02 48.4	2.687	2.952	95.7	19.4	17.9
1988 01 30	13 39.70	-02 41.5					
1988 02 09	13 43.29	-02 20.6	2.437	2.976	113.9	17.6	17.6
1988 02 19	13 44.73	-01 45.5					
1988 02 29	13 43.89	-00 57.1	2.226	2.999	133.9	13.8	17.3
1988 03 10	13 40.82	+00 02.5					
1988 03 20	13 35.71	+01 09.6	2.088	3.021	155.2	7.9	17.0
1988 03 30	13 29.04	+02 18.9					
1988 04 09	13 21.48	+03 24.4	2.053	3.042	168.8	3.7	16.8
1988 04 19	13 13.81	+04 20.3					
1988 04 29	13 06.83	+05 01.9	2.131	3.062	152.8	8.6	17.1
1988 05 09	13 01.19	+05 26.5					
1988 05 19	12 57.31	+05 33.7	2.307	3.080	132.3	14.0	17.5
1988 05 29	12 55.41	+05 24.2					
1988 06 08	12 55.52	+04 59.9	2.549	3.098	113.5	17.5	17.8
1988 06 18	12 57.54	+04 23.0					
1988 06 28	13 01.32	+03 35.7	2.828	3.113	96.6	18.9	18.1

1984 EN a,e,i = 2.39, 0.08, 4 Elements MPC 11622

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 30.81	-11 58.0	2.015	2.291	93.2	25.4	17.3
1988 01 30	13 39.31	-13 08.8					
1988 02 09	13 45.62	-14 08.4	1.784	2.307	109.3	23.8	17.1
1988 02 19	13 49.35	-14 55.0					
1988 02 29	13 50.18	-15 27.1	1.580	2.324	127.9	19.7	16.7
1988 03 10	13 47.93	-15 42.8					
1988 03 20	13 42.67	-15 40.8	1.429	2.341	149.3	12.5	16.3
1988 03 30	13 34.89	-15 20.8					
1988 04 09	13 25.51	-14 45.3	1.363	2.359	171.6	3.5	15.8
1988 04 19	13 15.75	-13 59.1					
1988 04 29	13 06.92	-13 09.5	1.401	2.377	161.3	7.8	16.1
1988 05 09	13 00.06	-12 24.1					
1988 05 19	12 55.80	-11 48.9	1.534	2.395	139.4	16.0	16.6
1988 05 29	12 54.41	-11 27.8					
1988 06 08	12 55.79	-11 21.9	1.736	2.412	120.2	21.3	17.0
1988 06 18	12 59.72	-11 31.1					
1988 06 28	13 05.91	-11 54.1	1.979	2.430	103.7	24.0	17.4

1973 QD2 a,e,i = 3.07, 0.27, 2 Elements MPC 11057

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 36.95	-07 20.8	3.131	3.339	93.5	17.1	17.9
1988	01 30	13 41.89	-07 41.1					
1988	02 09	13 45.19	-07 51.4	2.797	3.292	111.7	16.2	17.6
1988	02 19	13 46.63	-07 50.7					
1988	02 29	13 46.05	-07 38.6	2.499	3.243	131.7	13.2	17.2
1988	03 10	13 43.39	-07 15.3					
1988	03 20	13 38.73	-06 41.8	2.271	3.193	153.6	8.0	16.8
1988	03 30	13 32.40	-06 00.2					
1988	04 09	13 24.92	-05 14.0	2.143	3.142	175.6	1.4	16.3
1988	04 19	13 17.00	-04 27.6					
1988	04 29	13 09.43	-03 45.8	2.129	3.090	158.8	6.8	16.5
1988	05 09	13 02.94	-03 13.0					
1988	05 19	12 58.09	-02 52.0	2.220	3.037	136.7	13.2	16.8
1988	05 29	12 55.24	-02 44.8					
1988	06 08	12 54.52	-02 51.6	2.385	2.983	116.7	17.7	17.1
1988	06 18	12 55.93	-03 11.7					
1988	06 28	12 59.36	-03 44.1	2.590	2.928	99.1	20.0	17.3

1979 QZ1 a,e,i = 3.12, 0.14, 1 Elements MPC 11514

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 39.57	-10 22.2	2.923	3.113	91.8	18.4	18.1
1988	01 30	13 44.82	-10 53.4					
1988	02 09	13 48.22	-11 14.0	2.667	3.141	109.8	17.2	17.9
1988	02 19	13 49.59	-11 23.3					
1988	02 29	13 48.79	-11 20.6	2.442	3.169	129.8	13.9	17.6
1988	03 10	13 45.86	-11 06.1					
1988	03 20	13 40.96	-10 40.4	2.283	3.196	151.8	8.5	17.3
1988	03 30	13 34.52	-10 05.3					
1988	04 09	13 27.14	-09 24.0	2.224	3.223	175.2	1.5	17.0
1988	04 19	13 19.55	-08 40.4					
1988	04 29	13 12.50	-07 59.2	2.279	3.249	161.4	5.7	17.2
1988	05 09	13 06.64	-07 24.4					
1988	05 19	13 02.39	-06 59.0	2.440	3.274	139.3	11.6	17.6
1988	05 29	13 00.03	-06 44.9					
1988	06 08	12 59.60	-06 42.5	2.680	3.299	119.4	15.5	18.0
1988	06 18	13 01.04	-06 51.6					
1988	06 28	13 04.23	-07 11.3	2.966	3.323	101.6	17.4	18.3

1981 VS a,e,i = 2.78, 0.29, 9 Elements MPC 11629

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 44.51	-13 22.2	3.137	3.280	89.6	17.5	18.9
1988	01 30	13 49.10	-13 39.9					
1988	02 09	13 51.88	-13 46.5	2.877	3.318	108.0	16.4	18.7
1988	02 19	13 52.68	-13 40.8					
1988	02 29	13 51.38	-13 22.2	2.646	3.353	128.5	13.4	18.4
1988	03 10	13 48.04	-12 50.6					
1988	03 20	13 42.83	-12 06.3	2.481	3.386	150.8	8.2	18.1
1988	03 30	13 36.16	-11 11.5					
1988	04 09	13 28.61	-10 09.5	2.418	3.416	174.5	1.6	17.8
1988	04 19	13 20.86	-09 04.8					
1988	04 29	13 13.62	-08 02.2	2.473	3.444	161.7	5.3	18.0
1988	05 09	13 07.50	-07 06.6					
1988	05 19	13 02.90	-06 21.1	2.639	3.469	139.2	11.0	18.4
1988	05 29	13 00.09	-05 48.0					
1988	06 08	12 59.13	-05 27.8	2.887	3.491	118.8	14.8	18.7
1988	06 18	12 59.97	-05 20.3					
1988	06 28	13 02.48	-05 24.7	3.181	3.511	100.5	16.5	19.0

6034 P-L a,e,i = 2.58, 0.23, 8 Elements MPC 10310

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 40.84	-11 49.3	2.875	3.055	91.0	18.8	19.6
1988 01 30	13 46.70	-12 11.1					
1988 02 09	13 50.82	-12 21.3	2.564	3.029	108.8	18.0	19.3
1988 02 19	13 52.94	-12 18.5					
1988 02 29	13 52.86	-12 01.5	2.282	3.002	128.6	14.9	18.9
1988 03 10	13 50.48	-11 29.8					
1988 03 20	13 45.88	-10 43.3	2.063	2.971	150.7	9.5	18.5
1988 03 30	13 39.36	-09 43.9					
1988 04 09	13 31.50	-08 35.1	1.940	2.939	174.4	1.9	18.0
1988 04 19	13 23.10	-07 22.2					
1988 04 29	13 15.04	-06 11.7	1.932	2.904	161.2	6.4	18.2
1988 05 09	13 08.15	-05 09.6					
1988 05 19	13 03.04	-04 20.5	2.030	2.867	138.4	13.5	18.5
1988 05 29	13 00.09	-03 47.2					
1988 06 08	12 59.42	-03 30.5	2.204	2.828	118.1	18.5	18.8
1988 06 18	13 00.99	-03 29.9					
1988 06 28	13 04.68	-03 43.9	2.419	2.787	100.3	21.0	19.1

1980 TK5 a,e,i = 2.94, 0.09, 9 Elements MPC 11423

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 33.87	-16 08.2	2.526	2.726	91.0	21.2	17.1
1988 01 30	13 41.34	-16 50.7					
1988 02 09	13 46.91	-17 20.8	2.269	2.737	107.8	20.1	16.8
1988 02 19	13 50.30	-17 36.8					
1988 02 29	13 51.30	-17 37.1	2.040	2.750	126.8	16.8	16.5
1988 03 10	13 49.85	-17 20.2					
1988 03 20	13 46.05	-16 45.5	1.868	2.763	148.0	11.0	16.2
1988 03 30	13 40.29	-15 53.6					
1988 04 09	13 33.24	-14 47.7	1.785	2.778	170.6	3.4	15.8
1988 04 19	13 25.76	-13 32.9					
1988 04 29	13 18.79	-12 16.1	1.811	2.793	164.0	5.7	15.9
1988 05 09	13 13.13	-11 04.3					
1988 05 19	13 09.33	-10 03.2	1.941	2.808	142.0	12.8	16.3
1988 05 29	13 07.71	-09 16.7					
1988 06 08	13 08.30	-08 46.2	2.150	2.825	122.2	17.7	16.7
1988 06 18	13 11.02	-08 31.5					
1988 06 28	13 15.70	-08 31.7	2.408	2.841	104.7	20.2	17.1

(3576) 1984 DB3 a,e,i = 2.40, 0.13, 10 Elements MPC 11731

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 48.66	-08 04.8	2.299	2.509	90.5	23.1	18.0
1988 01 30	13 55.70	-09 02.8					
1988 02 09	14 00.61	-09 51.0	2.058	2.534	107.4	21.8	17.7
1988 02 19	14 03.05	-10 28.9					
1988 02 29	14 02.74	-10 55.7	1.840	2.558	126.7	18.1	17.4
1988 03 10	13 59.54	-11 11.0					
1988 03 20	13 53.50	-11 14.5	1.678	2.581	148.7	11.6	17.0
1988 03 30	13 45.04	-11 07.2					
1988 04 09	13 34.98	-10 51.3	1.606	2.603	172.8	2.8	16.6
1988 04 19	13 24.37	-10 30.2					
1988 04 29	13 14.40	-10 09.0	1.644	2.622	162.5	6.6	16.8
1988 05 09	13 06.08	-09 52.4					
1988 05 19	13 00.08	-09 44.4	1.785	2.640	139.8	14.3	17.3
1988 05 29	12 56.71	-09 47.4					
1988 06 08	12 55.99	-10 02.2	2.001	2.656	119.8	19.4	17.7
1988 06 18	12 57.76	-10 28.6					
1988 06 28	13 01.77	-11 05.9	2.259	2.670	102.5	21.8	18.0

1969 TC2 a,e,i = 3.02, 0.12, 12 Elements MPC 11746

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 49.39	-05 12.5	3.199	3.369	91.3	17.0	18.0
1988 01 30	13 53.98	-05 39.6					
1988 02 09	13 56.86	-05 57.8	2.901	3.362	109.5	16.1	17.7
1988 02 19	13 57.83	-06 06.9					
1988 02 29	13 56.76	-06 07.0	2.635	3.354	129.6	13.2	17.4
1988 03 10	13 53.61	-05 58.6					
1988 03 20	13 48.49	-05 43.0	2.436	3.344	151.4	8.2	17.1
1988 03 30	13 41.72	-05 22.2					
1988 04 09	13 33.85	-04 59.0	2.336	3.334	173.5	2.0	16.7
1988 04 19	13 25.54	-04 36.8					
1988 04 29	13 17.55	-04 19.0	2.354	3.322	160.8	5.7	16.9
1988 05 09	13 10.56	-04 08.7					
1988 05 19	13 05.09	-04 07.8	2.480	3.309	138.8	11.6	17.2
1988 05 29	13 01.48	-04 17.4					
1988 06 08	12 59.84	-04 37.8	2.685	3.295	118.7	15.7	17.5
1988 06 18	13 00.17	-05 08.3					
1988 06 28	13 02.36	-05 48.3	2.937	3.280	100.6	17.7	17.7

1981 ED25 a,e,i = 2.25, 0.23, 4 Elements MPC 8793

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 39.48	-11 42.3	2.390	2.605	91.3	22.2	19.9
1988 01 30	13 47.23	-12 20.2					
1988 02 09	13 53.18	-12 46.2	2.085	2.569	108.1	21.4	19.6
1988 02 19	13 56.96	-12 58.7					
1988 02 29	13 58.24	-12 55.8	1.806	2.530	127.1	18.2	19.1
1988 03 10	13 56.79	-12 36.1					
1988 03 20	13 52.52	-11 58.7	1.582	2.488	148.7	12.0	18.6
1988 03 30	13 45.64	-11 04.3					
1988 04 09	13 36.80	-09 56.1	1.446	2.443	172.8	3.0	18.0
1988 04 19	13 26.95	-08 39.8					
1988 04 29	13 17.35	-07 23.8	1.417	2.396	162.3	7.4	18.1
1988 05 09	13 09.15	-06 16.4					
1988 05 19	13 03.24	-05 24.3	1.487	2.346	138.9	16.5	18.5
1988 05 29	13 00.13	-04 51.5					
1988 06 08	12 59.96	-04 39.0	1.628	2.295	118.7	22.8	18.8
1988 06 18	13 02.62	-04 46.0					
1988 06 28	13 07.91	-05 10.6	1.803	2.242	101.6	26.4	19.1

(3538) 6548 P-L a,e,i = 2.64, 0.27, 4 Elements MPC 11504

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 49.15	-09 45.8	2.586	2.763	89.8	20.9	18.7
1988 01 30	13 55.52	-10 06.0					
1988 02 09	13 59.86	-10 13.5	2.357	2.815	107.5	19.5	18.5
1988 02 19	14 01.92	-10 07.3					
1988 02 29	14 01.54	-09 47.1	2.154	2.865	127.4	16.0	18.2
1988 03 10	13 58.70	-09 13.3					
1988 03 20	13 53.55	-08 27.2	2.011	2.914	149.6	10.0	17.9
1988 03 30	13 46.54	-07 31.6					
1988 04 09	13 38.33	-06 31.2	1.963	2.959	172.8	2.4	17.6
1988 04 19	13 29.78	-05 31.2					
1988 04 29	13 21.76	-04 37.4	2.030	3.003	161.9	6.0	17.8
1988 05 09	13 15.03	-03 54.2					
1988 05 19	13 10.08	-03 24.5	2.202	3.044	139.6	12.4	18.3
1988 05 29	13 07.19	-03 09.6					
1988 06 08	13 06.40	-03 09.1	2.453	3.083	119.6	16.6	18.7
1988 06 18	13 07.63	-03 21.8					
1988 06 28	13 10.71	-03 46.2	2.750	3.120	101.7	18.6	19.0

1949 QL a,e,i = 2.22, 0.20, 6 Elements MPC 11856

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 49.84	-15 15.7	2.504	2.653	87.7	21.8	18.5
1988 01 30	13 57.01	-16 21.6					
1988 02 09	14 02.28	-17 19.5	2.221	2.645	104.4	21.2	18.3
1988 02 19	14 05.31	-18 08.0					
1988 02 29	14 05.76	-18 45.5	1.957	2.633	123.2	18.4	17.9
1988 03 10	14 03.41	-19 10.1					
1988 03 20	13 58.19	-19 19.6	1.745	2.618	144.3	12.8	17.5
1988 03 30	13 50.35	-19 12.1					
1988 04 09	13 40.53	-18 47.6	1.616	2.600	166.3	5.2	17.0
1988 04 19	13 29.74	-18 08.0					
1988 04 29	13 19.20	-17 18.3	1.596	2.579	164.1	6.1	17.0
1988 05 09	13 10.06	-16 25.6					
1988 05 19	13 03.19	-15 36.8	1.680	2.555	142.1	14.1	17.4
1988 05 29	12 59.06	-14 57.9					
1988 06 08	12 57.81	-14 32.5	1.842	2.528	121.7	20.0	17.7
1988 06 18	12 59.31	-14 22.0					
1988 06 28	13 03.36	-14 26.4	2.048	2.498	104.0	23.3	18.0

1979 XK a,e,i = 2.41, 0.22, 1 Elements MPC 8675

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 28.64	-08 18.7	1.581	1.934	95.0	30.5	17.6
1988 01 30	13 40.53	-09 22.1					
1988 02 09	13 50.01	-10 09.8	1.399	1.966	109.7	28.2	17.3
1988 02 19	13 56.64	-10 40.3					
1988 02 29	13 59.99	-10 52.6	1.240	2.002	127.4	23.2	16.9
1988 03 10	13 59.82	-10 46.1					
1988 03 20	13 56.13	-10 21.5	1.127	2.043	148.4	14.8	16.5
1988 03 30	13 49.41	-09 41.3					
1988 04 09	13 40.69	-08 51.2	1.091	2.088	172.1	3.8	16.1
1988 04 19	13 31.34	-07 58.6					
1988 04 29	13 22.85	-07 12.2	1.150	2.135	163.4	7.7	16.4
1988 05 09	13 16.39	-06 38.9					
1988 05 19	13 12.64	-06 22.5	1.299	2.184	141.5	16.8	17.0
1988 05 29	13 11.84	-06 24.4					
1988 06 08	13 13.86	-06 43.2	1.516	2.234	122.7	22.5	17.6
1988 06 18	13 18.41	-07 16.9					
1988 06 28	13 25.18	-08 03.0	1.775	2.285	106.7	25.2	18.1

1984 FC a,e,i = 2.47, 0.05, 6 Elements MPC 11424

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 44.38	-08 12.7	2.223	2.453	91.4	23.6	17.7
1988 01 30	13 52.50	-09 06.9					
1988 02 09	13 58.59	-09 50.5	1.975	2.464	107.9	22.4	17.4
1988 02 19	14 02.29	-10 22.7					
1988 02 29	14 03.30	-10 42.7	1.751	2.474	126.7	18.7	17.0
1988 03 10	14 01.43	-10 50.2					
1988 03 20	13 56.69	-10 45.0	1.582	2.484	148.1	12.2	16.6
1988 03 30	13 49.42	-10 28.4					
1988 04 09	13 40.36	-10 03.1	1.499	2.494	171.9	3.2	16.1
1988 04 19	13 30.56	-09 33.4					
1988 04 29	13 21.23	-09 04.7	1.521	2.504	163.8	6.4	16.3
1988 05 09	13 13.41	-08 42.4					
1988 05 19	13 07.85	-08 30.6	1.644	2.514	141.2	14.6	16.8
1988 05 29	13 04.94	-08 31.7					
1988 06 08	13 04.71	-08 46.3	1.842	2.523	121.4	20.1	17.2
1988 06 18	13 07.04	-09 13.8					
1988 06 28	13 11.67	-09 53.2	2.082	2.532	104.3	22.9	17.6

1981 EB19 a,e,i = 2.25, 0.23, 2 Elements MPC 9751

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 37.07	-09 37.1	2.213	2.463	92.6	23.5	19.8
1988 01 30	13 45.74	-10 19.4					
1988 02 09	13 52.65	-10 49.9	1.911	2.418	108.9	22.7	19.4
1988 02 19	13 57.40	-11 07.0					
1988 02 29	13 59.62	-11 08.9	1.634	2.370	127.4	19.4	18.9
1988 03 10	13 59.00	-10 54.5					
1988 03 20	13 55.36	-10 22.9	1.412	2.320	148.6	12.9	18.3
1988 03 30	13 48.85	-09 35.0					
1988 04 09	13 40.08	-08 34.3	1.272	2.269	172.3	3.4	17.7
1988 04 19	13 30.05	-07 26.7					
1988 04 29	13 20.12	-06 20.9	1.235	2.216	162.4	7.9	17.8
1988 05 09	13 11.62	-05 25.5					
1988 05 19	13 05.58	-04 47.0	1.293	2.162	139.2	17.8	18.1
1988 05 29	13 02.60	-04 29.3					
1988 06 08	13 02.84	-04 32.9	1.416	2.108	119.3	24.8	18.5
1988 06 18	13 06.18	-04 56.6					
1988 06 28	13 12.39	-05 38.2	1.573	2.054	102.8	28.9	18.8

(3589) 1984 AB1 a,e,i = 2.25, 0.16, 4 Elements MPC 11831

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 49.54	-06 16.1	2.323	2.537	90.9	22.8	18.4
1988 01 30	13 57.10	-06 36.6					
1988 02 09	14 02.62	-06 43.5	2.074	2.556	107.9	21.5	18.1
1988 02 19	14 05.77	-06 36.0					
1988 02 29	14 06.28	-06 13.9	1.849	2.573	127.3	17.8	17.8
1988 03 10	14 03.99	-05 37.7					
1988 03 20	13 58.96	-04 49.0	1.681	2.586	149.0	11.4	17.4
1988 03 30	13 51.52	-03 51.8					
1988 04 09	13 42.42	-02 51.4	1.604	2.597	170.6	3.6	17.0
1988 04 19	13 32.63	-01 54.5					
1988 04 29	13 23.27	-01 07.7	1.636	2.605	160.0	7.6	17.2
1988 05 09	13 15.33	-00 35.9					
1988 05 19	13 09.50	-00 21.6	1.769	2.611	138.0	15.0	17.7
1988 05 29	13 06.16	-00 25.3					
1988 06 08	13 05.37	-00 45.7	1.974	2.613	118.3	20.0	18.0
1988 06 18	13 07.01	-01 20.7					
1988 06 28	13 10.86	-02 08.1	2.219	2.613	101.1	22.4	18.4

1982 DR2 a,e,i = 3.20, 0.08, 16 Elements MPC 11630

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 01 20	13 45.08	-27 35.5	3.044	3.107	84.4	18.4	18.2
1988 01 30	13 51.82	-28 52.0					
1988 02 09	13 56.78	-30 00.9	2.785	3.122	100.6	18.1	18.0
1988 02 19	13 59.68	-31 00.4					
1988 02 29	14 00.32	-31 48.0	2.545	3.137	118.2	16.2	17.8
1988 03 10	13 58.60	-32 21.1					
1988 03 20	13 54.59	-32 36.5	2.351	3.153	136.9	12.5	17.5
1988 03 30	13 48.59	-32 31.6					
1988 04 09	13 41.21	-32 05.0	2.236	3.168	154.2	7.9	17.2
1988 04 19	13 33.22	-31 17.5					
1988 04 29	13 25.53	-30 12.8	2.222	3.184	159.2	6.5	17.2
1988 05 09	13 18.97	-28 56.8					
1988 05 19	13 14.11	-27 36.2	2.315	3.199	145.4	10.3	17.4
1988 05 29	13 11.35	-26 17.9					
1988 06 08	13 10.77	-25 07.3	2.497	3.215	127.3	14.5	17.7
1988 06 18	13 12.34	-24 07.7					
1988 06 28	13 15.90	-23 21.0	2.741	3.230	109.8	17.2	18.0

(3679) 1984 DT a,e,i = 2.20, 0.22, 4 Elements MPC 12198

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 52.07	-15 18.5	2.542	2.680	87.2	21.5	18.6
1988	01 30	13 59.18	-16 14.5					
1988	02 09	14 04.38	-17 01.2	2.265	2.681	104.1	20.9	18.3
1988	02 19	14 07.35	-17 37.4					
1988	02 29	14 07.76	-18 01.4	2.006	2.678	123.0	18.1	18.0
1988	03 10	14 05.43	-18 11.4					
1988	03 20	14 00.31	-18 05.8	1.797	2.671	144.4	12.5	17.6
1988	03 30	13 52.68	-17 43.3					
1988	04 09	13 43.17	-17 04.8	1.674	2.661	167.3	4.8	17.1
1988	04 19	13 32.74	-16 13.1					
1988	04 29	13 22.56	-15 14.0	1.661	2.647	165.1	5.6	17.1
1988	05 09	13 13.71	-14 14.4					
1988	05 19	13 06.99	-13 21.2	1.754	2.629	142.5	13.6	17.5
1988	05 29	13 02.88	-12 39.6					
1988	06 08	13 01.49	-12 12.5	1.926	2.608	121.8	19.3	17.9
1988	06 18	13 02.72	-12 00.9					
1988	06 28	13 06.39	-12 04.5	2.144	2.584	103.9	22.5	18.2

1952 QX a,e,i = 2.24, 0.17, 5 Elements MPC 11629

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 52.57	-05 44.1	2.421	2.620	90.4	22.1	18.4
1988	01 30	14 00.01	-06 02.9					
1988	02 09	14 05.51	-06 08.6	2.155	2.625	107.4	21.0	18.2
1988	02 19	14 08.74	-06 00.6					
1988	02 29	14 09.43	-05 38.4	1.914	2.628	126.7	17.6	17.8
1988	03 10	14 07.40	-05 02.7					
1988	03 20	14 02.65	-04 15.2	1.728	2.628	148.2	11.5	17.4
1988	03 30	13 55.47	-03 19.3					
1988	04 09	13 46.51	-02 20.4	1.633	2.624	169.5	4.0	17.0
1988	04 19	13 36.70	-01 24.9					
1988	04 29	13 27.14	-00 39.4	1.647	2.618	160.4	7.4	17.1
1988	05 09	13 18.86	-00 08.7					
1988	05 19	13 12.59	+00 04.3	1.764	2.609	138.5	14.9	17.5
1988	05 29	13 08.78	-00 00.8					
1988	06 08	13 07.55	-00 22.8	1.953	2.597	118.6	20.1	17.9
1988	06 18	13 08.79	-00 59.8					
1988	06 28	13 12.33	-01 49.6	2.182	2.582	101.3	22.7	18.2

(3562) 1984 AZ a,e,i = 2.34, 0.15, 6 Elements MPC 11627

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 33.55	-02 21.1	1.632	1.993	96.0	29.4	17.0
1988	01 30	13 45.47	-02 55.3					
1988	02 09	13 55.14	-03 13.3	1.432	2.007	110.8	27.4	16.7
1988	02 19	14 02.10	-03 14.2					
1988	02 29	14 05.92	-02 58.1	1.257	2.025	128.1	22.6	16.3
1988	03 10	14 06.31	-02 26.7					
1988	03 20	14 03.19	-01 42.9	1.131	2.046	148.3	14.8	15.8
1988	03 30	13 56.91	-00 52.9					
1988	04 09	13 48.38	-00 04.6	1.081	2.071	167.9	5.8	15.5
1988	04 19	13 38.88	+00 33.7					
1988	04 29	13 29.92	+00 54.4	1.125	2.099	159.8	9.6	15.7
1988	05 09	13 22.79	+00 53.7					
1988	05 19	13 18.28	+00 31.3	1.256	2.129	139.5	18.0	16.3
1988	05 29	13 16.75	-00 10.9					
1988	06 08	13 18.16	-01 09.7	1.452	2.161	121.4	23.6	16.8
1988	06 18	13 22.25	-02 21.4					
1988	06 28	13 28.71	-03 43.1	1.687	2.195	105.8	26.5	17.2

1982 SA4 a,e,i = 2.27, 0.19, 5 Elements MPC 9067

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	01 20	13 52.46	-09 00.9	2.422	2.603	89.3	22.2	18.8
1988	01 30	14 00.37	-09 47.5					
1988	02 09	14 06.49	-10 24.4	2.126	2.577	105.9	21.6	18.5
1988	02 19	14 10.47	-10 50.6					
1988	02 29	14 11.95	-11 05.3	1.852	2.548	124.5	18.7	18.1
1988	03 10	14 10.67	-11 07.8					
1988	03 20	14 06.48	-10 57.7	1.630	2.516	145.8	12.9	17.6
1988	03 30	13 59.54	-10 35.7					
1988	04 09	13 50.40	-10 03.8	1.491	2.483	169.5	4.2	17.1
1988	04 19	13 39.96	-09 26.0					
1988	04 29	13 29.44	-08 47.9	1.458	2.446	165.6	5.9	17.1
1988	05 09	13 20.08	-08 15.7					
1988	05 19	13 12.84	-07 54.5	1.528	2.408	142.1	15.0	17.5
1988	05 29	13 08.33	-07 47.7					
1988	06 08	13 06.76	-07 56.7	1.674	2.368	121.5	21.4	17.8
1988	06 18	13 08.08	-08 21.2					
1988	06 28	13 12.09	-08 59.9	1.860	2.326	104.1	25.1	18.1

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 06.81	-11 17.5	3.145	3.538	105.5	15.6	18.0
1988	02 19	14 08.95	-11 23.2					
1988	02 29	14 09.22	-11 19.0	2.842	3.506	125.1	13.4	17.7
1988	03 10	14 07.57	-11 04.7					
1988	03 20	14 04.01	-10 40.5	2.599	3.473	146.5	9.1	17.3
1988	03 30	13 58.76	-10 07.6					
1988	04 09	13 52.22	-09 28.3	2.450	3.439	169.2	3.1	16.9
1988	04 19	13 44.93	-08 45.4					
1988	04 29	13 37.58	-08 03.0	2.414	3.403	167.0	3.8	16.9
1988	05 09	13 30.86	-07 25.0					
1988	05 19	13 25.32	-06 54.8	2.491	3.367	144.5	10.0	17.2
1988	05 29	13 21.40	-06 35.0					
1988	06 08	13 19.32	-06 26.8	2.656	3.330	123.8	14.7	17.5
1988	06 18	13 19.16	-06 30.5					
1988	06 28	13 20.90	-06 45.6	2.875	3.291	105.2	17.3	17.7
1988	07 08	13 24.41	-07 11.1					
1988	07 18	13 29.54	-07 45.9	3.116	3.253	88.5	18.2	17.9

(3631) Sigyn a,e,i = 3.09, 0.08, 14 Elements MPC 11991

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 03.92	-00 37.8	2.682	3.151	109.4	17.2	15.8
1988	02 19	14 07.13	+00 07.1					
1988	02 29	14 08.30	+01 05.3	2.423	3.135	128.3	14.4	15.5
1988	03 10	14 07.38	+02 14.8					
1988	03 20	14 04.38	+03 32.4	2.230	3.119	147.9	9.8	15.2
1988	03 30	13 59.55	+04 53.1					
1988	04 09	13 53.34	+06 10.8	2.133	3.104	162.6	5.5	14.9
1988	04 19	13 46.40	+07 19.2					
1988	04 29	13 39.46	+08 12.5	2.146	3.088	154.9	7.9	15.0
1988	05 09	13 33.27	+08 47.0					
1988	05 19	13 28.40	+09 01.4	2.259	3.072	136.4	13.1	15.3
1988	05 29	13 25.28	+08 56.1					
1988	06 08	13 24.10	+08 33.0	2.445	3.056	118.0	17.1	15.6
1988	06 18	13 24.90	+07 54.7					
1988	06 28	13 27.61	+07 03.7	2.675	3.040	101.1	19.2	15.8
1988	07 08	13 32.08	+06 02.9					
1988	07 18	13 38.14	+04 54.2	2.921	3.024	85.9	19.6	16.0

1977 CD a,e,i = 1.94, 0.08, 22 Elements MPC 12320

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 02 09	13 56.57	-12 07.1	1.354	1.901	107.6	29.7	16.7
1988 02 19	14 05.29	-10 39.9					
1988 02 29	14 10.88	-08 35.8	1.168	1.921	125.5	24.8	16.3
1988 03 10	14 12.99	-05 54.0					
1988 03 20	14 11.41	-02 38.0	1.034	1.942	146.2	16.6	15.8
1988 03 30	14 06.39	+01 00.9					
1988 04 09	13 58.75	+04 44.0	0.983	1.962	162.7	8.7	15.4
1988 04 19	13 49.75	+08 08.7					
1988 04 29	13 40.98	+10 54.9	1.033	1.982	152.6	13.5	15.7
1988 05 09	13 33.85	+12 52.2					
1988 05 19	13 29.28	+13 59.5	1.167	2.001	133.2	21.6	16.3
1988 05 29	13 27.74	+14 22.2					
1988 06 08	13 29.20	+14 08.6	1.356	2.018	116.0	26.9	16.8
1988 06 18	13 33.43	+13 26.7					
1988 06 28	13 40.12	+12 23.6	1.571	2.034	101.5	29.3	17.2
1988 07 08	13 48.89	+11 05.1					
1988 07 18	13 59.44	+09 35.6	1.794	2.049	89.2	29.7	17.5

1981 ET13 a,e,i = 2.28, 0.22, 4 Elements MPC 10538

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 02 09	13 44.61	-16 47.1	1.323	1.885	108.5	29.7	17.6
1988 02 19	13 54.80	-18 21.4					
1988 02 29	14 02.47	-19 43.2	1.110	1.851	123.5	26.5	17.1
1988 03 10	14 07.14	-20 49.8					
1988 03 20	14 08.31	-21 37.5	0.938	1.823	141.1	20.1	16.5
1988 03 30	14 05.85	-22 01.9					
1988 04 09	14 00.16	-22 00.0	0.825	1.802	160.9	10.5	15.9
1988 04 19	13 52.29	-21 31.1					
1988 04 29	13 43.96	-20 40.2	0.790	1.788	168.5	6.4	15.7
1988 05 09	13 37.01	-19 37.7					
1988 05 19	13 32.89	-18 35.7	0.834	1.782	149.6	16.7	16.1
1988 05 29	13 32.42	-17 45.2					
1988 06 08	13 35.74	-17 12.4	0.944	1.784	131.2	25.3	16.7
1988 06 18	13 42.60	-16 59.2					
1988 06 28	13 52.58	-17 04.8	1.098	1.795	116.1	30.6	17.1
1988 07 08	14 05.17	-17 26.2					
1988 07 18	14 19.97	-17 59.8	1.282	1.813	103.6	33.0	17.6

1985 UB5 a,e,i = 3.01, 0.11, 11 Elements MPC 12317

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 02 09	14 12.10	-14 46.3	2.975	3.340	103.1	16.7	17.8
1988 02 19	14 14.95	-14 44.3					
1988 02 29	14 15.83	-14 30.2	2.700	3.339	122.5	14.5	17.5
1988 03 10	14 14.67	-14 03.6					
1988 03 20	14 11.51	-13 24.5	2.481	3.337	143.9	10.1	17.2
1988 03 30	14 06.56	-12 34.0					
1988 04 09	14 00.25	-11 34.5	2.351	3.334	166.8	3.9	16.8
1988 04 19	13 53.15	-10 29.5					
1988 04 29	13 45.97	-09 23.8	2.335	3.330	169.5	3.2	16.7
1988 05 09	13 39.40	-08 22.4					
1988 05 19	13 34.02	-07 29.6	2.432	3.325	146.7	9.6	17.1
1988 05 29	13 30.27	-06 48.5					
1988 06 08	13 28.34	-06 20.6	2.620	3.318	125.8	14.4	17.4
1988 06 18	13 28.31	-06 06.3					
1988 06 28	13 30.14	-06 05.0	2.866	3.311	107.1	17.1	17.7
1988 07 08	13 33.68	-06 15.4					
1988 07 18	13 38.79	-06 35.9	3.138	3.302	90.2	17.9	17.9

1936 PB a,e,i = 2.67, 0.32, 7 Elements MPC 11856

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 02 09	14 07.37	-21 09.0	2.262	2.648	101.9	21.4	17.3
1988 02 19	14 12.88	-22 13.9					
1988 02 29	14 16.21	-23 10.3	1.947	2.579	119.2	19.6	16.9
1988 03 10	14 17.02	-23 56.4					
1988 03 20	14 15.01	-24 29.1	1.677	2.509	138.3	15.3	16.4
1988 03 30	14 10.13	-24 45.1					
1988 04 09	14 02.67	-24 41.5	1.479	2.439	158.5	8.7	15.8
1988 04 19	13 53.30	-24 16.4					
1988 04 29	13 43.18	-23 31.6	1.376	2.367	166.7	5.6	15.5
1988 05 09	13 33.66	-22 32.2					
1988 05 19	13 25.98	-21 26.6	1.374	2.297	148.2	13.4	15.7
1988 05 29	13 21.05	-20 23.8					
1988 06 08	13 19.34	-19 31.4	1.453	2.227	128.1	21.0	16.0
1988 06 18	13 20.93	-18 53.9					
1988 06 28	13 25.69	-18 33.5	1.582	2.159	110.5	26.2	16.2
1988 07 08	13 33.34	-18 30.0					
1988 07 18	13 43.58	-18 41.8	1.733	2.094	95.6	28.9	16.4

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

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 02 09	14 11.91	-15 46.7	2.375	2.766	102.8	20.3	17.5
1988 02 19	14 16.51	-16 19.7					
1988 02 29	14 18.87	-16 41.5	2.106	2.751	121.1	18.0	17.1
1988 03 10	14 18.76	-16 51.0					
1988 03 20	14 16.11	-16 47.1	1.885	2.736	141.6	13.1	16.7
1988 03 30	14 11.03	-16 29.3					
1988 04 09	14 03.98	-15 58.5	1.744	2.721	164.1	5.8	16.3
1988 04 19	13 55.68	-15 16.9					
1988 04 29	13 47.10	-14 29.1	1.706	2.706	171.1	3.3	16.1
1988 05 09	13 39.27	-13 40.7					
1988 05 19	13 33.01	-12 57.4	1.776	2.691	148.4	11.3	16.5
1988 05 29	13 28.92	-12 24.1					
1988 06 08	13 27.28	-12 03.7	1.931	2.676	127.7	17.5	16.9
1988 06 18	13 28.11	-11 57.2					
1988 06 28	13 31.32	-12 04.6	2.142	2.661	109.6	21.1	17.2
1988 07 08	13 36.66	-12 24.7					
1988 07 18	13 43.94	-12 55.8	2.379	2.647	93.7	22.5	17.4

(3535) 1979 SN11 a,e,i = 2.30, 0.18, 2 Elements MPC 11503

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988 02 09	14 20.72	-15 49.2	2.143	2.521	100.8	22.6	18.6
1988 02 19	14 25.39	-16 17.0					
1988 02 29	14 27.46	-16 31.8	1.918	2.553	119.2	19.8	18.3
1988 03 10	14 26.72	-16 32.6					
1988 03 20	14 23.09	-16 18.5	1.736	2.582	140.2	14.3	18.0
1988 03 30	14 16.77	-15 49.3					
1988 04 09	14 08.31	-15 06.4	1.632	2.608	163.6	6.2	17.6
1988 04 19	13 58.60	-14 13.2					
1988 04 29	13 48.77	-13 15.3	1.632	2.632	171.4	3.3	17.4
1988 05 09	13 39.92	-12 19.2					
1988 05 19	13 32.90	-11 31.1	1.741	2.654	148.0	11.7	17.9
1988 05 29	13 28.26	-10 55.4					
1988 06 08	13 26.19	-10 34.3	1.936	2.672	126.9	17.7	18.4
1988 06 18	13 26.64	-10 28.3					
1988 06 28	13 29.45	-10 36.5	2.185	2.688	108.6	21.0	18.8
1988 07 08	13 34.33	-10 57.2					
1988 07 18	13 41.04	-11 28.8	2.458	2.701	92.5	22.1	19.0

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 21.96	-12 40.3	2.307	2.684	101.5	21.1	19.0
1988	02 19	14 25.95	-12 49.9					
1988	02 29	14 27.48	-12 46.5	2.074	2.713	120.4	18.4	18.7
1988	03 10	14 26.39	-12 29.8					
1988	03 20	14 22.62	-11 59.8	1.886	2.738	141.7	13.0	18.3
1988	03 30	14 16.39	-11 17.7					
1988	04 09	14 08.24	-10 26.3	1.781	2.761	165.2	5.3	17.9
1988	04 19	13 58.95	-09 29.7					
1988	04 29	13 49.54	-08 33.7	1.784	2.781	169.8	3.7	17.9
1988	05 09	13 40.99	-07 44.1					
1988	05 19	13 34.08	-07 05.5	1.898	2.798	146.6	11.5	18.3
1988	05 29	13 29.35	-06 41.0					
1988	06 08	13 26.98	-06 31.5	2.097	2.812	125.6	17.1	18.7
1988	06 18	13 26.97	-06 36.7					
1988	06 28	13 29.19	-06 55.2	2.350	2.823	107.2	20.1	19.1
1988	07 08	13 33.40	-07 25.2					
1988	07 18	13 39.38	-08 05.0	2.626	2.831	90.9	21.0	19.4

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 22.58	-13 53.2	2.860	3.198	101.0	17.6	18.6
1988	02 19	14 25.46	-14 12.6					
1988	02 29	14 26.26	-14 22.4	2.583	3.197	120.2	15.5	18.3
1988	03 10	14 24.85	-14 22.0					
1988	03 20	14 21.21	-14 11.0	2.355	3.194	141.4	11.2	18.0
1988	03 30	14 15.50	-13 49.9					
1988	04 09	14 08.13	-13 19.8	2.213	3.189	164.4	4.8	17.6
1988	04 19	13 59.72	-12 43.2					
1988	04 29	13 51.06	-12 03.8	2.182	3.182	171.7	2.6	17.5
1988	05 09	13 42.96	-11 25.7					
1988	05 19	13 36.12	-10 53.0	2.265	3.172	148.5	9.6	17.8
1988	05 29	13 31.06	-10 29.1					
1988	06 08	13 28.05	-10 15.9	2.440	3.160	127.3	14.8	18.2
1988	06 18	13 27.16	-10 14.4					
1988	06 28	13 28.34	-10 24.4	2.675	3.146	108.3	17.9	18.4
1988	07 08	13 31.45	-10 45.1					
1988	07 18	13 36.31	-11 15.3	2.936	3.129	91.4	18.9	18.7

(3598) Saucier a,e,i = 3.17, 0.11, 1 Elements MPC 11845

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 12.11	-12 45.1	2.484	2.883	103.8	19.4	16.7
1988	02 19	14 16.72	-13 05.2					
1988	02 29	14 19.21	-13 13.9	2.219	2.871	122.2	17.0	16.4
1988	03 10	14 19.40	-13 10.9					
1988	03 20	14 17.25	-12 55.9	2.004	2.860	142.7	12.2	16.0
1988	03 30	14 12.89	-12 29.8					
1988	04 09	14 06.76	-11 54.4	1.871	2.851	165.2	5.2	15.6
1988	04 19	13 59.50	-11 12.9					
1988	04 29	13 51.97	-10 30.0	1.844	2.843	171.3	3.1	15.5
1988	05 09	13 45.06	-09 50.6					
1988	05 19	13 39.50	-09 19.1	1.923	2.837	148.7	10.7	15.9
1988	05 29	13 35.85	-08 58.9					
1988	06 08	13 34.36	-08 51.7	2.090	2.832	128.2	16.4	16.2
1988	06 18	13 35.11	-08 57.8					
1988	06 28	13 38.02	-09 16.5	2.314	2.829	110.1	19.7	16.5
1988	07 08	13 42.91	-09 46.4					
1988	07 18	13 49.59	-10 25.8	2.567	2.827	94.1	21.0	16.8

(3703) 1978 PU3 a,e,i = 2.33, 0.13, 7 Elements MPC 12319

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 13.46	-10 29.2	2.082	2.513	104.2	22.4	18.9
1988	02 19	14 19.24	-10 26.2					
1988	02 29	14 22.66	-10 07.4	1.815	2.489	122.3	19.7	18.5
1988	03 10	14 23.46	-09 32.1					
1988	03 20	14 21.44	-08 40.6	1.596	2.464	142.8	14.1	18.1
1988	03 30	14 16.68	-07 34.6					
1988	04 09	14 09.60	-06 18.3	1.457	2.438	165.0	6.1	17.6
1988	04 19	14 00.95	-04 58.1					
1988	04 29	13 51.84	-03 42.3	1.419	2.411	166.8	5.5	17.5
1988	05 09	13 43.44	-02 38.8					
1988	05 19	13 36.73	-01 53.6	1.484	2.382	144.7	14.2	17.8
1988	05 29	13 32.44	-01 30.0					
1988	06 08	13 30.86	-01 27.8	1.626	2.353	124.3	20.9	18.2
1988	06 18	13 32.02	-01 45.5					
1988	06 28	13 35.79	-02 20.6	1.813	2.323	106.9	24.8	18.5
1988	07 08	13 41.92	-03 09.9					
1988	07 18	13 50.14	-04 10.7	2.020	2.292	92.0	26.3	18.8

1976 SG2 a,e,i = 2.21, 0.13, 6 Elements MPC 11434

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 18.20	-12 54.6	1.963	2.378	102.3	23.9	18.3
1988	02 19	14 23.96	-12 59.3					
1988	02 29	14 27.08	-12 48.0	1.739	2.399	120.5	20.9	18.0
1988	03 10	14 27.33	-12 20.1					
1988	03 20	14 24.55	-11 35.3	1.558	2.417	141.4	14.9	17.6
1988	03 30	14 18.92	-10 35.2					
1988	04 09	14 10.97	-09 23.6	1.454	2.434	164.7	6.2	17.2
1988	04 19	14 01.61	-08 06.3					
1988	04 29	13 52.02	-06 51.5	1.452	2.448	169.2	4.4	17.1
1988	05 09	13 43.38	-05 46.9					
1988	05 19	13 36.61	-04 58.2	1.555	2.461	146.2	13.2	17.6
1988	05 29	13 32.32	-04 28.7					
1988	06 08	13 30.69	-04 18.8	1.739	2.471	125.5	19.5	18.0
1988	06 18	13 31.69	-04 27.0					
1988	06 28	13 35.13	-04 51.2	1.971	2.478	107.8	23.0	18.4
1988	07 08	13 40.72	-05 28.5					
1988	07 18	13 48.20	-06 16.5	2.226	2.484	92.3	24.1	18.7

1986 VV6 a,e,i = 2.56, 0.20, 5 Elements MPC 12584

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 24.51	-08 22.8	2.215	2.609	102.3	21.7	17.1
1988	02 19	14 28.81	-08 30.9					
1988	02 29	14 30.59	-08 26.9	2.003	2.651	120.9	18.7	16.9
1988	03 10	14 29.69	-08 11.3					
1988	03 20	14 26.09	-07 45.1	1.837	2.692	141.9	13.2	16.5
1988	03 30	14 20.01	-07 10.6					
1988	04 09	14 11.99	-06 31.3	1.753	2.731	164.5	5.6	16.2
1988	04 19	14 02.86	-05 51.7					
1988	04 29	13 53.60	-05 16.9	1.775	2.769	168.3	4.2	16.2
1988	05 09	13 45.21	-04 51.4					
1988	05 19	13 38.43	-04 38.0	1.905	2.805	146.4	11.5	16.7
1988	05 29	13 33.79	-04 38.5					
1988	06 08	13 31.47	-04 52.6	2.121	2.839	126.0	16.8	17.1
1988	06 18	13 31.45	-05 19.3					
1988	06 28	13 33.60	-05 57.0	2.392	2.871	107.8	19.7	17.5
1988	07 08	13 37.68	-06 43.8					
1988	07 18	13 43.48	-07 38.2	2.687	2.901	91.7	20.5	17.8

(3602) 1981 DQ2 a,e,i = 2.27, 0.13, 6 Elements MPC 11847

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 14.85	-19 10.3	1.749	2.165	101.0	26.6	18.3
1988	02 19	14 22.22	-19 53.4					
1988	02 29	14 26.78	-20 20.7	1.549	2.196	118.0	23.5	18.0
1988	03 10	14 28.20	-20 30.4					
1988	03 20	14 26.27	-20 20.3	1.384	2.226	137.9	17.4	17.6
1988	03 30	14 21.12	-19 49.0					
1988	04 09	14 13.33	-18 57.0	1.287	2.256	160.6	8.5	17.2
1988	04 19	14 03.92	-17 47.5					
1988	04 29	13 54.26	-16 27.8	1.284	2.287	172.5	3.3	17.0
1988	05 09	13 45.68	-15 07.1					
1988	05 19	13 39.22	-13 54.6	1.383	2.316	150.2	12.6	17.6
1988	05 29	13 35.50	-12 57.0					
1988	06 08	13 34.66	-12 17.6	1.565	2.345	129.5	19.5	18.1
1988	06 18	13 36.61	-11 57.1					
1988	06 28	13 41.08	-11 54.2	1.800	2.372	111.7	23.5	18.5
1988	07 08	13 47.74	-12 06.5					
1988	07 18	13 56.30	-12 31.5	2.063	2.399	96.4	24.9	18.9

1949 QC1 a,e,i = 2.21, 0.20, 7 Elements MPC 9583

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 19.94	-19 49.0	2.101	2.466	99.6	23.2	18.5
1988	02 19	14 26.02	-20 57.2					
1988	02 29	14 29.73	-21 57.2	1.818	2.431	116.8	21.3	18.1
1988	03 10	14 30.68	-22 47.5					
1988	03 20	14 28.52	-23 25.4	1.574	2.394	136.1	16.8	17.7
1988	03 30	14 23.14	-23 47.9					
1988	04 09	14 14.82	-23 51.9	1.399	2.355	157.3	9.5	17.1
1988	04 19	14 04.27	-23 35.3					
1988	04 29	13 52.76	-22 59.4	1.317	2.313	168.6	4.9	16.8
1988	05 09	13 41.78	-22 09.4					
1988	05 19	13 32.68	-21 13.5	1.338	2.270	149.8	13.0	17.1
1988	05 29	13 26.48	-20 20.6					
1988	06 08	13 23.63	-19 38.0	1.442	2.226	129.1	20.7	17.4
1988	06 18	13 24.16	-19 09.9					
1988	06 28	13 27.91	-18 58.3	1.597	2.180	111.1	25.8	17.7
1988	07 08	13 34.55	-19 02.7					
1988	07 18	13 43.74	-19 21.5	1.774	2.134	95.9	28.3	18.0

(3550) 1981 YS a,e,i = 2.93, 0.16, 15 Elements MPC 11615

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 25.81	+02 39.4	2.370	2.794	105.1	19.9	17.0
1988	02 19	14 29.69	+02 59.7					
1988	02 29	14 31.19	+03 30.4	2.161	2.826	123.0	17.1	16.7
1988	03 10	14 30.19	+04 09.0					
1988	03 20	14 26.68	+04 52.0	2.005	2.858	142.3	12.3	16.4
1988	03 30	14 20.90	+05 34.4					
1988	04 09	14 13.38	+06 10.5	1.932	2.890	159.1	7.1	16.2
1988	04 19	14 04.82	+06 35.2					
1988	04 29	13 56.14	+06 44.0	1.964	2.922	157.9	7.5	16.3
1988	05 09	13 48.21	+06 35.0					
1988	05 19	13 41.71	+06 08.1	2.099	2.954	140.8	12.5	16.6
1988	05 29	13 37.12	+05 24.9					
1988	06 08	13 34.66	+04 28.0	2.316	2.985	122.3	16.7	17.0
1988	06 18	13 34.32	+03 20.2					
1988	06 28	13 36.01	+02 04.1	2.585	3.015	105.2	19.0	17.3
1988	07 08	13 39.54	+00 41.8					
1988	07 18	13 44.70	-00 44.7	2.879	3.045	89.5	19.5	17.6

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 18.78	+01 37.0	1.521	2.035	106.5	27.7	17.5
1988	02 19	14 26.59	+01 58.7					
1988	02 29	14 31.29	+02 35.8	1.360	2.072	122.9	23.7	17.2
1988	03 10	14 32.58	+03 25.3					
1988	03 20	14 30.32	+04 22.2	1.241	2.113	141.4	17.1	16.9
1988	03 30	14 24.71	+05 19.1					
1988	04 09	14 16.48	+06 06.9	1.192	2.156	158.5	9.8	16.6
1988	04 19	14 06.72	+06 37.2					
1988	04 29	13 56.86	+06 43.5	1.234	2.201	157.9	9.9	16.7
1988	05 09	13 48.23	+06 23.6					
1988	05 19	13 41.79	+05 39.3	1.367	2.247	141.1	16.4	17.2
1988	05 29	13 38.07	+04 34.3					
1988	06 08	13 37.17	+03 13.7	1.572	2.294	123.5	21.7	17.7
1988	06 18	13 38.95	+01 41.8					
1988	06 28	13 43.14	+00 02.2	1.823	2.341	107.6	24.5	18.2
1988	07 08	13 49.42	-01 42.0					
1988	07 18	13 57.49	-03 28.7	2.100	2.387	93.5	25.1	18.5

1979 HG5 a,e,i = 2.75, 0.07, 5 Elements MPC 12205

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 19.57	-08 50.8	2.374	2.773	103.3	20.3	17.5
1988	02 19	14 24.70	-08 49.4					
1988	02 29	14 27.65	-08 35.0	2.107	2.758	121.5	17.8	17.1
1988	03 10	14 28.22	-08 07.9					
1988	03 20	14 26.31	-07 28.7	1.890	2.743	141.9	13.0	16.7
1988	03 30	14 22.01	-06 39.6					
1988	04 09	14 15.71	-05 44.2	1.753	2.728	163.5	6.0	16.3
1988	04 19	14 08.05	-04 47.4					
1988	04 29	13 59.92	-03 55.3	1.720	2.713	168.1	4.4	16.2
1988	05 09	13 52.28	-03 13.3					
1988	05 19	13 45.96	-02 45.6	1.792	2.698	147.1	11.8	16.6
1988	05 29	13 41.58	-02 34.7					
1988	06 08	13 39.48	-02 40.5	1.950	2.684	126.8	17.6	16.9
1988	06 18	13 39.73	-03 02.2					
1988	06 28	13 42.27	-03 37.9	2.161	2.670	108.9	21.1	17.2
1988	07 08	13 46.93	-04 25.2					
1988	07 18	13 53.49	-05 21.9	2.398	2.656	93.2	22.5	17.5

1984 SM1 a,e,i = 3.21, 0.07, 15 Elements MPC 11854

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 31.88	-24 24.9	3.112	3.353	95.5	17.0	17.9
1988	02 19	14 35.43	-25 32.9					
1988	02 29	14 37.00	-26 35.1	2.823	3.344	113.5	15.8	17.6
1988	03 10	14 36.38	-27 30.2					
1988	03 20	14 33.48	-28 16.1	2.577	3.334	132.8	12.7	17.3
1988	03 30	14 28.34	-28 50.6					
1988	04 09	14 21.29	-29 11.3	2.404	3.324	152.4	8.0	17.0
1988	04 19	14 12.84	-29 16.9					
1988	04 29	14 03.78	-29 07.3	2.333	3.314	164.5	4.7	16.8
1988	05 09	13 54.98	-28 45.0					
1988	05 19	13 47.24	-28 13.8	2.372	3.303	152.5	8.1	17.0
1988	05 29	13 41.23	-27 38.7					
1988	06 08	13 37.32	-27 04.8	2.510	3.292	133.5	12.9	17.3
1988	06 18	13 35.68	-26 35.9					
1988	06 28	13 36.30	-26 15.0	2.719	3.281	115.1	16.3	17.5
1988	07 08	13 39.04	-26 03.4					
1988	07 18	13 43.73	-26 01.7	2.966	3.269	98.2	17.9	17.8

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 32.86	-17 15.2	2.481	2.788	97.6	20.5	19.1
1988	02 19	14 37.52	-17 41.5					
1988	02 29	14 39.88	-17 56.9	2.225	2.803	115.9	18.5	18.8
1988	03 10	14 39.73	-18 00.5					
1988	03 20	14 36.94	-17 51.1	2.008	2.816	136.6	14.1	18.5
1988	03 30	14 31.61	-17 28.3					
1988	04 09	14 24.12	-16 52.4	1.866	2.826	159.5	7.1	18.1
1988	04 19	14 15.13	-16 05.5					
1988	04 29	14 05.59	-15 11.6	1.828	2.833	175.5	1.6	17.8
1988	05 09	13 56.50	-14 16.1					
1988	05 19	13 48.76	-13 24.6	1.903	2.838	152.2	9.6	18.2
1988	05 29	13 43.03	-12 42.2					
1988	06 08	13 39.63	-12 12.2	2.072	2.839	130.6	15.7	18.6
1988	06 18	13 38.65	-11 55.8					
1988	06 28	13 40.02	-11 53.2	2.303	2.838	111.5	19.5	18.9
1988	07 08	13 43.53	-12 03.4					
1988	07 18	13 48.96	-12 24.9	2.564	2.834	94.7	20.9	19.2

(3595) 1985 TF1 a,e,i = 2.66, 0.12, 3 Elements MPC 11834

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 28.72	-16 25.8	2.623	2.940	98.8	19.4	17.3
1988	02 19	14 33.50	-16 48.7					
1988	02 29	14 36.19	-17 01.0	2.339	2.926	117.1	17.5	17.0
1988	03 10	14 36.58	-17 01.8					
1988	03 20	14 34.53	-16 50.3	2.098	2.911	137.5	13.4	16.6
1988	03 30	14 30.10	-16 26.1					
1988	04 09	14 23.63	-15 49.9	1.933	2.894	160.0	6.8	16.2
1988	04 19	14 15.67	-15 03.6					
1988	04 29	14 07.07	-14 11.2	1.871	2.877	175.9	1.4	15.8
1988	05 09	13 58.77	-13 17.6					
1988	05 19	13 51.61	-12 28.3	1.921	2.857	152.6	9.4	16.2
1988	05 29	13 46.28	-11 48.0					
1988	06 08	13 43.16	-11 20.0	2.065	2.837	131.1	15.6	16.6
1988	06 18	13 42.38	-11 05.7					
1988	06 28	13 43.92	-11 05.2	2.271	2.816	112.1	19.5	16.9
1988	07 08	13 47.62	-11 17.5					
1988	07 18	13 53.29	-11 41.2	2.508	2.793	95.4	21.2	17.1

1966 PG a,e,i = 2.79, 0.23, 8 Elements MPC 11852

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 33.37	-14 23.5	3.133	3.419	98.4	16.6	17.9
1988	02 19	14 36.76	-14 24.0					
1988	02 29	14 38.26	-14 14.1	2.838	3.410	117.5	14.9	17.7
1988	03 10	14 37.75	-13 53.4					
1988	03 20	14 35.18	-13 21.7	2.589	3.398	138.4	11.2	17.3
1988	03 30	14 30.65	-12 39.7					
1988	04 09	14 24.49	-11 49.1	2.422	3.384	161.0	5.5	17.0
1988	04 19	14 17.16	-10 52.7					
1988	04 29	14 09.33	-09 54.4	2.365	3.368	174.3	1.7	16.7
1988	05 09	14 01.74	-08 58.6					
1988	05 19	13 55.03	-08 09.6	2.424	3.350	151.7	8.2	17.1
1988	05 29	13 49.75	-07 30.7					
1988	06 08	13 46.24	-07 04.1	2.583	3.329	130.2	13.5	17.4
1988	06 18	13 44.65	-06 50.3					
1988	06 28	13 45.02	-06 49.2	2.806	3.307	110.8	16.7	17.6
1988	07 08	13 47.23	-06 59.7					
1988	07 18	13 51.17	-07 20.6	3.061	3.282	93.4	18.0	17.8

(3609) 1980 VM1 a,e,i = 3.14, 0.23, 5 Elements MPC 11849

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 35.66	-11 24.2	2.866	3.170	98.7	17.9	17.5
1988	02 19	14 39.20	-11 37.0					
1988	02 29	14 40.67	-11 40.4	2.633	3.214	117.6	15.8	17.3
1988	03 10	14 39.97	-11 34.6					
1988	03 20	14 37.09	-11 19.9	2.444	3.257	138.5	11.7	17.0
1988	03 30	14 32.20	-10 57.6					
1988	04 09	14 25.68	-10 29.4	2.337	3.300	160.9	5.7	16.7
1988	04 19	14 18.10	-09 58.1					
1988	04 29	14 10.15	-09 26.9	2.337	3.341	174.1	1.8	16.6
1988	05 09	14 02.59	-08 59.4					
1988	05 19	13 56.05	-08 38.4	2.453	3.381	152.2	8.0	17.0
1988	05 29	13 51.03	-08 26.3					
1988	06 08	13 47.79	-08 24.3	2.666	3.419	131.1	12.9	17.4
1988	06 18	13 46.44	-08 32.4					
1988	06 28	13 46.96	-08 50.3	2.945	3.457	112.0	15.8	17.7
1988	07 08	13 49.22	-09 17.0					
1988	07 18	13 53.08	-09 51.3	3.259	3.493	94.7	16.9	18.0

(3687) A908 TC a,e,i = 2.73, 0.20, 16 Elements MPC 12309

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 32.40	-21 40.2	2.776	3.045	96.3	18.8	17.2
1988	02 19	14 37.63	-21 53.8					
1988	02 29	14 40.86	-21 55.5	2.467	3.014	114.4	17.4	16.9
1988	03 10	14 41.87	-21 43.5					
1988	03 20	14 40.52	-21 16.3	2.198	2.982	134.5	13.8	16.5
1988	03 30	14 36.82	-20 32.6					
1988	04 09	14 31.04	-19 32.3	2.000	2.947	156.8	7.7	16.0
1988	04 19	14 23.66	-18 16.8					
1988	04 29	14 15.49	-16 50.1	1.906	2.912	176.7	1.1	15.6
1988	05 09	14 07.41	-15 18.3					
1988	05 19	14 00.28	-13 48.4	1.925	2.874	155.0	8.5	15.9
1988	05 29	13 54.84	-12 27.3					
1988	06 08	13 51.51	-11 19.7	2.045	2.836	133.0	15.2	16.3
1988	06 18	13 50.48	-10 28.4					
1988	06 28	13 51.78	-09 54.2	2.231	2.797	113.5	19.5	16.5
1988	07 08	13 55.27	-09 36.1					
1988	07 18	14 00.76	-09 32.7	2.452	2.756	96.4	21.5	16.8

(3591) 1978 QJ2 a,e,i = 3.15, 0.16, 1 Elements MPC 11833

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 32.37	-14 50.5	2.706	3.013	98.4	18.9	16.9
1988	02 19	14 37.74	-15 18.3					
1988	02 29	14 41.18	-15 36.9	2.408	2.983	116.4	17.3	16.6
1988	03 10	14 42.47	-15 46.0					
1988	03 20	14 41.46	-15 44.7	2.153	2.953	136.2	13.5	16.2
1988	03 30	14 38.14	-15 33.2					
1988	04 09	14 32.76	-15 11.9	1.971	2.924	158.2	7.3	15.8
1988	04 19	14 25.78	-14 42.3					
1988	04 29	14 17.95	-14 07.5	1.889	2.896	178.5	0.5	15.3
1988	05 09	14 10.14	-13 31.3					
1988	05 19	14 03.20	-12 58.4	1.917	2.868	155.5	8.4	15.7
1988	05 29	13 57.87	-12 32.8					
1988	06 08	13 54.60	-12 17.4	2.040	2.841	134.1	14.9	16.0
1988	06 18	13 53.61	-12 14.0					
1988	06 28	13 54.94	-12 22.8	2.230	2.816	115.1	19.1	16.3
1988	07 08	13 58.47	-12 43.2					
1988	07 18	14 04.03	-13 13.9	2.457	2.792	98.4	21.1	16.6

(3533) Toyota a,e,i = 2.22, 0.12, 5 Elements MPC 11438

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 34.56	-15 11.7	1.988	2.336	97.8	24.7	17.1
1988	02 19	14 41.93	-15 28.3					
1988	02 29	14 46.78	-15 30.6	1.761	2.359	115.1	22.4	16.8
1988	03 10	14 48.82	-15 17.7					
1988	03 20	14 47.79	-14 48.8	1.568	2.379	135.0	17.2	16.5
1988	03 30	14 43.68	-14 04.4					
1988	04 09	14 36.85	-13 06.1	1.441	2.398	157.8	9.1	16.0
1988	04 19	14 27.99	-11 57.9					
1988	04 29	14 18.22	-10 46.2	1.410	2.415	176.2	1.6	15.6
1988	05 09	14 08.79	-09 38.5					
1988	05 19	14 00.81	-08 41.7	1.484	2.431	153.2	10.8	16.2
1988	05 29	13 55.09	-08 01.1					
1988	06 08	13 52.03	-07 38.7	1.648	2.444	131.8	18.0	16.6
1988	06 18	13 51.71	-07 34.5					
1988	06 28	13 54.00	-07 47.0	1.870	2.455	113.2	22.4	17.1
1988	07 08	13 58.63	-08 13.6					
1988	07 18	14 05.34	-08 51.8	2.122	2.465	97.2	24.2	17.4

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 37.38	-15 25.4	3.047	3.317	97.1	17.2	18.8
1988	02 19	14 41.82	-15 46.6					
1988	02 29	14 44.42	-15 59.3	2.728	3.279	115.5	15.8	18.5
1988	03 10	14 45.02	-16 02.8					
1988	03 20	14 43.48	-15 56.7	2.452	3.240	135.7	12.4	18.1
1988	03 30	14 39.82	-15 40.9					
1988	04 09	14 34.27	-15 15.8	2.250	3.200	157.8	6.8	17.7
1988	04 19	14 27.24	-14 42.9					
1988	04 29	14 19.39	-14 04.9	2.153	3.160	178.9	0.4	17.2
1988	05 09	14 11.50	-13 25.4					
1988	05 19	14 04.34	-12 48.4	2.168	3.118	155.7	7.7	17.6
1988	05 29	13 58.59	-12 18.0					
1988	06 08	13 54.69	-11 57.0	2.284	3.077	134.0	13.7	17.9
1988	06 18	13 52.89	-11 47.3					
1988	06 28	13 53.26	-11 49.4	2.468	3.034	114.5	17.7	18.2
1988	07 08	13 55.74	-12 02.9					
1988	07 18	14 00.18	-12 26.8	2.689	2.992	97.2	19.7	18.4

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 41.91	-14 00.0	3.308	3.557	96.5	16.0	19.1
1988	02 19	14 45.80	-14 11.3					
1988	02 29	14 47.93	-14 14.2	2.999	3.536	115.2	14.7	18.8
1988	03 10	14 48.18	-14 08.4					
1988	03 20	14 46.46	-13 53.7	2.733	3.514	135.6	11.4	18.5
1988	03 30	14 42.83	-13 30.6					
1988	04 09	14 37.52	-13 00.3	2.544	3.491	157.6	6.3	18.2
1988	04 19	14 30.92	-12 24.3					
1988	04 29	14 23.62	-11 45.7	2.460	3.467	177.5	0.7	17.8
1988	05 09	14 16.29	-11 07.8					
1988	05 19	14 09.57	-10 34.0	2.493	3.442	156.0	6.9	18.1
1988	05 29	14 04.06	-10 07.4					
1988	06 08	14 00.14	-09 50.2	2.627	3.416	134.5	12.2	18.4
1988	06 18	13 58.05	-09 43.6					
1988	06 28	13 57.87	-09 47.8	2.834	3.389	114.8	15.8	18.7
1988	07 08	13 59.55	-10 02.2					
1988	07 18	14 02.99	-10 26.0	3.079	3.361	97.2	17.5	18.9

4020 P-L a,e,i = 2.37, 0.07, 2 Elements MPC 11338

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 38.69	-16 03.6	2.216	2.528	96.6	22.8	18.9
1988	02 19	14 45.64	-16 30.6					
1988	02 29	14 50.32	-16 46.0	1.962	2.531	113.9	21.0	18.6
1988	03 10	14 52.44	-16 48.9					
1988	03 20	14 51.73	-16 38.4	1.742	2.534	133.6	16.5	18.2
1988	03 30	14 48.14	-16 14.3					
1988	04 09	14 41.93	-15 37.0	1.587	2.534	155.9	9.3	17.8
1988	04 19	14 33.65	-14 48.5					
1988	04 29	14 24.27	-13 53.1	1.527	2.534	179.6	0.2	17.2
1988	05 09	14 14.92	-12 56.6					
1988	05 19	14 06.70	-12 05.3	1.575	2.532	156.0	9.4	17.7
1988	05 29	14 00.49	-11 24.9					
1988	06 08	13 56.79	-10 58.7	1.716	2.529	134.1	16.7	18.2
1988	06 18	13 55.75	-10 48.2					
1988	06 28	13 57.35	-10 53.1	1.920	2.525	115.1	21.4	18.5
1988	07 08	14 01.35	-11 11.7					
1988	07 18	14 07.53	-11 42.2	2.157	2.519	98.7	23.5	18.9

(3646) 1985 RK4 a,e,i = 2.76, 0.10, 1 Elements MPC 12003

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 43.36	-15 59.7	2.743	3.004	95.6	19.1	18.4
1988	02 19	14 48.40	-16 24.2					
1988	02 29	14 51.40	-16 39.4	2.475	3.013	113.7	17.5	18.2
1988	03 10	14 52.14	-16 44.8					
1988	03 20	14 50.51	-16 40.0	2.244	3.021	133.9	13.7	17.8
1988	03 30	14 46.54	-16 24.6					
1988	04 09	14 40.49	-15 59.4	2.085	3.028	156.1	7.7	17.5
1988	04 19	14 32.87	-15 25.8					
1988	04 29	14 24.42	-14 46.7	2.026	3.033	179.5	0.2	17.0
1988	05 09	14 16.01	-14 06.0					
1988	05 19	14 08.47	-13 28.0	2.081	3.037	156.8	7.5	17.5
1988	05 29	14 02.49	-12 57.0					
1988	06 08	13 58.48	-12 35.7	2.236	3.040	135.1	13.6	17.9
1988	06 18	13 56.64	-12 25.6					
1988	06 28	13 57.00	-12 27.3	2.461	3.042	115.6	17.5	18.2
1988	07 08	13 59.44	-12 40.0					
1988	07 18	14 03.78	-13 02.8	2.725	3.042	98.3	19.3	18.5

1978 UU1 a,e,i = 2.39, 0.23, 3 Elements MPC 12203

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 46.20	-12 38.6	2.633	2.905	95.9	19.7	19.3
1988	02 19	14 51.49	-12 49.3					
1988	02 29	14 54.72	-12 49.7	2.341	2.890	114.0	18.3	19.0
1988	03 10	14 55.66	-12 39.4					
1988	03 20	14 54.11	-12 18.2	2.087	2.871	134.2	14.4	18.6
1988	03 30	14 50.03	-11 46.6					
1988	04 09	14 43.63	-11 06.1	1.903	2.850	156.5	8.1	18.2
1988	04 19	14 35.38	-10 19.4					
1988	04 29	14 26.06	-09 30.4	1.821	2.826	175.2	1.7	17.7
1988	05 09	14 16.62	-08 44.2					
1988	05 19	14 08.01	-08 05.6	1.851	2.799	154.5	8.9	18.1
1988	05 29	14 01.06	-07 38.6					
1988	06 08	13 56.28	-07 25.6	1.978	2.768	132.6	15.7	18.4
1988	06 18	13 53.91	-07 27.1					
1988	06 28	13 54.01	-07 42.8	2.171	2.736	113.2	20.0	18.7
1988	07 08	13 56.43	-08 11.0					
1988	07 18	14 01.00	-08 50.1	2.395	2.700	96.2	22.0	19.0

1986 UZ a,e,i = 2.17, 0.06, 5 Elements MPC 11440

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 42.13	-18 51.6	1.915	2.229	95.0	26.2	17.7
1988	02 19	14 50.82	-19 57.8					
1988	02 29	14 57.09	-20 54.8	1.686	2.242	111.1	24.3	17.4
1988	03 10	15 00.51	-21 41.9					
1988	03 20	15 00.70	-22 17.4	1.483	2.255	129.8	19.8	17.0
1988	03 30	14 57.44	-22 39.3					
1988	04 09	14 50.86	-22 45.5	1.336	2.266	151.2	12.3	16.6
1988	04 19	14 41.53	-22 34.2					
1988	04 29	14 30.58	-22 06.2	1.274	2.276	172.0	3.5	16.1
1988	05 09	14 19.49	-21 25.6					
1988	05 19	14 09.70	-20 39.1	1.314	2.285	158.4	9.4	16.4
1988	05 29	14 02.36	-19 54.6					
1988	06 08	13 58.10	-19 18.8	1.445	2.293	136.9	17.6	16.9
1988	06 18	13 57.05	-18 55.7					
1988	06 28	13 59.11	-18 47.0	1.639	2.300	118.1	23.0	17.3
1988	07 08	14 03.96	-18 52.2					
1988	07 18	14 11.25	-19 10.0	1.869	2.305	102.0	25.6	17.7

1940 YE a,e,i = 3.18, 0.17, 16 Elements MPC 10401

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 49.93	-33 15.5	2.963	3.105	88.9	18.5	16.2
1988	02 19	14 55.70	-34 40.8					
1988	02 29	14 59.33	-36 00.4	2.725	3.137	105.4	17.7	16.0
1988	03 10	15 00.56	-37 12.6					
1988	03 20	14 59.18	-38 14.8	2.515	3.170	123.0	15.3	15.7
1988	03 30	14 55.14	-39 03.5					
1988	04 09	14 48.67	-39 35.2	2.362	3.202	140.9	11.4	15.5
1988	04 19	14 40.28	-39 46.4					
1988	04 29	14 30.80	-39 35.6	2.295	3.234	154.7	7.7	15.3
1988	05 09	14 21.26	-39 03.8					
1988	05 19	14 12.61	-38 14.7	2.330	3.265	153.2	8.0	15.4
1988	05 29	14 05.71	-37 14.5					
1988	06 08	14 01.03	-36 09.7	2.465	3.296	138.6	11.7	15.7
1988	06 18	13 58.79	-35 06.5					
1988	06 28	13 58.98	-34 09.5	2.681	3.326	121.5	15.1	16.0
1988	07 08	14 01.43	-33 21.6					
1988	07 18	14 05.93	-32 44.1	2.948	3.355	104.8	17.0	16.3

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1988	02 09	14 50.18	-05 47.6	3.076	3.341	96.9	17.0	17.4
1988	02 19	14 54.41	-05 46.9					
1988	02 29	14 56.81	-05 37.6	2.787	3.331	115.2	15.6	17.1
1988	03 10	14 57.21	-05 20.5					
1988	03 20	14 55.50	-04 56.5	2.541	3.321	135.0	12.2	16.8
1988	03 30	14 51.73	-04 27.6					
1988	04 09	14 46.12	-03 56.4	2.370	3.309	155.7	7.2	16.4
1988	04 19	14 39.07	-03 26.2					
1988	04 29	14 31.18	-03 00.6	2.303	3.296	168.6	3.5	16.2
1988	05 09	14 23.18	-02 42.8					
1988	05 19	14 15.77	-02 35.5	2.348	3.282	152.9	8.1	16.4
1988	05 29	14 09.60	-02 40.2					
1988	06 08	14 05.08	-02 57.3	2.493	3.267	132.6	13.2	16.7
1988	06 18	14 02.47	-03 26.1					
1988	06 28	14 01.84	-04 05.5	2.708	3.251	113.6	16.7	17.0
1988	07 08	14 03.16	-04 53.9					
1988	07 18	14 06.29	-05 49.8	2.960	3.234	96.3	18.2	17.2