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

Contributors of perturbed orbital elements are advised that use of the Epoch 1986 June 19.0 ET (rather than 1985 Dec. 1.0 ET) will become effective FOLLOWING the 1985 Oct. 28 batch of MPCs.

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IDENTIFICATION CHANGES.

Continuation to MPC 9843.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1950 FT *	1950 03	17.01484	14 23 41.81	-01 14 43.7	805	13.2	024
1950 FT	1950 04	11.89466	14 11 05.46	+02 20 38.0	805	13.6	024
1968 HP1 *	1968 04	30.94933	13 37 15.40	-06 42 44.6	1968 FL	16.0	095
1969 VK3 *	1969 11	05.85391	02 43 15.26	+16 15 44.6	1969 US2	16.5	095
1978 NS7 *	1978 07	06.91513	17 54 59.18	-10 38 15.1	1978 LN	15.5	095
1981 UV20*	1981 10	31.30018	02 15 03.55	+10 22 01.3	1981 VT		704
1981 UV20	1981 10	31.37587	02 15 00.37	+10 21 11.7	1981 VT		704

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IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 9717.

	Note		Note		Note
1930 MJ = (2407)	1	1981 SN2 = (3123)	2	1981 WE4 = (2307)	2

Note 1: identification by E. Bowell. 2: identification by C. M. Bardwell.

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

017 Hoher List. 0.3-m astrograph and 0.6-m reflector. Observers M. Geffert, C. Sterken and F. Decker. AGK3 reference stars.
022 Pino Torinese. Observer G. Massone.
024 Heidelberg-Konigstuhl. 0.4-m f/5 Bruce astrograph. Observers H. Mandel, U. Gorze, U. Bastian and S. Roser.
046 Klet. Observers A. Mrkos and Z. Vavrova.
056 Skalnate Pleso. Observers M. Antal, T. Cisko and P. Rychtarcik. Measured and reduced by J. Fabricius, E. M. Pittich, P. Rychtarcik and J. Svoren.
057 Belgrade. 0.12-m f/8 astrograph. Observer V. Protitch-Benishek.

061 Uzhgorod. Observers I. Goroshchak et al.
069 Baldone. Observers Ozolinya, Eglitis and Alksnis.
071 Bulgarian National Observatory. Observers T. Bonev, V. Ivanova and V. Radeva.
083 Golossevo-Kiev. Observers E. M. Izhakevich, E. Sereda, S. Kaltygina and I. Ledovskaya.
084 Pulkovo. Observers Koroleva, Kiseleva, Ipatova and Bronnikova.
085 Kiev. Observers S. P. Major, I. V. Ledovskaya, E. M. Izhakevich, Yu. I. Safronov and K. I. Churyumov. In part from Kiev Komet. Tsirk. No. 341.
086 Odessa. Observer Kramer.
095 Crimean Astrophysical Observatory and Sternberg Crimean Station. Observers N. S. Chernykh, L. G. Karachkina, V. P. Tarashuk and D. N. Ponomarev. In part from Kiev Komet. Tsirk. No. 342.
114 Engelhardt Observatory, Zelenchukskaya Station. 0.4-m f/5 astrograph. Observers I. E. Tselevich and V. N. Kitkin. From Kiev Komet. Tsirk. Nos. 341 and 342.
119 Abastuman. Observer Kiladze.
129 Ordubad. Observer T. Kiseleva. Long. and Parallax 45.88, -331, -268 (correction to MPC 7761).
168 Kourovskaya. Observers S. Timofeev, S. Timirshin, B. Gusev, T. P. Baskakova, M. V. Lyutina, G. Romashin and V. Kajzer. Measured by T. I. Levitskaya, N. D. Kalinina and M. V. Lyutina.
186 Kitab. Observer E. Rakhmatov.
190 Gissar. Observer S. Gerasimenko.
217 Assah. 1-m Ritchey-Chretien reflector. Observers K. I. Churyumov, Gorodetskij, Meleev and Pspaev. Long. and Parallax 77.88, -311, -291 (see MPC 7759).
330 Purple Mountain Observatory. Observers J.-x. Yang and J.-h. Lu.
372 Geisei. Observer T. Seki. 0.60-m reflector. From Orient. Astron. Assoc. Comet Bull. No. 274.
378 Murou. Observer M. Nakamura. From Yamamoto Circ. No. 2044.
391 Sendai Observatory, Ayashi Station. Observer M. Koishikawa. 0.2-m reflector. Measured by Koishikawa and S. Kasahara.
392 JCPM Sapporo Station. Observer K. Watanabe. 0.16-m Schmidt.
474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh and W. M. Kissling).
482 St. Andrews. Observer J. R. Stapleton.
490 Wimborne Minster. 0.2-m reflector. Observer M. Swan. Measured by D. Buczynski. Communicated by G. M. Hurst.
491 Yebes. Observers M. de Pascual, J. Garcia, C. Cabanas and F. Sanchez.
493 German-Spanish Astronomical Center, Calar Alto. 2.2-m reflector and 0.80-m Schmidt. Observers K. Birkle et al. Measured and reduced by G. Klare, U. Bastian and S. Roeser.
494 Stakenbridge. Observer B. Manning.
502 Colchester. 0.25-m f/7 reflector. Observer M. J. Hendrie.
552 Osservatorio San Vittore. Observers G. Sassi and C. Vacchi. Measured by Vacchi, V. Goretti and E. Colombini.
555 Cracow-Fort Skala. Observers M. Kurpinska-Winiarska and W. Waniak.
562 Figl Observatory, Vienna. Observers A. Schnell, A. Stockenhuber, et al.
565 Bassano Bresciano. Observers U. Quadri and V. Marinello.
568 Mauna Kea. 2.24-m reflector. Observers D. J. Tholen, M. W. Buie and A. Storrs.
571 Cavriana. Observers L. Lai, I. Ronchetti, M. Ruzza and G. Vesentini.
575 La Chaux de Fonds. Observers A. Behrend and R. Behrend.
576 Burwash. 0.57-m reflector. Observer A. Young. Measured by P. Birtwhistle. Long. and Parallax 0.38, -269, -330 (see MPC 7759).
656 Victoria. 0.5-m reflector. Observer J. Newton. Measured by J. Tatum.

657 Victoria. Observers D. D. Balam and J. B. Tatum.
662 Lick Observatory. 0.9-m Crossley reflector. Observer E. A. Harlan. Measured by B. Jones.
675 Palomar. Comet 1982i, 5-m reflector, measured by G. E. Danielson, P. Holleran and M. J. S. Belton. Comet 1975 VII, 0.46-m Schmidt, observers C. Shoemaker and E. Shoemaker, measured by F. Salazar. Comet 1985k, Aug. 16, 17 and 23, 1.2-m Schmidt, observers J. Schombert and R. Windhorst, measured by C. Kowal; Aug. 20, 0.46-m Schmidt, observers S. Singer-Brewster, D. Schneeberger and M. Gallup. All others by J. Gibson, 1.5-m reflector and CCD, AGK3 and SAO reference stars, reduction using Palomar Sky Survey prints.
688 Lowell Observatory, Anderson Mesa Station. 0.33-m photographic telescope. Observer B. A. Skiff. Measured by S. J. Bus and E. Bowell.
691 University of Arizona, Kitt Peak. 0.91-m reflector, CCD in scanning mode. Observer T. Gehrels. Reductions by J. V. Scotti.
792 Quonochontaug. Observer W. S. Penhallow.
801 Oak Ridge Observatory. Observers R. E. McCrosky, G. Schwartz, C.-Y. Shao (assisted by C. M. Bardwell, D. W. E. Green and B. G. Marsden).
821 Bosque Alegre. Observer Z. M. Pereyra. Measured by M. de Zarate.
889 Karasuyama. 0.30-m reflector. Observer S. Inoda. Measured by T. Urata.
893 Sendai Observatory. Observers M. Koishikawa and T. Yusa. 0.4-m reflector. Measured by Koishikawa and T. Tsumagari.
978 Condor Brow. Observers J. D. Greenwood, D. G. Buczynski and R. Moseley. 0.47-m reflector. Measured by Buczynski.
984 Eastfield. Observer H. B. Ridley. Measured by D. G. Buczynski.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
		Periodic Comet Smirnova-Chernykh				
/1975 VII	1985	05 11.32569	15 36 59.86	-15 47 41.3		675
/1975 VII	1985	05 14.33611	15 34 58.66	-15 44 06.7		675
/1975 VII	1985	05 14.34861	15 34 58.40	-15 44 06.8	17 T	675
/1975 VII	1985	05 15.42014	15 34 14.96	-15 42 49.7		675
		Comet Bradfield (1975 XI)				
/1975 XI	1976	02 05.75694	22 57 40.77	+39 36 59.8		056
/1975 XI	1976	02 05.78542	22 57 51.12	+39 37 39.2		056
/1975 XI	1976	02 07.74167	23 09 52.96	+40 29 35.5		056
/1975 XI	1976	02 07.76597	23 10 01.50	+40 30 21.2		056
/1975 XI	1976	02 08.74653	23 15 55.73	+40 53 48.1		056
/1975 XI	1976	02 08.78264	23 16 08.40	+40 54 40.8		056
/1975 XI	1976	02 09.75069	23 21 53.42	+41 16 25.3		056
		Comet West (1976 VI)				
/1976 VI	1976	03 23.13437	21 00 22.36	+12 00 56.1		056
/1976 VI	1976	03 23.13594	21 00 22.22	+12 00 56.4		056
/1976 VI	1976	03 23.14340	21 00 21.48	+12 01 02.3		056
/1976 VI	1976	03 23.14757	21 00 21.37	+12 01 03.1		056
/1976 VI	1976	03 23.14878	21 00 21.07	+12 01 05.4		056
/1976 VI	1976	03 24.12031	20 59 00.84	+12 12 02.0		056
/1976 VI	1976	03 24.12448	20 59 00.63	+12 12 07.1		056
/1976 VI	1976	03 24.12604	20 59 00.46	+12 12 07.0		056
/1976 VI	1976	03 24.12951	20 59 00.02	+12 12 07.0		056
/1976 VI	1976	03 26.13021	20 56 23.38	+12 33 55.1		056
/1976 VI	1976	03 26.13368	20 56 23.09	+12 33 58.9		056
/1976 VI	1976	03 26.13559	20 56 22.96	+12 33 59.4		056
/1976 VI	1976	03 26.13837	20 56 22.68	+12 33 59.6		056
/1976 VI	1976	03 28.12674	20 53 55.16	+12 54 46.3		056

/1976 VI	1976	03	28.12882	20	53	55.12	+12	54	47.6		056
/1976 VI	1976	03	28.13073	20	53	54.85	+12	54	49.6		056
/1976 VI	1976	03	28.13247	20	53	54.76	+12	54	51.1		056
/1976 VI	1976	04	01.11215	20	49	14.88	+13	34	17.9		056
/1976 VI	1976	04	03.09896	20	46	58.73	+13	53	11.1		056
/1976 VI	1976	04	04.08819	20	45	50.90	+14	02	21.4		056
/1976 VI	1976	04	04.10347	20	45	49.65	+14	02	28.4		056
/1976 VI	1976	04	30.98194	20	08	01.49	+17	25	30.0		056
/1976 VI	1976	05	01.04236	20	07	54.73	+17	25	49.8		056
/1976 VI	1976	05	01.04896	20	07	54.02	+17	25	52.0		056
/1976 VI	1976	05	01.05104	20	07	53.74	+17	25	52.8		056
/1976 VI	1976	05	01.99792	20	06	09.67	+17	30	39.6		056
/1976 VI	1976	05	02.01910	20	06	07.35	+17	30	45.9		056
/1976 VI	1976	05	02.04965	20	06	03.81	+17	30	55.2		056
/1976 VI	1976	05	02.05208	20	06	03.62	+17	30	56.8		056
/1976 VI	1976	05	03.97292	20	02	26.15	+17	39	55.5		056
/1976 VI	1976	05	03.97865	20	02	25.59	+17	39	58.0		056
/1976 VI	1976	05	04.00278	20	02	22.79	+17	40	03.0		056
/1976 VI	1976	05	04.00625	20	02	22.36	+17	40	03.4		056
/1976 VI	1976	05	05.00179	20	00	26.24	+17	44	19.3		056
/1976 VI	1976	05	05.01771	20	00	24.59	+17	44	20.2		056
/1976 VI	1976	05	05.02708	20	00	23.27	+17	44	25.1		056
/1976 VI	1976	05	05.04317	20	00	21.45	+17	44	29.0		056

Periodic Comet d’Arrest

/1976 XI	1976	07	02.99792	19	03	08.32	+22	04	05.8		056
/1976 XI	1976	07	03.02083	19	03	10.17	+22	04	03.8		056

Periodic Comet Encke

/1980 XI	1985	07	26.38851	23	01	44.43	-06	06	37.6	19.8T	691
/1980 XI	1985	07	26.39976	23	01	43.90	-06	06	40.2		691
/1980 XI	1985	07	26.41860	23	01	43.13	-06	06	44.5		691
/1980 XI	1985	07	28.43222	23	00	19.42	-06	13	40.2		675
/1980 XI	1985	07	28.43597	23	00	19.27	-06	13	41.1		675
/1980 XI	1985	07	29.46146	22	59	35.14	-06	17	22.5		675
/1980 XI	1985	07	29.46545	22	59	34.95	-06	17	23.5		675
/1980 XI	1985	08	15.25980	22	45	28.86	-07	29	01.3	19.2T	691
/1980 XI	1985	08	15.27624	22	45	28.05	-07	29	06.0		691
/1980 XI	1985	08	15.29233	22	45	27.08	-07	29	10.4		691

Periodic Comet Halley

/1982i	1982	10	16.47425	07	11	01.60	+09	33	04.3	1	675
/1982i	1982	10	16.48303	07	11	01.54	+09	33	04.0	1	675
/1982i	1982	10	16.49134	07	11	01.50	+09	33	03.3	1	675
/1982i	1982	10	16.50447	07	11	01.42	+09	33	02.5	1	675
/1982i	1984	12	26.75116	05	51	20.16	+11	59	01.2	20.0T	217
/1982i	1984	12	26.87148	05	51	12.33	+11	59	05.4	20.0T	217
/1982i	1985	01	29.05972	05	16	14.38	+12	34	42.5	2	493
/1982i	1985	03	15.84861	04	51	57.32	+14	10	50.4	3	493
/1982i	1985	03	15.90174	04	51	56.80	+14	10	58.0	3	493
/1982i	1985	03	16.71528	04	51	49.49	+14	13	00.4		217
/1982i	1985	03	16.83576	04	51	48.39	+14	13	17.6	3	493
/1982i	1985	03	16.89306	04	51	47.83	+14	13	26.1	3	493
/1982i	1985	03	17.69138	04	51	41.19	+14	15	26.0		217
/1982i	1985	03	24.88611	04	51	07.43	+14	33	38.7	3	493
/1982i	1985	04	11.84838	04	52	42.82	+15	20	04.1	3	493
/1982i	1985	07	29.99998	05	50	55.99	+18	50	43.1	16.0T	119
/1982i	1985	07	30.01109	05	50	56.17	+18	50	43.1	16.0T	119
/1982i	1985	07	31.16285	05	51	39.63	+18	51	53.6		493

/1982i	1985	08	07.16130	05	55	55.61	+18	58	50.3			493
/1982i	1985	08	08.16571	05	56	31.23	+18	59	46.8			493
/1982i	1985	08	10.16698	05	57	41.50	+19	01	39.2			493
/1982i	1985	08	11.16608	05	58	16.08	+19	02	34.7			493
/1982i	1985	08	13.33253	05	59	29.98	+19	04	33.7			801
/1982i	1985	08	13.74826	05	59	44.3	+19	04	55	16	T	378
/1982i	1985	08	13.75903	05	59	44.1	+19	04	54			378
/1982i	1985	08	14.02042	05	59	52.96	+19	05	09.3			095
/1982i	1985	08	14.02910	05	59	53.25	+19	05	10.6			095
/1982i	1985	08	14.03587	05	59	53.67	+19	05	10.4			095
/1982i	1985	08	15.02433	06	00	26.40	+19	06	01.6			095
/1982i	1985	08	15.02674	06	00	26.49	+19	06	02.7			095
/1982i	1985	08	15.07377	06	00	27.98	+19	06	05.7	15.7	T	046
/1982i	1985	08	15.11597	06	00	29.41	+19	06	09.8		4	576
/1982i	1985	08	15.40012	06	00	38.76	+19	06	27.6	14.5	T	821
/1982i	1985	08	15.45139	06	00	40.37	+19	06	26.1			656
/1982i	1985	08	16.03152	06	00	59.34	+19	06	57.7			095
/1982i	1985	08	16.05556	06	00	59.90	+19	07	00.2			071
/1982i	1985	08	16.09711	06	01	02.06	+19	07	00.4			071
/1982i	1985	08	16.78090	06	01	23.74	+19	07	38.9	15.5	T	372
/1982i	1985	08	17.02851	06	01	31.61	+19	07	47.9			095
/1982i	1985	08	17.03302	06	01	31.79	+19	07	49.9			095
/1982i	1985	08	17.03403	06	01	31.34	+19	07	54.4			071
/1982i	1985	08	17.03800	06	01	32.03	+19	07	49.3			095
/1982i	1985	08	17.07737	06	01	33.40	+19	07	53.1			046
/1982i	1985	08	17.08625	06	01	33.95	+19	07	55.4			071
/1982i	1985	08	17.11042	06	01	34.45	+19	07	55.0	15.5	T	552
/1982i	1985	08	17.11528	06	01	34.57	+19	07	53.5	16	T	576
/1982i	1985	08	17.14809	06	01	35.62	+19	07	57.0			493
/1982i	1985	08	17.18079	06	01	36.69	+19	07	59.0			493
/1982i	1985	08	18.02763	06	02	03.92	+19	08	40.8			095
/1982i	1985	08	18.03110	06	02	03.87	+19	08	44.1			095
/1982i	1985	08	18.09653	06	02	05.88	+19	08	47.1	15.5	T	552
/1982i	1985	08	18.10625	06	02	06.14	+19	08	47.1			552
/1982i	1985	08	18.13194	06	02	06.94	+19	08	50.4			575
/1982i	1985	08	18.80122	06	02	28.25	+19	09	24.3	15.5	T	372
/1982i	1985	08	19.02050	06	02	35.11	+19	09	37.3			095
/1982i	1985	08	19.02399	06	02	34.96	+19	09	34.5			095
/1982i	1985	08	19.07865	06	02	36.84	+19	09	36.7			046
/1982i	1985	08	19.10903	06	02	37.87	+19	09	40.3			575
/1982i	1985	08	19.17622	06	02	39.94	+19	09	43.6			493
/1982i	1985	08	20.02190	06	03	06.15	+19	10	25.2			095
/1982i	1985	08	20.38612	06	03	17.28	+19	10	49.7	14.0	T	821
/1982i	1985	08	20.39237	06	03	17.46	+19	10	50.5	14.0	T	821
/1982i	1985	08	20.39932	06	03	17.68	+19	10	50.9	14.0	T	821
/1982i	1985	08	21.06545	06	03	37.92	+19	11	21.0			071
/1982i	1985	08	21.07824	06	03	38.36	+19	11	22.2			046
/1982i	1985	08	21.08304	06	03	38.52	+19	11	24.5			071
/1982i	1985	08	21.09444	06	03	38.82	+19	11	24.6			046
/1982i	1985	08	21.94894	06	04	04.61	+19	12	09.8			186
/1982i	1985	08	22.04844	06	04	07.34	+19	12	12.0			071
/1982i	1985	08	22.07431	06	04	08.36	+19	12	15.5			046
/1982i	1985	08	22.09228	06	04	08.86	+19	12	14.8			046
/1982i	1985	08	22.74271	06	04	28.10	+19	12	50.6	15	T	392
/1982i	1985	08	23.06073	06	04	37.16	+19	13	05.4			071
/1982i	1985	08	23.46782	06	04	49.26	+19	13	28.2			656
/1982i	1985	08	23.77911	06	04	58.18	+19	13	44.7	16	T	889
/1982i	1985	08	23.80556	06	04	59.00	+19	13	46.1	15.5	T	372
/1982i	1985	08	24.01385	06	05	05.03	+19	13	56.9			095

/1982i	1985	08	24.01906	06	05	05.22	+19	13	56.3				095
/1982i	1985	08	24.03564	06	05	05.62	+19	13	58.5				095
/1982i	1985	08	24.03891	06	05	06.22	+19	13	58.7	14	T		056
/1982i	1985	08	24.05483	06	05	06.08	+19	13	58.1				071
/1982i	1985	08	24.94796	06	05	31.33	+19	14	51.2				186
/1982i	1985	08	25.02062	06	05	33.63	+19	14	49.0				095
/1982i	1985	08	25.02410	06	05	33.73	+19	14	51.3				095
/1982i	1985	08	25.08920	06	05	35.60	+19	14	54.4				071
/1982i	1985	08	25.80590	06	05	55.62	+19	15	31.4	15	T	5	372
/1982i	1985	08	26.02043	06	06	01.43	+19	15	41.3				095
/1982i	1985	08	26.02737	06	06	01.66	+19	15	43.5				095
/1982i	1985	08	26.14479	06	06	04.84	+19	15	48.6				493
/1982i	1985	08	26.46285	06	06	13.55	+19	16	05.0				657
/1982i	1985	08	27.02550	06	06	28.71	+19	16	35.6				095
/1982i	1985	08	27.02899	06	06	28.86	+19	16	33.6				095
/1982i	1985	08	27.06211	06	06	29.71	+19	16	37.8				071
/1982i	1985	08	27.46910	06	06	40.57	+19	16	58.6				657
/1982i	1985	08	27.80833	06	06	49.63	+19	17	15.6	15.5	T	5	372
/1982i	1985	08	27.83928	06	06	50.39	+19	17	19.3	16.0	T		330
/1982i	1985	08	28.03300	06	06	55.43	+19	17	29.8				095
/1982i	1985	08	28.03647	06	06	55.54	+19	17	28.0				095
/1982i	1985	08	28.11181	06	06	57.63	+19	17	31.9	15.0	T		571
/1982i	1985	08	28.11667	06	06	57.76	+19	17	31.8	15.0	T		552
/1982i	1985	08	28.12847	06	06	58.00	+19	17	33.0	15.0	T		552
/1982i	1985	08	28.13056	06	06	58.00	+19	17	33.6	15.0	T		571
/1982i	1985	08	28.29429	06	07	02.39	+19	17	42.6				801
/1982i	1985	08	28.30142	06	07	02.58	+19	17	43.3				801
/1982i	1985	08	31.74688	06	08	28.37	+19	20	49.3	14	T		893
/1982i	1985	08	31.78685	06	08	29.2	+19	20	57				893
/1982i	1985	09	04.74931	06	09	56.26	+19	24	34.9				391
/1982i	1985	09	04.76540	06	09	57.06	+19	24	39.8				893
/1982i	1985	09	04.77882	06	09	57.10	+19	24	39.9				391
/1982i	1985	09	05.76181	06	10	16.56	+19	25	36.9	14.5	T		391
/1982i	1985	09	05.77222	06	10	16.50	+19	25	35.5	14.5	T		893
/1982i	1985	09	05.78819	06	10	17.06	+19	25	39.7				391
/1982i	1985	09	05.78819	06	10	17.26	+19	25	37.5				893

Periodic Comet Wild 2

/1983s	1985	07	24.25888	19	43	17.99	-19	41	25.6				691
/1983s	1985	07	24.26947	19	43	17.40	-19	41	27.4				691
/1983s	1985	07	24.27971	19	43	16.85	-19	41	29.7				691
/1983s	1985	08	15.21391	19	26	38.19	-20	39	02.7				691
/1983s	1985	08	15.23054	19	26	37.59	-20	39	05.0				691
/1983s	1985	08	15.24802	19	26	36.98	-20	39	05.0			6	691
/1983s	1985	09	10.33190	19	19	11.88	-21	16	04.6	19.2	T	7	568
/1983s	1985	09	11.34478	19	19	12.04	-21	16	51.6	19.0	T	8	568

Periodic Comet Hartley-IRAS

/1983v	1984	05	25.80247	11	54	14.85	+59	55	38.4				095
/1983v	1984	05	28.80658	11	50	27.18	+57	49	07.6				095

Periodic Comet Giacobini-Zinner

/1984e	1985	06	26.96051	21	54	53.52	+46	59	36.5				069
/1984e	1985	07	09.78006	22	43	54.72	+53	27	23.4				186
/1984e	1985	07	09.78352	22	43	55.86	+53	27	29.6				186
/1984e	1985	07	09.83262	22	44	08.85	+53	28	52.4				186
/1984e	1985	07	10.81613	22	48	45.14	+53	56	02.0				186
/1984e	1985	07	11.00095	22	49	37.17	+54	01	05.3			9	555
/1984e	1985	07	11.01345	22	49	40.45	+54	01	25.9			9	555

/1984e	1985	07	11.94535	22	54	12.08	+54	26	33.9	9	555
/1984e	1985	07	11.96699	22	54	18.25	+54	27	10.5	9	555
/1984e	1985	07	12.85882	22	58	45.23	+54	50	46.4		186
/1984e	1985	07	12.86505	22	58	47.51	+54	50	57.2		186
/1984e	1985	07	12.87097	22	58	48.76	+54	51	05.4		186
/1984e	1985	07	12.87735	22	58	50.77	+54	51	16.0		186
/1984e	1985	07	13.80990	23	03	38.82	+55	15	18.0		186
/1984e	1985	07	13.81801	23	03	41.05	+55	15	25.9		186
/1984e	1985	07	13.82319	23	03	43.02	+55	15	38.8		186
/1984e	1985	07	14.91170	23	09	29.86	+55	42	54.1	9	555
/1984e	1985	07	15.00752	23	10	00.65	+55	45	19.1	9	555
/1984e	1985	07	16.85416	23	20	19.84	+56	29	20.0		186
/1984e	1985	07	16.86005	23	20	21.82	+56	29	27.1		186
/1984e	1985	07	16.86559	23	20	23.76	+56	29	35.4		186
/1984e	1985	07	16.89486	23	20	34.19	+56	30	11.3	9	555
/1984e	1985	07	16.93745	23	20	48.68	+56	31	10.9	9	555
/1984e	1985	07	18.93229	23	32	41.15	+57	15	04.3		069
/1984e	1985	07	18.96839	23	32	54.62	+57	15	52.4	A	555
/1984e	1985	07	19.01647	23	33	11.99	+57	16	53.2	A	555
/1984e	1985	07	19.90877	23	38	46.87	+57	35	02.6	A	555
/1984e	1985	07	20.93495	23	45	23.04	+57	54	54.2		083
/1984e	1985	07	20.93501	23	45	23.03	+57	54	52.5		083
/1984e	1985	07	21.90182	23	51	47.55	+58	12	23.8		186
/1984e	1985	07	21.90736	23	51	49.87	+58	12	29.8		186
/1984e	1985	07	22.97822	23	59	09.22	+58	30	26.3		069
/1984e	1985	07	22.99245	23	59	15.02	+58	30	40.8		069
/1984e	1985	07	23.88988	00	05	34.42	+58	44	22.6		024
/1984e	1985	07	24.89421	00	12	50.10	+58	58	27.1		024
/1984e	1985	07	24.92448	00	13	03.22	+58	58	48.3	A	555
/1984e	1985	07	24.99605	00	13	34.48	+58	59	47.9	A	555
/1984e	1985	07	25.87638	00	20	06.86	+59	10	33.6		186
/1984e	1985	07	25.88124	00	20	08.94	+59	10	37.8		186
/1984e	1985	07	25.88610	00	20	10.77	+59	10	41.3		186
/1984e	1985	07	26.97030	00	28	27.43	+59	22	10.6	A	555
/1984e	1985	07	27.00188	00	28	42.06	+59	22	29.3	A	555
/1984e	1985	07	28.98715	00	44	24.49	+59	37	46.6		069
/1984e	1985	07	28.99549	00	44	28.49	+59	37	50.0		069
/1984e	1985	08	01.06517	01	10	03.40	+59	45	27.9		085
/1984e	1985	08	01.07634	01	10	09.10	+59	45	27.0		085
/1984e	1985	08	01.08873	01	10	15.56	+59	45	24.5		085
/1984e	1985	08	01.86196	01	16	54.61	+59	43	55.1		085
/1984e	1985	08	01.88451	01	17	06.33	+59	43	52.9		085
/1984e	1985	08	01.90473	01	17	16.70	+59	43	51.1		085
/1984e	1985	08	01.91635	01	17	22.66	+59	43	49.1		085
/1984e	1985	08	02.93493	01	26	15.07	+59	39	40.1	A	555
/1984e	1985	08	02.98005	01	26	38.65	+59	39	28.9	A	555
/1984e	1985	08	03.95360	01	35	13.19	+59	32	51.4	A	555
/1984e	1985	08	03.96324	01	35	18.27	+59	32	47.0	A	555
/1984e	1985	08	05.94140	01	52	54.44	+59	11	36.2		482
/1984e	1985	08	05.96435	01	53	06.80	+59	11	23.1	A	555
/1984e	1985	08	05.97332	01	53	11.48	+59	11	16.9	A	555
/1984e	1985	08	06.07642	01	54	06.14	+59	09	55.8		057
/1984e	1985	08	06.88373	02	01	20.42	+58	57	44.2		085
/1984e	1985	08	07.02729	02	02	37.54	+58	55	38.3		083
/1984e	1985	08	07.02752	02	02	37.57	+58	55	37.9		083
/1984e	1985	08	07.04375	02	02	46.34	+58	55	21.5		083
/1984e	1985	08	07.04377	02	02	46.36	+58	55	23.1		083
/1984e	1985	08	08.79182	02	18	25.37	+58	22	17.4		186
/1984e	1985	08	08.79598	02	18	27.78	+58	22	11.9		186

/1984e	1985	08	08.79984	02	18	29.97	+58	22	07.2	186
/1984e	1985	08	08.97014	02	20	01.46	+58	18	23.5	017
/1984e	1985	08	09.94103	02	28	39.90	+57	55	39.8	565
/1984e	1985	08	09.94939	02	28	44.63	+57	55	32.1	565
/1984e	1985	08	09.95775	02	28	49.36	+57	55	24.1	565
/1984e	1985	08	09.96941	02	28	54.94	+57	55	01.1	046
/1984e	1985	08	09.96944	02	28	55.10	+57	55	01.5	552
/1984e	1985	08	09.97103	02	28	55.79	+57	54	59.2	046
/1984e	1985	08	09.97633	02	28	58.48	+57	54	50.8	046
/1984e	1985	08	09.97830	02	28	59.60	+57	54	48.1	046
/1984e	1985	08	10.93229	02	37	25.89	+57	29	39.5	017
/1984e	1985	08	10.94965	02	37	35.20	+57	29	11.1	017
/1984e	1985	08	10.95729	02	37	39.42	+57	28	58.4	017
/1984e	1985	08	11.93342	02	46	12.47	+57	00	27.9	057
/1984e	1985	08	11.93750	02	46	14.43	+57	00	17.4	984
/1984e	1985	08	11.95564	02	46	24.00	+56	59	45.8	057
/1984e	1985	08	12.00031	02	46	46.98	+56	58	25.8	046
/1984e	1985	08	12.00124	02	46	47.63	+56	58	24.2	046
/1984e	1985	08	12.00458	02	46	49.21	+56	58	18.9	069
/1984e	1985	08	12.01292	02	46	53.48	+56	58	03.9	069
/1984e	1985	08	12.88021	02	54	24.20	+56	29	57.8	017
/1984e	1985	08	12.90287	02	54	36.02	+56	29	16.9	057
/1984e	1985	08	12.94028	02	54	54.88	+56	28	01.6	571
/1984e	1985	08	12.94331	02	54	56.94	+56	28	04.9	565
/1984e	1985	08	12.94725	02	54	59.00	+56	27	47.0	046
/1984e	1985	08	12.94811	02	54	59.43	+56	27	45.1	046
/1984e	1985	08	12.95360	02	55	02.22	+56	27	42.8	565
/1984e	1985	08	12.96389	02	55	07.50	+56	27	20.8	565
/1984e	1985	08	12.97198	02	55	11.78	+56	26	59.2	084
/1984e	1985	08	12.98414	02	55	17.79	+56	26	39.6	084
/1984e	1985	08	13.08507	02	56	09.71	+56	23	12.1	017
/1984e	1985	08	13.08784	02	56	11.07	+56	23	05.5	017
/1984e	1985	08	13.28157	02	57	51.03	+56	16	25.4	801
/1984e	1985	08	13.91258	03	03	14.41	+55	53	47.7	057
/1984e	1985	08	13.93403	03	03	24.02	+55	53	01.8	571
/1984e	1985	08	13.94323	03	03	28.88	+55	52	40.7	565
/1984e	1985	08	13.94855	03	03	32.21	+55	52	30.9	565
/1984e	1985	08	13.95388	03	03	35.55	+55	52	21.2	565
/1984e	1985	08	13.96897	03	03	42.15	+55	51	46.1	046
/1984e	1985	08	13.96990	03	03	42.62	+55	51	44.8	046
/1984e	1985	08	14.01517	03	04	05.67	+55	50	07.9	555
/1984e	1985	08	14.03472	03	04	15.31	+55	49	25.6	061
/1984e	1985	08	14.03854	03	04	17.25	+55	49	16.3	061
/1984e	1985	08	14.04937	03	04	22.90	+55	48	54.7	555
/1984e	1985	08	14.06931	03	04	32.68	+55	48	09.8	083
/1984e	1985	08	14.07049	03	04	33.51	+55	48	08.3	562
/1984e	1985	08	14.08715	03	04	41.91	+55	47	31.9	562
/1984e	1985	08	14.84931	03	11	06.90	+55	18	18.6	190
/1984e	1985	08	14.85712	03	11	10.16	+55	17	51.3	084
/1984e	1985	08	14.87311	03	11	18.02	+55	17	15.2	084
/1984e	1985	08	14.88021	03	11	22.14	+55	17	06.0	190
/1984e	1985	08	14.89085	03	11	26.93	+55	16	40.2	186
/1984e	1985	08	14.89500	03	11	28.99	+55	16	30.4	186
/1984e	1985	08	14.89916	03	11	31.34	+55	16	18.9	186
/1984e	1985	08	14.90331	03	11	33.25	+55	16	11.0	186
/1984e	1985	08	14.90746	03	11	35.25	+55	15	59.6	186
/1984e	1985	08	14.92708	03	11	44.91	+55	15	06.7	571
/1984e	1985	08	14.94649	03	11	55.01	+55	14	20.4	502
/1984e	1985	08	14.99028	03	12	16.90	+55	12	43.5	061

/1984e	1985	08	14.99779	03	12	20.60	+55	12	22.9	046
/1984e	1985	08	14.99872	03	12	21.09	+55	12	20.9	046
/1984e	1985	08	15.00347	03	12	23.35	+55	12	11.1	061
/1984e	1985	08	15.02349	03	12	33.26	+55	11	24.3	555
/1984e	1985	08	15.03541	03	12	38.97	+55	10	57.8	555
/1984e	1985	08	15.05984	03	12	51.14	+55	09	50.1	490
/1984e	1985	08	15.06285	03	12	52.98	+55	09	52.5	562
/1984e	1985	08	15.07534	03	12	59.12	+55	09	20.2	017
/1984e	1985	08	15.07535	03	12	59.14	+55	09	23.3	562
/1984e	1985	08	15.07951	03	13	01.18	+55	09	10.6	017
/1984e	1985	08	15.07957	03	13	01.03	+55	09	10.6	490
/1984e	1985	08	15.26781	03	14	35.31	+55	01	34.5	801
/1984e	1985	08	15.87455	03	19	35.02	+54	36	24.5	190
/1984e	1985	08	15.89549	03	19	45.17	+54	35	19.5	017
/1984e	1985	08	15.90174	03	19	48.67	+54	35	04.4	017
/1984e	1985	08	15.90233	03	19	48.48	+54	35	13.6	190
/1984e	1985	08	15.96615	03	20	19.93	+54	32	24.2	046
/1984e	1985	08	15.96753	03	20	20.61	+54	32	20.5	046
/1984e	1985	08	16.01924	03	20	45.84	+54	30	11.6	555
/1984e	1985	08	16.03417	03	20	53.12	+54	29	34.6	555
/1984e	1985	08	16.04479	03	20	58.23	+54	29	08.0	562
/1984e	1985	08	16.06148	03	21	06.25	+54	28	26.0	562
/1984e	1985	08	16.85513	03	27	32.10	+53	53	13.2	084
/1984e	1985	08	16.90079	03	27	53.94	+53	51	12.6	057
/1984e	1985	08	16.95694	03	28	20.68	+53	48	39.5	552
/1984e	1985	08	16.95893	03	28	21.53	+53	48	37.3	083
/1984e	1985	08	16.95898	03	28	21.50	+53	48	37.4	083
/1984e	1985	08	16.97391	03	28	28.55	+53	47	56.0	084
/1984e	1985	08	16.97664	03	28	30.03	+53	47	49.5	083
/1984e	1985	08	16.97671	03	28	30.16	+53	47	49.7	083
/1984e	1985	08	16.97743	03	28	30.60	+53	47	44.5	017
/1984e	1985	08	17.00035	03	28	41.42	+53	46	43.9	017
/1984e	1985	08	17.01285	03	28	47.15	+53	46	10.7	069
/1984e	1985	08	17.25576	03	30	43.71	+53	35	01.6	801
/1984e	1985	08	17.78142	03	34	52.96	+53	10	10.1	186
/1984e	1985	08	17.78568	03	34	54.81	+53	09	57.6	186
/1984e	1985	08	17.79042	03	34	57.13	+53	09	43.8	186
/1984e	1985	08	17.79458	03	34	58.91	+53	09	32.1	186
/1984e	1985	08	17.87214	03	35	36.23	+53	05	50.5	190
/1984e	1985	08	17.88368	03	35	41.18	+53	05	06.8	017
/1984e	1985	08	17.89375	03	35	45.77	+53	04	39.5	017
/1984e	1985	08	17.89968	03	35	48.79	+53	04	32.0	190
/1984e	1985	08	17.93784	03	36	06.58	+53	02	34.2	017
/1984e	1985	08	17.95104	03	36	12.80	+53	01	52.3	017
/1984e	1985	08	17.99278	03	36	32.15	+52	59	58.9	069
/1984e	1985	08	17.99418	03	36	32.72	+52	59	51.2	085
/1984e	1985	08	18.01504	03	36	42.46	+52	58	58.0	085
/1984e	1985	08	18.03714	03	36	52.64	+52	57	43.0	085
/1984e	1985	08	18.32608	03	39	07.69	+52	43	42.4	801
/1984e	1985	08	18.34722	03	39	17.75	+52	42	41.2	792
/1984e	1985	08	18.83681	03	43	05.10	+52	17	56.2	190
/1984e	1985	08	18.95019	03	43	56.10	+52	12	10.3	084
/1984e	1985	08	19.01753	03	44	27.30	+52	08	45.7	046
/1984e	1985	08	19.01892	03	44	27.94	+52	08	40.9	046
/1984e	1985	08	19.29479	03	46	33.87	+51	54	18.7	657
/1984e	1985	08	19.92371	03	51	18.26	+51	21	00.8	057
/1984e	1985	08	19.93611	03	51	22.81	+51	20	14.7	494
/1984e	1985	08	19.94375	03	51	26.30	+51	19	50.6	494
/1984e	1985	08	19.96736	03	51	36.87	+51	18	34.3	502

/1984e	1985	08	20.00368	03	51	52.95	+51	16	42.8		555
/1984e	1985	08	20.01658	03	51	58.81	+51	16	03.6		555
/1984e	1985	08	20.04460	03	52	10.58	+51	14	24.2		086
/1984e	1985	08	20.09493	03	52	33.80	+51	11	49.7		491
/1984e	1985	08	20.18302	03	53	12.39	+51	07	04.8	B	491
/1984e	1985	08	20.40434	03	54	51.27	+50	54	52.5		662
/1984e	1985	08	20.41129	03	54	54.42	+50	54	29.5		662
/1984e	1985	08	20.91910	03	58	36.89	+50	25	59.0		017
/1984e	1985	08	20.92050	03	58	37.55	+50	26	01.4		186
/1984e	1985	08	20.92396	03	58	38.93	+50	25	49.2		186
/1984e	1985	08	20.92744	03	58	40.46	+50	25	37.1		186
/1984e	1985	08	20.92813	03	58	40.82	+50	25	26.4		017
/1984e	1985	08	20.93090	03	58	41.84	+50	25	25.7		186
/1984e	1985	08	20.97268	03	59	00.54	+50	23	00.6		071
/1984e	1985	08	21.03207	03	59	26.52	+50	19	34.7		491
/1984e	1985	08	21.05174	03	59	34.41	+50	18	33.6		046
/1984e	1985	08	21.05272	03	59	34.81	+50	18	29.9		046
/1984e	1985	08	21.05764	03	59	37.07	+50	18	15.4		562
/1984e	1985	08	21.06910	03	59	41.99	+50	17	37.0		562
/1984e	1985	08	21.11180	04	00	00.39	+50	15	12.2		022
/1984e	1985	08	21.11771	04	00	02.68	+50	14	53.3		022
/1984e	1985	08	21.11863	04	00	03.46	+50	14	48.1		491
/1984e	1985	08	21.31146	04	01	27.10	+50	03	35.9		657
/1984e	1985	08	21.39549	04	02	03.29	+49	58	51.2		662
/1984e	1985	08	21.86839	04	05	25.28	+49	31	13.5		190
/1984e	1985	08	21.95663	04	06	03.04	+49	25	57.4		071
/1984e	1985	08	21.97118	04	06	08.76	+49	25	02.4		017
/1984e	1985	08	21.97951	04	06	12.32	+49	24	34.2		017
/1984e	1985	08	22.04578	04	06	40.15	+49	20	42.6		046
/1984e	1985	08	22.04647	04	06	40.57	+49	20	40.1		046
/1984e	1985	08	22.05521	04	06	44.21	+49	20	10.9		562
/1984e	1985	08	22.06771	04	06	49.40	+49	19	26.8		562
/1984e	1985	08	22.27361	04	08	16.80	+49	07	00.3		688
/1984e	1985	08	22.27708	04	08	17.97	+49	06	47.1		688
/1984e	1985	08	22.39278	04	09	06.29	+48	59	54.6		657
/1984e	1985	08	22.93693	04	12	52.16	+48	26	42.5		129
/1984e	1985	08	22.99801	04	13	17.34	+48	22	57.6		071
/1984e	1985	08	23.34903	04	15	40.73	+48	01	00.9		657
/1984e	1985	08	23.83854	04	18	58.79	+47	30	05.0		190
/1984e	1985	08	23.88021	04	19	15.17	+47	27	27.5		190
/1984e	1985	08	23.89039	04	19	19.17	+47	26	39.6		056
/1984e	1985	08	23.93970	04	19	39.08	+47	23	32.1		056
/1984e	1985	08	23.95347	04	19	44.51	+47	22	41.6		552
/1984e	1985	08	23.97486	04	19	53.24	+47	21	23.0		071
/1984e	1985	08	24.03166	04	20	15.54	+47	17	45.3		555
/1984e	1985	08	24.03229	04	20	15.89	+47	17	42.4		562
/1984e	1985	08	24.03527	04	20	16.87	+47	17	29.4		069
/1984e	1985	08	24.04221	04	20	19.52	+47	17	03.9		069
/1984e	1985	08	24.04479	04	20	20.78	+47	16	55.1		562
/1984e	1985	08	24.07264	04	20	31.55	+47	15	09.3		555
/1984e	1985	08	24.34549	04	22	20.35	+46	57	20.0		657
/1984e	1985	08	24.85231	04	25	39.05	+46	24	10.3		190
/1984e	1985	08	24.86273	04	25	43.45	+46	23	27.8		190
/1984e	1985	08	24.90249	04	25	59.06	+46	20	54.6		190
/1984e	1985	08	24.95015	04	26	17.44	+46	17	41.9		071
/1984e	1985	08	25.01209	04	26	41.12	+46	13	29.4		482
/1984e	1985	08	25.04492	04	26	53.70	+46	11	24.7		555
/1984e	1985	08	25.05690	04	26	58.16	+46	10	37.3		555
/1984e	1985	08	25.40521	04	29	12.59	+45	47	17.2		662

/1984e	1985	08	25.41008	04	29	14.25	+45	46	52.7		657
/1984e	1985	08	25.82296	04	31	50.97	+45	19	02.6	9 T	330
/1984e	1985	08	25.82957	04	31	53.55	+45	18	35.1		330
/1984e	1985	08	25.97278	04	32	47.71	+45	08	38.7		071
/1984e	1985	08	26.14720	04	33	52.77	+44	56	41.6		978
/1984e	1985	08	26.41632	04	35	33.54	+44	38	00.3		657
/1984e	1985	08	26.86667	04	38	19.88	+44	06	30.0		190
/1984e	1985	08	27.40521	04	41	35.05	+43	28	16.4		662
/1984e	1985	08	27.41215	04	41	37.54	+43	27	47.2		662
/1984e	1985	08	27.41910	04	41	39.98	+43	27	17.3		662
/1984e	1985	08	27.80491	04	43	57.69	+42	59	36.4	9.8T	330
/1984e	1985	08	27.81220	04	44	00.18	+42	59	07.1		330
/1984e	1985	08	28.03484	04	45	18.97	+42	42	48.1		069
/1984e	1985	08	28.04242	04	45	21.63	+42	42	16.4		069
/1984e	1985	08	28.07604	04	45	33.75	+42	39	51.6		022
/1984e	1985	08	28.08282	04	45	35.60	+42	39	24.0		083
/1984e	1985	08	28.09062	04	45	38.82	+42	38	48.4		022
/1984e	1985	08	28.12083	04	45	49.19	+42	36	38.4		571
/1984e	1985	08	28.27454	04	46	43.59	+42	25	22.0		801
/1984e	1985	08	28.27625	04	46	44.13	+42	25	14.0		801
/1984e	1985	08	29.03458	04	51	06.28	+41	29	15.6		083
/1984e	1985	08	29.05362	04	51	12.56	+41	27	49.9		083
/1984e	1985	08	29.40451	04	53	12.46	+41	01	34.4		662
/1984e	1985	08	29.41146	04	53	14.72	+41	01	04.0		662
/1984e	1985	08	30.05347	04	56	49.12	+40	12	27.5		022
/1984e	1985	08	30.06250	04	56	52.33	+40	11	47.3		022
/1984e	1985	08	30.86957	05	01	16.67	+39	09	47.3		190
/1984e	1985	08	30.87586	05	01	18.53	+39	09	19.1		190
/1984e	1985	08	31.00150	05	01	58.34	+38	59	32.0		069
/1984e	1985	08	31.03863	05	02	10.14	+38	56	39.8		069
/1984e	1985	08	31.90172	05	06	43.60	+37	49	10.6		190
/1984e	1985	08	31.92899	05	06	52.09	+37	47	01.0		190
/1984e	1985	09	01.00451	05	07	15.49	+37	40	59.3		069
/1984e	1985	09	01.00816	05	07	16.70	+37	40	42.4		069
/1984e	1985	09	02.36979	05	14	11.58	+35	52	01.2		657
/1984e	1985	09	03.06898	05	17	37.43	+34	55	28.8		562
/1984e	1985	09	03.08333	05	17	41.52	+34	54	19.0		562
/1984e	1985	09	03.36146	05	19	02.36	+34	31	36.5		657
/1984e	1985	09	04.09705	05	22	32.04	+33	31	17.1		978
/1984e	1985	09	04.29683	05	23	28.45	+33	14	57.4		801
/1984e	1985	09	04.29814	05	23	28.76	+33	14	50.9		801
/1984e	1985	09	04.31983	05	23	34.83	+33	13	04.9	C	801
/1984e	1985	09	04.32069	05	23	35.02	+33	13	01.2	D	801
/1984e	1985	09	05.35664	05	28	20.44	+31	47	13.7		801
/1984e	1985	09	05.35997	05	28	21.30	+31	46	57.0	E	801
/1984e	1985	09	05.36608	05	28	22.89	+31	46	27.1	F	801
/1984e	1985	09	06.03159	05	31	21.65	+30	50	49.6		978
/1984e	1985	09	06.05382	05	31	27.36	+30	48	58.4		978
/1984e	1985	09	06.12054	05	31	45.04	+30	43	25.9		494
/1984e	1985	09	06.12887	05	31	47.27	+30	42	44.3		494
/1984e	1985	09	06.14583	05	31	51.62	+30	41	20.0		494
/1984e	1985	09	06.16180	05	31	55.84	+30	40	00.3		494

Comet Shoemaker (1984f)

/1984f	1985	06	18.36762	11	38	21.16	-33	46	37.8		474
/1984f	1985	06	18.37294	11	38	20.66	-33	46	35.6		474
/1984f	1984	06	19.93078	16	09	19.20	+12	28	29.4		085
/1984f	1984	06	21.88497	16	07	06.21	+12	17	54.3		085

Periodic Comet Faye

/1984h	1984	11	27.06427	09	18	12.23	+03	30	50.3	114
/1984h	1984	11	30.09462	09	19	36.27	+03	11	22.0	114
/1984h	1984	12	01.09843	09	20	00.20	+03	05	11.8	114

Comet Austin (1984i)

/1984i	1984	10	03.05596	07	18	37.90	+42	17	30.0	085
/1984i	1984	10	03.07916	07	18	29.68	+42	18	21.9	085
/1984i	1984	10	20.80270	04	34	40.04	+49	26	23.0	095
/1984i	1984	10	20.83739	04	34	15.67	+49	26	11.6	095
/1984i	1984	10	20.87510	04	33	48.98	+49	25	57.0	095
/1984i	1984	10	21.82142	04	22	44.43	+49	17	35.6	095
/1984i	1984	10	21.85818	04	22	18.88	+49	17	14.4	095
/1984i	1984	10	27.01518	03	24	23.02	+47	18	34.9	085
/1984i	1984	10	27.02453	03	24	17.09	+47	18	20.7	085
/1984i	1984	10	27.04654	03	24	03.81	+47	17	31.0	085
/1984i	1984	10	27.05745	03	23	56.69	+47	17	09.5	085
/1984i	1984	11	01.91080	02	29	23.90	+43	10	57.2	085
/1984i	1984	11	02.96706	02	21	08.44	+42	19	34.8	085
/1984i	1984	11	02.97994	02	21	03.15	+42	19	00.3	085
/1984i	1984	11	03.00580	02	20	50.90	+42	17	41.8	085
/1984i	1984	11	03.01900	02	20	44.56	+42	17	02.8	085
/1984i	1984	11	03.04166	02	20	34.35	+42	15	53.4	085
/1984i	1984	11	05.05855	02	06	09.72	+40	35	30.8	085

Periodic Comet Arend-Rigaux

/1984k	1984	11	23.06770	08	06	38.11	-01	44	25.0	114
/1984k	1984	11	27.03792	08	14	08.36	-01	18	16.9	114
/1984k	1984	11	30.07546	08	19	36.04	-00	53	08.9	114
/1984k	1984	12	01.07853	08	21	20.99	-00	43	45.3	114
/1984k	1984	12	01.94158	08	22	50.62	-00	35	11.5	114
/1984k	1984	12	20.95569	08	49	26.79	+04	27	54.5	114
/1984k	1984	12	22.91416	08	51	26.25	+05	12	42.8	114
/1984k	1984	12	23.91342	08	52	23.65	+05	36	20.1	114
/1984k	1984	12	24.92146	08	53	19.04	+06	00	58.5	114
/1984k	1984	12	25.91050	08	54	11.11	+06	25	46.7	114
/1984k	1984	12	27.87074	08	55	47.59	+07	16	40.7	114

Comet Shoemaker (1984s)

/1984s	1984	11	22.78084	02	07	09.04	+05	17	54.9	114
/1984s	1984	11	22.80168	02	07	10.02	+05	17	08.9	114
/1984s	1984	11	26.65087	02	11	08.34	+02	52	50.5	114
/1984s	1984	11	26.65648	02	11	08.54	+02	52	34.7	114
/1984s	1984	11	26.66087	02	11	08.69	+02	52	21.7	114
/1984s	1984	11	26.71736	02	11	12.46	+02	50	17.6	114
/1984s	1984	11	29.73370	02	15	00.09	+00	55	33.2	114
/1984s	1984	11	29.73928	02	15	00.40	+00	55	22.2	114
/1984s	1984	11	29.74830	02	15	01.13	+00	55	00.7	114
/1984s	1984	11	29.75528	02	15	01.70	+00	54	46.1	114
/1984s	1984	11	29.80182	02	15	05.12	+00	52	59.3	114
/1984s	1984	11	29.80677	02	15	05.45	+00	52	47.7	114
/1984s	1984	11	30.93653	02	16	40.19	+00	09	46.2	114
/1984s	1984	12	01.83044	02	18	00.11	-00	24	15.9	114
/1984s	1984	12	02.92290	02	19	41.08	-01	05	44.2	G 114
/1984s	1984	12	20.74257	03	00	08.52	-11	22	11.6	114
/1984s	1984	12	21.80149	03	03	17.78	-11	52	39.2	114
/1984s	1984	12	22.76614	03	06	14.68	-12	19	32.1	114
/1984s	1984	12	23.77919	03	09	24.72	-12	46	52.4	114

/1984s	1984	12	25.76526	03	15	49.70	-13	37	46.8	114
/1984s	1984	12	26.76465	03	19	09.26	-14	01	59.6	114
/1984s	1984	12	27.76134	03	22	32.08	-14	25	08.0	114
/1984s	1984	12	28.76251	03	25	59.52	-14	47	23.2	114

Comet Levy-Rudenko (1984t)

/1984t	1985	01	18.59277	17	52	57.65	+51	04	25.7	168
/1984t	1985	01	18.60214	17	52	56.18	+51	05	08.5	168
/1984t	1985	01	18.60804	17	52	55.16	+51	05	29.4	168
/1984t	1985	01	18.61152	17	52	54.56	+51	05	44.2	168
/1984t	1985	01	18.66082	17	52	47.01	+51	08	46.9	168
/1984t	1985	01	18.66212	17	52	46.79	+51	08	54.2	168
/1984t	1985	01	18.92540	17	52	05.58	+51	25	17.6	168
/1984t	1985	01	18.93287	17	52	04.38	+51	25	47.9	168
/1984t	1985	02	09.65110	13	33	49.38	+75	35	40.0	168
/1984t	1985	02	09.65700	13	33	39.39	+75	35	42.7	168
/1984t	1985	02	09.66221	13	33	29.39	+75	35	49.6	168
/1984t	1985	02	09.66447	13	33	25.54	+75	35	47.7	168
/1984t	1985	02	09.68200	13	32	52.75	+75	36	02.5	168
/1984t	1985	02	09.69207	13	32	33.59	+75	36	03.3	168
/1984t	1985	02	11.86221	12	22	33.75	+75	16	46.3	168
/1984t	1985	02	11.86985	12	22	18.90	+75	16	28.6	168
/1984t	1985	02	11.87321	12	22	14.11	+75	16	27.4	168
/1984t	1985	02	12.61742	11	59	37.94	+74	51	27.8	168
/1984t	1985	02	12.62054	11	59	30.76	+74	51	20.0	168
/1984t	1985	02	12.62367	11	59	25.20	+74	51	12.4	168
/1984t	1985	02	12.62784	11	59	16.44	+74	50	55.0	168
/1984t	1985	02	12.63166	11	59	10.12	+74	50	52.1	168
/1984t	1985	02	12.82891	11	53	22.10	+74	42	58.0	168
/1984t	1985	02	12.84659	11	52	52.37	+74	42	10.2	168
/1984t	1985	02	18.67465	09	52	47.32	+67	39	43.8	168
/1984t	1985	02	18.67743	09	52	45.29	+67	39	26.3	168
/1984t	1985	02	18.68438	09	52	39.26	+67	38	43.1	168

Periodic Comet Ashbrook-Jackson

/1985a	1985	06	21.59030	20	16	19.21	-38	28	48.8	474
/1985a	1985	06	21.60905	20	16	18.65	-38	28	53.5	474
/1985a	1985	07	18.70608	19	55	39.43	-39	48	03.3	474
/1985a	1985	07	18.71921	19	55	38.68	-39	48	04.3	474

Periodic Comet Hartley

/1985f	1985	07	27.19236	13	04	55.99	-17	49	33.1	675
/1985f	1985	07	27.19771	13	04	56.67	-17	49	42.8	675
/1985f	1985	07	28.19049	13	07	04.49	-18	15	39.6	675
/1985f	1985	07	28.19205	13	07	04.76	-18	15	42.0	675
/1985f	1985	07	28.19590	13	07	05.28	-18	15	48.1	675
/1985f	1985	07	29.17940	13	09	12.83	-18	41	17.2	675
/1985f	1985	07	29.18667	13	09	13.72	-18	41	28.4	675

Periodic Comet Giclas

/1985g	1985	08	10.39236	02	24	48.62	+04	30	41.9	662
/1985g	1985	08	11.40417	02	26	31.24	+04	34	09.0	662

Periodic Comet Whipple

/1985h	1985	08	14.28471	21	41	01.12	-04	47	35.9	H 691
/1985h	1985	08	14.29991	21	41	00.51	-04	47	39.9	H 691
/1985h	1985	08	14.31845	21	40	59.83	-04	47	45.1	H 691
/1985h	1985	08	18.14179	21	38	41.48	-05	06	36.2	801

Periodic Comet Shajn-Schaldach

/1985i	1985	08	14.18913	19	52	07.55	-14	56	28.5			I 691
/1985i	1985	08	14.20611	19	52	06.92	-14	56	32.3			I 691
/1985i	1985	08	14.22385	19	52	06.08	-14	56	36.4			I 691

Periodic Comet Maury

/1985k	1985	08	16.30486	21	50	06.03	-01	31	06.4	16	T	675
/1985k	1985	08	17.28264	21	49	41.59	-01	39	38.4	16	T	675
/1985k	1985	08	17.34514	21	49	40.01	-01	40	07.8			675
/1985k	1985	08	20.39722	21	48	23.59	-02	07	37.5	15	T	675
/1985k	1985	08	20.42257	21	48	22.68	-02	07	53.9			675
/1985k	1985	08	23.30278	21	47	12.91	-02	34	46.1	16	T	675
/1985k	1985	08	23.35486	21	47	11.63	-02	35	12.2			675
/1985k	1985	09	07.21417	21	42	33.24	-04	57	29.5			675
/1985k	1985	09	07.39583	21	42	30.59	-04	59	14.3			675
/1985k	1985	09	08.12854	21	42	22.88	-05	06	04.0			675
/1985k	1985	09	08.20062	21	42	21.94	-05	06	44.2			675
/1985k	1985	09	12.08596	21	41	48.83	-05	42	00.6			801
/1985k	1985	09	12.16787	21	41	48.22	-05	42	42.7			801

Comet Hartley-Good (1985l)

/1985l	1985	09	13.58304	01	03	39.51	-27	42	43.6	10	T	474
/1985l	1985	09	13.59091	01	03	37.29	-27	42	44.2			474
/1985l	1985	09	14.26037	01	00	28.20	-27	46	52.0		J	801
/1985l	1985	09	14.38941	00	59	50.60	-27	47	36.1	12.5	T K	688
/1985l	1985	09	14.39716	00	59	49.78	-27	47	17.8		J	474
/1985l	1985	09	14.40793	00	59	46.14	-27	47	22.5			474
/1985l	1985	09	14.42361	00	59	41.65	-27	47	44.7		L	688
/1985l	1985	09	15.20512	00	55	49.21	-27	51	43.4			801
/1985l	1985	09	15.21394	00	55	46.52	-27	51	45.2			801
/1985l	1985	09	15.37153	00	54	59.10	-27	52	17.4		M	474
/1985l	1985	09	15.38021	00	54	56.14	-27	52	16.0			474
/1985l	1985	09	16.39206	00	49	36.49	-27	56	23.1	13	N	474
/1985l	1985	09	16.39935	00	49	34.16	-27	56	25.5			474

Note 1: time uncertain by 10 s. 2: rereduction of positions on MPC 9515. 3: rereduction of positions on MPC 9719. 4: very weak image. 5: tail 30" long in p.a. 270 . 6: image near that of background star. 7: stellar central condensation, coma diameter 7", tail length 9". 8: excessive image motion due to wind shake. 9: correction to MPC 9815. A: correction to MPC 9846-9848. B: dark plate, difficult to measure. C: difficult to measure; image involved with bright star. D: mean of trail ends; very near bright star. E: through thin clouds. F: through thick clouds. G: at edge of plate. H: coma diameter 10"; tail 20" long in p.a. 245 . I: 5"-10" coma. J: image trailed. K: R.A. and Decl. uncertain. L: R.A. uncertain. M: image faint.

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OBSERVATIONS MADE AT CAUSSOLS.

Plates taken in the course of the International Near-Earth Asteroid Search (INAS) by A. Barthelemy and T. Laverge with the 0.9-m Schmidt, measured and reduced by C. Pollas. Contact: J.-L. Heudier, CERGA, Avenue Copernic, F-06130 Grasse, France.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1985 PA	1985 08	19.03212	22 26 20.33	-13 57 38.4	010
1985 PA	1985 08	19.03906	22 26 19.55	-13 58 09.0	010
1985 PA	1985 08	24.00179	22 15 06.51	-20 27 34.3	010
1985 PA	1985 08	24.01568	22 15 04.76	-20 28 39.4	010

OBSERVATIONS MADE AT KLET BY A. MRKOS AND Z. VAVROVA.

Plates with the 0.6-m Maksutov reflector. Contact: A. Mrkos, Department of Astronomy and Astrophysics, Charles University, Svedska 8, C-15000 Prague 5, Czechoslovakia.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
102	1985 08	13.89796	21 12 34.45	-06 11 32.9		046
102	1985 08	13.91237	21 12 33.75	-06 11 37.8		046
104	1985 08	11.96906	22 33 17.76	-13 18 32.8		046
104	1985 08	11.98417	22 33 17.21	-13 18 35.1		046
104	1985 08	15.99468	22 30 31.05	-13 35 18.3		046
104	1985 08	16.00880	22 30 30.42	-13 35 21.5		046
104	1985 08	21.02399	22 26 49.97	-13 56 33.9		046
104	1985 08	21.03672	22 26 49.42	-13 56 36.7		046
104	1985 08	21.97951	22 26 06.80	-14 00 35.7		046
104	1985 08	21.99363	22 26 06.23	-14 00 39.8		046
182	1985 08	11.96906	22 37 30.21	-11 12 53.3		046
182	1985 08	11.98417	22 37 29.53	-11 12 58.5		046
182	1985 08	15.99468	22 34 24.53	-11 36 14.4		046
182	1985 08	16.00880	22 34 23.83	-11 36 20.0		046
182	1985 08	21.02399	22 30 09.76	-12 06 55.1		046
182	1985 08	21.03672	22 30 09.07	-12 06 59.2		046
182	1985 08	21.97951	22 29 19.15	-12 12 51.5		046
182	1985 08	21.99363	22 29 18.37	-12 12 56.4		046
189	1985 08	13.89796	21 12 51.04	-07 40 41.4		046
189	1985 08	13.91237	21 12 50.26	-07 40 45.9		046
243	1985 08	09.94753	22 07 34.93	-11 30 25.1		046
243	1985 08	09.95749	22 07 34.33	-11 30 27.7		046
506	1985 08	11.93295	21 44 03.69	-08 45 49.6		046
506	1985 08	11.94811	21 44 02.84	-08 45 50.2		046
525	1985 08	22.01615	22 57 31.14	+01 06 06.9		046
525	1985 08	22.03027	22 57 30.39	+01 06 02.6		046
614	1985 08	13.89796	21 15 28.04	-04 35 59.1		046
614	1985 08	13.91237	21 15 27.20	-04 36 03.4		046
684	1985 08	21.02399	22 30 52.87	-10 02 34.5		046
684	1985 08	21.03672	22 30 52.11	-10 02 36.3		046
684	1985 08	21.97951	22 29 57.54	-10 05 16.1		046
684	1985 08	21.99363	22 29 56.61	-10 05 19.1		046
759	1985 08	11.93295	21 44 56.08	-10 42 16.6		046
759	1985 08	11.94811	21 44 54.94	-10 42 08.3		046
862	1985 08	11.89730	21 01 49.51	-10 27 49.3		046
862	1985 08	11.91148	21 01 48.63	-10 27 48.2		046
951	1985 08	14.96405	22 11 53.16	-02 27 10.5		046
951	1985 08	14.97811	22 11 52.41	-02 27 14.4		046
1069	1985 08	11.96906	22 31 48.70	-12 12 38.7		046
1069	1985 08	11.98417	22 31 48.04	-12 12 45.1		046
1069	1985 08	15.99468	22 29 15.33	-12 41 05.6		046
1069	1985 08	16.00880	22 29 14.78	-12 41 12.1		046
1069	1985 08	21.02399	22 25 53.94	-13 17 03.7		046
1069	1985 08	21.03672	22 25 53.44	-13 17 08.5		046
1069	1985 08	21.97951	22 25 14.93	-13 23 52.7		046
1069	1985 08	21.99363	22 25 14.24	-13 24 00.5		046
1077	1985 08	21.02399	22 34 55.92	-11 55 57.2		046
1077	1985 08	21.03672	22 34 55.19	-11 55 58.3		046
1077	1985 08	21.97951	22 34 03.24	-11 56 52.2		046
1077	1985 08	21.99363	22 34 02.41	-11 56 53.3		046
1291	1985 08	09.87346	20 41 57.71	-03 30 58.1		046
1291	1985 08	09.88764	20 41 56.98	-03 31 02.4		046
1339	1985 07	18.98198	20 55 14.27	-13 41 50.8		046
1666	1985 08	15.93524	21 29 43.63	-09 17 38.0		046

1666		1985	08	15.94948	21	29	42.83	-09	17	40.6	046
1716		1985	08	13.89796	21	18	02.47	-06	40	28.3	046
1716		1985	08	13.91237	21	18	01.67	-06	40	31.6	046
1723		1985	08	11.89730	21	09	36.43	-12	35	59.9	046
1723		1985	08	11.91148	21	09	35.91	-12	36	05.3	046
1723		1985	08	12.91883	21	08	51.24	-12	42	37.4	046
1723		1985	08	12.93301	21	08	50.70	-12	42	41.9	046
1723		1985	08	13.93564	21	08	05.56	-12	49	08.1	046
1723		1985	08	13.95161	21	08	05.00	-12	49	12.1	046
1791		1985	08	11.89730	21	05	40.07	-08	15	22.3	046
1791		1985	08	11.91148	21	05	39.34	-08	15	26.8	046
1836		1985	08	09.91281	21	44	31.02	-03	35	48.2	046
1836		1985	08	09.92693	21	44	30.26	-03	35	48.9	046
1987		1985	08	14.92464	21	13	38.12	-10	16	28.1	046
1987		1985	08	14.93876	21	13	36.87	-10	16	15.6	046
2051		1985	08	09.94753	22	03	39.70	-09	46	55.6	046
2051		1985	08	09.95749	22	03	39.20	-09	46	56.1	046
2188		1985	08	09.94753	22	11	19.02	-11	37	32.1	046
2188		1985	08	09.95749	22	11	18.58	-11	37	37.1	046
2404		1985	08	11.96906	22	33	45.71	-11	49	56.8	046
2404		1985	08	11.98417	22	33	45.07	-11	50	01.9	046
2404		1985	08	15.99468	22	30	58.76	-12	09	59.4	046
2404		1985	08	16.00880	22	30	59.09	-12	10	04.4	046
2404		1985	08	21.02399	22	27	18.90	-12	35	25.7	046
2404		1985	08	21.03672	22	27	18.31	-12	35	29.2	046
2404		1985	08	21.97951	22	26	36.15	-12	40	15.4	046
2404		1985	08	21.99363	22	26	35.60	-12	40	20.2	046
2478		1985	08	09.91281	21	50	11.79	-05	26	17.0	046
2478		1985	08	09.92693	21	50	10.97	-05	26	22.6	046
2624		1985	08	11.93295	21	43	04.12	-12	25	44.1	046
2624		1985	08	11.94811	21	43	03.84	-12	25	46.5	046
2630		1985	08	11.96906	22	36	19.04	-10	32	21.8	046
2630		1985	08	11.98417	22	36	18.69	-10	32	22.2	046
2630		1985	08	15.99468	22	33	33.19	-10	46	55.9	046
2630		1985	08	16.00880	22	33	32.57	-10	46	58.9	046
2630		1985	08	21.02399	22	29	51.12	-11	06	06.2	046
2630		1985	08	21.03672	22	29	50.45	-11	06	09.2	046
2630		1985	08	21.97951	22	29	07.32	-11	09	49.8	046
2630		1985	08	21.99363	22	29	06.70	-11	09	52.1	046
2696		1985	08	11.86194	20	59	11.14	+13	28	05.2	046
2696		1985	08	11.87606	20	59	10.47	+13	27	58.7	046
2907		1985	08	14.96405	22	12	40.49	-04	20	23.3	046
2907		1985	08	14.97811	22	12	39.98	-04	20	28.0	046
2961		1985	08	14.96405	22	17	29.60	-02	13	30.1	046
2961		1985	08	14.97811	22	17	28.83	-02	13	34.8	046
3118		1985	08	11.89730	21	14	02.57	-11	13	20.8	16.3 046
3118		1985	08	11.91148	21	14	01.75	-11	13	22.0	046
3118		1985	08	12.91883	21	13	08.57	-11	13	46.2	046
3118		1985	08	12.93301	21	13	07.82	-11	13	46.8	046
3118		1985	08	13.93564	21	12	14.89	-11	14	09.1	046
3118		1985	08	13.95161	21	12	14.00	-11	14	09.7	046
1983	CW1	1985	08	22.01615	23	01	20.20	+01	02	29.3	046
1983	CW1	1985	08	22.03027	23	01	19.49	+01	02	28.4	046
1984	EZ	1985	08	11.89730	21	04	27.68	-09	53	42.1	046
1984	EZ	1985	08	11.91148	21	04	26.90	-09	53	50.0	046
1984	EZ	1985	08	12.91883	21	03	39.10	-10	02	58.1	046
1984	EZ	1985	08	12.93301	21	03	38.19	-10	03	05.9	046
1984	EZ	1985	08	13.93564	21	02	50.75	-10	12	06.9	046
1984	EZ	1985	08	13.95161	21	02	50.02	-10	12	15.6	046

1985 OD		1985 07 22.01346	20 53 40.61	-17 04 35.1			046
1985 PR		1985 08 21.02399	22 31 23.65	-12 03 57.2		16.8	046
1985 PR		1985 08 21.03672	22 31 22.75	-12 03 59.9			046
1985 PR		1985 08 21.97951	22 30 22.46	-12 07 36.3			046
1985 PR		1985 08 21.99363	22 30 21.67	-12 07 37.6			046
1985 PJ1	*	1985 08 11.89730	21 04 44.72	-11 11 58.7		16.4	046
1985 PJ1		1985 08 11.91148	21 04 43.80	-11 12 05.4			046
1985 PJ1		1985 08 12.91883	21 03 49.00	-11 17 55.1			046
1985 PJ1		1985 08 12.93301	21 03 48.08	-11 18 02.2			046
1985 PJ1		1985 08 13.93564	21 02 53.52	-11 23 53.7			046
1985 PJ1		1985 08 13.95161	21 02 52.80	-11 23 56.9			046
1985 PK1	*	1985 08 11.93295	21 40 58.06	-10 24 35.8		16.9	046
1985 PK1		1985 08 11.94811	21 40 57.46	-10 24 39.0			046
1985 QU	*	1985 08 21.02399	22 34 16.92	-10 33 06.5		16.0	046
1985 QU		1985 08 21.03672	22 34 16.00	-10 33 06.0			046
1985 QU		1985 08 21.97951	22 33 15.63	-10 30 29.0			046
1985 QU		1985 08 21.99363	22 33 14.50	-10 30 25.1			046
1985 QV	*	1985 08 22.01615	22 56 39.74	+02 16 39.8		16.8	046
1985 QV		1985 08 22.03027	22 56 38.93	+02 16 36.7			046
1985 QW	*	1985 08 22.01615	22 57 38.82	+00 46 36.4		16.5	046
1985 QW		1985 08 22.03027	22 57 38.27	+00 46 33.7			046
1985 QX	*	1985 08 22.01615	23 00 58.34	+02 25 48.8		16.6	046
1985 QX		1985 08 22.03027	23 00 57.61	+02 25 43.9			046
1985 QY	*	1985 08 22.01615	23 06 06.97	+00 02 21.9		16.5	046
1985 QY		1985 08 22.03027	23 06 06.18	+00 02 22.7			046

OBSERVATIONS MADE AT BRORFELDE BY K. AUGUSTESEN, P. JENSEN AND H. J. FOGH OLSEN.

Contact: P. Jensen, Copenhagen University Observatory, Brorfelde, DK-4340 Tollose, Denmark.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1984 SN		1984 10 26.92361	23 33 46.25	+03 55 32.6		16.5	054
1984 SN		1984 10 26.93785	23 33 45.91	+03 55 24.9			054
1985 FE3	*	1985 03 27.95602	11 01 11.68	+22 12 30.4		16.5	054
1985 FE3		1985 04 10.90019	10 53 21.28	+22 06 18.7		16.8	054
1985 FE3		1985 04 16.91977	10 52 00.33	+21 44 31.7			054
1985 HU1	*	1985 04 24.00912	14 30 19.86	+06 51 03.6		16.6	054

OBSERVATION MADE AT THE BURLINGTON REMOTE SITE BY T. HANDLEY.

Contact: T. Handley, 13 Linden Avenue, Burlington, NJ 08016, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
3262	1985 03 16.37813	11 14 50.23	+20 25 33.1		293

OBSERVATIONS MADE AT MERIDA BY J. STOCK AND F. MORENO.

Contact: J. Stock, Centro de Investigacion de Astronomia, Apartado 264, Merida, Venezuela.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
29	1985 08 17.01806	15 00 44.79	-23 32 38.7		1	303
29	1985 08 17.02049	15 00 44.99	-23 32 39.2		1	303
29	1985 08 17.04063	15 00 46.20	-23 32 42.1		1	303
29	1985 08 17.07778	15 00 48.33	-23 32 47.3		1	303
29	1985 08 17.09201	15 00 49.16	-23 32 49.1		1	303

Note 1: observatory code 303, Long. and Parallax 289.13, -422, -65 (see MPC 7759).

OBSERVATIONS MADE AT MOUNT JOHN UNIVERSITY OBSERVATORY.

Plates taken with the 0.6-m f/14 Cassegrain reflector by A. C. Gilmore, measured by P. M. Kilmartin. Computational support from R. McIntosh and W. M. Kissling. Reductions using field plates from the Carter Observatory,

AGK3, SAO Catalog and Cape Photographic Catalogue. Contact: A. C. Gilmore, P.O. Box 57, Lake Tekapo, New Zealand.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1266	1985 07	10.42228	19 21 02.49	-36 40 22.4		1	474
1266	1985 07	10.46875	19 20 59.94	-36 40 16.1		1	474
2768	1985 08	13.56939	18 54 02.09	-32 36 03.7			474
2768	1985 08	13.59138	18 54 00.86	-32 36 06.0			474
3270	1984 10	22.62083	05 22 08.99	-27 48 16.4			474
3270	1984 10	22.66042	05 22 10.79	-27 49 06.2			474
1978 SL7	1985 05	25.67843	18 24 23.66	-35 07 11.7			474
1978 SL7	1985 05	25.70606	18 24 22.43	-35 07 17.2			474
1980 DG	1985 03	21.56426	15 38 48.63	-32 36 56.4			474
1980 DG	1985 03	21.59389	15 38 49.25	-32 37 01.9			474
1982 BH	1985 04	24.64703	19 01 26.88	-44 35 59.9			474
1982 BH	1985 04	24.66566	19 01 28.70	-44 36 22.0			474
1982 BH	1985 05	23.67637	19 37 20.80	-55 12 36.7			474
1982 BH	1985 05	23.68991	19 37 21.23	-55 12 56.6			474
1982 BH	1985 06	21.55650	19 22 23.53	-65 01 59.4			474
1982 BH	1985 06	21.56970	19 22 22.06	-65 02 10.8			474
1982 BH	1985 07	20.65590	18 18 54.42	-66 54 15.1			474
1982 BH	1985 07	20.67465	18 18 52.46	-66 54 06.6			474
1984 KD	1984 06	18.51911	12 37 52.35	-40 55 21.6			474
1984 KD	1984 06	18.52067	12 37 49.35	-40 56 17.5			474
1984 JZ	1985 05	25.73894	21 07 06.89	-42 12 48.4			474
1984 JZ	1985 05	25.79475	21 07 07.50	-42 12 59.7			474
1985 ND	1985 08	13.52315	18 40 58.93	-33 48 55.9			474
1985 ND	1985 08	13.54473	18 40 58.39	-33 48 49.2			474
1985 NE	1985 08	13.56939	18 54 38.65	-32 37 31.0			474
1985 NE	1985 08	13.59138	18 54 38.30	-32 37 23.9			474

Note 1: plates taken with the 0.25-m astrograph.

OBSERVATIONS MADE AT MAUNA KEA.

Observations made using the encoders at the Infrared Telescope Facility by D. J. Tholen, L. A. Lebofsky, C. Kaminski, A. Tokunaga, D. M. Griep and W. F. Golisch. SAO reference stars. Contact: D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1980	1985 02	22.42014	09 22 10.59	-33 06 12.6		568
3124	1985 08	25.36875	22 05 58.69	-09 52 12.7	16.2V	568
3124	1985 08	26.50594	22 05 05.63	-10 00 14.5	16.1V	568
1985 PA	1985 08	25.50625	22 11 24.28	-22 27 34.5		568
1985 PA	1985 08	26.44733	22 09 01.89	-23 42 38.9	16.2V	568

OBSERVATIONS MADE AT ELDAGSEN BY W. BONK.

Contact: W. Bonk, Nordstrasse 33, D-3257 Springe 3, Federal Republic of Germany.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
509	1985 08	12.89027	23 30 28.36	+15 47 35.2	573
509	1985 08	12.90138	23 30 28.12	+15 47 34.5	573
509	1985 08	12.91250	23 30 27.88	+15 47 33.9	573
509	1985 08	12.92430	23 30 27.62	+15 47 33.2	573
509	1985 08	12.93541	23 30 27.38	+15 47 32.5	573
509	1985 08	15.86736	23 29 20.93	+15 44 09.7	573
509	1985 08	15.89027	23 29 20.40	+15 44 07.2	573
509	1985 08	15.90138	23 29 20.14	+15 44 05.9	573
509	1985 08	15.91250	23 29 19.88	+15 44 04.7	573
509	1985 08	15.92361	23 29 19.63	+15 44 03.5	573
714	1985 08	21.85418	23 35 27.66	+18 51 57.7	573
714	1985 08	21.87708	23 35 26.90	+18 51 56.0	573

714	1985 08 21.88819	23 35 26.53	+18 51 55.2			573
714	1985 08 21.90069	23 35 26.11	+18 51 54.3			573
714	1985 08 21.91180	23 35 25.74	+18 51 53.5			573

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY.

Plates with the 0.33-m photographic telescope. Observer C. W. Tombaugh. Measured by S. J. Bus using a PDS scanning microdensitometer. SAO reference stars, global solutions. Contact: E. Bowell, Lowell Observatory, 1400 W. Mars Hill Road, Flagstaff, AZ 86001, U.S.A.

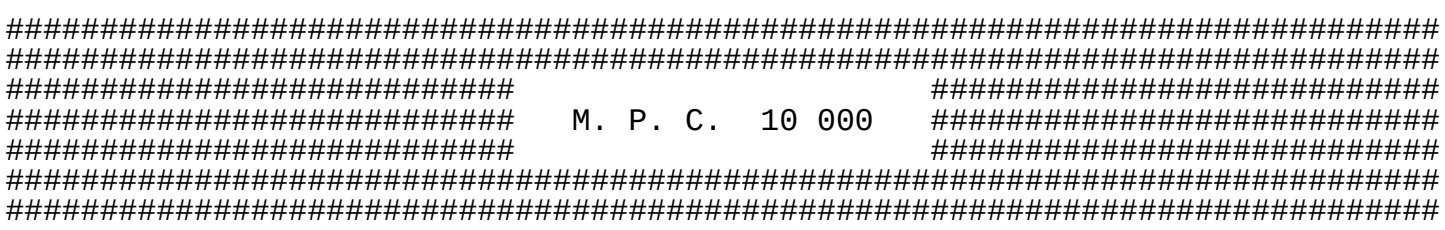
Object	Date	UT	R. A. (1950)	Decl.	Obs.
383	1930 06	23.41319	19 59 29.65	-21 40 14.6	690
383	1930 06	26.40278	19 57 37.20	-21 47 44.7	690
383	1930 06	27.39931	19 56 57.89	-21 50 17.0	690
638	1930 06	23.41319	19 56 59.76	-21 20 43.4	690
638	1930 06	26.40278	19 54 57.37	-21 37 27.2	690
638	1930 06	27.39931	19 54 14.01	-21 43 08.1	690
1847	1930 06	23.41319	19 59 59.71	-20 42 29.0	690
1847	1930 06	26.40278	19 57 59.35	-21 01 46.9	690
1847	1930 06	27.39931	19 57 16.23	-21 08 21.7	690
2407	1930 06	23.41319	19 58 12.96	-24 07 43.6	690
2407	1930 06	26.40278	19 56 21.48	-24 13 15.1	690
2407	1930 06	27.39931	19 55 41.77	-24 15 04.2	690
1930 MH	1930 06	23.41319	19 50 25.77	-22 27 47.3	690
1930 MH	1930 06	26.40278	19 48 25.17	-22 44 19.3	690
1930 MH	1930 06	27.39931	19 47 43.05	-22 49 53.3	690

OBSERVATIONS MADE WITH THE SPACEWATCH CAMERA 0.91-M TELESCOPE ON KITT PEAK.

Observations made by T. Gehrels with a CCD in scanning mode. Reductions by J. V. Scotti using reference stars from the 1984 SAO Catalog. For further details see MPC 9198. Contact: T. Gehrels, Space Sciences Building, University of Arizona, Tucson, AZ 85721, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
2192	1985 08	14.43980	02 42 06.08	+15 26 09.6	17.4V		691
2192	1985 08	14.45818	02 42 06.76	+15 26 10.2			691
2192	1985 08	14.47597	02 42 07.42	+15 26 10.7			691
1978 QQ2	1985 08	15.43597	02 40 36.75	+14 25 32.2			691
1978 QQ2	1985 08	15.45316	02 40 37.97	+14 25 36.1		1	691
1978 QQ2	1985 08	15.46946	02 40 39.11	+14 25 39.6		1	691
1982 HR	1985 08	14.32816	23 49 40.26	+03 03 16.6	20.2V		691
1982 HR	1985 08	14.34275	23 49 39.51	+03 03 13.5			691
1982 HR	1985 08	14.37213	23 49 38.16	+03 03 04.9			691
1982 HR	1985 08	15.30520	23 48 58.10	+02 58 41.6			691
1982 HR	1985 08	15.33669	23 48 56.49	+02 58 31.6			691
1982 HR	1985 08	15.35442	23 48 55.61	+02 58 25.6			691
1985 HC	1985 07	23.18523	14 47 50.21	+04 44 17.1			691
1985 HC	1985 07	23.19479	14 47 50.60	+04 44 17.1			691
1985 HC	1985 07	23.20696	14 47 51.08	+04 44 16.9			691
1985 PA	1985 08	24.38659	22 14 10.45	-20 58 13.6	16.0V		691
1985 PA	1985 08	24.40392	22 14 07.80	-20 59 36.8			691
1985 PA	1985 08	27.34451	22 06 43.10	-24 54 00.8			691
1985 PA	1985 08	27.35559	22 06 41.28	-24 54 53.5			691
1985 PA	1985 08	27.36802	22 06 39.30	-24 55 52.3			691
1985 PH1 *	1985 08	14.38098	01 24 27.93	+01 43 19.0	18.6V		691
1985 PH1	1985 08	14.39837	01 24 28.21	+01 43 17.3			691
1985 PH1	1985 08	14.41492	01 24 28.46	+01 43 14.9			691
1985 PH1	1985 08	15.38212	01 24 44.28	+01 40 53.6			691
1985 PH1	1985 08	15.39950	01 24 44.52	+01 40 51.2			691
1985 PH1	1985 08	15.41654	01 24 44.73	+01 40 49.3			691

Note 1: image near background star.



INDEX TO ORBITAL ELEMENTS.

The following index to orbital elements continues that on MPC 9000-9006 and refers to orbits of both comets and minor planets published since then. Only the latest orbit for each object is indexed, and multiple-designation minor planets are listed only under the principal designation. Now that the MPCs have attained their decachiliad, and as elliptical orbits have been determined for a myriad (in the original sense of the word) minor planets, there will be a departure from tradition: in the future these indices will be issued, not with every thousandth MPC, but--without fanfare --on an approximately annual basis.

Comet	MPC	Comet	MPC	Comet	MPC	Comet	MPC
/1982 I	9425	/1982 IX	9304	/1982i	9214	/1983 III	9304
/1983 XVI	9304	/1983 XIX	9025	/1983n	9213	/1983v	9304
/1984d	9304	/1984e	9762	/1984f	9426	/1984i	9425
/1984j	9211	/1984n	9211	/1984o	9212	/1984p	9830
/1984q	9425	/1984r	9685	/1984s	9425	/1984t	9685
/1984u	9351	/1984v	9828	/1985d	9830	/1985e	9753
/1985f	9828						

Planet	MPC	Planet	MPC	Planet	MPC	Planet	MPC	Planet	MPC
(26)	9581	(29)	9751	(50)	9581	(101)	9065	(143)	9458
(157)	9581	(160)	9581	(167)	9582	(241)	9203	(262)	9582
(263)	9458	(268)	9065	(278)	9459	(365)	9065	(386)	9020
(416)	9065	(457)	9350	(508)	9065	(596)	9066	(649)	9350
(702)	9066	(717)	9020	(738)	9020	(765)	9020	(766)	9021
(788)	9021	(802)	9459	(994)	9204	(1038)	9350	(1116)	9459
(1125)	9459	(1141)	9066	(1161)	9350	(1162)	9414	(1177)	9066
(1221)	9021	(1253)	9459	(1297)	9414	(1525)	9459	(1544)	9460
(1669)	9460	(1670)	9460	(1697)	9460	(1801)	9460	(1830)	9460
(1854)	9461	(1872)	9021	(1873)	9022	(1890)	9461	(2101)	9021
(2197)	9066	(2201)	9678	(2224)	9461	(2330)	9461	(2764)	9461
(3093)	9022	(3094)	9022	(3095)	9022	(3096)	9023	(3097)	9023
(3098)	9023	(3099)	9026	(3100)	9026	(3101)	9027	(3102)	9027
(3103)	9027	(3104)	9028	(3105)	9066	(3106)	9070	(3107)	9070
(3108)	9073	(3109)	9073	(3110)	9074	(3111)	9074	(3112)	9074
(3113)	9075	(3114)	9075	(3115)	9075	(3116)	9076	(3117)	9076
(3118)	9153	(3119)	9154	(3120)	9155	(3121)	9155	(3122)	9155
(3123)	9156	(3124)	9156	(3125)	9156	(3126)	9158	(3127)	9158
(3128)	9159	(3129)	9159	(3130)	9159	(3131)	9160	(3132)	9203
(3133)	9204	(3134)	9204	(3135)	9205	(3136)	9205	(3137)	9205
(3138)	9208	(3139)	9209	(3140)	9209	(3141)	9210	(3142)	9212
(3143)	9212	(3144)	9287	(3145)	9287	(3146)	9288	(3147)	9288
(3148)	9288	(3149)	9289	(3150)	9289	(3151)	9289	(3152)	9289
(3153)	9290	(3154)	9290	(3155)	9290	(3156)	9293	(3157)	9293
(3158)	9294	(3159)	9294	(3160)	9294	(3161)	9295	(3162)	9295
(3163)	9295	(3164)	9296	(3165)	9303	(3166)	9305	(3167)	9351
(3168)	9352	(3169)	9352	(3170)	9353	(3171)	9353	(3172)	9353
(3173)	9354	(3174)	9354	(3175)	9357	(3176)	9358	(3177)	9358
(3178)	9359	(3179)	9415	(3180)	9416	(3181)	9417	(3182)	9419

(3183) 9419	(3184) 9420	(3185) 9420	(3186) 9420	(3187) 9421
(3188) 9421	(3189) 9421	(3190) 9422	(3191) 9422	(3192) 9422
(3193) 9423	(3194) 9423	(3195) 9426	(3196) 9426	(3197) 9426
(3198) 9427	(3199) 9427	(3200) 9428	(3201) 9428	(3202) 9461
(3203) 9462	(3204) 9462	(3205) 9462	(3206) 9463	(3207) 9463
(3208) 9463	(3209) 9464	(3210) 9464	(3211) 9466	(3212) 9467
(3213) 9467	(3214) 9467	(3215) 9467	(3216) 9468	(3217) 9468
(3218) 9468	(3219) 9470	(3220) 9470	(3221) 9470	(3222) 9471
(3223) 9474	(3224) 9475	(3225) 9475	(3226) 9475	(3227) 9582
(3228) 9582	(3229) 9585	(3230) 9585	(3231) 9585	(3232) 9586
(3233) 9586	(3234) 9586	(3235) 9587	(3236) 9587	(3237) 9587
(3238) 9590	(3239) 9591	(3240) 9591	(3241) 9591	(3242) 9592
(3243) 9592	(3244) 9592	(3245) 9594	(3246) 9594	(3247) 9679
(3248) 9679	(3249) 9680	(3250) 9680	(3251) 9681	(3252) 9685
(3253) 9686	(3254) 9686	(3255) 9688	(3256) 9688	(3257) 9688
(3258) 9689	(3259) 9689	(3260) 9755	(3261) 9756	(3262) 9756
(3263) 9757	(3264) 9757	(3265) 9757	(3266) 9758	(3267) 9758
(3268) 9758	(3269) 9759	(3270) 9759	(3271) 9760	(3272) 9762
(3273) 9762	(3274) 9762	(3275) 9763	(3276) 9763	(3277) 9764
(3278) 9764	(3279) 9764	(3280) 9824	(3281) 9824	(3282) 9824
(3283) 9825	(3284) 9827	(3285) 9827	(3286) 9828	(3287) 9829
(3288) 9829	(3289) 9952	(3290) 9952	(3291) 9953	(3292) 9953
(3293) 9953	(3294) 9954	(3295) 9954	(3296) 9954	(3297) 9955
(3298) 9955	(3299) 9955	(3300) 9957	(3301) 9960	(3302) 9965

Planet	MPC	Planet	MPC	Planet	MPC	Planet	MPC
A915 TE	9469	A919 SD	9583	A922 WB	9161	A924 EG	9305
1928 SL	9687	1929 PB	9205	1929 TD1	9684	1930 VD	9684
1931 TJ1	9305	1931 TS2	9958	1931 TC4	9349	1931 TE4	9471
1931 VP	9212	1932 CQ	9206	1932 WB	9206	1933 FE1	9765
1934 CU	9068	1938 AD	9306	1938 DN1	9684	1940 ED	9684
1940 EF	9207	1941 HJ	9760	1941 UG	9207	1941 WA	9464
1948 RD	9583	1948 WF	9685	1949 PQ	9583	1949 QC1	9583
1951 AB	9359	1952 JH	9359	1953 PR	9360	1957 HK	9956
1958 GQ	9416	1964 ED	9202	1964 UC	9588	1964 UQ	9160
1966 BO	9471	1967 JP	9416	1967 UT	9031	1969 TJ1	9018
1969 TT1	9291	1969 TB2	9476	1969 TQ2	9458	1971 BD3	9062
1971 OS	9062	1971 QN	9472	1971 QO1	9458	1971 QP1	9469
1971 SC	9157	1971 SN2	9472	1971 SP3	9071	1971 SX3	9062
1971 TL3	9062	1971 UD1	9465	1971 UG1	9958	1972 HX	9062
1972 HL1	9062	1972 RQ	9062	1972 TW3	9062	1973 DS	9472
1973 DT	9077	1973 QZ1	9157	1973 QB2	9476	1973 RF	9062
1973 SG4	9062	1973 SL4	9062	1973 SO4	9062	1973 SP4	9062
1973 SS4	9062	1973 SW4	9162	1973 UU4	9077	1973 UV4	9062
1974 OU1	9062	1974 QO2	9213	1974 RM	9062	1974 SB1	9472
1974 SU1	9473	1974 VG	9354	1974 XW	9458	1975 AN	9062
1975 AC1	9062	1975 ES	9473	1975 EA6	9956	1975 QO	9291
1975 SE	9062	1975 TE	9062	1975 TK2	9458	1975 TV2	9024
1975 TU3	9062	1975 UX	9018	1975 UY	9018	1975 UZ	9018
1975 UA1	9018	1975 UB1	9018	1975 UC1	9018	1975 UD1	9018
1975 VN1	9078	1975 VT2	9018	1975 VV2	9018	1975 VW2	9018
1975 VX2	9018	1975 VM5	9063	1975 VW5	9018	1975 VY5	9018
1975 VA9	9477	1975 VG9	9584	1976 GJ2	9765	1976 GQ6	9063
1976 GR6	9078	1976 GO8	9593	1976 QH1	9063	1976 SF	9956
1976 SE1	9416	1976 SD3	9956	1976 SP4	9595	1976 SD5	9063
1976 SE5	9063	1976 SJ5	9063	1976 SL5	9063	1976 SR5	9063
1976 SX5	9063	1976 SY5	9063	1976 SZ5	9069	1976 SA6	9063
1976 SB6	9063	1976 SZ9	9957	1976 SV10	9753	1976 UQ1	9750
1976 UG2	9579	1976 YO1	9753	1976 YP1	9962	1976 YP2	9423

1976 YW2	9153	1976 YN7	9153	1977 DD3	9465	1977 DO4	9753
1977 ED1	9750	1977 EN1	9593	1977 EO1	9476	1977 EJ5	9957
1977 JD1	9458	1977 KD1	9458	1977 NN	9754	1977 PB	9458
1977 PE1	9476	1977 QD2	9213	1977 QK2	9754	1977 QC4	9584
1977 QG4	9465	1977 QH4	9458	1977 QA5	9355	1977 QK5	9458
1977 RG	9765	1977 RB2	9153	1977 RJ3	9153	1977 RW6	9754
1977 RH7	9960	1977 TU3	9153	1978 EC	9202	1978 EA3	9210
1978 JT1	9202	1978 NE	9423	1978 NF	9413	1978 NQ1	9202
1978 NT1	9595	1978 OJ	9424	1978 OK	9413	1978 ON	9413
1978 OP	9413	1978 OQ	9413	1978 PR4	9424	1978 PS4	9473
1978 PT4	9413	1978 PU4	9413	1978 QC	9754	1978 QY1	9579
1978 QJ2	9291	1978 QQ2	9682	1978 RX	9296	1978 RJ6	9202
1978 RQ7	9202	1978 RU7	9202	1978 RC9	9202	1978 TO7	9355
1978 UF2	9352	1978 WP11	9413	1978 WW11	9413	1979 HE3	9413
1979 HH3	9676	1979 HW6	9413	1979 KO1	9413	1979 MM5	9160
1979 OX8	9579	1979 OG9	9579	1979 OH9	9579	1979 OK9	9579
1979 OU9	9579	1979 OV10	9579	1979 OJ11	9579	1979 QP8	9681
1979 SY9	9161	1979 SZ9	9072	1979 SG10	9349	1979 SK11	9417
1979 SL11	9417	1979 SM11	9418	1979 SN11	9028	1979 TW1	9413
1979 TY1	9413	1979 TZ1	9413	1979 TC2	9413	1979 TH2	9414
1979 WX3	9682	1980 BB	9202	1980 BM	9202	1980 DS4	9202
1980 DY4	9202	1980 DL5	9202	1980 DO5	9202	1980 EE2	9210
1980 FV	9465	1980 FF12	9589	1980 FG12	9414	1980 FH12	9414
1980 GF	9202	1980 GO	9202	1980 JE	9028	1980 JB1	9458
1980 KR1	9202	1980 KT1	9202	1980 OA	9594	1980 OD	9681
1980 OG	9202	1980 PF	9469	1980 PH	9210	1980 PP2	9414
1980 PQ2	9458	1980 RD1	9414	1980 RJ2	9161	1980 RZ2	9202
1980 RB4	9823	1980 RH5	9414	1980 SG	9296	1980 TM	9202
1980 TD3	9202	1980 TG4	9202	1980 TG5	9683	1980 TY14	9202
1980 VO	9292	1980 XW	9755	1981 DU	9676	1981 DB1	9676
1981 DM1	9676	1981 DN1	9676	1981 DC2	9676	1981 DF2	9676
1981 DV2	9676	1981 EN	9676	1981 EO	9676	1981 ET	9676
1981 EZ	9676	1981 ED1	9676	1981 EZ2	9676	1981 EW3	9676
1981 EH4	9676	1981 EK4	9676	1981 ES4	9676	1981 EU4	9676
1981 EG5	9676	1981 EJ5	9683	1981 ER5	9676	1981 EU6	9676
1981 EM7	9676	1981 EC8	9676	1981 ES8	9676	1981 EW8	9962
1981 EY8	9424	1981 EB9	9676	1981 EV9	9963	1981 EH11	9676
1981 EO11	9063	1981 EA12	9963	1981 EQ12	9676	1981 EY12	9963
1981 EN13	9676	1981 ET13	9676	1981 ER14	9676	1981 EN15	9963
1981 EZ15	9961	1981 EM17	9676	1981 EN17	9676	1981 EY17	9690
1981 EK18	9676	1981 EM18	9676	1981 EB19	9751	1981 ED19	9676
1981 EK19	9676	1981 EL19	9961	1981 EQ19	9676	1981 EU19	9676
1981 EX19	9676	1981 EC20	9677	1981 EH20	9961	1981 EP20	9751
1981 ED21	9589	1981 EW21	9677	1981 EX21	9677	1981 EY21	9677
1981 ET22	9677	1981 EU22	9677	1981 EZ22	9677	1981 EB23	9752
1981 EX24	9961	1981 EC25	9677	1981 EG25	9677	1981 ET25	9677
1981 EF26	9677	1981 EN26	9677	1981 EP26	9677	1981 ET26	9677
1981 EX26	9677	1981 EY26	9677	1981 EE27	9589	1981 EP27	9962
1981 EQ27	9765	1981 EY27	9677	1981 EA28	9677	1981 EF28	9677
1981 EQ28	9677	1981 ES29	9677	1981 EF30	9949	1981 EQ30	9677
1981 EH31	9964	1981 EQ32	9677	1981 EK35	9964	1981 EU35	9752
1981 EY35	9677	1981 EE37	9752	1981 EF37	9677	1981 EU38	9677
1981 EH41	9677	1981 ER42	9964	1981 EG44	9964	1981 EG45	9063
1981 EH45	9063	1981 EJ45	9063	1981 EK45	9063	1981 EL45	9063
1981 EM45	9063	1981 EN45	9063	1981 EO45	9063	1981 EP45	9063
1981 EQ45	9063	1981 ER45	9063	1981 ES45	9063	1981 ET45	9063
1981 EU45	9063	1981 EV45	9063	1981 EW45	9063	1981 EX45	9063
1981 EY45	9063	1981 EZ45	9063	1981 EA46	9063	1981 EB46	9063
1981 EC46	9063	1981 ED46	9063	1981 EE46	9063	1981 EF46	9063

1981 EG46	9063	1981 EH46	9063	1981 EJ46	9063	1981 EK46	9063
1981 EL46	9063	1981 EM46	9063	1981 EN46	9063	1981 EO46	9063
1981 EP46	9063	1981 EQ46	9063	1981 ER46	9063	1981 ES46	9063
1981 ET46	9063	1981 EU46	9063	1981 EV46	9063	1981 EW46	9063
1981 EX46	9063	1981 EY46	9064	1981 EZ46	9064	1981 EA47	9064
1981 EB47	9064	1981 EC47	9064	1981 ED47	9064	1981 EE47	9064
1981 EF47	9064	1981 EG47	9064	1981 EH47	9064	1981 EJ47	9064
1981 EK47	9064	1981 EL47	9064	1981 EM47	9064	1981 EN47	9064
1981 EO47	9064	1981 EP47	9064	1981 EQ47	9064	1981 ER47	9064
1981 ES47	9064	1981 ET47	9064	1981 EU47	9064	1981 EV47	9064
1981 EW47	9064	1981 EX47	9064	1981 EY47	9064	1981 EZ47	9064
1981 EA48	9064	1981 EB48	9064	1981 EC48	9064	1981 ED48	9064
1981 EE48	9064	1981 EF48	9064	1981 EG48	9064	1981 EH48	9064
1981 EJ48	9064	1981 EK48	9064	1981 FB	9595	1981 FD	9687
1981 FQ	9677	1981 FR	9677	1981 FT	9949	1981 FC1	9677
1981 GB	9677	1981 GQ	9965	1981 GD1	9687	1981 GM1	9677
1981 GN1	9823	1981 GO1	9677	1981 JH	9683	1981 JZ	9353
1981 JY1	9683	1981 JD3	9755	1981 NU	9957	1981 PM	9072
1981 QK	9949	1981 QZ	9949	1981 QG1	9949	1981 RM	9949
1981 RU2	9949	1981 RR3	9949	1981 RU3	9949	1981 RV3	9949
1981 RS4	9949	1981 RV4	9949	1981 RW4	9949	1981 RC5	9949
1981 RD5	9949	1981 RF5	9949	1981 RG5	9949	1981 RJ5	9949
1981 RK5	9949	1981 SJ	9949	1981 SL	9949	1981 ST	9950
1981 SW	9958	1981 SE1	9950	1981 SN1	9950	1981 SQ1	9950
1981 SY1	9950	1981 SD2	9950	1981 SE2	9950	1981 SF2	9950
1981 SU2	9950	1981 SD4	9950	1981 SA5	9950	1981 SM5	9950
1981 SS5	9950	1981 SW6	9950	1981 SZ6	9950	1981 SA7	9950
1981 SC7	9950	1981 SE7	9950	1981 SW7	9950	1981 SX7	9950
1981 SZ7	9950	1981 TP	9950	1981 TW	9950	1981 TZ	9950
1981 TP1	9950	1981 TG2	9950	1981 TB3	9950	1981 TC3	9950
1981 TE3	9950	1981 TH3	9950	1981 TJ3	9950	1981 TM3	9950
1981 TN3	9950	1981 TO3	9950	1981 TH4	9950	1981 TJ4	9950
1981 TL4	9950	1981 UN	9950	1981 UB1	9950	1981 UC1	9950
1981 UA2	9950	1981 UD2	9950	1981 UJ4	9950	1981 UZ6	9950
1981 UZ9	9950	1981 UA10	9950	1981 UB10	9950	1981 UC10	9950
1981 UE10	9950	1981 UL10	9950	1981 UK11	9950	1981 UN11	9950
1981 UO11	9950	1981 UP11	9950	1981 UQ11	9950	1981 US11	9950
1981 UU11	9950	1981 UN12	9950	1981 UY15	9950	1981 VA	9687
1981 VF	9951	1981 VK	9951	1981 VN	9951	1981 VO	9951
1981 VP	9951	1981 VS	9951	1981 VC1	9951	1981 VP2	9951
1981 WC	9951	1981 WH	9951	1981 WO	9951	1981 WP	9951
1981 WQ	9951	1981 WU	9072	1981 WB1	9951	1981 WE1	9951
1981 WG1	9951	1981 WO1	9828	1981 WK2	9951	1981 WL4	9018
1981 WM4	9951	1981 XA	9466	1981 XC2	9951	1981 XH2	9951
1981 XJ2	9951	1981 YC	9355	1981 YR	9951	1981 YP1	9951
1981 YU1	9951	1981 YX1	9951	1982 BM	9951	1982 CD	9355
1982 HB2	9766	1982 KG1	9466	1982 SA4	9067	1982 SO4	9018
1982 TQ	9032	1982 TL1	9032	1982 TC2	9029	1982 UU5	9018
1982 UG6	9153	1982 UT6	9032	1982 UB7	9153	1982 UJ8	9358
1982 VZ	9360	1982 VZ4	9069	1982 XV1	9153	1983 AK	9755
1983 AS2	9965	1983 BM	9677	1983 BN	9072	1983 CA3	9965
1983 CB3	9356	1983 EA	9469	1983 QD	9469	1983 QE	9349
1983 QK	9677	1983 QL	9677	1983 QM	9677	1983 QN	9677
1983 QO	9677	1983 QP	9677	1983 QQ	9677	1983 QR	9677
1983 QS	9677	1983 QT	9677	1983 QU	9677	1983 QV	9677
1983 QW	9677	1983 QX	9677	1983 QY	9677	1983 QZ	9677
1983 QA1	9677	1983 QB1	9677	1983 QC1	9677	1983 QD1	9678
1983 QE1	9678	1983 QF1	9678	1983 QG1	9678	1983 RJ1	9678
1983 RV3	9678	1983 RL4	9766	1983 SA	9429	1983 VA	9430

1983 VC7	9678	1983 VD7	9678	1983 VF7	9678	1983 VG7	9825
1983 VM7	9752	1983 VO7	9678	1983 VP7	9678	1983 WP	9760
1983 WF1	9687	1983 XF	9430	1984 AP	9830	1984 AQ	9030
1984 AB1	9020	1984 AC1	9959	1984 AJ1	9153	1984 BC	9430
1984 CP	9018	1984 CR	9024	1984 DM	9018	1984 DN	9018
1984 DO	9018	1984 DQ	9018	1984 DR	9018	1984 DS	9018
1984 DT	9018	1984 DU	9067	1984 DV	9360	1984 DW	9018
1984 DX	9018	1984 DY	9019	1984 DZ	9019	1984 DB1	9019
1984 DC1	9825	1984 DD1	9019	1984 DE1	9019	1984 DF1	9474
1984 EN	9019	1984 EV	9025	1984 EX	9019	1984 EZ	9030
1984 EN1	9019	1984 EO1	9207	1984 EP1	9019	1984 ER1	9019
1984 ES1	9068	1984 ET1	9019	1984 EU1	9019	1984 FK	9064
1984 FO	9211	1984 GA	9019	1984 GB	9153	1984 GR	9349
1984 HR	9019	1984 HA1	9690	1984 HE1	9019	1984 HG1	9019
1984 HH1	9019	1984 HJ1	9019	1984 HK1	9019	1984 HL1	9019
1984 HM1	9019	1984 HO1	9019	1984 HP1	9019	1984 HQ1	9019
1984 HR1	9019	1984 HS1	9019	1984 HT1	9019	1984 HU1	9019
1984 HV1	9019	1984 HA2	9349	1984 JE	9019	1984 JZ	9211
1984 KB	9030	1984 KD	9297	1984 KF	9025	1984 KP	9153
1984 LK	9153	1984 OA	9153	1984 OD	9064	1984 OE	9064
1984 OF	9064	1984 OG	9064	1984 QA	9959	1984 QB	9202
1984 QC	9208	1984 QF	9153	1984 QH	9202	1984 QJ	9202
1984 QM	9153	1984 QN	9202	1984 QO	9424	1984 QQ	9580
1984 QR	9202	1984 QS	9153	1984 QT	9153	1984 QU	9202
1984 QV	9153	1984 QE1	9590	1984 QJ1	9292	1984 RA	9202
1984 RB	9349	1984 RC	9153	1984 RE	9153	1984 SA	9580
1984 SG	9286	1984 SH	9826	1984 SL	9286	1984 SN	9202
1984 SP	9202	1984 SR	9584	1984 SS	9414	1984 ST	9414
1984 SU	9580	1984 SV	9414	1984 SX	9202	1984 SA1	9458
1984 SB1	9202	1984 SC1	9202	1984 SE1	9202	1984 SF1	9292
1984 SG1	9286	1984 SJ1	9203	1984 SK1	9458	1984 SL1	9203
1984 SM1	9349	1984 SO1	9203	1984 SR1	9203	1984 SS1	9203
1984 ST1	9203	1984 SW1	9349	1984 SX1	9286	1984 SY1	9203
1984 SZ1	9203	1984 SA2	9203	1984 SB2	9286	1984 SC2	9203
1984 SQ2	9286	1984 SR2	9287	1984 ST2	9458	1984 SE3	9580
1984 SF3	9580	1984 SL3	9287	1984 SQ3	9287	1984 SU3	9415
1984 SW3	9356	1984 SZ3	9287	1984 SL4	9349	1984 SM4	9415
1984 SN4	9580	1984 SO4	9580	1984 SP4	9580	1984 SQ4	9580
1984 SB5	9458	1984 SC5	9580	1984 SG5	9580	1984 SH5	9580
1984 SL5	9951	1984 SM5	9580	1984 SO5	9580	1984 SQ5	9682
1984 SR5	9580	1984 SS5	9580	1984 ST5	9580	1984 SU5	9580
1984 SV5	9580	1984 SW5	9580	1984 SX5	9580	1984 SY5	9580
1984 SZ5	9580	1984 SB6	9826	1984 SC6	9580	1984 SD6	9580
1984 SE6	9580	1984 SF6	9580	1984 SG6	9580	1984 SH6	9580
1984 SK6	9580	1984 SL6	9580	1984 SM6	9580	1984 SN6	9580
1984 SO6	9580	1984 SP6	9580	1984 SR6	9580	1984 SS6	9580
1984 ST6	9580	1984 SU6	9580	1984 SW6	9580	1984 SX6	9580
1984 SY6	9580	1984 SZ6	9580	1984 SJ7	9678	1984 TB	9287
1984 TD	9287	1984 UA	9287	1984 UD	9349	1984 UG	9349
1984 UQ	9458	1984 UR	9349	1984 UT	9590	1984 UU	9287
1984 UW	9418	1984 UX	9349	1984 UA1	9287	1984 UB1	9287
1984 UC1	9287	1984 UD1	9287	1984 UF1	9287	1984 UJ1	9287
1984 UK1	9287	1984 UL1	9287	1984 UM1	9287	1984 UN1	9287
1984 UO1	9287	1984 UX1	9951	1984 UA2	9356	1984 UC2	9356
1984 UL2	9357	1984 UN2	9287	1984 UX2	9349	1984 UB3	9414
1984 UD3	9414	1984 UO3	9414	1984 UT3	9678	1984 VA	9361
1984 WB	9590	1984 WK	9418	1984 WL	9580	1984 WA1	9414
1984 WC1	9414	1984 WD1	9414	1984 WE1	9959	1984 WJ1	9951
1984 WQ1	9951	1984 YC	9580	1984 YD	9951	1984 YU	9414

1984	YV	9690	1984	YY	9951	1984	YH1	9951	1984	YK1	9951
1984	YL1	9951	1984	YM1	9951	1984	YN1	9951	1984	YO1	9951
1984	YO2	9951	1984	YV2	9951	1984	YZ3	9951	1984	YA4	9951
1984	YB4	9951	1984	YC4	9951	1984	YE4	9951	1984	YG4	9951
1984	YH4	9951	1985	AE	9580	1985	AF	9680	1985	BA	9678
1985	BB	9580	1985	BH	9951	1985	CA	9580	1985	CG	9580
1985	CK	9580	1985	CL	9750	1985	CN	9750	1985	CT	9678
1985	CU	9581	1985	CV	9581	1985	CX	9581	1985	CF1	9581
1985	CH1	9581	1985	CJ1	9581	1985	CM1	9951	1985	CN1	9951
1985	DA	9750	1985	DD	9678	1985	DQ	9678	1985	DX	9750
1985	FA	9766	1985	FC	9823	1985	FD	9750	1985	FE	9766
1985	FF	9678	1985	FH	9678	1985	FL	9678	1985	FZ	9678
1985	FA1	9678	1985	FC1	9827	1985	FU1	9767	1985	FZ1	9966
1985	FA2	9750	1985	FB2	9750	1985	FC2	9750	1985	FD3	9750
1985	GB	9951	1985	GK	9951	1985	GM	9951	1985	GO	9951
1985	GS	9750	1985	GW	9951	1985	GX	9951	1985	GA1	9951
1985	GE1	9951	1985	GO1	9750	1985	GP1	9751	1985	GU1	9751
1985	GV1	9751	1985	HB	9951	1985	HC	9960	1985	HE	9751
1985	HH	9751	1985	HJ	9751	1985	HL	9751	1985	HS1	9824
1985	JA	9830	1985	KA	9952	1985	KB	9952	1985	KC	9966
1985	KE	9751	1985	KF	9751	1985	ND	9952	1985	NE	9952
1985	OB	9952	1985	OD	9952	1985	OL	9952	1985	PA	9960
2055	P-L	9297	2091	P-L	9297	2093	P-L	9298	2103	P-L	9298
2535	P-L	9069	2594	P-L	9298	2765	P-L	9033	2808	P-L	9033
3040	P-L	9299	3524	P-L	9299	4016	P-L	9299	4069	P-L	9299
4122	P-L	9300	4237	P-L	9300	4260	P-L	9070	4601	P-L	9300
4657	P-L	9301	5557	P-L	9301	6092	P-L	9301	6519	P-L	9302
6543	P-L	9302	6552	P-L	9761	6624	P-L	9303	6787	P-L	9303
9507	P-L	9761									

* * * * *

OBSERVATIONS MADE AT PALOMAR.

Palomar-Leiden Survey plates taken with the 1.2-m Schmidt by T. Gehrels, scanned and measured by C. J. van Houten and I. van Houten-Groeneveld at Leiden. Computational support from the late P. Herget.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
3076	P-L *	1960 09	24.27708	00 25 14.35	+13 23 49.2	18.8	675
3076	P-L	1960 09	25.22986	00 24 27.71	+13 18 16.7		675
3076	P-L	1960 09	27.27569	00 22 46.66	+13 05 58.0		675
3076	P-L	1960 09	28.34722	00 21 53.33	+12 59 17.6		675
3076	P-L	1960 09	29.47153	00 20 56.87	+12 52 07.2		675
4530	P-L *	1960 09	24.41183	00 19 23.11	+03 19 22.1	17.0	675
4530	P-L	1960 09	26.31530	00 17 47.97	+03 06 46.8		675
4530	P-L	1960 09	27.40836	00 16 52.49	+02 59 29.7		675
4530	P-L	1960 09	28.39725	00 16 02.68	+02 52 51.3		675
4530	P-L	1960 10	17.27085	00 02 22.33	+00 57 35.1		675
4530	P-L	1960 10	22.22293	00 00 10.44	+00 36 09.4		675
4530	P-L	1960 10	24.35836	23 59 28.16	+00 28 35.1		675
4530	P-L	1960 10	26.32573	23 58 58.28	+00 22 33.6		675
6198	P-L *	1960 09	24.31111	23 57 00.83	+01 45 35.7	15.9	675
6198	P-L	1960 09	24.33613	23 56 59.26	+01 45 44.9		675
6198	P-L	1960 09	25.29097	23 56 01.06	+01 51 41.3		675
6198	P-L	1960 09	25.32502	23 55 58.79	+01 51 53.8		675
6198	P-L	1960 09	26.25556	23 55 02.37	+01 57 40.8		675
6198	P-L	1960 09	26.27573	23 55 01.10	+01 57 48.0		675
6198	P-L	1960 09	28.30764	23 52 58.40	+02 10 20.9		675
6198	P-L	1960 09	28.32780	23 52 57.03	+02 10 29.6		675
9510	P-L *	1960 10	17.22501	23 27 06.50	-03 36 18.7	17.9	675

9510	P-L		1960 10 22.16324	23 24 44.32	-03 38 37.4				675
9510	P-L		1960 10 24.23753	23 23 58.25	-03 38 18.3				675
9510	P-L		1960 10 26.27157	23 23 21.12	-03 37 16.7				675
9529	P-L	*	1960 10 17.22501	23 30 09.08	-05 31 06.5		19.5		675
9529	P-L		1960 10 22.16324	23 28 16.51	-05 44 49.1				675
9529	P-L		1960 10 24.23753	23 27 39.50	-05 49 18.0				675

OBSERVATIONS MADE WITH THE 1.6-m REFLECTOR AND CCD AT PALOMAR BY J. GIBSON.
Coordination with J. G. Williams and with the Minor Planet Center. AGK3 and SAO reference stars, reduction using Palomar Sky Survey prints. Contact: J. Gibson, Jet Propulsion Laboratory, MS 264-700, Pasadena, CA 91109, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1985 PA	1985 09	08.25000	21 33 14.59	-39 19 48.1		675
1985 PA	1985 09	08.25750	21 33 13.23	-39 20 16.5		675

OBSERVATIONS MADE WITH THE 0.46-M SCHMIDT AT PALOMAR.
Films taken in the course of the International Near-Earth Asteroid Survey (INAS) by S. Singer-Brewster, D. Schneeberger, M. Rudnyk and M. Gallup, measured by Rudnyk. Contact: E. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1985 DT1	*	1985 02	24.36181	10 55 02.86	+03 10 07.3	16.0	1	675
1985 DT1		1985 02	24.38958	10 55 01.28	+03 10 10.5			675
1985 DT1		1985 02	24.40347	10 55 00.54	+03 10 11.9			675
1985 DT1		1985 02	26.40069	10 52 53.25	+03 14 34.9			675
1985 DT1		1985 02	27.38125	10 51 49.98	+03 16 50.5			675
1985 DT1		1985 02	27.39514	10 51 49.18	+03 16 53.1			675
1985 LE	*	1985 06	15.41667	21 03 59.64	-02 43 45.6	14.5	2	675
1985 LE		1985 06	15.44896	21 03 59.67	-02 43 24.9			675
1985 OP	*	1985 07	17.41181	21 42 42.63	-18 47 27.1	15	3	675
1985 OP		1985 07	17.41319	21 42 42.31	-18 47 24.9			675
1985 OP		1985 07	17.41458	21 42 41.97	-18 47 22.5			675
1985 PA		1985 08	19.38958	22 25 34.54	-14 25 01.7		4	675
1985 PA		1985 08	20.44514	22 23 18.26	-15 46 34.6			675
1985 PA		1985 08	21.26493	22 21 30.04	-16 50 43.7			675
1985 PN		1985 08	17.42222	22 15 55.23	-09 38 16.7	16.5		675
1985 QZ	*	1985 08	19.31597	22 34 36.05	-11 41 40.0	15.5	8	675
1985 QZ		1985 08	19.32292	22 34 35.94	-11 41 50.1			675
1985 QZ		1985 08	19.32986	22 34 35.81	-11 41 59.5			675

Note 1: discoverer Schneeberger. 2: discoverer Rudnyk. 3: discoverer Helin. 4: beginning of trail. 5: 1.2-m Schmidt plate taken by J. Schombert. 8 = 3 + 5.

OBSERVATIONS MADE AT PALOMAR BY C. S. SHOEMAKER AND E. M. SHOEMAKER.
4-10-min exposures with the 0.46-m Schmidt telescope. Film pairs scanned by C. S. Shoemaker with a stereomicroscope. Measured by F. Salazar using a PDS scanning microdensitomer at the Lowell Observatory. SAO reference stars, global solutions. Contact: C. S. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
12	1985 05	13.28125	14 39 22.35	-17 51 06.6		675
12	1985 05	15.27795	14 37 32.31	-17 31 08.5		675
13	1985 05	13.41042	16 26 18.13	-31 03 44.3		675
13	1985 05	14.39306	16 25 14.39	-31 08 23.9		675
29	1985 05	11.37708	15 05 33.92	-25 39 07.9		675
29	1985 05	14.38611	15 02 30.97	-25 30 56.5		675
46	1985 05	13.42292	16 36 05.72	-18 42 41.9		675
46	1985 05	14.42917	16 35 15.48	-18 39 59.1		675
46	1985 05	15.44722	16 34 23.51	-18 37 12.8		675

55	1985	05	13.27708	14	10	32.08	-19	03	28.3		675
55	1985	05	15.29931	14	08	51.78	-18	57	12.4		675
62	1985	05	13.27222	14	36	45.15	-12	09	13.8		675
62	1985	05	13.28125	14	36	44.87	-12	09	13.3		675
62	1985	05	15.27361	14	35	19.09	-12	02	56.7		675
62	1985	05	15.27795	14	35	19.02	-12	02	56.5		675
69	1985	05	11.30625	14	04	46.91	-05	32	06.0		675
85	1985	05	11.30625	13	52	30.38	-06	52	34.6		675
106	1985	05	14.41042	15	59	10.90	-20	14	45.9		675
106	1985	05	15.43889	15	58	22.16	-20	13	19.2		675
108	1985	05	13.41042	16	21	03.56	-27	32	06.1		675
108	1985	05	14.39306	16	20	17.10	-27	31	16.6		675
108	1985	05	15.44306	16	19	26.43	-27	30	19.5		675
138	1985	05	11.34027	15	22	20.96	-18	13	19.4		675
160	1985	05	11.37708	15	17	45.97	-22	25	11.9		675
160	1985	05	14.38611	15	14	57.29	-22	17	29.2		675
207	1985	05	13.41042	16	33	17.70	-25	44	49.6		675
207	1985	05	13.41528	16	33	17.32	-25	44	49.8		675
207	1985	05	14.39306	16	32	21.29	-25	45	23.4		675
207	1985	05	14.42431	16	32	19.39	-25	45	23.8		675
207	1985	05	15.44306	16	31	19.50	-25	45	52.8		675
207	1985	05	15.45139	16	31	18.87	-25	45	51.3		675
237	1985	05	13.42292	16	43	50.95	-16	55	10.3		675
237	1985	05	14.42917	16	43	03.17	-16	56	28.8		675
237	1985	05	15.44722	16	42	13.80	-16	57	50.4		675
239	1985	05	13.27222	14	31	11.53	-08	57	16.5		675
239	1985	05	15.27361	14	29	45.92	-08	49	23.5		675
245	1985	05	11.34027	15	36	31.81	-18	30	36.2	14.5	675
245	1985	05	14.34861	15	34	06.34	-18	25	08.4		675
268	1985	05	13.41528	16	45	41.19	-19	17	29.7		675
268	1985	05	14.42431	16	44	57.56	-19	16	12.1		675
268	1985	05	15.45139	16	44	12.20	-19	14	52.6		675
316	1985	05	11.30625	13	56	48.00	-08	29	00.2		675
332	1985	05	11.32095	15	05	41.40	-18	53	46.6	15	675
332	1985	05	15.41181	15	01	58.33	-18	42	29.3		675
338	1985	05	13.39792	15	56	39.79	-27	23	01.6		675
338	1985	05	14.40556	15	55	47.28	-27	19	53.6		675
349	1985	05	11.37708	15	17	12.80	-22	29	08.8		675
349	1985	05	14.38611	15	14	27.96	-22	25	25.4		675
352	1985	05	14.41042	16	05	41.50	-21	37	18.8		675
352	1985	05	15.43889	16	04	36.24	-21	32	58.1		675
363	1985	05	14.41042	16	02	41.05	-19	49	31.9	14	675
363	1985	05	15.43889	16	01	44.79	-19	48	51.7		675
379	1985	05	11.32095	15	04	32.40	-15	17	38.9		675
379	1985	05	13.28542	15	02	59.69	-15	10	49.4		675
379	1985	05	15.28681	15	01	25.63	-15	03	51.1		675
379	1985	05	15.41181	15	01	19.71	-15	03	26.6		675
417	1985	05	13.27222	14	41	03.18	-10	34	09.7		675
417	1985	05	15.27361	14	39	34.39	-10	22	38.8		675
441	1985	05	13.27708	14	03	37.42	-19	33	50.0		675
441	1985	05	15.29931	14	02	13.41	-19	20	19.7		675
447	1985	05	11.32569	15	30	26.24	-16	39	03.7		675
447	1985	05	14.33611	15	27	53.45	-16	33	33.1		675
447	1985	05	14.34861	15	27	52.85	-16	33	33.0		675
447	1985	05	14.35833	15	27	52.22	-16	33	29.4	16	675
447	1985	05	15.41181	15	26	58.53	-16	31	33.9		675
481	1985	05	14.41042	16	03	25.06	-18	55	13.3		675
481	1985	05	15.43889	16	02	28.72	-18	54	58.7		675
503	1985	05	13.41528	16	43	18.99	-21	51	36.3		675

503	1985	05	14.42431	16	42	27.97	-21	51	21.2	675
503	1985	05	15.45139	16	41	35.19	-21	51	03.9	675
517	1985	05	13.40208	16	11	48.14	-23	31	49.3	675
517	1985	05	15.43889	16	10	14.45	-23	27	16.4	675
555	1985	05	13.43958	16	03	08.20	-17	05	12.1	675
565	1985	05	15.25000	14	06	54.31	-13	55	28.6	675
598	1985	05	13.43958	16	11	56.12	-11	31	02.5	675
598	1985	05	14.41458	16	11	06.19	-11	30	14.1	675
598	1985	05	15.45555	16	10	11.84	-11	29	25.6	675
617	1985	05	11.37708	15	26	28.18	-24	10	40.9	675
617	1985	05	14.38611	15	24	39.16	-24	10	56.2	675
675	1985	05	13.39792	15	35	57.25	-25	55	21.2	675
675	1985	05	14.40556	15	35	03.52	-25	50	44.2	675
731	1985	05	11.34027	15	45	53.06	-22	46	09.7	675
731	1985	05	13.39792	15	43	59.46	-22	47	23.3	675
731	1985	05	14.34861	15	43	06.30	-22	47	52.4	675
731	1985	05	14.40556	15	43	03.10	-22	47	53.0	675
748	1985	05	14.41042	16	19	03.49	-22	29	46.2	675
748	1985	05	15.43889	16	18	24.76	-22	28	01.5	675
764	1985	05	13.39792	15	57	56.38	-25	21	19.2	16.5 675
764	1985	05	14.40556	15	57	09.28	-25	17	29.1	675
782	1985	05	13.27222	14	34	16.00	-09	11	36.6	675
782	1985	05	15.27361	14	32	17.11	-09	09	14.9	675
798	1985	05	11.32569	15	33	09.77	-14	29	36.3	675
798	1985	05	14.33611	15	30	49.18	-14	12	10.0	675
803	1985	04	23.38611	15	56	02.78	-24	16	39.8	15.5 675
803	1985	05	11.34027	15	43	49.24	-23	09	35.9	675
803	1985	05	13.39792	15	42	13.33	-23	00	19.3	675
803	1985	05	14.34861	15	41	28.48	-22	55	58.1	675
803	1985	05	14.40556	15	41	25.75	-22	55	41.3	675
848	1985	05	15.25000	14	21	10.29	-13	39	35.2	675
910	1985	05	11.32095	15	03	19.75	-17	00	52.7	675
910	1985	05	15.41181	14	59	29.26	-17	02	51.4	675
1020	1985	05	11.30625	14	03	11.31	-08	20	45.1	675
1023	1985	05	13.27222	14	48	37.58	-08	36	46.5	675
1023	1985	05	15.27361	14	47	13.92	-08	27	30.1	675
1024	1985	05	14.41042	16	04	37.22	-21	23	23.4	675
1024	1985	05	15.43889	16	03	37.99	-21	24	56.8	675
1032	1985	05	13.43958	16	01	07.84	-15	52	26.6	675
1032	1985	05	14.41458	16	00	19.15	-15	52	59.8	675
1032	1985	05	15.45555	15	59	26.53	-15	53	36.0	675
1041	1985	05	14.41042	16	15	17.41	-21	59	32.3	675
1041	1985	05	15.43889	16	14	25.34	-22	00	25.8	675
1066	1985	05	13.41042	16	24	51.98	-29	22	54.8	675
1066	1985	05	14.39306	16	23	53.66	-29	22	35.7	675
1066	1985	05	15.44306	16	22	49.91	-29	22	04.0	675
1088	1985	05	11.34027	15	51	13.03	-20	35	39.1	675
1088	1985	05	14.34861	15	47	46.92	-20	34	58.5	675
1089	1985	05	13.27222	14	23	28.68	-11	10	46.5	675
1089	1985	05	15.25000	14	21	34.56	-11	05	01.7	675
1089	1985	05	15.27361	14	21	33.24	-11	04	47.4	675
1102	1985	05	15.25000	14	14	35.78	-11	28	23.2	675
1111	1985	05	13.42292	16	25	54.19	-16	17	43.4	675
1111	1985	05	14.42917	16	25	08.45	-16	15	40.9	675
1111	1985	05	15.44722	16	24	21.62	-16	13	38.0	675
1115	1985	05	13.42292	16	19	08.03	-17	11	15.0	675
1115	1985	05	14.41042	16	18	17.24	-17	12	27.1	675
1115	1985	05	14.42917	16	18	16.51	-17	12	26.3	675
1115	1985	05	15.43889	16	17	24.31	-17	13	42.4	675

1115	1985	05	15.44722	16	17	23.84	-17	13	38.7	675
1119	1985	05	11.32095	15	02	27.35	-15	06	57.1	675
1119	1985	05	13.28125	15	00	29.03	-15	06	43.7	675
1119	1985	05	13.28542	15	00	28.76	-15	06	43.8	675
1119	1985	05	15.27795	14	58	28.98	-15	06	35.6	675
1119	1985	05	15.28681	14	58	28.37	-15	06	36.8	675
1119	1985	05	15.41181	14	58	20.79	-15	06	37.3	675
1130	1985	05	15.25000	14	22	58.95	-13	34	19.5	675
1131	1985	05	13.28125	14	43	08.54	-11	06	39.6	675
1154	1985	05	13.41528	16	40	56.94	-20	11	51.0	675
1154	1985	05	14.42431	16	40	15.40	-20	11	25.3	675
1154	1985	05	15.45139	16	39	32.57	-20	10	59.3	675
1172	1985	05	14.41042	16	18	22.85	-22	32	32.1	675
1172	1985	05	15.43889	16	17	49.96	-22	29	05.8	675
1268	1985	05	13.41042	16	26	11.61	-27	18	39.2	675
1268	1985	05	14.39306	16	25	32.46	-27	17	52.1	675
1268	1985	05	15.44306	16	24	50.09	-27	16	60.0	675
1305	1985	05	14.41042	16	01	12.02	-20	24	05.2	675
1305	1985	05	15.43889	16	00	20.17	-20	22	27.3	675
1323	1985	05	15.25000	14	14	15.43	-11	17	36.7	675
1348	1985	05	14.33611	15	45	38.11	-14	31	52.7	675
1364	1985	05	11.30625	14	21	28.35	-06	41	01.9	675
1364	1985	05	13.27222	14	19	51.88	-06	41	01.3	675
1407	1985	05	13.27708	14	18	50.22	-20	06	33.5	675
1407	1985	05	15.29931	14	17	13.81	-19	55	59.0	675
1411	1985	05	11.31597	14	38	29.35	-25	59	15.6	675
1443	1985	05	13.42292	16	24	58.95	-18	56	44.1	675
1443	1985	05	14.41042	16	24	12.33	-18	54	26.3	675
1443	1985	05	14.42917	16	24	12.14	-18	54	23.4	675
1443	1985	05	15.43889	16	23	24.29	-18	52	00.7	675
1443	1985	05	15.44722	16	23	24.21	-18	51	60.0	675
1450	1985	05	11.30625	14	16	51.07	-09	16	54.2	675
1450	1985	05	15.25000	14	13	37.95	-09	07	36.3	675
1457	1985	05	11.37708	15	10	07.83	-27	58	41.2	16 675
1457	1985	05	14.38611	15	07	24.00	-27	44	13.6	675
1487	1985	05	11.30625	14	04	06.80	-09	09	24.2	675
1499	1985	05	11.31597	14	58	02.08	-20	50	08.0	675
1499	1985	05	14.32778	14	55	23.07	-20	23	10.6	675
1534	1985	05	14.41042	16	16	33.90	-21	13	31.2	675
1534	1985	05	15.43889	16	15	35.87	-21	13	36.4	675
1586	1985	05	13.27222	14	49	49.54	-09	02	05.2	675
1586	1985	05	15.27361	14	48	01.44	-08	56	13.3	675
1616	1985	05	15.25000	14	13	32.08	-11	51	28.9	675
1621	1985	05	13.42292	16	16	24.33	-16	45	21.5	675
1621	1985	05	13.43958	16	16	23.35	-16	45	18.6	675
1621	1985	05	14.41458	16	15	25.40	-16	41	38.9	675
1621	1985	05	14.42917	16	15	24.66	-16	41	35.4	675
1621	1985	05	15.44722	16	14	23.53	-16	37	45.2	675
1621	1985	05	15.45555	16	14	22.82	-16	37	44.9	675
1623	1985	05	15.25000	14	19	37.85	-10	26	28.3	675
1638	1985	05	13.28125	14	28	13.05	-14	26	25.9	675
1638	1985	05	15.27795	14	26	34.48	-14	18	13.4	675
1785	1985	05	14.39306	16	17	02.91	-26	06	02.4	675
1785	1985	05	15.44306	16	15	58.05	-26	02	20.0	675
1797	1985	05	14.40556	15	50	39.36	-22	48	55.2	675
1831	1985	05	13.41528	16	39	07.56	-19	59	35.1	675
1831	1985	05	14.42431	16	38	16.65	-20	01	56.2	675
1831	1985	05	15.45139	16	37	23.12	-20	04	23.1	675
1911	1985	05	11.34027	15	40	21.28	-21	15	51.4	675

1911		1985	05	14.34861	15	38	22.32	-21	09	00.5	675
1913		1985	05	13.28125	14	39	24.41	-17	19	50.9	675
1913		1985	05	15.27795	14	37	47.29	-17	12	45.3	675
1982		1985	05	13.41042	16	24	16.47	-25	49	36.5	675
1982		1985	05	14.39306	16	23	19.20	-25	52	59.9	675
1982		1985	05	15.44306	16	22	16.43	-25	56	24.6	675
2139		1985	05	15.25000	14	17	26.71	-15	50	31.0	675
2207		1985	05	13.43958	15	59	03.39	-12	04	20.4	675
2207		1985	05	14.41458	15	58	33.91	-12	02	25.0	675
2207		1985	05	15.45555	15	58	02.18	-12	00	24.6	675
2252		1985	05	14.40556	15	41	58.78	-25	30	50.3	17.5 675
2268		1985	05	11.30625	14	06	14.05	-08	51	30.4	675
2300		1985	05	11.32095	15	07	02.06	-18	39	53.5	675
2300		1985	05	15.41181	15	03	27.77	-18	27	55.1	675
2385		1985	05	11.32569	15	42	30.98	-12	22	47.2	675
2409		1985	05	11.30625	14	01	07.81	-06	19	27.8	675
2445		1985	05	11.30625	14	10	31.24	-05	34	18.7	675
2459		1985	05	13.43958	15	51	55.17	-15	05	28.3	675
2459		1985	05	14.41458	15	51	09.74	-15	00	40.4	675
2459		1985	05	15.45555	15	50	21.38	-14	55	29.4	675
2464		1985	05	15.25000	14	14	04.92	-14	09	25.7	675
2505		1985	05	13.41528	16	49	24.22	-22	50	31.2	675
2505		1985	05	14.42431	16	48	44.02	-22	50	18.2	675
2505		1985	05	15.45139	16	48	01.83	-22	50	01.9	675
2534		1985	05	13.28125	14	45	34.50	-15	00	15.5	675
2534		1985	05	15.27795	14	44	04.85	-14	53	21.8	675
2790		1985	05	11.32095	15	16	01.69	-18	21	54.1	675
2811		1985	05	15.25000	14	10	56.54	-14	44	34.8	675
2835		1985	05	14.34861	15	46	23.26	-21	34	53.3	17.5 675
2835		1985	05	15.42014	15	45	24.59	-21	32	14.9	675
3049		1985	05	14.41042	16	04	27.07	-18	27	53.6	675
3049		1985	05	15.43889	16	03	37.90	-18	26	12.8	675
3052		1985	05	11.34027	15	24	26.85	-19	29	27.7	675
3052		1985	05	14.34861	15	21	28.54	-19	11	19.1	675
3071		1985	05	11.32569	15	36	02.47	-16	01	00.8	675
3071		1985	05	14.33611	15	33	40.13	-15	52	50.6	675
3128		1985	05	13.28125	14	48	05.08	-12	16	43.2	675
3224		1985	05	11.32095	15	03	38.63	-17	08	42.3	675
3224		1985	05	15.41181	15	00	21.07	-16	44	59.1	675
3278		1985	05	11.30625	14	06	33.57	-02	53	30.3	675
1976	GJ2	1985	05	13.28542	15	16	23.03	-08	55	21.4	675
1976	GJ2	1985	05	15.28681	15	14	50.08	-08	37	01.2	675
1982	TP	1985	05	11.37708	15	23	05.92	-26	02	47.6	17.5 675
1982	TP	1985	05	14.38611	15	20	12.07	-25	47	37.9	675
1983	WL	1985	05	13.27222	14	42	04.23	-08	43	14.2	17.6 675
1983	WL	1985	05	15.27361	14	40	00.83	-08	43	33.1	675
1984	KF	1985	03	18.43542	17	10	30.72	+05	49	53.0	675
1984	KF	1985	03	18.49444	17	10	31.77	+05	50	08.5	675
1984	KF	1985	04	13.42569	17	13	14.82	+07	47	01.1	675
1985	GE1	1985	05	15.25000	14	02	45.43	-11	39	21.6	675
1985	GM1	1985	05	13.27222	14	38	33.14	-08	43	15.4	17.5 675
1985	GM1	1985	05	15.27361	14	37	08.85	-08	31	32.6	675
1985	GW1 *	1985	04	15.33819	13	28	09.59	-20	07	06.0	17.0 675
1985	GW1	1985	04	23.36111	13	21	54.43	-18	46	32.0	675
1985	HL	1985	05	11.30625	14	10	40.79	-02	24	24.9	675
1985	HV1 *	1985	04	24.37638	14	46	53.65	-15	24	31.3	17.5 675
1985	HV1	1985	04	25.35000	14	46	07.98	-15	21	15.5	675
1985	JG	1985	05	13.28542	15	14	54.91	-08	47	30.6	17 675
1985	JG	1985	05	15.28681	15	12	41.92	-09	00	28.6	675

1985	JL		1985	05	11.32569	15	27	40.19	-11	05	16.4	17.5	675
1985	JL		1985	05	14.33611	15	24	48.13	-11	11	41.7		675
1985	JO	*	1985	05	13.27708	14	08	55.07	-20	53	12.2		675
1985	JO		1985	05	15.29931	14	07	16.89	-20	41	12.2		675
1985	JP	*	1985	05	13.27222	14	35	43.62	-10	44	04.2	17.8	675
1985	JP		1985	05	15.27361	14	34	14.32	-10	38	42.1		675
1985	JQ	*	1985	05	13.27222	14	49	35.08	-08	39	40.0	17.5	675
1985	JQ		1985	05	15.27361	14	47	27.65	-08	32	08.2		675
1985	JR	*	1985	05	13.27222	14	50	05.67	-06	25	45.2	15.5	675
1985	JR		1985	05	15.27361	14	48	04.12	-06	32	30.4		675
1985	JS	*	1985	05	11.30625	13	55	08.47	-08	57	48.2	17.5	675
1985	JS		1985	05	13.29375	13	53	51.39	-08	44	57.9		675
1985	JT	*	1985	05	11.30625	13	58	33.83	-04	34	51.2	17.3	675
1985	JT		1985	05	13.29375	13	57	21.44	-04	24	53.6		675
1985	JU	*	1985	05	11.30625	13	59	40.73	-04	08	55.4	17.3	675
1985	JU		1985	05	13.29375	13	58	13.87	-04	00	22.6		675
1985	JV	*	1985	05	11.30625	14	20	45.32	-08	00	12.8	17	675
1985	JV		1985	05	13.29375	14	19	11.82	-07	53	07.6		675
1985	JW	*	1985	05	13.28125	14	29	57.95	-15	08	16.5	17.5	675
1985	JX	*	1985	05	13.28125	14	31	58.80	-14	20	42.7	18	675
1985	JX		1985	05	15.27795	14	30	30.51	-14	14	16.0		675
1985	JY	*	1985	05	13.28125	14	35	41.84	-14	07	38.0	17.5	675
1985	JY		1985	05	15.27795	14	34	12.99	-14	02	51.8		675
1985	JZ	*	1985	05	13.29375	14	20	25.31	-08	06	36.8	17.8	675
1985	JZ		1985	05	14.25902	14	19	37.03	-08	04	33.9		675
1985	JA1	*	1985	05	13.29375	14	24	24.21	-06	09	11.2	17.8	675
1985	JA1		1985	05	14.25902	14	23	28.14	-06	09	02.1		675
1985	JB1	*	1985	05	15.27795	14	51	07.85	-15	25	52.1	17	675
1985	JC1	*	1985	05	15.27795	14	59	36.50	-15	03	44.8	16.5	675
1985	JD1	*	1985	05	11.31597	14	57	04.61	-22	08	57.7	18.1	675
1985	JD1		1985	05	14.32778	14	53	54.83	-22	02	09.8		675
1985	JE1	*	1985	05	11.31597	14	59	51.87	-19	23	24.5	17.5	675
1985	JE1		1985	05	11.32095	14	59	51.53	-19	23	21.3	17	675
1985	JE1		1985	05	14.32778	14	56	25.99	-19	28	38.7		675
1985	JF1	*	1985	05	11.31597	15	01	53.87	-21	39	07.4	18	675
1985	JF1		1985	05	14.32778	14	59	04.95	-21	27	37.5		675
1985	JG1	*	1985	05	11.32095	14	58	53.91	-16	11	00.7	17	675
1985	JG1		1985	05	15.41181	14	55	03.53	-15	44	12.7		675
1985	JH1	*	1985	05	11.32095	15	03	39.81	-15	15	15.8	16.5	675
1985	JH1		1985	05	15.28681	14	59	35.98	-15	03	41.9		675
1985	JH1		1985	05	15.41181	14	59	27.98	-15	03	22.6		675
1985	JJ1	*	1985	05	11.32095	15	10	38.15	-17	04	00.8	17.3	675
1985	JJ1		1985	05	15.41181	15	06	33.53	-16	36	59.0		675
1985	JK1	*	1985	05	11.32569	15	25	23.73	-12	26	04.8	17	675
1985	JK1		1985	05	14.33611	15	22	40.60	-12	18	50.3		675
1985	JL1	*	1985	05	11.32569	15	34	41.78	-15	18	22.1	17.9	675
1985	JM1	*	1985	05	11.32569	15	40	31.15	-12	21	16.8	17.5	675
1985	JM1		1985	05	14.33611	15	37	19.07	-12	12	39.2		675
1985	JN1	*	1985	05	11.32569	15	42	56.10	-13	23	16.9	17.8	675
1985	JN1		1985	05	14.33611	15	39	56.30	-13	25	41.5		675
1985	JO1	*	1985	05	11.32569	15	44	30.21	-14	54	48.4	17	675
1985	JO1		1985	05	14.33611	15	41	28.87	-14	50	29.2		675
1985	JP1	*	1985	05	14.32778	14	55	32.18	-19	01	48.5	17.5	675
1985	JQ1	*	1985	05	14.33611	15	28	34.44	-14	33	51.4	18.1	675
1985	JR1	*	1985	05	14.33611	15	33	55.14	-13	16	08.9	18	675
1985	JS1	*	1985	05	14.35833	15	26	05.79	-15	18	32.2	17.5	675
1985	JS1		1985	05	15.41181	15	25	13.67	-15	15	47.3		675
1985	JT1		1985	05	11.34027	15	29	14.51	-18	25	49.2	17.5	675
1985	JT1		1985	05	14.34861	15	26	46.77	-18	18	31.6		675

1985	JT1	*	1985 05 14.35833	15	26	46.21	-18	18	30.0	17.5	675
1985	JT1		1985 05 15.41181	15	25	54.39	-18	15	54.4		675
1985	JU1	*	1985 05 13.28542	14	55	36.36	-09	29	51.8	17	675
1985	JU1		1985 05 15.28681	14	53	33.88	-09	27	52.4		675
1985	JV1	*	1985 05 13.28542	14	57	51.84	-12	24	12.1	16.5	675
1985	JV1		1985 05 15.28681	14	55	49.32	-12	26	48.7		675
1985	JW1	*	1985 05 13.28542	15	01	21.61	-09	47	43.7	16.5	675
1985	JW1		1985 05 15.28681	14	59	33.27	-09	51	43.2		675
1985	JX1	*	1985 05 13.28542	15	01	21.73	-10	15	56.0	17	675
1985	JX1		1985 05 15.28681	14	59	24.85	-10	08	06.7		675
1985	JY1	*	1985 05 11.37708	15	00	45.59	-25	01	27.7	17.5	675
1985	JY1		1985 05 14.38611	14	57	45.32	-25	58	27.4		675
1985	JZ1	*	1985 05 14.34861	15	27	01.59	-19	40	22.0	17.5	675
1985	JZ1		1985 05 15.42014	15	26	11.60	-19	35	15.4		675
1985	JA2	*	1985 05 14.34861	15	44	28.02	-20	09	25.3	17.5	675
1985	JA2		1985 05 15.42014	15	43	27.45	-20	05	08.1		675
1985	JB2	*	1985 05 13.39792	15	36	23.84	-24	37	26.4	17	675
1985	JB2		1985 05 14.40556	15	35	22.78	-24	33	37.5		675
1985	JC2	*	1985 05 13.43958	16	04	34.50	-14	18	47.6	16	675
1985	JC2		1985 05 14.41458	16	03	50.06	-14	12	42.3		675
1985	JC2		1985 05 15.45555	16	03	01.56	-14	06	15.0		675
1985	JD2	*	1985 05 13.43958	16	16	59.25	-14	14	54.2	17.8	675
1985	JD2		1985 05 14.41458	16	16	13.07	-14	07	06.6		675
1985	JD2		1985 05 15.45555	16	15	22.57	-13	58	50.5		675
1985	JE2	*	1985 05 14.41458	16	15	56.84	-10	52	53.8	17	675
1985	JF2	*	1985 05 13.41042	16	09	47.95	-26	18	33.2	17	675
1985	JF2		1985 05 14.39306	16	08	45.33	-26	24	29.3		675
1985	JF2		1985 05 15.44306	16	07	37.37	-26	30	49.7		675
1985	JG2	*	1985 05 13.41042	16	11	10.89	-24	08	48.9	17	675
1985	JG2		1985 05 14.39306	16	10	16.86	-24	09	54.4		675
1985	JG2		1985 05 15.44306	16	09	17.95	-24	10	59.3		675
1985	JH2	*	1985 05 13.40208	16	19	31.86	-19	05	56.3	17.5	675
1985	JH2		1985 05 14.41042	16	18	40.94	-19	04	50.0		675
1985	JJ2	*	1985 05 14.41042	16	06	21.31	-21	24	50.6	17	675
1985	JJ2		1985 05 15.43889	16	05	13.08	-21	30	59.4		675
1985	JK2	*	1985 05 14.41042	16	09	05.46	-21	45	10.5	17	675
1985	JK2		1985 05 15.43889	16	07	41.21	-21	58	45.3		675
1985	JL2	*	1985 05 14.41042	16	26	20.80	-19	39	46.5	16.5	675
1985	JL2		1985 05 15.43889	16	25	28.63	-19	42	38.6		675
1985	JM2	*	1985 05 11.31597	14	38	19.83	-24	07	02.4	17.5	675
1985	JN2	*	1985 05 13.28542	14	57	51.64	-13	36	04.0	17.5	675
1985	JN2		1985 05 15.28681	14	56	13.66	-13	28	43.5		675
1985	JO2	*	1985 05 15.25000	14	27	43.80	-15	24	10.5	16.8	675
1985	KO		1985 05 13.43958	15	57	43.63	-12	05	02.0	17.5	675
1985	KO		1985 05 14.41458	15	56	46.82	-12	00	53.0		675
1985	KO		1985 05 15.45555	15	55	45.72	-11	56	26.8		675
1985	KA1		1985 05 13.28542	15	10	18.14	-11	19	51.1	17	675
1985	KA1		1985 05 15.28681	15	08	32.12	-11	08	40.8		675

OBSERVATIONS MADE WITH THE 0.33-M PHOTOGRAPHIC TELESCOPE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION.

Observations made by B. A. Skiff and N. G. Thomas, measured by E. Bowell and S. J. Bus using a PDS scanning microdensitometer. See also MPC 9533. Contact: E. Bowell, Lowell Observatory, 1400 W. Mars Hill Road, Flagstaff, AZ 86001, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
5	1985 08	22.35208	00 23 41.88	-01 50 45.1		688
5	1985 08	22.43264	00 23 39.74	-01 51 10.3		688
59	1985 08	20.28542	23 08 39.47	-02 34 07.2		688

59	1985	08	20.38160	23	08	35.91	-02	34	50.2		688
104	1985	08	20.26319	22	27	24.47	-13	53	18.1		688
104	1985	08	20.35903	22	27	20.07	-13	53	42.2		688
114	1985	08	14.27153	22	19	30.93	-08	28	13.8		688
114	1985	08	14.33831	22	19	27.79	-08	28	36.4		688
114	1985	08	20.24097	22	14	49.07	-09	02	33.8		688
114	1985	08	20.33681	22	14	44.32	-09	03	07.8		688
114	1985	08	22.29722	22	13	09.47	-09	14	40.0		688
114	1985	08	22.37778	22	13	05.52	-09	15	09.8		688
135	1985	08	22.35208	00	21	34.44	+02	40	46.2		688
135	1985	08	22.43264	00	21	32.73	+02	40	46.6		688
136	1985	05	18.30035	15	20	01.94	-05	25	13.4		688
136	1985	05	18.33750	15	19	59.84	-05	24	57.6		688
182	1985	08	20.26319	22	30	49.87	-12	02	09.3		688
182	1985	08	20.35903	22	30	44.64	-12	02	45.0		688
192	1985	08	22.35208	00	13	47.24	+02	09	36.7		688
192	1985	08	22.43264	00	13	45.67	+02	10	02.3		688
241	1985	08	14.31632	22	49	33.92	+00	50	32.8		688
241	1985	08	14.38194	22	49	31.29	+00	50	26.4		688
243	1985	08	14.27153	22	04	12.21	-11	47	10.3		688
243	1985	08	14.33831	22	04	08.91	-11	47	26.2		688
243	1985	08	20.24097	21	59	21.10	-12	11	03.8		688
243	1985	08	20.33681	21	59	16.18	-12	11	27.9		688
243	1985	08	22.29722	21	57	39.55	-12	19	20.9		688
243	1985	08	22.37778	21	57	35.38	-12	19	39.9		688
279	1985	08	22.35208	00	32	42.83	+00	29	54.3		688
279	1985	08	22.43264	00	32	41.27	+00	29	42.8		688
289	1985	08	14.31632	23	03	27.12	-00	43	16.0		688
289	1985	08	14.38194	23	03	25.21	-00	43	36.0		688
289	1985	08	20.28542	23	00	25.76	-01	16	23.7		688
289	1985	08	20.38160	23	00	22.32	-01	16	59.1		688
315	1985	08	22.35208	00	10	23.13	+00	46	10.4		688
315	1985	08	22.43264	00	10	21.64	+00	45	50.6		688
346	1985	08	22.32292	23	58	12.35	-14	37	57.4		688
346	1985	08	22.40347	23	58	09.87	-14	38	31.8		688
386	1985	08	20.28542	23	14	17.92	-00	52	58.3		688
386	1985	08	20.38160	23	14	15.02	-00	54	06.4		688
421	1985	08	15.31111	23	56	05.47	+05	52	16.4		688
421	1985	08	15.38542	23	56	05.52	+05	52	05.5		688
453	1985	08	22.35208	00	21	27.46	-01	26	31.8		688
453	1985	08	22.43264	00	21	24.47	-01	26	42.5		688
509	1985	08	20.31111	23	27	22.56	+15	34	50.2		688
509	1985	08	20.40833	23	27	19.59	+15	34	34.9		688
525	1985	08	14.31632	23	03	14.54	+01	45	55.2		688
525	1985	08	14.38194	23	03	11.76	+01	45	37.1		688
525	1985	08	20.28542	22	58	54.14	+01	16	09.5		688
525	1985	08	20.38160	22	58	49.31	+01	15	36.4		688
537	1985	08	22.32292	00	09	43.87	-11	31	55.3		688
537	1985	08	22.40347	00	09	41.95	-11	32	35.9		688
580	1985	08	22.35208	00	30	32.31	-02	02	20.1		688
580	1985	08	22.43264	00	30	30.69	-02	02	37.1		688
603	1985	08	15.31111	23	56	28.97	+00	30	22.2		688
603	1985	08	15.38542	23	56	26.19	+00	30	19.7		688
684	1985	08	20.26319	22	31	36.90	-10	00	22.5		688
684	1985	08	20.35903	22	31	31.25	-10	00	38.5		688
691	1985	05	18.30035	15	07	01.00	-05	20	57.6		688
691	1985	05	18.33750	15	06	59.15	-05	20	56.8		688
698	1985	08	22.32292	00	03	14.22	-14	11	21.1	16.8	688
698	1985	08	22.40347	00	03	11.20	-14	11	42.1		688

714	1985	08	20.31111	23	36	20.28	+18	53	05.6		688
714	1985	08	20.40833	23	36	16.92	+18	53	02.9		688
725	1985	08	14.29410	23	02	57.88	-13	25	26.0	15.5	688
725	1985	08	14.36007	23	02	55.42	-13	25	48.4		688
789	1985	08	20.31111	23	33	39.76	+13	54	31.0		688
789	1985	08	20.40833	23	33	36.22	+13	54	19.2		688
791	1985	05	20.19757	13	44	31.86	+12	20	59.6		688
791	1985	05	21.17188	13	44	02.17	+12	20	03.6		688
791	1985	05	21.23438	13	44	00.16	+12	19	59.3		688
822	1985	08	14.27153	22	11	37.90	-10	01	22.0		688
822	1985	08	14.33831	22	11	33.94	-10	01	43.2		688
822	1985	08	20.24097	22	05	50.70	-10	33	50.9		688
822	1985	08	20.33681	22	05	44.94	-10	34	22.8		688
822	1985	08	22.29722	22	03	47.95	-10	45	20.1		688
822	1985	08	22.37778	22	03	42.97	-10	45	46.4		688
830	1985	08	15.31111	23	54	26.91	+00	00	39.0		688
830	1985	08	15.38542	23	54	25.07	+00	00	32.6		688
831	1985	08	14.31632	22	44	45.28	-03	34	26.8	16.5	688
831	1985	08	14.38194	22	44	42.47	-03	34	52.1		688
842	1985	08	22.35208	00	16	04.28	-04	35	38.3		688
842	1985	08	22.43264	00	16	01.58	-04	35	36.2		688
894	1985	08	15.31111	23	51	39.45	+06	56	19.5		688
894	1985	08	15.38542	23	51	37.99	+06	56	00.3		688
949	1985	08	14.38194	22	46	41.17	-03	39	15.3		688
996	1985	08	14.29410	22	38	51.06	-08	48	19.4		688
996	1985	08	14.36007	22	38	48.27	-08	48	34.4		688
996	1985	08	20.26319	22	34	44.36	-09	11	57.8		688
996	1985	08	20.35903	22	34	40.11	-09	12	19.0		688
1028	1985	08	22.32292	23	56	11.20	-14	26	06.4		688
1028	1985	08	22.40347	23	56	08.66	-14	26	29.5		688
1046	1985	08	22.35208	00	10	49.80	-03	08	02.0		688
1046	1985	08	22.43264	00	10	47.21	-03	08	11.5		688
1077	1985	08	14.29410	22	40	40.83	-11	49	51.8		688
1077	1985	08	14.36007	22	40	37.51	-11	49	55.7		688
1077	1985	08	20.26319	22	35	37.44	-11	55	11.7		688
1077	1985	08	20.35903	22	35	32.00	-11	55	17.7		688
1084	1985	08	20.24097	22	19	12.38	-06	15	53.4		688
1084	1985	08	20.33681	22	19	07.67	-06	16	28.0		688
1084	1985	08	22.29722	22	17	35.03	-06	28	27.3		688
1084	1985	08	22.37778	22	17	31.24	-06	28	57.8		688
1161	1985	08	22.32292	00	12	22.05	-13	38	36.0		688
1161	1985	08	22.40347	00	12	19.80	-13	39	02.6		688
1241	1985	08	20.31111	23	41	50.72	+16	23	15.6		688
1241	1985	08	20.40833	23	41	46.33	+16	23	46.0		688
1278	1985	05	18.30035	15	03	09.28	-04	27	12.1		688
1278	1985	05	18.33750	15	03	06.83	-04	27	12.5		688
1296	1985	08	14.31632	22	50	31.92	-00	40	07.7		688
1296	1985	08	14.38194	22	50	28.96	-00	40	22.8		688
1326	1985	05	20.19757	13	26	33.44	+12	50	37.7		688
1329	1985	08	22.32292	00	08	12.80	-13	50	42.0		688
1329	1985	08	22.40347	00	08	10.89	-13	51	42.2		688
1332	1985	08	14.29410	22	44	39.65	-10	46	34.3	15.5	688
1332	1985	08	14.36007	22	44	36.89	-10	46	49.1		688
1332	1985	08	20.26319	22	40	28.13	-11	09	42.7		688
1332	1985	08	20.35903	22	40	23.80	-11	09	04.3		688
1356	1985	08	22.32292	00	18	45.03	-10	19	47.0		688
1356	1985	08	22.40347	00	18	42.89	-10	20	10.0		688
1434	1985	08	22.35208	00	29	20.56	-02	57	48.3		688
1434	1985	08	22.43264	00	29	19.02	-02	58	21.0		688

1454	1985	08	22.35208	00	22	34.06	+02	27	33.5	17.2	688
1454	1985	08	22.43264	00	22	31.48	+02	27	27.1		688
1574	1985	08	20.31111	23	16	10.10	+15	36	42.0		688
1574	1985	08	20.40833	23	16	06.76	+15	36	35.1		688
1605	1985	08	15.31111	23	45	28.33	+00	33	58.8		688
1605	1985	08	15.38542	23	45	26.52	+00	33	36.7		688
1612	1985	08	14.31632	22	57	39.03	+02	11	27.0		688
1612	1985	08	14.38194	22	57	36.12	+02	11	30.6		688
1612	1985	08	20.28542	22	53	04.74	+02	13	43.0		688
1612	1985	08	20.38160	22	53	00.05	+02	13	41.9		688
1636	1985	08	15.31111	00	10	09.33	+01	37	53.3	16.8	688
1636	1985	08	15.38542	00	10	08.79	+01	37	35.7		688
1636	1985	08	22.35208	00	08	44.85	+01	08	19.4	16.5	688
1636	1985	08	22.43264	00	08	43.08	+01	07	55.1		688
1733	1985	08	22.35208	00	33	13.20	+01	50	12.7		688
1733	1985	08	22.43264	00	33	11.73	+01	49	50.5		688
1749	1985	08	15.31111	00	00	01.77	+01	48	12.6	17.2	688
1749	1985	08	15.38542	00	00	00.38	+01	48	07.7		688
1754	1985	08	14.31632	23	08	05.40	-04	30	51.6		688
1754	1985	08	14.38194	23	08	03.56	-04	31	13.6		688
1788	1985	08	14.29410	22	40	25.61	-08	12	19.0		688
1788	1985	08	14.36007	22	40	22.93	-08	12	35.4		688
1788	1985	08	20.26319	22	36	20.13	-08	38	22.7		688
1788	1985	08	20.35903	22	36	15.87	-08	38	48.2		688
1846	1985	08	22.35208	00	14	07.69	-01	15	27.5	17.2	688
1846	1985	08	22.43264	00	14	05.47	-01	15	40.4		688
1860	1985	08	14.29410	22	58	24.58	-13	09	37.4		688
1860	1985	08	14.36007	22	58	22.31	-13	10	22.3		688
1939	1985	08	14.29410	22	58	01.86	-07	53	14.5		688
1939	1985	08	14.36007	22	57	59.30	-07	53	30.9		688
2051	1985	08	14.27153	22	00	18.79	-10	05	06.3		688
2051	1985	08	20.24097	21	55	30.71	-10	31	41.6		688
2051	1985	08	20.33681	21	55	25.72	-10	32	07.9		688
2051	1985	08	22.29722	21	53	50.18	-10	41	03.1		688
2051	1985	08	22.37778	21	53	46.18	-10	41	25.7		688
2073	1985	08	14.29410	22	56	13.80	-11	23	35.4		688
2073	1985	08	14.36007	22	56	11.15	-11	23	57.5		688
2073	1985	08	20.26319	22	51	57.40	-11	55	28.5		688
2084	1985	08	22.35208	00	19	46.85	-00	55	37.2		688
2084	1985	08	22.43264	00	19	45.42	-00	56	03.9		688
2093	1985	08	14.27153	22	18	10.72	-08	52	07.6		688
2093	1985	08	14.33831	22	18	07.29	-08	52	46.1		688
2093	1985	08	20.24097	22	13	12.64	-09	49	03.3		688
2093	1985	08	20.33681	22	13	07.44	-09	49	59.7		688
2093	1985	08	22.29722	22	11	27.09	-10	08	55.2		688
2093	1985	08	22.37778	22	11	22.75	-10	09	42.2		688
2188	1985	08	14.27153	22	08	09.84	-12	00	03.1		688
2188	1985	08	14.33831	22	08	06.67	-12	00	25.1		688
2188	1985	08	20.24097	22	03	34.82	-12	32	00.2		688
2188	1985	08	20.33681	22	03	30.22	-12	32	32.2		688
2188	1985	08	22.29722	22	01	58.39	-12	43	04.0		688
2188	1985	08	22.37778	22	01	54.52	-12	43	29.1		688
2204	1985	05	20.19757	13	29	29.37	+14	11	23.4		688
2204	1985	05	21.17188	13	29	04.44	+14	10	45.9		688
2204	1985	05	21.23438	13	29	02.67	+14	10	42.4		688
2227	1985	08	15.31111	23	52	27.74	+01	42	36.9		688
2227	1985	08	15.38542	23	52	26.31	+01	42	19.3		688
2233	1985	08	20.24097	21	58	18.73	-05	48	29.0		688
2233	1985	08	20.33681	21	58	12.82	-05	48	55.9		688

2233	1985	08	22.29722	21	56	19.72	-05	58	20.4		688
2233	1985	08	22.37778	21	56	14.97	-05	58	42.8		688
2242	1985	08	15.31111	23	57	48.03	-00	16	22.1		688
2242	1985	08	15.38542	23	57	46.12	-00	16	26.9		688
2293	1985	08	22.35208	00	33	17.92	+03	13	49.8		688
2293	1985	08	22.43264	00	33	16.06	+03	13	36.5		688
2330	1985	08	14.36007	23	02	16.14	-09	50	09.2	16.8	688
2404	1985	08	20.26319	22	27	53.08	-12	31	32.1		688
2404	1985	08	20.35903	22	27	48.70	-12	32	01.5		688
2429	1985	08	22.32292	00	06	21.95	-13	59	20.1		688
2429	1985	08	22.40347	00	06	18.41	-13	59	29.5		688
2456	1985	08	15.31111	23	50	15.98	+07	07	28.1		688
2456	1985	08	15.38542	23	50	14.34	+07	07	29.1		688
2529	1985	08	14.31632	22	57	15.01	-00	13	50.9		688
2529	1985	08	14.38194	22	57	12.44	-00	14	06.6		688
2529	1985	08	20.28542	22	53	15.42	-00	41	28.6		688
2529	1985	08	20.38160	22	53	11.07	-00	41	57.0		688
2548	1985	08	20.31111	23	28	48.63	+19	06	13.2	17.0	688
2548	1985	08	20.40833	23	28	44.03	+19	06	35.8		688
2562	1985	08	14.27153	22	25	23.80	-12	52	44.4	17.0	688
2562	1985	08	14.33831	22	25	20.56	-12	52	53.8		688
2562	1985	08	20.24097	22	20	22.05	-13	03	40.6	16.8	688
2562	1985	08	20.33681	22	20	17.19	-13	03	52.7		688
2563	1985	08	22.35208	00	14	33.10	-00	57	54.8		688
2563	1985	08	22.43264	00	14	30.97	-00	58	11.1		688
2578	1985	08	22.32292	00	12	07.02	-14	46	41.4	16.8	688
2578	1985	08	22.40347	00	12	04.64	-14	47	04.2		688
2592	1985	08	15.31111	23	47	18.34	-00	11	18.4	17.5	688
2592	1985	08	15.38542	23	47	16.12	-00	11	32.0		688
2630	1985	08	20.26319	22	30	25.74	-11	03	05.8		688
2630	1985	08	20.35903	22	30	21.21	-11	03	28.0		688
2825	1985	08	14.29410	22	43	09.08	-07	56	52.5	16.8	688
2825	1985	08	14.36007	22	43	05.63	-07	57	02.3		688
2825	1985	08	20.26319	22	37	51.42	-08	13	30.7	16.5	688
2825	1985	08	20.35903	22	37	45.70	-08	13	48.2		688
2860	1985	08	15.31111	23	50	48.13	+05	24	39.8		688
2860	1985	08	15.38542	23	50	44.74	+05	25	43.3		688
2864	1985	08	22.29722	22	03	24.98	-13	05	03.8	17.2	688
2875	1985	08	14.29410	22	47	17.56	-09	19	15.0		688
2875	1985	08	14.36007	22	47	14.27	-09	19	25.6		688
2907	1985	08	22.29722	22	07	37.31	-05	12	37.3	16.8	688
2907	1985	08	22.37778	22	07	33.82	-05	13	12.6		688
2920	1985	08	20.31111	23	39	57.17	+20	15	50.5		688
2920	1985	08	20.40833	23	39	54.99	+20	15	44.2		688
2960	1985	08	14.29410	22	59	19.12	-09	42	58.6	17.5	688
2960	1985	08	14.36007	22	59	15.98	-09	43	31.1		688
3031	1985	08	14.31632	23	03	29.15	-03	36	39.2		688
3031	1985	08	14.38194	23	03	25.70	-03	36	50.1		688
3031	1985	08	20.28542	22	58	14.76	-03	54	23.2		688
3031	1985	08	20.38160	22	58	09.12	-03	54	42.1		688
3035	1985	08	20.33681	21	54	49.79	-10	21	26.6		688
3035	1985	08	22.29722	21	53	08.93	-10	32	04.0		688
3035	1985	08	22.37778	21	53	04.89	-10	32	31.8		688
3074	1985	08	14.27153	22	01	23.15	-13	47	12.9		688
3074	1985	08	14.33831	22	01	19.08	-13	47	25.9	2	688
3090	1985	08	20.24097	22	04	15.08	-06	09	21.9		688
3090	1985	08	20.33681	22	04	10.99	-06	10	00.0		688
3124	1985	08	14.27153	22	14	25.60	-08	35	21.7		688
3124	1985	08	14.33831	22	14	22.53	-08	35	48.3		688

3124		1985	08	20.24097	22	09	56.31	-09	16	08.9		688
3124		1985	08	20.33681	22	09	51.99	-09	16	48.1		688
3124		1985	08	22.29722	22	08	21.29	-09	30	32.7		688
3124		1985	08	22.37778	22	08	17.35	-09	31	05.8		688
A922	WB	1985	08	15.31111	23	45	45.40	+00	06	53.3	17.5	688
A922	WB	1985	08	15.38542	23	45	43.08	+00	06	58.1		688
1934	CU	1985	08	14.29410	22	47	32.11	-09	24	30.0	17.2	688
1934	CU	1985	08	14.36007	22	47	29.20	-09	25	04.1		688
1934	CU	1985	08	20.35903	22	42	45.67	-10	18	49.7	17.0	688
1940	EF	1985	08	22.35208	00	13	17.54	-03	35	35.1	16.8	688
1940	EF	1985	08	22.43264	00	13	15.25	-03	35	56.8		688
1948	RD	1985	08	22.35208	00	23	22.57	-00	02	51.6	16.0	688
1948	RD	1985	08	22.43264	00	23	20.80	-00	02	38.0		688
1976	GJ2	1985	05	18.30035	15	12	31.66	-08	10	19.9	16.5	688
1976	GJ2	1985	05	18.33750	15	12	29.83	-08	10	00.4		688
1977	QC4	1985	05	21.17188	13	40	28.24	+09	42	05.0	17.2	688
1977	QC4	1985	05	21.23438	13	40	26.36	+09	42	06.3		688
1978	EA3	1985	08	14.31632	22	47	10.53	+00	22	55.0	17.2	688
1978	EA3	1985	08	14.38194	22	47	08.19	+00	22	34.2		688
1979	FH2	1985	08	14.29410	23	02	26.35	-13	09	19.5	17.5	688
1979	FH2	1985	08	14.36007	23	02	23.55	-13	09	38.5		688
1981	EX19	1985	08	14.31632	23	03	41.29	-04	01	29.8	16.8	688
1981	EX19	1985	08	14.38194	23	03	39.29	-04	01	44.2		688
1981	QF	1985	08	20.26319	22	41	43.73	-09	30	34.7	17.0	688
1981	QF	1985	08	20.35903	22	41	38.97	-09	30	44.2		688
1982	TR	1985	08	15.31111	23	58	16.61	+02	46	44.2	17.5	688
1982	TR	1985	08	15.38542	23	58	14.82	+02	46	47.4		688
1982	UP	1985	08	14.27153	22	07	19.85	-07	18	55.2	17.0	688
1982	UP	1985	08	14.33831	22	07	16.12	-07	19	14.7		688
1982	UP	1985	08	20.33681	22	01	51.52	-07	51	25.3	17.2	688
1982	UP	1985	08	22.29722	22	00	02.77	-08	02	41.8	17.0	688
1982	UP	1985	08	22.37778	21	59	57.91	-08	03	09.7		688
1983	AG2	1985	08	20.24097	22	18	10.37	-11	03	17.0	17.0	688
1983	AG2	1985	08	20.33681	22	18	02.20	-11	03	00.3		688
1983	AG2	1985	08	22.29722	22	15	16.46	-10	57	01.8	17.0	688
1983	AG2	1985	08	22.37778	22	15	09.39	-10	56	49.7		688
1983	AT2	1985	08	22.35208	00	25	00.81	-02	34	19.5	17.2	688
1983	AT2	1985	08	22.43264	00	24	58.70	-02	34	26.5		688
1983	BN	1985	08	22.32292	00	12	22.44	-07	57	53.5	16.8	688
1983	BN	1985	08	22.40347	00	12	20.20	-07	58	22.4		688
1983	CW1	1985	08	14.31632	23	07	21.78	+01	03	40.1	16.8	688
1983	CW1	1985	08	14.38194	23	07	18.94	+01	03	41.8		688
1983	CW1	1985	08	20.28542	23	02	46.19	+01	03	26.8	16.5	688
1983	CW1	1985	08	20.38160	23	02	41.55	+01	03	26.2	1	688
1983	CA3	1985	08	15.31111	23	52	24.05	+07	19	59.4	17.2	688
1983	CA3	1985	08	15.38542	23	52	22.12	+07	19	56.6		688
1984	CW	1985	08	14.27153	22	10	21.53	-10	04	07.4	16.5	688
1984	CW	1985	08	14.33831	22	10	17.36	-10	04	11.4		688
1984	CW	1985	08	20.24097	22	04	12.49	-10	11	47.6	16.2	688
1984	CW	1985	08	20.33681	22	04	06.28	-10	11	55.9		688
1984	CW	1985	08	22.29722	22	02	03.68	-10	14	39.9	16.2	688
1984	CW	1985	08	22.37778	22	01	58.39	-10	14	46.0		688
1984	EM	1985	08	15.31111	00	02	24.02	+00	36	19.6	17.5	1 688
1984	EM	1985	08	15.38542	00	02	22.23	+00	36	02.3		688
1985	JF	1985	05	18.30035	15	09	58.41	-04	46	10.1	17.0	688
1985	JF	1985	05	18.33750	15	09	56.89	-04	45	55.2		688
1985	JG	1985	05	18.30035	15	09	21.91	-09	21	14.7	16.5	688
1985	JG	1985	05	18.33750	15	09	19.47	-09	21	30.1		688
1985	JJ	1985	05	18.30035	15	14	22.54	-06	23	34.0	17.0	688

1985	JJ		1985	05	18.33750	15	14	20.84	-06	23	22.2		688
1985	JK		1985	05	18.30035	15	14	27.03	-08	46	33.4	17.2	688
1985	JL		1985	05	18.30035	15	21	02.75	-11	21	10.6	16.8	688
1985	JL		1985	05	18.33750	15	21	00.68	-11	21	15.7		688
1985	JM		1985	05	18.30035	15	21	21.30	-10	30	29.8	16.8	688
1985	JM		1985	05	18.33750	15	21	19.15	-10	30	08.7		688
1985	JN		1985	05	18.30035	15	25	46.52	-11	20	52.6	17.2	688
1985	JN		1985	05	18.33750	15	25	44.67	-11	20	54.7		688
1985	KZ	*	1985	05	18.30035	15	03	31.35	-07	47	58.3	17.0 4	688
1985	KZ		1985	05	18.33750	15	03	29.13	-07	47	52.2		688
1985	KA1	*	1985	05	18.30035	15	05	55.42	-10	52	43.2	16.8 4	688
1985	KA1		1985	05	18.33750	15	05	53.66	-10	52	32.6		688
1985	PB	*	1985	08	14.27153	22	00	31.13	-10	29	55.5	16.2 4	688
1985	PB		1985	08	14.33831	22	00	27.62	-10	30	28.0		688
1985	PB		1985	08	20.24097	21	55	15.09	-11	20	20.0	16.5	688
1985	PB		1985	08	20.33681	21	55	09.64	-11	21	09.6		688
1985	PB		1985	08	22.29722	21	53	23.10	-11	38	08.1	16.5	688
1985	PB		1985	08	22.37778	21	53	18.59	-11	38	52.4		688
1985	PC	*	1985	08	14.27153	22	00	39.17	-07	59	48.0	16.8 4	688
1985	PC		1985	08	14.33831	22	00	35.38	-08	00	12.8		688
1985	PC		1985	08	20.24097	21	55	10.81	-08	40	18.3	17.0	688
1985	PC		1985	08	20.33681	21	55	05.20	-08	40	54.8		688
1985	PC		1985	08	22.29722	21	53	17.27	-08	54	37.2	17.0	688
1985	PC		1985	08	22.37778	21	53	12.60	-08	55	10.0		688
1985	PD	*	1985	08	14.27153	22	01	01.55	-11	51	01.1	16.8 4	688
1985	PD		1985	08	14.33831	22	00	58.33	-11	51	19.5		688
1985	PD		1985	08	20.24097	21	56	09.02	-12	18	55.9	17.0	688
1985	PD		1985	08	20.33681	21	56	04.18	-12	19	22.8		688
1985	PD		1985	08	22.29722	21	54	27.41	-12	28	34.1	17.0	688
1985	PD		1985	08	22.37778	21	54	23.16	-12	28	57.5		688
1985	PE	*	1985	08	14.27153	22	03	31.57	-08	43	23.4	17.0 4	688
1985	PE		1985	08	14.33831	22	03	28.88	-08	44	00.6		688
1985	PE		1985	08	20.24097	21	59	37.68	-09	36	02.0	17.0	688
1985	PE		1985	08	20.33681	21	59	33.67	-09	36	52.7		688
1985	PE		1985	08	22.29722	21	58	15.06	-09	54	37.8	16.8	688
1985	PE		1985	08	22.37778	21	58	11.85	-09	55	20.5		688
1985	PF	*	1985	08	14.27153	22	03	36.42	-06	26	08.8	16.8 4	688
1985	PF		1985	08	14.33831	22	03	33.89	-06	27	09.3		688
1985	PF		1985	08	20.24097	21	59	56.18	-08	00	42.0	16.8	688
1985	PF		1985	08	20.33681	21	59	52.16	-08	02	17.9		688
1985	PF		1985	08	22.29722	21	58	37.12	-08	34	28.2	16.8	688
1985	PF		1985	08	22.37778	21	58	34.07	-08	35	48.4		688
1985	PG	*	1985	08	14.27153	22	03	47.97	-06	30	15.7	17.0 4	688
1985	PG		1985	08	14.33831	22	03	44.75	-06	30	52.8	2	688
1985	PG		1985	08	20.24097	21	59	17.92	-07	23	57.3	17.0	688
1985	PG		1985	08	22.29722	21	57	44.09	-07	42	56.5	17.0	688
1985	PG		1985	08	22.37778	21	57	40.40	-07	43	42.3		688
1985	PH	*	1985	08	14.27153	22	05	02.35	-07	27	46.6	17.0 4	688
1985	PH		1985	08	14.33831	22	04	58.05	-07	27	31.6		688
1985	PH		1985	08	20.24097	21	58	53.87	-07	09	47.5	16.8	688
1985	PH		1985	08	20.33681	21	58	47.63	-07	09	31.3		688
1985	PH		1985	08	22.29722	21	56	43.65	-07	04	01.9	17.0	688
1985	PH		1985	08	22.37778	21	56	38.17	-07	03	48.4		688
1985	PJ	*	1985	08	14.27153	22	06	44.76	-12	01	37.4	16.8 4	688
1985	PJ		1985	08	14.33831	22	06	41.51	-12	01	53.0		688
1985	PJ		1985	08	20.24097	22	01	53.83	-12	24	23.1	16.8	688
1985	PJ		1985	08	20.33681	22	01	49.04	-12	24	45.3		688
1985	PJ		1985	08	22.29722	22	00	12.19	-12	32	15.8	16.8	688
1985	PJ		1985	08	22.37778	22	00	07.98	-12	32	33.8		688

1985	PK	*	1985	08	14.27153	22	11	07.78	-11	15	41.9	16.8	4 688
1985	PK		1985	08	14.33831	22	11	04.22	-11	15	44.5		688
1985	PK		1985	08	20.24097	22	05	50.60	-11	18	49.5	16.8	688
1985	PK		1985	08	20.33681	22	05	45.38	-11	18	54.2		688
1985	PK		1985	08	22.29722	22	03	59.49	-11	20	00.2	16.8	688
1985	PK		1985	08	22.37778	22	03	55.05	-11	20	02.2		688
1985	PL	*	1985	08	14.27153	22	12	22.67	-07	54	32.0	16.0	4 688
1985	PL		1985	08	14.33831	22	12	18.47	-07	54	10.9		688
1985	PL		1985	08	20.24097	22	06	02.26	-07	25	17.2	16.5	688
1985	PL		1985	08	20.33681	22	05	55.86	-07	24	50.9		688
1985	PL		1985	08	22.29722	22	03	47.69	-07	15	41.0	16.2	688
1985	PL		1985	08	22.37778	22	03	42.29	-07	15	19.3		688
1985	PM	*	1985	08	14.27153	22	15	48.06	-11	51	19.8	16.2	4 688
1985	PM		1985	08	14.33831	22	15	44.44	-11	51	25.0		688
1985	PM		1985	08	20.24097	22	10	30.28	-11	58	28.1	16.2	688
1985	PM		1985	08	20.33681	22	10	24.97	-11	58	36.2		688
1985	PM		1985	08	22.29722	22	08	38.51	-12	00	59.5	16.2	688
1985	PM		1985	08	22.37778	22	08	33.86	-12	01	05.3		688
1985	PN	*	1985	08	14.27153	22	17	58.24	-09	10	17.2	17.0	4 688
1985	PN		1985	08	14.33831	22	17	55.75	-09	10	48.5		688
1985	PN		1985	08	20.24097	22	14	02.71	-10	03	54.8	17.0	688
1985	PN		1985	08	20.33681	22	13	58.64	-10	04	47.3		688
1985	PN		1985	08	22.29722	22	12	38.72	-10	22	46.2	17.0	688
1985	PN		1985	08	22.37778	22	12	35.19	-10	23	32.8		688
1985	PO	*	1985	08	14.27153	22	18	56.46	-10	45	47.7	17.0	4 688
1985	PO		1985	08	14.33831	22	18	53.33	-10	46	15.1		688
1985	PO		1985	08	20.24097	22	14	20.89	-11	25	34.3	16.8	688
1985	PO		1985	08	20.33681	22	14	15.96	-11	26	11.5		688
1985	PO		1985	08	22.29722	22	12	42.14	-11	39	29.7	16.8	688
1985	PO		1985	08	22.37778	22	12	37.91	-11	40	04.8		688
1985	PP	*	1985	08	14.27153	22	21	08.72	-11	21	14.3	17.2	4 688
1985	PP		1985	08	14.33831	22	21	05.40	-11	21	47.2		688
1985	PP		1985	08	20.24097	22	16	18.93	-12	11	07.0	17.2	688
1985	PP		1985	08	22.29722	22	14	33.50	-12	28	38.0	17.0	688
1985	PP		1985	08	22.37778	22	14	29.07	-12	29	20.0		688
1985	PQ	*	1985	08	14.27153	22	23	35.42	-08	56	30.8	17.0	4 688
1985	PQ		1985	08	14.33831	22	23	32.29	-08	57	05.6		3 688
1985	PQ		1985	08	20.24097	22	18	29.56	-09	50	47.3	17.0	688
1985	PQ		1985	08	20.33681	22	18	24.17	-09	51	38.8		688
1985	PQ		1985	08	22.29722	22	16	40.67	-10	09	44.2	16.8	688
1985	PQ		1985	08	22.37778	22	16	36.31	-10	10	31.5		688
1985	PR	*	1985	08	14.29410	22	38	17.09	-11	38	22.1	17.0	5 688
1985	PR		1985	08	14.36007	22	38	13.24	-11	38	36.5		688
1985	PR		1985	08	20.26319	22	32	11.93	-12	01	00.4	17.0	688
1985	PR		1985	08	20.35903	22	32	05.81	-12	01	22.6		688
1985	PS	*	1985	08	14.29410	22	39	38.97	-08	20	11.7	17.0	4 688
1985	PS		1985	08	14.36007	22	39	37.56	-08	20	51.0		688
1985	PS		1985	08	20.26319	22	37	32.32	-09	22	29.8	16.5	688
1985	PS		1985	08	20.35903	22	37	29.67	-09	23	33.5		688
1985	PT	*	1985	08	14.29410	22	41	44.87	-13	01	53.8	16.5	4 688
1985	PT		1985	08	14.36007	22	41	42.60	-13	02	47.3		688
1985	PT		1985	08	20.26319	22	38	29.63	-14	20	11.4	16.5	688
1985	PT		1985	08	20.35903	22	38	26.04	-14	21	25.5		688
1985	PU	*	1985	08	14.29410	22	46	51.96	-11	44	23.2	16.2	4 688
1985	PU		1985	08	14.36007	22	46	49.60	-11	44	48.8		688
1985	PU		1985	08	20.26319	22	43	11.29	-12	23	03.1	16.2	688
1985	PU		1985	08	20.35903	22	43	07.20	-12	23	41.4		688
1985	PV	*	1985	08	14.29410	22	48	41.53	-13	27	39.6	17.5	4 688
1985	PV		1985	08	14.36007	22	48	40.15	-13	28	23.7		2 688

1985	PV		1985	08	20.26319	22	46	45.50	-14	30	25.6	17.2	688
1985	PW	*	1985	08	14.29410	22	51	00.71	-09	53	23.4	16.5 4	688
1985	PW		1985	08	14.36007	22	50	58.16	-09	53	40.3		688
1985	PW		1985	08	20.26319	22	47	04.45	-10	19	13.2	16.5	688
1985	PW		1985	08	20.35903	22	47	00.27	-10	19	38.9		688
1985	PX	*	1985	08	14.29410	22	51	33.96	-07	54	34.1	17.0 5	688
1985	PX		1985	08	14.36007	22	51	31.16	-07	55	11.7		688
1985	PX		1985	08	20.26319	22	47	24.37	-08	51	12.8	17.0	688
1985	PX		1985	08	20.35903	22	47	19.77	-08	52	11.6		688
1985	PY	*	1985	08	14.29410	22	51	48.16	-13	23	35.2	17.2 4	688
1985	PY		1985	08	14.36007	22	51	45.81	-13	24	14.2		688
1985	PZ	*	1985	08	14.29410	22	54	41.47	-08	27	15.4	16.5 4	688
1985	PZ		1985	08	14.36007	22	54	39.08	-08	27	47.3		688
1985	PZ		1985	08	20.26319	22	50	39.04	-09	17	28.1	16.8	688
1985	PZ		1985	08	20.35903	22	50	34.67	-09	18	20.1		688
1985	PA1	*	1985	08	14.31632	22	57	22.95	-01	34	25.3	16.8 4	688
1985	PA1		1985	08	14.38194	22	57	21.00	-01	35	06.3		688
1985	PA1		1985	08	20.28542	22	54	18.05	-02	41	32.6	16.8	688
1985	PA1		1985	08	20.38160	22	54	14.49	-02	42	40.2		688
1985	PB1	*	1985	08	14.31632	22	57	38.96	+02	00	50.6	16.8 4	688
1985	PB1		1985	08	14.38194	22	57	36.23	+02	00	29.9		688
1985	PB1		1985	08	20.28542	22	53	25.85	+01	22	13.7	16.8	688
1985	PB1		1985	08	20.38160	22	53	21.22	+01	21	31.9		688
1985	PC1	*	1985	08	14.31632	23	06	40.12	-02	24	20.3	17.5 7	688
1985	PC1		1985	08	14.38194	23	06	35.48	-02	24	20.5	1	688
1985	PD1	*	1985	08	14.31632	23	07	11.80	-03	13	14.4	17.0 4	688
1985	PD1		1985	08	14.38194	23	07	08.92	-03	13	10.2		688
1985	PD1		1985	08	20.28542	23	02	46.42	-03	08	58.2	16.8 3	688
1985	PD1		1985	08	20.38160	23	02	41.11	-03	08	58.2		688
1985	PE1	*	1985	08	15.31111	23	50	07.86	+02	41	30.9	17.0 4	688
1985	PE1		1985	08	15.38542	23	50	06.57	+02	41	45.4		688
1985	PF1	*	1985	08	15.31111	23	50	19.33	+00	31	09.0	17.2 4	688
1985	PF1		1985	08	15.38542	23	50	18.75	+00	31	00.8		688
1985	PG1	*	1985	08	15.31111	00	05	03.80	+06	23	33.1	17.0 4	688
1985	PG1		1985	08	15.38542	00	05	02.67	+06	23	18.6		688
1985	QA	*	1985	08	20.24097	22	13	43.58	-05	18	50.8	17.0 4	688
1985	QA		1985	08	20.33681	22	13	39.33	-05	19	57.6		688
1985	QA		1985	08	22.29722	22	12	14.83	-05	43	15.6	17.0	688
1985	QA		1985	08	22.37778	22	12	10.95	-05	44	16.0		688
1985	QB	*	1985	08	20.26319	22	29	38.54	-14	23	35.5	16.5 4	688
1985	QB		1985	08	20.35903	22	29	34.56	-14	24	39.9		688
1985	QC	*	1985	08	20.26319	22	38	34.97	-06	53	35.4	17.0 4	688
1985	QC		1985	08	20.35903	22	38	29.98	-06	54	11.3		688
1985	QD	*	1985	08	20.28542	23	16	58.59	-04	19	16.8	16.5 4	688
1985	QD		1985	08	20.38160	23	16	54.16	-04	19	26.7		688
1985	QE	*	1985	08	20.31111	23	35	11.93	+17	01	32.8	16.8 4	688
1985	QE		1985	08	20.40833	23	35	09.61	+17	01	38.2		688
1985	QF	*	1985	08	22.32292	23	55	50.88	-10	17	13.8	17.0 4	688
1985	QF		1985	08	22.40347	23	55	49.17	-10	18	00.9		688
1985	QG	*	1985	08	22.32292	23	56	05.22	-07	44	45.4	17.0 4	688
1985	QG		1985	08	22.40347	23	56	03.11	-07	45	21.0		688
1985	QH	*	1985	08	22.32292	23	57	55.12	-09	57	45.2	16.8 4	688
1985	QH		1985	08	22.40347	23	57	52.35	-09	58	06.2		688
1985	QJ	*	1985	08	22.32292	00	01	06.70	-10	39	21.5	17.0 4	688
1985	QJ		1985	08	22.40347	00	01	04.78	-10	39	55.4		688
1985	QK	*	1985	08	22.32292	00	03	16.60	-08	06	58.0	17.0 4	688
1985	QK		1985	08	22.40347	00	03	14.01	-08	07	07.0		688
1985	QL	*	1985	08	22.32292	00	05	58.88	-07	58	59.6	17.0 4	688
1985	QL		1985	08	22.40347	00	05	56.44	-07	59	30.9		688

1985 QM	*	1985 08 22.32292	00 09 07.88	-07 29 42.3			17.0	4	688
1985 QM		1985 08 22.40347	00 09 06.02	-07 29 33.3					688
1985 QN	*	1985 08 22.35208	00 08 21.72	-01 58 05.3			17.0	4	688
1985 QN		1985 08 22.43264	00 08 19.54	-01 58 27.4					688
1985 QO	*	1985 08 22.35208	00 13 12.04	+03 10 11.6			17.0	4	688
1985 QO		1985 08 22.43264	00 13 10.27	+03 09 55.5					688
1985 QP	*	1985 08 22.35208	00 19 35.30	+00 41 16.6			17.5	4	688
1985 QP		1985 08 22.43264	00 19 33.81	+00 41 24.9					688
1985 QQ	*	1985 08 22.35208	00 27 35.05	-02 33 50.8			16.5	4	688
1985 QQ		1985 08 22.43264	00 27 33.26	-02 33 50.4					688
1985 QR	*	1985 08 22.35208	00 29 49.49	-01 49 59.1			17.5	4	688
1985 QR		1985 08 22.43264	00 29 48.10	-01 50 30.1					688
1985 QS	*	1985 08 22.35208	00 32 06.59	-01 51 03.5			16.5	4	688
1985 QS		1985 08 22.43264	00 32 05.01	-01 51 02.0					688
1985 QT	*	1985 08 22.35208	00 32 17.82	-01 04 05.4			16.8	4	688
1985 QT		1985 08 22.43264	00 32 15.35	-01 03 57.9					688

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: discoverer Bowell. 5 = 1 + 4. 7 = 3 + 4.

OBSERVATIONS MADE AT OAK RIDGE OBSERVATORY BY R. E. McCROSKY, C.-Y. SHAO AND G. SCHWARTZ.

Plates with the 1.5-m reflector, reduced using the Astrographic Catalogue. Coordination and verification by, and assistance with identifications from, C. M. Bardwell. Contact: R. E. McCrosky, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
822	1985 08	13.25874	22 12 34.19	-09 56 03.3			801
3271	1985 08	14.09471	18 34 36.34	+18 33 33.4			801
1978 PU3	1985 07	18.21199	20 18 54.41	-08 46 58.0			801
1978 PU3	1985 08	14.13901	19 57 07.34	-11 43 04.1			801
1982 UJ8	1985 07	19.31250	21 15 12.30	-06 10 38.2			801
1982 UJ8	1985 08	13.20093	20 51 58.10	-07 04 33.5			801
1984 CW	1985 08	13.25874	22 11 22.21	-10 02 58.7			801
1984 CC1	1985 07	19.28260	20 45 40.14	-15 50 48.2			801
1984 CC1	1985 08	13.18140	20 20 48.04	-18 14 44.0			801
1984 EZ	1985 08	13.21779	21 03 24.42	-10 05 37.8			801
1984 FT	1985 07	18.13461	18 44 58.80	-12 15 03.6			801
1985 HC	1985 08	13.11390	15 07 51.90	+04 08 52.5			801
1985 HC	1985 08	14.05711	15 09 00.51	+04 05 56.1			801
1985 PA	1985 08	18.17665	22 28 06.86	-12 52 38.1	16.5	1	801
1985 PL	1985 09	13.20613	21 42 17.94	-05 43 56.1			801
1985 PL1 *	1985 08	13.23993	21 43 30.68	+00 56 28.4	18		801

Note 1: correction to MPC 9946.

* * * * *

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, E = E. Bowell, G = D. W. E. Green, h = K. Hurukawa, M = B. G. Marsden, s = L. D. Schmadel. For further information see MPC 7828.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1981 SZ7	13.5	811023	43.01	302.32	31.63	13.57	0.2294	2.8496	64	7	1	M
1981 TJ3	14.0	811023	359.97	284.15	112.41	2.88	0.2267	3.1908	56	8	1	M
1981 VS	14.0	811112	354.97	203.96	206.57	8.93	0.2901	2.7747	56	0	1	B
1981 VC1	15.0	811003	6.60	315.97	49.75	2.95	0.1616	2.2011	34	9	1	M
1985 DT1	13.5	850224	278.65	295.83	325.30	7.79	0.1702	2.3450	3	6		M
1985 FE3	14.5	850405	317.46	137.65	92.87	8.01	0.1466	2.1939	20	3		M

1985 GM1	13.5	850425	42.28	334.47	199.69	10.08	0.0535	2.9987	30	4		B
1985 HL	15.0	850425	17.31	12.85	172.41	6.95	0.2508	2.5782	22	7		B
1985 JL	14.5	850515	17.98	128.55	75.97	9.78	0.2083	2.7534	7	6		B
1985 JT1		850425	0.71	162.34	65.97	1.40	0.1172	3.1277	4	4		M
1985 JC2	15.0	850425	0.81	31.68	195.76	4.46	0.2100	2.3356	2	3		M
1985 JD2	16.0	850425	15.60	359.00	207.05	6.28	0.2099	2.2885	2	3		M
1985 JF2	13.0	850425	292.67	272.06	54.68	29.01	0.1844	3.2047	2	3	2	M
1985 JG2	14.0	850425	309.42	261.64	43.23	6.14	0.1905	2.6843	2	3		M
1985 NE	14.0	850714	30.62	245.34	358.26	6.74	0.1936	2.5419	34	0		M
1985 PB	15.0	850803	306.74	238.53	154.13	4.85	0.1795	2.2222	8	6	2	M
1985 PC	15.2	850803	41.87	86.00	184.07	3.24	0.1117	2.2439	8	6		E
1985 PE	14.6	850803	345.12	189.67	156.66	9.06	0.2262	2.9606	8	6		E
1985 PF	16.0	850803	343.32	188.81	156.14	11.95	0.1924	2.2260	8	6	2	M
1985 PG	15.3	850803	24.49	115.21	168.28	6.79	0.2197	2.5229	8	5		E
1985 PH	14.7	850803	324.02	66.87	316.60	13.10	0.2731	2.7876	8	6		E
1985 PJ	16.5	850803	6.79	325.11	342.97	0.48	0.2190	2.1739	8	6	2	M
1985 PK	14.2	850803	2.10	353.75	326.83	8.29	0.1660	2.9335	8	6		E
1985 PL	14.5	850823	346.95	31.06	319.92	12.81	0.2239	2.5740	30	7		B
1985 PM	15.4	850803	12.83	325.97	333.13	3.44	0.2437	2.3601	8	6		M
1985 PN	16.0	850803	280.47	271.44	151.81	18.51	0.1455	3.1590	8	7	2	M
1985 PO	14.3	850803	325.89	221.86	145.68	4.19	0.1214	2.6406	8	6		E
1985 PP	15.8	850803	327.89	223.99	140.03	4.15	0.1332	2.1967	8	5		E
1985 PQ	14.3	850803	90.95	68.83	152.78	8.41	0.1160	2.3345	8	6		E
1985 PR	15.0	850803	63.96	255.07	352.38	3.77	0.1283	2.1788	8	8		M
1985 PJ1	12.5	850823	232.63	302.00	164.86	7.36	0.2953	2.4635	3	6		G

Note 1: double designations 1981 SZ7 = 1981 UN10 = 1981 WN4 (B, h, s); 1981 TJ3 = 1981 WK (h, s); 1981 VS = 1981 UV20 (s); 1981 VC1 = 1981 UO10 (h, s). 2: e assumed.

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

(1561) Fricke
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	234.78313		(1950.0)	P	Q
n	0.17372191	Peri.	30.42061	-0.13420071	+0.98913600
a	3.1810194	Node	231.93401	-0.92380225	-0.14678686
e	0.1437498	Incl.	4.37081	-0.35857992	+0.00797389
P	5.67	B(1,0)	12.1		

From 45 observations at 12 oppositions 1941-1984, mean residual 1".2.

(3303)* 1967 UN = 1927 UG = 1971 QY = 1971 SY = 1976 SK7 = 1981 RF5
Discovered 1967 Oct. 30 by L. Kohoutek at Bergedorf. The identification 1967 UN = 1972 VA1 (NOC 1067) is invalid.
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	333.74090		(1950.0)	P	Q
n	0.19977727	Peri.	279.94203	+0.88168940	+0.47029413
a	2.8980464	Node	52.01488	-0.41175543	+0.80629527
e	0.0745057	Incl.	2.76656	-0.23039372	+0.35876368
P	4.93	B(1,0)	12.5		

Residuals in seconds of arc

271029	094	(44.3-	21.5-)X	671031	029	0.3-	0.5+	810908	095	0.9-	1.4+
671013	029	0.4-	0.3+	671031	029	0.6-	0.1+	810928	095	1.0-	0.9+
671013	029	0.2+	0.5+	671031	029	0.0	0.2-	811005	095	0.1-	0.2+
671014	029	1.0+	0.3-	710819	095	0.2+	4.1+	811022	095	2.3+	0.0
671014	029	0.3+	0.1-	710916	808	0.1-	0.8-	811024	095	0.0	0.2+
671030	029	0.3-	0.3+	760925	095	1.1-	1.7-	811026	095	0.6+	0.5-
671030	029	0.5-	0.0	760928	095	0.1-	3.9-				

(3304)* 1981 EQ21 = 1978 QA1 = 1984 WQ1

Discovered 1981 Mar. 2 by S. J. Bus in the course of the U.K. Schmidt-Caltech Asteroid Survey at Siding Spring. The identifications were found independently by K. Hurukawa.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	99.82616		(1950.0)	P	Q
n	0.18406254	Peri.	59.02621	+0.94381992	-0.32954181
a	3.0607353	Node	320.19996	+0.28854181	+0.85812359
e	0.2740915	Incl.	2.20427	+0.16108252	+0.39373354
P	5.35	B(1,0)	14.0		

Residuals in seconds of arc

780831 095	0.4+	1.5-	810303 413	5.0-	1.3+	810329 413	1.1-	1.3+
780905 095	0.7+	1.0-	810307 413	0.2+	2.2-	841120 688	0.7+	0.2-
810209 413	0.5+	1.1-	810307 413	1.7-	0.6-	841120 688	0.1-	1.3-
810213 413	0.2+	0.8-	810311 413	3.7+	0.5-	841217 095	1.5-	1.0+
810302 413	2.6-	0.7+	810311 413	0.6-	0.0	841223 095	0.1+	0.1-
810302 413	2.0+	1.3-	810329 413	2.8+	0.2-	841227 095	0.8+	0.3-

(3305)* 1985 KB = 1957 WQ = 1968 FL = 1977 PJ2 = 1982 UF10 = 1982 VB11

Discovered 1985 May 21 by A. C. Gilmore and P. M. Kilmartin at Mount John Observatory. The identifications were found independently by K. Hurukawa.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	18.63137		(1950.0)	P	Q
n	0.23444243	Peri.	240.51430	+0.02777422	+0.99207781
a	2.6048252	Node	31.79792	-0.81755826	+0.09306728
e	0.1505930	Incl.	13.44499	-0.57517570	-0.08438072
P	4.20	B(1,0)	13.5		

Residuals in seconds of arc

571126 760(56.9+ 33.4-)X			850423 675	0.9-	0.8+	850525 474	0.1-	0.6-
680328 095	0.3+	0.4+	850423 675	0.5+	0.7-	850525 474	0.4-	0.1+
770810 413	0.2-	2.5+	850521 474	0.8+	0.5+	850528 474	0.0	1.6+
770810 413	1.7-	2.8+	850521 474	1.3+	0.3+	850528 474	0.2+	1.7+
770819 413	0.6+	2.1-	850523 474	0.4-	1.3-	850612 474	0.4-	0.3-
770819 413	1.2+	3.3-	850523 474	0.1+	1.6-	850612 474	0.1-	0.5+
821022 095	0.7-	0.1+	850524 474	0.2-	0.5-			
821114 095	0.3+	0.7+	850524 474	0.4-	0.4-			

1981 RR3 = 1971 SZ1 = 1971 TE1

The identification and double designation were independently found by C. M. Bardwell.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	101.27958		(1950.0)	P	Q
n	0.29500030	Peri.	181.07719	+0.98702091	+0.15953332
a	2.2348810	Node	169.68793	-0.14655301	+0.94166921
e	0.2104907	Incl.	5.90225	-0.06566538	+0.29632451
P	3.34	B(1,0)	15.5		

Residuals in seconds of arc

710923 095	1.8-	0.4-	810903 095	0.8+	0.7+	811022 095	0.8+	1.5+
711011 095	2.1+	0.5-	811007 095	1.1-	1.6-	811024 095	0.7-	0.5+

1981 SS5 = 1974 YL = 1977 RT7 = 1977 SC2

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	171.28805		(1950.0)	P	Q
n	0.26731015	Peri.	317.14077	-0.21253179	+0.97480679
a	2.3866702	Node	300.48226	-0.87387863	-0.22060867
e	0.0852409	Incl.	4.50502	-0.43722577	-0.03291715
P	3.69	B(1,0)	13.5		

Residuals in seconds of arc

741219	330	0.1+	2.9-	810927	095	0.4+	0.7+	811119 095 0.0 1.1+
770912	095	1.4+	2.2-	810929	095	0.5+	0.6+	811124 095 1.1- 0.1-
770919	095	0.2-	0.3-	811003	095	0.7+	0.7+	811124 095 2.0- 1.1+

1981 WB1 = 1981 WA4 = 1933 UJ1 = 1938 EL = 1964 VX1 = 1967 RQ

The identification 1981 WB1 = 1933 UJ1 is by K. Hurukawa, who also independently found the other identifications.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	48.59336	(1950.0)	P	Q
n	0.28857595	Peri. 244.78546	+0.20833828	-0.97782248
a	2.2679282	Node 193.24268	+0.92758861	+0.20448129
e	0.1572071	Incl. 5.36265	+0.31012019	+0.04528355
P	3.42	B(1,0) 15.0		

Residuals in seconds of arc

331019	024(10.6+	6.0-)	811118	330	0.1-	1.1+	811201 330 1.1- 0.8+	
331020	024(14.2+	7.2-)	811123	046	2.4-	2.1-	811202 688 1.0- 0.3-	
380304	024	0.6- 2.9-	811123	046	0.9-	0.8-	811202 688 1.0- 0.8+	
641110	330	0.2- 0.6+	811124	688	0.1+	2.1-	811220 046 0.3+ 2.4+	
670911	095	0.2+ 1.2-	811124	688	0.3+	2.2-	811220 046 0.0 2.0+	
811024	095	4.1+ 2.3-	811129	511	0.9-	0.3-	811230 688 0.8+ 0.1+	
811117	046	1.1- 0.6+	811129	511	0.0	0.4+	811230 688 0.1- 1.3+	
811117	046	3.1+ 0.7+	811129	511	0.6+	0.3+		

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ORBITAL ELEMENTS BY K. HURUKAWA, TOKYO ASTRONOMICAL OBSERVATORY.

The identifications are by K. Hurukawa unless otherwise stated.

(3306)* 1979 SM11 = 1979 TJ2 = 1979 WS = 1951 GS = 1952 UJ1 = 1962 RL = 1969 US2 = 1971 FK = 1978 JJ = 1982 OE

Discovered 1979 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory. The triple designation 1979 SM11 = 1979 TJ2 = 1979 WS is by H. Oishi (JAM 1788).

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	28.40538	(1950.0)	P	Q
n	0.29246125	Peri. 63.97240	+0.12002530	+0.99183951
a	2.2477974	Node 213.00928	-0.93669321	+0.09879096
e	0.1452013	Incl. 4.52631	-0.32893731	+0.08058986
P	3.37	B(1,0) 13.8		

Residuals in seconds of arc

510402	711	0.7- 1.8+	Y	780505	095	0.3-	0.9+	820724 688 1.1- 1.7-
521025	760	(7.9+ 54.2+)	X	790924	095	0.6+	0.5+	850522 552 0.6+ 0.3+
620907	760	1.2- 0.1-		791014	095	0.0	0.5-	850522 552 0.3+ 1.3+
620907	760	1.5+ 1.3+		791116	095	0.6-	0.7-	850524 801 0.6+ 0.4+
691018	095	1.0- 2.5-		791122	095	0.3+	2.9+	
710319	095	1.2- 2.1-		820724	688	0.3+	1.7-	

(3307)* 1981 DE1 = 1977 AS

Discovered 1981 Feb. 28 by S. J. Bus in the course of the U.K. Schmidt-Caltech Asteroid Survey at Siding Spring. The identification was found independently by L. D. Schmadel (MPC 7614). Copied from JAM 1922.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	263.95591	(1950.0)	P	Q
n	0.29014806	Peri. 145.37407	+0.66324453	-0.74025298
a	2.2597286	Node 262.81079	+0.65906938	+0.64744680
e	0.0961371	Incl. 6.37407	+0.35459025	+0.18121305
P	3.40	B(1,0) 14.7		

Residuals in seconds of arc

770113	095	0.1-	0.0	810308	413	0.5-	0.0	810409	413	0.7-	0.9+
770120	095	0.2+	0.3+	810308	413	1.1+	1.2-	810409	413	0.6+	0.0
810209	413	0.1+	0.2-	810312	413	1.1-	0.2+	831130	801	0.3-	0.1+
810212	413	0.5-	0.2+	810312	413	0.6+	0.0	840109	801	0.4+	0.5-
810228	413	1.8-	0.4+	810407	413	1.2-	1.1+	840208	801	0.6-	0.4+
810228	413	2.5+	0.4-	810407	413	1.6+	0.7-	840210	801	0.4+	0.1-
810306	413	0.8-	0.7+	810408	413	1.0-	0.5+				
810306	413	0.1+	0.9-	810408	413	0.9+	0.8-				

(3308)* 1981 EP = 1981 EG30 = 1953 FA1 = 1979 YY6

Discovered 1981 Mar. 1 by H. Debehogne and G. de Sanctis at the European Southern Observatory. The double designation and identification 1981 EP = 1981 EG30 = 1953 FA1 were found independently and the identification 1981 EP = 1979 YY6 was found exclusively by W. Landgraf (MPC 9381).

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

			(1950.0)	P	Q
M	11.48063				
n	0.17615903	Peri.	275.96331	+0.02601660	-0.99805911
a	3.1516123	Node	171.87227	+0.99966147	+0.02599188
e	0.1801991	Incl.	23.58989	-0.00029998	+0.05658999
P	5.59	B(1,0)	12.5		

Residuals in seconds of arc

530316	024	(3.3-	7.7-)	810307	413	0.3-	0.1-	840924	071	0.7+	3.9-
530320	024	0.0	0.6-	810307	413	0.7+	1.4-	840924	071	0.9+	4.5-
791224	095	0.1+	2.2+	810311	413	0.1-	1.2-	840925	071	0.2-	0.1+
810209	413	0.6-	0.9-	810311	413	0.0	1.3-	840928	688	0.9+	0.5+
810213	413	0.3-	0.9-	810316	413	0.2-	1.8-	840928	688	1.9+	0.7-
810301	809	0.1+	0.6-	810316	413	0.4+	1.8-	841017	801	2.8+	3.4+
810301	809	0.5+	0.5-	840828	801	1.5+	0.4+	841019	071	5.1-	1.0-
810301	809	0.4+	0.5-	840923	801	0.2+	0.3+	841019	071	0.2+	0.9-
810302	413	1.0-	0.7-	840923	071	2.2-	2.9-	841023	688	1.1-	1.0-
810302	413	0.3+	1.9-	840923	071	2.8+	1.4-	841029	688	0.4-	0.9+
810303	413	0.9-	0.6-	840923	071	2.2-	3.4-	841029	688	0.9+	1.1+
810303	413	0.9+	1.5-	840923	071	1.6-	2.1-				

1977 SA1 = 1968 DQ = 1981 YU1

The key identification 1977 SA1 = 1981 YU1 was found independently by A. Lowe.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

			(1950.0)	P	Q
M	59.48264				
n	0.26870446	Peri.	343.40765	+0.75531879	-0.65361712
a	2.3784115	Node	57.50536	+0.60749613	+0.67097598
e	0.1345734	Incl.	3.24410	+0.24584949	+0.35010840
P	3.67	B(1,0)	14.3		

Residuals in seconds of arc

680227	095	0.1+	0.3+	771009	095	0.3-	0.8+	811222	330	2.1-	0.8+
770918	095	1.1-	0.7-	811124	095	4.3+	4.9-	811225	330	0.2+	1.8+
770919	095	0.9+	0.8+	811219	330	2.5-	1.6+				

1978 RN5 = 6198 P-L = 1969 TY3

The identification 1978 RN5 = 1969 TY3 was independently suggested by L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

			(1950.0)	P	Q
M	214.83648				
n	0.22000368	Peri.	14.25237	+0.98388032	-0.17829937
a	2.7175880	Node	355.94233	+0.13906751	+0.81117324
e	0.3359227	Incl.	11.19828	+0.11242659	+0.55696257
P	4.48	B(1,0)	14.7		

Residuals in seconds of arc

600924 675	0.5-	0.3+	600926 675	0.5+	0.2-	780906 095	0.1+	0.2+
600924 675	0.3+	0.2+	600928 675	0.1+	0.4-	780926 095	0.5+	1.2-
600925 675	0.8+	0.2-	600928 675	1.2-	0.8+	781002 095	0.6-	1.1+
600925 675	0.1-	0.4-	691011 095(41.4-	20.6-)		781008 095	0.1+	0.2-
600926 675	0.1+	0.1+	691014 095(42.4-	48.5-)				

1981 ED28 = 9529 P-L

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M 269.65193		(1950.0)	P	Q
n 0.21947083	Peri.	144.62898	+0.46599319	+0.88450799
a 2.7219849	Node	153.12496	-0.82266252	+0.44240118
e 0.0856956	Incl.	2.82383	-0.32569421	+0.14807700
P 4.49	B(1,0)	15.5		

Residuals in seconds of arc

601017 675	1.1+	0.0	810212 413	1.6+	2.7-	810306 413	1.8+	0.1-
601022 675	0.6-	0.6-	810213 413	1.7-	1.1+	810311 413	0.2-	0.0
601024 675	0.1-	0.2-	810302 413	0.6+	0.2-	810315 413	0.4+	0.0
810209 413	1.0-	1.2+	810306 413	1.8-	1.0+	810405 413	0.2-	1.2-

1981 RU2 = 1955 TG = 1978 EN4

The identifications were found independently by C. M. Bardwell. The key identification 1981 RU2 = 1955 TG was also found by L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M 273.86851		(1950.0)	P	Q
n 0.19039363	Peri.	122.23596	+0.81194028	-0.56262862
a 2.9925079	Node	272.45354	+0.46932941	+0.78766383
e 0.1120206	Incl.	8.95813	+0.34710645	+0.25106718
P 5.18	B(1,0)	13.1		

Residuals in seconds of arc

551011 760	1.1-	1.5+	551012 760	0.8-	0.9-	810927 095	0.8-	1.7-
551011 760	1.5-	0.2+	780306 095	0.1-	0.3-	811003 095	1.0-	1.5-
551012 760	2.8+	0.5+	810907 095	0.0	1.8-	811023 095	2.2+	3.4+

1981 SE1 = 1974 QM

The identification was found independently by L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M 146.24478		(1950.0)	P	Q
n 0.29131791	Peri.	128.46383	+0.32774530	+0.94443921
a 2.2536793	Node	160.62390	-0.88842781	+0.31704218
e 0.1674693	Incl.	4.29582	-0.32137056	+0.08671119
P 3.38	B(1,0)	14.5		

Residuals in seconds of arc

740818 095	1.6+	0.2-	810926 688	0.6-	4.1-	811022 095	0.5-	4.1+
740820 095	1.8-	0.7+	811004 688	3.5+	0.4+	811024 095	0.4+	0.4+
810903 095	0.7-	0.3+	811004 688	0.1+	0.5+			
810926 688	1.7+	0.5+	811007 095	3.9-	2.3-			

1981 SQ1 = 1981 VB1 = 1970 QH1 = 1979 KS

The double designation 1981 SQ1 = 1981 VB1 is by C. M. Bardwell (MPC 9952). The identifications 1981 SQ1 = 1970 QH1 = 1979 KS were found independently by L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M 292.30717		(1950.0)	P	Q
n 0.18141220	Peri.	176.12780	+0.98676460	+0.16209745
a 3.0904798	Node	174.53744	-0.15000585	+0.92294684
e 0.1992773	Incl.	2.69524	-0.06159437	+0.34913256
P 5.43	B(1,0)	13.4		

Residuals in seconds of arc

700831	095	0.0	0.0	790523	809	0.3-	0.2+	811021	095	2.0+	0.4-
790519	809	0.5-	0.1+	790524	809	0.3+	0.3-	811026	095	2.0-	5.5+
790519	809	0.1-	0.1-	810926	688	0.6+	1.2-	811027	095	1.0-	0.3-
790521	809	0.3+	0.1+	810926	688	1.9-	2.1-	811102	688	0.9+	2.9-
790523	809	0.2+	0.3-	811006	095	1.2+	3.2+	811102	688	0.3+	2.2-

1981 SW6 = 1979 HW4
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	249.03441		(1950.0)	P	Q
n	0.17594794	Peri.	225.37866	+0.79508995	-0.60606229
a	3.1541387	Node	171.83342	+0.59192742	+0.76725372
e	0.0533708	Incl.	9.24188	+0.13211319	+0.20978618
P	5.60	B(1,0)	12.4		

Residuals in seconds of arc

790425	095	0.4+	0.1-	790430	095	0.6+	0.8+	811006	095	0.8-	0.0
790428	095	1.0-	0.7-	810928	095	0.6+	0.0	811026	095	0.2+	0.0

1981 SW7 = 1976 YK2
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	300.74786		(1950.0)	P	Q
n	0.18126442	Peri.	59.03286	+0.99527215	+0.05432404
a	3.0921593	Node	297.74471	-0.08412628	+0.89645071
e	0.1939700	Incl.	5.21949	+0.04853979	+0.43980113
P	5.44	B(1,0)	13.2		

Residuals in seconds of arc

761216	095	0.8+	0.1-	761220	095	0.2+	0.3-	811002	095	0.5+	1.2-
761218	095	1.0-	0.4+	810929	095	0.5-	1.2+	811124	095	0.0	0.0

1981 SX7 = 1975 WO = 1980 RA5 = 1983 CJ2

The identifications 1981 SX7 = 1975 WO = 1983 CJ2 were found independently by L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	201.98104		(1950.0)	P	Q
n	0.15815177	Peri.	183.27267	+0.20580785	-0.97509919
a	3.3865244	Node	254.86237	+0.89972957	+0.22174834
e	0.0419737	Incl.	4.90945	+0.38487638	+0.00303870
P	6.23	B(1,0)	12.6		

Residuals in seconds of arc

751128	095	0.4-	2.8+	811002	095	2.6-	0.6-	830215	688	0.2-	0.7-
800909	095	0.1+	0.4-	811023	095	1.0+	1.5+	830215	688	0.2-	1.0-
810929	095	2.1+	3.3-	811124	095	0.1-	0.1-				

1981 TG2 = 1952 VK = 1962 WT1 = 1971 UM4 = 1976 UG1 = 1983 CT1
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	347.20386		(1950.0)	P	Q
n	0.20445979	Peri.	233.38544	+0.98750842	+0.15028126
a	2.8536342	Node	117.92743	-0.12194670	+0.91926298
e	0.0872498	Incl.	3.07245	-0.09978033	+0.36382841
P	4.82	B(1,0)	13.2		

Residuals in seconds of arc

521112	760	1.7-	0.6-	621130	760	(25.5-	24.1-)X	811022	095	2.8+	3.3+
521112	760	1.7-	0.7-	711020	095	0.6+	0.6+	811027	095	0.3-	1.6+
521114	760	2.4+	0.1-	761022	026	0.8-	0.6-	830204	046	1.5+	0.4-
521114	760	1.4+	0.9-	761024	026	0.1-	1.1-	830204	046	1.7-	0.0
521116	760	0.2+	0.2+	811004	095	1.5-	4.4-				
521116	760	0.0	1.5+	811007	095	1.0-	1.3+				

1981 TO3 = 1976 YS5
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	269.09531	(1950.0)	P	Q
n	0.17217826	Peri. 273.72110	+0.99947231	+0.01034719
a	3.2000103	Node 85.68781	+0.00282798	+0.91658866
e	0.1720178	Incl. 1.76944	-0.03235903	+0.39969759
P	5.72	B(1,0) 13.2		

Residuals in seconds of arc

761216 095	0.7+	0.3-	761220 095	0.6-	0.7+	811022 095	0.5+	0.1-
761218 095	0.1-	0.2-	811007 095	1.1-	1.3+	811024 095	0.6+	1.2-

1981 UA10 = 1950 TL2 = 1977 SQ2 = 1977 TL6
The identifications were found independently by L. D. Schmadel.
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	49.70032	(1950.0)	P	Q
n	0.25648406	Peri. 254.76116	+0.98694930	-0.13145533
a	2.4533716	Node 112.72112	+0.15643491	+0.91969565
e	0.2137814	Incl. 5.78718	-0.03819953	+0.36997218
P	3.84	B(1,0) 14.5		

Residuals in seconds of arc

501005 760	1.0-	0.6+	771008 095	0.8+	0.6-	811118 330	0.1+	1.6-
501005 760	0.5+	0.9+	811023 095	1.8+	2.3+	811201 330	0.5+	0.0
770919 095	0.1+	1.9-	811025 330	2.6-	0.3+			

1981 XJ2 = A923 RM = 1954 WS = 1979 HP3
The identification 1981 XJ2 = 1979 HP3 was found independently by L. D. Schmadel.
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	357.63654	(1950.0)	P	Q
n	0.25746135	Peri. 49.03473	-0.16372528	-0.98566270
a	2.4471592	Node 50.43580	+0.88842147	-0.16529075
e	0.1330067	Incl. 3.03234	+0.42883718	-0.03388244
P	3.83	B(1,0) 14.1		

Residuals in seconds of arc

230913 024	0.0	0.0	790425 095	2.6-	6.1-	811219 330	0.4+	2.3-
230914 024	2.4+	5.0-	811124 095	8.5+	1.4+	811222 330	0.2+	2.2-
541116 210(79.5-	28.7-)X		811203 330	2.2+	3.8+	811225 330	2.2-	2.8-

1982 TH2 = 9510 P-L = 1971 UD2 = 1978 PL3 = 1978 RG3 = 1980 DW3
The identification 1982 TH2 = 1978 PL3 was independently suggested by W. Landgraf.
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	298.00148	(1950.0)	P	Q
n	0.27204146	Peri. 48.95914	+0.57934906	-0.81504799
a	2.3589216	Node 5.64996	+0.72422057	+0.51071025
e	0.1193189	Incl. 4.17775	+0.37397759	+0.27362714
P	3.62	B(1,0) 14.8		

Residuals in seconds of arc

601017 675	0.7+	1.3-	780808 095	0.3-	0.8+	821025 095	0.1-	1.0+
601022 675	0.9-	1.6-	780903 095	0.5-	0.8+	821109 095	0.6-	1.1+
601024 675	1.6+	0.7-	800220 095	0.9-	1.8-	821114 095	0.1+	0.5+
601026 675	1.4+	1.7-	821014 095	0.3+	1.8-			
711021 095(21.9+	7.6+)		821020 095	0.8-	2.1+			

1983 WA = 3076 P-L
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	123.54687	(1950.0)	P	Q
n	0.21923755	Peri. 240.61813	-0.53103370	-0.83887198
a	2.7239154	Node 241.93797	+0.81678493	-0.46919775
e	0.2253412	Incl. 7.78751	+0.22553398	-0.27594795
P	4.50	B(1,0) 14.5		

Residuals in seconds of arc

600924 675	1.1+	0.4+	831130 372	2.1-	0.4+	831205 372	1.4-	1.7+
600925 675	0.6-	0.3-	831130 372	1.0+	2.1+	831206 688	2.2+	0.1+
600927 675	0.6-	0.2-	831201 688	0.7+	0.4+	831206 552	1.5+	0.2+
600928 675	0.1+	0.1+	831201 688	0.7-	0.8+	831206 552	1.2+	0.3+
600929 675	(3.2-	0.1+)	831201 889	(3.2-	1.9-)	831207 372	0.9+	2.2-
831128 688	(4.9+	2.4+)	831201 889	1.8-	0.0	831209 688	1.2+	0.4-
831128 688	0.3+	0.0	831202 372	0.3-	2.0-	831209 688	0.8-	0.5+
831128 889	(4.4+	0.6-)	831202 372	(3.3-	0.2-)	831209 372	1.2-	2.2+
831128 889	2.1-	2.2-	831205 688	0.3-	0.2-	831209 372	1.8+	1.2+
831128 372	2.2+	0.3-	831205 688	0.8-	1.7-	831227 552	2.2-	0.6-
831128 372	2.1-	0.4-	831205 372	1.7+	0.5+	831227 552	1.2+	0.5-

1985 CN1 = 1978 EC = 1978 ER6

The double designation 1978 EC = 1978 ER6 is by B. G. Marsden (MPC 9203). The identification 1985 CN1 = 1978 EC was found independently by L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	80.80394	(1950.0)	P	Q
n	0.28279546	Peri. 142.60854	-0.90745904	-0.41996786
a	2.2987335	Node 12.57563	+0.37085195	-0.81414488
e	0.1001708	Incl. 3.17126	+0.19745106	-0.40099265
P	3.49	B(1,0) 15.6		

Residuals in seconds of arc

780306 095	0.5+	1.3+	850217 809	1.2-	0.7+	850221 809	0.1-	0.4-
780311 049	3.8+	3.4-	850217 809	0.8-	0.7+	850221 809	0.7+	0.5-
780311 049	1.2-	1.6+	850217 809	0.2-	0.7+	850224 809	0.6-	0.5-
780311 049	1.1-	0.2+	850218 809	0.0	0.1+	850224 809	0.3+	0.5-
780311 049	0.6-	0.2+	850218 809	0.9+	0.1+	850224 809	0.2-	0.5-
780312 049	1.0+	0.3+	850218 809	1.2+	0.1+	850227 809	0.4+	0.3+
780312 049	1.9-	1.1+	850219 809	0.0	0.8+	850227 809	0.0	0.3+
850213 809	0.4+	0.2-	850219 809	0.2+	0.6+	850227 809	0.6+	0.2+
850213 809	0.3+	0.1+	850219 809	0.9+	0.4+	850228 809	0.3+	0.4-
850213 809	0.1-	1.1+	850220 809	3.0-	0.9-	850228 809	0.9+	0.3-
850215 809	0.8+	1.0-	850220 809	2.6-	0.4-	850228 809	1.1+	0.1-
850215 809	0.7+	0.5-	850220 809	2.0-	0.6-			
850215 809	0.7+	0.6-	850221 809	0.4-	0.1-			

1985 GO = 1975 JG = 1978 EG6 = 1979 QL

The identifications were also found by C. M. Bardwell and L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	47.57598	(1950.0)	P	Q
n	0.29251762	Peri. 123.51797	-0.71461210	+0.69541290
a	2.2475131	Node 100.67086	-0.66460882	-0.64119910
e	0.1032320	Incl. 4.41797	-0.21823076	-0.32444508
P	3.37	B(1,0) 15.2		

Residuals in seconds of arc

750511 095	0.1+	0.4+	850415 688	0.3-	1.3+	850423 688	0.4+	0.4-
780306 095	0.2+	0.5+	850415 688	0.2+	0.6+	850518 688	0.4-	0.9-
790823 801	0.3-	0.8+	850423 688	0.4-	0.3+	850518 688	0.3+	1.5-

4530 P-L = 1981 EX47
The identification was found independently by O. Kippes.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M 343.56968		(1950.0)	P	Q
n 0.31185937	Peri.	162.71418	+0.98297264	-0.18350155
a 2.1535967	Node	207.86507	+0.16606233	+0.90947400
e 0.1722785	Incl.	1.17564	+0.07866436	+0.37307400
P 3.16	B(1,0)	16.4		

Residuals in seconds of arc

600924	675	0.2-	0.3+	601017	675	1.2+	0.3-	810302	413	0.7+	0.3-
600926	675	0.1+	0.6-	601022	675	0.0	0.8+	810311	413	0.7+	0.9-
600927	675	0.1-	0.1+	601024	675	0.4-	0.4+	810315	413	0.6-	0.1-
600928	675	0.1+	0.7-	601026	675	0.3-	0.6-	810410	413	1.2-	0.3+

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ORBITAL ELEMENTS BY T. URATA, SHIMIZU, JAPAN.

1975 AM = 1984 YD
Copied from NOC 1523. The identification is by T. Urata.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M 117.73114		(1950.0)	P	Q
n 0.18769241	Peri.	308.09549	+0.86057612	-0.47314716
a 3.0211511	Node	80.87471	+0.50625924	+0.75411612
e 0.0814888	Incl.	11.00755	+0.05577019	+0.45545651
P 5.25	B(1,0)	13.0		

Residuals in seconds of arc

750107	026	1.0+	0.6-	750218	026	0.7+	0.0	841227	095	0.1-	0.1-
750110	026	0.2-	0.1-	750305	026	1.2-	0.7-	841229	095	1.8+	0.3-
750205	026	0.5+	0.4+	841223	881	(6.4-	4.2+)Y	841230	095	0.8-	1.5-
750207	026	0.9-	1.0+	841223	881	0.8-	1.8+ Y	841231	095	(0.2-	10.2-)

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ORBITAL ELEMENTS BY L. K. KRISTENSEN, INSTITUTE OF PHYSICS, AARHUS.

(3309)* 1982 BH
Discovered 1982 Jan. 28 by K. S. Jensen at Brorfelde.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M 90.65879		(1950.0)	P	Q
n 0.40219422	Peri.	218.28851	-0.40194863	+0.89852159
a 1.8176580	Node	29.28080	-0.72578724	-0.19521814
e 0.0533979	Incl.	21.13395	-0.55827429	-0.39312698
P 2.45	B(1,0)	15.1		

Residuals in seconds of arc

820128	054	0.1+	0.0	820401	675	0.8-	1.1+	840103	801	1.1+	1.3+
820128	054	0.5+	0.2+	820413	675	0.4-	0.6+	850424	474	0.6-	0.1-
820130	054	0.4-	0.1+	820422	801	0.0	0.6+	850424	474	0.8-	0.4+
820131	054	0.4-	0.1+	820519	801	0.9-	2.2+	850523	474	0.3+	1.3+
820201	054	0.5-	0.1-	830903	801	0.5-	2.0+	850523	474	0.5+	0.2+
820202	675	0.3-	0.4+	831007	801	0.5+	1.1+	850621	474	0.1-	1.1-
820213	675	(3.6-	3.4+)	831011	054	2.7+	1.9-	850621	474	0.0	0.9-
820213	675	(4.0+	3.5+)	831031	054	1.3+	0.6+	850720	474	0.1-	0.8-
820219	054	3.6-	1.8-	831103	046	2.6-	1.7-	850720	474	0.2-	0.4-
820220	054	1.3-	0.3-	831113	054	0.0	0.1+				

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

The identifications are by B. G. Marsden unless otherwise stated.

Periodic Comet Hartley (1985f)
T 1985 June 11.60833 ET

q	1.5399256	(1950.0)	P	Q
n	0.17557220	Peri. 174.10584	-0.81817362	+0.50600173
a	3.1586309	Node 40.36923	-0.54322690	-0.52466854
e	0.5124706	Incl. 24.93284	-0.18840505	-0.68460584
P	5.61			

From 13 observations 1985 June 13-July 29.

Periodic Comet Maury (1985k)
T 1985 June 8.56917 ET

q	2.0135140	(1950.0)	P	Q
n	0.11156028	Peri. 114.22116	+0.45770312	+0.88906209
a	4.2736242	Node 183.06020	-0.86353349	+0.44217610
e	0.5288510	Incl. 9.42626	-0.21170204	+0.11852801
P	8.83			

From 13 observations 1985 Aug. 16-Sept. 12.

Comet Hartley-Good (1985l)
T 1985 Dec. 9.12130 ET

q	0.6944775	(1950.0)	P	Q
		Peri. 87.03952	+0.05862483	-0.99749310
		Node 357.69323	-0.23327933	+0.02491173
e	1.0	Incl. 79.94265	+0.97064096	+0.06623382

From 9 observations 1985 Sept. 13-16.

(3310)* 1931 TS2 = 1930 MH = 1934 FB = 1939 CM = 1939 EC = 1948 YB = 1971 HO = 1983 TC1 = 1984 WW

Discovered 1931 Oct. 9 by C. W. Tombaugh at the Lowell Observatory. The identifications 1931 TS2 = 1984 WW and 1983 TC1 = 1984 WW are by E. Bowell and by A. Lowe, respectively (MPC 9958).
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	272.36306	(1950.0)	P	Q
n	0.18870682	Peri. 129.58217	-0.61553787	+0.76523162
a	3.0103084	Node 101.39442	-0.76910667	-0.53105735
e	0.0575602	Incl. 11.08668	-0.17201177	-0.36386626
P	5.22	B(1,0) 12.0		

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

300623	690	0.3+	2.4-	390215	062	1.6+	1.7+	831012	688	0.0	1.6-
300626	690	0.1+	2.7-	390311	029	(25.2+	61.8+)X	841120	688	0.6-	1.0-
300627	690	1.3+	2.0-	481224	020	(0.08+	0.04-)X	841120	688	0.4+	0.9-
311007	690	1.1+	0.9-	481227	020	(0.05+	0.02-)X	841127	688	0.4+	1.1-
311009	690	5.0-	2.7+	710427	095	2.4-	2.2-	841127	688	1.2+	1.0-
311011	690	1.4+	0.5+	831009	688	0.6+	1.1-	841223	095	0.1+	1.0+
340309	012	(0.00-	0.03+)X	831012	688	0.1+	0.5-	841227	095	(13.8-	3.9+)

(3311)* 1976 QM1 = 1974 EL = 1979 HN2 = 1981 SB5 = 1983 AW1 = 1984 SP = 1985 PD

Discovered 1976 Aug. 26 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identifications 1976 QM1 = 1974 EL, 1976 QM1 = 1981 SB5 and 1976 QM1 = 1985 PD are by T. Urata (NOC 1067), C. M. Bardwell and E. Bowell, respectively.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	177.16025		(1950.0)		P		Q				
n	0.21146792	Peri.	12.76173		-0.98361849		-0.18015032				
a	2.7902282	Node	156.85683		+0.16392366		-0.90859535				
e	0.0389568	Incl.	0.92800		+0.07499128		-0.37682933				
P	4.66	B(1,0)	13.5								

Residuals in seconds of arc

740315	095	0.1-	0.4-	830112	046	0.1-	2.0-	840923	474	0.2-	1.3-
760826	095	0.4-	2.1-	830113	046	1.9-	3.0-	850814	688	0.5-	0.7-
760924	095	0.2-	1.7-	840917	474	2.1+	0.6-	850814	688	1.2+	0.5-
760928	095	0.9+	0.3+	840917	474	1.1-	1.0-	850820	688	0.8+	1.1+
790424	095	2.0+	0.6+	840918	474	5.0-	1.5-	850820	688	1.5+	1.3+
810925	095	0.0	0.8+	840918	474	0.9+	1.3-	850822	688	0.5+	0.3-
811007	095	0.1-	0.5+	840923	474	1.1-	0.2-	850822	688	1.7-	1.2-

(3312)* 1984 SN = 1927 UK = 1953 UN = 1967 JE = 1974 VH = 1978 LL = 1978 NS7 = 1979 VQ = 1982 FJ2

Discovered 1984 Sept. 24 by K. Augustesen, P. Jensen and H. J. Fogh Olsen at Brorfelde. The key identifications 1984 SN = 1974 VH = 1979 VQ are by K. W. Fabrin and L. K. Kristensen.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	96.35158		(1950.0)		P		Q				
n	0.18913989	Peri.	127.70588		+0.94572200		+0.31086925				
a	3.0057115	Node	214.47645		-0.32495945		+0.90762725				
e	0.1170603	Incl.	9.63170		+0.00335414		+0.28208701				
P	5.21	B(1,0)	13.0								

Residuals in seconds of arc

271029	094	(1.1+	2.8-)X	780706	095	1.4+	0.7-	820327	046	1.6-	0.8+
531018	760	0.2+	0.4-	791111	095	0.7+	2.5-	840924	054	0.4-	0.1+
531018	760	0.3-	2.2+	791116	095	0.5+	2.3+	840925	688	1.2-	0.2+
670502	095	1.9+	0.7+	820323	046	0.5+	0.1+	840925	688	1.3+	1.1-
741112	095	0.5-	0.4-	820323	046	0.1-	0.4-	840929	054	1.2+	0.1-
741115	095	1.1-	3.1+	820326	046	0.8+	2.1-	841026	054	1.6+	1.9+
741117	095	0.3-	6.7-	820326	046	0.1+	1.8+	841026	054	0.8-	0.2-
780609	095	3.4-	2.2-	820327	046	0.1-	2.0-				

1972 RT3 = 1981 TN2 = 1981 WW3 = 1985 PU

The key identification 1972 RT3 = 1985 PU is by E. Bowell.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	11.14847		(1950.0)		P		Q				
n	0.22538059	Peri.	235.32707		+0.98770076		+0.14639382				
a	2.6741919	Node	116.19950		-0.11578136		+0.92084471				
e	0.2190640	Incl.	3.50910		-0.10508040		+0.36140540				
P	4.37	B(1,0)	14.0								

Residuals in seconds of arc

720906	095	0.9-	2.7+	811124	095	0.3-	0.7-	850814	688	0.2+	1.0-
720909	095	1.1+	1.6+	811124	033	0.9+	0.1-	850820	688	0.4+	0.8-
721007	095	2.3-	0.2+	811124	033	0.1-	0.2-	850820	688	0.4+	0.8-
811004	095	0.5+	1.7-	850814	688	0.3-	0.4-				

1976 YU5 = 1950 KD = 1983 WX

The key identification 1976 YU5 = 1983 WX is by A. Lowe.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	286.16451		(1950.0)		P		Q				
n	0.27715796	Peri.	71.11903		+0.86531221		+0.49321375				
a	2.3298002	Node	259.24221		-0.48725067		+0.78592555				
e	0.1407256	Incl.	5.21540		-0.11756518		+0.37290913				
P	3.56	B(1,0)	14.3								

Residuals in seconds of arc

500516	078(20.5+	96.0-)Y	831129	688	1.4-	0.9+	831201 688	1.9- 0.1-
761218	095	0.4- 0.2+	831129	688	1.7+	0.9-		
761220	095	0.4+ 0.2-	831201	688	1.7+	0.1+		

1979 FV1 = 1934 GC = 1951 XQ = 1954 JT = 1957 WL = 1982 TE = 1985 DJ
The key identification 1979 FV1 = 1985 DJ is by A. Lowe.
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	30.74029		(1950.0)	P	Q
n	0.15425990	Peri.	176.39040	-0.96733822	-0.25230995
a	3.4432474	Node	348.90339	+0.22926617	-0.82972988
e	0.0284381	Incl.	7.29018	+0.10813787	-0.49788353
P	6.39	B(1,0)	12.5		

Residuals in seconds of arc

340403	024	0.8+ 1.8+	790323	095	0.2-	0.3-	850216 046	2.9- 1.4-
511205	711	0.2- 1.0+ Y	790329	095	0.0	1.6+	850216 046	1.4- 0.5-
540509	839	0.5- 2.0-	821011	688	0.2-	2.2-	850220 046	3.5+ 0.3-
571123	760(29.6-	5.7+)X	821011	688	1.6+	0.3-	850220 046	0.7- 1.7-

1982 HR
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	303.74837		(1950.0)	P	Q
n	0.74042269	Peri.	301.68085	-0.65456659	-0.75596699
a	1.2100860	Node	189.21732	+0.70850458	-0.60994172
e	0.3228801	Incl.	2.68922	+0.26374956	-0.23766572
P	1.33	B(1,0)	20.0		

Residuals in seconds of arc

820424	805	1.2+ 1.0-	820514	675	0.1-	0.7+	820524 805	0.4- 0.3+
820425	805	1.3+ 0.1+	820516	675	0.3+	0.8-	820524 805	(11.5+ 1.3+)
820425	805	0.2- 0.1+	820518	805	0.0	0.2-	820531 675	0.9+ 0.2-
820426	805	1.0- 0.5-	820518	805	1.3+	0.2+	820612 675	1.2+ 0.6+
820426	805	1.6- 0.4-	820518	805	0.5+	0.9+	820613 675	1.3+ 0.7+
820429	805	1.2- 0.4+	820518	805	0.4-	0.1+	850814 691	0.2+ 1.8-
820429	801	1.3+ 0.9+	820518	801	0.2-	1.3-	850814 691	0.9- 1.0-
820430	801	(1.0- 4.3+)	820520	805	2.6-	0.2+	850814 691	0.7- 1.6-
820501	675	(5.0- 0.3-)	820520	805	(4.1-	1.4-)	850815 691	1.1+ 1.4+
820502	675	(2.4+ 1.2+)	820521	805	(3.6-	2.8+)	850815 691	0.4+ 0.7+
820513	675	0.4- 0.2+	820521	805	0.3+	0.1+	850815 691	0.6+ 0.0

1982 OK = 1985 KO
The identification is by A. Mrkos.
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	1.53923		(1950.0)	P	Q
n	0.29453576	Peri.	171.40847	+0.73224259	+0.67976703
a	2.2372348	Node	145.64688	-0.62912358	+0.69859064
e	0.2113126	Incl.	4.23630	-0.26081471	+0.22335596
P	3.35	B(1,0)	15.5		

Residuals in seconds of arc

820724	688	0.2+ 0.8-	820818	046	1.6-	2.0-	820822 809	1.0- 0.3+
820724	688	1.2+ 0.3-	820818	046	0.4-	1.0-	820913 675	0.8+ 0.3+
820814	046	0.2- 2.6-	820819	675	2.1+	0.7+	820913 675	1.1+ 0.5-
820814	046	0.5- 2.8-	820819	675	0.7+	0.2-	850513 675	2.7+ 3.0-
820816	809	0.3+ 0.8+	820819	046	1.3-	1.6-	850514 675	2.5- 2.6-
820816	809	0.5+ 0.9+	820820	809	0.8-	1.0+	850515 675	1.6+ 1.0+
820816	809	0.4+ 0.7+	820820	809	0.1-	1.3+	850524 046	1.9- 2.9+
820818	809	0.2+ 1.5+	820820	809	0.8-	0.7+	850524 046	0.2+ 1.9+
820818	809	0.7+ 1.6+	820822	809	0.7-	0.3+		
820818	809	0.2+ 1.1+	820822	809	0.7-	0.4+		

1982 TP = 1978 TV5

The identification is by W. Landgraf.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	358.58536	(1950.0)		P	Q
n	0.24259428	Peri.	16.63021	+0.44285617	+0.89124704
a	2.5461454	Node	279.74498	-0.83344990	+0.36901928
e	0.1300057	Incl.	5.69263	-0.33051425	+0.26363512
P	4.06	B(1,0)	13.5		

Residuals in seconds of arc

781008	095	0.1+	0.3-	821015	095	0.5-	2.7-	821024	095	0.7-	0.6-
821013	688	1.8+	0.1+	821020	095	0.7-	1.3-	821112	095	0.5-	0.2+
821013	688	1.1+	0.6-	821021	095	1.3+	2.1+	850511	675	0.4-	1.3-
821014	095	2.3-	1.6+	821022	095	0.4+	1.9+	850514	675	0.5+	1.3+

1984 EZ

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	97.79874	(1950.0)		P	Q
n	0.22630091	Peri.	75.11263	-0.63648432	+0.76526672
a	2.6669367	Node	154.56915	-0.76530261	-0.61110148
e	0.1236025	Incl.	12.94548	-0.09591463	-0.20229146
P	4.36	B(1,0)	13.5		

Residuals in seconds of arc

840301	675	0.7-	0.4-	840403	688	0.9-	0.7-	850811	046	2.8-	0.3+
840301	675	0.6+	0.7+	840403	688	0.2-	0.3-	850812	046	2.7+	2.0-
840304	675	0.8+	0.2-	840408	688	1.7-	0.5-	850812	046	0.4-	2.1-
840304	675	0.3+	0.2-	840408	688	0.2-	1.5-	850813	801	2.4-	0.2+
840309	688	1.0+	0.7-	840605	801	1.1+	2.3+	850813	046	2.0+	1.3+
840309	688	0.2+	1.8+	850811	046	1.7-	0.5+	850813	046	2.7+	1.3+

1985 PA

Epoch 1985 Aug. 23.0 ET = JDE 2446300.5

M	263.24857	(1950.0)		P	Q
n	0.58120919	Peri.	311.47536	-0.33141901	-0.83108966
a	1.4220485	Node	147.37149	+0.89890541	-0.13436337
e	0.3013748	Incl.	55.92239	-0.28658417	+0.53966329
P	1.70	B(1,0)	16.0		

From 20 observations 1985 Aug. 15-Sept. 8.

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

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

(3313)* 1980 DG = 1972 JB1 = 1982 TP2

Discovered 1980 Feb. 19 by A. Mrkos at Klet. The key identification 1980 DG = 1982 TP2 is by F. Bowman and W. Landgraf, who found it independently (MPC 8901).

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	27.39108	(1950.0)		P	Q
n	0.22771029	Peri.	345.06479	-0.21554976	+0.95640003
a	2.6559157	Node	272.19047	-0.87443278	-0.27887683
e	0.1295543	Incl.	11.37420	-0.43463273	+0.08675658
P	4.33	B(1,0)	13.5		

Residuals in seconds of arc

720511	805	0.7-	1.4-		800220	046	1.2+	0.0		821021	095	1.3+	2.3+
720511	805	0.3-	0.8-		800221	046	0.9+	0.8-		821111	095	0.7+	2.2-
720511	805	0.5+	0.9-		800221	046	2.3-	0.4+		850321	474	0.1+	0.8-
800219	046	0.5+	0.1-		800223	046	1.5+	1.5-		850321	474	0.4+	0.2-
800219	046	0.5-	1.6+		800223	046	2.3-	0.1-		850518	474	0.9-	0.2+
800220	046	1.0+	0.2-		821015	095	1.3-	3.7-		850518	474	0.5+	0.9+

(3314)* 1981 FH = 1928 DD1 = 1941 BT = 1959 SR = 1959 TX = 1969 TM = 1974 DZ1 = 1978 AG = 1979 WV4 = 1985 ND

Discovered 1981 Mar. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

			(1950.0)	P	Q
M	289.47336				
n	0.29819450	Peri.	45.04688	+0.71795606	-0.69608521
a	2.2188927	Node	359.05915	+0.59680461	+0.61711577
e	0.0449565	Incl.	7.40765	+0.35827831	+0.36692439
P	3.31	B(1,0)	14.5		

Residuals in seconds of arc

280228	024	0.9-	2.1-		780112	809	0.5-	0.1+		850710	474	0.2+	3.0+
410130	062	2.0-	2.1+		791117	095	2.2-	1.9-		850710	474	2.4+	0.3-
410130	062	2.1+	4.0+		810330	688	0.8-	0.1+		850715	474	1.6-	1.6-
590929	024	3.3+	0.4+		810330	688	0.6-	0.0		850719	474	0.5-	0.5+
591003	760	1.7-	0.5+		810401	688	0.3+	2.0-		850720	474	0.7-	0.1+
591003	760	(8.0+	0.6+)		810401	688	0.4+	1.7-		850720	474	0.9-	0.2-
691007	095	4.5+	2.9-		810405	688	0.1-	0.2-		850813	474	1.1-	1.4+
691016	095	(7.7+	7.8-)		810405	688	0.0	1.7-		850813	474	1.0-	1.6+
740217	095	1.3+	0.6+		810409	688	0.3-	1.0-					

(3315)* 1984 CZ = 1950 FT = 1972 NK = 1977 RQ3

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

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

			(1950.0)	P	Q
M	111.65992				
n	0.22934985	Peri.	56.70054	-0.91190268	+0.39895269
a	2.6432429	Node	146.52202	-0.40997634	-0.87478527
e	0.0850450	Incl.	10.05221	-0.01878560	-0.27493175
P	4.30	B(1,0)	13.5		

Residuals in seconds of arc

500317	024	0.2+	0.0		840208	688	0.4-	0.3+		840331	688	1.1-	0.8-
500411	024	0.5+	2.8+		840208	688	1.4-	0.8-		840331	688	0.3+	0.7-
720713	095	0.3+	3.4-		840301	688	4.2+	0.1-		850621	801	0.2-	0.2+
770907	414	0.0	0.7-		840301	688	1.2+	1.0-		850718	801	0.3-	0.7+
770907	414	0.4+	0.9-		840306	688	1.6-	1.1-					
840206	688	0.7-	1.2-		840306	688	1.7-	0.5+					

(3316)* 1984 CN1 = 1951 GO = 1979 HY4

Discovered 1984 Feb. 6 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

			(1950.0)	P	Q
M	96.53303				
n	0.17849006	Peri.	350.98425	-0.97950589	+0.19492581
a	3.1241127	Node	200.46953	-0.17456369	-0.94718157
e	0.0893252	Incl.	8.33869	-0.10047752	-0.25465857
P	5.52	B(1,0)	12.5		

Residuals in seconds of arc

510401	711	1.7+	5.0+	Y	840301	688	0.5-	0.9-	840306	688	0.2+ 1.4-
790425	095	0.8+	1.8+		840301	688	0.2+	1.3-	840306	688	0.2- 0.7-
790428	095	1.5-	0.7-		840301	675	1.0-	0.2+	840403	688	0.9+ 0.8-
790430	095	0.5+	0.6-		840301	675	1.3-	0.9+	840403	688	0.4+ 0.9-
840206	688	0.3+	0.2-		840304	675	0.4-	0.3-	850524	801	0.3- 0.9-
840206	688	1.1+	0.5-		840304	675	1.1-	0.6+	850621	801	0.4+ 0.4+

(3317)* 1984 KF = 1963 QD = 1982 BN3 = 1982 DC

Discovered 1984 May 26 by C. Shoemaker and E. Shoemaker at Palomar.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

			(1950.0)	P	Q
M	348.27609				
n	0.08330038	Peri.	147.42493	+0.26471399	+0.90648879
a	5.1924388	Node	135.32679	-0.95421890	+0.29548870
e	0.1259800	Incl.	27.89639	-0.13925796	-0.30160322
P	11.83	B(1,0)	9.5		

Residuals in seconds of arc

630821	760	1.0-	1.2-		840526	675	0.4+	0.1-	850521	657	1.4- 0.3-
630821	760	0.4+	1.6-		840527	675	0.0	0.8+	850521	657	1.8- 0.8+
820120	033	4.7-	0.0		840529	675	0.4-	0.6+	850524	801	1.5- 0.4+
820120	033	0.6+	0.2+		840628	801	0.5+	0.9+	850610	657	0.9+ 2.2-
820220	688	1.1+	0.5-		840725	801	0.0	0.1+	850610	657	0.4+ 1.8-
820220	688	0.6+	0.5-		850318	675	0.7-	0.3+	850619	657	2.0+ 0.8-
820228	688	1.1+	1.2-		850318	675	0.4+	0.3+	850621	657	1.1+ 1.1-
820228	688	1.8+	2.3-		850413	675	1.1+	1.3+	850622	801	1.0- 1.7+

(3318)* 1985 HB = 1943 GP = 1950 RT = 1953 CJ = 1962 YF = 1970 KB
= 1972 XL1 = 1976 QW1 = 1979 DH

Discovered 1985 Apr. 23 by K. Augustesen and P. Jensen at Brorfelde.
The identifications were all found independently by K. Hurukawa.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

			(1950.0)	P	Q
M	92.80010				
n	0.18889600	Peri.	44.02297	-0.87892609	-0.43767286
a	3.0082981	Node	109.13787	+0.36298243	-0.87161483
e	0.0459148	Incl.	11.57468	+0.30940699	-0.22074882
P	5.22	B(1,0)	12.5		

Residuals in seconds of arc

430408	062	0.2+	2.8+		530310	760	0.7-	0.8+	790228	688	0.5- 2.9-
430408	062	0.3-	1.3+		621230	760	(46.8-	82.9+)X	850423	054	0.1- 0.8-
430409	062	0.9-	0.9-		700529	095	1.2-	2.7+	850424	688	0.2+ 0.4-
500912	839	0.3+	1.2-		700606	095	1.5+	2.2-	850424	688	0.7+ 1.0-
500912	839	0.2-	0.7+		721201	095	(10.6-	34.2+)	850425	054	0.4+ 2.2+
530214	760	0.9-	0.4+		721203	095	2.7-	2.4+	850515	688	0.6- 0.0
530214	760	4.7+	2.7-		760821	809	0.6+	0.4-	850515	688	0.7- 0.1+
530310	760	0.4-	0.1+		760821	809	0.6+	0.3-			

1964 TC1 = 1935 SD2 = 1976 YM5 = 1981 RS4

The key identification 1964 TC1 = 1981 RS4 is by B. G. Marsden.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

			(1950.0)	P	Q
M	283.17226				
n	0.17355580	Peri.	306.84753	+0.87496949	+0.48412207
a	3.1830551	Node	24.20009	-0.43828750	+0.79841076
e	0.2454124	Incl.	1.02929	-0.20574855	+0.35800289
P	5.68	B(1,0)	13.5		

Residuals in seconds of arc

350928	078	3.0-	4.4+		641109	330	3.6+	0.1+	811005	095	3.6- 0.6-
351001	078	1.2+	0.6-		761218	095	0.1-	0.4+	811022	095	2.8+ 0.3-
641008	330	2.2-	2.1-		810908	095	0.4+	0.1-			
641030	330	0.3-	0.3+		810928	095	1.6+	1.1-			

1964 TR1 = 1957 JE = 1979 HP2 = 1981 TJ2 = 1981 UL15 = 1985 JS1

The double designation 1981 TJ2 = 1981 UL15 is by N. S. Chernykh.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	355.69159	(1950.0)		P	Q
n	0.23533606	Peri.	77.42338	+0.66608736	-0.74556636
a	2.5982320	Node	330.77559	+0.66613443	+0.60754664
e	0.1584496	Incl.	2.51346	+0.33554813	+0.27389391
P	4.19	B(1,0)	14.5		

Residuals in seconds of arc

570502	760(26.0-	7.0-)X	641110	330	2.0+	0.8-	811023	095	3.1+	1.4-
641009	330	1.4-	1.4+	790424	095	0.4-	0.3+	850514	675	1.0-	2.8-
641101	330	2.2-	0.2-	811004	095	1.0-	0.3-	850515	675	0.2-	1.1-

1964 TG2 = 1981 UN12

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	330.05886	(1950.0)		P	Q
n	0.17818700	Peri.	214.30115	+0.75307935	+0.65620286
a	3.1276602	Node	104.61429	-0.59203368	+0.70745866
e	0.1795679	Incl.	2.82180	-0.28699757	+0.26248818
P	5.53	B(1,0)	13.0		

Residuals in seconds of arc

641009	330	0.5+	0.2+	641109	330	1.4+	0.4-	811025	095	0.6+	0.3-
641030	330	1.6-	0.5-	811023	095	1.7-	0.2-	811028	095	0.4-	1.1-

1979 QK6 = 1985 JQ

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	351.53468	(1950.0)		P	Q
n	0.30648657	Peri.	200.14114	+0.76335089	+0.64309382
a	2.1786925	Node	119.68498	-0.58260802	+0.72619592
e	0.1965086	Incl.	4.02891	-0.27903998	+0.24304286
P	3.22	B(1,0)	15.5		

Residuals in seconds of arc

790819	095	0.2-	1.4+	790827	095	0.8-	0.5-	850513	675	0.0	0.9+
790826	095	0.5-	0.2+	790924	095	0.8+	0.5+	850515	675	0.1+	0.5-

1979 SR9 = 1985 JH1

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	19.41070	(1950.0)		P	Q
n	0.29427551	Peri.	204.26012	+0.20838514	+0.97742803
a	2.2385536	Node	77.78252	-0.89137733	+0.20443670
e	0.1468265	Incl.	2.03972	-0.40251967	+0.05329239
P	3.35	B(1,0)	14.5		

Residuals in seconds of arc

790922	095	1.5+	0.7+	791016	095	0.5+	0.0	850515	675	0.2-	0.4+
790928	095	1.7-	0.6-	850511	675	0.1+	0.8-				

1981 RV3 = 1959 TN = 1975 RH2 = 1980 KT1 = 1980 LD1

The double designation 1980 KT1 = 1980 LD1 is by B. G. Marsden (MPC 9203). The identification 1981 RV3 = 1980 KT1 was found independently by K. Hurukawa and L. D. Schmadel. Hurukawa also independently found the identification 1981 RV3 = 1975 RH2.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	338.46957	(1950.0)		P	Q
n	0.17983944	Peri.	168.11343	+0.28586751	+0.95775456
a	3.1084719	Node	118.49038	-0.88205355	+0.27579622
e	0.1725734	Incl.	2.04743	-0.37451475	+0.08150245
P	5.48	B(1,0)	12.5		

Residuals in seconds of arc

591006 024	2.1+	1.3+	800611 675	4.1-	0.1+	811022 095	1.9+	1.9+
750909 808	0.2+	0.2-	800612 675	2.1+	1.0-	811024 095	3.1+	0.6+
750909 808	0.5-	0.3-	810903 095	0.8-	0.2+			
800517 095	1.4+	3.1-	811007 095	3.5-	3.2-			

1982 UH7 = 1975 GH1 = 1985 JN2

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	264.91500		(1950.0)	P	Q
n	0.20159674	Peri.	208.46408	+0.98484877	-0.17293970
a	2.8805887	Node	161.48143	+0.16577696	+0.91716119
e	0.0836734	Incl.	2.31613	+0.05090085	+0.35903649
P	4.89	B(1,0)	13.0		

Residuals in seconds of arc

750415 805	0.3+	0.5-	821023 095	1.6-	0.4+	850515 675	0.9-	0.2-
750420 805	0.8-	0.1-	821112 095	1.2+	0.4-			
821021 095	0.4+	0.8+	850513 675	0.8+	0.6+			

1983 QJ = 1961 VW = 1977 FL1 = 1979 WJ7 = 1984 YH4

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	114.71910		(1950.0)	P	Q
n	0.21667411	Peri.	336.82093	+0.66490946	-0.73925349
a	2.7453575	Node	71.32118	+0.70169663	+0.56924750
e	0.0644468	Incl.	6.47131	+0.25596336	+0.35980767
P	4.55	B(1,0)	13.5		

Residuals in seconds of arc

611111 760(75.5- 11.4-)X			830906 809	0.8-	0.8-	830912 809	1.1+	1.4-
770326 095	1.8+	0.7+	830907 809	0.6-	0.0	830912 809	1.1+	1.7-
791117 095	0.6-	0.4-	830907 809	0.4-	0.0	841227 095	0.9+	1.7+
830831 809	1.2-	0.5+	830907 809	0.4-	1.2+	841229 095	0.4-	2.0+
830831 809	0.9-	0.6+	830908 809	0.1-	0.4-	841230 095	1.0-	0.9+
830831 809	0.7-	0.7+	830908 809	0.0	0.8-	841231 095	0.2+	1.1+
830906 809	1.2-	0.6-	830908 809	0.1-	0.6-			
830906 809	1.0-	0.6-	830912 809	1.1+	1.2-			

1983 RO3 = 1980 DQ2 = 1984 YU3

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	86.91596		(1950.0)	P	Q
n	0.17626364	Peri.	351.01381	+0.60805764	-0.79349596
a	3.1503714	Node	61.53296	+0.73010970	+0.54650833
e	0.1874712	Incl.	1.63622	+0.31177832	+0.26775511
P	5.59	B(1,0)	13.5		

Residuals in seconds of arc

800220 095	0.1+	0.2-	830904 809	0.1-	0.6+	830908 809	0.1+	1.2+
830902 809	0.3-	0.1+	830906 809	2.1-	0.4+	830909 809	0.0	0.9+
830902 809	0.8+	0.0	830906 809	0.8-	0.5+	830909 809	0.3+	0.8+
830902 809	1.9+	0.1+	830906 809	0.4-	0.0	830909 809	0.5+	0.8+
830903 809	0.6-	0.9-	830907 809	0.5+	0.1+	830912 809	0.6+	0.5-
830903 809	0.8-	0.2-	830907 809	0.5+	0.1+	830912 809	0.9+	0.8-
830903 809	1.9+	0.7+	830907 809	0.3+	0.1+	830912 809	1.1+	1.1-
830904 809	0.0	0.5+	830908 809	2.3-	0.1+	841227 095	0.6+	0.6-
830904 809	0.3-	0.4+	830908 809	0.3-	0.2+	841229 095	0.4-	0.2-

1983 WL
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	185.71700	(1950.0)	P	Q
n	0.27668315	Peri. 20.04757	+0.04718686	-0.98462425
a	2.3324648	Node 67.55123	+0.88980483	-0.03507803
e	0.0920860	Incl. 10.48524	+0.45389510	+0.17112749
P	3.56	B(1,0) 14.5		

Residuals in seconds of arc

831127	330	2.0+	2.7+	831205	688	0.7-	0.7-	831209	688	2.1+	0.9-
831128	688	0.2+	1.7-	831205	046	0.3+	0.8+	831229	688	0.1+	0.3+
831128	688	1.1-	1.7-	831205	046	1.7+	1.0+	831229	688	3.0+	0.2-
831201	688	0.5-	1.1-	831206	688	1.4+	0.7-	840102	688	2.9+	0.4+
831201	688	1.9+	1.8-	831206	688	0.6+	0.0	840104	688	1.1+	0.6+
831204	046	4.7-	0.4-	831208	046	1.8-	1.3+	840104	688	3.5-	2.3-
831204	046	1.7-	2.6-	831208	046	0.8-	0.3+	850513	675	0.4+	2.4-
831205	688	2.7+	2.0-	831209	688	0.2+	0.2-	850515	675	0.5-	2.9+

1985 GB = 1933 HE = 1979 FR3 = 1979 HG2

The identification and double designation 1985 GB = 1979 FR3 = 1979 HG2 were independently found by K. Hurukawa and L. D. Schmadel. The identification 1985 GB = 1933 HE was also independently suggested by Hurukawa.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	46.10426	(1950.0)	P	Q
n	0.16902458	Peri. 156.03769	-0.95356553	+0.30001555
a	3.2396916	Node 41.45003	-0.28238970	-0.85996207
e	0.1075229	Incl. 2.29624	-0.10473220	-0.41286306
P	5.83	B(1,0) 13.0		

Residuals in seconds of arc

330424	024	3.2-	0.9+	790424	095	0.5-	0.5+	850423	688	2.5+	0.4-
330519	024	2.3+	2.9-	850414	688	0.9+	0.9+	850515	688	1.5-	0.9+
790331	095	0.5-	1.5-	850414	688	1.5+	0.8+	850515	688	1.7-	0.7+
790424	095	0.1+	0.7-	850423	688	0.1-	0.8+				

1985 GE1 = 1947 LK = 1978 JS2 = 1979 SA2
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	64.42235	(1950.0)	P	Q
n	0.28394234	Peri. 354.34511	-0.83634694	+0.54488865
a	2.2925394	Node 218.86875	-0.49910570	-0.80224495
e	0.1203654	Incl. 5.50191	-0.22675381	-0.24392498
P	3.47	B(1,0) 14.0		

Residuals in seconds of arc

470614	690	0.4+	1.3-	850415	688	0.6+	0.3-	850515	675	0.5-	0.2-
470615	690	0.4-	0.4+	850415	688	1.2+	1.2-	850521	688	1.2-	0.5+
780509	095	0.5+	2.5+	850424	688	0.0	0.3+	850521	688	0.8-	1.0+
790922	095	0.3-	1.1+	850424	688	0.6+	0.8-				

1985 HC = 1962 JL = 1971 KE = 1981 TG4
Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	355.38271	(1950.0)	P	Q
n	0.21368062	Peri. 107.31974	+0.74396337	+0.60102418
a	2.7709326	Node 217.32080	-0.62776034	+0.77840176
e	0.4104107	Incl. 28.79629	+0.22898791	+0.18127500
P	4.61	B(1,0) 13.0		

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

620505	760(0.05+	0.00+)X	850508	675	0.2+	0.9-	850723 691	0.5+ 0.3-
710524	095	0.2+ 1.3-	850508	675	0.3+	0.9-	850723 691	0.6+ 0.2-
811008	095	0.3- 1.2-	850518	688	1.8+	1.3+	850723 691	0.5+ 0.4-
850423	675	1.1- 0.6+	850518	688	0.4+	0.2+	850813 801	0.7- 0.4-
850424	675	1.2- 0.3+	850521	801	0.2+	0.1-	850814 801	2.1- 0.5-
850425	675	1.4- 1.3+	850618	801	2.0+	0.4+		
850425	675	0.5- 2.7-	850716	801	0.2-	2.0+		

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

1981 EX19 = 1963 UH

The identification was found independently by K. Hurukawa (JAM 1901) and C. M. Bardwell.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	36.05320		(1950.0)	P	Q
n	0.31175210	Peri.	130.89190	+0.84546883	+0.53399583
a	2.1540907	Node	196.83463	-0.49552691	+0.78059540
e	0.2122319	Incl.	1.09993	-0.19908675	+0.32483729
P	3.16	B(1,0)	15.5		

Residuals in seconds of arc

631018	760	0.3+ 1.2+	810303	413	0.9+	0.5-	810408 413	1.3- 2.5+
631018	760	0.5- 0.6-	810307	413	0.4-	0.4+	810408 413	1.1+ 0.4+
810209	413	1.4- 0.2-	810307	413	2.5+	0.6-	810411 413	3.0- 0.8+
810213	413	0.4- 0.8+	810311	413	1.1-	1.2+	810411 413	2.2+ 2.2-
810302	413	2.3- 1.4+	810311	413	0.4-	0.0	850814 688	0.1+ 1.3+
810302	413	3.9+ 1.7-	810316	413	1.6+	0.1-	850814 688	0.7- 0.7-
810303	413	1.6- 0.3-	810329	413	0.0	0.2-		

1982 TR = 1972 TU8

The identification is by W. Landgraf.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	317.56220		(1950.0)	P	Q
n	0.30491608	Peri.	106.08486	+0.40334370	-0.91394349
a	2.1861672	Node	320.03296	+0.81047193	+0.37962412
e	0.0635578	Incl.	4.01337	+0.42479301	+0.14350200
P	3.23	B(1,0)	15.0		

Residuals in seconds of arc

721004	095	1.0+ 0.5-	821020	095	1.3-	0.8-	821108 095	5.1- 5.1-
821013	688	0.6- 3.5-	821021	095	0.1+	1.8+	821111 095	3.7+ 1.0+
821013	688	0.5+ 2.2-	821022	095	0.5+	0.6+	821112 095	0.0 0.4+
821014	095	4.0- 1.0+	821022	095	4.8+	1.3-	850815 688	1.9- 0.1-
821015	095	0.2- 1.1-	821024	095	0.6-	0.7+	850815 688	0.2+ 0.2+

1982 UP = 1969 RS1

The identification was independently suggested by C. M. Bardwell and W. Landgraf.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	356.82999		(1950.0)	P	Q
n	0.30656781	Peri.	161.66424	+0.97317106	-0.22925987
a	2.1783076	Node	211.60942	+0.20617178	+0.90642653
e	0.1384059	Incl.	2.12583	+0.10213361	+0.35472645
P	3.21	B(1,0)	15.5		

Residuals in seconds of arc

690913	095	0.5-	1.3+	821017	688	0.1+	0.4-	850814	688	0.2+	0.1+
820920	095	0.2-	1.2+	821024	688	0.4-	1.4-	850814	688	0.5-	0.6+
820922	095	0.2-	0.8+	821024	688	0.4-	0.5-	850820	688	2.8-	0.7-
820926	095	0.1+	2.2+	821115	688	0.8+	0.8-	850822	688	2.6+	1.1-
821017	688	0.6-	1.0-	821115	688	1.0+	0.0	850822	688	1.1+	0.9-

1984 EM = 1933 FZ

The identification is by W. Landgraf.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5 (J-P)

M	109.65708		(1950.0)	P	Q
n	0.28931509	Peri.	82.12305	-0.32807170	+0.94461296
a	2.2640683	Node	168.71361	-0.88319883	-0.30345672
e	0.1306958	Incl.	2.54151	-0.33515484	-0.12498152
P	3.41	B(1,0)	14.5		

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

330323	024	0.4+	1.5-	840301	809	0.4-	1.4+	840306	809	0.0	0.4+
330325	024	1.3-	2.9+	840301	809	0.3-	1.6+	840306	688	0.3+	0.6+
330327	024	(0.04+	0.00-)	840301	688	3.5+	0.3+	840308	809	1.8-	0.1-
330413	024	1.0+	0.6+	840301	809	0.1+	1.7+	840308	809	1.6-	0.2-
840206	688	2.5+	1.4-	840301	688	1.8+	1.0-	840308	809	1.2-	0.1-
840223	809	0.1-	1.3+	840303	809	1.8-	1.2+	840309	809	0.0	0.2-
840223	809	0.2+	1.6+	840303	809	1.5-	0.9+	840309	809	0.1+	0.2-
840223	809	0.1+	1.2+	840303	809	1.1-	0.9+	840309	809	0.2+	0.2-
840225	809	0.6-	0.1-	840304	809	1.3-	0.1-	840310	809	0.8-	0.7+
840225	809	0.1+	0.2-	840304	809	1.1-	0.2-	840310	809	0.6-	0.8+
840225	809	0.6+	0.3-	840304	809	0.7-	0.2-	840310	809	0.5-	0.7+
840226	809	0.6+	0.5+	840305	809	1.0-	1.6+	840329	688	1.0+	1.8-
840226	809	0.3+	0.1+	840305	809	1.0-	1.1+	840331	688	1.3-	1.2-
840226	809	0.2+	0.3+	840305	809	1.0-	0.9+	840331	688	2.1+	0.9-
840228	809	0.3-	0.7+	840306	809	0.4-	0.6+	850815	688	0.4-	0.5+
840228	809	0.1-	0.6+	840306	809	0.3-	0.3+	850815	688	2.0+	0.6+
840228	809	0.1+	0.6+	840306	688	0.4-	0.1+				

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ORBITAL ELEMENTS BY W. LANDGRAF, ASTRONOMISCHE ARBEITSGEMEINSCHAFT, MAINZ.

The identifications are by W. Landgraf unless otherwise stated.

1981 QG1 = 1976 SN7

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M	255.67970		(1950.0)	P	Q
n	0.19245268	Peri.	242.63750	+0.52946793	-0.84794875
a	2.9711192	Node	175.15749	+0.84501950	+0.52451923
e	0.3086841	Incl.	17.53150	+0.07487155	+0.07656693
P	5.12	B(1,0)	14.0		

Residuals in seconds of arc

760925	095	0.9-	1.0-	810829	046	0.8-	0.2+	810906	046	1.5+	0.8-
760928	095	0.9+	1.0+	810905	046	0.2-	1.0+	810906	046	(2.7+)	1.5+
810929	046	(2.4-)	0.6-	810905	046	0.0	1.1-	810925	095	0.4-	0.2-

1981 TP1 = 1981 WB4 = 1952 HF4 = 1976 YA1 = 1980 RU3 = 1984 JV

The identifications were found independently by K. Hurukawa. The identification 1981 TP1 = 1980 RU3 was also found by A. Lowe.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M 152.25810		(1950.0)	P	Q
n 0.18449000	Peri.	281.61971	-0.96625756	-0.14600489
a 3.0560058	Node	250.26738	+0.20952166	-0.92471549
e 0.0436671	Incl.	13.02865	-0.14982326	-0.35154491
P 5.34	B(1,0)	12.5		

Residuals in seconds of arc

520426	711	0.8-	1.4-	Y	800911	095	0.5+	0.2-	811130	511	0.6-	0.7+
761216	095	(5.0-)	1.3-		811002	095	0.3-	0.1-	811130	511	0.2+	0.5+
761218	095	0.2-	0.3+		811008	095	0.6-	0.4+	811130	511	0.6-	0.5+
761220	095	1.6+	1.3-		811022	095	0.7-	(3.0+)	840503	688	0.0	0.4+
800906	095	0.6+	0.6-		811024	095	0.4+	(2.6+)	840503	688	0.1-	0.5+

1985 GX = 1978 QF2 = 1978 RL4

The identifications were also found by C. M. Bardwell, K. Hurukawa and L. D. Schmadel.

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M 118.07710		(1950.0)	P	Q
n 0.22415374	Peri.	315.84666	-0.49223993	-0.86782993
a 2.6839353	Node	163.27265	+0.84946025	-0.49587151
e 0.1852696	Incl.	13.58598	+0.19004508	-0.03134736
P 4.40	B(1,0)	13.5		

Residuals in seconds of arc

780831	095	0.4-	1.2-		850415	688	0.3+	0.0	850515	688	0.4-	0.5+
780905	095	0.4+	1.1+		850424	688	0.7+	0.3+	850515	688	0.2-	0.3+
850415	688	0.5-	0.0		850424	688	0.0	1.0-				

1985 KC = 1979 QT3

Epoch 1985 Dec. 1.0 ET = JDE 2446400.5

M 10.29120		(1950.0)	P	Q
n 0.30131484	Peri.	303.06831	+0.28879854	+0.95696644
a 2.2035472	Node	343.64536	-0.84118332	+0.23943149
e 0.0302945	Incl.	5.80329	-0.45717177	+0.16397500
P 3.27	B(1,0)	15.5		

Residuals in seconds of arc

790822	809	0.2-	1.3+		850524	474	0.1-	0.1+	850528	474	0.4+	0.7+
790822	809	1.1-	0.1+		850524	474	0.2-	0.3+	850616	474	0.0	1.0-
790822	809	0.5+	0.0		850525	474	0.1+	0.1+	850616	474	0.4-	0.2-
790823	809	0.8+	0.4-		850525	474	0.8-	0.4+				
790823	809	(3.0+)	0.8-		850528	474	0.9+	0.5-				

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NEW NAMES OF MINOR PLANETS.

(2309) Mr. Spock = 1971 QX1

Discovered 1971 Aug. 16 by J. Gibson at the Yale-Columbia Southern Station, El Leoncito.

Named for the ginger short-haired tabby cat (1967-) who selected the discoverer and his soon-to-be wife at a cat show in California and accompanied them to Connecticut, South Africa and Argentina. At El Leoncito he provided endless hours of amusement, brought home his trophies, dead or alive, and was a figure of interest to everyone who knew him. He was named after the character in the television program "Star Trek" who was also imperturbable, logical, intelligent and had pointed ears.

(2466) Golson = 1959 RJ

Discovered 1959 Sept. 7 at the Goethe Link Observatory, Indiana University.

Named in memory of John C. Golson (1927-1984), the first employee of the Kitt Peak National Observatory. "J.C." had been a night assistant at the McDonald Observatory before he was hired by Aden B. Meinel to work as an observer on the site survey for a national optical astronomy observatory. The first person hired after Kitt Peak was selected, he received a special service award during the celebration of KPNO's 25th anniversary in February 1983. Name proposed by F. K. Edmondson.

(2488) Bryan = 1952 UT

Discovered 1952 Oct. 23 at the Goethe Link Observatory, Indiana University.

Named in memory of William Lowe Bryan (1860-1955), president of Indiana University from 1902 to 1937, whose pioneering work in experimental psychology was recognized by his election as president of the American Psychological Association in 1903. Appointed to the faculty soon after his graduation from Indiana University in 1884 (two years before the retirement of Daniel Kirkwood), Bryan also served for more than a quarter of a century as vice president and president emeritus, and he was the architect of the present-day structure of the university: the present academic organization, including the department of astronomy, is truly his creation. Name proposed by F. K. Edmondson.

(2496) Fernandus = 1953 TC1

Discovered 1953 Oct. 8 at the Goethe Link Observatory, Indiana University.

Named in memory of Fernandus Payne (1881-1977), dean of the graduate school and head of the department of zoology at Indiana University from 1927 to 1947 and dean of the college of arts and sciences from 1942 to 1947. His support played an important role in expanding the department of astronomy and the establishment of a graduate program leading to the Ph.D. degree. President of the American Society of Zoologists in 1931, Payne was chairman the Association of American Universities' Committee on Classification for 18 years. Following his formal retirement in 1951, he served for a year as assistant director for biological and medical sciences of the newly-established National Science Foundation and actively continued his research for two more decades. Name proposed by F. K. Edmondson.

(2596) Vainu Bappu = 1979 KN

Discovered 1979 May 19 by R. M. West at the European Southern Observatory.

Named in memory of Manali Kallat Vainu Bappu (1927-1982), famous Indian astrophysicist and a dear friend of the discoverer. Educated at Harvard and Caltech, he established, under difficult circumstances, the first modern Indian observatory at Naini Tal during the 1950s. Appointed director of the Kodaikanal Observatory in 1960, he subsequently founded and directed the Indian Institute of Astrophysics in Bangalore. He was the initiator and driving force of many projects, among them the 2.3-m Kavalur telescope, entirely designed and built in India. In the multiple roles of brilliant scientist, teacher and administrator, he contributed decisively to the high level of astronomy and astrophysics in India today. He served as vice-president (1967-1973) and president (1979-1982) of the IAU and as chairman of the editorial board of the Indian Journal of Astronomy and Astrophysics.

(2823) van der Laan = 2010 P-L

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

Named in honor of Harry van der Laan, professor of astronomy at Leiden Observatory and well-known for his work on radio radiation of gaseous nebulae. He is especially honored for his activity in securing the Dutch

participation in the Observatorio de Roque de los Muchachos at La Palma, Canary Islands.

(2876) Aeschylus = 6558 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the author of tragedies in ancient Athens (525-456 B.C.). Of his more than 90 tragedies only seven survived.

(2921) Sophocles = 6525 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the author of tragedies in ancient Athens (496-406 B.C.). Of his 123 tragedies only seven survived.

(2930) Euripides = 6554 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the author of tragedies in ancient Athens (480-406 B.C.). Of his 92 plays 19 survived.

(2934) Aristophanes = 4006 P-L
Discovered 1960 Sept. 25 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the author of comedies in ancient Athens (445-385 B.C.). Of his 44 plays 11 survived.

(2940) Bacon = 3042 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the English scholar Francis Bacon (1561-1626), thought by some to have been the author of Shakespeare’s plays.

(2984) Chaucer = 1981 YD
Discovered 1981 Dec. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Named for the English poet Geoffrey Chaucer (1340?-1400).

(2985) Shakespeare = 1983 TV1
Discovered 1983 Oct. 12 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Named for the English poet and playwright William Shakespeare (1564-1616).

(2992) Vondel = 2540 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the Dutch poet and playwright (1587-1679).

(2999) Dante = 1981 CY
Discovered 1981 Feb. 6 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.
Named for Dante Alighieri (1265-1321), greatest of the Italian poets.

(3000) Leonardo = 1981 EG19
Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.
Named for Leonardo da Vinci (1452-1519), Italian painter, sculptor, architect, musician, engineer and natural philosopher.

(3001) Michelangelo = 1982 BC1
Discovered 1982 Jan. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Named for Michelangelo Buonarroti (1475-1564), Italian artist.

(3033) Holbaek = 1984 EJ
Discovered 1984 Mar. 5 by K. Augustesen, P. Jensen and H. J. Fogh Olsen at Brorfelde.
Named in honor of the town nearest to the Brorfelde Observatory on the occasion of the town's 700th anniversary in 1986.

(3046) Moliere = 4120 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the French playwright (1622-1673).

(3047) Goethe = 6091 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the German poet and playwright (1749-1832).

(3079) Schiller = 2578 P-L
Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named for the German poet and playwright (1759-1805).

(3090) Tjossem = 1982 AN
Discovered 1982 Jan. 4 by J. Gibson at Palomar.
Named in honor of a pioneer family in central Washington, four generations of whose members have been friends of the discoverer and his family. It honors in particular the memory of Peter Tjossem (1878-1957), millwright, farmer, amateur entomologist, lapidarist, amateur paleobotanist working at a professional level on identification of Miocene fossil woods of central Washington, elder in the Presbyterian Church--and friend to any young person who came to him, in the best traditions of the amateur scientist.

(3124) Kansas = 1981 VB
Discovered 1981 Nov. 3 by D. J. Tholen at the Steward Observatory's Kitt Peak Station.
Named for the discoverer's home state, which derives its name from that of the Kansa Indians who migrated into the northeastern region of the state during the latter portion of the 18th century. The state's motto is "Ad astra per aspera", which means "To the stars through difficulties". The planet is also named for the University of Kansas, the discoverer's alma mater, to commemorate the centennial of observational astronomy there, which began with the purchase of an Alvan Clark 6-inch refractor in 1885, an instrument still in use today.

(3133) Sendai = A907 TC
Discovered 1907 Oct. 4 by A. Kopff at Heidelberg.
Named for the biggest city in northeastern Japan, home of Tohuku University and several other institutes of higher learning, sometimes called the "Heidelberg of the East". The Sendai Municipal Astronomical Observatory, established in 1955 at the urging of the Sendai Amateur Astronomical Association, has an active program for astrometric observations of comets. Name proposed by S. Nakano, who found the identifications involving this planet.

(3165) Mikawa = 1984 QE

Discovered 1984 Aug. 31 by K. Suzuki and T. Urata at Toyota.

Named for the district in which the Toyota Station is located. Mikawa, the old name of the district, also appears in the title of the Western Mikawa Astronomical Club, of which the first discoverer is a member.

(3219) Komaki = 1934 CX

Discovered 1934 Feb. 4 by K. Reinmuth at Heidelberg.

Named in memory of Kojiro Komaki (1903-1969), director of the meteor section of the Oriental Astronomical Association from 1928 until 1969 and well known as a meteor observer and a leader of amateur astronomy in Japan. He established the Kii Astronomical Society (1943), the Japan Meteor Committee (1956) and the Japan Meteor Society (1968), and he was the director of these until his death. Together with his wife Sigeyo, he observed more than 30 000 meteors. He was a strong influence on many astronomers now active in Japan, including S. Nakano, who found the identifications involving this planet and proposed the name.

(3245) Jensch = 1973 UL5

Discovered 1973 Oct. 27 by F. Borngen and K. Kirsch at Tautenburg.

Named in honor of Alfred Jensch, internationally renowned for his creative genius in the advancement of the design of astronomical instruments at the Jena Zeiss Works for almost 40 years. The 300-mm and 600-mm Jensch Coelostats are particularly innovative, and he was essentially responsible for the design of the 2-m reflectors at Tautenburg, Shemakha, Ondrejov and Roshen. The new 'support' mounting, perhaps his most important innovation, proved to be of enormous value. Jensch has also represented Zeiss Jena on several national and international panels and holds a number of awards.

(3288) Seleucus = 1982 DV

Discovered 1982 Feb. 28 by H.-E. Schuster at the European Southern Observatory.

Named for one of the generals of Alexander the Great and heir to the largest part of his empire. Seleucus maintained the best of relations with the great Babylonian teachers and priests, and the Chaldean astronomers are said to have predicted his becoming king.

* * * * *

EPHEMERIDES.

1985 PA a,e,i = 1.42, 0.30, 56 Elements MPC 10034

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	09 12	21 22.37	-43 01.8	0.629	1.511	133.7	28.8	17.1
1985	09 22	20 55.74	-50 38.4					
1985	10 02	20 35.84	-55 34.2	0.801	1.428	104.3	42.8	17.8
1985	10 12	20 24.68	-58 46.6					
1985	10 22	20 22.44	-60 58.8	0.984	1.339	85.2	47.8	18.2
1985	11 01	20 28.29	-62 36.9					
1985	11 11	20 41.33	-63 53.7	1.118	1.248	72.3	49.1	18.4
1985	11 21	21 01.03	-64 54.5					
1985	12 01	21 26.97	-65 40.0	1.174	1.160	64.3	50.0	18.3
1985	12 11	21 59.02	-66 06.2					
1985	12 21	22 37.08	-66 05.4	1.135	1.082	60.9	52.6	18.2
1985	12 31	23 20.56	-65 24.9					
1986	01 10	00 08.25	-63 45.2	1.000	1.024	62.2	58.1	17.9
1986	01 20	00 58.22	-60 38.4					
1986	01 30	01 48.05	-55 24.4	0.795	0.995	67.0	65.6	17.5
1986	02 09	02 35.75	-47 04.2					

1986 02 19	03 20.31	-34 25.7	0.590	1.002	74.0	71.5	17.0
1986 03 01	04 01.63	-16 59.2					
1986 03 11	04 40.35	+02 55.7	0.534	1.042	79.9	69.8	16.8
1986 03 21	05 17.49	+20 40.1					
1986 03 31	05 53.94	+33 46.3	0.697	1.108	79.4	62.4	17.4
1986 04 10	06 30.51	+42 40.7					
1986 04 20	07 07.75	+48 34.2	0.950	1.190	75.0	54.6	18.0
1986 04 30	07 45.77	+52 22.4					
1986 05 10	08 24.41	+54 40.4	1.200	1.280	70.2	47.9	18.5
1986 05 20	09 03.27	+55 49.8					
1986 05 30	09 41.73	+56 04.5	1.415	1.371	66.4	42.6	18.9
1986 06 09	10 19.25	+55 33.5					
1986 06 19	10 55.40	+54 23.9	1.586	1.458	63.8	38.7	19.2

Periodic Comet Maury (1985k) Elements MPC 10031

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1985 09 12	21 41.82	-05 41.1	1.220	2.178	155.9	10.9	15.8
1985 09 22	21 41.93	-07 03.0					
1985 10 02	21 44.42	-08 07.8	1.409	2.248	137.1	17.6	16.3
1985 10 12	21 49.23	-08 53.2					
1985 10 22	21 56.19	-09 18.8	1.664	2.326	119.9	21.8	16.8
1985 11 01	22 04.97	-09 25.6					
1985 11 11	22 15.26	-09 15.5	1.967	2.411	104.3	23.4	17.3
1985 11 21	22 26.78	-08 50.4					
1985 12 01	22 39.23	-08 12.2	2.299	2.502	90.0	23.2	17.8
1985 12 11	22 52.40	-07 23.2					
1985 12 21	23 06.12	-06 25.0	2.644	2.597	76.6	21.6	18.3
1985 12 31	23 20.22	-05 19.4					
1986 01 10	23 34.59	-04 08.1	2.985	2.696	63.6	19.1	18.7
1986 01 20	23 49.15	-02 52.5					
1986 01 30	00 03.81	-01 34.0	3.310	2.797	51.0	15.9	19.1
1986 02 09	00 18.52	-00 13.8					
1986 02 19	00 33.25	+01 07.0	3.606	2.899	38.6	12.3	19.4

Comet Hartley-Good (1985l) Elements MPC 10031

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1985 09 12	01 10.63	-27 32.6	0.825	1.746	144.7	19.5	10.0
1985 09 22	00 14.20	-27 54.8					
1985 10 02	22 46.45	-24 30.9	0.530	1.457	142.5	24.7	8.3
1985 10 12	21 08.67	-15 17.5					
1985 10 22	19 54.14	-04 33.2	0.582	1.167	91.6	58.5	7.5
1985 11 01	19 05.60	+03 42.8					
1985 11 11	18 31.99	+09 26.2	0.828	0.896	58.2	69.9	7.1
1985 11 21	18 04.73	+13 14.3					
1985 12 01	17 39.14	+15 15.7	1.044	0.714	41.1	65.1	6.6
1985 12 11	17 14.14	+15 21.5					
1985 12 21	16 50.91	+13 36.0	1.127	0.736	40.1	59.4	6.9
1985 12 31	16 30.17	+10 26.5					
1986 01 10	16 10.75	+06 22.3	1.061	0.943	54.8	58.4	7.9
1986 01 20	15 49.95	+01 37.8					
1986 01 30	15 24.30	-03 45.4	0.913	1.221	80.0	52.6	8.7
1986 02 09	14 49.89	-09 45.4					
1986 02 19	14 03.47	-15 55.7	0.797	1.512	115.3	36.2	9.3
1986 03 01	13 06.27	-21 05.9					
1986 03 11	12 07.12	-23 59.6	0.870	1.800	149.8	16.1	10.3
1986 03 21	11 17.24	-24 34.6					
1986 03 31	10 41.47	-23 51.1	1.175	2.080	146.1	15.6	11.5
1986 04 10	10 18.32	-22 42.8					
1986 04 20	10 04.58	-21 37.6	1.619	2.350	125.6	20.3	12.8

Comet Hartley (1984v) Elements MPC 9828

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1985 09 12	06 49.66	-46 27.4	4.090	4.002	77.9	14.2	16.6
1985 09 22	06 59.27	-50 07.8					
1985 10 02	07 08.03	-53 54.7	4.018	4.000	81.8	14.3	16.5
1985 10 12	07 15.62	-57 44.6					
1985 10 22	07 21.55	-61 33.4	3.999	4.005	83.2	14.3	16.5
1985 11 01	07 25.19	-65 16.7					
1985 11 11	07 25.60	-68 50.0	4.029	4.017	82.3	14.1	16.6
1985 11 21	07 21.37	-72 08.6					
1985 12 01	07 10.55	-75 07.3	4.093	4.037	79.8	13.9	16.6
1985 12 11	06 50.54	-77 39.8					
1985 12 21	06 18.83	-79 38.2	4.172	4.063	76.9	13.6	16.7
1985 12 31	05 35.65	-80 54.4					
1986 01 10	04 47.15	-81 24.5	4.245	4.097	74.7	13.4	16.8
1986 01 20	04 03.84	-81 14.4					
1986 01 30	03 32.71	-80 38.1	4.296	4.137	74.2	13.2	16.8
1986 02 09	03 14.55	-79 49.9					
1986 02 19	03 07.20	-79 00.0	4.316	4.184	75.8	13.2	16.9
1986 03 01	03 08.18	-78 14.8					
1986 03 11	03 15.72	-77 37.8	4.304	4.237	79.5	13.3	16.9
1986 03 21	03 28.76	-77 10.7					
1986 03 31	03 46.70	-76 53.8	4.267	4.296	85.0	13.4	17.0
1986 04 10	04 09.42	-76 46.5					
1986 04 20	04 37.02	-76 46.7	4.221	4.361	91.3	13.3	17.0
1986 04 30	05 09.67	-76 51.5					
1986 05 10	05 47.46	-76 56.3	4.187	4.430	97.3	13.1	17.1
1986 05 20	06 30.04	-76 55.9					
1986 05 30	07 16.29	-76 44.7	4.188	4.505	101.7	12.7	17.1
1986 06 09	08 04.40	-76 18.2					
1986 06 19	08 52.09	-75 34.3	4.245	4.584	103.1	12.5	17.3
1986 06 29	09 37.36	-74 33.5					
1986 07 09	10 19.00	-73 18.7	4.369	4.667	100.8	12.4	17.4
1986 07 19	10 56.61	-71 54.5					
1986 07 29	11 30.33	-70 25.3	4.561	4.754	94.8	12.3	17.6
1986 08 08	12 00.65	-68 55.1					
1986 08 18	12 28.09	-67 27.3	4.808	4.845	86.0	12.0	17.8
1986 08 28	12 53.15	-66 04.1					
1986 09 07	13 16.26	-64 47.2	5.091	4.938	75.6	11.4	18.0
1986 09 17	13 37.78	-63 37.4					
1986 09 27	13 57.95	-62 35.0	5.385	5.035	64.5	10.4	18.2

Periodic Comet Kojima Elements MPC 8274

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1985 12 01	08 24.44	+18 22.7	1.872	2.560	124.2	18.6	20.4
1985 12 11	08 26.16	+18 16.1					
1985 12 21	08 25.19	+18 19.4	1.653	2.518	144.4	13.2	20.1
1985 12 31	08 21.63	+18 32.3					
1986 01 10	08 15.89	+18 53.0	1.515	2.483	167.0	5.1	19.9
1986 01 20	08 08.77	+19 18.5					
1986 01 30	08 01.38	+19 44.5	1.481	2.455	169.1	4.4	19.8
1986 02 09	07 54.90	+20 07.7					
1986 02 19	07 50.39	+20 25.2	1.549	2.434	146.2	13.1	19.8
1986 03 01	07 48.52	+20 35.6					
1986 03 11	07 49.58	+20 38.3	1.700	2.420	125.9	19.4	20.0
1986 03 21	07 53.57	+20 32.8					
1986 03 31	08 00.24	+20 18.9	1.903	2.414	108.5	23.1	20.2
1986 04 10	08 09.23	+19 56.5					
1986 04 20	08 20.21	+19 25.3	2.134	2.416	93.7	24.5	20.5

1972 RT3 a,e,i = 2.67, 0.22, 4 Elements MPC 10032

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 09 12	22 26.79	-14 42.6	1.110	2.095	163.7	7.8	16.0
1985 09 22	22 21.10	-15 22.4					
1985 10 02	22 17.88	-15 41.2	1.207	2.089	142.2	17.1	16.4
1985 10 12	22 17.63	-15 38.3					
1985 10 22	22 20.48	-15 14.6	1.370	2.089	123.2	23.5	16.8
1985 11 01	22 26.22	-14 32.3					
1985 11 11	22 34.49	-13 33.8	1.578	2.095	107.1	26.9	17.2

1981 EX19 a,e,i = 2.15, 0.21, 1 Elements MPC 10040

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 09 12	22 44.35	-06 29.8	0.709	1.711	171.3	5.1	16.0
1985 09 22	22 38.40	-07 21.2					
1985 10 02	22 35.31	-07 55.6	0.792	1.730	149.2	17.2	16.6
1985 10 12	22 35.69	-08 08.5					
1985 10 22	22 39.62	-07 58.8	0.940	1.757	130.4	25.6	17.2
1985 11 01	22 46.78	-07 27.5					
1985 11 11	22 56.62	-06 37.4	1.132	1.790	114.8	30.1	17.7
1985 11 21	23 08.68	-05 30.8					
1985 12 01	23 22.48	-04 10.5	1.356	1.829	101.5	31.9	18.2

1982 TR a,e,i = 2.19, 0.06, 4 Elements MPC 10040

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 09 12	23 37.27	+01 56.3	1.138	2.139	172.0	3.7	16.9
1985 09 22	23 27.00	+01 13.2					
1985 10 02	23 17.51	+00 28.1	1.152	2.125	161.6	8.6	17.1
1985 10 12	23 10.07	-00 11.0					
1985 10 22	23 05.61	-00 37.7	1.258	2.112	139.0	18.0	17.5
1985 11 01	23 04.49	-00 48.0					
1985 11 11	23 06.67	-00 40.8	1.429	2.099	119.3	24.3	17.9

1984 EM a,e,i = 2.26, 0.13, 3 Elements MPC 10041

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 09 12	23 42.40	-02 12.7	1.282	2.285	173.6	2.8	16.8
1985 09 22	23 33.08	-03 27.1					
1985 10 02	23 24.60	-04 34.3	1.342	2.314	161.8	7.8	17.1
1985 10 12	23 18.00	-05 27.2					
1985 10 22	23 13.99	-06 01.5	1.498	2.342	139.0	16.2	17.6
1985 11 01	23 12.83	-06 15.7					
1985 11 11	23 14.46	-06 10.7	1.725	2.369	119.1	21.4	18.0
1985 11 21	23 18.65	-05 48.1					
1985 12 01	23 25.07	-05 10.2	1.992	2.395	101.7	23.8	18.4

1964 TG2 a,e,i = 2.60, 0.16, 3 Elements MPC 10037

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 09 12	02 09.26	+16 03.0	1.421	2.232	133.0	19.2	17.4
1985 09 22	02 07.28	+16 13.2					
1985 10 02	02 02.34	+16 06.9	1.273	2.216	154.0	11.4	17.0
1985 10 12	01 54.95	+15 44.4					
1985 10 22	01 46.11	+15 08.4	1.209	2.203	175.6	2.0	16.5
1985 11 01	01 37.21	+14 25.0					
1985 11 11	01 29.59	+13 41.8	1.246	2.194	157.4	10.0	16.9
1985 11 21	01 24.38	+13 06.6					
1985 12 01	01 22.20	+12 45.0	1.374	2.188	135.4	18.5	17.3
1985 12 11	01 23.20	+12 39.8					
1985 12 21	01 27.29	+12 51.6	1.565	2.187	116.3	23.8	17.7
1985 12 31	01 34.15	+13 18.9					
1986 01 10	01 43.43	+13 59.3	1.791	2.189	100.1	26.3	18.1

1981 SS5 a,e,i = 2.39, 0.09, 5 Elements MPC 10023

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	09 12	04 53.29	+27 16.0	2.300	2.567	93.5	23.0	17.9
1985	09 22	05 01.03	+27 39.0					
1985	10 02	05 06.36	+27 58.1	2.053	2.574	110.0	21.4	17.6
1985	10 12	05 08.93	+28 13.2					
1985	10 22	05 08.37	+28 23.7	1.833	2.580	129.2	17.4	17.3
1985	11 01	05 04.55	+28 27.9					
1985	11 11	04 57.59	+28 23.8	1.673	2.585	151.3	10.6	16.9
1985	11 21	04 48.04	+28 09.1					
1985	12 01	04 36.98	+27 43.1	1.606	2.588	173.5	2.5	16.5
1985	12 11	04 25.73	+27 07.0					
1985	12 21	04 15.71	+26 25.2	1.653	2.590	157.6	8.3	16.8
1985	12 31	04 08.03	+25 42.9					
1986	01 10	04 03.32	+25 05.3	1.803	2.590	134.6	15.7	17.2
1986	01 20	04 01.82	+24 35.6					
1986	01 30	04 03.43	+24 15.3	2.023	2.589	114.2	20.3	17.6
1986	02 09	04 07.86	+24 03.9					
1986	02 19	04 14.78	+24 00.3	2.280	2.586	96.5	22.3	17.9

1981 UA10 a,e,i = 2.45, 0.21, 6 Elements MPC 10028

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	10 02	05 51.05	+17 33.3	1.638	2.067	100.3	28.4	17.8
1985	10 12	05 59.72	+17 28.1					
1985	10 22	06 05.27	+17 23.2	1.464	2.107	116.6	25.0	17.5
1985	11 01	06 07.37	+17 21.1					
1985	11 11	06 05.76	+17 23.8	1.321	2.149	136.3	18.5	17.2
1985	11 21	06 00.46	+17 32.5					
1985	12 01	05 52.03	+17 47.5	1.243	2.194	159.4	9.1	16.9
1985	12 11	05 41.51	+18 07.9					
1985	12 21	05 30.40	+18 32.2	1.261	2.240	172.7	3.2	16.7
1985	12 31	05 20.34	+18 59.5					
1986	01 10	05 12.61	+19 29.0	1.384	2.288	149.7	12.5	17.3
1986	01 20	05 08.03	+20 00.5					
1986	01 30	05 06.86	+20 33.5	1.594	2.336	128.2	19.3	17.8
1986	02 09	05 08.97	+21 07.2					
1986	02 19	05 14.04	+21 40.6	1.860	2.384	109.8	23.0	18.3
1986	03 01	05 21.68	+22 12.3					
1986	03 11	05 31.47	+22 41.1	2.154	2.431	93.8	24.1	18.6

1981 SE1 a,e,i = 2.25, 0.17, 4 Elements MPC 10026

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	10 02	06 18.27	+18 33.4	2.249	2.523	93.9	23.3	18.8
1985	10 12	06 24.98	+18 12.5					
1985	10 22	06 29.19	+17 51.4	2.014	2.546	111.0	21.4	18.5
1985	11 01	06 30.59	+17 31.7					
1985	11 11	06 28.94	+17 14.9	1.807	2.566	130.8	17.0	18.2
1985	11 21	06 24.16	+17 02.1					
1985	12 01	06 16.49	+16 54.1	1.663	2.583	153.5	9.8	17.9
1985	12 11	06 06.54	+16 51.1					
1985	12 21	05 55.35	+16 52.9	1.619	2.598	173.4	2.5	17.5
1985	12 31	05 44.23	+16 59.3					
1986	01 10	05 34.43	+17 10.2	1.690	2.611	154.2	9.4	17.9
1986	01 20	05 26.95	+17 25.5					
1986	01 30	05 22.38	+17 44.8	1.861	2.620	131.5	16.4	18.3
1986	02 09	05 20.86	+18 07.5					
1986	02 19	05 22.33	+18 32.5	2.099	2.626	111.4	20.5	18.7
1986	03 01	05 26.52	+18 58.3					
1986	03 11	05 33.08	+19 23.6	2.367	2.630	94.0	22.1	19.0

(3312) 1984 SN a,e,i = 3.01, 0.12, 10 Elements MPC 10032

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 10 02	06 40.05	+15 49.8	2.871	3.016	88.6	19.4	18.1
1985 10 12	06 46.43	+15 06.5					
1985 10 22	06 50.80	+14 22.2	2.619	3.039	105.4	18.4	17.9
1985 11 01	06 52.99	+13 38.3					
1985 11 11	06 52.82	+12 56.4	2.392	3.062	124.4	15.5	17.7
1985 11 21	06 50.23	+12 18.3					
1985 12 01	06 45.35	+11 45.9	2.222	3.084	145.3	10.5	17.4
1985 12 11	06 38.53	+11 20.7					
1985 12 21	06 30.36	+11 03.9	2.146	3.106	164.9	4.7	17.2
1985 12 31	06 21.66	+10 56.4					
1986 01 10	06 13.32	+10 57.9	2.184	3.127	160.1	6.1	17.3
1986 01 20	06 06.18	+11 07.8					
1986 01 30	06 00.87	+11 24.6	2.334	3.148	139.4	11.8	17.6
1986 02 09	05 57.74	+11 46.5					
1986 02 19	05 56.95	+12 11.5	2.567	3.168	119.1	15.8	17.9
1986 03 01	05 58.44	+12 37.9					
1986 03 11	06 02.05	+13 03.9	2.849	3.187	100.7	17.8	18.2

1981 XJ2 a,e,i = 2.45, 0.13, 3 Elements MPC 10028

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 10 22	07 29.36	+23 51.1	1.757	2.132	97.7	27.6	17.6
1985 11 01	07 40.69	+23 45.7					
1985 11 11	07 49.50	+23 46.0	1.532	2.125	113.1	25.4	17.2
1985 11 21	07 55.30	+23 54.6					
1985 12 01	07 57.70	+24 13.5	1.336	2.122	131.5	20.4	16.8
1985 12 11	07 56.39	+24 42.8					
1985 12 21	07 51.35	+25 20.4	1.197	2.122	153.2	12.1	16.4
1985 12 31	07 43.11	+26 01.4					
1986 01 10	07 32.79	+26 39.2	1.145	2.126	174.8	2.4	15.9
1986 01 20	07 22.09	+27 07.7					
1986 01 30	07 12.81	+27 23.7	1.194	2.133	156.4	10.7	16.4
1986 02 09	07 06.35	+27 27.2					
1986 02 19	07 03.53	+27 20.3	1.332	2.143	134.4	19.2	16.8
1986 03 01	07 04.51	+27 05.3					
1986 03 11	07 09.03	+26 43.7	1.531	2.157	115.7	24.5	17.3
1986 03 21	07 16.67	+26 16.2					
1986 03 31	07 26.90	+25 42.7	1.764	2.173	100.0	26.9	17.6

(3184) 1949 QC a,e,i = 2.67, 0.26, 8 Elements MPC 9420

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	08 49.11	+20 02.0	2.763	3.074	98.8	18.6	18.6
1985 11 21	08 52.53	+20 12.2					
1985 12 01	08 53.69	+20 33.0	2.524	3.112	118.1	16.2	18.3
1985 12 11	08 52.41	+21 04.7					
1985 12 21	08 48.62	+21 46.6	2.331	3.147	139.8	11.6	18.1
1985 12 31	08 42.50	+22 36.3					
1986 01 10	08 34.41	+23 29.8	2.225	3.180	163.3	5.1	17.8
1986 01 20	08 25.06	+24 22.5					
1986 01 30	08 15.37	+25 09.6	2.236	3.210	169.7	3.1	17.8
1986 02 09	08 06.29	+25 47.5					
1986 02 19	07 58.70	+26 14.8	2.367	3.238	146.5	9.7	18.1
1986 03 01	07 53.22	+26 31.3					
1986 03 11	07 50.13	+26 38.1	2.593	3.263	124.7	14.5	18.5
1986 03 21	07 49.51	+26 36.7					
1986 03 31	07 51.23	+26 28.2	2.878	3.285	105.2	17.1	18.8
1986 04 10	07 55.05	+26 13.7					
1986 04 20	08 00.73	+25 53.8	3.185	3.305	87.9	17.7	19.0

(3191) 1979 SX9 a,e,i = 2.87, 0.01, 3 Elements MPC 9422

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 46.01	+20 43.2	2.563	2.898	99.7	19.7	18.3
1985	11 21	08 51.05	+20 36.3					
1985	12 01	08 53.83	+20 38.7	2.299	2.896	118.1	17.5	18.0
1985	12 11	08 54.13	+20 51.3					
1985	12 21	08 51.80	+21 13.9	2.079	2.894	138.9	12.9	17.7
1985	12 31	08 46.93	+21 45.0					
1986	01 10	08 39.83	+22 21.5	1.940	2.891	162.0	6.0	17.4
1986	01 20	08 31.16	+22 59.0					
1986	01 30	08 21.88	+23 32.9	1.910	2.889	171.9	2.8	17.2
1986	02 09	08 13.04	+23 59.4					
1986	02 19	08 05.67	+24 16.3	1.996	2.886	148.7	10.3	17.5
1986	03 01	08 00.50	+24 23.3					
1986	03 11	07 57.91	+24 21.1	2.175	2.883	127.0	16.0	17.9
1986	03 21	07 58.02	+24 10.6					
1986	03 31	08 00.68	+23 52.9	2.413	2.881	107.9	19.3	18.2
1986	04 10	08 05.64	+23 28.7					
1986	04 20	08 12.61	+22 58.2	2.677	2.878	91.1	20.4	18.4

1974 QO2 a,e,i = 2.23, 0.18, 4 Elements MPC 9213

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 52.77	+15 38.4	2.310	2.619	96.8	22.1	19.9
1985	11 21	08 58.08	+15 19.7					
1985	12 01	09 00.97	+15 11.6	2.056	2.628	114.9	19.9	19.6
1985	12 11	09 01.19	+15 16.1					
1985	12 21	08 58.50	+15 34.5	1.838	2.635	135.9	15.0	19.3
1985	12 31	08 52.93	+16 06.4					
1986	01 10	08 44.75	+16 50.0	1.694	2.639	159.8	7.4	18.9
1986	01 20	08 34.66	+17 40.9					
1986	01 30	08 23.75	+18 33.8	1.658	2.640	174.5	2.1	18.6
1986	02 09	08 13.27	+19 23.1					
1986	02 19	08 04.42	+20 05.0	1.738	2.637	149.5	11.0	19.1
1986	03 01	07 58.08	+20 37.1					
1986	03 11	07 54.67	+20 59.1	1.912	2.632	127.0	17.5	19.4
1986	03 21	07 54.30	+21 11.4					
1986	03 31	07 56.80	+21 14.4	2.143	2.623	107.6	21.3	19.7
1986	04 10	08 01.85	+21 08.9					
1986	04 20	08 09.11	+20 55.1	2.397	2.612	90.8	22.6	20.0

(3245) Jensch a,e,i = 3.13, 0.15, 0 Elements MPC 9594

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 45.48	+18 22.5	2.366	2.707	99.2	21.2	18.5
1985	11 21	08 51.35	+18 00.0					
1985	12 01	08 54.88	+17 46.4	2.129	2.724	117.1	18.8	18.2
1985	12 11	08 55.85	+17 43.1					
1985	12 21	08 54.13	+17 50.5	1.935	2.742	137.6	14.0	17.9
1985	12 31	08 49.82	+18 08.1					
1986	01 10	08 43.26	+18 33.5	1.816	2.763	160.7	6.8	17.6
1986	01 20	08 35.15	+19 03.3					
1986	01 30	08 26.46	+19 33.3	1.803	2.786	174.9	1.8	17.4
1986	02 09	08 18.25	+19 59.6					
1986	02 19	08 11.50	+20 19.6	1.903	2.809	151.1	9.8	17.9
1986	03 01	08 06.92	+20 31.9					
1986	03 11	08 04.87	+20 36.4	2.098	2.835	129.4	15.7	18.2
1986	03 21	08 05.41	+20 33.2					
1986	03 31	08 08.41	+20 22.6	2.355	2.861	110.4	19.1	18.6
1986	04 10	08 13.60	+20 05.1					
1986	04 20	08 20.68	+19 40.8	2.644	2.888	93.7	20.3	18.9

1981 EX24 a,e,i = 3.22, 0.14, 1 Elements MPC 9961

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 50.95	+16 51.8	2.696	2.992	97.5	19.2	20.5
1985	11 21	08 55.68	+16 32.7					
1985	12 01	08 58.24	+16 22.3	2.453	3.018	115.9	17.1	20.2
1985	12 11	08 58.49	+16 21.8					
1985	12 21	08 56.33	+16 31.8	2.252	3.044	136.7	12.8	20.0
1985	12 31	08 51.88	+16 51.6					
1986	01 10	08 45.47	+17 19.2	2.129	3.071	159.8	6.3	19.7
1986	01 20	08 37.69	+17 51.8					
1986	01 30	08 29.36	+18 25.4	2.115	3.098	175.8	1.3	19.4
1986	02 09	08 21.39	+18 56.8					
1986	02 19	08 14.64	+19 23.1	2.218	3.126	152.0	8.5	19.9
1986	03 01	08 09.74	+19 42.6					
1986	03 11	08 07.03	+19 54.9	2.421	3.153	130.0	14.0	20.2
1986	03 21	08 06.67	+19 59.8					
1986	03 31	08 08.55	+19 57.6	2.690	3.181	110.5	17.1	20.6
1986	04 10	08 12.49	+19 48.6					
1986	04 20	08 18.24	+19 33.0	2.991	3.208	93.2	18.2	20.8

1981 RR3 a,e,i = 2.23, 0.21, 6 Elements MPC 10023

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 58.21	+11 04.3	2.084	2.372	94.2	24.6	19.5
1985	11 21	09 04.50	+10 23.2					
1985	12 01	09 08.24	+09 52.9	1.871	2.414	111.6	22.3	19.3
1985	12 11	09 09.15	+09 36.0					
1985	12 21	09 07.02	+09 35.0	1.686	2.455	131.9	17.4	19.0
1985	12 31	09 01.89	+09 51.5					
1986	01 10	08 54.04	+10 24.9	1.566	2.492	155.1	9.6	18.7
1986	01 20	08 44.20	+11 12.9					
1986	01 30	08 33.50	+12 10.4	1.546	2.527	173.4	2.6	18.4
1986	02 09	08 23.21	+13 11.3					
1986	02 19	08 14.53	+14 09.8	1.641	2.559	152.6	10.2	18.9
1986	03 01	08 08.33	+15 01.6					
1986	03 11	08 05.03	+15 44.1	1.833	2.588	130.3	17.0	19.3
1986	03 21	08 04.70	+16 16.3					
1986	03 31	08 07.16	+16 37.8	2.087	2.614	110.9	20.9	19.7
1986	04 10	08 12.07	+16 48.9					
1986	04 20	08 19.10	+16 49.9	2.370	2.637	94.0	22.3	20.0

1971 QN a,e,i = 2.19, 0.20, 3 Elements MPC 9472

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 02.13	+15 19.3	2.284	2.561	94.5	22.7	19.9
1985	11 21	09 07.69	+14 42.1					
1985	12 01	09 10.82	+14 14.1	2.040	2.582	112.4	20.7	19.6
1985	12 11	09 11.24	+13 57.0					
1985	12 21	09 08.71	+13 52.5	1.827	2.600	133.1	16.0	19.3
1985	12 31	09 03.23	+14 00.9					
1986	01 10	08 55.05	+14 21.2	1.683	2.615	156.6	8.6	18.9
1986	01 20	08 44.84	+14 50.6					
1986	01 30	08 33.67	+15 24.7	1.642	2.626	175.9	1.5	18.5
1986	02 09	08 22.77	+15 59.2					
1986	02 19	08 13.38	+16 29.9	1.719	2.634	152.1	10.1	19.0
1986	03 01	08 06.40	+16 54.4					
1986	03 11	08 02.31	+17 11.6	1.893	2.638	129.4	16.9	19.4
1986	03 21	08 01.23	+17 20.8					
1986	03 31	08 02.99	+17 22.3	2.129	2.639	109.7	20.9	19.7
1986	04 10	08 07.30	+17 15.9					
1986	04 20	08 13.83	+17 01.8	2.390	2.637	92.7	22.4	20.0

1984 SF1 a,e,i = 2.24, 0.18, 3 Elements MPC 9292

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	09 02.95	+16 56.5	2.356	2.631	94.8	22.0	19.5
1985 11 21	09 08.58	+16 24.9					
1985 12 01	09 11.86	+16 02.3	2.097	2.639	112.7	20.2	19.2
1985 12 11	09 12.49	+15 50.5					
1985 12 21	09 10.22	+15 50.6	1.870	2.644	133.3	15.7	18.8
1985 12 31	09 05.03	+16 02.6					
1986 01 10	08 57.12	+16 24.9	1.713	2.646	156.9	8.4	18.5
1986 01 20	08 47.10	+16 54.6					
1986 01 30	08 36.01	+17 26.9	1.661	2.645	177.4	1.0	18.0
1986 02 09	08 25.07	+17 57.3					
1986 02 19	08 15.53	+18 22.4	1.725	2.641	152.4	10.0	18.5
1986 03 01	08 08.35	+18 39.9					
1986 03 11	08 04.03	+18 49.4	1.887	2.634	129.6	16.9	18.9
1986 03 21	08 02.75	+18 50.8					
1986 03 31	08 04.37	+18 44.5	2.111	2.624	109.8	21.0	19.2
1986 04 10	08 08.59	+18 30.8					
1986 04 20	08 15.09	+18 09.8	2.361	2.610	92.8	22.6	19.5

2037 P-L a,e,i = 3.22, 0.15, 18 Elements MPC 8786

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	09 07.96	+36 15.5	3.283	3.574	99.0	15.9	20.2
1985 11 21	09 12.26	+36 41.6					
1985 12 01	09 14.39	+37 16.3	3.000	3.556	116.8	14.3	20.0
1985 12 11	09 14.10	+37 58.5					
1985 12 21	09 11.21	+38 45.4	2.765	3.536	135.6	11.2	19.7
1985 12 31	09 05.75	+39 32.6					
1986 01 10	08 57.94	+40 14.7	2.612	3.515	152.8	7.4	19.5
1986 01 20	08 48.35	+40 45.6					
1986 01 30	08 37.86	+41 00.2	2.566	3.493	156.8	6.4	19.4
1986 02 09	08 27.51	+40 55.8					
1986 02 19	08 18.35	+40 32.3	2.633	3.471	142.5	10.0	19.5
1986 03 01	08 11.19	+39 52.3					
1986 03 11	08 06.48	+38 59.3	2.795	3.447	123.7	13.9	19.7
1986 03 21	08 04.41	+37 57.1					
1986 03 31	08 04.90	+36 48.9	3.018	3.422	105.5	16.3	19.9
1986 04 10	08 07.72	+35 36.9					
1986 04 20	08 12.59	+34 22.5	3.269	3.397	88.6	17.2	20.1

(3158) 1976 SU2 a,e,i = 2.55, 0.10, 15 Elements MPC 9294

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	08 52.43	+00 53.4	2.120	2.381	92.6	24.5	18.1
1985 11 21	08 59.70	-00 27.9					
1985 12 01	09 04.67	-01 41.3	1.901	2.399	108.2	23.0	17.8
1985 12 11	09 07.09	-02 42.9					
1985 12 21	09 06.76	-03 27.8	1.708	2.419	125.9	19.2	17.5
1985 12 31	09 03.67	-03 51.5					
1986 01 10	08 58.01	-03 49.6	1.568	2.440	145.0	13.4	17.2
1986 01 20	08 50.36	-03 19.5					
1986 01 30	08 41.66	-02 22.3	1.513	2.461	159.7	8.0	17.0
1986 02 09	08 33.04	-01 02.5					
1986 02 19	08 25.65	+00 32.2	1.563	2.483	152.6	10.6	17.2
1986 03 01	08 20.39	+02 12.4					
1986 03 11	08 17.76	+03 50.2	1.710	2.505	134.1	16.5	17.5
1986 03 21	08 17.96	+05 19.2					
1986 03 31	08 20.88	+06 35.7	1.927	2.527	115.8	20.9	17.9
1986 04 10	08 26.25	+07 37.7					
1986 04 20	08 33.77	+08 24.5	2.185	2.549	99.4	22.9	18.3

(3223) 1942 RN a,e,i = 2.61, 0.14, 10 Elements MPC 9474

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 46.64	+07 06.4	1.904	2.234	95.8	26.2	15.1
1985	11 21	08 55.50	+06 07.1					
1985	12 01	09 02.02	+05 17.4	1.681	2.238	111.4	24.2	14.8
1985	12 11	09 05.90	+04 41.1					
1985	12 21	09 06.87	+04 22.5	1.486	2.246	129.7	19.7	14.5
1985	12 31	09 04.84	+04 25.6					
1986	01 10	08 59.98	+04 52.7	1.348	2.257	150.7	12.3	14.1
1986	01 20	08 52.84	+05 44.1					
1986	01 30	08 44.44	+06 55.8	1.297	2.271	169.0	4.8	13.8
1986	02 09	08 36.03	+08 21.0					
1986	02 19	08 28.93	+09 50.7	1.350	2.288	155.9	10.1	14.1
1986	03 01	08 24.16	+11 16.6					
1986	03 11	08 22.27	+12 32.4	1.497	2.308	134.9	17.8	14.5
1986	03 21	08 23.45	+13 34.6					
1986	03 31	08 27.55	+14 21.3	1.711	2.330	116.1	22.6	14.9
1986	04 10	08 34.24	+14 52.5					
1986	04 20	08 43.14	+15 08.3	1.961	2.354	100.0	24.8	15.3

1980 FF12 a,e,i = 2.17, 0.09, 3 Elements MPC 9589

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 59.70	+20 13.2	1.965	2.298	96.5	25.3	19.4
1985	11 21	09 08.35	+19 44.6					
1985	12 01	09 14.57	+19 25.4	1.709	2.283	113.0	23.4	19.0
1985	12 11	09 17.96	+19 18.0					
1985	12 21	09 18.13	+19 24.0	1.482	2.266	132.5	18.7	18.6
1985	12 31	09 14.83	+19 43.4					
1986	01 10	09 08.09	+20 14.1	1.318	2.249	155.2	10.6	18.1
1986	01 20	08 58.39	+20 51.3					
1986	01 30	08 46.88	+21 28.0	1.246	2.230	176.5	1.6	17.6
1986	02 09	08 35.11	+21 57.6					
1986	02 19	08 24.77	+22 15.3	1.282	2.211	153.5	11.5	18.0
1986	03 01	08 17.22	+22 19.5					
1986	03 11	08 13.18	+22 11.1	1.408	2.191	130.9	20.0	18.4
1986	03 21	08 12.87	+21 51.6					
1986	03 31	08 16.07	+21 22.3	1.590	2.171	111.9	25.3	18.8
1986	04 10	08 22.35	+20 44.2					
1986	04 20	08 31.25	+19 57.7	1.798	2.150	96.1	27.7	19.1

1981 WP1 a,e,i = 2.37, 0.15, 8 Elements MPC 6646

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 06.80	+22 18.2	2.155	2.456	95.5	23.7	18.7
1985	11 21	09 14.37	+22 26.0					
1985	12 01	09 19.44	+22 47.1	1.932	2.487	112.8	21.4	18.4
1985	12 11	09 21.70	+23 23.0					
1985	12 21	09 20.82	+24 13.6	1.741	2.516	132.9	16.6	18.1
1985	12 31	09 16.73	+25 16.5					
1986	01 10	09 09.57	+26 26.5	1.618	2.544	155.2	9.3	17.8
1986	01 20	08 59.95	+27 36.1					
1986	01 30	08 48.97	+28 36.6	1.596	2.571	169.3	4.1	17.6
1986	02 09	08 38.00	+29 21.4					
1986	02 19	08 28.43	+29 47.0	1.687	2.596	150.9	10.7	18.0
1986	03 01	08 21.32	+29 53.8					
1986	03 11	08 17.23	+29 44.5	1.872	2.618	129.5	17.0	18.3
1986	03 21	08 16.30	+29 22.3					
1986	03 31	08 18.35	+28 50.1	2.118	2.639	110.5	20.8	18.7
1986	04 10	08 23.03	+28 09.8					
1986	04 20	08 29.96	+27 22.9	2.393	2.658	93.9	22.2	19.0

1969 TB2 a,e,i = 2.90, 0.06, 2 Elements MPC 9476

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	09 07.34	+18 58.1	2.839	3.078	94.4	18.7	18.7
1985 11 21	09 12.59	+18 42.6					
1985 12 01	09 15.83	+18 35.9	2.564	3.079	112.5	17.2	18.5
1985 12 11	09 16.83	+18 39.1					
1985 12 21	09 15.43	+18 52.7	2.324	3.080	133.0	13.5	18.2
1985 12 31	09 11.64	+19 15.9					
1986 01 10	09 05.63	+19 46.7	2.157	3.080	155.7	7.5	17.9
1986 01 20	08 57.84	+20 21.6					
1986 01 30	08 49.04	+20 56.5	2.095	3.079	176.9	1.0	17.4
1986 02 09	08 40.12	+21 27.1					
1986 02 19	08 32.05	+21 50.5	2.152	3.077	155.2	7.7	17.9
1986 03 01	08 25.64	+22 04.8					
1986 03 11	08 21.41	+22 09.9	2.313	3.075	132.8	13.7	18.2
1986 03 21	08 19.62	+22 06.2					
1986 03 31	08 20.27	+21 54.4	2.544	3.072	112.7	17.5	18.5
1986 04 10	08 23.21	+21 35.3					
1986 04 20	08 28.20	+21 09.5	2.811	3.068	95.1	19.0	18.7

(3183) 1949 PP a,e,i = 3.19, 0.13, 2 Elements MPC 9419

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	09 09.46	+15 57.7	3.296	3.492	93.0	16.4	18.7
1985 11 21	09 13.49	+15 42.4					
1985 12 01	09 15.71	+15 35.2	3.021	3.507	111.7	15.1	18.5
1985 12 11	09 15.98	+15 37.2					
1985 12 21	09 14.19	+15 48.9	2.781	3.521	132.4	11.9	18.2
1985 12 31	09 10.40	+16 09.8					
1986 01 10	09 04.81	+16 38.5	2.617	3.534	155.2	6.7	18.0
1986 01 20	08 57.82	+17 12.5					
1986 01 30	08 50.03	+17 48.8	2.561	3.546	179.3	0.2	17.4
1986 02 09	08 42.17	+18 23.9					
1986 02 19	08 34.97	+18 55.0	2.627	3.556	156.8	6.3	18.0
1986 03 01	08 29.08	+19 20.0					
1986 03 11	08 24.94	+19 37.8	2.802	3.566	134.2	11.5	18.3
1986 03 21	08 22.80	+19 48.1					
1986 03 31	08 22.71	+19 51.1	3.053	3.575	113.8	14.8	18.5
1986 04 10	08 24.59	+19 47.1					
1986 04 20	08 28.27	+19 36.4	3.344	3.582	95.5	16.2	18.8

(3173) 1981 WY a,e,i = 2.20, 0.21, 8 Elements MPC 9354

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 11 11	09 12.23	+21 09.6	2.407	2.665	93.9	21.8	18.5
1985 11 21	09 18.87	+21 15.1					
1985 12 01	09 23.27	+21 33.3	2.141	2.667	111.7	20.1	18.2
1985 12 11	09 25.10	+22 05.8					
1985 12 21	09 24.04	+22 53.2	1.906	2.666	131.9	15.9	17.9
1985 12 31	09 19.94	+23 53.9					
1986 01 10	09 12.86	+25 04.0	1.740	2.662	154.5	9.2	17.5
1986 01 20	09 03.24	+26 16.7					
1986 01 30	08 52.02	+27 23.9	1.678	2.654	170.5	3.5	17.2
1986 02 09	08 40.46	+28 18.2					
1986 02 19	08 29.95	+28 54.9	1.731	2.643	151.6	10.2	17.5
1986 03 01	08 21.67	+29 13.0					
1986 03 11	08 16.31	+29 14.3	1.882	2.628	129.4	17.0	17.9
1986 03 21	08 14.17	+29 01.6					
1986 03 31	08 15.17	+28 37.8	2.095	2.610	109.9	21.1	18.2
1986 04 10	08 19.01	+28 05.0					
1986 04 20	08 25.34	+27 24.5	2.335	2.588	92.9	22.8	18.4

1983 EW a,e,i = 2.20, 0.15, 3 Elements MPC 8213

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 02.12	+13 33.4	2.094	2.378	94.0	24.5	18.6
1985	11 21	09 10.47	+12 49.6					
1985	12 01	09 16.67	+12 14.2	1.817	2.350	110.4	23.2	18.2
1985	12 11	09 20.38	+11 50.0					
1985	12 21	09 21.20	+11 40.2	1.568	2.321	129.4	19.1	17.7
1985	12 31	09 18.92	+11 46.9					
1986	01 10	09 13.45	+12 11.3	1.376	2.289	151.7	11.8	17.3
1986	01 20	09 05.15	+12 52.3					
1986	01 30	08 54.88	+13 45.5	1.274	2.257	175.4	2.0	16.7
1986	02 09	08 43.93	+14 44.6					
1986	02 19	08 33.87	+15 42.4	1.279	2.223	157.1	10.0	17.0
1986	03 01	08 26.10	+16 32.8					
1986	03 11	08 21.50	+17 12.1	1.379	2.189	133.9	19.1	17.3
1986	03 21	08 20.47	+17 38.6					
1986	03 31	08 22.97	+17 51.8	1.541	2.154	114.3	25.0	17.7
1986	04 10	08 28.67	+17 52.0					
1986	04 20	08 37.18	+17 39.3	1.732	2.119	98.0	28.0	18.0

1984 SH a,e,i = 2.16, 0.16, 3 Elements MPC 9826

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 10.78	+16 10.2	2.256	2.508	92.8	23.2	19.3
1985	11 21	09 18.06	+15 45.3					
1985	12 01	09 23.12	+15 30.9	1.991	2.505	110.0	21.7	19.0
1985	12 11	09 25.61	+15 29.4					
1985	12 21	09 25.22	+15 42.7	1.753	2.500	129.9	17.6	18.6
1985	12 31	09 21.77	+16 11.3					
1986	01 10	09 15.28	+16 54.2	1.576	2.492	152.9	10.4	18.2
1986	01 20	09 06.17	+17 47.7					
1986	01 30	08 55.34	+18 45.6	1.496	2.480	177.8	0.9	17.6
1986	02 09	08 44.04	+19 41.0					
1986	02 19	08 33.70	+20 28.0	1.530	2.466	156.0	9.4	18.1
1986	03 01	08 25.55	+21 02.8					
1986	03 11	08 20.34	+21 24.4	1.664	2.449	132.7	17.3	18.4
1986	03 21	08 18.41	+21 33.3					
1986	03 31	08 19.69	+21 30.6	1.862	2.429	112.7	22.3	18.8
1986	04 10	08 23.88	+21 17.3					
1986	04 20	08 30.64	+20 54.1	2.089	2.406	95.7	24.5	19.1

1981 EY26 a,e,i = 3.18, 0.11, 5 Elements MPC 9677

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1985	11 11	09 12.98	+20 05.5	3.166	3.374	-0.85	+3.7	17.5
1985	11 21	09 17.77	+19 48.5					
1985	12 01	09 20.72	+19 39.3	2.865	3.357	-0.95	+4.2	17.3
1985	12 11	09 21.62	+19 38.7					
1985	12 21	09 20.33	+19 46.9	2.601	3.341	-1.06	+4.7	17.0
1985	12 31	09 16.82	+20 03.1					
1986	01 10	09 11.25	+20 25.6	2.409	3.323	-1.16	+4.9	16.7
1986	01 20	09 03.98	+20 51.3					
1986	01 30	08 55.66	+21 16.7	2.322	3.306	-1.21	+4.8	16.2
1986	02 09	08 47.08	+21 38.3					
1986	02 19	08 39.11	+21 53.4	2.356	3.287	-1.17	+4.3	16.6
1986	03 01	08 32.52	+22 00.2					
1986	03 11	08 27.86	+21 58.7	2.497	3.268	-1.07	+3.8	16.8
1986	03 21	08 25.43	+21 49.1					
1986	03 31	08 25.30	+21 32.2	2.712	3.249	-0.95	+3.5	17.1
1986	04 10	08 27.38	+21 08.7					
1986	04 20	08 31.48	+20 38.9	2.967	3.229	-0.86	+3.3	17.3

1973 DT a,e,i = 2.69, 0.16, 13 Elements MPC 9077

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	08 56.67	+18 12.8	1.945	2.281	96.6	25.5	17.8
1985	11 21	09 06.50	+18 29.2					
1985	12 01	09 14.03	+19 01.1	1.721	2.294	113.1	23.3	17.5
1985	12 11	09 18.90	+19 51.4					
1985	12 21	09 20.75	+21 01.7	1.531	2.310	132.3	18.4	17.2
1985	12 31	09 19.42	+22 30.7					
1986	01 10	09 14.93	+24 14.1	1.405	2.329	154.0	10.7	16.8
1986	01 20	09 07.73	+26 03.2					
1986	01 30	08 58.83	+27 47.0	1.375	2.351	169.8	4.3	16.6
1986	02 09	08 49.54	+29 15.1					
1986	02 19	08 41.35	+30 20.4	1.453	2.375	152.8	11.0	16.9
1986	03 01	08 35.46	+31 00.7					
1986	03 11	08 32.56	+31 17.9	1.622	2.402	131.9	17.9	17.4
1986	03 21	08 32.89	+31 15.1					
1986	03 31	08 36.30	+30 56.1	1.852	2.430	113.5	22.1	17.8
1986	04 10	08 42.42	+30 23.7					
1986	04 20	08 50.84	+29 40.0	2.115	2.460	97.7	23.9	18.1

1981 FQ a,e,i = 3.11, 0.16, 0 Elements MPC 9677

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1985	11 11	09 14.19	+16 22.6	3.059	3.249	-0.83	+3.1	18.4
1985	11 21	09 19.61	+15 59.0					
1985	12 01	09 23.25	+15 43.3	2.747	3.221	-0.94	+3.6	18.1
1985	12 11	09 24.89	+15 36.8					
1985	12 21	09 24.35	+15 40.5	2.469	3.192	-1.06	+4.1	17.8
1985	12 31	09 21.58	+15 54.5					
1986	01 10	09 16.65	+16 18.1	2.258	3.162	-1.18	+4.4	17.5
1986	01 20	09 09.88	+16 49.0					
1986	01 30	09 01.87	+17 23.8	2.148	3.132	-1.24	+4.4	16.9
1986	02 09	08 53.40	+17 58.6					
1986	02 19	08 45.39	+18 29.8	2.157	3.101	-1.22	+4.0	17.3
1986	03 01	08 38.68	+18 54.3					
1986	03 11	08 33.87	+19 10.7	2.274	3.071	-1.13	+3.4	17.5
1986	03 21	08 31.37	+19 18.3					
1986	03 31	08 31.29	+19 17.2	2.468	3.040	-1.01	+3.0	17.8
1986	04 10	08 33.54	+19 07.7					
1986	04 20	08 37.96	+18 50.1	2.702	3.009	-0.92	+2.9	18.0

1940 ED a,e,i = 2.33, 0.15, 4 Elements MPC 9684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 07.57	+12 09.3	2.239	2.485	92.3	23.5	19.3
1985	11 21	09 15.64	+11 20.8					
1985	12 01	09 21.68	+10 39.8	1.956	2.457	108.7	22.3	18.9
1985	12 11	09 25.37	+10 09.3					
1985	12 21	09 26.37	+09 52.0	1.697	2.426	127.6	18.7	18.5
1985	12 31	09 24.47	+09 50.4					
1986	01 10	09 19.60	+10 06.1	1.495	2.395	149.4	12.1	18.0
1986	01 20	09 12.05	+10 38.9					
1986	01 30	09 02.56	+11 25.7	1.382	2.362	172.5	3.1	17.5
1986	02 09	08 52.27	+12 21.4					
1986	02 19	08 42.58	+13 19.4	1.378	2.329	159.4	8.6	17.7
1986	03 01	08 34.79	+14 13.2					
1986	03 11	08 29.81	+14 58.4	1.472	2.296	136.3	17.4	18.0
1986	03 21	08 28.11	+15 32.2					
1986	03 31	08 29.74	+15 53.4	1.634	2.262	116.3	23.3	18.4
1986	04 10	08 34.44	+16 01.8					
1986	04 20	08 41.89	+15 57.4	1.830	2.228	99.5	26.4	18.7

1981 WH a,e,i = 2.37, 0.28, 4 Elements MPC 9951

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1985	11 11	09 05.78	+13 49.4	1.533	1.872	-1.70	+4.1	18.5
1985	11 21	09 17.66	+13 04.1					
1985	12 01	09 26.68	+12 31.9	1.377	1.928	-1.88	+5.2	18.3
1985	12 11	09 32.47	+12 16.3					
1985	12 21	09 34.67	+12 21.0	1.238	1.988	-2.18	+6.5	18.0
1985	12 31	09 33.10	+12 47.6					
1986	01 10	09 27.85	+13 35.2	1.145	2.051	-2.56	+7.8	17.7
1986	01 20	09 19.53	+14 39.5					
1986	01 30	09 09.34	+15 52.2	1.133	2.116	-2.79	+8.0	17.3
1986	02 09	08 58.84	+17 03.6					
1986	02 19	08 49.65	+18 05.4	1.225	2.182	-2.66	+6.8	17.8
1986	03 01	08 43.03	+18 52.4					
1986	03 11	08 39.59	+19 23.1	1.412	2.247	-2.27	+5.4	18.4
1986	03 21	08 39.46	+19 37.9					
1986	03 31	08 42.39	+19 38.3	1.665	2.313	-1.87	+4.4	18.9
1986	04 10	08 47.95	+19 25.9					
1986	04 20	08 55.72	+19 02.1	1.957	2.376	-1.55	+3.9	19.4

1977 NN a,e,i = 2.26, 0.18, 5 Elements MPC 9754

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 25.07	+17 07.2	2.453	2.642	89.8	22.0	19.6
1985	11 21	09 31.90	+16 29.7					
1985	12 01	09 36.58	+16 00.9	2.189	2.651	107.0	20.8	19.3
1985	12 11	09 38.81	+15 42.7					
1985	12 21	09 38.30	+15 36.5	1.948	2.657	126.8	17.2	19.0
1985	12 31	09 34.90	+15 42.6					
1986	01 10	09 28.63	+16 00.1	1.765	2.660	149.5	10.8	18.6
1986	01 20	09 19.84	+16 26.6					
1986	01 30	09 09.32	+16 57.5	1.678	2.660	174.6	2.0	18.1
1986	02 09	08 58.15	+17 27.9					
1986	02 19	08 47.62	+17 53.2	1.707	2.657	159.9	7.3	18.4
1986	03 01	08 38.87	+18 10.5					
1986	03 11	08 32.66	+18 18.4	1.843	2.651	136.3	15.0	18.8
1986	03 21	08 29.39	+18 17.0					
1986	03 31	08 29.07	+18 06.6	2.052	2.642	115.7	19.9	19.1
1986	04 10	08 31.50	+17 48.0					
1986	04 20	08 36.37	+17 21.6	2.297	2.630	97.9	22.2	19.4

1977 SA1 a,e,i = 2.38, 0.13, 3 Elements MPC 10025

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 14.01	+19 04.1	1.940	2.222	92.9	26.4	18.1
1985	11 21	09 23.84	+18 39.6					
1985	12 01	09 31.21	+18 26.6	1.728	2.251	109.0	24.5	17.8
1985	12 11	09 35.78	+18 27.6					
1985	12 21	09 37.18	+18 44.3	1.539	2.281	128.0	19.9	17.5
1985	12 31	09 35.24	+19 16.8					
1986	01 10	09 29.96	+20 02.6	1.405	2.311	150.1	12.2	17.1
1986	01 20	09 21.77	+20 56.5					
1986	01 30	09 11.64	+21 50.8	1.360	2.341	173.0	2.9	16.8
1986	02 09	09 00.93	+22 37.7					
1986	02 19	08 51.13	+23 11.4	1.423	2.371	158.6	8.7	17.1
1986	03 01	08 43.53	+23 29.1					
1986	03 11	08 38.87	+23 31.2	1.584	2.401	136.2	16.6	17.6
1986	03 21	08 37.44	+23 19.5					
1986	03 31	08 39.11	+22 56.0	1.812	2.430	116.7	21.6	18.0
1986	04 10	08 43.56	+22 22.6					
1986	04 20	08 50.37	+21 40.5	2.078	2.459	99.9	23.7	18.4

(3154) 1984 SO3 a,e,i = 3.11, 0.16, 2 Elements MPC 9290

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 19.20	+16 20.1	2.645	2.839	90.9	20.4	18.3
1985	11 21	09 26.03	+15 56.9					
1985	12 01	09 30.83	+15 43.2	2.403	2.869	108.2	19.1	18.1
1985	12 11	09 33.39	+15 40.9					
1985	12 21	09 33.51	+15 50.8	2.189	2.900	128.0	15.5	17.9
1985	12 31	09 31.16	+16 13.0					
1986	01 10	09 26.44	+16 46.0	2.036	2.931	150.2	9.6	17.6
1986	01 20	09 19.74	+17 26.9					
1986	01 30	09 11.73	+18 11.2	1.982	2.963	174.1	2.0	17.2
1986	02 09	09 03.29	+18 54.0					
1986	02 19	08 55.40	+19 30.9	2.043	2.995	161.1	6.1	17.6
1986	03 01	08 48.90	+19 58.9					
1986	03 11	08 44.40	+20 16.8	2.212	3.028	138.4	12.6	17.9
1986	03 21	08 42.22	+20 24.2					
1986	03 31	08 42.42	+20 21.8	2.459	3.060	118.1	16.7	18.3
1986	04 10	08 44.86	+20 10.3					
1986	04 20	08 49.32	+19 50.6	2.752	3.092	100.2	18.6	18.6

(3149) 1981 SH a,e,i = 2.25, 0.16, 7 Elements MPC 9289

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 06.62	+07 54.7	1.671	1.961	91.3	30.3	18.3
1985	11 21	09 18.12	+06 32.0					
1985	12 01	09 27.18	+05 17.7	1.481	1.987	105.6	28.6	18.0
1985	12 11	09 33.45	+04 16.0					
1985	12 21	09 36.57	+03 31.4	1.307	2.016	122.7	24.2	17.7
1985	12 31	09 36.28	+03 08.4					
1986	01 10	09 32.56	+03 11.1	1.174	2.047	143.1	16.8	17.3
1986	01 20	09 25.74	+03 41.4					
1986	01 30	09 16.74	+04 37.2	1.114	2.081	164.8	7.1	17.0
1986	02 09	09 06.91	+05 52.5					
1986	02 19	08 57.83	+07 17.7	1.152	2.116	162.5	8.1	17.1
1986	03 01	08 50.88	+08 42.3					
1986	03 11	08 46.89	+09 58.3	1.286	2.151	141.1	16.8	17.6
1986	03 21	08 46.24	+11 00.4					
1986	03 31	08 48.81	+11 46.1	1.491	2.188	121.7	22.9	18.1
1986	04 10	08 54.25	+12 15.1					
1986	04 20	09 02.16	+12 27.7	1.739	2.224	105.2	25.8	18.5

(3165) Mikawa a,e,i = 2.24, 0.18, 4 Elements MPC 9303

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 27.17	+17 05.5	2.378	2.565	89.3	22.7	18.4
1985	11 21	09 34.83	+16 45.8					
1985	12 01	09 40.36	+16 37.4	2.128	2.585	106.4	21.5	18.2
1985	12 11	09 43.44	+16 42.3					
1985	12 21	09 43.78	+17 02.1	1.900	2.603	126.0	17.8	17.9
1985	12 31	09 41.20	+17 37.1					
1986	01 10	09 35.68	+18 25.5	1.728	2.617	148.5	11.3	17.5
1986	01 20	09 27.52	+19 23.5					
1986	01 30	09 17.46	+20 24.5	1.649	2.629	172.4	2.8	17.1
1986	02 09	09 06.59	+21 21.7					
1986	02 19	08 56.20	+22 08.7	1.686	2.638	160.2	7.3	17.4
1986	03 01	08 47.49	+22 41.9					
1986	03 11	08 41.27	+23 00.2	1.830	2.643	136.9	14.9	17.8
1986	03 21	08 37.99	+23 04.5					
1986	03 31	08 37.69	+22 56.5	2.047	2.646	116.3	19.8	18.1
1986	04 10	08 40.16	+22 37.8					
1986	04 20	08 45.10	+22 09.8	2.302	2.646	98.6	22.1	18.4

1984 QJ1 a,e,i = 2.27, 0.20, 4 Elements MPC 9292

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 31.58	+09 55.6	2.506	2.631	86.1	22.1	19.6
1985	11 21	09 38.68	+09 04.4					
1985	12 01	09 43.78	+08 21.6	2.253	2.653	102.8	21.3	19.4
1985	12 11	09 46.59	+07 49.3					
1985	12 21	09 46.87	+07 30.1	2.017	2.672	122.0	18.2	19.1
1985	12 31	09 44.46	+07 25.9					
1986	01 10	09 39.35	+07 37.9	1.830	2.688	143.9	12.4	18.7
1986	01 20	09 31.81	+08 05.9					
1986	01 30	09 22.48	+08 47.6	1.731	2.701	167.4	4.6	18.4
1986	02 09	09 12.29	+09 38.6					
1986	02 19	09 02.38	+10 33.5	1.746	2.710	164.2	5.7	18.5
1986	03 01	08 53.84	+11 26.5					
1986	03 11	08 47.47	+12 13.2	1.872	2.717	141.0	13.3	18.8
1986	03 21	08 43.74	+12 50.9					
1986	03 31	08 42.78	+13 17.9	2.080	2.720	120.0	18.6	19.2
1986	04 10	08 44.46	+13 33.9					
1986	04 20	08 48.53	+13 39.0	2.334	2.721	101.7	21.2	19.5

1982 HL a,e,i = 2.75, 0.10, 6 Elements MPC 7363

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 21.05	+20 51.9	2.352	2.582	91.9	22.5	18.4
1985	11 21	09 30.35	+20 38.4					
1985	12 01	09 37.69	+20 35.5	2.081	2.566	108.2	21.4	18.1
1985	12 11	09 42.76	+20 45.3					
1985	12 21	09 45.22	+21 09.1	1.837	2.551	126.8	18.0	17.8
1985	12 31	09 44.85	+21 46.9					
1986	01 10	09 41.54	+22 36.7	1.650	2.537	147.8	11.9	17.4
1986	01 20	09 35.47	+23 34.0					
1986	01 30	09 27.25	+24 31.9	1.552	2.525	168.5	4.5	17.0
1986	02 09	09 17.87	+25 22.6					
1986	02 19	09 08.63	+25 59.5	1.561	2.514	160.2	7.7	17.1
1986	03 01	09 00.79	+26 18.9					
1986	03 11	08 55.31	+26 20.2	1.672	2.504	138.5	15.2	17.5
1986	03 21	08 52.74	+26 05.0					
1986	03 31	08 53.21	+25 35.7	1.856	2.497	118.9	20.5	17.8
1986	04 10	08 56.54	+24 54.7					
1986	04 20	09 02.42	+24 03.7	2.082	2.491	101.9	23.2	18.1

(3247) 1981 YE a,e,i = 2.38, 0.13, 4 Elements MPC 9679

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 15.40	+20 09.0	2.013	2.288	92.9	25.6	17.9
1985	11 21	09 26.36	+19 42.1					
1985	12 01	09 35.31	+19 24.9	1.746	2.259	108.4	24.5	17.5
1985	12 11	09 41.89	+19 20.1					
1985	12 21	09 45.66	+19 30.1	1.504	2.232	126.3	20.8	17.1
1985	12 31	09 46.28	+19 55.9					
1986	01 10	09 43.49	+20 36.8	1.314	2.206	147.1	14.0	16.6
1986	01 20	09 37.38	+21 28.9					
1986	01 30	09 28.55	+22 24.9	1.205	2.181	169.3	4.8	16.2
1986	02 09	09 18.15	+23 15.8					
1986	02 19	09 07.79	+23 53.2	1.197	2.158	161.4	8.4	16.2
1986	03 01	08 59.11	+24 11.8					
1986	03 11	08 53.32	+24 10.8	1.285	2.137	139.0	17.8	16.6
1986	03 21	08 51.09	+23 51.7					
1986	03 31	08 52.48	+23 17.0	1.440	2.118	119.5	24.2	17.0
1986	04 10	08 57.21	+22 29.3					
1986	04 20	09 04.87	+21 30.2	1.631	2.102	103.2	27.7	17.3

(3170) 1979 SS11 a,e,i = 2.93, 0.09, 2 Elements MPC 9353

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 25.77	+17 25.1	2.490	2.675	89.7	21.7	17.6
1985	11 21	09 34.16	+16 52.8					
1985	12 01	09 40.59	+16 29.4	2.230	2.679	106.3	20.7	17.4
1985	12 11	09 44.79	+16 16.8					
1985	12 21	09 46.49	+16 16.6	1.995	2.685	125.2	17.4	17.0
1985	12 31	09 45.55	+16 29.2					
1986	01 10	09 41.94	+16 53.9	1.815	2.692	146.7	11.6	16.7
1986	01 20	09 35.90	+17 28.0					
1986	01 30	09 28.05	+18 07.1	1.724	2.700	170.2	3.6	16.3
1986	02 09	09 19.26	+18 45.8					
1986	02 19	09 10.66	+19 18.9	1.744	2.709	164.5	5.6	16.5
1986	03 01	09 03.30	+19 42.4					
1986	03 11	08 57.97	+19 54.6	1.870	2.720	141.6	13.1	16.8
1986	03 21	08 55.18	+19 55.0					
1986	03 31	08 55.05	+19 44.3	2.077	2.731	121.1	18.2	17.2
1986	04 10	08 57.47	+19 23.4					
1986	04 20	09 02.19	+18 53.4	2.332	2.744	103.4	20.9	17.5

A915 TE a,e,i = 3.36, 0.21, 8 Elements MPC 9469

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 41.51	+22 56.9	3.666	3.764	88.0	15.2	18.0
1985	11 21	09 46.32	+22 57.4					
1985	12 01	09 49.47	+23 07.1	3.396	3.792	106.3	14.5	17.9
1985	12 11	09 50.80	+23 26.2					
1985	12 21	09 50.17	+23 54.5	3.153	3.819	126.3	12.0	17.7
1985	12 31	09 47.56	+24 30.4					
1986	01 10	09 43.03	+25 11.5	2.977	3.844	147.7	7.9	17.5
1986	01 20	09 36.84	+25 54.4					
1986	01 30	09 29.46	+26 34.9	2.902	3.868	166.9	3.3	17.2
1986	02 09	09 21.48	+27 09.0					
1986	02 19	09 13.63	+27 33.6	2.948	3.891	159.8	5.0	17.4
1986	03 01	09 06.59	+27 47.0					
1986	03 11	09 00.90	+27 48.9	3.109	3.912	138.9	9.6	17.6
1986	03 21	08 56.94	+27 40.1					
1986	03 31	08 54.90	+27 22.0	3.355	3.932	118.6	12.9	17.9
1986	04 10	08 54.77	+26 56.1					
1986	04 20	08 56.46	+26 23.8	3.653	3.951	99.9	14.5	18.1

2563 P-L a,e,i = 3.20, 0.15, 2 Elements MPC 6207

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	11 11	09 37.06	+13 27.1	3.427	3.499	85.9	16.4	19.3
1985	11 21	09 42.62	+12 59.7					
1985	12 01	09 46.63	+12 39.9	3.111	3.478	103.6	16.0	19.0
1985	12 11	09 48.90	+12 29.1					
1985	12 21	09 49.25	+12 28.4	2.817	3.456	123.3	13.8	18.8
1985	12 31	09 47.61	+12 38.5					
1986	01 10	09 43.97	+12 59.2	2.581	3.434	145.1	9.4	18.5
1986	01 20	09 38.51	+13 29.3					
1986	01 30	09 31.65	+14 06.3	2.439	3.410	168.6	3.3	18.1
1986	02 09	09 23.96	+14 46.8					
1986	02 19	09 16.19	+15 26.9	2.415	3.386	167.2	3.7	18.1
1986	03 01	09 09.10	+16 03.0					
1986	03 11	09 03.35	+16 32.4	2.507	3.360	143.8	10.0	18.4
1986	03 21	08 59.42	+16 53.4					
1986	03 31	08 57.57	+17 05.2	2.690	3.334	122.5	14.6	18.6
1986	04 10	08 57.85	+17 07.9					
1986	04 20	09 00.19	+17 01.6	2.926	3.308	103.5	17.2	18.8