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

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

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EDITORIAL NOTICE.

On 5859 we stated that the publication of astrometric observations in the MPCs should most emphatically be construed as publication in the 'refereed' astronomical literature. The checking process is almost invariably more complete than in the conventional astronomical literature. Some observers have pointed out that the principal problem with relying solely on MPC publication of observations is that there has been no opportunity to include information about how the observations were made. To rectify this matter, each of the sets of observations of minor planets in the current batch of MPCs has been incorporated in a brief 'micropaper'. In some cases the information stated there has been specifically provided by the observers. In others it is hoped that the observers will make the necessary amendments for inclusion with their observations in future batches of MPCs. It is desirable that the supplementary notes be kept brief, and perhaps the most useful information they could provide concerns the star-catalogue system used in the reductions; information of this type is essential if consideration is to be given to the transfer to the J2000 equinox (cf. MPC 8025).

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ERRATA.

MPC	Line	
8281	21	Delete the name of the discoverer.
8337	7	Add E. HELIN
8534	- 6	Add The double designation 1979 VP1 = 1979 YR1 is by N. S. Chernykh.
8542	-11 & -10	For Asiago Astrophysical Observatory read Arcetri Observatory, Florence

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CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N Obs.
57	1946 03	27.99703	11 55 35.98	-06 20 45.1	MPC 3203		1 020
116	1966 04	26.95856	13 51 02.85	-08 01 44.0	MPC 3329		1 020
116	1966 04	26.99486	13 51 01.00	-08 01 32.2	MPC 3329		1 020
175	1952 07	23.30277	19 38.4	-26 41	MPC 853	14.6	2 760
222	1966 04	26.95856	14 00 42.76	-09 40 28.3	MPC 3331		1 020

222		1966	04	26.99486	14	00	40.99	-09	40	18.5	MPC	3331		1 020
267		1952	07	23.30277	19	43	.5	-28	05		MPC	853	16.2	2 760
684		1946	03	27.96552	12	04	35.19	-05	20	28.7	MPC	3218		1 020
712		1966	04	26.98425	14	18	58.38	-18	29	12.3	MPC	3340		1 020
743		1946	03	27.96552	12	08	39.08	-06	32	34.5	MPC	3219		1 020
1301		1955	10	24.06355	23	39	46.99	-22	24	03.9	MPC	1731		2 839
1308		1966	04	14.84861	13	19	26.93	-12	52	37.7	MPC	2717	15.3	3 076
1312		1935	01	03.18651	05	13	11.23	-00	48	50.6	RI	1128	14	754
1349		1949	03	25.85406	12	02	35.50	-14	42	10.4	MPC	239	13.5	078
1366		1965	07	21.87188	20	36	15.52	-35	01	05.2	MPC	2558	13.8	076
1369		1978	06	06.90182	14	53	11.31	+00	56	12.7	MPC	4404		4 046
1369		1978	06	06.91628	14	53	11.04	+00	56	13.6	MPC	4404		4 046
1379		1940	03	09.93497	12	43	28.46	+01	02	24.8	MPC	3227		5 020
1379		1940	03	09.97651	12	43	26.93	+01	02	56.6	MPC	3227		5 020
1393		1974	05	18.92986	16	22	17.98	-22	44	15.2	MPC	3802	15.3	1 076
1396		1956	05	13.98507	17	11	36.54	-31	20	27.5	MPC	1540	12.8	076
1407		1977	09	13.90484	22	21	37.94	+01	15	57.4	MPC	4686		542
1418		1939	03	20.95919	11	49	53.45	+00	23	46.6	MPC	3227		6 020
1418		1939	03	20.99348	11	49	50.58	+00	23	54.5	MPC	3227		6 020
1418		1950	10	07.86597	00	23	07.75	+07	01	59.3	MPC	560		990
1426		1937	04	03.94147	13	23	00.95	-21	05	27.8	MPC	3227		020
1426		1937	04	03.97194	13	22	59.22	-21	05	27.4	MPC	3227		020
1461		1938	04	16.84076	08	17	12.37	+29	20	35.6	MPC	3227		020
1461		1949	01	05.00	08	29	.1	+24	00		MPC	202		020
1461		1952	09	09.85694	23	43	06.32	-23	30	48.3	MPC	867	13.3	078
1461		1966	02	20.12094	11	00	15.93	+24	58	40.5	MPC	4241		7 760
1461		1966	02	20.16435	11	00	13.88	+24	59	00.5	MPC	4241		7 760
1471		1978	08	09.93490	22	28	28.82	-06	41	19.3	MPC	5809		095
1487		1940	03	09.86294	10	32	09.83	+12	48	14.1	MPC	3234	14.3	5 020
1487		1940	03	09.89515	10	32	08.34	+12	48	21.1	MPC	3234	14.3	5 020
1490		1937	12	04.00507	06	19	06.55	+20	16	52.4	MPC	3232	14.6	2 020
1490		1951	10	04.32677	00	57	39.60	+24	00	27.1	MPC	719	15.6	760
1490		1951	10	04.37050	00	57	37.23	+24	00	07.5	MPC	719	15.6	760
1494		1964	11	07.04185	00	50	07.71	+04	07	51.0	MPC	4242		8 760
1494		1964	11	07.07518	00	50	06.89	+04	07	42.3	MPC	4242		8 760
1513		1940	03	09.93497	12	43	47.73	+01	03	45.0	MPC	3234	14.5	5 020
1513		1943	02	06.01293	08	58	56.28	+16	52	20.9	MPC	3228		9 020
1520		1949	11	18.00	04	13	.9	+25	58		MPC	453		020
1523		1936	03	20.07058	13	58	46.15	-19	33	12.7	MPC	3228	14.4	020
1528		1952	07	23.12921	17	45	10.35	-14	32	24.5	MPC	1560	17.3	2 760
1528		1952	07	23.17919	17	45	09.20	-14	32	42.3	MPC	1560	17.3	2 760
1530		1970	02	11.05990	08	31	35.74	+15	29	01.1	MPC	3490		805
1530		1970	02	11.07029	08	31	35.02	+15	29	02.8	MPC	3490		805
1530		1970	02	11.08068	08	31	34.39	+15	29	03.5	MPC	3490		805
1540		1969	04	23.89917	12	00	59.30	+13	29	20.6	MPC	3454		020
1552		1962	11	03.10850	04	09	15.43	+32	06	02.5	MPC	3044		043
1566		1968	07	03.01404	15	17	18.16	-22	23	21.0	MPC	3037		1 808
1566		1968	07	03.08330	15	17	20.59	-22	25	11.1	MPC	3037		1 808
1583		1951	02	03.10176	01	01	45.01	+12	49	40.1	MPC	532		711
2264		1966	09	06.89	22	49	.3	-07	15		MPC	2703		A 020
2264		1966	09	12.92	22	45	.1	-07	42		MPC	2703		A 020
2264		1966	09	21.96	22	39	.1	-08	14		MPC	2703		A 020
1937	AQ	1937	01	08.03663	08	54	48.81	+18	21	33.5	MPC	3227		B 020
1937	AQ	1937	01	21.17356	08	46	08.28	+18	44	42.1	MPC	3227		B 020
1937	AQ	1937	01	21.20454	08	46	06.22	+18	44	53.8	MPC	3227		B 020
1939	GT	1939	04	13.96876	11	29	04.39	+01	56	50.8	MPC	3227		6 020
1943	GA1	1943	04	04.97757	13	17	30.55	-06	31	23.1	MPC	3228		C 020
1946	FD	1946	03	27.96552	11	56	25.04	-06	20	02.3	MPC	3228		E 020

1946	FD		1946 03 30.99154	11 54 13.60	-06 07 32.1	MPC 3228			D	020
1951	QM		1951 08 24.17112	20 41 42.99	-00 29 06.5	MPC 4306			F	760
1951	QM		1951 08 24.18571	20 41 42.22	-00 29 02.5	MPC 4306			F	760
1952	OL	*	1952 07 23.17919	17 43.2	-16 28	MPC 853		17.8	2	760
1955	LA	*	1955 06 14.84202	18 32 53.02	-28 34 07.1	MPC 1337		14.3	G	076
1966	HK	*	1966 04 26.98425	14 14 59.62	-18 14 52.7	MPC 4736			1	020

Note 1: date originally given as 1 day later. 2: date originally given as 1 day earlier. 3: date originally given as 1966 04 04. 4: object originally erroneously given as (1360). 5: date originally given as 1940 05 09. 6: object originally given as (1454). 7: object originally given as (1463). 8: object originally given as (1495). 9: date originally given as 1943 01 06. A: object originally given as (1340); accurate positions of the same object were redesignated 1966 RP = (2264). B: object originally given as (1424). C: object originally given as (1539). D: object originally given as (1523). E = 1 + D. F: object originally given as (1436). G: 1955 LA = (1481); date originally given as 0.5 day earlier.

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DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	N	Obs.
150	1966 04	26.95856	14 00 42.76	-09 40 28.3	MPC 3330	1	020
150	1966 04	26.99486	14 00 40.99	-09 40 18.5	MPC 3330	1	020
979	1966 04	22.03351	14 28 31.52	-18 23 00.3	MPC 3343		020
979	1966 04	22.07229	14 28 30.58	-18 23 45.6	MPC 3343		020
979	1966 04	27.02990	14 25 00.47	-17 51 51.8	MPC 3343	1	020
1302	1968 09	05.05560	00 47 06.66	+01 00 33.1	MPC 3451		020
1302	1968 09	05.07291	00 47 05.38	+01 00 37.6	MPC 3451		020
1315	1966 04	22.03351	14 32 49.52	-18 14 54.5	MPC 3348		020
1315	1966 04	22.07065	14 32 47.38	-18 14 37.1	MPC 3348		020
1315	1966 04	26.98425	14 29 05.70	-18 11 47.7	MPC 3348	1	020
1315	1966 04	27.02999	14 29 03.13	-18 11 56.9	MPC 3348	1	020
1336	1968 10	22.94166	01 41 53.31	+05 32 56.7	MPC 3451		020
1336	1968 10	22.95205	01 41 47.34	+05 32 54.3	MPC 3451		020
1339	1968 04	30.04053	13 51 48.99	-24 43 18.2	MPC 3451		020
1339	1968 04	30.05437	13 51 50.89	-24 43 12.3	MPC 3451		020
1377	1968 09	25.02991	01 27 37.46	+14 03 58.7	MPC 3452		020
1377	1968 09	25.04861	01 27 36.29	+14 04 00.8	MPC 3452		020
1377	1968 09	30.00162	01 23 31.35	+13 29 06.4	MPC 3452		020
1377	1968 09	30.01478	01 23 30.67	+13 29 19.2	MPC 3452		020
1377	1968 10	02.00110	01 21 38.91	+13 16 00.7	MPC 3452		020
1377	1968 10	02.01426	01 21 38.31	+13 16 08.3	MPC 3452		020
1393	1949 11	30.37498	04 48 57.78	+24 14 29.0	MPC 4304	2	760
1441	1937 11	26.00694	05 24 26.95	+23 20 55.1	MPC 2129		053
1441	1937 12	04.98333	05 14 28.62	+22 22 17.8	MPC 2129		053
1441	1937 12	22.88333	04 58 22.44	+19 49 47.2	MPC 2129		053
1441	1937 12	23.82986	04 58 12.77	+19 48 03.4	MPC 2129		053
1441	1938 02	21.81944	04 57 33.25	+16 07 32.6	MPC 2129		053
1441	1939 03	18.88403	10 46 10.40	-13 34 52.7	MPC 2129		053
1441	1941 09	17.98125	01 37 16.62	+32 40 00.2	MPC 2129		053
1441	1941 10	16.93125	01 18 06.25	+30 06 25.9	MPC 2129		053
1442	1968 03	23.90852	11 18 27.52	+03 05 09.4	MPC 3453		020
1442	1968 03	23.92168	11 18 26.65	+03 04 38.4	MPC 3453		020
1450	1966 11	18.04	04 12.6	+18 55	MPC 2704		020
1493	1961 11	10.04793	02 33 58.76	+19 43 48.5	MPC 4241	3	760
1493	1961 11	10.09100	02 33 56.71	+19 43 36.3	MPC 4241	3	760

1494		1966	03	20.00	12	15.0	-02	39	MPC 2649		020
1524		1966	08	24.98	22	46.1	-12	29	MPC 2704		020
1524		1966	09	12.86	22	28.8	-12	31	MPC 2704		020
1539		1966	05	23.93	15	27.8	-16	39	MPC 2704		020
1590		1937	11	12.01389	03	08 22.94	+17	20 12.2	MPC 3232		020
1940 JC	*	1940	05	09.86294	10	32 09.83	+12	48 14.1	MPC 3234	4	020
1940 JC		1940	05	09.89515	10	32 08.34	+12	48 21.1	MPC 3234	4	020
1940 JD	*	1940	05	09.93497	12	43 47.73	+01	03 45.0	MPC 3234	4	020

Note 1: date erroneously given as 1 day later. 2: observation correctly published as (1522) on MPC 430. 3: observations correctly published as 1961 VQ on MPC 2302. 4: date in error; see the observations of (1487) and (1513) and note 5 on MPC 8580-8581.

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IDENTIFICATION CHANGES.

Continuation to MPC 8481.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	N	Obs.
A902 GC	*	1902	04 04.89465	12 40 25.14	-04 03 24.2	A902 EE			024
A902 GC		1902	04 07.89396	12 38 20.89	-03 40 32.0	A902 EE			024
A915 TO	*	1915	10 01.88252	23 18 27.95	-09 39 35.1	1378			024
1926 CF	*	1926	02 08.96493	06 43 46.54	+21 36 53.3	1562	13.5		024
1926 FL	*	1926	03 17.86126	06 41.8	+22 43	1313	16		024
1926 GE1	*	1926	04 14.88008	11 53.5	+06 21	1331	15		024
1928 HK	*	1928	04 24.86729	09 38 07.04	+19 39 10.4	1511	16.5		024
1931 CJ	*	1931	02 08.88964	06 14 51.00	+33 38 31.1	1424	14		024
1931 FT	*	1931	03 27.06701	11 13 42.85	+03 35 46.6	1524	15.0		024
1931 TP4	*	1931	10 04.84861	22 51 27.78	-10 36 43.3	1487	16		024
1933 DL	*	1933	02 18.14444	03 51 29.91	+28 35 59.5	1366	16		754
1933 HN	*	1933	04 20.94319	11 48 09.54	+04 14 20.6	1552			024
1933 KC	*	1933	05 19.92674	11 23 34.78	+06 02 26.5	1409			024
1933 UA2	*	1933	10 29.89392	00 01 22.34	+01 47 22.9	1497			012
1934 LQ	*	1934	06 05.87211	14 58.5	-17 22	1517	13.2		078
1934 LQ		1934	06 14.90190	14 54.4	-17 07	1517	13.2		078
1934 VZ	*	1934	11 01.86104	22 41 13.25	-09 38 09.6	1539			012
1935 YK	*	1935	12 27.01056	07 21 41.21	+21 34 12.9	1383	14.5		078
1936 QO1	*	1936	08 25.04319	23 28 08.13	+00 10 01.3	1476			024
1936 UN	*	1936	10 24.96326	22 50 56.64	-00 31 17.3	1476			012
1936 UN		1936	11 10.79992	23 00 12.21	+00 23 01.0	1476			012
1936 WM	*	1936	11 16.07633	22 35 52.29	-08 13 35.3	1422	13		754
1936 WM		1936	11 16.09078	22 35 52.74	-08 13 35.1	1422	13		754
1936 XH	*	1936	12 06.87	02 33.1	+10 41.1	1554			020
1937 CN	*	1937	02 06.85399	08 28 12.25	+20 05 01.0	1424			020
1937 CN		1937	02 06.97184	08 28 11.07	+20 05 08.3	1424			020
1937 DA	*	1937	02 18.05278	11 05 10.30	-12 48 57.7	1347			020
1937 LS	*	1937	06 04.99050	18 52 44.16	-08 49 36.9	1434			024
1938 AH	*	1938	01 05.83959	02 19 18.87	+20 13 11.2	1459			999
1938 SO1	*	1938	09 27.23133	00 17 34.03	+03 30 09.2	1380			754
1938 VC	*	1938	11 13.80	01 32.6	+15 06	1519	13.6		094
1939 GU	*	1939	04 09.92117	08 58 21.39	+15 41 56.3	1523			020
1939 GU		1939	04 11.90635	08 59 28.04	+15 31 55.4	1523			020
1939 KG	*	1939	05 23.94537	15 45 02.35	-00 19 34.7	1333			028
1939 KH	*	1939	05 16.88367	15 40.4	-28 10	1436	13.0		078
1939 XK	*	1939	12 14.99993	06 46.0	+31 05	1308	14.2		029
1940 EQ	*	1940	03 09.86294	10 27 00.20	+11 24 13.4	1381			020
1940 JE	*	1940	05 04.90	15 49.6	-11 09	1400	13.6		119
1940 MA	*	1940	06 30.94	18 27.8	-20 06	1491			020

1940	SG	*	1940	09	26.88	01	32.2	+20	58		1314	13.8	119
1940	SG		1940	09	28.84	01	30.7	+20	51		1314	13.8	119
1940	SH	*	1940	09	29.76	23	17.1	+02	00		1420	13.9	119
1941	JB	*	1941	05	01.85	14	40.3	-24	22		1374	14.0	078
1942	FU	*	1942	03	22.95	11	51.8	-04	45		1476		012
1942	PL	*	1942	08	05.912	22	02.5	-23	00		1375	13.7	078
1942	QC	*	1942	08	31.85326	20	51 03.79	-19	50	44.2	1553		024
1943	EK1	*	1943	03	11.00104	12	01 33.83	+04	45	05.2	1482		012
1943	JB	*	1943	05	09.93960	16	38 49.74	-22	04	03.1	1517		057
1943	PE	*	1943	08	07.824	19	59.0	-19	30		1485	13.0	078
1943	TP	*	1943	10	05.0132	02	15.9	+08	49		1553	15.0	053
1943	VL	*	1943	11	02.93	02	40.8	-08	20		1329		012
1945	PA	*	1945	08	12.00130	22	51 34.94	-01	20	24.3	1374		012
1946	UR	*	1946	10	29.90159	23	58 28.64	-04	18	49.2	1366		012
1947	RK	*	1947	09	14.0	00	38.6	+08	48		1491		020
1947	SE	*	1947	09	17.876	00	07.5	-21	34		1323	14.0	078
1948	EE1	*	1948	03	05.09514	12	22 33.04	+04	45	13.3	1330		012
1948	GN	*	1948	04	10.87891	11	55 23.27	+08	38	30.3	1379		020
1948	JR	*	1948	05	14.9466	16	20.6	-06	07		1469	14.1	094
1948	PC1	*	1948	08	01.86199	20	48 22.68	-29	13	10.3	1464	14.5	078
1948	PD1	*	1948	08	08.98118	23	00.8	-04	51		1415	14.1	094
1948	QR	*	1948	08	29.84268	22	56 37.57	-17	01	56.8	1393	13.5	078
1948	RP1	*	1948	09	09.9	21	44.3	-13	19		1434	13.5	020
1948	SK	*	1948	09	29.1	00	54.2	+07	17		1308	14.0	020
1948	TL2	*	1948	10	09.93736	00	39 57.45	+07	23	41.1	1308		012
1948	VR	*	1948	11	09.18340	04	41 05.03	+18	52	44.1	1377		012
1949	AD	*	1949	01	05.0	08	24.8	+20	56		1445	14.0	020
1949	EH	*	1949	03	02.53611	10	11 05	+16	11.4		1587	12.5	388
1949	FN1	*	1949	03	23.97209	10	52 02.46	+16	42	00.4	1366		012
1949	GU	*	1949	04	01.1	14	14.5	-05	19		1388		020
1949	HQ1	*	1949	04	28.29672	16	31 36.41	+15	34	14.0	1568	17.0	754
1949	HQ1		1949	04	28.30922	16	31 35.97	+15	34	21.0	1568	17.0	754
1949	KC1	*	1949	05	20.86321	15	42 39	-20	06.3		1315	14.0	078
1949	KD1	*	1949	05	30.25294	16	05 25.95	-27	00	16.9	1430	16.1	760
1949	KD1		1949	05	30.27933	16	05 24.29	-27	00	13.8	1430		760
1949	ST1	*	1949	09	30.98007	01	49.4	+25	52		1485	13.8	094
1949	UH1	*	1949	10	17.85332	00	39 40.84	+08	16	16.9	1561		012
1949	UH1		1949	10	27.93163	00	32 45.52	+07	21	44.8	1561		012
1949	WO	*	1949	11	26.15102	05	29 16.13	+26	51	08.5	1393		012
1949	YE1	*	1949	12	25.29016	09	15 41.33	+15	53	44.1	1374	15.6	760
1949	YE1		1949	12	25.33529	09	15 40.36	+15	53	45.6	1374		760
1949	YE1		1949	12	28.31390	09	14 37.89	+15	54	40.7	1374	15.1	760
1949	YE1		1949	12	28.39862	09	14 35.76	+15	54	43.6	1374		760
1950	BS1	*	1950	01	24.96878	07	09 38.51	+09	44	22.2	1353		012
1950	BT1	*	1950	01	25.02263	08	50 57.70	+16	32	31.7	1374		012
1950	CW	*	1950	02	08.0	08	06.7	+17	06		1376		020
1950	DL1	*	1950	02	16.91931	08	21 53.79	+18	02	30.6	1374		012
1950	FR	*	1950	03	20.02949	14	04 46.43	+09	38	19.7	1461		012
1950	KK	*	1950	05	16.85886	16	48 52	-33	00.1		1366	12.5	078
1950	KL	*	1950	05	16.86856	16	43 31	-32	31.2		597	12.5	078
1950	KM	*	1950	05	20.8	14	58.6	-18	35		1424		020
1950	MH	*	1950	06	16.01012	18	07 00.67	-13	06	53.0	1345		012
1950	PD1	*	1950	08	07.12295	19	03 52.50	-25	45	40.9	1529		760
1950	PD1		1950	08	07.20597	19	03 49.16	-25	45	51.6	1529		760
1950	RM1	*	1950	09	14.63340	22	14 19.31	-04	11	57.1	1307		330
1950	RN1	*	1950	09	14.89951	21	32 54.52	-05	22	32.6	1301	15.0	008
1950	RN1		1950	09	15.90234	21	32 18.85	-05	33	32.0	1301		008
1950	XW	*	1950	12	12.95565	05	49 15.30	+22	45	09.3	1348		012
1950	XW		1950	12	14.19370	05	48 04.4	+22	50	03	1348	14.7	711

1951	CA2	*	1951	02	05.90539	07	44	03.08	+23	28	21.1	1405		012
1951	GM1	*	1951	04	12.88835	13	58	38.00	-20	54	42.6	1374	16.5	074
1951	JC1	*	1951	05	05.90	14	57.7		+01	00		1346		020
1951	MO	*	1951	06	28.10398	18	40	47.66	-25	03	37.1	1556	14.0	839
1951	NN	*	1951	07	10.95659	19	47	46	-25	01.8		1415	12.0	078
1951	RA2	*	1951	09	07.98146	01	01.5		+04	32		1351	13.7	094
1951	TU	*	1951	10	01.94667	01	26.0		+12	51		1328	13.6	094
1951	TV	*	1951	10	01.94667	01	40.2		+09	16		1358	13.5	094
1952	BK2	*	1952	01	30.09579	05	55	07.14	+24	49	00.2	1560	14.4	760
1952	BK2		1952	01	30.14232	05	55	05.87	+24	48	59.9	1560	14.4	760
1952	DN3	*	1952	02	24.97520	08	31	15.70	+11	30	02.3	1314		012
1952	DO3	*	1952	02	23.8	09	15.3		+18	40		1470		020
1952	DP3	*	1952	02	28.16494	09	27	50.19	+14	59	03.9	1430	16.8	760
1952	DP3		1952	02	28.21355	09	27	48.18	+14	59	20.6	1430	16.8	760
1952	KK1	*	1952	05	20.18540	14	56	53.9	-30	14	59	1532	15.9	711
1952	OE1	*	1952	07	24.29688	21	58	34.24	-14	41	19.3	1553	16.6	760
1952	RP	*	1952	09	14.76161	21	22	45.01	-14	14	48.8	1491	16.0	074
1952	UB2	*	1952	10	17.94252	02	17	57.22	+12	34	22.1	1378		012
1952	UC2	*	1952	10	17.94252	02	46	47.29	+12	50	51.8	1408		012
1952	VM	*	1952	11	10.0	02	27.4		+00	25		1369		020
1953	AN	*	1953	01	06.52708	05	19	03.39	+05	03	04.5	1384	12.5	388
1953	BB	*	1953	01	16.08233	09	53	20.64	+12	49	31.5	1321	15.0	020
1953	BC	*	1953	01	16.02796	08	36	19.57	+21	47	54.7	1358	14.8	020
1953	CR	*	1953	02	08.0	09	41.4		+12	03		1442		020
1953	FQ1	*	1953	03	25.16409	14	12	49.06	+15	58	27.5	1312		012
1953	LH	*	1953	06	05.92745	18	08	35.97	-38	26	29.4	1418	12.8	078
1953	OR	*	1953	07	21.0	21	48.3		-03	50		1419	14.2	020
1953	PD1	*	1953	08	03.94115	20	26	49.79	+27	31	03.8	1355		012
1953	PE1	*	1953	08	05.82292	19	47	55.97	-24	26	06.4	1440	15.5	078
1953	PF1	*	1953	08	13.00	23	07.0		-06	30		1514		020
1953	PF1		1953	09	03.10	22	55.5		-09	42		1514		020
1953	TO3	*	1953	10	09.71	00	30.0		-20	55		1484		210
1953	TP3	*	1953	10	11.841	00	09.5		-06	23		1517	13.3	094
1953	UA1	*	1953	10	29.96288	01	46	49.65	+17	10	31.6	1491		020
1953	VX3	*	1953	11	10.7901	01	49.4		+07	44		1327	13.4	094
1953	YM	*	1953	12	30.03	08	10.8		+43	22		1368		210
1954	CR	*	1954	02	01.14513	06	35	30.76	-15	42	47.0	1573	16.7	760
1954	CR		1954	02	01.18679	06	35	30.25	-15	42	36.1	1573		760
1954	FD	*	1954	03	27.902	11	25.9		+11	29		1366		012
1954	JV	*	1954	05	01.02318	11	12	31.46	-03	45	07.7	1315		839
1954	JV		1954	05	01.14092	11	12	32.63	-03	45	21.2	1315		839
1954	JW	*	1954	05	02.06127	15	18	09.01	-05	44	26.2	1410		006
1954	KR	*	1954	05	25.91736	17	34	21.04	-23	05	28.6	1490	14.0	078
1954	LL	*	1954	06	04.9	15	06.2		-24	15		1415	14.2	008
1954	MV	*	1954	06	30.05	19	07.0		-03	01		1469		020
1954	MW	*	1954	06	30.10	20	30.7		-08	48		1498	15.0	020
1954	NX	*	1954	07	09.07409	21	21	11.14	-13	48	29.9	1584	14.8	020
1954	OK	*	1954	07	27.9	18	46.7		-04	01		1469		020
1954	WB1	*	1954	11	17.0	01	49.5		+08	32		1487	15.0	020
1955	BZ	*	1955	01	25.89248	06	48	25.63	+21	11	30.3	1333	14.7	020
1955	BA1	*	1955	01	16.55	09	13.4		+13	21		1444	15.0	388
1955	BA1		1955	01	26.01125	09	05	42.27	+13	21	00.4	1444		020
1955	BB1	*	1955	01	26.01125	09	07	14.51	+14	38	08.8	1514	15.0	020
1955	BC1	*	1955	01	26.10	10	25.0		+12	50		1553	14.4	020
1955	CD	*	1955	02	10.91238	07	58	50.52	+28	21	00.8	1327	15.0	020
1955	CE	*	1955	02	15.61806	11	43	22.99	-18	41	25.5	1436		388
1955	CE		1955	02	15.64583	11	43	22.60	-18	40	52.2	1436		388
1955	DV	*	1955	02	27.99059	10	19	37.16	+01	45	03.1	1369		012
1955	FE2	*	1955	03	18.69375	13	17	01.95	-07	25	44.2	1546		388

1955	LD	*	1955	06	13.82258	18	04	50.24	-20	30	03.5	1443		14.0	076
1955	OJ	*	1955	07	20.91875	19	07.2		-12	47		1329			990
1955	OJ		1955	07	21.91381	19	05	21.05	-12	54	27.5	1329			020
1955	OK	*	1955	07	21.97215	20	09	31.54	-07	57	20.4	1410			020
1955	RP1	*	1955	09	12.89827	00	14	08.21	-15	54	07.7	1364			076
1955	SY2	*	1955	09	18.9	21	50.2		-03	13		1411		15.0	020
1955	VH1	*	1955	11	09.49063	02	09	18.92	+20	17	39.8	1955	US1	14	1 388
1955	VH1		1955	11	11.45833	02	07	48.04	+20	06	39.7	1955	US1	14	1 388
1955	XH1	*	1955	12	03.41528	01	53	20.01	+18	26	51.1	1955	US1	15	1 388
1955	YJ	*	1955	12	19.719	04	41.2		+19	24		1389		13.8	210
1956	EP1	*	1956	03	13.63681	13	10	35.02	-00	06	35.4	1517			388
1956	KB	*	1956	05	18.04097	17	28	54.35	-25	32	24.6	1436		13.8	076
1956	VN	*	1956	11	07.05304	04	41	37.40	+24	04	08.0	1378		15.0	020
1956	VO	*	1956	11	06.82986	00	26	54.50	+24	34	33.2	1471		14.5	020
1956	VP	*	1956	11	07.36529	05	11	08.38	+36	28	30.4	1557		15.6	760
1956	VP		1956	11	07.41149	05	11	06.44	+36	28	44.3	1557			760
1956	WD	*	1956	11	30.60729	05	49	46.80	+40	35	11.7	1495			388
1956	XT	*	1956	12	02.86563	03	10	25.75	+06	03	07.5	1355			020
1956	XU	*	1956	12	03.1	04	57.4		+25	35		1364		14.9	020
1956	YO	*	1956	12	24.49792	04	01	39.62	+01	49	04.4	1329		13.7	388
1956	YP	*	1956	12	29.66494	07	03	51.73	+26	40	16.7	1544			388
1957	BK1	*	1957	01	24.53889	06	37	39.68	+27	38	33.4	1544			388
1957	BK1		1957	02	02.45903	06	32	33.70	+27	37	15.2	1544			388
1957	BK1		1957	02	02.48681	06	32	32.38	+27	37	14.7	1544			388
1957	PB	*	1957	08	01.00355	22	30	04.46	-10	00	07.5	1523			020
1957	QQ	*	1957	08	22.88191	21	21.7		-05	33		1444		13.9	024
1957	QR	*	1957	08	20.94604	22	11	05.52	-10	57	17.3	1523			020
1957	QR		1957	08	27.80	22	04.0		-11	22		1523			020
1957	QR		1957	08	31.80	22	00.1		-11	37		1523			020
1957	SL	*	1957	09	17.90	21	45.2		-12	24		1523		15.0	020
1957	WG2	*	1957	11	21.8	02	11.2		+15	30		1319			020
1957	YY	*	1957	12	22.13707	02	47	11.56	+25	24	55.5	1476		15.6	760
1958	HM	*	1958	04	10.20486	11	58	37	+03	48.9		1378		13.5	690
1958	HM		1958	04	22.21667	11	55	37	+04	00.1		1378			690
1958	KA	*	1958	05	19.89931	17	10	36.45	-30	50	16.7	1339		14.3	076
1958	PE	*	1958	08	11.21472	20	15	19.08	-34	07	32.3	1357			839
1958	PE		1958	08	11.23550	20	15	18.00	-34	07	34.4	1357			839
1958	TR1	*	1958	10	08.93792	23	42.2		+05	22		1463		11.3	024
1958	XZ	*	1958	12	03.86389	03	50	11.39	+17	15	51.6	1328		15.3	024
1959	GZ	*	1959	04	13.94722	15	00	07.27	-25	52	59.1	1368		13.8	076
1959	TX	*	1959	10	03.20852	23	27	09.35	-03	31	32.1	1389		16.1	760
1959	TX		1959	10	03.25157	23	27	07.45	-03	31	35.0	1389			760
1960	BF	*	1960	01	22.12569	08	02	20.68	+22	05	51.8	1445		16.0	760
1960	BF		1960	01	22.17083	08	02	17.91	+22	05	57.5	1445			760
1960	KC	*	1960	05	26.90903	17	35	06.85	-47	27	06.7	1509		15.0	076
1960	OH	*	1960	07	25.92400	18	53	37.02	-28	08	37.9	1523			020
1960	QE	*	1960	08	23.87824	20	36	38.17	-16	43	54.4	1342			020
1960	SH	*	1960	09	20.19098	23	07	10.26	+00	46	54.5	1561		15	760
1961	CJ	*	1961	02	12.95966	09	34	25.39	+17	23	05.2	1358			020
1961	JK	*	1961	05	13.90472	13	22	44.76	-08	48	51.0	1542			020
1961	JK		1961	05	13.93259	13	22	43.49	-08	48	41.9	1542			020
1961	OA	*	1961	07	19.95486	20	50	32.52	-27	12	16.1	1375		15.5	076
1961	PB	*	1961	08	15.21527	22	53	04.78	-08	34	04.6	1481		15.7	760
1961	PB		1961	08	15.27846	22	53	02.65	-08	34	16.9	1481			2 760
1961	QA	*	1961	08	16.58	22	06.8		-07	32		1319		13.5	388
1962	KB	*	1962	05	30.92708	16	32	53.27	-25	09	07.9	1358			076
1962	LA	*	1962	06	06.90625	18	43	10.63	-19	43	09.3	1542		15.5	076
1962	PR	*	1962	08	01.24870	22	06	18.63	-07	59	00.1	1533		16	760
1962	PR		1962	08	01.29783	22	06	16.61	-07	59	16.1	1533			760

1962	PS	*	1962	08	02.24254	20	59	18.03	-22	18	52.3	1558	15.6	760
1962	PS		1962	08	02.31817	20	59	14.56	-22	19	39.6	1558		760
1962	UK	*	1962	10	28.07840	01	01	32.28	+11	44	54.8	1430	15.8	760
1962	UK		1962	10	28.12113	01	01	30.29	+11	44	35.5	1430		760
1962	VH	*	1962	11	01.26627	03	46	26.90	+27	21	17.1	1490	15.6	760
1963	LA	*	1963	06	15.21944	15	34	28.54	-12	11	25.6	1513	16.7	760
1963	NA	*	1963	07	15.95238	16	23	30.23	-19	04	30.7	1357		822
1963	NA		1963	07	15.97870	16	23	29.49	-19	04	33.6	1357		822
1963	VP	*	1963	11	12.21109	04	16	44.25	+23	04	50.3	1358	16.0	760
1963	VP		1963	11	12.25484	04	16	41.91	+23	04	48.1	1358		760
1964	LB	*	1964	06	05.03411	18	41	50.24	-14	15	22.6	1492		012
1964	PR	*	1964	08	10.12	20	26	.4	-27	03		1341	15.0	760
1964	QC	*	1964	08	29.78868	20	15	03.34	-28	39	24.3	1341		095
1964	RM	*	1964	09	10.87334	22	38	01.48	-08	27	09.4	1301		095
1964	RN	*	1964	09	08.02757	01	32	25.27	+10	01	09.3	1494	16.0	095
1964	VB3	*	1964	11	08.94257	01	02	42.10	+28	23	29.1	1507		095
1964	XN	*	1964	12	06.00736	05	57	57.67	+23	13	55.6	1445		095
1965	AN1	*	1965	01	03.55208	04	01	41.51	+17	34	46.6	1307		330
1965	JK	*	1965	05	09.25248	16	17	09.65	-28	09	44.4	1456		808
1965	SZ	*	1965	09	24.04033	00	46	51.37	-05	47	35.6	1549		012
1965	UF2	*	1965	10	30.13681	00	37	26.56	-02	46	46.1	1595	15.7	760
1965	UF2		1965	10	30.17987	00	37	24.59	-02	46	37.2	1595		760
1965	YO	*	1965	12	28.96994	04	24	58.19	+17	38	18.6	1417		020
1965	YO		1965	12	28.99141	04	24	57.70	+17	38	17.5	1417		020
1966	DW	*	1966	02	17.98407	10	12	44.61	+14	31	27.3	1577		020
1966	DW		1966	02	18.02685	10	12	42.41	+14	31	47.7	1577		020
1966	FW	*	1966	03	22.04612	12	13	04.30	-02	27	37.6	1494		020
1966	FW		1966	03	22.07449	12	13	03.06	-02	27	36.8	1494		020
1966	FW		1966	03	25.03863	12	10	14.88	-02	04	19.8	1494		020
1966	FW		1966	03	25.08088	12	10	13.53	-02	04	12.4	1494		020
1966	GC	*	1966	04	14.93281	13	07	21.25	-05	24	41.2	1394		020
1966	GC		1966	04	18.95743	13	03	44.24	-04	57	23.3	1394		020
1966	GC		1966	04	18.95876	13	03	44.30	-04	57	24.9	1394		020
1966	HN	*	1966	04	21.95792	14	29	21.61	-18	19	16.8	979		095
1966	HN		1966	04	27.00274	14	25	39.65	-17	52	12.2	979		095
1966	HO	*	1966	04	27.00274	14	29	14.04	-18	00	20.7	1315		095
1966	HP	*	1966	04	19.00776	14	07	05.75	-08	39	01.2	1350		020
1966	HP		1966	04	21.98883	14	04	57.63	-08	23	37.2	1350		020
1966	HP		1966	04	22.04251	14	04	55.47	-08	23	16.5	1350		020
1966	HQ	*	1966	04	23.11	16	02	.9	-18	36		1302		020
1966	HQ		1966	04	27.01	16	00	.3	-18	39		1302		020
1966	HR	*	1966	04	17.02918	15	16	33.22	+03	18	17.5	1431		095
1966	HS	*	1966	04	23.05642	12	56	59.83	-06	05	29.9	1475		020
1966	HT	*	1966	04	23.05642	13	03	21.87	-06	47	02.1	1408		020
1966	JB	*	1966	05	09.88222	12	49	27.98	-03	15	26.8	1394		020
1966	JB		1966	05	09.90507	12	49	26.31	-03	15	11.4	1394		020
1966	JC	*	1966	05	09.88222	12	46	00.57	-04	31	55.9	1475		020
1966	JC		1966	05	09.90507	12	45	59.04	-04	31	37.3	1475	3	020
1966	JD	*	1966	05	09.88222	12	54	16.43	-05	18	34.6	1408		020
1966	JD		1966	05	09.90507	12	54	17.85	-05	18	24.5	1408		020
1966	KE	*	1966	05	17.02	15	44	.7	-18	08		1302		020
1966	KE		1966	05	21.01	15	41	.6	-17	52		1302		020
1966	KF	*	1966	05	16.86551	12	39	21.53	-18	06	16.9	1426		020
1966	KF		1966	05	16.89461	12	39	21.17	-18	06	12.2	1426		020
1966	KG	*	1966	05	16.98913	15	33	28.53	-16	51	29.1	1539		020
1966	KG		1966	05	17.00853	15	33	27.81	-16	51	22.3	1539		020
1966	KG		1966	05	20.96194	15	29	40.96	-16	42	14.2	1539		020
1966	KG		1966	05	20.98341	15	29	38.67	-16	42	13.1	1539		020
1966	KH	*	1966	05	26.96772	15	25	36.34	-16	27	10.2	1539		020

1966	KH		1966	05	26.98399	15	25	35.84	-16	27	06.9	1539	020
1966	KH		1966	05	27.00166	15	25	34.15	-16	27	00.8	1539	020
1966	LE	*	1966	06	07.90708	15	17	22.47	-16	00	05.9	1539	020
1966	LE		1966	06	07.92769	15	17	21.87	-15	59	56.4	1539	020
1966	LE		1966	06	13.86802	15	13	32.12	-15	47	52.0	1539	020
1966	LE		1966	06	13.89364	15	13	31.12	-15	47	32.8	1539	020
1966	MD	*	1966	06	22.03109	18	18	56.55	-27	21	44.9	1358	020
1966	MD		1966	06	22.99269	18	18	08.72	-27	20	51.7	1358	020
1966	MD		1966	06	23.01433	18	18	07.45	-27	20	29.4	1358	020
1966	ME	*	1966	06	22.93313	17	42	32.02	-23	07	57.7	1535	020
1966	QT	*	1966	08	22.89533	20	05	01.02	-24	59	26.9	1544	095
1966	TR	*	1966	10	13.97721	02	33	21.82	+24	25	48.6	1355	095
1966	TR		1966	10	17.02019	02	32	08.21	+23	40	15.8	1355	095
1966	TS	*	1966	10	06.86204	23	58	32.73	-00	24	16.9	1443	020
1966	TS		1966	10	06.89043	23	58	31.14	-00	24	15.0	1443	020
1966	TS		1966	10	10.90907	23	56	17.25	-00	50	05.8	1443	020
1966	UB1	*	1966	10	18.00	01	21.4		+11	04		1575	020
1966	UB1		1966	10	20.02	01	19.8		+10	40		1575	020
1966	UB1		1966	10	21.89	01	18.1		+10	11		1575	020
1966	UC1	*	1966	10	18.86525	00	45	03.32	+08	46	31.8	1561	095
1966	UD1	*	1966	10	20.02371	02	04	22.95	+07	06	34.9	1511	095
1966	UE1	*	1966	10	21.95162	01	26	48.97	+22	37	08.3	1598	020
1966	UE1		1966	10	21.96270	01	26	48.46	+22	37	09.7	1598	020
1966	WH	*	1966	11	17.85453	02	19	47.29	+12	29	48.0	1305	020
1966	WJ	*	1966	11	17.95293	03	22	36.68	+21	14	46.6	1395	020
1966	WJ		1966	11	17.96747	03	22	35.64	+21	14	57.1	1395	020
1966	WK	*	1966	11	25.21213	06	27	56.80	+22	32	18.5	1487	020
1966	WL	*	1966	11	26.22	05	16.3		+28	17		1448	020
1966	WM	*	1966	11	17.95293	03	15	27.28	+24	06	17.6	1512	020
1966	WM		1966	11	17.96747	03	15	25.84	+24	06	17.6	1512	020
1966	WN	*	1966	11	23.02905	05	29	51.07	+13	01	19.7	1516	095
1966	XD	*	1966	12	15.02763	06	23	47.14	+21	33	50.0	1365	020
1966	XD		1966	12	15.04218	06	23	46.49	+21	33	45.1	1365	020
1966	XE	*	1966	12	09.83	03	06.8		+19	22		1395	020
1966	XF	*	1966	12	15.02763	06	08	40.60	+21	59	57.5	1442	020
1966	XF		1966	12	15.04218	06	08	39.39	+22	00	06.2	1442	020
1966	XG	*	1966	12	06.90056	03	03	39.37	+23	22	22.1	1512	020
1966	XH	*	1966	12	15.02763	06	05	31.60	+21	08	56.0	1551	020
1966	XH		1966	12	15.04218	06	05	30.35	+21	08	59.0	1551	020
1966	YD	*	1966	12	17.04588	07	22	54.99	+20	37	01.0	1363	020
1966	YD		1966	12	17.06043	07	22	53.88	+20	37	01.4	1363	020
1966	YD		1966	12	21.08279	07	20	08.25	+20	41	43.1	1363	020
1966	YE	*	1966	12	17.07892	07	21	22.97	+27	12	22.3	1427	020
1966	YE		1966	12	17.10684	07	21	21.57	+27	12	37.6	1427	020
1966	YE		1966	12	23.13531	07	16	31.30	+27	41	47.0	1427	020
1966	YE		1966	12	23.15678	07	16	30.04	+27	41	47.7	1427	020
1966	YF	*	1966	12	17.04588	07	30	24.63	+20	44	02.8	1595	020
1966	YF		1966	12	17.06043	07	30	23.89	+20	44	18.9	1595	020
1966	YF		1966	12	21.08279	07	27	21.45	+20	55	35.0	1595	020
1966	YG	*	1966	12	23.09376	06	18	57.53	+31	46	22.9	1527	020
1966	YG		1966	12	23.10830	06	18	55.40	+31	46	32.8	1527	020
1967	AA	*	1967	01	04.90367	05	59	36.56	+20	59	08.3	1365	020
1967	AA		1967	01	04.92514	05	59	35.54	+20	59	14.1	1365	020
1967	AB	*	1967	01	03.87379	05	50	00.10	+21	55	10.6	1442	020
1967	AB		1967	01	03.89526	05	49	59.48	+21	55	06.2	1442	020
1967	AB		1967	01	04.90367	05	48	37.72	+21	56	33.8	1442	020
1967	AB		1967	01	04.92514	05	48	36.36	+21	56	38.3	1442	020
1967	AC	*	1967	01	03.87379	05	44	08.61	+21	40	00.2	1551	020
1967	AC		1967	01	04.90367	05	43	04.46	+21	39	22.2	1551	020

1967	AC		1967	01	04.92514	05	43	02.78	+21	39	25.3	1551	020
1967	AD	*	1967	01	03.92608	06	03	18.19	+31	47	52.0	1527	020
1967	AD		1967	01	03.92738	06	03	18.64	+31	47	49.5	1527	020
1967	AD		1967	01	04.82508	06	01	56.02	+31	44	00.9	1527	020
1967	AD		1967	01	04.84309	06	01	55.13	+31	44	06.6	1527	020
1967	CH	*	1967	02	07.94884	09	30	31.94	+12	01	28.0	1374	020
1967	CH		1967	02	18.92429	09	17	56.46	+12	42	02.1	1374	020
1967	CH		1967	02	18.93885	09	17	55.87	+12	42	07.5	1374	020
1967	CJ	*	1967	02	08.05377	10	52	18.10	+06	09	37.2	1376	020
1967	CJ		1967	02	08.06417	10	52	17.52	+06	09	42.7	1376	020
1967	CK	*	1967	02	08.05377	10	48	21.85	+05	43	08.4	1536	020
1967	CK		1967	02	08.06417	10	48	20.98	+05	43	12.0	1536	020
1967	EG1	*	1967	03	08.89941	09	36	47.62	+18	40	04.3	1482	095
1967	EH1	*	1967	03	11.87329	11	26	54.72	-14	12	02.4	1499	020
1967	EH1		1967	03	11.88714	11	26	53.69	-14	12	06.8	1499	020
1967	EH1		1967	03	15.94480	11	23	23.09	-13	50	16.5	1499	020
1967	EH1		1967	03	15.95520	11	23	21.45	-13	50	10.5	1499	020
1967	EJ1	*	1967	03	14.02282	13	19	41.57	+04	47	15.8	1455	020
1967	EJ1		1967	03	14.05260	13	19	40.42	+04	47	12.0	1455	020
1967	KE	*	1967	05	30.91633	14	34	54.39	-12	49	19.7	1377	020
1967	KE		1967	05	30.93019	14	34	53.20	-12	49	20.9	1377	020
1967	KE		1967	06	10.87235	14	34	48.35	-12	48	42.4	1377	020
1967	KE		1967	06	10.89451	14	34	48.11	-12	48	46.6	1377	020
1967	KF	*	1967	05	30.91633	14	33	07.02	-16	30	27.1	1424	020
1967	LA	*	1967	06	10.87235	14	27	30.99	-16	25	42.8	1424	020
1967	LA		1967	06	10.89451	14	27	30.08	-16	25	43.4	1424	020
1967	MA	*	1967	06	30.89592	16	45	22.83	-17	38	48.1	1577	020
1967	MA		1967	06	30.90977	16	45	22.03	-17	38	49.7	1577	020
1967	MA		1967	07	05.92352	16	41	40.36	-17	43	49.6	1577	020
1967	NC	*	1967	07	05.99054	18	25	11.71	-23	24	50.4	1336	020
1967	NC		1967	07	08.82596	18	22	25.09	-23	30	51.9	1336	020
1967	NC		1967	07	08.95160	18	22	24.31	-23	30	49.1	1336	020
1967	ND	*	1967	07	11.07166	21	07	39.61	-12	27	11.1	1420	020
1967	ND		1967	07	11.09521	21	07	38.92	-12	27	17.8	1420	020
1967	ND		1967	07	12.97977	21	06	05.17	-12	32	40.1	1420	020
1967	NE	*	1967	07	05.99001	18	35	57.67	-25	03	50.5	1582	020
1967	NE		1967	07	08.92596	18	33	04.32	-25	15	12.9	1582	020
1967	NE		1967	07	08.95160	18	33	03.41	-25	15	09.4	1582	020
1967	NF	*	1967	07	08.91592	18	05	41.60	-22	44	21.1	1588	020
1967	NF		1967	07	08.93600	18	05	40.35	-22	44	24.0	1588	020
1967	NG	*	1967	07	08.91592	18	10	51.16	-24	07	19.3	1531	020
1967	NG		1967	07	08.93600	18	10	49.97	-24	07	18.9	1531	020
1967	PF	*	1967	08	01.94469	20	27	59.20	-10	53	34.3	1533	020
1967	PF		1967	08	01.96616	20	27	58.64	-10	53	15.0	1533	020
1967	PG	*	1967	08	01.95520	20	39	16.86	-18	23	55.0	1562	020
1967	PG		1967	08	01.97667	20	39	16.00	-18	23	59.0	1562	020
1967	PG		1967	08	03.90028	20	37	22.56	-18	34	35.9	1562	020
1967	PG		1967	08	03.91967	20	37	21.73	-18	34	38.1	1562	020
1967	PH	*	1967	08	03.86911	20	26	42.81	-11	12	48.1	1533	020
1967	PH		1967	08	03.88573	20	26	41.85	-11	12	47.9	1533	020
1967	PH		1967	08	08.94491	20	23	08.75	-11	42	54.4	1533	020
1967	PH		1967	08	08.95944	20	23	06.95	-11	42	50.2	1533	020
1967	PJ	*	1967	08	10.96069	21	40	37.55	-15	15	33.2	1523	020
1967	PJ		1967	08	10.97177	21	40	36.22	-15	15	31.0	1523	020
1967	PK	*	1967	08	15.03147	22	19	14.20	-13	30	33.4	1553	020
1967	PK		1967	08	15.04294	22	19	14.16	-13	30	32.8	1553	020
1967	SD	*	1967	09	26.93526	23	16	36.45	-04	15	00.4	1394	020
1967	SD		1967	09	26.95188	23	16	35.61	-04	15	07.2	1394	020
1967	TN	*	1967	10	09.02150	02	02	43.43	+33	00	38.0	1318	15.5 026

1967	UW	*	1967	10	31.98610	03	47	48.62	+36	09	06.6	1521		095
1967	VB	*	1967	11	08.00520	03	31	52.46	+18	00	25.2	1327		012
1967	VB		1967	11	08.03359	03	31	49.94	+18	00	31.3	1327		012
1967	XC	*	1967	12	04.93845	05	35	33.01	+20	31	21.9	1331		020
1967	XC		1967	12	04.96959	05	35	31.49	+20	31	04.4	1331		020
1968	AC	*	1968	01	03.90815	05	16	15.09	+34	30	03.6	1325		020
1968	AC		1968	01	03.92339	05	16	13.95	+34	30	15.0	1325		020
1968	AD	*	1968	01	02.86657	05	27	01.29	+15	32	59.2	1432		020
1968	AD		1968	01	02.89348	05	27	00.61	+15	32	58.3	1432		020
1968	AE	*	1968	01	06.08745	06	08	31.19	+20	45	15.3	1443		020
1968	AE		1968	01	06.10130	06	08	29.99	+20	45	04.6	1443		020
1968	BL	*	1968	01	27.97369	07	34	08.61	+24	09	15.9	1430		020
1968	BL		1968	01	27.99516	07	34	07.49	+24	09	26.3	1430		020
1968	BM	*	1968	01	27.97369	07	43	04.42	+24	53	21.4	1592		020
1968	BM		1968	01	27.99516	07	43	03.77	+24	53	23.6	1592		020
1968	FT	*	1968	03	29.93766	12	56	00.07	-05	14	32.4	1352		020
1968	FT		1968	03	29.95497	12	55	59.91	-05	14	30.0	1352		020
1968	FU	*	1968	03	29.93766	12	57	14.66	-04	13	29.3	1440		020
1968	FU		1968	03	29.95497	12	57	13.99	-04	13	22.1	1440		020
1968	FV	*	1968	03	29.97297	14	05	23.18	-06	28	48.1	1450		020
1968	FV		1968	03	29.98336	14	05	22.58	-06	28	38.8	1450		020
1968	FW	*	1968	03	29.93766	12	50	10.07	-04	39	51.2	1527		020
1968	FW		1968	03	29.95497	12	50	09.43	-04	39	44.2	1527		020
1968	KV	*	1968	05	24.85793	13	42	34.35	+04	14	14.6	1357		095
1968	MB	*	1968	06	17.82431	17	02	48.80	-34	50	43.5	1532	15.5	076
1968	OM1	*	1968	07	25.90082	19	50	07.09	-24	40	37.2	1444		095
1968	QZ1	*	1968	08	25.98470	18	23	52.41	-01	22	14.0	1400	16.5	026
1968	QA2	*	1968	08	22.10300	23	56	45.94	+01	27	06.2	1415		020
1968	QA2		1968	08	22.12169	23	56	44.88	+01	27	09.0	1415		020
1968	QB2	*	1968	08	17.04093	22	16	45.94	-20	28	45.6	1558		020
1968	QB2		1968	08	17.04993	22	16	45.26	-20	28	51.6	1558		020
1968	QB2		1968	08	19.07515	22	15	08.42	-20	44	26.0	1558		020
1968	QB2		1968	08	19.10978	22	15	07.66	-20	44	37.1	1558		020
1968	QC2	*	1968	08	30.88884	21	07	19.66	-24	49	46.3	1549		020
1968	QC2		1968	08	30.90477	21	07	19.28	-24	49	47.2	1549		020
1968	RB	*	1968	09	02.07433	23	47	52.73	+00	52	35.9	1415		020
1968	RB		1968	09	02.08749	23	47	52.22	+00	52	26.1	1415		020
1968	SD	*	1968	09	16.91814	22	49	57.91	-16	33	43.5	1500		020
1968	SD		1968	09	16.93753	22	49	56.88	-16	33	45.4	1500		020
1968	SE	*	1968	09	16.88490	20	58	11.70	-25	03	37.0	1549		020
1968	SE		1968	09	16.90359	20	58	10.86	-25	03	38.3	1549		020
1968	SF	*	1968	09	17.01996	00	24	30.43	-15	12	21.9	1582		020
1968	SF		1968	09	17.02896	00	24	29.79	-15	12	16.3	1582		020
1968	SG	*	1968	09	22.87745	20	58	29.47	-24	55	33.0	1549		020
1968	SG		1968	09	22.89268	20	58	28.80	-24	55	30.6	1549		020
1968	SH	*	1968	09	25.07008	01	39	00.67	-01	19	11.3	1528		020
1968	SH		1968	09	25.08393	01	38	59.49	-01	19	08.5	1528	4	020
1968	SH		1968	09	27.02652	01	37	36.05	-01	34	22.5	1528		020
1968	SH		1968	09	27.03898	01	37	35.02	-01	34	15.8	1528		020
1968	SJ	*	1968	09	30.02636	01	35	15.79	-01	58	42.7	1528		020
1968	SJ		1968	09	30.03522	01	35	15.03	-01	58	47.9	1528		020
1968	TP	*	1968	10	02.06775	02	46	14.03	+12	40	53.0	1472		095
1969	CB	*	1969	02	11.01368	08	43	43.16	+11	54	01.6	1561	5	020
1969	CB		1969	02	11.02476	08	43	41.99	+11	54	07.1	1561	5	020
1969	DE	*	1969	02	17.94443	09	25	15.50	+15	06	06.8	1383		020
1969	DE		1969	02	17.95759	09	25	14.74	+15	06	14.3	1383		020
1969	DF	*	1969	02	18.00814	10	56	17.51	+10	10	17.7	1396		020
1969	DF		1969	02	18.02268	10	56	16.84	+10	10	16.5	1396		020
1969	DG	*	1969	02	17.97906	10	07	37.42	+14	03	09.0	1470		020

1969	DG		1969	02	17.99360	10	07	36.16	+14	03	15.1	1470		020
1969	DH	*	1969	02	18.00814	10	50	44.47	+11	26	50.5	1418		020
1969	DH		1969	02	18.02268	10	50	43.54	+11	26	51.5	1418		020
1969	DJ	*	1969	02	18.04242	10	26	16.14	+18	29	11.1	1517		020
1969	DJ		1969	02	18.05350	10	26	16.14	+18	29	19.7	1517		020
1969	EE2	*	1969	03	13.86884	10	32	26.99	+11	36	59.7	1358		095
1969	HF	*	1969	04	23.88671	12	22	30.76	+03	33	07.6	1514		020
1969	HF		1969	04	23.91164	12	22	29.82	+03	33	20.9	1514		020
1969	JS	*	1969	05	08.81181	16	04	43.48	-16	04	34.2	1600	15.3	076
1969	JS		1969	05	23.98661	15	38	55.41	-19	08	08.1	1600		020
1969	JS		1969	05	24.00530	15	38	53.34	-19	08	36.5	1600		020
1969	JT	*	1969	05	12.98881	14	05	35.68	-21	45	01.5	1525		020
1969	JT		1969	05	13.00058	14	05	35.05	-21	44	57.8	1525		020
1969	MH	*	1969	06	20.01086	19	08	50.08	-22	37	45.7	1487		020
1969	MH		1969	06	20.02402	19	08	49.00	-22	37	45.1	1487		020
1969	MJ	*	1969	06	20.01086	18	48	09.04	-21	49	59.2	1576		020
1969	MJ		1969	06	20.02402	18	48	08.21	-21	49	55.3	1576		020
1969	QV	*	1969	08	20.03236	22	40	00.86	-07	35	33.5	1532		020
1969	QV		1969	08	20.04759	22	40	00.01	-07	35	30.4	1532		020
1969	QV		1969	08	22.02499	22	38	31.80	-07	37	25.4	1532		020
1969	QV		1969	08	22.04023	22	38	31.09	-07	37	26.5	1532		020
1969	RP2	*	1969	09	01.92449	21	33	19.26	-15	48	37.9	1382		020
1969	RP2		1969	09	01.93211	21	33	18.66	-15	48	31.1	1382		020
1969	RP2		1969	09	05.92776	21	29	38.33	-15	59	23.1	1382		020
1969	RP2		1969	09	05.93884	21	29	37.38	-15	59	25.7	1382		020
1969	RQ2	*	1969	09	05.92776	21	33	20.87	-12	45	09.6	1433		020
1969	RQ2		1969	09	05.93884	21	33	20.13	-12	45	12.9	1433		020
1969	XH	*	1969	12	09.05305	06	35	26.38	+28	57	33.2	1374		020
1969	XH		1969	12	09.06413	06	35	25.65	+28	57	32.9	1374		020
1969	XJ	*	1969	12	08.99180	05	02	40.44	+17	24	27.9	1499	6	020
1969	XJ		1969	12	08.99418	05	02	39.59	+17	24	33.8	1499	6	020
1970	CR	*	1970	02	11.05990	08	25	50.57	+16	19	57.3	1376		805
1970	CR		1970	02	11.07029	08	25	50.01	+16	20	03.8	1376		805
1970	CR		1970	02	11.08068	08	25	49.44	+16	20	09.6	1376		805
1970	ES3	*	1970	03	08.20324	11	26	43.26	-01	21	25.2	1555		805
1970	ES3		1970	03	08.21363	11	26	42.60	-01	21	23.3	1555		805
1970	ES3		1970	03	08.22408	11	26	42.03	-01	21	21.9	1555		805
1970	JS	*	1970	05	07.28052	15	16	41.05	-36	54	40.9	1406		805
1970	JS		1970	05	07.29091	15	16	40.55	-36	54	41.1	1406		805
1970	JS		1970	05	07.30130	15	16	40.02	-36	54	41.4	1406		805
1970	SQ1	*	1970	09	30.89758	23	13	06.22	-08	18	55.9	1318		095
1970	VA	*	1970	11	04.01368	02	45	29.85	+07	02	22.6	1514		020
1970	VA		1970	11	04.02268	02	45	28.65	+07	02	19.3	1514		020
1971	AA	*	1971	01	06.87576	05	31	19.12	+26	41	43.2	1332		020
1971	AA		1971	01	06.88684	05	31	17.60	+26	41	46.2	1332		020
1971	AB	*	1971	01	06.87576	05	29	29.78	+25	49	18.4	1382		020
1971	AB		1971	01	06.88684	05	29	29.10	+25	49	16.4	1382		020
1971	BE4	*	1971	01	20.92039	07	49	12.58	+33	47	21.8	1424		095
1971	DF2	*	1971	02	24.03107	10	39	50.34	-02	07	46.4	1315		020
1971	DF2		1971	02	24.04008	10	39	50.14	-02	07	39.5	1315		020
1971	DG2	*	1971	02	23.95923	10	08	42.53	+07	52	10.3	1542		020
1971	DG2		1971	02	23.96823	10	08	42.01	+07	52	14.3	1542		020
1971	MK	*	1971	06	28.91177	15	56	23.96	-21	09	43.5	1420		020
1971	MK		1971	06	28.93394	15	56	23.41	-21	09	39.0	1420		020
1971	OW1	*	1971	07	30.96742	20	44	36.16	-18	35	00.3	1331	14.6	020
1971	OW1		1971	07	30.97660	20	44	35.73	-18	34	59.5	1331		020
1971	OX1	*	1971	07	30.98543	21	20	48.32	-08	20	56.0	1561		020
1971	OX1		1971	07	30.99305	21	20	48.08	-08	20	55.4	1561		020
1971	QM3	*	1971	08	16.88403	21	05	05.20	-34	19	21.7	1388	15.3	076

1971	QN3	*	1971 08 25.04736	23 59 27.11	-09 07 36.4	1518					020
1971	QN3		1971 08 25.06017	23 59 26.53	-09 07 38.1	1518					020
1971	QO3	*	1971 08 30.84152	20 58 37.49	-10 27 37.3	1561					073
1971	QO3		1971 08 30.85329	20 58 36.42	-10 27 39.0	1561					073
1972	NZ	*	1972 07 09.86806	20 21 03.88	-11 38 36.6	1329			13.5		076
1972	RB4	*	1972 09 04.84898	22 29 56.70	-17 17 25.2	1527					073
1972	RB4		1972 09 04.86145	22 29 56.14	-17 17 23.1	1527					073
1972	VS1	*	1972 11 09.71266	00 15 06.10	+10 39 40.9	1347					073
1972	VS1		1972 11 09.72512	00 15 05.70	+10 39 46.1	1347					073
1972	XQ2	*	1972 12 01.87934	04 11 16.10	+17 38 59.0	1549					095
1973	AX4	*	1973 01 03.88507	06 23 52.40	+17 59 57.4	1376					095
1973	BE	*	1973 01 23.82764	05 21 50.22	+34 59 23.0	1540					020
1973	BE		1973 01 23.84426	05 21 49.65	+34 59 21.7	1540					020
1973	KB	*	1973 05 30.83611	16 20 23.69	-27 03 23.7	1424			14.8		076
1973	QG2	*	1973 08 31.96624	00 06 21.04	-03 32 03.1	1446					095
1973	QG2		1973 09 05.96725	00 03 19.07	-03 50 58.5	1446					095
1973	RG	*	1973 09 04.00314	23 18 29.01	-06 30 49.5	1541					020
1973	RG		1973 09 04.02045	23 18 27.78	-06 30 47.9	1541					020
1973	UD6	*	1973 10 26.80789	00 11 56.76	-04 33 14.4	1375					095
1973	YJ4	*	1973 12 26.00970	08 52 29.91	+12 20 47.2	1365					095
1973	YK4	*	1973 12 30.18840	09 54 42.23	+02 21 29.4	1531			18.0		026
1974	CP1	*	1974 02 11.71597	09 26 22.45	-00 01 26.0	1531					323
1974	CP1		1974 02 11.73264	09 26 20.78	-00 01 25.6	1531					323
1974	FA2	*	1974 03 22.57083	09 20 21.74	-02 28 12.7	1347					323
1974	QR3	*	1974 08 23.01583	00 23 12.10	-03 21 53.5	1562					095
1974	SE5	*	1974 09 23.87482	23 29 40.64	+01 26 57.9	1523					095
1974	VH3	*	1974 11 09.14410	03 13 52.85	+02 48 39.9	1369					788
1974	VH3		1974 11 09.19271	03 13 50.12	+02 47 55.6	1369					788
1975	EC6	*	1975 03 10.96480	09 48 48.47	+09 56 28.1	1422					020
1975	EC6		1975 03 10.97657	09 48 47.76	+09 56 36.7	1422					020
1975	LC1	*	1975 06 12.86250	18 17 49.13	-33 58 09.4	1421			15.0		076
1975	WB2	*	1975 11 21.73056	01 12 50.21	+08 02 46.5	1363			16.3		026
1976	PK	*	1976 08 01.96562	21 42 42.44	-17 49 28.9	1976	OJ1		16.5		095
1977	QF5	*	1977 08 24.00592	00 36 28.14	+03 32 08.7	1380			17.5		095
1977	QG5	*	1977 08 16.81736	19 51 52.59	-14 32 46.7	1456			15.5		076
1977	QH5	*	1977 08 18.83160	18 45 26.50	-14 37 45.4	1419					095
1978	GA5	*	1978 04 11.93652	13 57 55.84	-09 03 12.6	1445					095
1983	RG3	*	1983 09 09.15971	22 18 37.22	-07 25 48.9	1983	RJ1				801

Note 1: these observations were redesignated 1955 US1 from 1923 OD on MPC 1598; the designation 1955 OD on MPC 2587 was a typographical error; see also MPC 7982. 2: date originally erroneously given as 1961 08 15.57846. 3: R.A. originally given as 12 46 59.04. 4: R.A. originally given as 01 39 59.49. 5: date originally given as 1968 02 11. 6: date originally given as 1969 11 08.

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IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 8482.

	Note		Note		Note
1948 SK = (1848)	1	1949 KC = (1315)	1	1949 YE1 = (465)	2
1950 KK = (597)	2	1950 KL = (1366)	2	1953 YK = (1368)	1
1953 YM = (1452)	1	1963 PE = (653)	2	1966 HN = (1315)	2
1966 HO = (979)	2	1973 YG4 = (1365)	1	1978 GC4 = (1445)	2

Note 1: identification by B. G. Marsden. 2: by C. M. Bardwell.

ERRONEOUS IDENTIFICATIONS.

The following identifications with numbered planets are incorrect. If no note is given, reference can be made to Strobel (1963, Veroff. Astron. Rechen-Inst. No. 9).

	Note		Note		Note
A891 YA = (1517)		A904 EA = (1605)		A918 PA = (1346)	
1925 WF = (1336)		1932 EM = (1336)		1933 DA = (1530)	
1933 FB1 = (1493)		1934 XH = (1578)		1935 SW = (1517)	
1935 US = (1636)	1	1940 TM = (1703)	2	1945 WC = (1378)	
1947 UB = (1611)	3	1949 UD1 = (1633)	4	1951 PA = (1593)	
1953 PJ = (1624)		1954 WN = (1838)	5	1955 FH1 = (1506)	
1957 JE1 = (1357)		1957 OU = (1314)		1963 VC = (1542)	6
1971 UF2 = (1335)	7				

Note 1: the correct discovery designation for (1636) is 1950 BH. 2: reference MPC 4657. 3: MPC 2324. 4: MPC 2325. 5: MPC 5333. 6: MPC 2506. 7: MPC 6486.

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

017 Hoher List Observatory. Observers M. Geffert and E. H. Geyer. Measured and reduced by Geffert.
022 Pino Torinese. Observers G. De Sanctis, G. Massone and V. Zappala.
024 Heidelberg-Konigstuhl. Bruce 0.40-m astrograph. Observers H. Mandel, U. Gorze and G. Klare.
046 Klet. Observer A. Mrkos.
051 South African Astronomical Observatory, Cape Town. 0.33-m astrograph. Observers J. Churms, I. Bassett and P. Mack.
085 Kiev. Observers C. P. Major, E. M. Sereda, G. V. Moroz, E. M. Izhakevich, G. A. Ivanov and A. I. Yatsenko. From Kiev Komet. Tsirk. No. 318.
095 Crimean Astrophysical Observatory. Observer N. S. Chernykh.
292 Burlington, New Jersey. Observer T. Handley. Long. and Parallax 285.11, -327, -273 (see MPC 7759).
323 Perth Observatory, Bickley. Observers M. P. Candy, V. Candy, P. Jekabsons, J. Johnston and M. Sultana.
330 Purple Mountain Observatory. Observers J.-x. Zhang, Q. Wang and Y.-L. Ge.
372 Geisei. Observer T. Seki. In part from Orient. Astron. Assoc. Comet Bull. No. 258.
413 Siding Spring. U.K. Schmidt. Observers K. S. Russell and M. Hawkins.
474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh and W. M. Kissling).
489 Hemingford Abbots. Observer A. Young. Measured by R. McNaught. Communicated by G. M. Hurst.
494 Stakenbridge. Observer B. Manning.
502 Colchester. Observer M. J. Hendrie.
552 Osservatorio S. Vittore. Communicated by E. Colombini.
571 Pic du Midi. 0.6-m reflector. Observers J.-C. Merlin, D. Fayard and P. Dupont. Measured and reduced by Merlin and R. Chemin. Communicated by J.-L. Heudier. Long. and Parallax 0.14, -313, -289 (see MPC 7759).

657 Victoria. Observer D. Balam and J. B. Tatum.
675 Palomar. The observations of comets 1983j and 1983l on 1983 Sept. 6-8 were made by C. S. Shoemaker and E. M. Shoemaker with the 0.46-m Schmidt. All the remaining observations were made by J. Gibson with the 1.2-m Schmidt (with the 1.5-m reflector for comet 1984d on Mar. 12).
688 Lowell Observatory, Anderson Mesa Station. Observers B. Skiff and E. Bowell. Measured by Bowell.
695 Kitt Peak. 4-m reflector. Observers M. J. S. Belton, H. Spinrad, P. A. Wehinger and S. Wyckoff.
707 Chamberlin Observatory, field station. 0.40-m f/5.5 reflector. Observers E. Everhart and S. Siegel.
801 Oak Ridge Observatory. 1.5-m reflector (0.4-m astrograph for comet 1984d on Mar. 12). Observers R. E. McCrosky, C.-Y. Shao and G. Schwartz (assisted by C. M. Bardwell and B. G. Marsden).
805 Cerro El Roble. Observer C. Torres.
808 Felix Aguilar Observatory, El Leoncito Station. Observer J. G. Sanguin.
809 European Southern Observatory. 0.4-m astrograph. Observers H. Debehogne and E. R. Netto.
811 Maria Mitchell Observatory, Nantucket. Observer D. Silverwood.
984 Eastfield. Observer H. B. Ridley. Measured by M. J. Hendrie.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Smirnova-Chernykh					
/1975 VII	1984	02 01.40133	11 59 11.80	+09 18 43.0			801
/1975 VII	1984	02 01.75278	11 59 08.86	+09 19 55.8			323
/1975 VII	1984	02 27.73356	11 49 29.73	+11 03 48.6			323
/1975 VII	1984	03 01.32181	11 48 02.41	+11 15 12.1			801
		Periodic Comet Stephan-Oterma					
/1980 X	1980	09 09.34809	03 58 44.60	-00 34 09.6			801
		Periodic Comet Kearns-Kwee					
/1981 XX	1981	12 31.03958	06 34 47.70	+32 56 45.0			489
/1981 XX	1981	12 31.05347	06 34 47.16	+32 56 40.9			489
/1981 XX	1981	12 31.93993	06 34 04.78	+32 52 40.0			489
		Comet Bowell (1982 I)					
/1982 I	1983	11 28.13822	21 58 46.77	-13 30 43.7			675
		Periodic Comet Tempel 2					
/1982d	1983	07 11.11152	01 41 29.24	-00 24 08.2			571
/1982d	1983	07 11.11832	01 41 30.33	-00 24 04.9			571
/1982d	1983	09 17.06004	03 15 16.24	-04 56 12.0			085
/1982d	1983	09 17.06005	03 15 16.29	-04 56 13.2			085
/1982d	1983	09 20.08880	03 15 00.58	-05 22 21.7			085
		Periodic Comet Halley					
/1982i	1984	03 04.2490	05 57 18.12	+11 41 43.4	24	N	695
		Periodic Comet Tempel 1					
/1982j	1983	04 12.24653	12 50 19.15	+15 52 49.7			801
		Periodic Comet Kopff					
/1982k	1983	07 09.92798	15 31 04.03	-13 05 17.9			571
/1982k	1983	07 09.93135	15 31 04.46	-13 05 21.4			571
/1982k	1983	07 09.93683	15 31 04.54	-13 05 23.2			571
/1982k	1983	07 09.94291	15 31 04.83	-13 05 26.0			571

/1982k	1983	07	10.90840	15	31	54.65	-13	15	15.0	571
/1982k	1983	07	10.91757	15	31	55.04	-13	15	21.6	571
			Periodic Comet IRAS							
/1983j	1983	09	06.46180	01	13	38.07	+15	42	22.6	675
/1983j	1983	09	06.47500	01	13	36.29	+15	42	59.9	675
/1983j	1983	09	07.39027	01	11	39.33	+16	26	39.1	675
/1983j	1984	02	22.15698	00	57	09.42	+52	14	20.2	801
			Comet IRAS (1983k)							
/1983k	1983	08	01.34977	12	07	52.72	-39	04	59.5	16.4N 474
/1983k	1983	08	01.37153	12	07	53.60	-39	04	30.5	474
/1983k	1984	03	06.64416	12	10	29.79	-15	50	24.7	16 T 413
/1983k	1984	03	06.68583	12	10	26.79	-15	49	47.6	413
/1983k	1984	03	07.76470	12	08	47.77	-15	33	06.8	413
			Comet Cernis (1983l)							
/1983l	1983	08	31.95195	02	19	08.45	-00	57	27.8	085
/1983l	1983	09	02.04031	02	17	51.18	-01	23	56.6	085
/1983l	1983	09	02.06813	02	17	49.23	-01	24	37.2	085
/1983l	1983	09	02.99274	02	16	41.94	-01	47	21.2	085
/1983l	1983	09	03.00789	02	16	40.81	-01	47	44.7	085
/1983l	1983	09	03.03351	02	16	38.88	-01	48	23.2	085
/1983l	1983	09	04.07207	02	15	21.05	-02	14	16.9	085
/1983l	1983	09	04.28097	02	15	05.24	-02	19	28.3	809
/1983l	1983	09	04.28928	02	15	04.58	-02	19	41.1	809
/1983l	1983	09	04.29759	02	15	03.92	-02	19	53.9	809
/1983l	1983	09	07.38775	02	10	58.53	-03	38	52.2	809
/1983l	1983	09	07.39606	02	10	57.85	-03	39	05.1	809
/1983l	1983	09	07.40437	02	10	57.19	-03	39	18.1	809
/1983l	1983	09	08.40648	02	09	33.53	-04	05	27.0	809
/1983l	1983	09	08.41220	02	09	33.06	-04	05	35.9	809
/1983l	1983	09	08.47083	02	09	28.25	-04	07	10.1	675
/1983l	1983	09	08.49583	02	09	26.12	-04	07	52.4	675
/1983l	1983	09	12.37410	02	03	43.90	-05	51	16.6	809
/1983l	1983	09	12.37963	02	03	43.43	-05	51	25.5	809
/1983l	1983	09	12.38518	02	03	42.93	-05	51	34.3	809
/1983l	1983	09	15.38529	01	58	59.13	-07	13	34.8	809
/1983l	1983	09	15.39083	01	58	58.59	-07	13	43.8	809
/1983l	1983	09	15.39637	01	58	58.03	-07	13	52.9	809
/1983l	1983	09	16.39296	01	57	19.98	-07	41	24.6	809
/1983l	1983	09	16.39849	01	57	19.43	-07	41	33.8	809
/1983l	1983	09	16.40404	01	57	18.88	-07	41	43.0	809
/1983l	1983	09	16.98020	01	56	21.56	-07	57	46.9	085
/1983l	1983	09	17.00756	01	56	18.82	-07	58	31.5	085
/1983l	1983	09	17.02619	01	56	16.80	-07	59	03.3	085
/1983l	1983	09	17.39991	01	55	39.21	-08	09	21.6	809
/1983l	1983	09	17.40407	01	55	38.79	-08	09	28.3	809
/1983l	1983	09	17.40823	01	55	38.37	-08	09	35.1	809
/1983l	1983	09	18.40135	01	53	57.33	-08	37	15.1	809
/1983l	1983	09	18.40550	01	53	56.91	-08	37	22.0	809
/1983l	1983	09	18.40966	01	53	56.49	-08	37	28.9	809
/1983l	1983	09	20.00275	01	51	11.25	-09	22	06.2	085
/1983l	1983	09	20.01968	01	51	09.45	-09	22	35.4	085
/1983l	1983	09	20.04400	01	51	06.85	-09	23	15.5	085
/1983l	1983	10	07.29063	01	17	43.41	-17	15	47.4	292
/1983l	1983	12	04.47150	23	46	00.41	-30	19	06.7	14.2N 474
/1983l	1983	12	04.47648	23	46	00.20	-30	19	07.7	474
/1983l	1984	02	02.51944	23	40	46.84	-30	49	08.0	323

Periodic Comet Crommelin

/1983n	1984	01	31.98984	23	25	02.87	+04	25	02.1			801
/1983n	1984	02	01.96810	23	29	25.93	+04	17	39.7			801
/1983n	1984	02	02.69578	23	32	43.82	+04	11	54.2			095
/1983n	1984	02	02.71864	23	32	50.06	+04	11	43.2			095
/1983n	1984	02	03.70874	23	37	22.00	+04	03	24.2			095
/1983n	1984	02	03.71221	23	37	22.75	+04	03	23.8			095
/1983n	1984	02	06.68484	23	51	21.12	+03	35	08.8			095
/1983n	1984	02	06.68860	23	51	22.16	+03	35	08.0			095
/1983n	1984	02	06.75139	23	51	40.47	+03	34	27.5			022
/1983n	1984	02	06.76042	23	51	43.14	+03	34	23.4			022
/1983n	1984	02	08.98694	00	02	30.78	+03	09	35.3			801
/1983n	1984	02	10.75347	00	11	16.55	+02	47	36.4			022
/1983n	1984	02	10.75903	00	11	18.06	+02	47	34.0			022
/1983n	1984	02	12.75961	00	21	25.34	+02	19	59.3			024
/1983n	1984	02	18.74794	00	52	56.57	+00	39	51.1		8.5T	046
/1983n	1984	02	18.75244	00	52	58.12	+00	39	45.2			046
/1983n	1984	02	18.76840	00	53	03.0	+00	39	29			017
/1983n	1984	02	18.78368	00	53	08.4	+00	39	11			017
/1983n	1984	02	18.79653	00	53	12.57	+00	38	55.0		10 T	494
/1983n	1984	02	19.76271	00	58	27.06	+00	20	14.8			017
/1983n	1984	02	19.76657	00	58	28.4	+00	20	09			017
/1983n	1984	02	20.10139	01	00	18.43	+00	13	29.6			707
/1983n	1984	02	20.51111	01	02	32.92	+00	05	24.8			323
/1983n	1984	02	21.10035	01	05	47.41	-00	06	52.7			688
/1983n	1984	02	21.10660	01	05	49.44	-00	06	57.5			688
/1983n	1984	02	21.11528	01	05	52.03	-00	07	06.1			688
/1983n	1984	02	22.11346	01	11	23.80	-00	28	08.6			675
/1983n	1984	02	22.76985	01	15	03.06	-00	42	08.5			051
/1983n	1984	02	22.77766	01	15	05.61	-00	42	16.9			051
/1983n	1984	02	22.78171	01	15	06.74	-00	42	23.8			051
/1983n	1984	02	24.50208	01	24	47.42	-01	21	06.6			323
/1983n	1984	02	27.50000	01	41	56.70	-02	32	57.0			323
/1983n	1984	02	27.75781	01	43	25.83	-02	39	32.7			046
/1983n	1984	02	28.51875	01	47	51.25	-02	58	34.1			323
/1983n	1984	02	28.78183	01	49	23.22	-03	05	12.9			051
/1983n	1984	02	28.78785	01	49	25.54	-03	05	25.5			051
/1983n	1984	02	29.02811	01	50	49.69	-03	11	35.8		1	805
/1983n	1984	02	29.03159	01	50	50.80	-03	11	39.4		1	805
/1983n	1984	02	29.03853	01	50	53.20	-03	11	50.3		1	805
/1983n	1984	02	29.42326	01	53	08.35	-03	21	54.4		8.5T	372
/1983n	1984	02	29.51875	01	53	41.86	-03	24	12.0			323
/1983n	1984	03	02.00994	02	02	29.47	-04	03	29.4			801
/1983n	1984	03	03.77263	02	12	59.18	-04	50	39.8			051
/1983n	1984	03	03.98277	02	14	15.07	-04	56	38.1			801
/1983n	1984	03	06.10347	02	27	03.55	-05	55	03.5			688
/1983n	1984	03	06.10556	02	27	04.15	-05	55	06.4			688
/1983n	1984	03	06.11667	02	27	08.33	-05	55	26.0			688
/1983n	1984	03	06.11840	02	27	08.96	-05	55	29.6			688
/1983n	1984	03	06.75779	02	31	02.65	-06	13	19.8			046
/1983n	1984	03	06.76057	02	31	03.25	-06	13	23.1			046
/1983n	1984	03	06.77986	02	31	10.67	-06	13	57.8			022
/1983n	1984	03	06.78542	02	31	12.44	-06	14	06.8			022
/1983n	1984	03	06.79097	02	31	14.65	-06	14	16.8			022
/1983n	1984	03	06.99512	02	32	29.75	-06	20	00.6			801
/1983n	1984	03	07.76539	02	37	12.78	-06	41	23.0			051
/1983n	1984	03	11.14145	02	58	09.56	-08	16	47.8			675
/1983n	1984	03	14.77436	03	21	07.82	-09	58	08.1			051

/1983n	1984	03	21.15025	04	02	19.14	-12	46	29.4		675
/1983n	1984	03	22.13647	04	08	45.67	-13	10	39.0		675
/1983n	1984	03	26.01443	04	34	10.86	-14	39	10.5		808
/1983n	1984	03	26.41088	04	36	46.43	-14	47	38.2		413
/1983n	1984	03	26.42436	04	36	51.69	-14	47	54.6		413
/1983n	1984	03	26.46603	04	37	07.90	-14	48	48.6		413
/1983n	1984	03	27.02282	04	40	46.77	-15	00	34.9		811
/1983n	1984	03	28.48233	04	50	20.45	-15	30	01.5	13 T	330
/1983n	1984	03	28.49656	04	50	25.89	-15	30	14.0		330
/1983n	1984	03	28.50802	04	50	31.11	-15	30	27.8		330

Comet IRAS (1983o)

/1983o	1984	01	28.62892	14	51	16.20	-17	44	43.6		474
/1983o	1984	01	28.63841	14	51	16.11	-17	44	31.9		474
/1983o	1984	02	01.81111	14	50	05.17	-16	12	36.9		323
/1983o	1984	02	09.69722	14	46	14.15	-12	54	42.8		323
/1983o	1984	03	01.42929	14	24	05.24	-01	16	12.6	2	801
/1983o	1984	03	03.50348	14	20	48.20	+00	08	12.4		657
/1983o	1984	03	30.35788	13	22	40.39	+19	40	07.7		657

Periodic Comet Harrington-Abell

/1983r	1984	02	01.67674	10	56	41.25	+10	43	57.0		323
/1983r	1984	02	06.72014	10	53	33.46	+10	14	52.5		323
/1983r	1984	02	08.32093	10	52	24.71	+10	05	56.2		801
/1983r	1984	02	27.67500	10	35	34.77	+08	33	21.8		323
/1983r	1984	03	01.25114	10	33	16.70	+08	22	03.4		801

Periodic Comet Wild 2

/1983s	1984	01	04.2598	03	58	16.56	+16	15	10.7		695
/1983s	1984	01	04.2637	03	58	16.50	+16	15	10.8		695
/1983s	1984	01	04.2650	03	58	16.45	+16	15	10.8		695
/1983s	1984	01	04.2705	03	58	16.38	+16	15	10.0		695
/1983s	1984	01	09.57431	03	55	11.01	+16	14	55.7		323
/1983s	1984	01	10.58889	03	54	41.35	+16	15	13.1		323
/1983s	1984	02	01.55382	03	51	52.87	+16	47	29.8		323
/1983s	1984	02	02.09581	03	52	00.45	+16	48	52.8		801
/1983s	1984	02	05.18403	03	52	53.75	+16	57	25.3		707
/1983s	1984	02	06.56389	03	53	22.96	+17	01	36.3		323
/1983s	1984	03	02.03116	04	11	12.57	+18	35	33.8		801
/1983s	1984	03	03.17766	04	12	26.40	+18	40	41.1		657
/1983s	1984	03	04.17535	04	13	32.08	+18	45	13.8		657
/1983s	1984	03	04.2077	04	13	33.53	+18	45	16.4		695
/1983s	1984	03	07.02765	04	16	48.54	+18	58	03.0		801
/1983s	1984	02	22.19725	04	02	52.36	+17	57	48.1		675

Periodic Comet Taylor

/1983u	1984	02	08.14115	06	40	16.11	+29	06	55.9	3	801
/1983u	1984	02	10.21183	06	40	23.08	+29	34	07.6		675
/1983u	1984	03	05.07457	06	53	41.19	+33	20	33.4		801

Periodic Comet Hartley-IRAS

/1983v	1983	12	25.78889	20	48	05.38	+08	39	34.1		984
/1983v	1984	01	04.77083	20	46	47.80	+12	49	32.4		502
/1983v	1984	02	11.56462	20	47	37.07	+29	31	13.7		675
/1983v	1984	03	02.81007	20	46	08.23	+41	05	09.4		372
/1983v	1984	03	04.80312	20	45	36.62	+42	23	24.1	9.5T	372
/1983v	1984	03	11.52803	20	42	53.00	+47	02	20.9		675
/1983v	1984	03	30.53037	20	18	32.09	+62	08	47.9		657

Periodic Comet Clark

/1983w	1984	02	02.78125	15	39	30.31	-13	58	21.6		323
/1983w	1984	02	11.50350	15	59	17.69	-15	20	37.2		801

Comet Bradfield (1984a)

/1984a	1984	01	12.82361	16	17	03.40	-49	49	48.7		323
/1984a	1984	01	16.83362	16	38	41.93	-52	01	43.3		323
/1984a	1984	01	20.82396	17	01	48.89	-53	58	30.6		323
/1984a	1984	01	23.81701	17	20	08.28	-55	15	16.4		323
/1984a	1984	01	24.81701	17	26	25.54	-55	38	47.7		323
/1984a	1984	01	25.82101	17	32	49.58	-56	01	13.8		323
/1984a	1984	01	27.83843	17	45	53.73	-56	42	46.6		323
/1984a	1984	01	28.65242	17	51	14.45	-56	58	06.2		474
/1984a	1984	01	28.65855	17	51	16.90	-56	58	12.4		474
/1984a	1984	02	01.84931	18	19	21.38	-58	04	46.2		323
/1984a	1984	02	02.84514	18	26	07.17	-58	17	26.7		323
/1984a	1984	02	03.84097	18	32	54.07	-58	28	54.0		323
/1984a	1984	02	08.85347	19	07	02.45	-59	08	36.0		323
/1984a	1984	02	09.82986	19	13	38.48	-59	12	53.1		323
/1984a	1984	02	13.83333	19	40	14.72	-59	19	50.8		323
/1984a	1984	02	15.83194	19	53	10.24	-59	17	15.9		323
/1984a	1984	02	24.85139	20	47	14.19	-58	24	12.5		323
/1984a	1984	02	29.84028	21	13	39.44	-57	32	52.5		323

Periodic Comet Neujmin 1

/1984c	1984	02	26.63831	17	05	03.22	-36	16	51.1	18	N		474
/1984c	1984	02	26.68414	17	05	07.21	-36	17	05.9				474
/1984c	1984	02	27.81042	17	06	47.01	-36	23	58.4				323

Periodic Comet Russell 4

/1984d	1984	03	02.73856	13	32	38.66	+00	36	49.5	13	T	4	413
/1984d	1984	03	04.74591	13	32	26.14	+00	40	59.9			4	413
/1984d	1984	03	07.72909	13	31	54.33	+00	47	56.2				413
/1984d	1984	03	10.42525	13	31	12.12	+00	54	38.9				675
/1984d	1984	03	11.28567	13	30	56.29	+00	56	55.3				675
/1984d	1984	03	11.40094	13	30	53.81	+00	57	14.3				675
/1984d	1984	03	11.53428	13	30	50.88	+00	57	35.6				675
/1984d	1984	03	11.77951	13	30	46.14	+00	58	14.4				372
/1984d	1984	03	12.24195	13	30	36.84	+00	59	45.6			5	801
/1984d	1984	03	12.35962	13	30	34.05	+00	59	52.1	14	T		801
/1984d	1984	03	12.47222	13	30	31.59	+01	00	09.0				675
/1984d	1984	03	12.47500	13	30	31.53	+01	00	09.3				675
/1984d	1984	03	21.29550	13	26	25.26	+01	25	20.1				675
/1984d	1984	03	22.29723	13	25	50.59	+01	28	14.4				675
/1984d	1984	03	26.90069	13	22	57.53	+01	41	11.4				552
/1984d	1984	03	26.91944	13	22	56.83	+01	41	18.9				552
/1984d	1984	03	27.92292	13	22	15.93	+01	44	00.4				552
/1984d	1984	03	29.33090	13	21	17.63	+01	47	50.5				657
/1984d	1984	03	30.37190	13	20	34.37	+01	50	27.3				657
/1984d	1984	03	31.35625	13	19	51.76	+01	52	57.5				657
/1984d	1984	04	02.33769	13	18	26.06	+01	57	43.3				657
/1984d	1984	04	04.30625	13	16	58.96	+02	02	00.4	16.2	T		688
/1984d	1984	04	04.33125	13	16	57.62	+02	02	02.8				688

Note 1: poor images, diameter 8"; faint, broad nebulosity extending 15" to north. 2: comet diffuse, measurement difficult. 3: image involved with star. 4: measured on prism plates. 5: guiding problems.

OBSERVATIONS MADE AT THE FABRA OBSERVATORY BY J. M. CODINA, J. M. MUNDET, J. NUNEZ AND N. TORRAS.

Contact: J. M. Codina, Observatorio Fabra, Barcelona 22, Spain.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2	1980 12	09.88521	01 54 54.28	-25 51 15.6	006
2	1980 12	09.89692	01 54 54.15	-25 51 13.5	006
3	1980 01	15.87780	07 19 00.17	+02 14 45.9	006
3	1980 01	15.88405	07 18 59.82	+02 14 48.8	006
3	1980 01	15.89030	07 18 59.49	+02 14 51.8	006
3	1980 01	25.88207	07 10 57.38	+03 41 19.8	006
3	1980 01	25.89145	07 10 56.98	+03 41 24.7	006
3	1980 02	11.78492	07 02 31.16	+06 31 04.8	006
3	1980 02	11.79672	07 02 30.95	+06 31 12.2	006
3	1980 03	31.87725	07 24 36.55	+13 03 16.2	006
3	1980 03	31.88662	07 24 37.13	+13 03 18.5	006
3	1980 05	07.90302	08 11 54.85	+14 29 24.2	006
3	1980 05	07.91483	08 11 55.80	+14 29 24.8	006
3	1980 05	07.92663	08 11 57.06	+14 29 24.2	006
4	1980 01	04.76528	02 13 46.37	+06 17 36.4	006
4	1980 01	04.77847	02 13 46.60	+06 17 40.4	006
4	1980 01	11.77344	02 16 27.68	+07 00 06.8	006
4	1980 02	29.79196	03 01 14.00	+13 05 37.2	006
4	1980 02	29.80098	03 01 14.72	+13 05 41.8	006
5	1980 07	15.01664	19 41 33.60	-17 34 25.2	006
5	1980 07	15.03072	19 41 32.85	-17 34 28.0	006
5	1980 07	21.95944	19 35 08.38	-17 59 36.1	006
5	1980 07	21.97277	19 35 07.69	-17 59 39.1	006
6	1980 12	22.85465	03 22 08.07	-05 31 31.0	006
6	1980 12	22.86306	03 22 07.97	-05 31 26.1	006
6	1980 12	30.83522	03 21 36.67	-03 55 37.9	006
6	1980 12	30.84286	03 21 36.65	-03 55 32.9	006
7	1980 07	23.02741	23 55 45.83	+08 12 04.7	006
7	1980 07	23.03539	23 55 46.07	+08 12 08.4	006
7	1980 08	04.93495	00 00 45.98	+09 43 35.5	006
7	1980 08	04.94120	00 00 46.06	+09 43 38.0	006
7	1980 08	04.94676	00 00 46.12	+09 43 40.1	006
7	1980 08	07.01977	00 01 09.10	+09 55 50.0	006
7	1980 08	07.02638	00 01 09.16	+09 55 52.2	006
7	1980 08	29.89896	23 56 57.70	+11 07 14.0	006
7	1980 08	29.90521	23 56 57.50	+11 07 14.0	006
7	1980 08	29.91076	23 56 57.34	+11 07 14.1	006
7	1980 09	15.84249	23 45 05.66	+10 31 00.4	006
7	1980 09	15.85087	23 45 05.22	+10 30 58.5	006
7	1980 09	16.92538	23 44 11.15	+10 26 05.6	006
7	1980 09	16.93368	23 44 10.70	+10 26 03.1	006
7	1980 09	16.93993	23 44 10.40	+10 26 01.6	006
7	1980 10	08.88072	23 27 00.07	+08 02 59.8	006
7	1980 10	08.88920	23 26 59.72	+08 02 56.4	006
7	1980 10	22.84304	23 21 33.20	+06 24 38.7	006
7	1980 10	22.85083	23 21 33.14	+06 24 36.0	006
7	1980 10	27.88689	23 21 14.35	+05 55 01.5	006
7	1980 10	27.89383	23 21 14.28	+05 54 59.7	006
7	1980 11	18.77946	23 30 30.40	+04 46 11.1	006
7	1980 11	18.78657	23 30 30.72	+04 46 10.6	006
7	1980 11	18.79213	23 30 30.98	+04 46 09.7	006
7	1980 11	21.79459	23 33 02.47	+04 45 07.8	006
7	1980 11	21.80222	23 33 02.91	+04 45 08.0	006
7	1980 11	28.77576	23 39 55.11	+04 50 21.0	006
7	1980 11	28.78270	23 39 55.56	+04 50 22.2	006

7		1980	12	12.75138	23	57	24.27	+05	30	37.7	006
7		1980	12	12.75903	23	57	24.90	+05	30	39.6	006
7		1980	12	18.76901	00	06	14.15	+05	58	51.8	006
7		1980	12	18.77752	00	06	14.95	+05	58	54.8	006
8		1980	06	02.87831	16	44	45.83	-16	00	12.8	006
8		1980	06	02.88873	16	44	46.45	-16	00	11.5	006
8		1980	07	02.97280	16	15	44.83	-16	19	51.9	006
8		1980	07	02.98836	16	15	44.19	-16	19	53.2	006
8		1980	07	03.00059	16	15	43.78	-16	19	54.7	006
8		1980	07	09.95253	16	11	53.50	-16	34	02.1	006
8		1980	07	09.96314	16	11	53.21	-16	34	03.6	006
8		1980	07	10.99318	16	11	26.45	-16	36	28.7	006
8		1980	07	11.00777	16	11	26.02	-16	36	31.7	006
9		1980	03	07.90219	08	45	43.57	+26	57	39.0	006
9		1980	03	07.91122	08	45	43.36	+26	57	38.1	006
9		1980	04	11.85117	08	53	05.13	+24	55	40.5	006
9		1980	04	11.86297	08	53	05.65	+24	55	38.5	006
9		1980	05	02.91503	09	12	33.32	+22	42	39.0	006
9		1980	05	02.92545	09	12	34.03	+22	42	34.9	006
9		1980	05	02.93413	09	12	34.57	+22	42	30.8	006
10		1980	12	30.87549	03	16	55.45	+21	21	40.0	006
10		1980	12	30.88785	03	16	55.16	+21	21	38.1	006
11		1980	02	27.91633	11	22	20.67	+09	04	29.7	006
11		1980	02	27.92501	11	22	20.17	+09	04	33.6	006
11		1980	02	27.93196	11	22	19.78	+09	04	36.3	006
11		1980	03	22.92929	11	01	23.35	+11	44	07.3	006
11		1980	03	22.93934	11	01	22.85	+11	44	10.9	006
11		1980	04	10.85657	10	49	36.29	+12	55	37.6	006
11		1980	04	10.86395	10	49	36.10	+12	55	38.0	006
11		1980	04	10.87130	10	49	35.90	+12	55	38.7	006
11		1980	05	08.90184	10	48	04.82	+12	43	53.2	006
11		1980	05	08.91052	10	48	04.96	+12	43	52.4	006
11		1980	05	08.92163	10	48	05.09	+12	43	50.5	006
11		1980	05	28.93726	10	58	09.89	+11	23	59.3	006
11		1980	05	28.94873	10	58	10.26	+11	23	55.8	006
14		1980	05	07.95790	15	31	41.47	-09	08	34.2	006
14		1980	05	07.96674	15	31	40.93	-09	08	35.0	006
14		1980	06	03.85563	15	07	30.60	-09	54	46.8	006
14		1980	06	03.85979	15	07	30.41	-09	54	47.3	006
14		1980	06	27.96357	14	58	34.30	-11	44	49.9	006
14		1980	06	27.97433	14	58	34.32	-11	44	53.7	006
14		1980	07	14.89012	15	02	04.29	-13	31	06.7	006
14		1980	07	14.90484	15	02	04.66	-13	31	14.0	006
15		1980	07	04.96758	19	02	04.33	-25	51	54.6	006
15		1980	07	04.97869	19	02	03.58	-25	51	53.2	006
15		1980	07	04.99032	19	02	02.82	-25	51	51.2	006
15		1980	07	09.99508	18	56	38.99	-25	38	20.3	006
15		1980	07	10.00411	18	56	38.40	-25	38	19.4	006
15		1980	07	22.91109	18	43	25.60	-24	56	25.7	006
15		1980	07	22.91873	18	43	25.16	-24	56	24.0	006
15		1980	08	04.89190	18	33	00.68	-24	07	24.0	006
15		1980	08	04.89815	18	33	00.44	-24	07	22.8	006
15		1980	08	04.90370	18	33	00.20	-24	07	21.9	006
15		1980	08	28.89641	18	25	57.50	-22	35	05.6	006
15		1980	08	28.94067	18	25	57.64	-22	34	56.5	006
15		1980	09	22.85562	18	36	12.58	-21	08	32.9	006
15		1980	09	22.86723	18	36	13.18	-21	08	30.4	006
18		1980	04	24.88020	13	27	17.39	+04	28	32.2	006
18		1980	04	24.88853	13	27	16.91	+04	28	34.6	006

18		1980	04	24.89547	13	27	16.56	+04	28	37.4	006
18		1980	05	30.89568	13	06	49.96	+05	42	47.4	006
18		1980	05	30.90610	13	06	49.79	+05	42	45.2	006
18		1980	06	16.88117	13	07	05.50	+04	53	30.6	006
18		1980	06	16.89020	13	07	05.42	+04	53	27.4	006
18		1980	06	16.89714	13	07	05.85	+04	53	24.7	006
18		1980	07	09.90725	13	17	00.09	+02	48	20.5	006
18		1980	07	09.92422	13	17	00.72	+02	48	13.7	006
25		1980	08	29.86042	00	19	25.44	+29	00	23.5	006
25		1980	08	29.86910	00	19	25.26	+29	00	20.0	006
25		1980	09	16.97743	00	09	47.91	+25	23	12.0	006
25		1980	09	16.98542	00	09	47.56	+25	23	04.3	006
25		1980	09	16.99167	00	09	47.30	+25	22	58.1	006
25		1980	11	05.87637	23	52	05.30	+08	55	56.1	006
25		1980	11	05.89095	23	52	05.47	+08	55	42.9	006
25		1980	11	05.90188	23	52	05.60	+08	55	32.0	006
27		1980	01	09.86902	05	08	57.97	+22	51	17.9	006
27		1980	01	09.87943	05	08	57.61	+22	51	18.1	006
29		1980	03	31.91995	08	39	44.21	+22	21	47.2	006
29		1980	03	31.93106	08	39	44.39	+22	21	44.1	006
39		1980	02	06.86154	08	53	23.43	+11	09	18.2	006
39		1980	02	06.87473	08	53	22.69	+11	09	23.5	006
39		1980	02	12.86093	08	48	26.81	+11	49	39.5	006
39		1980	02	12.86995	08	48	26.34	+11	49	43.2	006
39		1980	02	12.87690	08	48	26.06	+11	49	45.3	006
40		1980	09	17.01632	00	31	06.94	-05	11	31.3	006
40		1980	09	17.02361	00	31	06.53	-05	11	33.9	006
40		1980	09	17.02986	00	31	06.18	-05	11	36.3	006
40		1980	10	20.87659	00	02	05.94	-07	47	31.8	006
40		1980	10	20.88839	00	02	05.47	-07	47	32.8	006
40		1980	10	27.85044	23	58	32.53	-07	50	34.2	006
40		1980	10	27.86137	23	58	32.26	-07	50	34.0	006
41		1980	03	07.85462	08	31	02.18	+04	37	30.9	006
41		1980	03	07.86851	08	31	01.79	+04	37	39.0	006
48		1980	01	16.84655	05	07	53.40	+13	44	04.8	006
48		1980	01	16.86322	05	07	52.96	+13	44	06.3	006
51		1980	09	18.07501	04	48	17.98	+12	42	30.1	006
51		1980	09	18.09584	04	48	18.97	+12	42	24.9	006
51		1980	09	18.11736	04	48	19.86	+12	42	21.4	006
51		1980	09	18.13299	04	48	20.51	+12	42	16.6	006
51		1980	09	18.14653	04	48	21.12	+12	42	12.3	006
51		1980	09	18.15833	04	48	21.60	+12	42	09.6	006
52		1980	08	06.90502	20	38	10.65	-18	33	39.8	006
52		1980	08	06.92048	20	38	09.87	-18	33	43.3	006
59		1980	07	21.90323	18	23	41.70	-11	08	49.1	006
59		1980	07	21.92020	18	23	41.03	-11	08	52.0	006
63		1980	04	24.94755	13	53	54.44	-21	07	06.8	006
63		1980	04	24.95484	13	53	53.94	-21	07	04.8	006
63		1980	04	24.96109	13	53	53.61	-21	07	04.2	006
63		1980	05	30.86302	13	27	55.25	-18	46	58.1	006
63		1980	05	30.87346	13	27	55.09	-18	46	56.0	006
89		1980	07	22.95713	19	17	27.25	-31	43	20.8	006
89		1980	07	22.96802	19	17	26.45	-31	43	16.0	006
130		1980	07	14.95104	19	10	20.26	-01	44	35.1	006
130		1980	07	14.96942	19	10	19.32	-01	44	42.9	006
216		1980	10	01.83310	23	16	09.55	+10	18	57.6	006
216		1980	10	01.84578	23	16	09.11	+10	18	47.4	006
216		1980	12	09.83603	23	44	17.79	+01	37	12.2	006
216		1980	12	09.84804	23	44	18.60	+01	37	11.8	006

230	1980 04 15.83322	11 08 12.80	-07 29 51.2		006
230	1980 04 15.84620	11 08 12.49	-07 29 44.8		006
349	1980 06 16.93360	14 49 37.50	-21 33 52.2		006
349	1980 06 16.94228	14 49 37.27	-21 33 52.5		006
349	1980 06 16.94922	14 49 36.98	-21 33 51.3		006
386	1980 09 30.82821	22 04 41.45	-10 07 40.3		006
386	1980 09 30.84523	22 04 41.23	-10 07 51.2		006
409	1980 05 02.95237	14 09 12.72	-21 03 15.2		006
409	1980 05 02.96330	14 09 12.19	-21 03 09.8		006
409	1980 06 04.87288	13 52 03.55	-16 01 45.3		006
409	1980 06 04.88365	13 52 03.45	-16 01 40.3		006
409	1980 06 04.89823	13 52 02.57	-16 01 34.2		006
554	1980 08 06.96006	21 49 09.58	-10 52 48.5		006
554	1980 08 06.97970	21 49 08.48	-10 52 52.4		006

OBSERVATIONS MADE AT ALGIERS BY L. BOYER.
Contact: L. Boyer, 2 Avenue Joseph Giorden, F-06200 Nice, France.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1301	1937 11 06.03399	03 50 38.22	-32 41 54.4		008
1301	1950 09 14.89951	21 34 41.73	-05 29 26.2		008
1301	1950 09 15.90234	21 34 06.07	-05 41 58.0		008

OBSERVATIONS MADE AT PINO TORINESE BY G. MASSONE AND G. DE SANCTIS.
Plates with the 1.05-m astrometric reflector. Contact: V. Zappala, Osservatorio Astronomico di Torino, I-10025 Pino Torinese, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 YK *	1983 12 29.00625	06 29 05.46	+10 21 18.9		18.0	022
1983 YK	1983 12 29.06250	06 29 02.83	+10 21 24.9			022
1983 YK	1984 01 10.97639	06 18 44.33	+10 50 27.2			022
1983 YK	1984 01 11.94479	06 18 00.73	+10 53 12.5			022
1983 YK	1984 01 11.96562	06 17 59.92	+10 53 15.2			022

OBSERVATIONS MADE AT ZIMMERWALD BY P. WILD.
Films taken with the 0.4-m Schmidt. Contact: P. Wild, Astronomisches Institut der Universitat, Sidlerstrasse 5, CH-3012 Berne, Switzerland.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1983 SA	1983 12 01.75365	23 07 12.08	+25 38 50.5		026
1983 SA	1983 12 01.85694	23 07 19.23	+25 39 24.0		026

OBSERVATIONS MADE AT TAUTENBURG BY F. BORNGEN, K. KIRSCH, K.-H. MAU AND H. MEUSINGER.
Plates taken with the 1.35-m (134/200/400 cm) Schmidt. Reductions by Borngen and Kirsch, using the SAO Catalogue. Contact: S. Marx, Karl Schwarzschild Observatorium, DDR-6901 Tautenburg, Democratic Republic of Germany.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1449	1983 12 29.94444	06 57 37.26	+20 57 08.7		16.4	033
1449	1983 12 30.00069	06 57 33.32	+20 57 23.1			033
1537	1983 11 09.98472	02 35 06.96	+15 58 14.1		15.3	033
1537	1983 11 10.00069	02 35 06.21	+15 58 08.1			033
1808	1983 11 09.98472	02 41 04.87	+17 39 22.0		15.2	033
1808	1983 11 10.00069	02 41 03.93	+17 39 18.8			033
2499	1983 11 09.98472	02 40 42.47	+15 04 32.5		17.6	033
2499	1983 11 10.00069	02 40 41.70	+15 04 28.8			033
1934 AF	1983 12 29.94444	07 04 24.07	+21 44 11.1		17.8	033
1934 AF	1983 12 30.00069	07 04 21.03	+21 44 16.0			033
1976 YJ3	1983 11 09.98472	02 42 27.18	+17 23 26.0		16.9	033
1976 YJ3	1983 11 10.00069	02 42 26.16	+17 23 19.9			033
1983 VE	1983 11 09.98472	02 36 06.61	+15 47 29.5		15.0	033

1983	VE		1983	11	10.00069	02	36	05.84	+15	47	22.4	033
1983	VJ		1983	11	09.98472	02	41	35.94	+17	51	04.2	17.2 033
1983	VJ		1983	11	10.00069	02	41	34.85	+17	51	06.4	033
1983	VK		1983	11	09.98472	02	43	00.63	+17	23	55.5	18.1 033
1983	VK		1983	11	10.00069	02	42	59.57	+17	23	51.3	033
1983	VM5	*	1983	11	09.98472	02	33	28.99	+17	50	38.0	19.5 033
1983	VM5		1983	11	10.00069	02	33	27.83	+17	50	36.8	033
1983	VN5	*	1983	11	09.98472	02	33	43.80	+17	41	10.2	19.6 033
1983	VN5		1983	11	10.00069	02	33	42.61	+17	41	09.2	033
1983	VO5	*	1983	11	09.98472	02	34	05.43	+16	55	52.0	19.5 033
1983	VO5		1983	11	10.00069	02	34	04.54	+16	55	48.1	033
1983	VP5	*	1983	11	09.98472	02	34	29.35	+16	42	07.5	17.2 033
1983	VP5		1983	11	10.00069	02	34	28.26	+16	41	49.1	033
1983	VQ5	*	1983	11	09.98472	02	34	57.96	+17	06	06.1	19.2 033
1983	VQ5		1983	11	10.00069	02	34	57.08	+17	06	02.3	033
1983	VR5	*	1983	11	09.98472	02	34	58.77	+14	53	32.3	18.9 033
1983	VR5		1983	11	10.00069	02	34	58.00	+14	53	29.1	033
1983	VS5	*	1983	11	09.98472	02	35	00.54	+16	23	20.0	19.4 033
1983	VS5		1983	11	10.00069	02	34	59.44	+16	23	16.5	033
1983	VT5	*	1983	11	09.98472	02	35	00.70	+17	41	36.5	18.2 033
1983	VT5		1983	11	10.00069	02	34	59.86	+17	41	31.0	033
1983	VU5	*	1983	11	09.98472	02	35	13.90	+17	29	24.8	18.1 033
1983	VU5		1983	11	10.00069	02	35	12.79	+17	29	30.2	033
1983	VV5	*	1983	11	09.98472	02	35	31.54	+15	46	45.2	17.3 033
1983	VV5		1983	11	10.00069	02	35	30.69	+15	46	42.9	033
1983	VW5	*	1983	11	09.98472	02	35	31.57	+15	22	20.1	20.2 033
1983	VW5		1983	11	10.00069	02	35	30.38	+15	22	17.5	033
1983	VX5	*	1983	11	09.98472	02	35	54.89	+16	00	30.7	19.5 033
1983	VX5		1983	11	10.00069	02	35	53.97	+16	00	26.6	033
1983	VY5	*	1983	11	09.98472	02	36	01.73	+15	08	46.5	18.3 033
1983	VY5		1983	11	10.00069	02	36	00.92	+15	08	43.8	033
1983	VZ5	*	1983	11	09.98472	02	37	10.79	+16	12	21.8	19.6 033
1983	VZ5		1983	11	10.00069	02	37	09.78	+16	12	21.3	033
1983	VA6	*	1983	11	09.98472	02	37	22.83	+15	44	39.5	17.7 033
1983	VA6		1983	11	10.00069	02	37	21.87	+15	44	37.1	033
1983	VB6	*	1983	11	09.98472	02	37	40.74	+16	54	36.3	15.4 033
1983	VB6		1983	11	10.00069	02	37	39.88	+16	54	15.1	033
1983	VC6	*	1983	11	09.98472	02	37	55.06	+18	02	31.6	18.8 033
1983	VC6		1983	11	10.00069	02	37	54.05	+18	02	27.9	033
1983	VD6	*	1983	11	09.98472	02	38	18.79	+15	02	27.1	17.2 033
1983	VD6		1983	11	10.00069	02	38	17.93	+15	02	18.6	033
1983	VE6	*	1983	11	09.98472	02	38	58.41	+18	03	44.9	18.5 033
1983	VE6		1983	11	10.00069	02	38	57.56	+18	03	33.8	033
1983	VF6	*	1983	11	09.98472	02	38	59.34	+17	05	32.2	17.8 033
1983	VF6		1983	11	10.00069	02	38	58.50	+17	05	25.1	033
1983	VG6	*	1983	11	09.98472	02	39	30.64	+16	53	26.6	18.0 033
1983	VG6		1983	11	10.00069	02	39	29.77	+16	53	23.3	033
1983	VH6	*	1983	11	09.98472	02	39	40.70	+16	26	41.9	18.1 033
1983	VH6		1983	11	10.00069	02	39	40.25	+16	26	30.6	033
1983	VJ6	*	1983	11	09.98472	02	39	49.65	+15	29	28.3	19.9 033
1983	VJ6		1983	11	10.00069	02	39	48.95	+15	29	24.7	033
1983	VK6	*	1983	11	09.98472	02	39	57.27	+17	09	30.6	18.8 033
1983	VK6		1983	11	10.00069	02	39	56.18	+17	09	27.2	033
1983	VL6	*	1983	11	09.98472	02	40	00.24	+16	06	34.0	16.7 033
1983	VL6		1983	11	10.00069	02	39	59.18	+16	06	33.4	033
1983	VM6	*	1983	11	09.98472	02	40	23.65	+17	30	37.7	18.6 033
1983	VM6		1983	11	10.00069	02	40	22.64	+17	30	35.0	033
1983	VN6	*	1983	11	09.98472	02	40	44.93	+16	55	55.5	17.4 033
1983	VN6		1983	11	10.00069	02	40	44.03	+16	55	49.3	033

1983	VO6	*	1983	11	09.98472	02	40	49.00	+17	25	45.3	19.3	033
1983	VO6		1983	11	10.00069	02	40	47.95	+17	25	44.3		033
1983	VP6	*	1983	11	09.98472	02	41	32.12	+17	41	18.6	18.0	033
1983	VP6		1983	11	10.00069	02	41	30.98	+17	41	18.1		033
1983	VQ6	*	1983	11	09.98472	02	41	35.53	+16	13	29.9	19.8	033
1983	VQ6		1983	11	10.00069	02	41	34.23	+16	13	28.2		033
1983	VR6	*	1983	11	09.98472	02	42	08.64	+16	30	47.0	19.2	033
1983	VR6		1983	11	10.00069	02	42	07.83	+16	30	45.1		033
1983	VS6	*	1983	11	09.98472	02	42	23.64	+16	03	23.0	17.9	033
1983	VS6		1983	11	10.00069	02	42	22.55	+16	03	22.9		033
1983	VT6	*	1983	11	09.98472	02	42	33.00	+16	04	35.6	19.9	033
1983	VT6		1983	11	10.00069	02	42	32.14	+16	04	27.0		033
1983	VU6	*	1983	11	09.98472	02	42	35.88	+16	11	18.3	18.7	033
1983	VU6		1983	11	10.00069	02	42	35.05	+16	11	15.2		033
1983	VV6	*	1983	11	09.98472	02	42	55.11	+15	39	51.8	19.4	033
1983	VV6		1983	11	10.00069	02	42	54.35	+15	39	48.1		033
1983	VW6	*	1983	11	09.98472	02	44	19.55	+17	35	16.9	19.6	033
1983	VW6		1983	11	10.00069	02	44	18.70	+17	35	14.0		033
1983	VX6	*	1983	11	09.98472	02	44	21.24	+16	45	44.9	18.5	033
1983	VX6		1983	11	10.00069	02	44	20.20	+16	45	44.6		033
1983	VY6	*	1983	11	09.98472	02	44	37.56	+16	06	52.9	17.6	033
1983	VY6		1983	11	10.00069	02	44	36.42	+16	06	51.2		033
1983	VZ6	*	1983	11	09.98472	02	45	27.74	+17	15	43.0	19.5	033
1983	VZ6		1983	11	10.00069	02	45	26.94	+17	15	39.1		033
1983	VA7	*	1983	11	09.98472	02	45	32.78	+15	30	56.8	18.2	033
1983	VA7		1983	11	10.00069	02	45	31.92	+15	30	51.6		033
1983	VB7	*	1983	11	09.98472	02	46	24.30	+17	34	20.0	19.7	033
1983	VB7		1983	11	10.00069	02	46	23.34	+17	34	16.3		033
1983	YL	*	1983	12	29.94444	06	59	33.60	+21	03	32.9	19.2	033
1983	YL		1983	12	30.00069	06	59	30.60	+21	03	38.7		033
1983	YM	*	1983	12	29.94444	07	00	07.20	+23	40	47.2	19.5	033
1983	YM		1983	12	30.00069	07	00	04.07	+23	41	11.7		033
1983	YN	*	1983	12	29.94444	07	03	04.79	+23	37	43.7	19.8	033
1983	YN		1983	12	30.00069	07	03	01.74	+23	37	48.0		033
1983	YO	*	1983	12	29.94444	07	05	59.40	+20	37	00.6	18.3	033
1983	YO		1983	12	30.00069	07	05	56.05	+20	37	18.4		033
1983	YP	*	1983	12	29.94444	07	07	02.38	+23	18	04.4	20.2	033
1983	YP		1983	12	30.00069	07	06	58.89	+23	18	06.1		033
1984	AN		1983	12	29.94444	07	02	22.32	+20	31	24.5	18.4	033
1984	AN		1983	12	30.00069	07	02	18.88	+20	31	47.9		033

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

Plates with the 0.6-m Maksutov reflector. Verification and assistance with identifications from D. W. E. Green and B. G. Marsden. 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.	N	Obs.
58	1984 02	21.89052	10 20 03.45	+09 09 53.2			046
58	1984 02	21.90470	10 20 02.65	+09 09 59.5			046
67	1984 01	26.79520	06 35 57.52	+14 20 17.0			046
67	1984 01	26.80938	06 35 56.86	+14 20 19.1			046
93	1984 02	21.78323	08 53 54.23	+27 02 46.1			046
93	1984 02	21.79745	08 53 53.52	+27 02 47.1			046
387	1984 01	26.79520	06 41 45.03	+14 07 10.4			046
387	1984 01	26.80938	06 41 44.39	+14 07 14.6			046
484	1984 02	22.94257	09 24 02.85	+20 39 59.8			046
484	1984 02	22.95675	09 24 01.89	+20 40 09.0			046
484	1984 02	25.84641	09 21 42.94	+21 00 10.8		1	046

484			1984	02	25.86053	09	21	42.31	+21	00	15.4	1	046
503			1984	02	22.94257	09	18	52.10	+24	20	29.0		046
503			1984	02	22.95675	09	18	51.22	+24	20	30.3		046
503			1984	02	25.84641	09	16	38.33	+24	27	37.8		046
503			1984	02	25.86053	09	16	37.71	+24	27	40.7		046
930			1984	02	21.78323	08	58	28.00	+26	51	43.7		046
930			1984	02	21.79745	08	58	27.35	+26	51	45.1		046
970			1984	02	21.87027	09	55	10.06	+09	58	23.9	1	046
970			1984	02	22.97735	09	54	03.22	+10	02	16.6	1	046
970			1984	02	22.99164	09	54	02.22	+10	02	20.5		046
1043			1984	02	21.87027	09	55	24.79	+10	09	48.8		046
1043			1984	02	22.97735	09	54	35.70	+10	16	50.9		046
1043			1984	02	22.99164	09	54	35.07	+10	16	55.7		046
1043			1984	02	25.88611	09	52	28.23	+10	35	11.5		046
1043			1984	02	25.90081	09	52	27.49	+10	35	18.2		046
1157			1984	02	21.89052	10	20	11.67	+11	13	16.8		046
1157			1984	02	21.90470	10	20	10.91	+11	13	18.7		046
1343			1984	02	21.83300	09	29	15.17	+24	25	32.4		046
1343			1984	02	22.94257	09	28	11.05	+24	28	48.9		046
1343			1984	02	22.95675	09	28	10.26	+24	28	50.8		046
1343			1984	02	25.84641	09	25	28.07	+24	36	27.8		046
1343			1984	02	25.86053	09	25	27.25	+24	36	31.1		046
1737			1984	02	21.87027	10	01	12.26	+11	33	31.8		046
1737			1984	02	22.97735	10	00	12.35	+11	35	25.2		046
1737			1984	02	22.99164	10	00	11.57	+11	35	25.9		046
1737			1984	02	25.88611	09	57	36.88	+11	40	09.0		046
1737			1984	02	25.90081	09	57	36.02	+11	40	10.8		046
1772			1984	02	22.94257	09	19	03.46	+24	01	43.7		046
1772			1984	02	22.95675	09	19	02.52	+24	01	46.1		046
1772			1984	02	25.84641	09	16	36.16	+24	13	43.7		046
1772			1984	02	25.86053	09	16	35.54	+24	13	47.2		046
2311			1984	02	21.89052	10	16	54.56	+09	45	24.1		046
2311			1984	02	21.90470	10	16	53.62	+09	45	26.2		046
2358			1984	02	22.94257	09	19	21.16	+21	33	44.7	1	046
2358			1984	02	22.95675	09	19	20.44	+21	33	44.0	1	046
2358			1984	02	25.84641	09	16	56.86	+21	34	48.5		046
2358			1984	02	25.86053	09	16	56.05	+21	34	47.6		046
2970			1984	02	21.78323	08	45	51.79	+26	52	51.5		046
2970			1984	02	21.79745	08	45	51.19	+26	52	51.5		046
1984	BT		1984	02	21.78323	08	56	24.27	+29	22	58.6		046
1984	BT		1984	02	21.79745	08	56	23.45	+29	23	01.1		046
1984	BW		1984	02	21.81888	09	30	00.01	+22	43	32.6		046
1984	BW		1984	02	21.83300	09	29	59.00	+22	43	45.5		046
1984	BW		1984	02	22.94257	09	29	04.76	+22	54	58.6		046
1984	BW		1984	02	22.95675	09	29	03.82	+22	55	06.9		046
1984	DE	*	1984	02	21.87027	09	56	54.94	+09	39	40.2	17.0	046
1984	DE		1984	02	22.97735	09	55	50.66	+09	42	13.1		046
1984	DE		1984	02	22.99164	09	55	49.69	+09	42	14.5		046
1984	DE		1984	02	25.88611	09	53	04.86	+09	48	55.1		046
1984	DE		1984	02	25.90081	09	53	04.00	+09	48	55.6		046
1984	DF	*	1984	02	21.87027	10	03	26.72	+08	32	26.2	17.2	046
1984	DG	*	1984	02	21.89052	10	17	10.30	+12	33	12.4		046
1984	DG		1984	02	21.90470	10	17	09.34	+12	33	17.8		046
1984	DH	*	1984	02	22.94257	09	20	21.61	+22	31	16.0		046
1984	DH		1984	02	22.95675	09	20	21.01	+22	31	17.7		046
1984	DH		1984	02	25.84641	09	17	07.23	+22	39	08.4		046
1984	DH		1984	02	25.86053	09	17	06.38	+22	39	12.4		046
1984	DJ	*	1984	02	22.97735	10	05	57.31	+11	07	56.9	1	046
1984	DJ		1984	02	22.99164	10	05	56.46	+11	08	01.6	1	046

1984 DK	*	1984 02 25.84641	09 25 57.04	+23 27 34.6					046
1984 DK		1984 02 25.86053	09 25 56.17	+23 27 40.7					046

Note 1: at edge of plate.

OBSERVATIONS MADE AT KVISTABERG BY C.-I. LAGERKVIST AND G. HAHN.

Plates with the 1.0-m (100/135/300 cm) Kvistaberg Schmidt measured with the IRIS machine at Physics IV, Royal Institute of Technology. Reductions using the program ASTEROID (Hahn and Lagerkvist 1982, in Groundbased Observations of Comet Halley, eds. P. Veron, M. Festou and K. Kjar, p. 287). AGK3 reference stars, mean errors 0".49 in R.A., 0".50 in Decl. Assistance from B. G. Marsden with identifications. Contact: C.-I. Lagerkvist, Astronomiska Observatoriet, Box 515, S-75120 Uppsala, Sweden.

Object	Date	UT	R. A. (1950)	Decl.				N	Obs.
1	1981 02	09.99316	07 06 35.24	+32 18 18.4					049
1	1981 02	10.00701	07 06 34.75	+32 18 19.7					049
187	1979 09	21.97549	02 03 48.22	+13 02 27.6				1	049
187	1979 09	21.99090	02 03 47.60	+13 02 26.4					049
656	1979 09	21.97549	02 09 24.87	+12 48 29.8					049
656	1979 09	21.99090	02 09 24.46	+12 48 27.7					049
828	1979 09	21.97549	02 10 34.54	+13 47 34.1				1	049
828	1979 09	21.99090	02 10 34.14	+13 47 33.3					049
1588	1981 02	10.02017	08 43 37.14	+27 00 26.0					049
1588	1981 02	10.03749	08 43 36.36	+27 00 35.0					049
1669	1979 09	21.97549	02 00 22.75	+12 22 01.9				1	049
1669	1979 09	21.99090	02 00 22.25	+12 21 59.6					049
1906	1981 02	09.99316	07 15 01.00	+30 39 58.7					049
1906	1981 02	10.00701	07 15 00.53	+30 39 53.5					049
1979 SK11	1979 09	21.97549	02 10 24.36	+12 44 43.6					049
1979 SK11	1979 09	21.99090	02 10 23.53	+12 44 36.2					049
1979 SN12*	1979 09	18.94449	23 58 23.71	+14 08 24.7					049
1979 SN12	1979 09	18.96319	23 58 22.84	+14 08 18.7					049

Note 1: these positions replace those on MPC 8492.

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

Contact: H. J. Fogh Olson, Copenhagen University Observatory, Brorfelde, DK-4340 Tollose, Denmark.

Object	Date	UT	R. A. (1950)	Decl.				Mag.	Obs.
297	1984 03	05.95946	10 55 35.65	+04 28 11.6					054
297	1984 03	08.04479	10 53 59.52	+04 34 56.0					054
733	1984 03	05.95946	10 54 48.25	+05 39 02.0					054
733	1984 03	08.04479	10 52 51.90	+05 38 10.2					054
1443	1984 03	05.95946	10 57 30.05	+06 05 11.1					054
1443	1984 03	08.04479	10 55 52.63	+06 16 21.7					054
1982 SK	1984 03	05.95946	10 58 26.80	+04 28 56.6					054
1982 SK	1984 03	08.04479	10 56 20.40	+04 40 55.8					054
1984 EJ	* 1984 03	05.95946	10 59 31.71	+06 05 42.5				16.8	054
1984 EJ	1984 03	08.04479	10 57 34.90	+06 24 24.4					054

OBSERVATIONS MADE AT TURKU BY Y. VAISALA, L. OTERMA, H. ALIKOSKI, I. KLEMOLA, V. LAIHO, H. RANTASEPPA AND M. VAISALA.

Plates taken mainly with the 0.50-m (500/1031 mm), sometimes with the co-mounted 0.38-m (380/688 mm), anastigmatic reflectors at Iso-Heikkila. Measured by A. Linnamaki, L. Oterma, M.-O. Snare and some students. Some two-thirds of the measurements were made with the old engine of Vaisala's construction, reductions being made using his modified dependence method and the Yale catalogues. The remainder were measured with the Zeiss 3030 at Tuorla, with SAO and AGK3 reference-star positions and a reduction program by A. Niemi. Verification of the observations was done in collabora-

tion with D. W. E. Green. Contact: L. Oterma, Sirkkalank 31, SF-20700 Turku, Finland.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
1	1938 11	15.99279	03 22 05.97	+10 10 14.5		062
1	1945 04	15.95465	14 20 19.38	-00 02 02.9		062
1	1954 04	21.86970	12 30 19.66	+13 15 21.9		062
2	1945 04	09.91150	11 52 46.48	+14 11 37.1		062
2	1945 04	11.88521	11 51 50.60	+14 43 55.5		062
3	1939 08	22.92034	21 46 54.26	-04 18 16.0	1	062
3	1946 04	01.96146	13 46 49.81	-00 46 15.1		062
3	1946 04	04.93515	13 44 36.73	-00 22 42.9		062
4	1941 01	30.95878	10 01 38.17	+19 30 29.2		062
4	1941 02	01.87795	09 59 58.64	+19 46 31.5		062
4	1945 04	04.99861	13 18 54.86	+05 32 41.9		062
4	1945 04	06.00958	13 17 59.04	+05 38 48.2		062
4	1947 10	19.02223	07 46 53.99	+19 35 18.9		062
4	1947 10	19.03022	07 46 54.37	+19 35 18.3		062
5	1946 04	01.96146	13 39 30.41	-01 53 32.5		062
5	1946 04	04.93515	13 37 08.59	-01 32 36.6		062
5	1948 10	09.98550	01 35 32.34	+02 13 24.2		062
6	1941 04	23.97424	15 05 48.89	+05 33 39.7		062
6	1941 04	26.93683	15 03 17.83	+05 52 09.7		062
6	1941 04	30.91308	14 59 48.64	+06 14 51.0		062
6	1944 02	28.95788	10 42 08.00	+16 09 47.6		062
6	1944 02	28.96454	10 42 07.92	+16 09 53.1		062
6	1944 03	29.89657	10 19 59.34	+19 45 19.5		062
6	1947 02	11.84062	03 45 16.58	+05 16 51.7		062
6	1948 03	04.05022	12 14 30.85	+12 19 01.0		062
7	1941 01	21.92475	08 45 09.09	+10 34 21.9		062
7	1941 01	22.91125	08 44 04.12	+10 36 05.6		062
7	1947 10	18.97808	03 01 18.58	+25 16 30.2		062
8	1940 03	15.86505	10 56 19.67	+15 34 15.0		062
8	1953 03	04.87729	10 25 12.33	+17 42 35.8		062
8	1953 03	11.85846	10 18 42.35	+18 23 18.6		062
8	1953 03	15.85301	10 15 23.71	+18 41 52.8		062
8	1953 03	15.88079	10 15 22.75	+18 41 57.7		062
9	1938 10	22.02273	03 45 52.22	+15 39 46.3		062
9	1938 11	16.02184	03 23 06.17	+15 32 28.4		062
9	1940 04	05.00635	13 58 02.80	-05 11 59.3		062
9	1940 04	11.00619	13 52 26.05	-04 47 06.0		062
9	1946 12	22.10087	11 16 54.12	+11 50 56.2		062
9	1947 02	13.05417	11 17 49.21	+14 47 32.0		062
9	1947 02	13.95706	11 17 07.72	+14 53 42.2		062
9	1949 10	29.96108	02 44 10.73	+10 30 10.4		062
9	1949 10	30.01368	02 44 07.90	+10 30 04.9		062
10	1940 09	08.94707	23 55 33.95	+05 05 00.6		062
10	1940 09	11.99244	23 53 24.51	+04 53 07.5		062
10	1943 01	01.02794	08 59 53.05	+15 22 38.2		062
10	1943 01	05.11478	08 57 33.91	+15 27 19.5		062
10	1946 10	19.96652	01 23 59.78	+14 32 40.5		062
10	1946 10	22.87117	01 21 49.60	+14 19 01.3	1	062
10	1946 10	22.87904	01 21 49.31	+14 18 58.7		062
10	1949 03	26.89780	10 21 50.37	+05 10 19.1		062
10	1949 03	29.83917	10 20 23.16	+05 19 58.2		062
11	1938 03	22.97580	12 55 50.24	+01 13 50.9		062
11	1938 03	23.97134	12 55 01.03	+01 20 38.3		062
11	1938 03	29.06984	12 50 39.50	+01 55 36.0		062
11	1938 04	04.94237	12 44 34.21	+02 40 45.4		062
11	1938 04	04.97288	12 44 32.25	+02 40 56.1		062

11		1938	04	04.98054	12	44	31.98	+02	41	05.1	062
11		1938	04	05.03247	12	44	29.29	+02	41	17.8	062
11		1938	04	06.98185	12	42	45.71	+02	53	27.2	062
11		1938	04	20.97043	12	31	15.05	+04	05	51.2	062
11		1938	04	21.02135	12	31	12.83	+04	06	04.7	062
11		1940	11	30.08603	07	41	09.08	+18	21	22.8	062
11		1940	12	04.97070	07	39	09.72	+18	28	36.1	062
11		1942	04	14.97138	13	59	48.94	-04	07	09.6	062
11		1942	04	17.96022	13	57	08.30	-03	50	03.3	062
11		1949	02	25.85626	09	07	00.95	+18	40	51.6	062
11		1949	03	01.97137	09	03	53.24	+18	58	51.9	062
11		1953	03	04.86774	10	17	46.16	+14	33	20.3	062
11		1953	03	04.90281	10	17	44.51	+14	33	31.0	062
11		1953	03	11.85846	10	11	50.95	+15	12	53.9	062
11		1953	03	15.85301	10	08	47.09	+15	32	33.1	062
11		1953	03	15.88079	10	08	45.84	+15	32	38.6	062
12		1950	10	05.92719	01	43	11.40	+19	48	34.8	062
13		1939	03	23.02899	13	12	47.97	+09	38	56.3	062
13		1941	10	15.91539	02	33	45.79	+09	37	25.1	062
13		1941	10	15.92245	02	33	45.35	+09	37	25.8	062
13		1941	10	15.95370	02	33	43.48	+09	37	27.9	062
13		1941	10	15.96088	02	33	43.08	+09	37	27.6	062
13		1941	10	27.90549	02	20	52.97	+09	52	15.4	062
13		1943	03	09.95975	12	16	04.56	+22	08	33.1	062
13		1945	10	01.99087	01	46	03.62	-01	25	08.3	062
13		1945	10	15.90987	01	31	46.61	-01	33	19.9	062
13		1945	11	02.83868	01	13	14.10	-01	12	17.2	062
14		1940	10	03.00998	02	24	18.14	+02	04	53.8	062
14		1940	10	03.02965	02	24	17.61	+02	04	52.9	062
14		1940	10	03.93026	02	23	40.44	+02	00	52.5	062
14		1940	10	03.97285	02	23	38.76	+02	00	45.8	062
14		1942	02	11.85652	09	41	30.21	+27	42	05.1	062
14		1942	02	11.97680	09	41	23.26	+27	43	00.6	062
14		1946	01	06.86226	08	00	00.06	+27	26	00.4	062
15		1946	08	24.93396	21	57	36.93	+01	14	56.5	062
15		1946	09	02.90306	21	48	57.09	+01	10	32.3	062
15		1948	02	07.91826	08	37	45.80	+12	21	48.7	062
16		1946	12	22.07795	11	04	03.63	+05	45	55.1	062
16		1946	12	22.10087	11	04	04.32	+05	45	55.8	062
16		1947	02	13.04051	10	52	28.44	+07	37	50.6	062
16		1947	02	25.86426	10	42	49.91	+08	47	07.5	062
16		1947	02	25.89470	10	42	48.59	+08	47	17.2	062
16		1947	02	25.90182	10	42	48.03	+08	47	19.8	062
17		1941	01	26.85550	09	18	03.58	+16	58	10.4	6 062
17		1941	01	26.89184	09	18	01.54	+16	58	24.8	6 062
17		1945	03	04.93158	09	47	55.86	+17	27	03.5	062
17		1945	03	05.90281	09	47	07.52	+17	32	31.6	062
17		1949	03	02.96200	10	57	14.79	+12	36	46.4	062
17		1949	03	26.85469	10	37	23.75	+15	07	25.3	062
17		1949	03	26.85880	10	37	23.49	+15	07	27.7	1 062
17		1949	03	27.83791	10	36	45.92	+15	11	31.8	062
17		1953	04	10.91086	11	36	35.33	+10	56	52.6	062
17		1953	04	15.90507	11	33	42.17	+11	12	32.9	062
17		1953	04	15.93877	11	33	41.16	+11	12	40.1	062
17		1953	04	17.89428	11	32	43.10	+11	17	13.4	062
17		1957	03	31.02286	13	05	20.65	+02	49	57.7	062
18		1941	01	21.94141	09	09	38.82	+10	15	14.8	062
18		1941	01	21.95854	09	09	37.96	+10	15	23.4	062
18		1941	01	22.91814	09	08	41.57	+10	23	17.2	062

18		1941	01	22.96397	09	08	39.10	+10	23	37.6	062
18		1945	03	19.02523	12	32	05.97	+05	43	08.2	062
18		1945	04	05.96057	12	16	11.96	+08	11	09.4	062
18		1955	01	27.94433	09	54	10.47	+09	25	15.3	062
19		1938	02	07.92250	10	08	10.99	+09	03	02.0	062
19		1940	09	29.92637	01	06	02.80	+08	03	47.1	062
19		1940	10	03.92673	01	02	48.64	+07	39	43.8	062
19		1940	10	04.88645	01	02	00.70	+07	33	46.9	062
19		1942	03	12.89649	11	07	25.65	+03	48	20.2	062
19		1942	03	12.90407	11	07	25.27	+03	48	19.0	1 062
19		1942	03	14.01721	11	06	24.93	+03	55	14.7	062
19		1946	04	04.87514	12	07	01.71	-01	52	08.0	062
20		1938	09	16.92162	00	27	35.01	+03	30	57.6	062
20		1938	09	21.95649	00	23	16.43	+03	01	54.6	062
20		1940	03	29.89803	11	43	20.77	+01	14	21.1	062
20		1940	03	30.86707	11	42	33.55	+01	19	55.3	062
20		1940	04	12.86590	11	33	44.20	+02	22	57.4	062
20		1942	11	05.91938	02	44	48.96	+15	33	35.9	062
20		1949	08	26.91174	22	43	39.84	-07	08	11.1	062
20		1949	08	26.95890	22	43	36.90	-07	08	26.1	062
21		1942	04	14.96478	13	25	57.35	-04	27	59.4	062
21		1942	04	17.91254	13	23	10.35	-04	13	21.7	062
21		1945	02	04.95308	08	50	44.17	+21	28	47.5	062
21		1953	03	10.92770	11	06	57.90	+10	48	49.3	062
21		1953	03	11.88757	11	06	04.92	+10	54	12.9	062
22		1941	10	15.94925	02	34	36.38	+01	49	23.0	062
22		1943	03	25.83464	09	45	13.95	+33	17	23.4	062
22		1946	10	26.92824	02	44	51.56	+04	37	16.3	062
22		1953	03	07.83182	10	29	41.76	+31	17	23.3	062
22		1953	03	10.80503	10	27	10.97	+31	21	42.9	062
22		1953	03	15.80593	10	23	13.96	+31	24	14.1	062
23		1939	03	26.96825	14	09	26.65	+00	25	20.8	062
24		1939	09	07.95522	00	34	33.16	+03	03	42.2	062
24		1939	09	09.89109	00	33	25.15	+02	56	36.9	062
24		1939	10	20.91847	00	05	29.01	+00	02	30.5	062
24		1942	03	11.92172	12	23	21.26	-01	46	38.3	062
24		1942	03	12.95656	12	22	38.06	-01	42	10.0	062
24		1942	03	12.96403	12	22	37.61	-01	42	09.5	062
24		1942	03	14.03781	12	21	52.37	-01	37	28.2	062
24		1942	04	04.88466	12	05	42.85	+00	02	06.3	062
24		1942	04	09.89006	12	02	21.16	+00	22	21.5	062
24		1942	04	10.90782	12	01	42.32	+00	26	12.7	062
24		1945	11	02.85807	02	05	06.22	+12	40	09.0	062
25		1954	10	01.94752	00	45	40.59	+21	26	52.6	062
25		1954	10	03.88374	00	44	11.30	+20	49	21.4	062
26		1939	01	18.99660	10	13	38.52	+16	43	10.6	062
26		1939	01	20.11231	10	13	02.12	+16	48	01.2	062
26		1939	02	12.88625	09	54	16.28	+18	44	42.5	062
26		1939	02	15.90719	09	51	24.83	+18	58	56.9	062
26		1941	10	27.91426	01	18	03.07	+06	08	04.4	062
26		1948	03	03.02907	12	37	09.61	+00	31	37.4	062
26		1954	10	05.96985	01	41	40.37	+08	07	29.4	062
27		1939	09	07.95979	00	08	58.32	-01	59	06.3	062
27		1939	09	09.89607	00	07	25.77	-02	10	25.8	062
27		1948	02	29.90571	10	53	24.70	+09	59	07.1	062
27		1955	02	16.79875	07	59	24.40	+22	24	10.8	062
28		1942	03	12.96374	12	17	48.61	+07	17	25.5	2 062
28		1942	03	12.99464	12	17	47.31	+07	17	41.9	2 062
28		1942	03	17.87550	12	14	13.66	+08	01	50.5	062

28	1942	03	17.90339	12	14	12.42	+08	02	04.7		062
28	1942	03	18.93657	12	13	25.85	+08	11	13.9		062
28	1942	04	04.89936	12	01	01.53	+10	19	51.4		062
28	1942	04	10.94023	11	57	17.03	+10	52	29.6		062
29	1938	12	15.92034	08	00	59.54	+29	55	50.3		062
29	1939	02	15.83803	07	05	06.73	+30	18	09.1		062
30	1938	09	16.92162	00	29	45.59	+06	40	41.9		062
30	1938	09	21.95649	00	25	31.02	+06	20	19.9		062
30	1938	10	02.86795	00	15	36.83	+05	27	12.2		062
30	1947	01	25.97816	09	06	09.42	+16	27	28.9		062
30	1949	10	29.94157	01	05	32.58	+11	10	31.8		062
30	1949	10	29.97578	01	05	31.02	+11	10	20.1		062
31	1938	09	22.98346	01	45	36.17	-00	53	04.5		062
32	1941	09	26.84569	00	01	07.21	+05	53	22.4		062
32	1941	09	27.82749	00	00	19.17	+05	46	26.6		062
32	1941	10	15.86042	23	47	03.78	+03	40	56.0		062
32	1941	10	16.84168	23	46	28.33	+03	34	37.3		062
33	1939	02	10.96886	10	25	43.01	+11	32	49.7		062
33	1939	02	12.93846	10	24	12.44	+11	41	11.0		062
33	1939	02	13.92331	10	23	26.28	+11	45	23.1		062
33	1939	02	13.98662	10	23	23.58	+11	45	44.6	1	062
33	1940	04	04.91957	13	08	03.87	-07	39	20.2	1	062
33	1940	04	11.87170	13	02	28.95	-07	07	45.9		062
33	1944	02	21.97384	10	43	49.18	+09	30	22.1		062
33	1944	02	28.93167	10	38	24.05	+10	01	00.3		062
33	1949	03	23.86652	10	50	45.70	+08	23	08.2		062
33	1951	09	29.87047	00	33	58.27	+03	34	17.7		062
34	1941	11	12.98405	04	15	37.09	+14	11	15.2		062
34	1941	11	14.94149	04	13	56.82	+14	02	55.3	1	062
34	1941	11	14.96279	04	13	55.64	+14	02	50.1		062
34	1941	11	17.01216	04	12	07.21	+13	54	14.7		062
34	1943	04	06.89675	12	42	07.89	-03	05	42.9		062
34	1943	04	07.94862	12	41	19.57	-02	57	51.4	1	062
34	1945	10	01.92414	01	36	54.02	+07	50	00.9		062
34	1945	10	15.90183	01	25	55.26	+06	18	28.2		062
34	1947	02	13.89541	08	57	23.58	+10	15	57.5		062
34	1954	10	06.04242	02	54	29.21	+12	33	37.9		062
35	1940	10	03.97128	00	52	50.64	+09	37	14.8		062
35	1940	10	04.88645	00	52	07.32	+09	34	09.6		062
35	1943	03	12.87307	10	37	12.44	+11	45	09.9		062
35	1943	03	12.93267	10	37	09.26	+11	45	12.7		062
35	1943	03	12.97735	10	37	06.78	+11	45	15.3		062
35	1943	03	27.84433	10	25	59.50	+11	45	24.3		062
36	1939	03	22.91024	11	00	35.28	+12	01	46.2	1	062
37	1939	04	18.97332	13	00	18.65	-07	33	06.1		062
37	1941	09	26.93223	01	17	04.64	+08	42	07.1		062
37	1941	09	27.90370	01	16	19.85	+08	39	23.3		062
37	1943	03	29.85000	11	17	11.64	+05	44	31.1		062
37	1943	03	29.90006	11	17	09.39	+05	44	42.7		062
37	1947	01	25.94784	09	33	43.41	+18	56	20.3	1	062
37	1947	01	25.98233	09	33	41.43	+18	56	27.8	1	062
37	1947	01	26.01670	09	33	39.45	+18	56	37.3		062
37	1947	01	26.04529	09	33	37.86	+18	56	43.6		062
38	1945	09	12.01117	01	14	29.34	+18	43	11.2		062
38	1945	09	13.03873	01	13	56.22	+18	43	33.9		062
38	1945	09	13.04966	01	13	56.21	+18	43	29.9		062
38	1945	10	01.90250	01	00	19.50	+18	13	42.2	2	062
38	1945	10	01.93190	01	00	17.86	+18	13	36.7	2	062
38	1954	09	29.89689	00	21	10.21	+13	45	21.1		062

38		1954	10	01.87582	00	19	25.54	+13	36	31.9	062
39		1939	03	22.91690	11	20	44.46	+08	27	30.5	062
39		1944	04	19.91998	13	20	13.05	+03	04	45.9	062
39		1944	04	26.95204	13	15	08.28	+03	42	22.4	062
39		1948	02	29.88765	10	17	14.46	+09	59	48.0	062
39		1953	03	14.94616	12	30	33.30	+03	38	51.6	062
39		1953	03	14.95275	12	30	33.02	+03	38	55.4	062
39		1953	03	18.95821	12	27	40.50	+04	10	21.3	062
40		1941	01	30.98344	10	35	20.56	+14	48	43.3	062
40		1946	10	23.93301	01	48	03.02	+03	28	20.7	062
40		1946	10	26.86400	01	45	08.11	+03	16	31.2	062
40		1948	03	04.03297	11	54	14.38	+08	18	00.1	062
40		1948	03	04.04409	11	54	13.69	+08	18	07.4	062
40		1953	11	13.00926	03	42	03.45	+14	32	38.3	062
40		1953	11	13.01424	03	42	03.33	+14	32	39.6	062
41		1939	03	18.01507	13	37	57.27	-03	26	26.6	062
41		1939	03	26.95888	13	35	44.58	-01	09	16.8	062
41		1940	09	02.94520	23	28	06.41	+01	07	54.5	062
41		1940	09	02.99578	23	28	04.10	+01	07	27.9	062
41		1945	10	01.93664	01	11	43.02	+00	51	32.1	062
41		1948	03	03.96660	10	48	55.01	-00	33	38.1	062
41		1954	09	06.98767	00	32	41.66	+02	28	45.1	062
42		1939	02	15.91251	10	30	22.54	+21	48	03.6	062
42		1943	03	09.93914	11	17	53.61	+18	20	05.2	062
42		1943	04	01.85367	10	57	54.57	+19	51	59.6	062
42		1947	03	18.96023	12	21	27.13	+11	57	56.2	062
42		1949	12	23.95194	08	25	41.36	+25	13	50.6	062
42		1949	12	23.98968	08	25	39.63	+25	14	03.4	062
42		1950	02	12.84479	07	36	28.82	+29	02	23.3	062
42		1954	02	08.89833	08	55	38.63	+27	08	09.1	062
42		1954	02	23.86028	08	41	44.36	+28	01	34.4	062
42		1954	02	24.86366	08	40	56.50	+28	03	53.0	062
43		1943	11	03.99042	03	14	49.40	+21	45	45.6	062
43		1946	10	07.86300	00	29	47.43	+09	54	29.2	062
43		1946	10	18.78385	00	20	07.43	+08	32	52.1	062
43		1946	10	19.88816	00	19	16.28	+08	24	57.1	062
43		1946	10	22.83043	00	17	10.25	+08	04	24.5	062
43		1948	02	07.90918	08	20	14.49	+15	28	48.4	062
43		1948	02	07.91826	08	20	13.76	+15	28	53.2	062
43		1948	02	09.87146	08	18	10.46	+15	34	50.4	062
44		1941	08	26.91087	22	15	43.97	-13	00	46.1	062
44		1942	12	31.96029	08	15	46.20	+17	24	35.2	062
44		1942	12	31.97562	08	15	45.43	+17	24	39.3	1 062
44		1943	01	05.09534	08	12	34.90	+17	43	11.1	062
44		1953	11	13.01424	03	57	48.27	+13	50	49.1	062
45		1942	04	15.98380	14	28	50.20	-04	22	29.3	062
45		1942	04	17.93082	14	27	22.76	-04	10	25.1	062
45		1946	03	03.85145	10	28	41.34	+11	26	02.8	062
45		1946	03	03.89679	10	28	39.17	+11	26	21.0	062
45		1948	10	09.98550	01	37	48.95	+01	36	06.4	062
45		1955	02	22.95912	10	50	46.06	+09	20	03.8	062
45		1955	02	24.92479	10	49	12.61	+09	35	08.2	062
45		1955	02	24.97566	10	49	10.29	+09	35	30.4	062
45		1955	03	23.81756	10	28	57.07	+12	40	36.2	062
45		1955	03	23.82416	10	28	56.88	+12	40	38.6	062
45		1955	03	23.83075	10	28	56.65	+12	40	44.5	1 062
45		1955	03	23.85112	10	28	55.87	+12	40	46.3	062
45		1955	03	23.85784	10	28	55.55	+12	40	48.0	062
45		1955	03	23.86455	10	28	55.34	+12	40	53.6	1 062

45		1955	03	28.86613	10	26	13.12	+13	05	34.0	062
45		1955	03	28.87424	10	26	12.85	+13	05	35.9	062
45		1957	10	25.91764	01	34	13.27	+00	46	46.2	062
46		1948	03	03.92551	11	25	55.80	+02	50	25.1	062
47		1938	02	06.91882	10	14	07.64	+15	37	48.7	062
47		1938	02	07.88043	10	13	20.83	+15	41	33.5	062
47		1943	03	07.88861	10	22	34.20	+13	36	51.6	2 062
47		1943	03	07.94654	10	22	31.76	+13	36	58.6	062
47		1943	03	09.89400	10	20	58.28	+13	43	00.5	1 062
47		1943	03	25.84847	10	09	58.15	+14	18	36.5	062
47		1945	09	11.95700	00	10	18.15	+00	06	19.5	062
47		1945	09	12.95973	00	09	29.84	+00	03	20.9	062
47		1948	02	29.90571	11	02	33.76	+08	58	50.3	062
47		1950	09	13.01611	01	08	13.00	+07	52	49.6	062
47		1953	04	15.88553	11	04	16.78	+06	51	24.1	062
48		1940	10	03.03567	02	34	16.45	+10	52	40.2	062
48		1940	10	03.97933	02	33	49.02	+10	47	52.0	062
48		1940	10	03.98402	02	33	48.85	+10	47	46.0	062
48		1945	09	11.90272	23	32	06.70	-00	41	27.3	062
48		1945	09	12.89318	23	31	25.47	-00	47	50.4	062
48		1948	03	03.01484	11	34	40.23	+00	12	34.1	062
49		1944	09	20.90625	00	19	05.82	+07	40	47.7	062
49		1946	03	05.82821	08	35	06.89	+16	27	16.3	062
49		1955	10	22.89485	01	08	05.41	+12	59	51.5	062
50		1939	10	07.91483	01	19	35.95	+05	50	46.8	062
50		1942	04	15.97338	14	10	11.47	-10	31	36.8	062
50		1945	01	15.99579	09	02	14.18	+13	39	30.8	062
51		1938	02	22.93019	11	14	56.10	+00	17	48.8	062
51		1938	03	05.98392	11	06	17.81	+02	15	37.8	062
51		1938	03	07.93120	11	04	42.32	+02	37	38.1	062
51		1938	03	23.86580	10	52	40.85	+05	34	43.9	062
51		1938	04	04.85737	10	46	39.14	+07	26	24.8	062
51		1942	04	17.93644	15	14	10.48	-05	41	41.1	062
51		1942	04	19.96598	15	12	46.91	-05	22	57.6	062
51		1942	04	28.86622	15	05	51.16	-04	03	07.6	062
51		1942	04	28.86836	15	05	51.03	-04	03	06.9	062
51		1942	05	04.90411	15	00	39.81	-03	13	34.6	062
51		1942	05	04.95839	15	00	36.89	-03	13	08.8	062
51		1942	05	06.86118	14	58	57.12	-02	58	41.2	062
51		1942	05	06.86442	14	58	56.94	-02	58	41.0	062
51		1942	05	06.89718	14	58	55.18	-02	58	24.7	062
51		1942	05	06.91917	14	58	53.96	-02	58	15.7	062
51		1942	05	15.93319	14	51	09.89	-01	59	22.8	062
51		1942	05	15.93597	14	51	09.76	-01	59	22.4	062
51		1943	08	30.96227	23	55	57.88	+01	13	37.4	062
51		1943	08	31.90504	23	55	20.14	+01	05	42.5	062
51		1943	08	31.90712	23	55	20.05	+01	05	41.2	062
51		1943	09	06.97216	23	50	56.37	+00	11	45.9	062
51		1943	09	06.97946	23	50	55.74	+00	11	42.6	062
51		1949	03	03.02774	12	11	12.01	-01	53	46.2	062
51		1949	03	24.94840	11	54	54.25	+02	10	02.5	062
51		1949	03	25.03354	11	54	50.30	+02	11	01.7	062
51		1949	03	28.93715	11	51	49.38	+02	54	46.8	062
51		1949	04	01.93870	11	48	53.88	+03	37	42.0	062
51		1954	09	06.98767	00	35	40.14	+02	48	11.3	062
52		1940	04	03.88198	11	37	12.63	+11	26	59.5	062
52		1940	04	04.81830	11	36	39.35	+11	30	36.9	062
52		1945	01	15.99579	08	59	50.83	+16	29	16.2	062
52		1949	12	23.87804	05	23	44.89	+15	07	58.4	062

53	1943	04	06.94843	13	57	06.79	-04	29	28.0		062
53	1943	04	09.04770	13	55	21.80	-04	16	31.7		062
53	1945	10	01.90968	00	47	25.37	-01	36	13.8		062
53	1947	03	18.96571	12	09	11.99	+04	25	03.4		062
53	1947	04	13.89507	11	49	40.35	+07	00	50.3		062
54	1941	01	30.82007	08	14	19.83	+22	56	40.0	1	062
54	1941	01	30.88766	08	14	15.41	+22	56	40.9		062
54	1946	03	22.87431	10	09	17.62	+02	39	14.6		062
54	1946	03	24.83809	10	07	56.57	+02	44	23.7		062
54	1950	03	07.84948	08	08	12.89	+20	25	26.6		062
55	1938	02	17.83618	09	05	13.32	+25	42	30.1		062
55	1938	02	22.76508	09	00	56.87	+25	46	45.8	1	062
55	1943	03	12.91097	11	15	37.83	+09	15	49.1		062
55	1943	03	13.00142	11	15	32.92	+09	16	08.3		062
55	1943	03	27.85775	11	03	19.78	+09	59	00.3		062
55	1947	02	12.77263	07	53	54.46	+30	43	54.9		062
56	1940	04	04.92941	13	33	51.55	-08	06	45.0		062
56	1940	04	09.92308	13	29	50.17	-07	23	42.2		062
56	1940	04	11.90920	13	28	11.18	-07	06	08.0		062
56	1941	09	27.95671	02	08	03.34	+11	02	49.2		062
56	1941	09	30.01863	02	06	43.01	+10	47	11.3		062
56	1945	09	11.93495	00	08	19.44	+05	28	20.8		062
56	1945	09	11.96134	00	08	18.21	+05	28	05.6		062
56	1945	09	12.97015	00	07	34.30	+05	18	33.3	1	062
56	1948	02	08.08681	11	20	03.25	-02	25	42.9	1	062
56	1948	03	03.96660	11	02	10.61	-00	06	04.0		062
57	1941	04	23.91914	14	46	56.69	-08	23	24.5		062
57	1941	04	27.93623	14	44	10.56	-07	56	34.5		062
57	1943	10	01.88618	00	14	25.46	+07	15	25.9		062
57	1954	09	19.83635	22	34	20.80	+04	15	38.5		062
57	1954	09	29.82368	22	29	14.61	+02	47	02.5		062
58	1940	04	03.93453	13	08	51.62	-02	17	18.5		062
58	1940	04	04.89405	13	08	06.25	-02	10	45.3		062
58	1942	11	05.86104	02	48	30.92	+09	03	19.2		062
58	1944	02	21.91389	09	44	19.52	+11	31	20.7		062
58	1944	02	28.90620	09	38	41.44	+12	15	39.1		062
58	1949	04	18.92743	14	07	03.40	-06	14	00.8		062
58	1949	04	19.02795	14	06	58.27	-06	13	23.6		062
58	1949	04	24.99119	14	02	06.45	-05	38	18.7		062
59	1943	03	12.97272	11	50	48.17	+02	11	28.1		062
59	1943	03	29.85822	11	37	56.86	+04	17	40.9		062
59	1943	03	29.90584	11	37	54.68	+04	17	59.0		062
59	1945	10	01.93664	01	13	19.47	+01	25	10.8		062
59	1945	11	02.78347	00	51	50.97	-02	34	42.6		062
59	1947	02	13.89541	09	01	24.97	+09	36	38.7		062
60	1938	09	22.99446	01	37	08.95	+09	47	57.0		062
60	1940	04	09.92829	13	56	16.56	-10	18	01.6		062
60	1947	02	13.91198	09	38	23.27	+08	39	50.2		062
60	1953	11	13.00926	03	32	31.29	+14	30	29.0		062
61	1940	02	02.95769	09	34	54.47	+22	38	39.8	1	062
61	1945	02	04.87941	08	48	16.93	+29	25	22.9		062
61	1953	09	17.88059	23	48	46.08	+13	17	50.3		062
62	1945	01	16.04337	09	34	09.21	+14	52	29.8		062
62	1945	03	03.82812	08	59	26.56	+17	57	08.1		062
62	1945	03	06.86949	08	57	52.69	+18	04	42.6		062
62	1946	04	06.95852	13	23	58.61	-05	39	26.1		062
62	1954	10	05.91586	01	26	43.87	+05	25	54.2		062
62	1954	10	05.92303	01	26	43.53	+05	25	52.5		062
63	1940	09	02.92862	23	48	27.65	+01	02	33.7	2	062

63	1940	09	02.96172	23	48	25.82	+01	02	30.4	2	062
63	1940	09	02.99578	23	48	24.01	+01	02	24.8		062
63	1940	09	08.94128	23	42	44.20	+00	46	03.9		062
63	1940	09	11.96941	23	39	44.20	+00	36	36.4	2	062
63	1940	09	12.00367	23	39	42.15	+00	36	28.8	2	062
63	1944	10	10.97631	02	01	29.65	+20	07	10.9		062
63	1946	03	05.83625	08	34	01.98	+21	34	41.8		062
64	1938	10	15.90420	02	13	53.84	+15	37	48.8		062
64	1938	10	16.89763	02	13	03.73	+15	33	55.9		062
64	1938	11	16.86564	01	46	32.78	+13	11	26.8		062
64	1942	09	07.93962	23	52	47.80	+00	43	22.6		062
64	1942	09	08.90463	23	52	02.35	+00	38	55.4	1	062
64	1942	09	08.93391	23	52	00.91	+00	38	47.3	1	062
64	1942	09	08.96007	23	51	59.76	+00	38	39.7		062
64	1942	09	08.97940	23	51	58.86	+00	38	34.6		062
64	1942	09	11.89465	23	49	38.75	+00	24	41.8		062
64	1943	12	28.98285	07	52	23.28	+21	47	57.0		062
64	1953	03	14.81462	09	25	16.23	+14	18	19.0		062
64	1953	03	14.84799	09	25	15.35	+14	18	22.3		062
64	1953	03	18.84852	09	23	45.50	+14	24	06.1		062
65	1940	10	03.03567	02	41	39.14	+11	45	59.0		062
65	1940	10	03.97933	02	41	11.09	+11	42	53.2		062
65	1943	03	07.82345	09	22	24.48	+14	27	19.3		062
65	1943	03	07.89156	09	22	21.98	+14	27	34.2		062
65	1946	10	23.91754	01	13	37.25	+04	07	42.6		062
65	1946	10	26.79977	01	11	46.03	+03	55	43.5		062
65	1950	03	16.01907	12	55	00.52	-03	05	01.0		062
65	1950	03	16.03311	12	55	00.13	-03	04	53.9		062
65	1953	11	13.01424	04	01	06.59	+15	53	19.2		062
66	1938	02	06.78722	09	25	53.51	+19	11	13.7		062
66	1938	02	06.81639	09	25	51.78	+19	11	20.6		062
66	1938	02	07.81932	09	24	51.65	+19	15	00.2		062
66	1938	02	18.84257	09	14	15.32	+19	49	41.3	1	062
66	1938	02	22.76508	09	10	50.32	+19	58	51.8	1	062
67	1941	10	16.06615	03	22	26.34	+15	30	52.2		062
67	1947	02	13.04716	10	49	38.17	+00	22	48.7	1	062
68	1939	02	15.92316	10	57	12.55	+18	11	58.1		062
68	1944	03	29.95719	12	01	30.43	+08	26	00.0		062
68	1946	10	07.09060	03	17	37.21	+16	23	07.1		062
68	1946	10	22.04338	03	07	20.67	+16	35	56.6		062
68	1946	10	23.99289	03	05	37.52	+16	36	29.9		062
68	1949	04	18.91337	13	27	09.20	-04	44	30.3		062
68	1949	04	24.97800	13	21	59.55	-04	27	00.6		062
68	1953	03	07.87973	11	03	16.68	+16	57	18.6		062
68	1953	03	10.87111	11	00	43.02	+17	08	42.5	1	062
68	1953	03	10.90212	11	00	41.63	+17	08	49.7	1	062
68	1953	03	11.85841	10	59	52.56	+17	12	12.5		062
69	1946	10	03.86894	23	32	42.65	-01	08	00.7	1	062
69	1946	10	03.87721	23	32	42.57	-01	08	06.8		062
70	1941	04	03.95361	12	37	55.24	+08	39	55.0	1	062
70	1945	03	06.99049	11	36	10.07	+19	26	20.5		062
70	1945	04	04.92199	11	10	04.08	+20	28	56.6		062
70	1945	04	05.82828	11	09	24.92	+20	28	12.2		062
71	1939	09	16.85048	23	03	48.38	+17	32	09.8		062
71	1942	02	19.89207	10	04	49.27	+00	00	05.9		062
71	1942	02	21.92271	10	02	21.36	-00	07	35.7		062
71	1948	09	02.96021	22	34	38.45	+08	35	16.3		062
72	1939	01	19.03427	08	57	02.07	+08	21	07.0		062
72	1939	01	20.05560	08	56	03.00	+08	24	28.9		062

72		1944	10	22.90773	01	44	49.72	+10	42	46.6	062
72		1954	09	06.90972	22	56	20.44	+01	10	08.9	062
73		1938	10	15.90420	02	05	31.02	+14	16	17.0	062
73		1938	10	16.89763	02	04	39.39	+14	12	48.2	062
73		1938	11	15.94233	01	39	08.05	+12	17	26.3	062
73		1942	09	08.92494	23	34	48.83	-03	59	20.4	062
73		1949	03	03.02774	12	12	18.26	-00	30	34.7	062
73		1949	03	24.94840	11	54	03.84	+01	08	54.0	062
73		1949	03	25.03354	11	53	59.37	+01	09	17.4	062
73		1953	03	14.81462	09	16	49.94	+18	05	48.1	062
73		1953	03	14.84799	09	16	49.11	+18	05	49.6	062
73		1953	03	18.84852	09	15	08.81	+18	08	04.4	062
74		1941	10	15.93455	02	39	20.64	+13	32	12.5	062
74		1941	10	27.87780	02	30	30.26	+12	16	06.7	062
74		1941	10	27.88532	02	30	29.99	+12	16	03.5	2 062
74		1941	10	27.91831	02	30	28.28	+12	15	50.0	062
74		1941	10	27.92566	02	30	27.96	+12	15	47.3	2 062
74		1941	11	12.90245	02	18	11.63	+10	38	02.3	062
74		1941	11	14.89080	02	16	51.82	+10	27	37.4	062
74		1943	03	07.83822	09	43	31.79	+09	18	51.7	062
74		1943	03	07.88508	09	43	29.76	+09	19	04.4	062
74		1948	03	03.01484	11	33	26.55	+00	03	12.2	062
75		1943	03	07.88126	09	51	58.64	+16	29	21.7	062
75		1943	03	07.95372	09	51	55.26	+16	29	32.6	062
75		1945	10	01.92414	01	28	42.29	+12	26	04.9	062
75		1945	10	15.90183	01	15	47.22	+12	08	27.1	062
75		1945	11	02.81594	01	01	40.84	+11	33	23.7	2 062
75		1945	11	02.84649	01	01	39.49	+11	33	18.9	2 062
75		1947	02	12.77014	08	34	30.06	+24	13	02.7	062
75		1947	02	12.79861	08	34	28.51	+24	13	07.0	062
75		1947	02	12.94861	08	34	20.34	+24	13	22.3	2 062
75		1947	02	12.97888	08	34	18.83	+24	13	24.5	2 062
75		1948	03	31.84042	12	01	41.28	-00	43	55.2	062
75		1948	03	31.88660	12	01	39.26	-00	43	45.4	062
75		1948	03	31.91866	12	01	37.61	-00	43	32.9	062
76		1940	03	29.89213	11	38	16.08	+00	35	07.0	062
76		1940	03	30.86227	11	37	38.93	+00	39	42.7	062
76		1940	04	12.86590	11	30	30.97	+01	35	10.3	062
76		1956	09	29.93793	00	37	57.62	+05	15	57.8	062
77		1938	02	17.84579	08	55	09.62	+20	14	33.0	062
77		1945	10	01.98404	02	07	52.57	+14	33	07.5	062
77		1947	03	18.89763	10	56	57.07	+07	42	25.2	062
78		1946	10	22.87944	01	30	13.32	+22	00	55.0	062
78		1946	10	22.94704	01	30	09.22	+22	00	41.3	1 062
78		1946	10	25.96064	01	27	02.91	+21	49	57.0	062
79		1941	01	01.96096	08	48	20.62	+09	47	55.4	062
79		1941	01	21.89570	08	30	19.95	+10	40	34.0	062
79		1941	01	21.92475	08	30	18.34	+10	40	42.0	062
79		1941	01	22.91125	08	29	17.94	+10	44	41.9	062
79		1942	04	18.98538	15	11	00.82	-15	53	42.5	062
79		1942	04	19.98219	15	10	13.62	-15	48	57.6	062
79		1947	10	08.82042	23	18	59.66	-00	28	50.5	062
79		1949	03	24.93926	11	05	33.37	+01	27	09.1	062
79		1949	03	24.98133	11	05	31.55	+01	27	24.7	062
80		1947	04	18.87912	12	17	09.18	-07	50	32.7	062
80		1948	08	31.90440	22	13	45.66	+06	34	40.4	062
81		1946	10	03.96842	00	20	40.48	+03	44	44.4	1 062
81		1946	10	03.97657	00	20	39.65	+03	44	44.0	062
81		1946	10	24.90704	00	03	47.91	+03	22	28.2	062

81		1953	03	10.92770	11	09	17.70	+08	51	42.7	062
81		1953	03	11.88757	11	08	26.57	+08	54	40.1	062
82		1939	02	10.97593	10	43	34.22	+12	40	49.5	062
82		1939	02	13.92991	10	41	19.29	+12	52	45.7	062
82		1939	02	13.98662	10	41	16.30	+12	53	01.4	1 062
82		1939	02	13.99229	10	41	16.59	+12	53	04.3	062
82		1939	02	16.97162	10	38	51.62	+13	05	11.5	062
82		1946	10	03.88584	23	58	33.59	-02	00	16.6	062
83		1942	09	08.93050	00	02	57.83	-04	35	03.7	062
83		1946	10	24.90843	00	55	38.57	+04	53	31.4	062
83		1946	10	26.78831	00	54	01.25	+04	47	21.5	062
83		1946	10	26.83542	00	53	58.81	+04	47	13.0	062
84		1945	09	11.94815	23	51	00.02	+09	17	07.9	062
84		1945	09	12.97015	23	49	58.60	+09	20	58.2	062
84		1947	01	26.01925	09	53	03.13	+15	15	52.8	062
85		1947	10	08.81213	23	06	36.57	+03	17	14.1	062
85		1947	10	18.82730	23	04	56.35	+01	33	07.2	062
86		1939	03	17.97006	12	14	22.47	+05	39	07.8	062
86		1939	03	18.98597	12	13	38.44	+05	43	57.8	062
86		1939	03	22.96273	12	10	44.77	+06	02	48.4	062
86		1939	04	18.98304	11	53	00.02	+07	37	34.6	062
86		1942	11	05.98147	03	33	25.74	+14	12	33.5	062
86		1942	12	03.87331	03	10	35.11	+13	47	28.5	062
86		1944	02	25.92924	10	16	24.52	+17	19	23.1	3 062
86		1944	02	25.96350	10	16	22.88	+17	19	32.9	3 062
86		1944	02	28.94069	10	14	03.03	+17	32	40.4	062
86		1944	02	28.96118	10	14	02.02	+17	32	45.0	062
86		1953	11	13.01424	03	56	44.09	+16	16	15.4	062
86		1955	01	27.95990	10	54	35.77	+13	17	22.4	062
86		1955	02	23.00820	10	36	48.25	+15	32	39.2	062
86		1955	02	24.94158	10	35	16.83	+15	42	14.2	062
86		1955	03	23.80390	10	16	22.48	+17	19	56.8	062
86		1955	03	23.83795	10	16	21.35	+17	20	02.0	062
86		1955	03	28.84947	10	13	51.97	+17	28	35.5	062
87		1940	11	29.97770	03	55	33.17	+17	01	17.8	062
87		1940	12	04.79633	03	51	43.64	+17	02	34.0	062
87		1942	01	20.86619	08	24	22.66	+30	23	11.6	062
87		1943	03	03.98447	12	18	05.11	+13	48	19.2	062
87		1943	03	03.99894	12	18	04.53	+13	48	24.5	062
87		1943	03	08.01101	12	15	37.05	+14	08	09.5	062
87		1943	03	27.92176	12	02	03.72	+15	29	24.2	062
88		1940	09	06.93900	22	54	53.42	+02	07	41.0	062
88		1941	12	25.93537	05	55	53.97	+24	20	24.3	062
88		1942	01	10.86017	05	41	30.88	+23	53	57.4	062
88		1943	03	13.89419	10	21	41.46	+02	55	46.4	062
88		1945	11	02.84979	02	03	08.65	+20	11	40.8	062
88		1945	11	05.91925	02	00	31.10	+19	52	49.8	062
88		1947	01	25.85681	07	51	58.72	+18	05	28.4	062
88		1954	10	02.94476	00	32	36.63	+12	59	25.7	062
88		1954	10	04.88376	00	30	59.15	+12	48	26.7	062
88		1956	01	05.86963	06	58	33.48	+21	52	54.8	062
89		1942	03	20.84688	10	27	37.48	-05	10	43.0	062
89		1942	03	21.90539	10	26	45.13	-05	07	06.1	062
89		1946	03	24.84729	10	02	05.84	-00	48	41.7	062
89		1956	09	10.97708	00	31	59.07	+28	29	36.9	062
90		1942	03	12.80538	10	19	42.68	+13	40	36.7	062
90		1945	11	04.03043	04	43	06.44	+21	51	39.1	062
90		1945	11	06.03030	04	41	46.85	+21	50	09.6	062

90		1947	01	25.86282	08	31	39.36	+21	26	55.7	062
90		1947	01	25.86850	08	31	39.16	+21	26	53.7	062
90		1948	03	03.02439	12	21	10.73	+00	54	59.8	062
91		1941	09	27.96516	01	59	52.12	+12	52	16.2	062
91		1941	09	30.01863	01	58	33.11	+12	47	33.7	1 062
91		1943	03	29.85000	11	05	10.81	+06	57	05.5	062
91		1943	03	29.90006	11	05	08.82	+06	57	19.1	1 062
91		1945	09	11.99369	00	36	17.01	+03	17	28.4	062
91		1945	09	13.03074	00	35	32.06	+03	13	25.1	062
91		1947	02	11.96892	10	10	34.21	+13	54	59.2	062
92		1939	02	15.91251	10	32	52.57	+20	18	58.6	062
92		1940	04	11.00833	14	56	16.21	-03	21	29.7	062
92		1940	04	30.95352	14	42	19.86	-02	16	35.4	062
92		1940	05	01.93927	14	41	34.89	-02	14	04.7	062
92		1945	03	07.03432	11	44	10.13	+15	40	02.0	062
92		1945	04	04.92199	11	24	19.35	+17	42	36.2	062
93		1943	03	27.83044	09	27	25.43	+21	30	53.2	062
93		1945	10	01.92414	01	31	54.61	+13	21	37.6	062
93		1945	10	15.90183	01	18	55.24	+12	49	47.1	062
93		1945	11	02.83122	01	03	19.23	+11	57	54.7	062
93		1948	03	03.02439	12	26	32.06	-01	16	47.9	062
93		1948	03	31.84042	12	01	27.88	-00	04	43.3	062
93		1948	03	31.88660	12	01	25.35	-00	04	34.7	062
93		1948	03	31.91866	12	01	23.38	-00	04	29.0	062
93		1954	09	06.99485	00	52	38.64	+05	18	14.5	062
94		1940	09	29.93337	00	27	16.86	+03	44	19.0	062
94		1940	09	30.96893	00	26	25.68	+03	41	44.1	062
94		1943	04	03.90079	12	10	00.85	-01	33	41.2	2 062
94		1943	04	03.90785	12	10	00.53	-01	33	40.3	2 062
94		1943	04	03.93817	12	09	59.14	-01	33	35.0	2 062
94		1943	04	03.94523	12	09	58.79	-01	33	34.4	2 062
94		1943	04	08.85730	12	06	20.96	-01	19	35.3	062
94		1946	11	16.89628	02	43	05.30	+24	56	39.0	062
94		1946	12	14.86442	02	25	17.99	+23	42	44.0	062
94		1948	02	09.97159	09	46	17.60	+21	55	48.6	062
95		1942	10	06.90440	01	15	40.17	+23	11	52.0	062
96		1940	09	09.89127	00	09	10.31	+16	43	18.4	062
96		1940	09	11.99534	00	07	31.40	+16	42	19.4	062
96		1945	09	10.84443	22	47	54.86	+02	00	28.9	062
96		1945	09	12.86355	22	46	15.23	+01	56	09.0	062
96		1956	09	29.88090	23	48	37.50	+15	32	01.8	062
97		1938	04	05.01062	12	59	23.65	+04	04	44.5	062
97		1938	04	05.04640	12	59	21.88	+04	05	01.3	062
97		1938	04	06.98185	12	57	48.03	+04	19	53.3	5 062
97		1938	04	06.98839	12	57	47.81	+04	19	56.2	062
97		1938	04	20.96330	12	47	12.14	+05	51	23.1	062
97		1938	04	23.91991	12	45	13.96	+06	06	31.1	062
97		1942	02	12.02920	10	53	57.51	+04	59	18.7	062
97		1942	02	18.02689	10	49	22.76	+05	58	54.9	062
97		1942	02	21.98196	10	46	09.83	+06	39	37.3	062
97		1943	05	02.96710	16	01	30.59	-04	27	44.4	062
97		1955	02	22.94205	09	52	25.18	+09	03	51.1	062
97		1955	02	24.86472	09	50	52.91	+09	24	01.4	062
98		1941	11	16.83115	02	16	22.45	+34	23	07.1	062
98		1945	09	12.00243	00	48	49.98	+10	40	22.7	062
98		1945	09	13.03994	00	48	00.62	+10	40	32.4	062
98		1945	10	01.85811	00	30	40.35	+10	23	58.1	062
98		1954	10	02.98978	01	29	53.16	+21	19	18.8	062

98		1954 10 03.95098	01 28 58.07	+21 19 48.4						062
98		1954 10 04.97647	01 27 57.85	+21 20 15.0						062
98		1954 10 05.98206	01 26 58.66	+21 20 24.3						062
98		1956 03 07.91946	10 55 54.85	+12 38 07.7					1	062
99		1939 10 18.91069	01 59 39.74	+07 05 17.7						062
99		1948 10 30.04091	03 21 23.03	+20 47 11.1						062
100		1940 12 04.85383	04 35 48.66	+14 14 36.4						062
100		1942 01 20.95317	08 55 01.95	+17 28 20.7						062
100		1942 02 04.77237	08 43 20.87	+18 33 22.5						062
100		1942 02 11.82452	08 37 54.75	+19 02 23.1						062
100		1943 04 03.97735	12 41 36.73	+04 20 12.6						062
100		1943 04 07.91737	12 38 44.16	+04 40 40.0						062
100		1943 04 07.92490	12 38 43.82	+04 40 42.1						062
100		1948 02 29.90571	10 59 21.78	+11 48 24.6						062
183		1948 02 07.99101	09 23 46.78	+12 07 23.7					1	062

Note 1: near edge of plate. 2: near edge of plate, transferred. 3: severe involvement with defect. 4: remeasurement of position on RI 2237. 5: broken plate. 6 = 2 + 4.

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY.

Plates taken with the 0.4-m f/4 astrograph at the Sternberg Crimean Station. Observers N. V. Metlova and N. E. Kurochkin. Measured by T. M. Smirnova. Copied from Kiev Komet. Tsirk. No. 316. Contact: N. V. Metlova, GAISH Crimean Station, P/O Nauchnyj, Crimea 334413, U.S.S.R.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2120		1983 09 02.90299	23 05 39.06	+17 48 55.4			095
2120		1983 09 04.03681	23 04 52.06	+17 41 50.7			095
2120		1983 09 04.99896	23 04 12.06	+17 35 36.3			095
2120		1983 09 05.03382	23 04 10.63	+17 35 20.0			095
2120		1983 09 05.97493	23 03 31.31	+17 29 03.1			095
2120		1983 09 12.98458	22 58 39.38	+16 35 47.8			095
2120		1983 09 13.96826	22 57 59.06	+16 27 28.7			095
2120		1983 09 15.91847	22 56 40.31	+16 10 33.7			095
1983 RE3	*	1983 09 02.90299	23 03 19.88	+17 21 33.2		16.0V	095
1983 RE3		1983 09 04.03681	23 02 28.38	+17 16 19.9		16.0V	095
1983 RE3		1983 09 04.99896	23 01 44.75	+17 11 36.5		16.0V	095
1983 RE3		1983 09 05.03382	23 01 43.06	+17 11 26.7			095
1983 RE3		1983 09 05.97493	23 01 00.25	+17 06 36.4		16.0V	095
1983 RE3		1983 09 12.98458	22 55 41.75	+16 23 17.4		16.0V	095
1983 RE3		1983 09 13.96826	22 54 57.88	+16 16 14.3		16.0V	095
1983 RE3		1983 09 15.91847	22 53 32.56	+16 01 43.6		16.0V	095
1983 RF3	*	1983 09 02.90299	23 15 16.65	+16 16 06.6		17.0V	095
1983 RF3		1983 09 04.03681	23 14 17.50	+16 15 43.0		17.0V	095
1983 RF3		1983 09 04.99896	23 13 26.06	+16 15 10.2		17.0V	095
1983 RF3		1983 09 05.03382	23 13 24.06	+16 15 07.1			095
1983 RF3		1983 09 05.97493	23 12 33.13	+16 14 20.9		17.0V	095
1983 RF3		1983 09 12.98458	23 06 02.63	+16 01 14.6		17.0V	095
1983 RF3		1983 09 13.96826	23 05 07.25	+15 58 23.8		17.0V	095
1983 RF3		1983 09 15.91847	23 03 18.25	+15 52 06.0		17.0V	095

OBSERVATION MADE AT THE YUNNAN OBSERVATORY BY M.-X. BAO AND C.-Y. SHAO.

Plate with 1-m reflector. Measured by X. Wang at the Purple Mountain Observatory. Contact: C.-Y. Shao, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
2822	1982 12 07.63765	03 02 49.10	+02 16 33.5		1	286

Note 1: observatory code 286, Long. and Parallax 102.79, -387, -179 (see MPC 7759).

OBSERVATIONS MADE AT BURLINGTON, NEW JERSEY, BY T. HANDLEY.

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

Object	Date	UT	R. A. (1950)	Decl.	Obs.
18	1983 05	07.19792	10 26 49.99	+15 01 46.0	292
45	1983 06	12.33681	19 52 52.19	-13 47 50.4	292
45	1983 07	11.32222	19 32 49.45	-15 07 54.0	292
45	1983 08	15.12708	19 07 39.80	-17 42 36.6	292
51	1983 09	11.28889	23 31 36.63	-01 31 07.0	292

OBSERVATIONS MADE AT GEISEI BY T. SEKI.

Plates taken with a 0.40-m reflector. Mainly copied from Nihondaira Obs. Circ. no. 1468. Contact: T. Seki, Kamimachi 2-9-31, Kochi, Japan.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2169	1984 01	22.49167	07 14 47.39	+23 54 37.6	16.5	372
2169	1984 01	22.50590	07 14 46.89	+23 54 35.8		372
2996	1984 01	31.66736	07 08 16.89	+26 04 07.2	16.5	372
2996	1984 01	31.67847	07 08 16.42	+26 04 07.2		372
1938 WA	1983 12	02.62743	04 11 23.10	+19 52 45.6	16.5	372
1938 WA	1983 12	09.63090	04 05 26.08	+19 37 01.4	16.5	372
1938 WA	1983 12	09.64340	04 05 25.49	+19 37 00.6		372
1938 WA	1983 12	12.66215	04 03 00.46	+19 30 31.9	16.5	372
1938 WA	1983 12	12.68056	04 02 59.36	+19 30 30.8		372
1979 FJ2	1984 02	06.67986	10 23 29.24	+13 11 28.1	17.5	372
1979 FJ2	1984 02	06.69722	10 23 28.33	+13 11 32.1		372
1983 WB	1983 12	30.49687	03 51 53.38	+19 58 53.7		372
1983 WB	1983 12	30.50937	03 51 53.11	+19 58 56.4		372
1984 AU	1984 01	23.57535	07 12 29.68	+25 48 26.9	16.5	372
1984 AU	1984 01	23.58368	07 12 29.01	+25 48 26.4		372
1984 AU	1984 01	25.55243	07 10 38.2	+25 47 31	16.5	372
1984 BJ	1984 01	31.71528	08 03 23.12	+21 26 29.0	17	372
1984 BJ	1984 01	31.72639	08 03 22.45	+21 26 28.4		372
1984 BJ	1984 02	02.73264	08 01 35.12	+21 26 16.7	17	372
1984 BJ	1984 02	02.74861	08 01 34.23	+21 26 16.0		372
1984 BJ	1984 02	06.59236	07 58 17.77	+21 25 10.6	17.5	372
1984 BJ	1984 02	06.60417	07 58 17.09	+21 25 07.7		372
1984 BJ	1984 02	08.58646	07 56 41.34	+21 24 17.5	17.5	372
1984 BK	1984 01	25.60208	08 09 36.21	+20 23 04.0	17	372
1984 BK	1984 01	25.61597	08 09 35.16	+20 23 02.1		372
1984 BK	1984 01	31.69132	08 02 57.54	+20 30 19.9	18	372
1984 BK	1984 01	31.70313	08 02 56.94	+20 30 22.0		372
1984 BC1 *	1984 01	27.45590	03 49 43.06	-35 03 02.9	15	372
1984 BC1	1984 01	27.47361	03 49 42.48	-35 03 06.5		372
1984 CG *	1984 02	08.69062	09 34 58.02	+13 48 40.0	17	372
1984 CG	1984 02	08.70451	09 34 57.48	+13 48 41.4		372
1984 CG	1984 02	12.76875	09 31 19.07	+13 56 11.7	18	372
1984 CG	1984 02	12.78125	09 31 18.49	+13 56 13.2		372

OBSERVATIONS MADE AT SIDING SPRING BY C.-I. LAGERKVIST, G. HAHN AND B. E. WESTERLUND.

Plates with the 0.50-m (50/66/172 cm) Schmidt telescope at the Uppsala Southern Station, now moved from Mount Stromlo to the Siding Spring Observatory. Measurements, reductions and identifications as on MPC 8605. SAO reference stars, mean errors 0".61 in R.A., 0".63 in Decl. Contact: C.-I. Lagerkvist, Astronomiska Observatoriet, Box 515, S-75120 Uppsala, Sweden.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1812	1981 10	24.47681	00 54 51.34	+00 03 11.1	413
1812	1981 10	24.49066	00 54 50.70	+00 03 02.7	413
1812	1981 10	24.67073	00 54 43.30	+00 01 50.9	413
1812	1981 10	24.68458	00 54 42.96	+00 01 46.1	413

2035		1981 10 23.64091	03 46 16.01	-13 48 44.5			413
2035		1981 10 23.65614	03 46 14.88	-13 48 42.2			413
2035		1981 10 23.73371	03 46 08.39	-13 48 28.5			413
2035		1981 10 23.74617	03 46 07.06	-13 48 27.9			413
2077		1981 10 23.66999	02 20 07.61	-33 47 10.1			413
2077		1981 10 23.68385	02 20 06.33	-33 46 57.4			413
2161		1981 10 25.42283	00 33 05.82	-08 52 57.0			413
2161		1981 10 25.43536	00 33 05.38	-08 52 57.6			413
2161		1981 10 25.67354	00 32 57.13	-08 53 26.0			413
2161		1981 10 25.68600	00 32 56.69	-08 53 26.2			413
2162		1981 10 24.47681	00 56 15.40	-00 10 44.8			413
2162		1981 10 24.49066	00 56 14.74	-00 10 49.1			413
2162		1981 10 24.67073	00 56 05.51	-00 11 38.6			413
2162		1981 10 24.68458	00 56 04.82	-00 11 43.5			413
2558		1981 10 24.47681	00 52 03.72	+01 02 50.8			413
2558		1981 10 24.49066	00 52 03.07	+01 02 51.5			413
2558		1981 10 24.67073	00 51 53.38	+01 02 47.7			413
2558		1981 10 24.68458	00 51 52.45	+01 02 45.9			413
1981	UD10*	1981 10 25.42283	00 26 02.47	-09 38 12.2			413
1981	UD10	1981 10 25.43536	00 26 01.85	-09 38 13.1			413
1981	UD10	1981 10 25.67354	00 25 51.95	-09 38 12.8			413
1981	UD10	1981 10 25.68600	00 25 51.37	-09 38 12.6			413

OBSERVATIONS MADE AT MOUNT JOHN UNIVERSITY OBSERVATORY BY A. C. GILMORE AND P. M. KILMARTIN.

Plates taken with the 0.6-m f/14 reflector by A. C. Gilmore, measured by P. M. Kilmartin. Computational support from R. McIntosh and W. M. Kissling. Contact: A. C. Gilmore, P.O. Box 57, Lake Tekapo, New Zealand.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1980 SH	1983 12	04.56259	07 29 14.27	-21 17 36.7		474
1980 SH	1983 12	04.58470	07 29 13.87	-21 17 55.4	17	474
1980 SH	1984 01	02.54708	07 08 54.59	-24 14 01.4	16.2	474
1980 SH	1984 01	02.56884	07 08 53.18	-24 13 57.5		474
1980 XE	1984 01	29.52221	12 05 28.81	-22 29 53.1	16.4	474
1980 XE	1984 01	29.54490	12 05 28.82	-22 30 18.2		474
1981 QJ1	1984 01	28.56353	10 32 03.76	+16 32 45.9	18.5	474
1981 QJ1	1984 01	28.60300	10 32 01.90	+16 32 46.5		474
1982 MH	1983 12	29.46502	04 18 58.64	+23 59 42.2	18	474
1982 MH	1983 12	29.50102	04 18 56.94	+23 59 42.1		474
1982 RU	1984 01	03.61572	08 16 00.35	+01 21 20.0	16.7	474
1982 RU	1984 01	28.49709	07 57 01.89	+02 51 13.8	16.8	474
1982 RU	1984 01	28.52152	07 57 00.76	+02 51 21.8		474
1983 PB	1983 11	01.41498	22 08 51.46	-20 45 17.5		474
1983 RD	1983 12	05.44559	04 40 23.11	-11 55 49.2	16.4	474
1983 RD	1983 12	05.46787	04 40 22.19	-11 55 24.2		474

OBSERVATIONS MADE AT THE OSSERVATORIO S. VITTORE.

Plates taken by C. Vacchi and G. Sassi; blinked by C. Vacchi, measured and reduced by C. Vacchi, V. Goretti and E. Colombini. Contact: E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1981 EG14	1984 01	05.92222	06 14 58.89	+14 07 11.1	16.9	552
1981 EG14	1984 01	05.94444	06 14 57.50	+14 07 10.0		552
1984 BA	1984 02	01.88542	07 00 45.81	+17 37 35.8	15.5	552
1984 BA	1984 02	01.91458	07 00 44.27	+17 37 37.5		552
1984 BB	1984 02	01.93056	07 02 35.74	+18 44 31.9	17.0	552
1984 BB	1984 02	01.95625	07 02 34.67	+18 44 39.3		552
1984 FA *	1984 03	26.90069	13 20 50.84	+01 37 14.4	17.0	552
1984 FA	1984 03	26.91944	13 20 50.17	+01 37 16.1		552

OBSERVATIONS MADE AT REINTAL BY F. SEILER.
Contact: F. Frevert, Dilichstrasse 1, D-633 Wetzlar/Lahn, Federal Republic of Germany.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
942	1984 01	29.80833	09 23 17.38	+29 30 35.3	556
942	1984 01	29.81528	09 23 17.05	+29 30 40.6	556
942	1984 01	29.82222	09 23 16.57	+29 30 40.9	556
1160	1984 01	01.85417	08 12 59.18	+43 11 22.8	556
1160	1984 01	01.86111	08 12 58.85	+43 11 26.1	556
2044	1983 12	03.79167	05 06 46.12	+45 21 47.2	556
2044	1983 12	03.79861	05 06 45.50	+45 22 00.2	556
2044	1983 12	03.81250	05 06 44.10	+45 22 29.4	556
2044	1983 12	03.81944	05 06 43.26	+45 22 44.4	556
2044	1983 12	03.82639	05 06 42.56	+45 22 57.3	556
2044	1983 12	03.83333	05 06 41.82	+45 23 11.5	556
2044	1983 12	03.84028	05 06 41.22	+45 23 24.5	556
2044	1983 12	03.85417	05 06 39.92	+45 23 51.6	556
2044	1983 12	04.76597	05 05 06.99	+45 54 02.8	556
2044	1983 12	04.78681	05 05 04.84	+45 54 44.1	556
2044	1983 12	04.79375	05 05 04.11	+45 54 57.1	556
2044	1983 12	04.80069	05 05 03.40	+45 55 11.8	556
2044	1983 12	04.80764	05 05 02.73	+45 55 27.1	556
2044	1983 12	04.81458	05 05 01.97	+45 55 41.0	556
2044	1983 12	04.82153	05 05 01.18	+45 55 54.7	556
2044	1983 12	28.79375	04 18 01.76	+55 47 04.3	556
2044	1983 12	28.80069	04 18 00.96	+55 47 09.9	556
2044	1983 12	28.80764	04 18 00.16	+55 47 16.7	556
2044	1983 12	28.81458	04 17 59.52	+55 47 24.0	556
2044	1983 12	28.82153	04 17 58.59	+55 47 30.2	556
2044	1983 12	28.82847	04 17 57.89	+55 47 37.4	556
2044	1983 12	28.83542	04 17 57.17	+55 47 43.4	556
2044	1984 01	01.77500	04 11 43.24	+56 42 22.0	556
2044	1984 01	01.78194	04 11 42.50	+56 42 26.0	556
2044	1984 01	01.78889	04 11 41.85	+56 42 32.6	556
2044	1984 01	02.77222	04 10 19.48	+56 54 31.8	556
2044	1984 01	02.77917	04 10 18.97	+56 54 36.1	556
2044	1984 01	02.78611	04 10 18.28	+56 54 41.5	556
2044	1984 01	02.79306	04 10 17.68	+56 54 46.5	556
2757	1984 01	02.80000	05 23 53.51	+24 15 19.1	556
2757	1984 01	02.80694	05 23 53.20	+24 15 19.2	556
2757	1984 01	02.82083	05 23 52.63	+24 15 17.7	556

OBSERVATIONS MADE AT SEEWALCHEN BY M. BRESSLER.
Contact: F. Frevert, Dilichstrasse 1, D-633 Wetzlar/Lahn, Federal Republic of Germany.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
652	1983 05	06.86597	13 53 09.59	+09 18 54.6	563
652	1983 05	06.87083	13 53 09.49	+09 18 55.0	563
652	1983 05	06.87708	13 53 09.17	+09 18 53.7	563
652	1983 05	06.88750	13 53 08.48	+09 18 54.6	563
652	1983 05	06.89722	13 53 08.02	+09 18 53.5	563
652	1983 05	06.90417	13 53 07.65	+09 18 53.6	563
1160	1984 01	02.03194	08 12 46.50	+43 12 05.5	563
1160	1984 01	02.04028	08 12 45.83	+43 12 07.8	563
1160	1984 01	02.05417	08 12 44.85	+43 12 10.7	563
1160	1984 01	02.06806	08 12 43.90	+43 12 13.2	563
1160	1984 01	02.08194	08 12 43.02	+43 12 16.8	563
2044	1983 11	12.99028	05 27 52.17	+33 25 15.3	563

2044	1983 11 13.01806	05 27 51.54	+33 26 08.6			563
2044	1983 11 13.04583	05 27 50.75	+33 27 04.1			563
2044	1983 11 13.05278	05 27 50.74	+33 27 17.8			563
2044	1983 12 03.98056	05 06 26.31	+45 28 06.8			563
2044	1983 12 03.99444	05 06 24.90	+45 28 36.3			563
2044	1983 12 04.00278	05 06 24.03	+45 28 52.2			563
2044	1983 12 04.00833	05 06 23.56	+45 29 02.6			563
2044	1983 12 04.01250	05 06 23.07	+45 29 10.9			563
2044	1983 12 04.02222	05 06 21.97	+45 29 31.2			563
2044	1984 01 01.95694	04 11 26.59	+56 44 35.2			563
2044	1984 01 01.97083	04 11 25.22	+56 44 45.6			563
2044	1984 01 01.98472	04 11 24.01	+56 44 55.3			563
2044	1984 01 01.99861	04 11 23.01	+56 45 05.6			563
2757	1983 12 25.87917	05 30 20.48	+24 21 00.0			563
2757	1983 12 25.91250	05 30 18.71	+24 20 59.2			563
2757	1983 12 25.92222	05 30 18.11	+24 20 59.2			563
2757	1983 12 25.93472	05 30 17.52	+24 20 57.7			563
2757	1984 01 01.83889	05 24 37.28	+24 16 02.7			563
2757	1984 01 01.85278	05 24 36.65	+24 16 01.6			563
2757	1984 01 01.86667	05 24 35.92	+24 16 02.5			563
2757	1984 01 01.90278	05 24 34.22	+24 16 00.6			563

OBSERVATIONS MADE AT BASSANO BRESCIANO BY U. QUADRI AND V. MARINELLO.
Contact: U. Quadri, Osservatorio Brixia, Bassano Bresciano, Brescia, Italy.

Object	Date	UT	R. A. (1950)	Decl.		Obs.
57	1983 12 27.82657	05 00 51.95	+02 23 50.6			565
57	1983 12 27.91286	05 00 48.35	+02 23 48.4			565
57	1983 12 28.83230	05 00 11.02	+02 23 37.1			565
57	1983 12 28.90902	05 00 07.84	+02 23 36.7			565
57	1983 12 29.86427	04 59 29.85	+02 23 37.0			565
57	1983 12 29.91177	04 59 27.97	+02 23 37.9			565
57	1984 01 04.86161	04 55 53.19	+02 27 23.8			565
57	1984 01 04.90388	04 55 51.76	+02 27 26.4			565
57	1984 01 05.81954	04 55 22.40	+02 28 35.1			565
57	1984 01 05.87907	04 55 20.46	+02 28 40.5			565
57	1984 01 25.87604	04 49 23.71	+03 24 42.3			565
57	1984 01 25.92772	04 49 23.41	+03 24 55.0			565

OBSERVATIONS MADE AT THE OSSERVATORIO CHAONIS BY C. R. BAUR AND J. M. BAUR.
Plates mainly with 0.45-m and 0.20-m reflectors, scanned by G. Carniel.
Contact: J. M. Baur, Via Zara 20, I-33083 Chions, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2906	1984 03 07.02361	13 59 16.87	+30 53 38.8		16.3	567
2906	1984 03 07.03750	13 59 16.53	+30 53 45.6			567
2906	1984 03 07.05139	13 59 16.13	+30 53 52.3			567
1981 EB20	1984 03 06.85347	09 18 54.11	+13 46 42.4		16	567
1981 EB20	1984 03 06.87083	09 18 53.33	+13 46 44.8			567
1982 XC	1984 03 06.94027	11 03 32.84	+19 45 54.5		16.4	567
1982 XC	1984 03 06.95417	11 03 32.22	+19 45 59.1			567
1982 XC	1984 03 06.96805	11 03 31.59	+19 46 03.5			567
1984 BA	1984 02 20.85139	06 49 56.37	+17 48 34.8		16.1	567
1984 BA	1984 02 20.87777	06 49 55.94	+17 48 35.4			567

OBSERVATIONS MADE AT PALOMAR.
Positions measured by P. Wild from the Palomar Sky Survey. Contact: P. Wild, Astronomisches Institut der Universitat, Sidlerstrasse 5, CH-3012 Berne, Switzerland.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2511		1955 03	22.22222	10 14 41.97	+24 12 26.0	17	675
2511		1955 03	22.24931	10 14 40.76	+24 12 28.1		675

OBSERVATIONS MADE AT PALOMAR BY J. GIBSON.

Plates taken with the 1.2-m Schmidt. Coordination with J. G. Williams and with the Minor Planet Center. Contact: J. Gibson, 6838 Greeley Street, Tujunga, CA 91042, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1978 PA		1983 06	18.43342	18 15 32.60	-03 04 28.5		675
1978 PA		1983 06	19.41883	18 14 13.35	-03 20 43.3		675
1980 KO		1984 02	21.27642	09 19 34.17	+19 56 02.2		675
1981 EG14		1984 02	21.22087	05 59 07.03	+15 09 49.8		675
1981 QA		1984 03	10.49886	15 04 10.33	-10 22 55.8		675
1981 QA		1984 03	11.46761	15 04 32.88	-10 18 30.0		675
1981 UW9		1984 02	10.34968	12 21 31.69	+10 09 57.3		675
1981 UW9		1984 02	11.39378	12 21 08.52	+10 12 48.1		675
1981 YR1		1983 05	20.38756	18 04 32.51	-10 15 21.3		675
1981 YR1		1983 05	21.40422	18 03 44.89	-10 19 47.6		675
1982 BB		1984 02	11.46739	15 01 17.68	+07 50 10.2		675
1982 BB		1984 03	10.46761	15 19 20.43	+14 55 42.4		675
1982 BB		1984 03	11.44469	15 19 27.34	+15 13 55.0		675
1982 FT		1984 02	10.16461	04 19 25.43	+49 00 18.9		675
1982 FT		1984 02	22.21184	04 32 03.01	+46 19 17.4		675
1982 SA		1984 03	10.51831	14 14 32.99	-31 41 25.1		675
1982 SA		1984 03	11.41067	14 14 05.85	-31 54 33.2		675
1983 QD		1984 01	24.10559	00 42 03.78	+16 56 47.3		675
1983 QD		1984 02	22.12781	01 31 47.93	+20 17 22.0		675
1983 SA		1984 02	22.14101	01 14 01.89	+34 20 47.4		675
1983 TB		1984 01	24.14934	00 13 19.78	+18 19 11.1		675
1983 VQ1		1984 02	22.22989	03 26 22.92	+39 37 23.6		675
1983 WF1		1984 02	21.17920	04 32 09.48	+19 34 03.1		675
1983 WF1		1984 03	22.16876	05 01 31.46	+23 04 34.7		675
1983 XF		1984 02	21.20142	04 55 36.80	+27 34 02.5		675
1984 AB		1984 02	10.20003	05 32 11.79	+33 49 06.2		675
1984 AB		1984 03	21.26321	06 22 29.15	+37 07 08.8		675
1984 BC		1984 02	10.33683	10 02 24.62	+24 51 07.7		675
1984 BC		1984 02	11.38267	10 02 35.11	+25 29 48.1		675
1984 BC		1984 02	21.23962	10 04 05.68	+31 28 55.8		675
1984 CE		1984 02	21.25629	09 51 09.71	+27 04 33.1		675
1984 CE		1984 02	22.24795	09 50 13.21	+27 11 38.3		675
1984 CE		1984 03	21.27918	09 30 55.16	+28 51 11.7		675
1984 CF		1984 02	21.25629	09 55 42.48	+26 41 00.0		675
1984 CF		1984 02	22.24795	09 54 50.73	+26 47 05.3		675
1984 CF		1984 03	21.27918	09 36 41.99	+28 04 10.7		675
1984 DD	*	1984 02	21.20142	04 52 34.87	+28 14 17.0	18.0	675

OBSERVATIONS MADE AT PALOMAR BY E. HELIN AND R. S. DUNBAR.

Plates taken with the 1.2-m Schmidt, scanned by E. Helin, measured by S. Swanson. Computational support from C. M. Bardwell and B. G. Marsden. Contact: E. Helin, Jet Propulsion Laboratory, MS 183-501, Pasadena, CA 91125, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 VA		1984 01	29.50347	15 38 14.64	+16 14 30.0		675
1983 VA		1984 01	29.52778	15 38 14.54	+16 14 38.3		675
1984 AM1	*	1984 01	05.20208	05 59 26.29	+21 24 15.3	17	675
1984 AM1		1984 01	05.22292	05 59 24.94	+21 24 35.5		675
1984 BC		1984 02	26.30208	10 04 58.83	+34 20 05.5		675
1984 BC		1984 02	26.31250	10 04 58.84	+34 20 24.0		675

1984	DA	*	1984	02	24.27014	08	31	21.51	+04 18 49.6	17	675
1984	DA		1984	02	24.31181	08	31	20.19	+04 19 53.8		675
1984	DA		1984	02	25.25625	08	30	47.03	+04 44 59.9		675
1984	DA		1984	02	25.28056	08	30	46.18	+04 45 37.7		675
1984	DA		1984	03	07.24375	08	26	54.98	+09 23 17.1		675
1984	DA		1984	03	07.26458	08	26	54.83	+09 23 42.5		675
1984	DB	*	1984	02	24.27014	08	36	11.19	+09 13 22.3	16.5	675
1984	DB		1984	02	24.31181	08	36	10.17	+09 14 15.0		675
1984	DB		1984	02	25.25625	08	35	47.59	+09 34 21.4		675
1984	DB		1984	02	25.28056	08	35	46.89	+09 34 52.7		675
1984	DB		1984	03	07.27014	08	33	38.58	+13 10 43.8		675
1984	DB		1984	03	07.29097	08	33	38.47	+13 11 04.9		675
1984	DC	*	1984	02	23.25069	09	49	46.28	+15 43 03.5	16.5	675
1984	DC		1984	02	23.29236	09	49	44.45	+15 43 49.1		675
1984	DC		1984	02	25.30069	09	48	15.89	+16 26 01.6		675
1984	DC		1984	02	25.34236	09	48	14.12	+16 26 49.5		675
1984	DC		1984	03	07.32153	09	41	43.70	+19 48 16.9		675
1984	DC		1984	03	07.34236	09	41	43.12	+19 48 35.1		675

OBSERVATIONS MADE AT PALOMAR BY C. SHOEMAKER AND E. SHOEMAKER.

Films taken with the 0.46-m Schmidt telescope, scanned and measured by C. Shoemaker. P. Shoemaker and P. Kempchinsky assisted with the observations. B. G. Marsden assisted with the identifications. Contact: C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
472	1983 09	07.44583	04 00 03.17	+00 14 14.9	14.7	675
472	1983 09	07.46736	04 00 04.20	+00 14 07.7		675
2795	1984 03	01.37361	11 26 59.73	-04 39 12.0	16.5	675
2795	1984 03	01.40277	11 26 58.20	-04 38 60.0		675
2795	1984 03	04.39791	11 24 23.05	-04 17 40.2		675
2795	1984 03	04.42708	11 24 21.45	-04 17 26.0		675
A923 NB	1983 11	06.43680	04 31 53.84	+29 43 19.7	15	675
A923 NB	1983 11	09.38611	04 29 36.43	+29 15 35.2		675
1981 JS	1984 03	01.37361	11 37 50.10	-04 44 51.4	17	675
1981 JS	1984 03	01.40277	11 37 48.53	-04 44 42.4		675
1981 JS	1984 03	04.39791	11 35 15.72	-04 27 52.1		675
1981 JS	1984 03	04.42708	11 35 14.00	-04 27 41.1		675
1982 SK	1984 03	02.38611	11 02 03.94	+04 08 33.6	17	675
1982 SK	1984 03	04.34305	11 00 05.01	+04 19 42.7		675
1982 SK	1984 03	04.37291	11 00 03.15	+04 19 52.4		675
1983 QG	1983 09	07.43958	02 48 48.96	-10 14 04.1	17	675
1983 QG	1983 09	07.46180	02 48 49.77	-10 14 06.5		675
1983 TX1	1983 10	09.36527	00 50 30.60	+19 47 27.3	17.7	675
1983 TX1	1983 10	09.38958	00 50 29.11	+19 47 23.1		675
1983 TG2 *	1983 10	08.29375	00 31 07.05	-05 18 53.1	17	675
1983 TG2	1983 10	08.31250	00 31 05.78	-05 18 47.3		675
1983 TH2 *	1983 10	08.29375	00 31 38.94	-04 48 05.3	17	675
1983 TH2	1983 10	08.31250	00 31 38.18	-04 48 13.2		675
1983 TJ2 *	1983 10	08.29375	00 33 08.12	-04 36 40.0	17	675
1983 TJ2	1983 10	08.31250	00 33 06.92	-04 36 44.1		675
1983 TK2 *	1983 10	09.42430	02 05 31.13	+05 16 47.6	17.5	675
1983 TK2	1983 10	09.44095	02 05 30.30	+05 16 43.6		675
1984 CX	1984 03	02.36111	10 54 10.36	+03 10 00.6	16.5	675
1984 CX	1984 03	02.38611	10 54 08.80	+03 10 05.4		675
1984 CX	1984 03	04.34305	10 52 04.85	+03 16 50.2		675
1984 CX	1984 03	04.37291	10 52 02.91	+03 16 56.1		675
1984 CC1	1984 03	02.36111	11 05 53.38	+08 54 26.5	17.5	675
1984 CC1	1984 03	02.38611	11 05 52.12	+08 54 40.1		675
1984 CC1	1984 03	04.34305	11 03 58.07	+09 11 16.5		675

1984	CC1		1984	03	04.37291	11	03	56.28	+09	11	32.6		675
1984	CN1		1984	03	01.37361	11	34	41.85	-04	09	22.0	16.5	675
1984	CN1		1984	03	01.40277	11	34	40.65	-04	09	10.8		675
1984	CN1		1984	03	04.39791	11	32	42.04	-03	50	45.1		675
1984	CN1		1984	03	04.42708	11	32	40.77	-03	50	33.0		675
1984	EJ		1984	03	02.36111	11	02	51.82	+05	33	36.7	16	675
1984	EJ		1984	03	02.38611	11	02	50.33	+05	33	50.9		675
1984	EJ		1984	03	04.34305	11	01	01.87	+05	51	16.5		675
1984	EJ		1984	03	04.37291	11	01	00.17	+05	51	31.5		675
1984	EZ		1984	03	01.37778	12	02	03.81	+06	24	28.5	17	675
1984	EZ		1984	03	01.40694	12	02	02.83	+06	24	48.8		675
1984	EZ		1984	03	04.40208	12	00	14.29	+06	58	04.1		675
1984	EZ		1984	03	04.43125	12	00	13.10	+06	58	23.7		675
1984	EE1	*	1984	03	01.37778	11	49	09.60	+08	16	59.0	16.2	675
1984	EE1		1984	03	01.40694	11	49	08.00	+08	17	06.6		675
1984	EE1		1984	03	04.40208	11	46	23.25	+08	30	50.4		675
1984	EE1		1984	03	04.43125	11	46	21.43	+08	30	58.2		675
1984	EF1	*	1984	03	01.37778	12	07	05.17	+06	53	13.8	17	675
1984	EF1		1984	03	01.40694	12	07	03.58	+06	53	19.6		675
1984	EF1		1984	03	04.40208	12	04	29.08	+07	02	27.5		675
1984	EF1		1984	03	04.43125	12	04	27.35	+07	02	33.3		675

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION.
Plates with the 0.33-m photographic telescope. Observers B. A. Skiff, N. G. Thomas and S. J. Bus. Measured by E. L. G. Bowell using a PDS scanning microdensitometer. SAO reference stars, global solutions. Contact: E. L. G. Bowell, Lowell Observatory, P.O. Box 1269, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
9	1984	03 09.39792	12 17 10.77	+07 54 59.8			688
9	1984	03 09.44306	12 17 08.22	+07 55 15.9			688
19	1984	02 06.34722	11 46 04.64	-00 20 50.8			688
19	1984	03 01.32361	11 29 32.63	+01 27 03.2			688
19	1984	03 01.35417	11 29 31.05	+01 27 13.2			688
19	1984	03 06.30486	11 25 04.47	+01 57 20.9			688
19	1984	03 06.33819	11 25 02.68	+01 57 33.8			688
27	1984	03 06.32292	11 19 41.50	+07 20 29.6			688
27	1984	03 06.35347	11 19 39.59	+07 20 41.5			688
27	1984	03 09.30417	11 16 48.24	+07 39 26.8			688
27	1984	03 09.37917	11 16 43.69	+07 39 55.0			688
46	1984	02 08.27431	11 05 33.91	+04 20 24.7			688
46	1984	02 08.31250	11 05 32.29	+04 20 35.7			688
46	1984	03 01.30833	10 47 46.86	+06 21 32.9			688
46	1984	03 01.33889	10 47 45.11	+06 21 43.7			688
46	1984	03 06.24375	10 43 25.98	+06 51 19.8			688
46	1984	03 06.27431	10 43 24.33	+06 51 31.0			688
58	1984	01 28.34236	10 37 23.09	+06 43 11.9			688
58	1984	01 28.38472	10 37 21.72	+06 43 23.7			688
58	1984	02 05.34931	10 32 44.51	+07 23 45.6			688
58	1984	02 05.38681	10 32 42.93	+07 23 58.2			688
58	1984	03 06.18264	10 09 13.23	+10 40 08.9			688
58	1984	03 06.21319	10 09 11.74	+10 40 21.0			688
93	1984	01 26.26667	09 19 34.81	+26 07 08.8			688
93	1984	01 26.29722	09 19 33.01	+26 07 15.6			688
93	1984	02 04.24722	09 10 47.57	+26 35 08.5			688
93	1984	02 04.27917	09 10 45.59	+26 35 13.7			688
108	1984	02 08.27431	11 12 37.63	+06 36 06.6			688
108	1984	02 08.31250	11 12 36.28	+06 36 13.6			688
108	1984	03 01.25625	10 57 21.28	+07 44 45.2			688

108	1984	03	01.29306	10	57	19.38	+07	44	52.8	688
108	1984	03	06.25903	10	53	24.90	+08	01	57.7	688
108	1984	03	06.28958	10	53	23.41	+08	02	06.1	688
113	1984	01	08.16250	06	11	25.49	+19	53	28.5	688
113	1984	01	08.20833	06	11	22.55	+19	53	36.0	688
116	1984	01	28.28889	10	33	31.91	+15	12	42.5	688
116	1984	01	28.32361	10	33	30.74	+15	12	52.9	688
116	1984	02	05.28542	10	28	36.44	+15	53	51.0	688
116	1984	02	05.31458	10	28	35.13	+15	54	00.6	688
116	1984	02	26.19236	10	11	14.69	+17	42	00.6	688
116	1984	02	26.22896	10	11	12.63	+17	42	10.7	688
116	1984	03	06.18264	10	03	47.26	+18	16	01.2	688
116	1984	03	06.21319	10	03	45.76	+18	16	07.1	688
125	1984	02	06.34722	11	49	48.81	+00	31	03.8	688
125	1984	02	06.41389	11	49	47.55	+00	31	16.6	688
125	1984	03	06.32292	11	33	12.99	+03	04	06.5	688
125	1984	03	06.35347	11	33	11.51	+03	04	19.4	688
125	1984	03	09.30417	11	30	52.55	+03	24	21.5	688
125	1984	03	09.37917	11	30	48.89	+03	24	52.0	688
133	1984	02	06.34722	11	45	06.16	-03	12	28.5	688
133	1984	02	06.41389	11	45	04.56	-03	12	31.7	688
133	1984	03	01.32361	11	30	53.38	-02	54	47.0	688
133	1984	03	01.35417	11	30	51.89	-02	54	43.5	688
133	1984	03	06.30486	11	26	55.40	-02	42	30.4	688
133	1984	03	06.33819	11	26	53.71	-02	42	24.9	688
138	1984	01	26.28194	09	05	51.24	+21	34	06.3	688
138	1984	01	26.31250	09	05	49.37	+21	34	15.4	688
138	1984	02	04.26250	08	56	40.49	+22	14	52.1	688
138	1984	02	04.29444	08	56	38.41	+22	15	00.2	688
141	1984	03	01.30833	10	49	01.32	-00	19	13.2	688
141	1984	03	01.33889	10	48	59.59	-00	19	10.2	688
141	1984	03	06.24375	10	44	24.83	-00	04	57.8	688
141	1984	03	06.27431	10	44	23.08	-00	04	52.3	688
166	1984	03	01.23889	10	48	40.12	+17	15	25.7	688
166	1984	03	01.27778	10	48	38.07	+17	15	44.6	688
173	1984	02	08.27431	11	12	47.09	+08	40	26.7	688
173	1984	02	08.31250	11	12	45.72	+08	40	44.6	688
173	1984	03	01.23889	10	57	13.94	+11	44	40.1	688
173	1984	03	01.25625	10	57	13.02	+11	44	47.4	688
173	1984	03	01.27778	10	57	11.97	+11	45	00.3	688
173	1984	03	01.29306	10	57	11.23	+11	45	05.7	688
173	1984	03	06.25903	10	53	16.40	+12	26	11.0	688
173	1984	03	06.28958	10	53	14.90	+12	26	26.4	688
175	1984	01	26.28194	09	27	36.64	+19	08	53.5	688
175	1984	01	26.31250	09	27	35.22	+19	09	00.2	688
175	1984	02	04.26250	09	20	39.55	+19	40	20.7	688
175	1984	02	04.29444	09	20	37.98	+19	40	27.8	688
191	1984	01	28.34236	10	25	25.27	+06	02	46.9	688
191	1984	01	28.38472	10	25	23.96	+06	03	03.4	688
191	1984	03	06.18264	09	58	26.56	+10	36	50.3	688
191	1984	03	06.21319	09	58	25.25	+10	37	03.6	688
210	1984	01	26.26667	09	04	00.60	+25	27	12.8	688
210	1984	01	26.29722	09	03	58.72	+25	27	21.4	688
210	1984	02	04.24722	08	55	00.88	+25	59	59.8	688
210	1984	02	04.27917	08	54	58.89	+26	00	05.7	688
261	1984	02	06.32500	11	12	11.84	+10	52	36.3	688
261	1984	02	06.39167	11	12	09.64	+10	53	00.2	688
261	1984	03	01.23889	10	53	40.82	+13	39	29.2	688
261	1984	03	01.27778	10	53	38.49	+13	39	45.5	688

261		1984	03	06.19792	10	49	01.04	+14	12	03.9	688
261		1984	03	06.22847	10	48	59.39	+14	12	15.4	688
261		1984	03	09.28889	10	46	09.69	+14	30	39.0	688
261		1984	03	09.34167	10	46	06.69	+14	30	56.9	688
297		1984	02	08.27431	11	14	20.81	+03	15	53.4	688
297		1984	02	08.31250	11	14	19.44	+03	15	57.3	688
297		1984	03	01.30833	10	59	10.35	+04	13	17.7	688
297		1984	03	01.33889	10	59	08.88	+04	13	23.5	688
297		1984	03	06.24375	10	55	22.68	+04	29	04.9	688
297		1984	03	06.27431	10	55	21.28	+04	29	11.4	688
316		1984	02	04.26250	09	08	39.45	+17	07	39.6	688
316		1984	02	04.29444	09	08	37.78	+17	07	48.5	688
324		1984	01	26.28194	09	23	36.28	+19	53	39.3	688
324		1984	01	26.31250	09	23	34.26	+19	53	43.1	688
324		1984	02	04.26250	09	13	48.79	+20	09	31.7	688
324		1984	02	04.29444	09	13	46.61	+20	09	34.6	688
327		1984	02	05.28542	10	06	12.56	+17	37	02.1	688
327		1984	02	05.31458	10	06	11.03	+17	37	07.9	688
330		1984	03	06.25903	11	18	52.99	+10	05	36.6	688
330		1984	03	06.28958	11	18	51.40	+10	05	49.0	688
330		1984	03	06.32292	11	18	49.64	+10	06	03.8	688
330		1984	03	06.35347	11	18	47.86	+10	06	16.4	688
330		1984	03	09.30417	11	16	07.02	+10	28	49.7	688
330		1984	03	09.37917	11	16	02.70	+10	29	24.1	688
335		1984	02	05.28542	10	06	47.87	+11	08	08.4	688
335		1984	02	05.31458	10	06	46.36	+11	08	19.6	688
349		1984	02	06.32500	11	16	23.27	+15	18	12.6	688
349		1984	02	06.39167	11	16	20.83	+15	18	29.5	688
349		1984	03	01.23889	10	58	07.32	+17	01	31.5	688
349		1984	03	01.27778	10	58	05.25	+17	01	40.5	688
373		1984	02	06.32500	11	17	19.83	+14	56	14.6	688
373		1984	02	06.39167	11	17	17.30	+14	56	23.9	688
379		1984	02	06.34722	11	56	34.46	+00	15	03.3	688
379		1984	02	06.41389	11	56	33.01	+00	15	13.7	688
379		1984	03	01.32361	11	44	13.45	+01	42	18.6	688
379		1984	03	01.35417	11	44	12.37	+01	42	26.9	688
379		1984	03	06.30486	11	40	52.42	+02	05	35.8	688
379		1984	03	06.33819	11	40	51.09	+02	05	45.2	688
417		1984	01	08.16250	06	11	28.16	+13	26	06.4	688
417		1984	01	08.20833	06	11	25.62	+13	26	08.0	688
422		1984	01	26.17257	07	28	33.43	+29	46	43.4	688
422		1984	01	26.23264	07	28	29.15	+29	46	45.5	688
423		1984	01	26.26667	08	56	17.14	+31	36	53.7	688
423		1984	01	26.29722	08	56	15.43	+31	37	03.8	688
423		1984	02	04.24722	08	48	06.86	+32	19	31.9	688
423		1984	02	04.27917	08	48	05.11	+32	19	39.1	688
434		1984	03	01.32361	11	42	12.44	-03	02	49.2	688
434		1984	03	01.35417	11	42	10.92	-03	02	12.7	688
434		1984	03	06.30486	11	38	08.69	-01	20	53.3	688
434		1984	03	06.33819	11	38	06.91	-01	20	10.8	688
447		1984	03	01.23889	10	33	53.19	+16	37	30.3	688
447		1984	03	01.27778	10	33	51.21	+16	37	41.3	688
447		1984	03	06.19792	10	29	54.33	+16	58	40.3	688
447		1984	03	06.22847	10	29	52.86	+16	58	47.6	688
447		1984	03	09.28889	10	27	30.42	+17	10	28.1	3 688
447		1984	03	09.34167	10	27	27.86	+17	10	38.4	688
453		1984	02	06.32500	11	26	46.24	+10	00	16.6	688
453		1984	02	06.39167	11	26	44.03	+10	00	26.4	688
453		1984	03	01.25625	11	06	17.43	+11	25	30.2	688

453		1984	03	01.29306	11	06	14.89	+11	25	38.5	688
453		1984	03	06.25903	11	00	42.10	+11	43	24.1	688
453		1984	03	06.28958	11	00	39.93	+11	43	30.2	688
505		1984	03	09.42014	13	09	26.09	+08	21	44.5	688
505		1984	03	09.46528	13	09	24.28	+08	22	01.5	688
527		1984	01	26.28194	09	10	44.42	+19	08	22.1	688
527		1984	01	26.31250	09	10	42.84	+19	08	34.4	688
527		1984	02	04.29444	09	02	49.87	+20	05	12.5	688
530		1984	02	06.32500	11	17	18.09	+10	40	00.7	688
530		1984	02	06.39167	11	17	16.08	+10	40	20.6	688
530		1984	03	01.25625	11	02	43.95	+12	54	30.1	688
530		1984	03	01.29306	11	02	42.33	+12	54	42.1	688
530		1984	03	06.25903	10	59	14.59	+13	22	06.1	688
530		1984	03	06.28958	10	59	13.27	+13	22	16.2	688
555		1984	01	28.28889	10	29	25.67	+10	34	02.3	688
555		1984	01	28.32361	10	29	24.55	+10	34	11.1	688
555		1984	01	28.34236	10	29	24.02	+10	34	15.2	688
555		1984	01	28.38472	10	29	22.56	+10	34	26.6	688
555		1984	02	05.28542	10	24	47.06	+11	11	18.9	688
555		1984	02	05.31458	10	24	45.87	+11	11	27.6	688
555		1984	02	05.34931	10	24	44.46	+11	11	38.2	688
555		1984	02	05.38681	10	24	42.88	+11	11	49.1	688
555		1984	02	26.19236	10	09	17.29	+13	02	29.1	688
555		1984	02	26.22896	10	09	15.57	+13	02	40.9	688
555		1984	03	06.18264	10	02	47.01	+13	45	41.6	688
555		1984	03	06.21319	10	02	45.74	+13	45	49.8	688
599		1984	03	09.42014	13	10	56.17	+07	58	44.9	688
599		1984	03	09.46528	13	10	54.34	+07	58	54.9	688
620		1984	02	05.34931	10	47	03.48	+14	01	31.9	688
620		1984	02	26.22896	10	27	00.67	+15	19	53.0	688
620		1984	03	06.18264	10	17	57.35	+15	46	02.5	688
620		1984	03	06.21319	10	17	55.51	+15	46	06.9	688
623		1984	01	26.17257	07	21	54.75	+27	37	08.8	688
623		1984	01	26.23264	07	21	50.79	+27	36	44.4	688
676		1984	02	08.27431	11	05	45.11	+08	09	41.1	688
676		1984	02	08.31250	11	05	43.89	+08	09	56.5	688
676		1984	03	01.23889	10	51	33.92	+10	44	39.2	688
676		1984	03	01.27778	10	51	32.15	+10	44	56.2	688
676		1984	03	06.19792	10	48	01.40	+11	19	57.1	688
676		1984	03	06.22847	10	48	00.05	+11	20	09.6	688
676		1984	03	09.28889	10	45	50.25	+11	41	21.5	688
676		1984	03	09.34167	10	45	47.97	+11	41	43.0	688
733		1984	02	08.27431	11	17	30.81	+05	57	52.4	688
733		1984	02	08.31250	11	17	29.24	+05	57	51.1	688
733		1984	03	01.30833	10	59	08.78	+05	40	55.2	688
733		1984	03	01.33889	10	59	06.97	+05	40	54.3	688
733		1984	03	06.24375	10	54	32.54	+05	38	54.1	688
733		1984	03	06.27431	10	54	30.83	+05	38	53.6	688
746		1984	02	05.32986	09	47	00.30	+30	56	05.2	688
746		1984	02	05.36806	09	46	58.16	+30	56	10.8	688
746		1984	02	26.17361	09	28	05.34	+31	22	18.3	688
746		1984	02	26.21111	09	28	03.55	+31	22	17.7	688
765		1984	02	08.27431	11	20	54.94	+02	13	38.5	17.2 688
765		1984	02	08.31250	11	20	53.30	+02	13	43.4	688
765		1984	03	01.30833	11	01	31.25	+03	30	44.9	688
765		1984	03	01.33889	11	01	29.30	+03	30	54.0	688
765		1984	03	06.24375	10	56	43.06	+03	52	09.1	17.0 688
765		1984	03	06.27431	10	56	41.31	+03	52	16.9	688
791		1984	01	28.28889	10	38	42.10	+16	05	55.9	688

791	1984	01	28.32361	10	38	41.05	+16	06	10.2			688
805	1984	03	06.32292	11	27	35.27	+04	51	33.3			688
805	1984	03	06.35347	11	27	34.01	+04	51	47.8			688
805	1984	03	09.30417	11	25	36.02	+05	14	38.6			688
805	1984	03	09.37917	11	25	32.89	+05	15	12.9			688
845	1984	03	09.39792	12	10	26.53	+14	04	45.1			688
845	1984	03	09.44306	12	10	24.25	+14	04	55.2			688
848	1984	03	01.30833	10	45	52.02	+06	42	36.0			688
848	1984	03	01.33889	10	45	50.47	+06	42	43.9			688
848	1984	03	06.24375	10	42	14.30	+07	05	17.5			688
848	1984	03	06.27431	10	42	12.94	+07	05	25.6			688
861	1984	01	26.28194	09	07	55.43	+19	46	27.9			688
861	1984	01	26.31250	09	07	54.02	+19	46	37.7			688
861	1984	02	04.26250	09	00	50.47	+20	32	32.2			688
861	1984	02	04.29444	09	00	48.89	+20	32	41.8			688
910	1984	01	26.26667	09	06	20.08	+30	18	20.5			688
910	1984	01	26.29722	09	06	18.42	+30	18	29.6			688
910	1984	02	04.24722	08	57	50.52	+30	57	08.9			688
910	1984	02	04.27917	08	57	48.60	+30	57	16.6			688
936	1984	01	26.19167	08	47	36.87	+20	57	22.6			688
936	1984	01	26.25139	08	47	33.87	+20	57	35.4			688
936	1984	02	04.19444	08	40	16.41	+21	26	30.3			688
936	1984	02	04.23194	08	40	14.66	+21	26	38.3			688
1000	1984	01	26.28194	09	07	25.04	+24	03	02.8			688
1000	1984	01	26.31250	09	07	23.20	+24	03	02.1			688
1000	1984	02	04.26250	08	58	24.30	+24	00	39.3			688
1000	1984	02	04.29444	08	58	22.40	+24	00	38.2			688
1022	1984	01	26.26667	09	10	03.31	+26	59	06.6			688
1022	1984	01	26.29722	09	10	01.49	+26	59	27.3			688
1022	1984	02	04.24722	09	01	48.77	+28	33	57.4			688
1022	1984	02	04.27917	09	01	46.90	+28	34	17.3			688
1023	1984	03	01.30833	10	48	16.82	-00	30	25.7			688
1023	1984	03	01.33889	10	48	15.52	-00	30	16.3			688
1023	1984	03	06.24375	10	44	49.33	+00	01	18.3			688
1023	1984	03	06.27431	10	44	48.05	+00	01	30.8			688
1024	1984	03	09.42014	12	49	20.91	+15	16	26.0			688
1024	1984	03	09.46528	12	49	19.02	+15	16	38.5			688
1030	1984	03	01.32361	11	36	29.71	-04	44	39.6			688
1030	1984	03	01.35417	11	36	28.51	-04	44	24.3			688
1030	1984	03	06.30486	11	33	23.01	-04	01	54.9			688
1030	1984	03	06.33819	11	33	21.70	-04	01	38.1			688
1033	1984	02	06.34722	11	40	44.16	-04	13	53.9			688
1033	1984	02	06.41389	11	40	42.58	-04	13	40.2			688
1033	1984	03	01.32361	11	27	36.39	-02	09	52.8			688
1033	1984	03	01.35417	11	27	35.04	-02	09	39.2			688
1033	1984	03	06.30486	11	24	06.33	-01	35	21.1			688
1033	1984	03	06.33819	11	24	04.84	-01	35	07.0			688
1041	1984	03	09.42014	12	57	56.94	+11	29	48.3			688
1041	1984	03	09.46528	12	57	55.23	+11	30	00.3			688
1056	1984	02	26.19236	10	15	15.37	+17	48	53.2		3	688
1056	1984	02	26.22896	10	15	12.88	+17	49	09.2			688
1066	1984	03	06.19792	10	38	35.23	+09	11	32.7	17.0		688
1066	1984	03	06.22847	10	38	33.36	+09	11	40.0			688
1081	1984	02	08.27431	11	19	21.65	+09	21	17.7			688
1081	1984	02	08.31250	11	19	20.36	+09	21	25.8			688
1081	1984	03	01.25625	11	03	50.81	+10	53	47.9			688
1081	1984	03	01.29306	11	03	48.88	+10	53	57.4			688
1081	1984	03	06.25903	10	59	53.21	+11	14	29.1			688
1081	1984	03	06.28958	10	59	51.68	+11	14	37.8			688

1137	1984	03	09.39792	11	58	35.80	+07	36	47.7	688
1137	1984	03	09.44306	11	58	33.16	+07	37	05.7	688
1157	1984	01	28.28889	10	37	58.45	+10	17	27.5	688
1157	1984	01	28.32361	10	37	57.17	+10	17	31.6	688
1157	1984	01	28.34236	10	37	56.71	+10	17	30.5	688
1157	1984	01	28.38472	10	37	55.10	+10	17	36.2	688
1157	1984	02	05.34931	10	32	51.69	+10	33	09.3	688
1157	1984	02	05.38681	10	32	50.08	+10	33	14.0	688
1157	1984	02	26.19236	10	16	42.32	+11	23	58.3	688
1157	1984	02	26.22896	10	16	40.42	+11	24	04.0	688
1157	1984	03	06.18264	10	09	34.00	+11	44	37.1	688
1157	1984	03	06.21319	10	09	32.60	+11	44	40.7	688
1204	1984	01	26.19167	08	48	09.99	+20	23	58.2	688
1204	1984	01	26.25139	08	48	05.90	+20	24	13.7	688
1204	1984	02	04.19444	08	38	14.17	+20	58	42.0	688
1204	1984	02	04.23194	08	38	11.74	+20	58	49.8	688
1248	1984	02	06.32500	11	33	54.25	+17	14	37.4	688
1248	1984	02	06.39167	11	33	52.40	+17	15	06.7	688
1276	1984	01	28.27292	10	12	01.73	+27	16	33.4	688
1276	1984	01	28.30729	10	12	00.38	+27	16	57.9	688
1276	1984	02	05.32986	10	06	35.85	+28	52	24.6	688
1276	1984	02	05.36806	10	06	34.10	+28	52	50.7	688
1278	1984	01	28.27292	10	03	18.99	+24	42	59.1	688
1278	1984	01	28.30729	10	03	17.12	+24	43	16.8	688
1278	1984	02	05.32986	09	55	56.86	+25	44	49.7	688
1278	1984	02	05.36806	09	55	54.53	+25	45	05.3	688
1278	1984	02	26.17361	09	35	13.27	+27	49	51.0	688
1278	1984	02	26.21111	09	35	11.04	+27	50	00.1	688
1292	1984	02	06.34722	11	35	41.77	-00	45	43.2	688
1292	1984	02	06.41389	11	35	40.06	-00	45	38.3	688
1292	1984	03	01.32361	11	19	56.08	+00	28	48.6	688
1292	1984	03	01.35417	11	19	54.42	+00	28	57.5	688
1292	1984	03	06.30486	11	15	33.52	+00	53	57.4	688
1292	1984	03	06.33819	11	15	31.88	+00	54	07.9	688
1326	1984	01	26.26667	08	58	34.01	+28	44	41.4	688
1326	1984	01	26.29722	08	58	32.13	+28	44	57.4	688
1326	1984	02	04.24722	08	49	28.79	+29	59	31.3	688
1326	1984	02	04.27917	08	49	26.80	+29	59	46.2	688
1343	1984	01	28.27292	09	53	01.18	+22	34	39.5	688
1343	1984	01	28.30729	09	52	59.43	+22	34	50.8	688
1343	1984	02	05.32986	09	45	37.77	+23	17	08.6	688
1343	1984	02	05.36806	09	45	35.46	+23	17	19.9	688
1343	1984	02	26.17361	09	25	10.50	+24	37	16.8	688
1343	1984	02	26.21111	09	25	08.50	+24	37	21.2	688
1348	1984	01	26.26667	09	02	25.37	+24	27	18.7	688
1348	1984	01	26.28194	09	02	24.74	+24	27	22.6	688
1348	1984	01	26.29722	09	02	23.66	+24	27	32.1	688
1348	1984	01	26.31250	09	02	22.83	+24	27	35.1	688
1348	1984	02	04.24722	08	54	11.44	+25	22	01.5	688
1348	1984	02	04.27917	08	54	09.57	+25	22	12.1	688
1354	1984	01	26.28194	09	17	39.14	+24	01	49.6	688
1354	1984	01	26.31250	09	17	37.60	+24	01	55.0	688
1354	1984	02	04.24722	09	10	14.97	+24	33	44.6	688
1354	1984	02	04.26250	09	10	14.15	+24	33	45.1	688
1354	1984	02	04.27917	09	10	13.38	+24	33	51.3	688
1354	1984	02	04.29444	09	10	12.48	+24	33	51.0	688
1358	1984	01	26.17257	07	22	50.15	+25	21	43.4	688
1358	1984	01	26.23264	07	22	46.50	+25	21	47.0	688
1364	1984	02	26.17361	09	18	22.37	+32	07	50.1	688

1364	1984	02	26.21111	09	18	20.88	+32	07	52.8			688
1385	1984	03	09.39792	12	00	05.26	+09	36	23.3			688
1440	1984	01	28.34236	10	30	51.53	+12	43	02.1			688
1440	1984	01	28.38472	10	30	49.81	+12	43	10.9			688
1440	1984	02	05.28542	10	25	34.95	+13	16	15.5			688
1440	1984	02	05.34931	10	25	31.99	+13	16	33.3			688
1440	1984	02	05.38681	10	25	30.46	+13	16	43.3		1	688
1440	1984	02	26.19236	10	09	12.80	+14	46	59.5			688
1440	1984	02	26.22896	10	09	11.05	+14	47	07.6			688
1440	1984	03	06.18264	10	02	23.77	+15	19	41.9			688
1440	1984	03	06.21319	10	02	22.41	+15	19	51.4			688
1443	1984	02	08.31250	11	16	04.04	+03	56	36.1			688
1443	1984	03	01.30833	11	01	07.39	+05	40	14.3			688
1443	1984	03	01.33889	11	01	05.91	+05	40	24.0			688
1443	1984	03	06.24375	10	57	16.89	+06	06	41.1			688
1443	1984	03	06.27431	10	57	15.49	+06	06	51.3			688
1489	1984	02	08.27431	11	06	00.83	+05	50	06.6			688
1489	1984	02	08.31250	11	05	59.72	+05	50	17.2			688
1527	1984	01	26.28194	09	08	34.58	+24	17	31.2			688
1527	1984	01	26.31250	09	08	32.35	+24	17	40.0			688
1527	1984	02	04.24722	08	58	11.09	+24	54	11.9			688
1527	1984	02	04.26250	08	58	10.11	+24	54	14.0			688
1527	1984	02	04.27917	08	58	08.97	+24	54	19.3			688
1527	1984	02	04.29444	08	58	07.84	+24	54	20.9			688
1545	1984	01	26.17257	07	27	31.53	+26	50	50.8			688
1545	1984	01	26.23264	07	27	28.23	+26	50	58.2			688
1557	1984	01	28.27292	09	56	28.86	+21	50	57.7			688
1557	1984	01	28.30729	09	56	27.16	+21	51	05.2			688
1568	1984	01	28.28889	10	40	32.75	+09	22	17.3			688
1568	1984	01	28.32361	10	40	31.43	+09	22	43.4			688
1568	1984	01	28.34236	10	40	30.71	+09	22	58.6		1	688
1568	1984	01	28.38472	10	40	29.19	+09	23	27.0			688
1568	1984	02	05.34931	10	34	51.32	+11	07	08.5			688
1568	1984	02	05.38681	10	34	49.42	+11	07	35.4			688
1568	1984	02	26.19236	10	16	10.48	+15	53	33.8			688
1568	1984	02	26.22896	10	16	08.39	+15	54	02.1			688
1568	1984	03	06.18264	10	08	05.63	+17	45	27.2			688
1568	1984	03	06.21319	10	08	03.84	+17	45	48.5			688
1570	1984	02	06.34722	11	37	12.13	+01	16	52.5			688
1570	1984	02	06.41389	11	37	10.40	+01	17	00.5			688
1570	1984	03	06.32292	11	18	25.26	+03	26	55.9	16.8		688
1570	1984	03	06.35347	11	18	23.68	+03	27	06.9			688
1570	1984	03	09.30417	11	16	02.06	+03	43	40.9	16.8		688
1570	1984	03	09.37917	11	15	58.48	+03	44	07.3			688
1606	1984	02	06.34722	11	44	37.42	-02	41	23.6			688
1606	1984	02	06.41389	11	44	35.30	-02	41	08.1			688
1606	1984	03	01.32361	11	30	12.11	-00	52	14.6			688
1606	1984	03	01.35417	11	30	10.69	-00	52	03.5			688
1606	1984	03	06.30486	11	26	24.19	-00	22	04.7			688
1606	1984	03	06.33819	11	26	22.53	-00	21	51.0			688
1616	1984	01	26.26667	09	03	14.91	+30	01	16.2			688
1616	1984	02	04.24722	08	54	39.17	+30	37	57.4			688
1616	1984	02	04.27917	08	54	37.33	+30	38	04.1			688
1623	1984	01	28.28889	10	14	19.47	+12	44	58.9			688
1623	1984	01	28.32361	10	14	18.00	+12	45	07.8			688
1623	1984	02	05.28542	10	08	46.38	+13	23	43.4			688
1623	1984	02	05.31458	10	08	45.13	+13	23	51.9			688
1651	1984	02	06.34722	11	33	17.63	-01	55	24.9			688
1651	1984	02	06.41389	11	33	16.33	-01	55	12.3			688

1658	1984	01	08.14722	06	13	39.35	+23	55	46.7			688
1658	1984	01	08.19306	06	13	36.62	+23	55	53.6			688
1662	1984	01	26.28194	09	07	29.12	+18	53	46.4			688
1662	1984	01	26.31250	09	07	27.25	+18	53	52.5			688
1662	1984	02	04.26250	08	58	38.39	+19	17	59.6			688
1662	1984	02	04.29444	08	58	36.46	+19	18	04.9			688
1666	1984	02	06.34722	11	37	33.86	-01	49	28.7			688
1666	1984	02	06.41389	11	37	31.63	-01	49	19.9			688
1667	1984	01	26.19167	08	47	11.87	+23	40	21.9		15.8	688
1667	1984	01	26.25139	08	47	07.67	+23	40	42.5			688
1667	1984	02	04.19444	08	36	43.96	+24	30	30.8			688
1667	1984	02	04.23194	08	36	41.31	+24	30	42.3			688
1683	1984	01	26.28194	09	10	46.56	+21	19	22.6			688
1683	1984	01	26.31250	09	10	44.72	+21	19	25.2			688
1683	1984	02	04.26250	09	01	51.78	+21	32	00.9			688
1683	1984	02	04.29444	09	01	49.66	+21	32	01.9			688
1694	1984	01	28.27292	10	09	27.81	+26	27	59.5			688
1694	1984	01	28.30729	10	09	25.84	+26	28	09.1			688
1694	1984	02	05.32986	10	00	40.09	+27	04	35.3			688
1694	1984	02	05.36806	10	00	37.49	+27	04	43.9			688
1694	1984	02	26.21111	09	36	39.09	+27	51	35.9		1	688
1737	1984	01	28.28889	10	21	39.96	+10	56	40.6			688
1737	1984	01	28.32361	10	21	38.51	+10	56	42.1			688
1737	1984	02	05.28542	10	15	42.15	+11	06	15.0			688
1737	1984	02	05.31458	10	15	40.80	+11	06	17.4			688
1748	1984	01	08.14722	06	09	46.87	+21	18	04.4			688
1748	1984	01	08.16250	06	09	46.26	+21	18	03.3			688
1748	1984	01	08.19306	06	09	44.97	+21	18	05.7			688
1748	1984	01	08.20833	06	09	44.29	+21	18	06.6			688
1758	1984	03	09.42014	13	10	07.00	+08	46	18.2			688
1758	1984	03	09.46528	13	10	05.47	+08	46	36.9			688
1762	1984	01	08.16250	06	23	04.75	+20	16	11.4			688
1762	1984	01	08.20833	06	23	02.27	+20	16	14.9			688
1774	1984	01	08.14722	05	56	19.40	+20	37	34.6			688
1774	1984	01	08.19306	05	56	17.07	+20	37	35.5			688
1782	1984	01	28.34236	10	49	50.54	+07	13	44.8		16.8	688
1782	1984	01	28.38472	10	49	49.28	+07	13	52.8			688
1782	1984	02	05.34931	10	45	40.98	+07	41	49.0			688
1782	1984	02	05.38681	10	45	39.56	+07	41	56.5			688
1782	1984	03	06.19792	10	24	12.11	+10	00	40.8			688
1782	1984	03	06.22847	10	24	10.61	+10	00	51.3			688
1782	1984	03	09.28889	10	21	55.30	+10	15	04.1			688
1782	1984	03	09.34167	10	21	53.01	+10	15	19.7			688
1797	1984	01	08.14722	05	52	42.64	+28	30	52.1			688
1797	1984	01	08.19306	05	52	39.48	+28	30	51.9			688
1820	1984	03	01.25625	11	07	42.17	+08	22	16.3			688
1820	1984	03	01.29306	11	07	39.84	+08	22	35.9			688
1820	1984	03	06.25903	11	02	45.32	+09	03	05.0			688
1820	1984	03	06.28958	11	02	43.41	+09	03	20.7			688
1830	1984	02	08.27431	11	03	28.77	+06	45	30.5			688
1830	1984	02	08.31250	11	03	27.15	+06	45	46.7			688
1830	1984	03	06.19792	10	40	13.62	+10	24	24.1			688
1830	1984	03	06.22847	10	40	11.77	+10	24	39.4			688
1830	1984	03	09.28889	10	37	22.46	+10	49	01.3			688
1830	1984	03	09.34167	10	37	19.44	+10	49	26.1			688
1848	1984	01	08.14722	06	09	34.20	+25	11	00.0		16.5	688
1848	1984	01	08.19306	06	09	31.66	+25	11	00.2			688
1855	1984	01	08.20833	06	33	13.34	+17	40	38.9			688
1878	1984	02	08.27431	11	22	08.74	+02	45	33.7		17.0	688

1878	1984	02	08.31250	11	22	07.44	+02	45	40.6			688
1878	1984	03	01.30833	11	07	16.04	+04	28	17.8		16.5	688
1878	1984	03	01.33889	11	07	14.45	+04	28	28.5			688
1880	1984	03	01.23889	10	33	09.80	+14	15	51.3		16.8	688
1880	1984	03	01.27778	10	33	07.65	+14	16	04.6			688
1880	1984	03	06.19792	10	28	57.36	+14	44	58.9			688
1880	1984	03	06.22847	10	28	55.71	+14	45	08.4			688
1880	1984	03	09.28889	10	26	24.74	+15	01	49.7			688
1880	1984	03	09.34167	10	26	22.10	+15	02	06.3			688
1887	1984	03	06.32292	11	32	26.25	+02	28	19.1			688
1887	1984	03	06.35347	11	32	24.82	+02	28	24.1			688
1955	1984	01	08.14722	06	10	56.06	+22	54	37.7		16.8	688
1955	1984	01	08.19306	06	10	53.70	+22	54	38.8			688
1972	1984	01	26.17257	07	18	24.62	+29	28	29.7			688
1972	1984	01	26.23264	07	18	21.16	+29	28	33.3			688
1982	1984	01	28.27292	09	55	31.66	+23	28	23.6		17.8	688
1982	1984	01	28.30729	09	55	29.78	+23	28	34.6			688
1982	1984	02	05.32986	09	47	24.69	+24	14	53.0		17.8	1 688
1982	1984	02	05.36806	09	47	22.45	+24	15	02.7			3 688
1985	1984	01	26.23264	07	28	59.08	+26	56	48.0			688
1999	1984	02	08.27431	11	12	17.11	+08	01	41.8			688
1999	1984	02	08.31250	11	12	16.01	+08	02	00.7			688
1999	1984	03	01.25625	10	59	08.01	+11	16	29.0			688
1999	1984	03	01.29306	10	59	06.36	+11	16	49.0			688
1999	1984	03	06.25903	10	55	37.93	+12	01	13.4			688
1999	1984	03	06.28958	10	55	36.59	+12	01	30.7			688
2003	1984	01	28.28889	10	15	02.85	+13	52	07.4			688
2003	1984	01	28.32361	10	15	01.55	+13	52	16.2			688
2003	1984	02	05.28542	10	09	35.92	+14	27	05.3			688
2003	1984	02	05.31458	10	09	34.60	+14	27	11.9			688
2085	1984	01	26.28194	09	04	02.58	+18	06	56.2			688
2085	1984	01	26.31250	09	04	00.88	+18	07	05.9			688
2085	1984	02	04.26250	08	55	45.81	+18	55	03.9		16.0	688
2085	1984	02	04.29444	08	55	43.82	+18	55	14.6			688
2137	1984	01	26.17257	07	27	41.09	+29	37	35.8			688
2137	1984	01	26.23264	07	27	37.80	+29	37	28.0			688
2169	1984	01	26.17257	07	11	33.12	+24	00	58.8			688
2169	1984	01	26.23264	07	11	29.82	+24	01	05.3			688
2180	1984	01	08.16250	06	14	08.29	+14	06	34.0			688
2180	1984	01	08.20833	06	14	06.03	+14	06	31.9			688
2219	1984	01	26.28194	09	27	05.06	+24	52	20.3			688
2219	1984	01	26.31250	09	27	03.55	+24	52	31.2			688
2222	1984	01	08.14722	06	11	13.17	+23	38	59.2			688
2222	1984	01	08.19306	06	11	10.88	+23	39	03.3			688
2256	1984	01	08.14722	06	03	52.84	+23	13	27.5			688
2256	1984	01	08.19306	06	03	50.68	+23	13	27.4			688
2300	1984	01	28.28889	10	26	09.97	+13	08	12.9		17.0	688
2300	1984	01	28.32361	10	26	08.74	+13	08	18.9			688
2300	1984	01	28.34236	10	26	07.97	+13	08	23.6		16.8	688
2300	1984	01	28.38472	10	26	06.39	+13	08	33.1			688
2300	1984	02	05.28542	10	20	30.09	+13	42	07.0		17.0	688
2300	1984	02	05.31458	10	20	28.72	+13	42	15.7			688
2300	1984	02	05.34931	10	20	27.19	+13	42	23.6		16.8	688
2300	1984	02	05.38681	10	20	25.21	+13	42	33.8			688
2300	1984	02	26.19236	10	02	51.90	+15	14	10.1		16.8	688
2300	1984	02	26.22896	10	02	49.91	+15	14	19.2			688
2300	1984	03	06.18264	09	55	34.85	+15	46	26.1		17.0	688
2300	1984	03	06.21319	09	55	33.36	+15	46	31.4			688
2311	1984	01	28.34236	10	31	19.64	+07	52	46.2			688

2311	1984	01	28.38472	10	31	18.30	+07	52	55.0			688
2311	1984	02	05.34931	10	27	10.73	+08	25	50.6			688
2311	1984	02	05.38681	10	27	09.56	+08	25	59.6			688
2311	1984	03	06.18264	10	08	24.16	+10	50	47.0			688
2311	1984	03	06.21319	10	08	23.00	+10	50	55.6			688
2323	1984	02	08.27431	11	22	07.70	+07	35	25.6			688
2323	1984	02	08.31250	11	22	06.51	+07	35	32.6			688
2323	1984	03	01.25625	11	06	20.37	+08	49	21.3			688
2323	1984	03	01.29306	11	06	18.44	+08	49	29.1			688
2323	1984	03	06.25903	11	02	11.83	+09	07	02.2			688
2323	1984	03	06.28958	11	02	10.28	+09	07	08.7			688
2341	1984	02	06.32500	11	20	40.87	+11	39	03.4			688
2341	1984	02	06.39167	11	20	38.17	+11	39	27.6			688
2341	1984	03	01.23889	10	58	35.98	+14	13	18.5			688
2341	1984	03	01.25625	10	58	34.77	+14	13	24.7			688
2341	1984	03	01.27778	10	58	33.41	+14	13	32.0			688
2341	1984	03	01.29306	10	58	32.36	+14	13	37.9			688
2341	1984	03	06.25903	10	53	14.59	+14	41	49.7			688
2341	1984	03	06.28958	10	53	12.64	+14	42	00.3			688
2362	1984	01	26.17257	07	14	14.00	+28	54	01.0		3	688
2362	1984	01	26.23264	07	14	09.68	+28	54	00.0			688
2383	1984	01	26.28194	09	02	12.13	+23	12	53.1			688
2383	1984	01	26.31250	09	02	09.88	+23	13	02.1			688
2388	1984	01	08.14722	06	04	21.89	+26	01	08.9		1	688
2388	1984	01	08.19306	06	04	18.97	+26	01	04.4		1	688
2391	1984	02	08.27431	11	16	30.09	+04	00	41.8			688
2391	1984	03	01.30833	10	59	15.21	+06	24	00.3			688
2391	1984	03	01.33889	10	59	13.40	+06	24	13.3			688
2391	1984	03	06.27431	10	54	45.20	+07	00	00.5			688
2402	1984	01	26.19167	08	28	54.54	+24	25	57.7	16.2		688
2402	1984	01	26.25139	08	28	50.10	+24	26	04.3			688
2402	1984	02	04.19444	08	18	08.33	+24	32	06.3	16.8		688
2402	1984	02	04.23194	08	18	05.77	+24	32	05.6			688
2411	1984	02	08.27431	11	29	45.49	+04	34	57.8			688
2411	1984	02	08.31250	11	29	44.53	+04	35	05.3			688
2418	1984	02	05.38681	10	44	21.45	+09	48	08.7			688
2446	1984	01	26.19167	08	40	40.75	+23	38	00.3		1	688
2446	1984	01	26.25139	08	40	36.88	+23	38	15.6			688
2446	1984	02	04.19444	08	30	39.90	+24	09	56.7	17.2		688
2446	1984	02	04.23194	08	30	37.35	+24	10	03.3			688
2464	1984	02	04.26250	09	14	27.58	+17	09	26.0			688
2464	1984	02	04.29444	09	14	25.81	+17	09	33.6			688
2480	1984	01	28.28889	10	26	32.93	+14	56	00.8			688
2480	1984	01	28.32361	10	26	31.31	+14	56	15.0		3	688
2480	1984	02	05.28542	10	19	29.42	+15	39	28.2			688
2480	1984	02	05.31458	10	19	27.69	+15	39	37.7			688
2489	1984	01	26.28194	09	02	43.26	+19	20	09.4			688
2489	1984	01	26.31250	09	02	41.60	+19	20	16.9			688
2489	1984	02	04.26250	08	55	25.20	+19	51	29.0			688
2489	1984	02	04.29444	08	55	23.50	+19	51	38.4		2	688
2505	1984	03	01.23889	10	35	17.03	+12	04	51.1	17.0		688
2505	1984	03	01.27778	10	35	15.07	+12	05	00.6			688
2505	1984	03	06.19792	10	31	26.33	+12	26	23.1	16.8		688
2505	1984	03	06.22847	10	31	24.96	+12	26	30.5			688
2505	1984	03	09.28889	10	29	05.72	+12	39	05.0			688
2505	1984	03	09.34167	10	29	03.36	+12	39	17.4			688
2510	1984	01	08.14722	06	09	46.37	+22	42	37.6			688
2510	1984	01	08.19306	06	09	43.34	+22	42	44.3			688
2519	1984	03	06.32292	11	29	07.04	+06	58	57.0			688

2519	1984	03	06.35347	11	29	05.75	+06	59	06.9			688
2519	1984	03	09.30417	11	26	56.80	+07	13	16.1			688
2519	1984	03	09.37917	11	26	53.48	+07	13	37.9			688
2524	1984	01	26.19167	08	43	31.53	+17	58	05.6		16.8	688
2524	1984	01	26.25139	08	43	28.50	+17	58	15.9			688
2524	1984	02	04.19444	08	36	12.86	+18	25	10.1			688
2524	1984	02	04.23194	08	36	11.05	+18	25	18.4			688
2534	1984	02	06.34722	11	50	17.95	+01	02	25.1		17.2	688
2534	1984	02	06.41389	11	50	16.24	+01	02	37.0			688
2534	1984	03	06.32292	11	33	44.60	+02	54	12.2			688
2534	1984	03	06.35347	11	33	43.21	+02	54	22.4			688
2534	1984	03	09.30417	11	31	37.42	+03	08	24.0			688
2534	1984	03	09.37917	11	31	34.10	+03	08	44.6			688
2550	1984	01	28.34236	10	25	28.36	+06	51	46.0		1	688
2550	1984	01	28.38472	10	25	27.03	+06	52	00.3			688
2550	1984	02	05.34931	10	20	39.19	+07	38	05.1			688
2550	1984	02	05.38681	10	20	37.71	+07	38	19.3			688
2550	1984	03	06.18264	09	59	38.42	+10	55	47.9			688
2550	1984	03	06.21319	09	59	37.13	+10	56	00.1			688
2587	1984	03	06.32292	11	37	33.39	+06	31	18.2			688
2587	1984	03	06.35347	11	37	32.06	+06	31	26.2			688
2587	1984	03	09.30417	11	35	22.44	+06	46	13.5			688
2587	1984	03	09.37917	11	35	19.10	+06	46	35.5			688
2707	1984	03	01.25625	11	16	50.15	+08	50	59.7			688
2707	1984	03	01.29306	11	16	48.43	+08	51	11.5			688
2707	1984	03	06.25903	11	13	03.25	+09	15	26.2			688
2707	1984	03	06.28958	11	13	01.85	+09	15	35.3			688
2730	1984	03	01.25625	11	18	22.85	+08	08	03.2			688
2730	1984	03	01.29306	11	18	20.65	+08	08	11.8			688
2730	1984	03	06.25903	11	13	51.54	+08	26	37.9			688
2730	1984	03	06.28958	11	13	49.76	+08	26	45.0			688
2749	1984	01	08.14722	06	10	45.68	+23	55	27.8		16.8	688
2750	1984	03	01.23889	10	46	13.08	+17	40	44.7			688
2750	1984	03	01.27778	10	46	10.45	+17	40	55.6			688
2750	1984	03	09.28889	10	37	47.75	+18	09	58.3			688
2750	1984	03	09.34167	10	37	44.37	+18	10	08.1			688
2763	1984	01	26.19167	08	42	37.39	+18	20	33.5			688
2763	1984	01	26.25139	08	42	33.43	+18	20	44.0			688
2763	1984	02	04.19444	08	33	01.12	+18	46	03.1			688
2763	1984	02	04.23194	08	32	58.80	+18	46	08.5			688
2768	1984	03	09.39792	12	15	43.89	+07	38	49.1			688
2768	1984	03	09.44306	12	15	41.14	+07	39	05.6			688
2773	1984	03	06.32292	11	23	32.30	+09	57	22.7			688
2773	1984	03	06.35347	11	23	30.58	+09	57	34.1			688
2773	1984	03	09.30417	11	20	39.26	+10	17	28.7		16.8	688
2773	1984	03	09.37917	11	20	34.66	+10	17	59.1			688
2778	1984	02	06.32500	11	13	05.29	+12	04	20.9		17.0	688
2778	1984	02	06.39167	11	13	02.60	+12	04	45.5			688
2778	1984	03	01.23889	10	52	01.17	+14	54	21.5			688
2778	1984	03	01.27778	10	51	58.74	+14	54	38.1			688
2778	1984	03	06.19792	10	47	03.26	+15	25	58.5		16.8	688
2778	1984	03	06.22847	10	47	01.51	+15	26	09.7			688
2778	1984	03	09.28889	10	44	01.45	+15	43	59.3			688
2778	1984	03	09.34167	10	43	58.38	+15	44	15.1			688
2795	1984	02	06.34722	11	41	31.66	-06	16	04.0			688
2795	1984	02	06.41389	11	41	30.36	-06	15	58.0			688
2795	1984	03	01.32361	11	27	02.47	-04	39	32.0			688
2795	1984	03	01.35417	11	27	00.78	-04	39	19.6			688
2795	1984	03	06.30486	11	22	42.01	-04	03	17.5			688

2795		1984	03	06.33819	11	22	40.21	-04	03	01.6	688
2811		1984	01	26.19167	08	31	07.74	+19	40	44.5	688
2811		1984	01	26.25139	08	31	04.32	+19	40	55.8	688
2811		1984	02	04.19444	08	22	53.15	+20	05	57.4	688
2811		1984	02	04.23194	08	22	51.23	+20	06	05.0	688
2812		1984	01	28.27292	09	57	58.32	+25	03	18.7	688
2812		1984	01	28.30729	09	57	56.48	+25	03	37.1	688
2812		1984	02	05.32986	09	50	26.34	+26	09	53.8	688
2812		1984	02	05.36806	09	50	23.71	+26	10	09.7	688
2812		1984	02	26.17361	09	28	34.71	+28	05	16.6	688
2812		1984	02	26.21111	09	28	32.51	+28	05	23.1	688
2815		1984	03	01.23889	10	37	35.82	+14	48	18.2	688
2815		1984	03	01.27778	10	37	33.35	+14	48	35.7	688
2815		1984	03	06.19792	10	32	41.71	+15	23	22.6	17.0 688
2815		1984	03	06.22847	10	32	39.82	+15	23	38.6	688
2815		1984	03	09.34167	10	29	41.05	+15	43	52.3	688
2816		1984	01	26.19167	08	28	15.31	+25	05	59.2	688
2816		1984	01	26.25139	08	28	11.76	+25	06	18.1	688
2816		1984	02	04.19444	08	19	39.26	+25	47	40.0	688
2816		1984	02	04.23194	08	19	37.04	+25	47	48.4	688
2818		1984	02	06.32500	11	10	31.82	+11	12	56.0	17.2 688
2818		1984	02	06.39167	11	10	29.65	+11	13	13.6	688
2818		1984	03	01.23889	10	52	15.57	+13	23	44.3	688
2818		1984	03	01.27778	10	52	13.11	+13	23	58.1	688
2818		1984	03	06.19792	10	47	37.78	+13	48	31.0	688
2818		1984	03	06.22847	10	47	35.94	+13	48	38.9	688
2818		1984	03	09.28889	10	44	48.29	+14	02	13.9	688
2818		1984	03	09.34167	10	44	45.40	+14	02	24.8	688
2820		1984	02	06.34722	11	56	09.92	-03	17	08.8	688
2820		1984	02	06.41389	11	56	08.06	-03	16	57.6	688
2820		1984	03	01.32361	11	40	02.99	-01	35	30.5	688
2820		1984	03	01.35417	11	40	01.13	-01	35	18.0	688
2820		1984	03	06.30486	11	35	24.18	-01	03	10.0	688
2820		1984	03	06.33819	11	35	22.19	-01	02	57.0	688
2823		1984	01	08.16250	06	23	59.07	+19	54	00.5	688
2823		1984	01	08.20833	06	23	56.13	+19	53	59.7	688
2824		1984	03	01.30833	11	02	19.61	+03	08	27.2	688
2824		1984	03	01.33889	11	02	17.69	+03	08	35.6	688
2824		1984	03	06.24375	10	57	21.64	+03	33	58.8	688
2824		1984	03	06.27431	10	57	19.82	+03	34	08.3	688
2835		1984	01	28.28889	10	38	03.43	+09	53	41.7	688
2835		1984	01	28.32361	10	38	02.19	+09	53	49.5	688
2835		1984	01	28.34236	10	38	01.50	+09	53	50.5	688
2835		1984	01	28.38472	10	38	00.05	+09	53	59.6	688
2835		1984	02	05.34931	10	32	42.70	+10	24	22.2	688
2835		1984	02	05.38681	10	32	40.92	+10	24	31.8	688
2835		1984	02	26.22896	10	15	20.89	+11	58	19.4	688
2835		1984	03	06.18264	10	07	49.10	+12	36	09.8	688
2835		1984	03	06.21319	10	07	47.52	+12	36	16.9	688
2844		1984	03	06.32292	11	30	23.77	+06	54	45.8	688
2844		1984	03	06.35347	11	30	21.95	+06	55	01.1	688
2844		1984	03	09.30417	11	27	28.76	+07	18	01.2	688
2844		1984	03	09.37917	11	27	24.02	+07	18	36.3	688
2848		1984	02	06.34722	11	49	28.75	+00	57	19.0	17.2 688
2848		1984	02	06.41389	11	49	27.18	+00	57	28.2	688
2848		1984	03	06.32292	11	32	24.97	+02	41	24.8	688
2848		1984	03	06.35347	11	32	23.85	+02	41	29.6	688
2885		1984	01	26.28194	09	07	53.92	+19	53	29.4	688
2885		1984	01	26.31250	09	07	51.61	+19	53	36.1	688

2891		1984	01	26.25139	08	43	39.66	+20	56	59.6			688
2891		1984	02	04.19444	08	36	46.52	+21	39	09.7			688
2891		1984	02	04.23194	08	36	44.80	+21	39	19.7			688
2893		1984	03	09.42014	13	09	04.82	+11	32	12.6			688
2893		1984	03	09.46528	13	09	03.76	+11	32	24.3			688
2952		1984	01	26.23264	07	28	50.04	+24	33	44.7			688
2970		1984	01	26.26667	09	14	57.61	+27	29	50.3			688
2970		1984	01	26.29722	09	14	55.38	+27	29	51.5			688
2970		1984	02	04.24722	09	04	28.88	+27	29	46.2	17.0		688
2970		1984	02	04.27917	09	04	26.40	+27	29	47.6			688
2983		1984	03	06.24375	10	38	38.13	+01	45	38.6	16.2		688
2983		1984	03	06.27431	10	38	36.72	+01	45	47.0			688
2996		1984	01	26.17257	07	12	56.03	+26	04	26.1	16.8		688
2996		1984	01	26.23264	07	12	52.67	+26	04	25.6			688
1935	TE	1984	03	09.42014	12	48	20.42	+10	47	38.0	17.0		688
1935	TE	1984	03	09.46528	12	48	18.33	+10	47	47.0		3	688
1968	FH	1984	01	28.28889	10	35	42.38	+11	49	09.7	17.2		688
1968	FH	1984	01	28.32361	10	35	41.20	+11	49	15.7			688
1968	FH	1984	02	05.34931	10	30	58.22	+12	23	50.8	17.2		688
1968	FH	1984	02	05.38681	10	30	56.54	+12	24	00.3			688
1968	FH	1984	02	26.19236	10	15	31.88	+14	03	17.3	17.0		688
1968	FH	1984	02	26.22896	10	15	30.14	+14	03	27.7			688
1968	FH	1984	03	06.18264	10	08	40.28	+14	42	31.1	17.0		688
1968	FH	1984	03	06.21319	10	08	39.07	+14	42	38.0		1	688
1972	YX	1984	02	08.27431	11	30	01.35	+08	52	08.6	17.2		688
1972	YX	1984	02	08.31250	11	30	00.20	+08	52	19.0			688
1972	YX	1984	03	01.25625	11	15	24.03	+11	02	58.9	17.0		688
1972	YX	1984	03	01.29306	11	15	22.10	+11	03	12.4			688
1972	YX	1984	03	06.25903	11	11	27.25	+11	32	30.9	17.2		688
1972	YX	1984	03	06.28958	11	11	25.86	+11	32	41.5			688
1973	ST4	1984	03	01.32361	11	26	32.64	-02	47	39.9	17.2		688
1973	ST4	1984	03	06.30486	11	22	16.06	-02	26	46.3	17.5		688
1973	ST4	1984	03	06.33819	11	22	14.47	-02	26	34.9			688
1977	DT4	1984	01	26.28194	09	06	48.60	+21	25	48.2	17.2		688
1977	DT4	1984	01	26.31250	09	06	46.50	+21	25	56.1			688
1977	DT4	1984	02	04.26250	08	56	41.87	+22	15	02.5	17.2		688
1977	DT4	1984	02	04.29444	08	56	39.77	+22	15	10.0		3	688
1979	FJ2	1984	01	28.38472	10	29	16.21	+12	30	09.5	17.2		688
1979	FJ2	1984	02	05.28542	10	24	25.68	+13	04	57.1	17.2		688
1979	FJ2	1984	02	05.31458	10	24	24.37	+13	05	04.6			688
1979	FJ2	1984	02	05.34931	10	24	22.92	+13	05	17.2	17.0		688
1979	FJ2	1984	02	05.38681	10	24	21.50	+13	05	25.2			688
1979	FJ2	1984	02	26.19236	10	08	57.08	+14	43	30.3	17.5		688
1979	FJ2	1984	02	26.22896	10	08	55.53	+14	43	38.8		1	688
1979	FJ2	1984	03	06.18264	10	02	15.82	+15	21	26.3	17.5		688
1979	FJ2	1984	03	06.21319	10	02	14.62	+15	21	34.8			688
1979	SW11	1984	03	01.30833	11	03	56.88	-00	20	28.6	17.0		688
1979	SW11	1984	03	01.33889	11	03	54.92	-00	20	12.8			688
1979	SW11	1984	03	06.24375	10	59	15.45	+00	20	40.0	16.8		688
1979	SW11	1984	03	06.27431	10	59	13.58	+00	20	55.7			688
1980	XE	1984	03	09.32292	11	35	23.64	-32	14	03.4	17.0	1	688
1980	XE	1984	03	09.36042	11	35	20.04	-32	14	18.7			688
1981	JS	1984	02	06.34722	11	50	22.77	-05	40	31.3	17.0		688
1981	JS	1984	02	06.41389	11	50	22.02	-05	40	33.7			688
1981	JS	1984	03	01.32361	11	37	52.83	-04	45	07.7	16.8		688
1981	JS	1984	03	01.35417	11	37	51.17	-04	44	57.5			688
1981	JS	1984	03	06.30486	11	33	34.61	-04	16	13.6	16.8		688
1981	JS	1984	03	06.33819	11	33	32.64	-04	16	02.8			688
1981	UW9	1984	03	09.39792	12	05	33.30	+11	35	56.3	17.0		688

1981	UW9		1984	03	09.44306	12	05	31.33	+11	36	05.7		688
1982	SK		1984	02	08.27431	11	21	54.47	+02	24	16.4	16.8	688
1982	SK		1984	02	08.31250	11	21	52.97	+02	24	22.0		688
1982	SK		1984	03	01.30833	11	03	09.42	+04	02	25.7	16.2	688
1982	SK		1984	03	01.33889	11	03	07.41	+04	02	37.4		688
1982	SK		1984	03	06.24375	10	58	09.65	+04	30	34.4	16.0	688
1982	SK		1984	03	06.27431	10	58	07.82	+04	30	44.9		688
1982	XC		1984	02	06.32500	11	23	31.21	+16	18	55.1	16.5	688
1982	XC		1984	02	06.39167	11	23	29.16	+16	19	23.3		688
1983	AO		1984	03	09.42014	12	59	39.13	+10	26	37.1	17.0	688
1984	AU		1984	01	26.17257	07	10	04.46	+25	47	17.7	16.8	688
1984	AU		1984	01	26.23264	07	10	01.15	+25	47	14.5		688
1984	AW		1984	01	26.17257	07	33	02.41	+26	30	46.6	16.8	688
1984	AW		1984	01	26.23264	07	32	59.28	+26	30	50.8		688
1984	AZ		1984	01	26.17257	07	34	36.01	+26	25	12.6	16.5	688
1984	AZ		1984	01	26.23264	07	34	32.09	+26	25	31.9		688
1984	AA1		1984	01	26.19167	08	42	32.94	+21	42	09.9	16.8	688
1984	AA1		1984	01	26.25139	08	42	29.71	+21	42	24.1		688
1984	AA1		1984	02	04.19444	08	34	39.08	+22	14	21.5	17.0	688
1984	AA1		1984	02	04.23194	08	34	37.13	+22	14	29.4		688
1984	AB1		1984	01	26.19167	08	40	30.43	+20	33	43.3	16.8	688
1984	AB1		1984	01	26.25139	08	40	26.24	+20	34	09.7		688
1984	AB1		1984	02	04.19444	08	30	36.94	+21	30	50.1	17.0	688
1984	AB1		1984	02	04.23194	08	30	34.36	+21	31	04.4		688
1984	AC1		1984	01	26.19167	08	44	01.70	+21	50	18.0	16.2	688
1984	AC1		1984	01	26.25139	08	43	57.64	+21	50	53.0		688
1984	AC1		1984	02	04.19444	08	34	22.62	+23	11	50.7	16.5	688
1984	AC1		1984	02	04.23194	08	34	20.26	+23	12	09.2		688
1984	AF1		1984	01	26.26667	08	57	58.88	+26	08	19.3	16.5	688
1984	AF1		1984	01	26.29722	08	57	57.17	+26	08	30.4		688
1984	AF1		1984	02	04.24722	08	49	56.80	+26	51	44.6	16.8	688
1984	AF1		1984	02	04.27917	08	49	55.06	+26	51	53.5		688
1984	AG1		1984	01	26.26667	09	02	26.85	+29	18	10.8	16.8	688
1984	AG1		1984	01	26.29722	09	02	24.82	+29	18	15.3		688
1984	AG1		1984	02	04.24722	08	52	31.00	+29	33	20.3	16.8	688
1984	AG1		1984	02	04.27917	08	52	28.81	+29	33	22.1		688
1984	AK1		1984	01	28.28889	10	16	59.45	+11	40	11.9	16.8	688
1984	AK1		1984	01	28.32361	10	16	58.26	+11	40	21.4		688
1984	AK1		1984	02	05.28542	10	12	01.92	+12	14	47.2	16.5	688
1984	AK1		1984	02	05.31458	10	12	00.61	+12	14	55.3		688
1984	BB1	*	1984	01	28.34236	10	25	56.49	+08	30	39.4	16.8	7 688
1984	BB1		1984	01	28.38472	10	25	55.15	+08	30	49.4		688
1984	BB1		1984	02	05.34931	10	20	51.27	+09	12	13.9	16.8	688
1984	BB1		1984	02	05.38681	10	20	49.74	+09	12	27.3		688
1984	BB1		1984	02	26.19236	10	03	06.79	+11	29	47.9	16.5	688
1984	BB1		1984	02	26.22896	10	03	04.65	+11	30	03.5		688
1984	BB1		1984	03	06.18264	09	55	41.69	+12	27	09.9	16.5	688
1984	BB1		1984	03	06.21319	09	55	40.30	+12	27	20.9		688
1984	CM		1984	01	28.27292	09	56	10.30	+28	52	02.3	17.0	688
1984	CM		1984	01	28.30729	09	56	08.57	+28	52	11.9		688
1984	CM	*	1984	02	05.32986	09	48	06.32	+29	28	02.9	17.0	4 688
1984	CM		1984	02	05.36806	09	48	03.82	+29	28	10.5		688
1984	CM		1984	02	26.17361	09	26	18.14	+30	02	25.1	17.0	688
1984	CM		1984	02	26.21111	09	26	15.91	+30	02	22.8		688
1984	CN		1984	01	28.27292	10	09	23.83	+24	31	32.5	17.2	688
1984	CN		1984	01	28.30729	10	09	22.31	+24	31	45.3		688
1984	CN	*	1984	02	05.32986	10	02	45.60	+25	14	39.5	17.2	4 688
1984	CN		1984	02	05.36806	10	02	43.54	+25	14	50.1		688
1984	CN		1984	02	26.17361	09	43	28.31	+26	35	38.5	17.2	688

1984	CN		1984	02	26.21111	09	43	26.16	+26	35	44.7		688
1984	CO		1984	01	28.34236	10	35	07.36	+07	08	23.4	17.0	688
1984	CO		1984	01	28.38472	10	35	05.79	+07	08	33.0		688
1984	CO	*	1984	02	05.34931	10	30	05.68	+07	39	25.2	17.0 4	688
1984	CO		1984	02	05.38681	10	30	04.13	+07	39	35.8		688
1984	CP	*	1984	02	05.34931	10	36	04.91	+13	59	29.1	17.2 4	688
1984	CP		1984	02	05.38681	10	36	03.26	+13	59	47.1		688
1984	CP		1984	02	26.19236	10	17	20.13	+16	41	00.6	17.0	688
1984	CP		1984	02	26.22896	10	17	18.25	+16	41	23.4		688
1984	CQ		1984	01	28.34236	10	40	50.58	+11	45	55.3	16.5	688
1984	CQ		1984	01	28.38472	10	40	49.22	+11	46	16.8		688
1984	CQ	*	1984	02	05.34931	10	36	11.92	+12	56	43.3	16.2 4	688
1984	CQ		1984	02	05.38681	10	36	10.29	+12	57	03.8		688
1984	CQ		1984	02	26.19236	10	18	15.13	+16	19	31.7	16.5	688
1984	CQ		1984	02	26.22896	10	18	13.03	+16	19	52.4		688
1984	CQ		1984	03	06.18264	10	10	15.90	+17	34	42.2	16.5	688
1984	CQ		1984	03	06.21319	10	10	14.27	+17	34	55.7		688
1984	CR	*	1984	02	05.34931	10	40	31.85	+14	10	52.0	17.2 4	688
1984	CR		1984	02	05.38681	10	40	30.12	+14	11	01.2		688
1984	CS	*	1984	02	06.32500	11	14	49.10	+13	55	16.4	16.5 4	688
1984	CS		1984	02	06.39167	11	14	45.87	+13	55	15.5		688
1984	CT	*	1984	02	06.32500	11	21	21.04	+11	18	24.9	17.2 4	688
1984	CT		1984	02	06.39167	11	21	18.01	+11	18	41.8		688
1984	CU	*	1984	02	06.32500	11	36	24.08	+10	52	54.7	17.0 4	688
1984	CU		1984	02	06.39167	11	36	22.44	+10	53	15.8		688
1984	CV	*	1984	02	08.27431	11	08	01.08	+01	33	10.1	17.0 4	688
1984	CV		1984	02	08.31250	11	07	59.54	+01	33	13.6		688
1984	CV		1984	03	01.30833	10	50	41.37	+02	33	06.3	16.2	688
1984	CV		1984	03	01.33889	10	50	39.66	+02	33	12.9		688
1984	CV		1984	03	06.24375	10	46	18.32	+02	52	23.2	16.0	688
1984	CV		1984	03	06.27431	10	46	16.68	+02	52	30.6		688
1984	CW	*	1984	02	08.27431	11	13	13.78	+01	58	55.1	17.5 5	688
1984	CW		1984	02	08.31250	11	13	11.96	+01	58	58.7		688
1984	CW		1984	03	01.30833	10	53	12.46	+02	48	47.6	16.8	688
1984	CW		1984	03	01.33889	10	53	10.54	+02	48	53.8		688
1984	CW		1984	03	06.24375	10	48	01.36	+03	06	07.5	16.8	688
1984	CW		1984	03	06.27431	10	47	59.20	+03	06	13.5		688
1984	CX	*	1984	02	08.27431	11	14	29.63	+02	23	36.1	16.8 4	688
1984	CX		1984	02	08.31250	11	14	28.18	+02	23	35.8		688
1984	CX		1984	03	01.30833	10	55	16.98	+03	06	25.9	15.8	688
1984	CX		1984	03	01.33889	10	55	14.93	+03	06	32.1		688
1984	CX		1984	03	06.24375	10	50	04.75	+03	23	28.7	15.8	688
1984	CX		1984	03	06.27431	10	50	02.68	+03	23	35.8		688
1984	CY	*	1984	02	08.27431	11	17	25.53	+06	59	21.0	17.2 4	688
1984	CY		1984	02	08.31250	11	17	23.93	+06	59	41.7		688
1984	CZ	*	1984	02	08.27431	11	17	44.45	+07	27	46.2	16.8 6	688
1984	CZ		1984	02	08.31250	11	17	43.33	+07	28	03.7		688
1984	CZ		1984	03	01.25625	11	03	41.34	+10	52	29.9	16.5	688
1984	CZ		1984	03	01.29306	11	03	39.34	+10	52	50.7		688
1984	CZ		1984	03	06.25903	10	59	44.06	+11	41	07.8	16.5	688
1984	CZ		1984	03	06.28958	10	59	42.54	+11	41	27.0		688
1984	CA1	*	1984	02	08.27431	11	18	41.08	+09	05	15.6	17.0 4	688
1984	CA1		1984	02	08.31250	11	18	39.77	+09	05	26.5		688
1984	CA1		1984	03	01.25625	11	03	14.10	+10	59	29.2	16.5	688
1984	CA1		1984	03	01.29306	11	03	12.12	+10	59	40.3		688
1984	CA1		1984	03	06.25903	10	59	12.77	+11	25	28.0	16.5	688
1984	CA1		1984	03	06.28958	10	59	11.31	+11	25	37.8		688
1984	CB1	*	1984	02	08.27431	11	21	05.28	+06	31	02.0	17.2 4	688
1984	CB1		1984	02	08.31250	11	21	04.19	+06	31	11.8		688

1984	CB1		1984	03	01.25625	11	07	19.65	+08	21	05.3	16.2	688
1984	CB1		1984	03	01.29306	11	07	17.87	+08	21	17.5		688
1984	CB1		1984	03	06.25903	11	03	33.02	+08	48	18.2	16.5	688
1984	CB1		1984	03	06.28958	11	03	31.61	+08	48	28.4		688
1984	CC1	*	1984	02	08.27431	11	24	18.39	+05	51	42.1	17.0	4 688
1984	CC1		1984	02	08.31250	11	24	17.33	+05	51	55.4		688
1984	CC1		1984	03	01.25625	11	06	57.66	+08	44	57.1	16.8	688
1984	CC1		1984	03	01.29306	11	06	55.26	+08	45	16.6		688
1984	CC1		1984	03	06.25903	11	02	06.47	+09	27	19.1	16.8	688
1984	CC1		1984	03	06.28958	11	02	04.69	+09	27	35.5		688
1984	CD1	*	1984	02	08.27431	11	26	26.79	+09	05	21.7	17.2	4 688
1984	CD1		1984	02	08.31250	11	26	25.67	+09	05	30.4		688
1984	CD1		1984	03	01.25625	11	10	11.73	+10	59	14.4	16.8	688
1984	CD1		1984	03	01.29306	11	10	09.44	+10	59	27.1		688
1984	CD1		1984	03	06.25903	11	05	21.40	+11	26	37.9	16.8	688
1984	CD1		1984	03	06.28958	11	05	19.40	+11	26	47.6		688
1984	CE1	*	1984	02	04.26250	08	55	56.01	+19	40	00.4	17.2	8 688
1984	CE1		1984	02	04.29444	08	55	54.10	+19	40	03.3		688
1984	CF1	*	1984	02	04.26250	08	57	23.27	+18	30	01.0	17.2	8 688
1984	CF1		1984	02	04.29444	08	57	21.47	+18	30	13.1		688
1984	CG1		1984	01	26.28194	09	07	57.06	+18	51	55.4	17.2	688
1984	CG1		1984	01	26.31250	09	07	55.28	+18	51	51.0		688
1984	CG1	*	1984	02	04.26250	08	59	03.69	+18	40	36.5	17.2	8 688
1984	CG1		1984	02	04.29444	08	59	01.81	+18	40	34.2		688
1984	CH1		1984	01	26.28194	09	13	50.47	+19	15	22.3	16.8	688
1984	CH1		1984	01	26.31250	09	13	48.28	+19	15	26.3		688
1984	CH1	*	1984	02	04.26250	09	03	52.45	+19	34	27.7	17.0	8 688
1984	CH1		1984	02	04.29444	09	03	50.22	+19	34	31.2		688
1984	CJ1	*	1984	02	04.26250	09	04	28.39	+18	52	10.3	17.2	8 688
1984	CJ1		1984	02	04.29444	09	04	26.02	+18	52	18.9		688
1984	CK1		1984	01	26.28194	09	17	16.68	+24	26	09.1	16.8	688
1984	CK1		1984	01	26.31250	09	17	14.80	+24	26	07.8		688
1984	CK1	*	1984	02	04.26250	09	07	26.79	+24	28	12.7	16.8	8 688
1984	CK1		1984	02	04.29444	09	07	24.59	+24	28	12.1		688
1984	CL1		1984	01	26.28194	09	24	29.14	+18	43	20.5	17.0	688
1984	CL1		1984	01	26.31250	09	24	27.65	+18	43	37.2		2 688
1984	CL1	*	1984	02	04.26250	09	17	04.68	+19	49	56.1	16.8	8 688
1984	CL1		1984	02	04.29444	09	17	02.80	+19	50	12.1		688
1984	CM1	*	1984	02	06.34722	11	44	30.22	+00	52	27.3	16.5	4 688
1984	CM1		1984	02	06.41389	11	44	29.85	+00	52	52.3		688
1984	CM1		1984	03	06.32292	11	32	53.54	+05	20	29.1	16.2	688
1984	CM1		1984	03	06.35347	11	32	52.31	+05	20	49.4		688
1984	CM1		1984	03	09.30417	11	30	54.97	+05	53	48.3	16.0	688
1984	CM1		1984	03	09.37917	11	30	51.70	+05	54	39.4		688
1984	CN1	*	1984	02	06.34722	11	45	55.89	-05	45	20.4	16.8	4 688
1984	CN1		1984	02	06.41389	11	45	54.88	-05	45	13.4		688
1984	CN1		1984	03	01.32361	11	34	43.88	-04	09	41.1	16.5	688
1984	CN1		1984	03	01.35417	11	34	42.69	-04	09	30.5		688
1984	CN1		1984	03	06.30486	11	31	24.52	-03	38	27.6	16.5	688
1984	CN1		1984	03	06.33819	11	31	23.07	-03	38	13.8		688
1984	CO1	*	1984	02	06.34722	11	56	23.20	-00	37	25.2	17.2	4 688
1984	CO1		1984	02	06.41389	11	56	21.54	-00	37	24.5		688
1984	CO1		1984	03	01.32361	11	41	45.91	-00	05	28.9	16.5	688
1984	CO1		1984	03	01.35417	11	41	44.50	-00	05	24.3		688
1984	CO1		1984	03	06.30486	11	37	46.81	+00	07	24.1	16.8	688
1984	CO1		1984	03	06.33819	11	37	45.26	+00	07	29.7		688
1984	EA	*	1984	03	01.23889	10	45	21.46	+17	45	01.0	16.8	5 688
1984	EA		1984	03	01.27778	10	45	16.98	+17	44	24.1		688
1984	EA		1984	03	06.19792	10	36	39.74	+16	27	24.9	16.5	688

1984	EA		1984	03	06.22847	10	36	36.49	+16	26	56.7		688
1984	EA		1984	03	09.28889	10	31	31.86	+15	37	18.3	16.5	688
1984	EA		1984	03	09.34167	10	31	26.37	+15	36	23.4		688
1984	EB	*	1984	03	01.23889	10	33	52.05	+13	31	01.9	16.8 4	688
1984	EB		1984	03	01.27778	10	33	50.29	+13	31	24.0		688
1984	EB		1984	03	06.19792	10	30	23.32	+14	14	30.8	16.2	688
1984	EB		1984	03	06.22847	10	30	21.95	+14	14	46.7		688
1984	EB		1984	03	09.28889	10	28	17.56	+14	40	20.8	16.8	688
1984	EB		1984	03	09.34167	10	28	15.38	+14	40	46.1		688
1984	EC	*	1984	03	01.23889	10	41	03.96	+13	51	43.4	16.8 4	688
1984	EC		1984	03	01.27778	10	41	01.41	+13	51	46.5		688
1984	EC		1984	03	06.19792	10	35	47.55	+13	53	39.7	17.0	688
1984	EC		1984	03	06.22847	10	35	45.48	+13	53	39.5		688
1984	EC		1984	03	09.28889	10	32	34.66	+13	53	30.9	16.8 3	688
1984	EC		1984	03	09.34167	10	32	31.47	+13	53	28.7		688
1984	ED	*	1984	03	01.23889	10	41	38.06	+16	11	56.6	17.0 4	688
1984	ED		1984	03	01.27778	10	41	36.17	+16	12	14.7		688
1984	ED		1984	03	06.19792	10	37	56.52	+16	48	56.0	16.8	688
1984	ED		1984	03	06.22847	10	37	55.17	+16	49	09.7		688
1984	ED		1984	03	09.28889	10	35	42.15	+17	10	27.9	17.2	688
1984	ED		1984	03	09.34167	10	35	39.74	+17	10	47.1		688
1984	EE	*	1984	03	01.23889	10	41	45.08	+11	15	26.9	17.2 4	688
1984	EE		1984	03	01.27778	10	41	43.27	+11	15	42.8		688
1984	EE		1984	03	06.19792	10	37	45.25	+11	48	09.6	17.2	688
1984	EE		1984	03	06.22847	10	37	43.71	+11	48	21.4		688
1984	EE		1984	03	09.28889	10	35	19.14	+12	07	43.7	17.2	688
1984	EE		1984	03	09.34167	10	35	16.52	+12	08	01.8		688
1984	EF	*	1984	03	01.23889	10	47	03.49	+12	05	30.0	16.5 4	688
1984	EF		1984	03	01.27778	10	47	01.45	+12	05	43.4		688
1984	EF		1984	03	06.19792	10	43	00.65	+12	32	01.8	17.0	688
1984	EF		1984	03	06.22847	10	42	59.19	+12	32	11.7		688
1984	EF		1984	03	09.28889	10	40	32.31	+12	47	35.7	16.8	688
1984	EF		1984	03	09.34167	10	40	29.81	+12	47	50.5		688
1984	EG	*	1984	03	01.23889	10	47	14.71	+14	07	49.1	17.0 4	688
1984	EG		1984	03	01.27778	10	47	12.23	+14	08	10.0		688
1984	EG		1984	03	06.19792	10	42	34.91	+14	53	14.0	17.0	688
1984	EG		1984	03	06.22847	10	42	33.06	+14	53	32.7		688
1984	EG		1984	03	09.28889	10	39	43.73	+15	19	42.5	17.0	688
1984	EG		1984	03	09.34167	10	39	40.83	+15	20	08.8		688
1984	EH	*	1984	03	01.23889	10	52	02.27	+13	53	13.9	16.5 4	688
1984	EH		1984	03	01.27778	10	51	59.64	+13	53	11.7		688
1984	EH		1984	03	06.19792	10	46	56.79	+13	49	08.6	16.5	688
1984	EH		1984	03	06.22847	10	46	54.78	+13	49	06.9		688
1984	EH		1984	03	09.28889	10	43	51.61	+13	45	29.4	16.5	688
1984	EH		1984	03	09.34167	10	43	48.40	+13	45	25.6		688
1984	EJ		1984	03	01.30833	11	03	49.82	+05	24	17.6	15.5	688
1984	EJ		1984	03	01.33889	11	03	48.00	+05	24	33.7		688
1984	EJ		1984	03	06.24375	10	59	15.92	+06	08	15.6	15.5	688
1984	EJ		1984	03	06.27431	10	59	14.20	+06	08	32.1		688
1984	EK	*	1984	03	01.25625	11	04	55.89	+13	00	49.0	17.0 4	688
1984	EK		1984	03	01.29306	11	04	54.04	+13	00	59.6		688
1984	EK		1984	03	06.25903	11	00	47.90	+13	27	31.3	16.8	688
1984	EK		1984	03	06.28958	10	50	46.26	+13	27	41.1		688
1984	EL	*	1984	03	01.25625	11	12	34.99	+14	27	36.3	16.8 4	688
1984	EL		1984	03	01.29306	11	12	33.17	+14	27	45.4		688
1984	EL		1984	03	06.25903	11	08	38.88	+14	49	28.6	16.8	688
1984	EL		1984	03	06.28958	10	58	37.42	+14	49	35.9		688
1984	EM	*	1984	03	01.30833	10	48	00.89	+06	56	00.3	16.8 4	688
1984	EM		1984	03	01.33889	10	47	58.91	+06	56	12.6		688

1984	EM		1984	03	06.24375	10	43	11.10	+07	32	42.7	16.8	688
1984	EM		1984	03	06.27431	10	43	09.29	+07	32	56.8		688
1984	EN	*	1984	03	01.30833	10	48	18.11	+05	57	20.4	17.0	4 688
1984	EN		1984	03	01.33889	10	48	16.16	+05	57	26.2		688
1984	EN		1984	03	06.24375	10	43	23.67	+06	16	15.6	17.0	688
1984	EN		1984	03	06.27431	10	43	21.80	+06	16	24.7		688
1984	EO	*	1984	03	01.30833	10	59	43.87	+01	13	06.6	16.2	4 688
1984	EO		1984	03	01.33889	10	59	42.38	+01	13	24.5		688
1984	EO		1984	03	06.24375	10	55	43.34	+02	02	31.5	16.2	688
1984	EO		1984	03	06.27431	10	55	41.84	+02	02	50.3		688
1984	EP	*	1984	03	01.30833	11	09	59.92	+05	16	38.5	16.8	4 688
1984	EP		1984	03	01.33889	11	09	58.44	+05	16	50.2		688
1984	EQ	*	1984	03	06.19792	10	41	10.27	+10	39	41.3	17.0	4 688
1984	EQ		1984	03	06.22847	10	41	08.49	+10	39	43.8		688
1984	EQ		1984	03	09.28889	10	38	17.87	+10	40	56.5	17.0	688
1984	EQ		1984	03	09.34167	10	38	14.68	+10	40	57.5		688
1984	ER		1984	03	01.25625	11	07	20.22	+11	55	54.0	17.2	688
1984	ER		1984	03	01.29306	11	07	18.12	+11	56	10.6		688
1984	ER	*	1984	03	06.25903	11	02	57.79	+12	36	25.6	17.0	4 688
1984	ER		1984	03	06.28958	11	02	56.11	+12	36	38.3		688
1984	ES	*	1984	03	06.32292	11	18	19.07	+08	20	18.3	17.5	4 688
1984	ES		1984	03	06.35347	11	18	16.90	+08	20	25.6		688
1984	ES		1984	03	09.30417	11	15	06.15	+08	32	15.1	17.5	688
1984	ES		1984	03	09.37917	11	15	01.30	+08	32	30.9		688
1984	ET	*	1984	03	06.32292	11	25	20.71	+09	13	00.8	16.8	4 688
1984	ET		1984	03	06.35347	11	25	19.17	+09	13	14.0		688
1984	ET		1984	03	09.30417	11	22	42.95	+09	36	57.3	16.8	688
1984	ET		1984	03	09.37917	11	22	38.76	+09	37	34.5		1 688
1984	EU	*	1984	03	06.32292	11	31	25.47	+10	05	58.8	16.5	4 688
1984	EU		1984	03	06.35347	11	31	23.54	+10	06	13.3		688
1984	EU		1984	03	09.30417	11	28	30.34	+10	29	44.3	16.5	688
1984	EU		1984	03	09.37917	11	28	25.71	+10	30	20.2		688
1984	EV	*	1984	03	06.32292	11	33	15.19	+03	17	21.2	17.0	4 688
1984	EV		1984	03	06.35347	11	33	13.20	+03	17	28.8		688
1984	EV		1984	03	09.30417	11	30	10.71	+03	25	17.9	17.2	688
1984	EV		1984	03	09.37917	11	30	06.04	+03	25	30.7		1 688
1984	EW	*	1984	03	06.32292	11	33	52.29	+06	01	07.4	17.2	4 688
1984	EW		1984	03	06.35347	11	33	50.54	+06	01	11.6		688
1984	EW		1984	03	09.30417	11	30	59.28	+06	09	59.6	17.2	688
1984	EW		1984	03	09.37917	11	30	54.94	+06	10	12.0		688
1984	EX	*	1984	03	06.32292	11	33	52.71	+02	18	17.7	16.8	4 688
1984	EX		1984	03	06.35347	11	33	50.96	+02	18	23.0		688
1984	EY	*	1984	03	09.39792	11	54	27.95	+09	14	09.5	17.0	8 688
1984	EY		1984	03	09.44306	11	54	25.17	+09	14	20.0		688
1984	EZ	*	1984	03	09.39792	11	56	55.50	+07	54	33.4	16.5	8 688
1984	EZ		1984	03	09.44306	11	56	53.49	+07	55	06.6		688
1984	EA1	*	1984	03	09.39792	11	59	47.71	+10	55	17.5	17.2	8 688
1984	EA1		1984	03	09.44306	11	59	45.77	+10	55	40.4		688
1984	EB1	*	1984	03	09.39792	12	01	53.33	+08	48	05.9	17.0	8 688
1984	EB1		1984	03	09.44306	12	01	51.22	+08	48	34.1		688
1984	EC1	*	1984	03	09.39792	12	02	33.04	+12	53	12.1	17.2	8 688
1984	EC1		1984	03	09.44306	12	02	31.19	+12	53	35.9		688
1984	ED1	*	1984	03	09.28889	10	26	14.21	+15	00	51.6	17.0	4 688
1984	ED1		1984	03	09.34167	10	26	11.99	+15	01	21.0		688
2578	P-L		1984	02	06.34722	11	43	20.48	-00	59	21.6	17.0	688
2578	P-L		1984	02	06.41389	11	43	19.44	-00	59	07.8		688
2578	P-L		1984	03	01.32361	11	30	55.30	+01	04	35.5	16.8	688
2578	P-L		1984	03	01.35417	11	30	53.90	+01	04	49.3		688
2578	P-L		1984	03	06.30486	11	27	04.78	+01	41	04.8	16.8	688

2578	P-L	1984 03 06.33819	11 27 03.25	+01 41 21.3			688
6091	P-L	1984 03 06.32292	11 20 40.99	+02 48 21.9		17.2	688
6091	P-L	1984 03 06.35347	11 20 39.19	+02 48 34.6			688

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: discoverer Bowell. 5 = 1 + 4. 6 = 2 + 4. 7 = 3 + 4. 8: discoverer Skiff.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY.

Plates with the 0.33-m photographic telescope. Observer C. W. Tombaugh. Measured by E. L. G. Bowell using a PDS scanning microdensitometer. SAO reference stars, global solutions. Contact: E. L. G. Bowell, Lowell Observatory, P.O. Box 1269, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.		Obs.
1931 TG4	1931 10	06.28472	01 02 19.31	-01 49 47.8		690
1931 TG4	1931 10	07.27431	01 01 32.22	-01 56 21.3		690
1931 TG4	1931 10	09.26528	00 59 58.51	-02 09 10.4		690

OBSERVATIONS MADE AT THE LINCOLN LABORATORY ETS, NEW MEXICO.

Real-time observations conducted under the direction of L. G. Taff. Assistance with verifications and identifications by B. G. Marsden. Contact: L. G. Taff, MIT Lincoln Laboratory, Lexington, MA 02173, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.		Obs.
35	1984 01	30.21414	06 42 26.16	+33 37 40.9		704
35	1984 01	30.26241	06 42 23.78	+33 37 32.5		704
41	1984 01	07.24463	05 15 24.72	+01 09 51.2		704
41	1984 01	07.34366	05 15 20.05	+01 10 07.6		704
157	1984 01	30.22171	08 15 26.74	+40 06 08.5		704
157	1984 01	30.27070	08 15 23.35	+40 06 23.2		704
199	1984 01	07.25056	05 32 53.65	+23 24 23.2		704
199	1984 01	07.36054	05 32 48.31	+23 24 37.4		704
231	1984 01	07.18211	04 37 14.26	+29 01 55.1		704
231	1984 01	07.27742	04 37 10.70	+29 01 41.7		704
256	1984 01	30.22558	07 56 02.89	+03 33 10.7		704
256	1984 01	30.29320	07 55 59.41	+03 33 39.8		704
259	1984 01	07.20988	05 25 53.09	+23 33 36.3		704
259	1984 01	07.31417	05 25 48.62	+23 33 48.3		704
273	1984 01	30.22885	08 00 46.62	+01 57 47.3		704
273	1984 01	30.29671	08 00 42.54	+01 58 24.5		704
395	1984 01	30.23294	07 53 25.95	+17 32 03.6		704
395	1984 01	30.30006	07 53 22.38	+17 32 13.6		704
468	1984 01	07.20166	05 44 20.10	+23 59 58.7		704
468	1984 01	07.30534	05 44 15.20	+23 59 56.4		704
516	1984 01	07.19277	04 13 42.38	+37 55 14.7		704
516	1984 01	07.28425	04 13 38.70	+37 54 39.8		704
519	1984 01	30.21810	07 44 46.67	+36 43 18.4		704
519	1984 01	30.26591	07 44 43.65	+36 43 23.4		704
578	1984 01	07.26600	05 23 24.21	+30 38 37.8		704
578	1984 01	07.36959	05 23 18.86	+30 38 30.8		704
623	1984 01	30.19813	07 17 39.05	+27 09 43.4		704
623	1984 01	30.25181	07 17 35.61	+27 09 19.8		704
625	1984 01	07.29573	08 06 22.59	+16 37 17.0		704
625	1984 01	07.35251	08 06 19.33	+16 37 31.9		704
629	1984 01	07.21732	05 19 17.97	+23 45 23.7		704
629	1984 01	07.32634	05 19 13.28	+23 45 43.2		704
665	1984 01	30.23685	06 45 26.99	+26 58 59.5		704
665	1984 01	30.30333	06 45 23.88	+26 58 51.3		704
837	1984 01	30.24180	07 40 00.16	+10 01 30.5		704
837	1984 01	31.16769	07 39 08.30	+10 05 46.7		704
891	1984 01	07.22404	04 54 16.68	+15 20 20.6		704

891		1984	01	07.33438	04	54	12.23	+15	20	49.2	704
2118		1984	01	30.20905	08	03	05.56	+26	06	38.3	704
2118		1984	01	30.25928	08	03	02.33	+26	06	36.4	704
2261		1984	01	31.17656	07	32	16.43	+33	46	33.7	704
2261		1984	01	31.22201	07	32	12.87	+33	47	10.3	704
2827		1984	01	28.19840	08	20	49.68	+29	54	10.8	704
2827		1984	01	28.24922	08	20	45.63	+29	54	11.0	704
2827		1984	01	29.15680	08	19	38.03	+29	53	59.6	704
2827		1984	01	30.15445	08	18	23.71	+29	53	36.3	704
2827		1984	01	31.15473	08	17	09.78	+29	53	03.9	704
2827		1984	02	01.23564	08	15	50.49	+29	52	16.3	704
2827		1984	02	02.36728	08	14	28.04	+29	51	04.1	704
2827		1984	02	03.38548	08	13	15.38	+29	49	52.4	704
1984	AC1	1984	01	28.38111	08	41	37.61	+22	11	22.3	704
1984	AC1	1984	01	28.40707	08	41	35.78	+22	11	37.4	704
1984	AC1	1984	01	29.16463	08	40	47.13	+22	18	43.0	704
1984	AC1	1984	01	30.16299	08	39	42.34	+22	27	54.2	704
1984	AC1	1984	02	01.24784	08	37	27.52	+22	46	46.1	704
1984	BY *	1984	01	28.30429	08	17	17.33	+16	46	02.0	704
1984	BY	1984	01	28.35170	08	17	13.99	+16	46	06.5	704
1984	BY	1984	01	29.16058	08	16	20.46	+16	47	07.1	704
1984	BY	1984	01	30.15897	08	15	14.21	+16	48	24.2	704
1984	BY	1984	01	31.17145	08	14	07.66	+16	49	43.5	704
1984	BY	1984	02	01.24189	08	12	57.72	+16	51	03.3	704
1984	BY	1984	02	03.29316	08	10	46.87	+16	53	34.8	704
1984	BZ *	1984	01	29.19836	08	37	55.22	+27	39	26.8	704
1984	BZ	1984	01	29.24781	08	37	51.98	+27	39	33.1	704
1984	BZ	1984	01	30.16752	08	36	52.69	+27	41	02.9	704
1984	BZ	1984	02	01.25369	08	34	38.39	+27	44	06.8	704
1984	BZ	1984	02	03.38993	08	32	22.92	+27	46	16.3	704
1984	BA1 *	1984	01	29.33735	09	08	51.57	+09	29	27.4	704
1984	BA1	1984	02	01.26021	09	05	53.43	+09	37	28.7	704

OBSERVATIONS MADE BY A. COCHRAN AND E. BARKER AT THE McDONALD OBSERVATORY.
Images obtained with the 2.7-m reflector. Contact: A. Cochran, Department of Astronomy, University of Texas, Austin, TX 78712, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1984	FB *	1984	03 31.2305	13 21 55.3	+01 45 08	18 V	711
1984	FB	1984	03 31.3117	13 21 53.3	+01 45 16		711
1984	FB	1984	04 01.4225	13 21 00.2	+01 45 57		711

OBSERVATIONS MADE AT THE GOETHE LINK OBSERVATORY.
Plates measured and reduced at Indiana University under the direction of D. Owings in response to requests from the Minor Planet Center. Contact: F. K. Edmondson, Swain Hall West 319A, Indiana University, Bloomington, IN 47401, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Obs.
1635		1954	07 25.12260	17 55 13.97	-20 45 30.8	760
1635		1954	07 25.16079	17 55 12.97	-20 45 33.1	760
1954	SR	1954	09 24.11770	23 57 10.23	+20 18 35.6	760
1954	SR	1954	09 24.16838	23 57 07.75	+20 18 19.2	760
1954	UZ1	1954	10 25.15703	01 03 14.35	+03 26 32.4	760
1954	UZ1	1954	10 25.20565	01 03 12.40	+03 26 17.8	760
1955	HJ	1955	04 27.30983	15 20 40.93	-11 19 40.4	760
1955	HJ	1955	04 27.35150	15 20 38.92	-11 19 22.0	760
1955	MH	1955	06 22.29199	18 54 22.56	-18 34 20.2	760
1955	MH	1955	06 22.33155	18 54 20.35	-18 34 31.7	760
1955	MJ	1955	06 22.29199	18 44 08.99	-13 51 31.0	760
1955	MJ	1955	06 22.33155	18 44 06.81	-13 51 26.0	760

1955	OD	1955	07	28.24932	20	55	42.67	-10	13	35.6	760
1955	OD	1955	07	28.29169	20	55	40.51	-10	14	02.1	760
1955	QR	1955	08	23.31870	23	23	22.64	-12	05	14.1	760
1955	QW	1955	08	24.32149	23	30	06.26	+18	11	34.3	760
1955	QZ	1955	08	25.26733	22	52	23.01	-10	58	35.0	760
1955	QZ	1955	08	25.30274	22	52	20.39	-10	58	34.8	760
1955	QZ	1955	08	25.37149	22	52	15.90	-10	58	32.5	760
1955	QB1	1955	08	25.26733	22	47	37.21	-10	35	39.4	760
1955	QB1	1955	08	25.30274	22	47	35.04	-10	35	41.5	760
1955	QD1	1955	08	25.26733	22	45	17.80	-16	36	40.0	760
1955	QD1	1955	08	25.30274	22	45	15.48	-16	36	41.9	760
1955	QF1	1955	08	25.26733	22	47	04.95	-15	44	29.5	760
1955	QF1	1955	08	25.30274	22	47	02.91	-15	44	31.7	760
1955	QF1	1955	08	25.34024	22	47	00.76	-15	44	33.2	760
1955	QH1	1955	08	25.26733	22	31	08.85	-11	05	21.9	760
1955	QH1	1955	08	25.30274	22	31	06.90	-11	05	30.7	760
1955	QM1	1955	08	25.26733	22	30	49.22	-09	51	55.3	760
1955	QM1	1955	08	25.30274	22	30	46.97	-09	51	54.5	760
1955	RN	1955	09	21.18327	22	52	00.07	-15	56	03.0	760
1955	RO	1955	09	13.25547	22	48	59.19	-12	40	07.2	760
1955	RO	1955	09	13.29368	22	48	57.55	-12	40	24.5	760
1955	RU	1955	09	13.33256	00	53	05.94	+02	31	46.3	760
1955	ST1	1955	09	21.18327	22	51	25.28	-17	56	18.5	760
1955	SV1	1955	09	21.18327	22	45	44.49	-21	38	48.5	760
1962	TB	1962	10	01.24437	01	06	17.55	+02	26	43.4	760
1962	TB	1962	10	01.28743	01	06	15.11	+02	26	21.5	760

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.
138	1984	02 01.24648	08 59 46.92	+22 01 45.4			801
1030	1984	03 08.27858	11 32 06.11	-03 44 03.7			801
1440	1984	03 03.26106	10 04 31.85	+15 09 51.4			801
1685	1984	02 09.00587	03 04 10.16	+04 43 33.8			801
1685	1984	03 05.01364	05 44 37.76	+07 01 34.6			801
3000	1984	02 01.20276	07 01 49.62	+18 09 50.3			801
A923 NB	1984	03 01.05847	04 32 39.28	+17 12 55.8			801
1935 TE	1984	03 08.35277	12 49 09.30	+10 42 39.5			801
1955 RZ	1984	01 09.18002	05 32 26.71	+28 38 39.7			801
1955 RZ	1984	02 08.06867	05 19 59.25	+26 28 42.4			801
1964 TH1	1984	03 05.03145	05 44 46.21	+20 56 33.6			801
1968 FH	1984	02 01.32502	10 33 27.51	+12 05 58.8			801
1968 FH	1984	03 02.25665	10 11 36.82	+14 26 07.0			801
1968 FH	1984	03 08.16326	10 07 14.16	+14 50 25.0			801
1972 NW	1984	02 02.29224	09 23 23.35	+13 11 12.0			801
1972 NW	1984	03 05.13043	08 52 45.68	+15 30 58.9			801
1972 QM	1984	03 08.30091	11 37 14.62	+03 25 49.2			801
1972 YX	1984	02 09.35622	11 29 28.93	+08 58 01.6		1	801
1972 YX	1984	03 01.29920	11 15 21.76	+11 03 17.5			801
1974 YP	1984	02 10.28040	10 50 17.53	-10 08 32.6			801
1974 YP	1984	03 08.18709	10 26 18.08	-08 56 15.9			801
1977 DT4	1984	02 01.24648	09 00 05.37	+21 59 24.1			801
1977 DT4	1984	03 01.13377	08 33 36.24	+23 35 07.1			801
1977 TA1	1984	02 01.10844	05 15 30.77	+12 21 40.1			801
1977 TA1	1984	02 09.04419	05 15 05.19	+12 36 01.8			801

1978	PQ2	1984	02	03.04406	04	56	47.76	+20	05	17.8		801
1978	QB3	1984	02	09.32929	11	12	56.50	+06	50	54.9		801
1978	QB3	1984	03	02.27823	10	53	26.58	+08	24	26.1		801
1978	SP2	1984	02	08.02335	04	42	34.77	+03	56	42.6		801
1978	SP2	1984	03	02.06392	04	51	55.18	+06	08	44.7		801
1978	SP2	1984	03	08.00276	04	56	01.71	+06	42	48.0		801
1978	TR3	1984	02	02.38859	10	31	09.46	+26	35	53.4		801
1978	TR3	1984	03	01.20346	09	59	17.99	+26	47	14.6		801
1978	WH14	1984	02	02.98632	01	45	05.48	+09	11	47.8		801
1979	BA	1984	02	02.41479	11	00	35.47	+11	24	45.0		801
1979	BA	1984	03	01.22377	10	27	30.45	+36	24	31.4		801
1979	BA	1984	03	02.21537	10	26	06.22	+37	05	02.4		801
1979	FJ2	1984	02	02.34120	10	26	19.68	+12	51	38.3	18	801
1979	FJ2	1984	03	03.26106	10	04	22.84	+15	09	46.1		801
1979	OB15	1984	02	02.04497	02	46	04.03	+17	47	16.5		801
1979	SW11	1984	02	08.34314	11	21	27.86	-02	35	57.3		801
1979	SW11	1984	03	03.30822	11	02	02.68	-00	04	03.2		801
1979	YP	1984	02	01.29706	10	02	00.05	+11	00	26.3	18	801
1979	YP	1984	02	08.29494	09	55	04.39	+11	37	53.1		801
1979	YP	1984	03	01.18199	09	33	27.32	+13	33	19.4		801
1980	DC	1984	02	01.08449	04	23	09.43	+33	01	29.5		801
1980	KO	1984	02	01.27166	09	36	28.29	+18	29	36.5		801
1980	KO	1984	02	08.27114	09	30	34.06	+19	02	21.5		801
1980	KO	1984	03	01.15764	09	12	55.20	+20	23	36.1		801
1981	DD	1984	02	03.06294	04	58	27.55	+15	54	41.2		801
1981	DE1	1984	02	08.22587	08	19	52.79	+10	54	12.5		801
1981	DE1	1984	02	10.25717	08	17	54.43	+10	58	59.2		801
1981	EG	1984	02	01.13315	05	16	44.93	+27	44	19.9	2	801
1981	EG	1984	02	09.08522	05	16	44.51	+27	52	47.4		801
1981	EV	1983	12	09.30852	07	32	03.68	+16	55	52.1		801
1981	EV	1984	02	03.08790	06	38	55.41	+20	58	30.3		801
1981	EA8	1984	02	01.15354	07	37	01.82	+22	55	45.9		801
1981	EA8	1984	02	09.19923	07	29	12.49	+22	56	58.4		801
1981	EF10	1984	02	08.24504	08	50	29.94	+09	34	43.2		801
1981	EF10	1984	03	01.10902	08	31	01.47	+11	16	06.3		801
1981	EY15	1984	02	02.31895	09	42	59.28	+18	30	57.7		801
1981	EY15	1984	03	03.19327	09	10	03.00	+18	59	38.6		801
1981	EH16	1984	02	02.26901	09	01	48.86	+14	34	17.1		801
1981	EO17	1984	02	02.22281	08	16	36.00	+12	58	36.5	3	801
1981	EO17	1984	02	09.24459	08	09	59.79	+13	31	47.6		801
1981	EO17	1984	02	10.23703	08	09	09.18	+13	36	26.0		801
1981	JS	1984	03	08.27858	11	31	46.74	-04	03	27.0		801
1981	QJ1	1984	02	02.36652	10	28	00.11	+16	33	03.5		801
1981	QJ1	1984	03	03.23909	09	58	34.77	+16	20	23.1		801
1981	UW9	1984	02	01.37570	12	24	01.65	+09	48	29.4	18	801
1981	UW9	1984	03	01.38566	12	11	07.32	+11	11	12.2		801
1982	QR	1984	01	09.16213	05	29	05.59	+34	59	47.9		801
1982	QR	1984	02	08.04580	05	17	18.54	+30	53	38.6		801
1982	QR	1984	02	09.10657	05	17	21.70	+30	45	40.5		801
1982	RB1	1984	02	10.30687	11	02	44.43	-01	46	21.0		801
1982	RB1	1984	03	08.21358	10	38	33.49	+01	30	04.0		801
1982	RD1	1984	02	02.24416	08	43	44.96	+21	40	00.0		801
1982	RD1	1984	03	02.15428	08	16	38.04	+21	50	13.2		801
1982	SK	1984	02	08.36953	11	21	50.68	+02	24	34.3		801
1982	SK	1984	03	01.27363	11	03	11.37	+04	02	17.1		801
1982	UB1	1984	02	01.22711	08	02	55.75	+22	19	57.6		801
1982	VX3	1984	02	02.19843	08	09	50.65	+18	47	32.9		801
1982	VX3	1984	03	05.10225	07	51	48.74	+19	58	01.8		801
1982	VR4	1984	02	09.27633	08	58	18.28	+15	52	38.6		801

1982 VR4		1984	03	03.15884	08	42	46.01	+17	08	26.6	18	801
1982 XC		1984	02	01.34643	11	25	40.68	+15	43	55.9		801
1982 XC		1984	03	02.29856	11	07	07.06	+19	17	16.6		801
1983 AO		1984	02	01.42798	13	08	15.92	+07	05	23.3		801
1983 AO		1984	03	01.41556	13	03	44.72	+09	36	06.7		801
1983 QD		1984	02	02.97142	00	57	57.76	+17	59	57.2		801
1983 QG		1984	02	03.00303	02	48	19.11	+13	39	19.7		801
1983 SA		1984	02	02.01875	00	39	59.93	+31	57	53.1	4	801
1983 SA		1984	03	03.02223	01	31	05.53	+35	31	49.8		801
1983 VA		1984	02	08.42238	15	36	21.58	+17	40	04.7		801
1983 VA		1984	03	02.42000	15	14	49.07	+21	08	21.2		801
1983 VE		1984	03	07.04933	04	09	51.77	+18	16	16.0		801
1983 VW1		1984	02	01.03882	03	39	31.76	+10	51	36.1		801
1983 WP		1984	03	04.03764	04	25	08.50	+24	57	54.6		801
1983 WF1		1984	03	04.99685	04	42	58.12	+21	10	57.0		801
1983 XF		1984	02	01.05883	04	17	16.49	+25	26	33.7		801
1983 XF		1984	03	01.08070	05	18	04.06	+28	16	36.0		801
1983 XF		1984	03	07.07084	05	34	44.87	+28	36	52.6	5	801
1983 XF		1984	03	08.02697	05	37	30.67	+28	39	22.4		801
1984 AB		1984	02	09.15016	05	31	59.61	+33	39	59.1		801
1984 AB		1984	03	02.08917	05	49	15.98	+36	07	08.6		801
1984 BC		1984	03	03.21523	10	06	27.83	+37	19	08.2		801
1984 CH	*	1984	02	01.32502	10	34	08.65	+11	46	11.7	18	801
1984 CJ	*	1984	02	02.26901	09	02	24.13	+14	16	25.9	17.5	801
1984 CK	*	1984	02	02.31895	09	42	31.10	+18	38	26.5	17.5	801
1984 CL	*	1984	02	02.38859	10	30	24.87	+26	24	03.0	17	801
1984 CP1	*	1984	02	02.29224	09	23	14.08	+13	15	01.2	17.5	801
1984 CQ1	*	1984	02	02.29224	09	23	43.64	+12	55	08.7	17.0	801
1984 EG1	*	1984	03	02.27823	10	52	31.59	+08	21	09.6	18.5	801
1984 EH1	*	1984	03	03.15884	08	42	54.34	+17	04	02.3	18	801
1984 EJ1	*	1984	03	03.23909	09	59	57.09	+16	11	38.4	18.5	801
1984 EK1	*	1984	03	03.23909	10	00	06.53	+16	05	02.1	19	801
1984 EL1	*	1984	03	03.23909	10	00	46.04	+16	11	50.0	18.5 6	801
2578 P-L		1984	02	08.39403	11	42	50.39	-00	53	14.1		801
2578 P-L		1984	03	08.25964	11	25	31.84	+01	55	48.5		801
4120 P-L		1984	02	08.11815	06	03	10.51	-01	56	34.9		801
4120 P-L		1984	03	05.04854	06	09	01.34	+01	47	54.7		801
6081 P-L		1984	03	02.23659	09	25	15.69	+11	35	33.9		801
6091 P-L		1984	03	02.34592	11	24	06.25	+02	29	04.7		801
6562 P-L		1984	02	02.07101	03	16	43.16	+18	33	51.3		801
6627 P-L		1984	02	09.30472	09	49	52.27	+10	42	09.5		801

Note 1: four reference stars; poor solution. 2: weak image. 3: edge of plate. 4: poor dark plate. 5: faint in clouds. 6: measured in one direction only.

OBSERVATIONS MADE AT CERRO TOLOLO INTERAMERICAN OBSERVATORY BY W. LILLER.

Semi-accurate positions of fast-moving objects found on Curtis Schmidt plates. Identified by B. G. Marsden. Contact: W. Liller, Casilla 604, Vina del Mar, Chile.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2150	1984 03	26.27986	13 57 40.2	-13 35 43	16	807
2150	1984 03	27.24271	13 57 03.1	-13 14 58		807
1982 QQ	1984 03	26.23542	13 06 02.4	-04 20 16	16	807
1982 QQ	1984 03	27.20729	13 05 14.0	-03 55 32		807

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY BY H. DEBEHOGNE AND E. R. NETTO.

Plates taken with the 0.40-m GPO astrograph scanned and measured by H. Debehogne. Assistance from B. G. Marsden with identifications. Contact:

H. Debehogne, Observatoire Royal de Belgique, Avenue circulaire 3, B-1180 Brussels, Belgium.

Object	Date	UT	R. A. (1950)	Decl.	O - C	Mag.	Obs.
24	1983 09	01.31929	22 36 40.77	-09 44 26.5	0.0	1+	809
24	1983 09	01.32414	22 36 40.56	-09 44 27.8	0.0	1+	809
24	1983 09	01.32899	22 36 40.35	-09 44 29.2	0.0	1+	809
24	1983 09	04.17085	22 34 36.24	-09 56 25.2	0.1-	0	809
24	1983 09	04.17639	22 34 35.98	-09 56 26.8	0.1-	0	809
24	1983 09	04.18193	22 34 35.74	-09 56 28.2	0.1-	0	809
24	1983 09	08.27836	22 31 38.33	-10 13 18.6	0.2+	1+	809
24	1983 09	08.28667	22 31 37.98	-10 13 20.4	0.2+	1+	809
24	1983 09	08.29498	22 31 37.64	-10 13 22.2	0.2+	1+	809
24	1983 09	09.25486	22 30 56.41	-10 17 14.1	0.1+	1+	809
24	1983 09	09.26040	22 30 56.18	-10 17 15.5	0.1+	1+	809
24	1983 09	09.26594	22 30 55.96	-10 17 16.7	0.1+	1+	809
24	1983 09	11.25771	22 29 31.88	-10 25 07.5	0.1+	0	809
24	1983 09	11.26325	22 29 31.66	-10 25 09.1	0.1+	0	809
24	1983 09	11.26879	22 29 31.41	-10 25 10.2	0.1+	0	809
24	1983 09	14.28968	22 27 27.31	-10 36 54.8	0.0	0	809
24	1983 09	14.30215	22 27 26.80	-10 36 57.8	0.0	0	809
24	1983 09	16.29530	22 26 06.77	-10 44 02.9	0.0	0	809
24	1983 09	16.30362	22 26 06.42	-10 44 04.6	0.0	0	809
24	1983 09	16.31470	22 26 06.01	-10 44 07.1	0.0	0	809
24	1983 09	16.32303	22 26 05.70	-10 44 08.9	0.0	0	809
111	1983 09	01.33678	22 33 44.09	-04 33 20.0	0.1+	0	809
111	1983 09	01.34163	22 33 43.82	-04 33 21.5	0.1+	0	809
111	1983 09	01.34630	22 33 43.56	-04 33 22.4	0.1+	0	809
111	1983 09	02.27190	22 32 53.69	-04 36 55.1	0.1+	0	809
111	1983 09	02.27744	22 32 53.40	-04 36 56.5	0.1+	0	809
111	1983 09	02.28298	22 32 53.08	-04 36 57.3	0.1+	0	809
111	1983 09	04.23180	22 31 08.32	-04 44 32.0	0.0	0	809
111	1983 09	04.23734	22 31 08.02	-04 44 33.5	0.0	0	809
111	1983 09	04.24288	22 31 07.71	-04 44 34.3	0.0	0	809
111	1983 09	06.24158	22 29 20.67	-04 52 25.8	0.0	0	809
111	1983 09	06.24712	22 29 20.38	-04 52 27.1	0.0	0	809
111	1983 09	06.25265	22 29 20.07	-04 52 28.4	0.0	0	809
111	1983 09	08.31922	22 27 30.66	-05 00 38.7	0.2+	1+	809
111	1983 09	08.32753	22 27 30.26	-05 00 40.6	0.2+	1+	809
111	1983 09	08.33584	22 27 29.85	-05 00 42.6	0.2+	1+	809
111	1983 09	13.27856	22 23 16.42	-05 20 07.7	0.0	0	809
111	1983 09	14.32431	22 22 24.72	-05 24 11.3	0.0	0	809
111	1983 09	14.33678	22 22 24.08	-05 24 14.1	0.0	0	809
111	1983 09	16.33755	22 20 47.59	-05 31 53.8	0.0	0	809
111	1983 09	16.34448	22 20 47.26	-05 31 54.2	0.0	0	809
206	1983 09	01.31929	22 40 04.06	-09 51 58.6	0.1+	0	809
206	1983 09	01.32414	22 40 03.83	-09 52 00.6	0.1+	0	809
206	1983 09	01.32899	22 40 03.60	-09 52 03.0	0.1+	0	809
206	1983 09	04.17085	22 37 47.35	-10 09 24.7	0.0	0	809
206	1983 09	04.17639	22 37 47.09	-10 09 26.7	0.0	0	809
206	1983 09	04.18193	22 37 46.83	-10 09 28.7	0.0	0	809
206	1983 09	06.18963	22 36 10.81	-10 21 35.1	0.0	0	809
206	1983 09	06.19517	22 36 10.54	-10 21 37.1	0.0	0	809
206	1983 09	06.20071	22 36 10.25	-10 21 38.6	0.0	0	809
206	1983 09	08.27836	22 34 31.68	-10 33 59.9	0.2+	2+	809
206	1983 09	08.28667	22 34 31.31	-10 34 02.7	0.2+	2+	809
206	1983 09	08.29498	22 34 30.94	-10 34 05.4	0.2+	2+	809
206	1983 09	09.25486	22 33 46.06	-10 39 42.0	0.1+	1+	809
206	1983 09	09.26040	22 33 45.81	-10 39 44.0	0.1+	1+	809
206	1983 09	09.26594	22 33 45.58	-10 39 45.7	0.1+	1+	809

206		1983	09	11.25771	22	32	13.30	-10	51	11.4	0.0	0		809
206		1983	09	11.26325	22	32	13.07	-10	51	13.0	0.0	0		809
206		1983	09	11.26879	22	32	12.80	-10	51	14.8	0.0	0		809
206		1983	09	14.28968	22	29	57.11	-11	07	58.7	0.0	0		809
206		1983	09	14.30215	22	29	56.56	-11	08	02.4	0.0	0		809
206		1983	09	16.31470	22	28	29.48	-11	18	42.1	0.0	0		809
206		1983	09	16.32303	22	28	29.12	-11	18	45.1	0.0	0		809
229		1983	09	01.31929	22	43	54.69	-10	43	57.7	0.0	0		809
229		1983	09	01.31929	22	43	54.68	-10	44	02.0	0.0	0		809
229		1983	09	01.32414	22	43	54.48	-10	44	03.2	0.0	0		809
229		1983	09	01.32414	22	43	54.49	-10	43	58.9	0.0	0		809
229		1983	09	01.32899	22	43	54.29	-10	44	00.1	0.0	0		809
229		1983	09	01.32899	22	43	54.29	-10	44	01.5	0.0	0		809
229		1983	09	04.17085	22	41	50.93	-10	54	42.4	0.0	0		809
229		1983	09	04.17639	22	41	50.68	-10	54	43.7	0.0	0		809
229		1983	09	04.18193	22	41	50.45	-10	54	45.2	0.0	0		809
229		1983	09	06.18963	22	40	23.33	-11	02	04.5	0.0	1-		809
229		1983	09	06.19517	22	40	23.08	-11	02	06.1	0.0	1-		809
229		1983	09	06.20071	22	40	22.83	-11	02	07.4	0.0	1-		809
288		1983	09	01.27808	22	22	40.67	-14	01	00.4	0.0	0		809
288		1983	09	01.28362	22	22	40.41	-14	01	02.3	0.0	0		809
288		1983	09	01.28917	22	22	40.13	-14	01	03.9	0.0	0		809
288		1983	09	02.29475	22	21	50.97	-14	06	29.7	0.0	0		809
288		1983	09	02.30029	22	21	50.71	-14	06	31.8	0.0	0		809
288		1983	09	02.30583	22	21	50.45	-14	06	33.6	0.0	0		809
288		1983	09	04.11753	22	20	22.80	-14	16	07.6	0.0	0		809
288		1983	09	04.12307	22	20	22.52	-14	16	08.9	0.0	0		809
288		1983	09	04.12861	22	20	22.24	-14	16	10.6	0.0	0		809
288		1983	09	06.10306	22	18	48.00	-14	26	17.2	0.0	0		809
288		1983	09	06.10860	22	18	47.74	-14	26	19.1	0.0	0		809
288		1983	09	06.11415	22	18	47.46	-14	26	20.7	0.0	0		809
288		1983	09	09.12951	22	16	27.23	-14	41	04.3	0.1+	2+		809
288		1983	09	09.13505	22	16	27.00	-14	41	05.8	0.1+	2+		809
288		1983	09	09.14059	22	16	26.77	-14	41	07.1	0.1+	2+		809
288		1983	09	10.14062	22	15	41.53	-14	45	47.6	0.1+	1+		809
288		1983	09	10.14616	22	15	41.29	-14	45	48.8	0.1+	1+		809
288		1983	09	10.15171	22	15	41.06	-14	45	50.1	0.1+	1+		809
288		1983	09	11.16837	22	14	55.74	-14	50	28.7	0.0	1+		809
288		1983	09	11.17391	22	14	55.50	-14	50	30.2	0.0	1+		809
288		1983	09	11.17945	22	14	55.28	-14	50	31.6	0.0	1+		809
288		1983	09	12.16702	22	14	11.92	-14	54	56.0	0.0	1+		809
288		1983	09	12.17533	22	14	11.56	-14	54	57.8	0.0	1+		809
288		1983	09	12.18364	22	14	11.21	-14	54	59.7	0.0	1+		809
288		1983	09	16.17064	22	11	22.39	-15	11	45.6	0.2-	1-		809
288		1983	09	16.18317	22	11	21.92	-15	11	48.0	0.2-	1-		809
318		1983	09	01.29817	22	28	29.19	-08	11	49.5	0.1+	0		809
318		1983	09	01.30371	22	28	28.99	-08	11	52.0	0.1+	0		809
318		1983	09	01.30925	22	28	28.77	-08	11	54.3	0.1+	0		809
318		1983	09	02.21995	22	27	51.91	-08	18	00.4	0.1+	0		809
318		1983	09	02.22550	22	27	51.67	-08	18	02.6	0.1+	0		809
318		1983	09	02.23104	22	27	51.44	-08	18	04.8	0.1+	0		809
318		1983	09	03.18328	22	27	12.84	-08	24	24.2	0.0	0		809
318		1983	09	03.18883	22	27	12.61	-08	24	26.4	0.0	0		809
318		1983	09	03.19437	22	27	12.37	-08	24	28.7	0.0	0		809
318		1983	09	04.14246	22	26	34.04	-08	30	43.3	0.0	0		809
318		1983	09	04.14800	22	26	33.82	-08	30	45.3	0.0	0		809
318		1983	09	04.15354	22	26	33.61	-08	30	47.5	0.0	0		809
318		1983	09	06.15501	22	25	13.19	-08	43	59.8	0.0	0		809
318		1983	09	06.16055	22	25	12.96	-08	44	02.0	0.0	0		809

318	1983	09	06.16609	22	25	12.71	-08	44	04.2	0.0	0	809
367	1983	09	01.27808	22	28	41.55	-14	42	32.8	0.0	1+	809
367	1983	09	01.28362	22	28	41.20	-14	42	34.7	0.0	1+	809
367	1983	09	01.28917	22	28	40.87	-14	42	36.6	0.0	1+	809
438	1983	09	13.08326	21	40	13.49	-26	03	34.7	0.0	0	809
438	1983	09	13.11304	21	40	12.38	-26	03	32.1	0.0	0	809
438	1983	09	13.12550	21	40	11.91	-26	03	31.0	0.0	0	809
438	1983	09	15.09996	21	38	58.27	-26	01	40.5	0.0	1-	809
438	1983	09	15.11104	21	38	57.84	-26	01	39.6	0.0	1-	809
557	1983	09	01.29817	22	25	45.01	-06	50	59.8	0.0	0	809
557	1983	09	01.30371	22	25	44.71	-06	51	01.3	0.0	0	809
557	1983	09	01.30925	22	25	44.41	-06	51	03.0	0.0	0	809
557	1983	09	02.21995	22	24	54.07	-06	55	21.8	0.0	0	809
557	1983	09	02.22550	22	24	53.79	-06	55	23.5	0.0	0	809
557	1983	09	02.23104	22	24	53.48	-06	55	25.0	0.0	0	809
557	1983	09	03.18328	22	24	00.91	-06	59	56.3	0.0	0	809
557	1983	09	03.18883	22	24	00.61	-06	59	57.8	0.0	0	809
557	1983	09	03.19437	22	24	00.31	-06	59	59.4	0.0	0	809
557	1983	09	04.14246	22	23	08.24	-07	04	29.7	0.0	0	809
557	1983	09	04.14800	22	23	07.94	-07	04	31.1	0.0	0	809
557	1983	09	04.15354	22	23	07.65	-07	04	33.0	0.0	0	809
557	1983	09	06.15501	22	21	18.32	-07	14	02.7	0.1-	0	809
557	1983	09	06.16055	22	21	18.02	-07	14	04.0	0.1-	0	809
557	1983	09	06.16609	22	21	17.72	-07	14	05.5	0.1-	0	809
557	1983	09	07.23954	22	20	19.68	-07	19	09.9	0.1-	0	809
557	1983	09	07.24508	22	20	19.39	-07	19	11.5	0.1-	0	809
557	1983	09	07.25062	22	20	19.08	-07	19	13.3	0.1-	0	809
557	1983	09	08.25205	22	19	25.62	-07	23	55.2	0.3+	1+	809
557	1983	09	08.25758	22	19	25.36	-07	23	56.6	0.3+	1+	809
557	1983	09	08.26312	22	19	25.09	-07	23	58.0	0.3+	1+	809
557	1983	09	09.20223	22	18	35.44	-07	28	20.6	0.2+	1+	809
557	1983	09	09.20777	22	18	35.17	-07	28	22.1	0.2+	1+	809
557	1983	09	09.21331	22	18	34.90	-07	28	23.6	0.2+	1+	809
557	1983	09	11.23486	22	16	49.81	-07	37	45.3	0.1+	0	809
557	1983	09	11.24040	22	16	49.54	-07	37	46.7	0.1+	0	809
557	1983	09	11.24594	22	16	49.27	-07	37	48.4	0.1+	0	809
557	1983	09	13.21069	22	15	10.06	-07	46	37.8	0.0	0	809
557	1983	09	13.21761	22	15	09.72	-07	46	39.7	0.0	0	809
557	1983	09	13.22454	22	15	09.39	-07	46	41.5	0.0	0	809
557	1983	09	15.26755	22	13	29.74	-07	55	40.1	0.0	0	809
557	1983	09	15.27310	22	13	29.47	-07	55	41.6	0.0	0	809
557	1983	09	15.27864	22	13	29.20	-07	55	43.0	0.0	0	809
557	1983	09	16.26968	22	12	42.29	-07	59	57.6	0.1+	0	809
557	1983	09	16.27799	22	12	41.91	-08	00	00.1	0.1+	0	809
557	1983	09	17.33066	22	11	53.15	-08	04	26.4	0.1+	1+	809
557	1983	09	17.33620	22	11	52.82	-08	04	27.5	0.1+	1+	809
624	1983	09	01.31929	22	38	34.01	-10	40	06.9	0.1+	0	809
624	1983	09	01.32414	22	38	33.87	-10	40	08.1	0.1+	0	809
624	1983	09	01.32899	22	38	33.73	-10	40	08.4	0.1+	0	809
624	1983	09	04.17085	22	36	59.45	-10	43	41.4	0.0	0	809
624	1983	09	04.17639	22	36	59.25	-10	43	41.9	0.0	0	809
624	1983	09	04.18193	22	36	59.06	-10	43	42.2	0.0	0	809
624	1983	09	06.18963	22	35	52.63	-10	46	08.4	0.0	0	809
624	1983	09	06.19517	22	35	52.43	-10	46	08.9	0.0	0	809
624	1983	09	06.20071	22	35	52.23	-10	46	09.3	0.0	0	809
624	1983	09	08.27836	22	34	43.88	-10	48	37.3	0.1+	1+	809
624	1983	09	08.28667	22	34	43.63	-10	48	37.9	0.1+	1+	809
624	1983	09	08.29498	22	34	43.37	-10	48	38.2	0.1+	1+	809
624	1983	09	09.25486	22	34	12.10	-10	49	44.5	0.1+	1+	809

624	1983	09	09.26040	22	34	11.92	-10	49	45.2	0.1+	1+	809
624	1983	09	09.26594	22	34	11.74	-10	49	45.4	0.1+	1+	809
624	1983	09	11.25771	22	33	07.11	-10	51	56.8	0.0	0	809
624	1983	09	11.26325	22	33	06.92	-10	51	57.0	0.0	0	809
624	1983	09	11.26879	22	33	06.74	-10	51	57.5	0.0	0	809
624	1983	09	14.28968	22	31	30.77	-10	55	03.4	0.0	0	809
624	1983	09	14.30215	22	31	30.36	-10	55	04.4	0.0	0	809
624	1983	09	16.29530	22	30	28.23	-10	56	47.8	0.0	0	809
624	1983	09	16.30362	22	30	27.98	-10	56	48.4	0.0	0	809
624	1983	09	16.31470	22	30	27.63	-10	56	49.1	0.0	0	809
624	1983	09	16.32303	22	30	27.38	-10	56	49.5	0.0	0	809
641	1983	09	01.31929	22	42	27.80	-11	18	18.4	0.0	1+	809
641	1983	09	01.32414	22	42	27.52	-11	18	19.9	0.0	1+	809
641	1983	09	01.32899	22	42	27.23	-11	18	21.5	0.0	1+	809
641	1983	09	04.17085	22	39	36.51	-11	33	44.7	0.0	0	809
641	1983	09	04.17639	22	39	36.17	-11	33	46.3	0.0	0	809
641	1983	09	04.18193	22	39	35.84	-11	33	48.1	0.0	0	809
1156	1983	09	01.37366	23	40	07.30	-04	47	25.3	0.1+	0	809
1156	1983	09	01.38058	23	40	06.96	-04	47	27.8	0.1+	0	809
1156	1983	09	01.38751	23	40	06.62	-04	47	30.5	0.1+	0	809
1156	1983	09	04.25604	23	37	39.16	-05	04	56.7	0.0	0	809
1156	1983	09	04.26158	23	37	38.88	-05	04	58.6	0.0	0	809
1156	1983	09	04.26712	23	37	38.59	-05	05	00.5	0.0	0	809
1156	1983	09	07.35451	23	34	51.37	-05	24	21.0	0.2-	1-	809
1156	1983	09	07.36282	23	34	50.95	-05	24	24.4	0.2-	1-	809
1156	1983	09	07.37113	23	34	50.52	-05	24	27.5	0.2-	1-	809
1156	1983	09	09.38090	23	32	58.31	-05	37	11.4	0.1+	0	809
1156	1983	09	09.38921	23	32	57.80	-05	37	14.6	0.1+	0	809
1190	1983	09	01.37366	23	46	59.67	-05	06	42.1	0.0	0	809
1190	1983	09	01.38058	23	46	59.34	-05	06	43.9	0.0	0	809
1190	1983	09	01.38751	23	46	59.00	-05	06	46.0	0.0	0	809
1190	1983	09	02.32176	23	46	14.77	-05	10	49.9	0.0	0	809
1190	1983	09	02.32730	23	46	14.51	-05	10	51.4	0.0	0	809
1190	1983	09	02.33284	23	46	14.24	-05	10	52.8	0.0	0	809
1190	1983	09	04.25604	23	44	40.08	-05	19	29.2	0.0	0	809
1190	1983	09	04.26158	23	44	39.80	-05	19	30.6	0.0	0	809
1190	1983	09	04.26712	23	44	39.54	-05	19	31.9	0.0	0	809
1257	1983	09	01.33678	22	30	42.75	-03	36	01.3	0.0	1+	809
1257	1983	09	01.34163	22	30	42.49	-03	36	03.0	0.0	1+	809
1257	1983	09	01.34630	22	30	42.24	-03	36	04.9	0.0	1+	809
1257	1983	09	02.24558	22	29	55.70	-03	41	44.0	0.0	1+	809
1257	1983	09	02.25112	22	29	55.43	-03	41	46.1	0.0	1+	809
1257	1983	09	02.25943	22	29	55.01	-03	41	49.1	0.0	1+	809
1257	1983	09	06.21664	22	26	32.00	-04	06	59.2	0.1-	0	809
1257	1983	09	06.22218	22	26	31.72	-04	07	01.3	0.1-	0	809
1257	1983	09	06.22772	22	26	31.43	-04	07	03.4	0.1-	0	809
1257	1983	09	09.27979	22	23	59.32	-04	26	32.8	0.2+	1+	809
1257	1983	09	09.28533	22	23	59.09	-04	26	34.9	0.2+	1+	809
1257	1983	09	09.29087	22	23	58.82	-04	26	36.9	0.2+	1+	809
1257	1983	09	13.25016	22	20	50.95	-04	51	39.3	0.0	0	809
1257	1983	09	13.25709	22	20	50.62	-04	51	42.1	0.0	0	809
1257	1983	09	13.26401	22	20	50.30	-04	51	44.4	0.0	0	809
1258	1983	09	01.23445	21	41	05.39	-07	55	28.6	0.1+	1+	809
1258	1983	09	01.23999	21	41	05.13	-07	55	29.2	0.1+	1+	809
1258	1983	09	01.24553	21	41	04.89	-07	55	29.9	0.1+	1+	809
1258	1983	09	02.10153	21	40	27.75	-07	57	30.1	0.0	1+	809
1258	1983	09	02.10707	21	40	27.51	-07	57	30.6	0.0	1+	809
1258	1983	09	02.11261	21	40	27.27	-07	57	31.4	0.0	1+	809
1258	1983	09	06.07744	21	37	40.56	-08	06	41.0	0.0	0	809

1258	1983	09	06.08298	21	37	40.34	-08	06	41.5	0.0	0	809
1258	1983	09	06.08852	21	37	40.13	-08	06	42.1	0.0	0	809
1258	1983	09	07.07195	21	37	00.57	-08	08	56.3	0.1+	0	809
1258	1983	09	07.07887	21	37	00.28	-08	08	57.1	0.1+	0	809
1258	1983	09	07.08580	21	36	59.99	-08	08	58.1	0.1+	0	809
1258	1983	09	09.09211	21	35	41.71	-08	13	26.5	0.2+	1+	809
1258	1983	09	09.09765	21	35	41.52	-08	13	27.4	0.2+	1+	809
1258	1983	09	09.10319	21	35	41.34	-08	13	28.1	0.2+	1+	809
1437	1983	09	01.23445	21	42	17.68	-07	40	08.3	0.1-	0	809
1437	1983	09	01.23999	21	42	17.49	-07	40	08.7	0.1-	0	809
1437	1983	09	01.24553	21	42	17.31	-07	40	09.0	0.1-	0	809
1437	1983	09	02.10153	21	41	49.87	-07	40	54.3	0.1-	0	809
1437	1983	09	02.10707	21	41	49.69	-07	40	54.3	0.1-	0	809
1437	1983	09	02.11261	21	41	49.51	-07	40	54.4	0.1-	0	809
1437	1983	09	06.07744	21	39	44.72	-07	44	23.6	0.1-	0	809
1437	1983	09	06.08298	21	39	44.55	-07	44	23.7	0.1-	0	809
1437	1983	09	06.08852	21	39	44.38	-07	44	24.3	0.1-	0	809
1437	1983	09	07.07195	21	39	14.32	-07	45	15.1	0.1-	0	809
1437	1983	09	07.07887	21	39	14.12	-07	45	15.4	0.1-	0	809
1437	1983	09	07.08580	21	39	13.91	-07	45	15.9	0.1-	0	809
1437	1983	09	09.09211	21	38	13.74	-07	46	58.4	0.1-	0	809
1437	1983	09	09.09765	21	38	13.57	-07	46	58.7	0.1-	0	809
1437	1983	09	09.10319	21	38	13.42	-07	46	59.0	0.1-	0	809
1437	1983	09	12.12685	21	36	46.04	-07	49	28.6	0.1-	0	809
1437	1983	09	12.13516	21	36	45.80	-07	49	28.9	0.1-	0	809
1437	1983	09	12.14347	21	36	45.56	-07	49	29.3	0.1-	0	809
1529	1983	08	31.29952	22	59	19.31	-18	07	39.4	0.1+	1-	809
1529	1983	08	31.31060	22	59	18.90	-18	07	42.9	0.1+	1-	809
1529	1983	08	31.32168	22	59	18.49	-18	07	46.6	0.1+	1-	809
1529	1983	09	06.27066	22	55	33.43	-18	37	11.1	0.0	1-	809
1529	1983	09	06.27620	22	55	33.23	-18	37	12.6	0.0	1-	809
1529	1983	09	06.28174	22	55	33.02	-18	37	14.4	0.0	1-	809
1529	1983	09	08.35247	22	54	13.79	-18	46	46.1	0.2+	4+	809
1529	1983	09	08.35801	22	54	13.61	-18	46	47.2	0.2+	4+	809
1529	1983	09	08.36354	22	54	13.42	-18	46	48.3	0.2+	4+	809
1619	1983	09	13.08326	21	44	02.55	-26	06	58.2	0.0	0	809
1619	1983	09	13.11304	21	44	01.35	-26	06	55.6	0.0	0	809
1619	1983	09	13.12550	21	44	00.84	-26	06	54.4	0.0	0	809
1619	1983	09	15.09996	21	42	41.15	-26	05	53.1	0.0	2-	809
1619	1983	09	15.11104	21	42	40.67	-26	05	52.4	0.0	2-	809
1663	1983	09	13.08326	21	40	47.63	-24	48	33.7	0.0	1-	809
1663	1983	09	13.11304	21	40	46.77	-24	48	34.8	0.0	1-	809
1663	1983	09	13.12550	21	40	46.41	-24	48	35.3	0.0	1-	809
1743	1983	09	01.33678	22	38	06.44	-03	12	01.6	0.0	0	809
1743	1983	09	01.34163	22	38	06.19	-03	12	03.9	0.0	0	809
1743	1983	09	01.34630	22	38	05.93	-03	12	06.0	0.0	0	809
1743	1983	09	02.27190	22	37	18.62	-03	18	38.3	0.0	0	809
1743	1983	09	02.27744	22	37	18.33	-03	18	41.1	0.0	0	809
1743	1983	09	02.28298	22	37	18.05	-03	18	43.6	0.0	0	809
1743	1983	09	04.23180	22	35	38.68	-03	32	42.1	0.0	0	809
1743	1983	09	04.23734	22	35	38.41	-03	32	44.4	0.0	0	809
1743	1983	09	04.24288	22	35	38.14	-03	32	46.8	0.0	0	809
1743	1983	09	06.24158	22	33	56.88	-03	47	13.3	0.1-	0	809
1743	1983	09	06.24712	22	33	56.60	-03	47	16.0	0.1-	0	809
1743	1983	09	06.25265	22	33	56.32	-03	47	18.4	0.1-	0	809
1743	1983	09	08.31922	22	32	12.76	-04	02	16.7	0.2+	1+	809
1743	1983	09	08.32753	22	32	12.39	-04	02	20.2	0.2+	1+	809
1743	1983	09	08.33584	22	32	11.99	-04	02	23.7	0.2+	1+	809
1743	1983	09	12.29653	22	28	59.15	-04	31	02.2	0.0	0	809

1743		1983	09	12.30415	22	28	58.80	-04	31	05.3	0.0	0			809
1743		1983	09	12.31315	22	28	58.38	-04	31	09.1	0.0	0			809
1743		1983	09	13.27856	22	28	11.90	-04	37	59.7	0.0	0			809
1743		1983	09	14.32431	22	27	24.08	-04	45	32.3	0.0	0			809
1743		1983	09	14.33678	22	27	23.52	-04	45	37.7	0.0	0			809
1743		1983	09	16.33755	22	25	52.80	-04	59	45.6	0.0	0			809
1743		1983	09	16.34448	22	25	52.46	-04	59	48.6	0.0	0			809
1805		1983	09	01.37366	23	47	52.22	-05	06	30.5	0.0	0			809
1805		1983	09	01.38058	23	47	51.99	-05	06	32.4	0.0	0			809
1805		1983	09	01.38751	23	47	51.74	-05	06	34.2	0.0	0			809
1805		1983	09	02.32176	23	47	15.73	-05	11	06.6	0.0	0			809
1805		1983	09	02.32730	23	47	15.52	-05	11	08.1	0.0	0			809
1805		1983	09	02.33284	23	47	15.32	-05	11	09.7	0.0	0			809
1841		1983	09	01.37366	23	44	27.24	-04	52	22.7	0.0	0			809
1841		1983	09	01.38058	23	44	26.96	-04	52	24.4	0.0	0			809
1841		1983	09	01.38751	23	44	26.70	-04	52	26.1	0.0	0			809
1841		1983	09	02.32176	23	43	52.45	-04	56	05.8	0.0	0			809
1841		1983	09	02.32730	23	43	52.25	-04	56	06.8	0.0	0			809
1841		1983	09	02.33284	23	43	52.05	-04	56	08.1	0.0	0			809
1841		1983	09	04.25604	23	42	40.12	-05	03	46.7	0.1-	0			809
1841		1983	09	04.26158	23	42	39.91	-05	03	47.8	0.1-	0			809
1841		1983	09	04.26712	23	42	39.71	-05	03	49.1	0.1-	0			809
1841		1983	09	07.35451	23	40	40.64	-05	16	14.0	0.2-	0			809
1841		1983	09	07.36282	23	40	40.35	-05	16	16.0	0.2-	0			809
1841		1983	09	07.37113	23	40	40.06	-05	16	18.0	0.2-	0			809
1841		1983	09	09.38090	23	39	20.90	-05	24	27.5	0.0	0			809
1841		1983	09	09.38921	23	39	20.60	-05	24	29.3	0.0	0			809
1906		1983	08	31.38747	00	17	49.60	+01	15	26.1					809
1906		1983	08	31.39925	00	17	49.10	+01	15	25.8					809
1906		1983	08	31.41102	00	17	48.60	+01	15	25.3					809
2125		1983	09	01.29817	22	27	03.04	-08	38	18.2				16.8	809
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2125		1983	09	01.30925	22	27	02.50	-08	38	21.0					809
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2125		1983	09	03.18328	22	25	30.09	-08	45	56.6					809
2125		1983	09	03.18883	22	25	29.83	-08	45	58.0					809
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2125		1983	09	09.20223	22	20	41.28	-09	09	37.7					809
2125		1983	09	09.20777	22	20	41.02	-09	09	39.3					809
2125		1983	09	09.21331	22	20	40.77	-09	09	40.4					809
2125		1983	09	11.23486	22	19	08.52	-09	17	13.7					809
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2125		1983	09	13.21069	22	17	41.66	-09	24	20.6					809
2125		1983	09	13.21761	22	17	41.34	-09	24	22.1					809

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2125	1983	09	15.26755	22	16	14.81	-09	31	25.5		809
2125	1983	09	15.27310	22	16	14.57	-09	31	26.7		809
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2125	1983	09	17.33620	22	14	51.73	-09	38	10.3		809
2125	1983	09	18.26214	22	14	16.11	-09	41	03.9		809
2125	1983	09	18.26630	22	14	15.95	-09	41	04.6		809
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2400	1983	09	01.23999	21	41	23.47	-07	19	29.3	0.0 0	809
2400	1983	09	01.24553	21	41	23.26	-07	19	31.7	0.0 0	809
2400	1983	09	02.10153	21	40	50.81	-07	26	14.8	0.0 0	809
2400	1983	09	02.10707	21	40	50.60	-07	26	17.4	0.0 0	809
2400	1983	09	02.11261	21	40	50.39	-07	26	19.9	0.0 0	809
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2400	1983	09	06.08298	21	38	25.97	-07	57	11.0	0.0 0	809
2400	1983	09	06.08852	21	38	25.78	-07	57	13.8	0.0 0	809
2400	1983	09	07.07195	21	37	52.05	-08	04	45.5	0.0 0	809
2400	1983	09	07.07887	21	37	51.80	-08	04	48.8	0.0 0	809
2400	1983	09	07.08580	21	37	51.57	-08	04	52.1	0.0 0	809
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2400	1983	09	09.10319	21	36	45.20	-08	20	09.9	0.0 0	809
2422	1983	09	01.37366	23	43	57.16	-03	27	15.8	0.0 0	809
2422	1983	09	01.38058	23	43	56.83	-03	27	19.1	0.0 0	809
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2422	1983	09	04.25604	23	41	33.52	-03	50	25.9	0.0 0	809
2422	1983	09	04.26158	23	41	33.25	-03	50	28.7	0.0 0	809
2422	1983	09	04.26712	23	41	32.98	-03	50	31.6	0.0 0	809
2422	1983	09	07.35451	23	38	52.86	-04	15	46.1	0.0 0	809
2422	1983	09	07.36282	23	38	52.43	-04	15	50.2	0.0 0	809
2422	1983	09	07.37113	23	38	52.00	-04	15	54.3	0.0 0	809
2461	1983	09	01.27808	22	21	08.45	-12	57	04.5	0.0 0	809
2461	1983	09	01.28362	22	21	08.22	-12	57	06.0	0.0 0	809
2461	1983	09	01.28917	22	21	08.01	-12	57	07.7	0.0 0	809
2461	1983	09	02.14793	22	20	33.72	-13	00	54.0	0.0 0	809
2461	1983	09	02.15347	22	20	33.51	-13	00	55.6	0.0 0	809
2461	1983	09	02.15901	22	20	33.28	-13	00	57.0	0.0 0	809
2461	1983	09	04.08844	22	19	10.45	-13	10	00.9	0.0 0	809
2461	1983	09	04.09398	22	19	10.22	-13	10	02.6	0.0 0	809
2461	1983	09	04.09952	22	19	09.96	-13	10	04.0	0.0 0	809
2461	1983	09	07.21669	22	16	58.76	-13	24	08.1	0.0 0	809
2461	1983	09	07.22223	22	16	58.54	-13	24	09.4	0.0 0	809
2461	1983	09	07.22777	22	16	58.33	-13	24	11.1	0.0 0	809
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2949		1983	09	02.22550	22	26	28.96	-08	40	50.5	809
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2956		1983	09	12.25290	22	12	57.18	-14	20	43.3	809
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2956		1983	09	12.27783	22	12	56.09	-14	20	49.9	809
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2956		1983	09	15.25440	22	10	52.70	-14	32	37.7	809
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2959		1983	09	01.27808	22	21	17.95	-14	35	13.8	17.2 809
2959		1983	09	01.28362	22	21	17.73	-14	35	15.4	809
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2959		1983	09	02.30583	22	20	37.50	-14	40	04.7	809
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2959		1983	09	04.12307	22	19	26.53	-14	48	34.5	809
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2959		1983	09	06.10306	22	18	09.61	-14	57	37.1	809
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2959		1983	09	06.11415	22	18	09.18	-14	57	40.1	809
2959		1983	09	09.12951	22	16	14.20	-15	10	53.4	809
2959		1983	09	09.13505	22	16	14.00	-15	10	55.2	809
2959		1983	09	09.14059	22	16	13.80	-15	10	56.9	809
2959		1983	09	10.14062	22	15	36.41	-15	15	11.1	809
2959		1983	09	10.14616	22	15	36.20	-15	15	12.4	809
2959		1983	09	10.15171	22	15	35.99	-15	15	13.5	809
2959		1983	09	11.16837	22	14	58.36	-15	19	27.4	809
2959		1983	09	11.17391	22	14	58.16	-15	19	29.0	809
2959		1983	09	11.17945	22	14	57.96	-15	19	30.6	809
2959		1983	09	12.16702	22	14	22.23	-15	23	31.1	809
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2959		1983	09	12.18364	22	14	21.63	-15	23	35.2	809
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2959		1983	09	16.18317	22	11	59.73	-15	39	06.1	809
1979	MV6	1983	09	01.33678	22	32	03.85	-02	55	42.9	17.2 809
1979	MV6	1983	09	01.34163	22	32	03.60	-02	55	44.6	809
1979	MV6	1983	09	01.34630	22	32	03.35	-02	55	46.2	809
1979	MV6	1983	09	02.24558	22	31	16.45	-03	01	15.4	809
1979	MV6	1983	09	02.25112	22	31	16.16	-03	01	17.5	809
1979	MV6	1983	09	02.25943	22	31	15.72	-03	01	20.4	809
1979	MV6	1983	09	06.21664	22	27	50.66	-03	26	00.3	809
1979	MV6	1983	09	06.22218	22	27	50.37	-03	26	02.3	809
1979	MV6	1983	09	06.22772	22	27	50.08	-03	26	04.4	809
1979	MV6	1983	09	09.27979	22	25	16.52	-03	45	24.1	809
1979	MV6	1983	09	09.28533	22	25	16.24	-03	45	26.2	809
1979	MV6	1983	09	09.29087	22	25	15.96	-03	45	28.3	809
1979	MV6	1983	09	13.25016	22	22	06.60	-04	10	29.8	809
1979	MV6	1983	09	13.25709	22	22	06.29	-04	10	32.4	809
1979	MV6	1983	09	13.26401	22	22	05.94	-04	10	35.1	809
1979	MV6	1983	09	13.27856	22	22	05.21	-04	10	40.5	809
1979	MV6	1983	09	14.32431	22	21	17.53	-04	17	11.9	809
1979	MV6	1983	09	14.33678	22	21	16.92	-04	17	17.2	809
1981	EK	1983	09	01.31929	22	39	04.48	-10	50	51.0	17.0 809
1981	EK	1983	09	01.32414	22	39	04.26	-10	50	53.1	809
1981	EK	1983	09	01.32899	22	39	04.02	-10	50	55.7	809
1981	EK	1983	09	04.17085	22	36	49.62	-11	06	31.1	809
1981	EK	1983	09	04.17639	22	36	49.34	-11	06	33.0	809
1981	EK	1983	09	04.18193	22	36	49.07	-11	06	35.0	809
1981	EK	1983	09	06.18963	22	35	14.25	-11	17	28.2	809
1981	EK	1983	09	06.19517	22	35	13.98	-11	17	30.0	809
1981	EK	1983	09	06.20071	22	35	13.69	-11	17	31.9	809
1981	EK	1983	09	08.27836	22	33	36.48	-11	28	33.0	809
1981	EK	1983	09	08.28667	22	33	36.08	-11	28	35.7	809
1981	EK	1983	09	08.29498	22	33	35.70	-11	28	38.3	809
1981	EK	1983	09	09.25486	22	32	51.30	-11	33	39.0	809
1981	EK	1983	09	09.26040	22	32	51.03	-11	33	40.7	809
1981	EK	1983	09	09.26594	22	32	50.76	-11	33	42.4	809
1981	EK	1983	09	14.28968	22	29	05.15	-11	58	35.9	809
1981	EK	1983	09	14.30215	22	29	04.59	-11	58	39.6	809
1981	EK	1983	09	16.31470	22	27	38.70	-12	08	00.5	809
1981	EK	1983	09	16.32303	22	27	38.34	-12	08	02.5	809
1981	EM	1983	09	02.29475	22	18	51.51	-14	24	14.6	17.2 809
1981	EM	1983	09	02.30029	22	18	51.16	-14	24	15.7	809
1981	EM	1983	09	02.30583	22	18	50.79	-14	24	16.8	809

1981	EM	1983	09	04.11753	22	16	57.61	-14	27	47.8	809
1981	EM	1983	09	04.12307	22	16	57.27	-14	27	48.4	809
1981	EM	1983	09	04.12861	22	16	56.92	-14	27	49.1	809
1981	EM	1983	09	06.10306	22	14	54.48	-14	31	12.2	809
1981	EM	1983	09	06.10860	22	14	54.14	-14	31	12.8	809
1981	EM	1983	09	06.11415	22	14	53.79	-14	31	13.1	809
1981	EM	1983	09	09.12951	22	11	50.69	-14	35	30.8	809
1981	EM	1983	09	09.13505	22	11	50.36	-14	35	31.2	809
1981	EM	1983	09	09.14059	22	11	50.02	-14	35	31.4	809
1981	EM	1983	09	12.19957	22	08	51.92	-14	38	36.9	809
1981	EM	1983	09	12.20788	22	08	51.44	-14	38	37.4	809
1981	EM	1983	09	12.21619	22	08	50.96	-14	38	37.8	809
1981	EM	1983	09	12.25290	22	08	48.77	-14	38	39.6	809
1981	EM	1983	09	12.26536	22	08	48.07	-14	38	40.4	809
1981	EM	1983	09	12.27783	22	08	47.37	-14	38	41.1	809
1981	EM	1983	09	15.24332	22	06	04.87	-14	40	21.6	809
1981	EM	1983	09	15.25440	22	06	04.22	-14	40	21.9	809
1981	EM	1983	09	16.24059	22	05	12.70	-14	40	37.2	809
1981	EM	1983	09	16.24890	22	05	12.23	-14	40	37.3	809
1981	EX6	1983	09	01.31929	22	42	34.48	-10	02	47.8	17.2 809
1981	EX6	1983	09	01.32414	22	42	34.19	-10	02	47.6	809
1981	EX6	1983	09	01.32899	22	42	33.92	-10	02	47.4	809
1981	EX6	1983	09	04.17085	22	39	49.52	-09	59	03.5	809
1981	EX6	1983	09	04.17639	22	39	49.21	-09	59	03.1	809
1981	EX6	1983	09	04.18193	22	39	48.89	-09	59	02.6	809
1981	EX6	1983	09	06.18963	22	37	53.32	-09	56	16.2	809
1981	EX6	1983	09	06.19517	22	37	53.00	-09	56	16.0	809
1981	EX6	1983	09	06.20071	22	37	52.68	-09	56	15.8	809
1981	EX6	1983	09	08.27836	22	35	53.80	-09	53	13.2	809
1981	EX6	1983	09	08.28667	22	35	53.33	-09	53	12.4	809
1981	EX6	1983	09	08.29498	22	35	52.87	-09	53	11.7	809
1981	EX6	1983	09	11.25771	22	33	06.72	-09	48	33.2	809
1981	EX6	1983	09	11.26325	22	33	06.41	-09	48	32.5	809
1981	EX6	1983	09	11.26879	22	33	06.09	-09	48	31.7	809
1981	EX6	1983	09	16.29530	22	28	36.38	-09	39	32.3	809
1981	EX6	1983	09	16.30362	22	28	35.94	-09	39	31.4	809
1981	EX16	1983	09	01.37366	23	44	13.34	-04	44	27.8	16.8 809
1981	EX16	1983	09	01.38058	23	44	12.93	-04	44	27.0	809
1981	EX16	1983	09	01.38751	23	44	12.52	-04	44	26.2	809
1981	EX16	1983	09	02.32176	23	43	18.41	-04	42	40.0	809
1981	EX16	1983	09	02.32730	23	43	18.09	-04	42	39.2	809
1981	EX16	1983	09	02.33284	23	43	17.75	-04	42	38.4	809
1981	EX16	1983	09	04.25604	23	41	23.30	-04	39	04.4	809
1981	EX16	1983	09	04.26158	23	41	22.97	-04	39	03.7	809
1981	EX16	1983	09	04.26712	23	41	22.64	-04	39	03.2	809
1981	EX16	1983	09	07.35451	23	38	11.75	-04	33	27.7	809
1981	EX16	1983	09	07.36282	23	38	11.25	-04	33	26.9	809
1981	EX16	1983	09	07.37113	23	38	10.73	-04	33	26.0	809
1981	EX16	1983	09	09.38090	23	36	02.93	-04	29	49.8	809
1981	EX16	1983	09	09.38921	23	36	02.40	-04	29	49.1	809
1981	EX16	1983	09	14.35894	23	30	38.36	-04	20	55.0	809
1981	EX16	1983	09	15.32711	23	29	34.76	-04	19	07.8	809
1981	EX16	1983	09	15.33474	23	29	34.24	-04	19	06.9	809
1981	EX16	1983	09	15.34374	23	29	33.66	-04	19	05.9	809
1981	EX16	1983	09	16.36041	23	28	26.51	-04	17	12.4	809
1981	EX16	1983	09	16.37010	23	28	25.82	-04	17	11.8	809
1981	EX16	1983	09	18.36326	23	26	14.27	-04	13	26.4	809
1981	EX16	1983	09	18.36880	23	26	13.91	-04	13	25.8	809
1983	OD	1983	09	13.08326	21	47	34.22	-26	05	46.2	809

1983	OD		1983	09	13.11304	21	47	33.79	-26	06	03.2		809
1983	OD		1983	09	13.12550	21	47	33.61	-26	06	10.5		809
1983	OD		1983	09	15.09996	21	47	05.66	-26	25	01.1		809
1983	OD		1983	09	15.11104	21	47	05.51	-26	25	07.5		809
1983	QJ	*	1983	08	31.29952	22	56	14.53	-17	59	48.2		809
1983	QJ		1983	08	31.31060	22	56	13.97	-17	59	51.6		809
1983	QJ		1983	08	31.32168	22	56	13.41	-17	59	55.0		809
1983	QJ		1983	09	06.27066	22	51	09.77	-18	29	54.2		809
1983	QJ		1983	09	06.27620	22	51	09.49	-18	29	55.8		809
1983	QJ		1983	09	06.28174	22	51	09.21	-18	29	57.5		809
1983	QJ		1983	09	08.35247	22	49	23.20	-18	39	19.6		809
1983	QJ		1983	09	08.35801	22	49	22.92	-18	39	21.4		809
1983	QJ		1983	09	08.36354	22	49	22.63	-18	39	22.6		809
1983	QJ		1983	09	12.06660	22	46	16.20	-18	54	35.1		809
1983	QJ		1983	09	12.07837	22	46	15.59	-18	54	38.1		809
1983	QJ		1983	09	12.08876	22	46	15.06	-18	54	40.8		809
1983	RJ1		1983	09	01.29817	22	25	06.32	-06	51	03.0	17.5	809
1983	RJ1		1983	09	01.30371	22	25	06.07	-06	51	04.9		809
1983	RJ1		1983	09	01.30925	22	25	05.83	-06	51	06.6		809
1983	RJ1		1983	09	02.21995	22	24	23.70	-06	55	51.3		809
1983	RJ1		1983	09	02.22550	22	24	23.42	-06	55	53.1		809
1983	RJ1		1983	09	02.23104	22	24	23.18	-06	55	55.0		809
1983	RJ1		1983	09	03.18328	22	23	39.45	-07	00	51.7		809
1983	RJ1		1983	09	03.18883	22	23	39.20	-07	00	53.6		809
1983	RJ1		1983	09	03.19437	22	23	38.95	-07	00	55.2		809
1983	RJ1		1983	09	04.14246	22	22	55.84	-07	05	52.2		809
1983	RJ1		1983	09	04.14800	22	22	55.58	-07	05	53.8		809
1983	RJ1		1983	09	04.15354	22	22	55.33	-07	05	55.7		809
1983	RJ1		1983	09	06.15501	22	21	25.80	-07	16	18.4		809
1983	RJ1		1983	09	06.16055	22	21	25.56	-07	16	20.0		809
1983	RJ1		1983	09	06.16609	22	21	25.30	-07	16	21.5		809
1983	RJ1		1983	09	07.23954	22	20	38.31	-07	21	51.7		809
1983	RJ1		1983	09	07.24508	22	20	38.07	-07	21	53.6		809
1983	RJ1		1983	09	07.25062	22	20	37.83	-07	21	55.0		809
1983	RJ1		1983	09	08.25205	22	19	55.11	-07	27	00.8		809
1983	RJ1		1983	09	08.25758	22	19	54.87	-07	27	02.6		809
1983	RJ1		1983	09	08.26312	22	19	54.61	-07	27	04.2		809
1983	RJ1		1983	09	09.20223	22	19	15.61	-07	31	46.9		809
1983	RJ1		1983	09	09.20777	22	19	15.36	-07	31	48.7		809
1983	RJ1		1983	09	09.21331	22	19	15.10	-07	31	50.5		809
1983	RJ1		1983	09	11.23486	22	17	53.98	-07	41	48.9		809
1983	RJ1		1983	09	11.24040	22	17	53.72	-07	41	50.8		809
1983	RJ1		1983	09	11.24594	22	17	53.47	-07	41	52.1		809
1983	RJ1		1983	09	13.21069	22	16	39.34	-07	51	13.9		809
1983	RJ1		1983	09	13.21761	22	16	39.09	-07	51	15.8		809
1983	RJ1		1983	09	13.22454	22	16	38.83	-07	51	17.9		809
1983	RJ1		1983	09	16.26968	22	14	53.94	-08	04	58.4		809
1983	RJ1		1983	09	16.27799	22	14	53.62	-08	05	00.6		809
1983	RL2		1983	09	01.27808	22	25	35.15	-14	33	42.9	17.5	809
1983	RL2		1983	09	01.28362	22	25	34.86	-14	33	43.8		809
1983	RL2		1983	09	01.28917	22	25	34.57	-14	33	44.6		809
1983	RL2		1983	09	02.29475	22	24	41.32	-14	36	23.7		809
1983	RL2		1983	09	02.30029	22	24	41.03	-14	36	24.8		809
1983	RL2		1983	09	02.30583	22	24	40.74	-14	36	25.4		809
1983	RL2		1983	09	04.11753	22	23	05.98	-14	40	59.1		809
1983	RL2		1983	09	04.12307	22	23	05.70	-14	41	00.0		809
1983	RL2		1983	09	04.12861	22	23	05.41	-14	41	00.6		809
1983	RL2		1983	09	06.10306	22	21	23.58	-14	45	34.5		809
1983	RL2		1983	09	06.10860	22	21	23.27	-14	45	35.3		809

1983	RL2		1983	09	06.11415	22	21	22.99	-14	45	36.0	809
1983	RL2		1983	09	09.12951	22	18	52.38	-14	51	46.9	809
1983	RL2		1983	09	09.13505	22	18	52.10	-14	51	47.6	809
1983	RL2		1983	09	09.14059	22	18	51.81	-14	51	48.2	809
1983	RL2		1983	09	12.16702	22	16	28.00	-14	56	54.4	809
1983	RL2		1983	09	12.17533	22	16	27.59	-14	56	55.3	809
1983	RL2		1983	09	12.18364	22	16	27.21	-14	56	56.4	809
1983	RL2		1983	09	16.17064	22	13	30.44	-15	01	53.1	809
1983	RL2		1983	09	16.18317	22	13	29.89	-15	01	54.0	809
1983	RS2		1983	09	06.18963	22	33	56.06	-09	39	31.3	16.9 809
1983	RS2		1983	09	06.19517	22	33	55.76	-09	39	32.8	809
1983	RS2		1983	09	06.20071	22	33	55.46	-09	39	34.2	809
1983	RS2		1983	09	08.27836	22	32	03.13	-09	48	15.9	809
1983	RS2		1983	09	08.28667	22	32	02.68	-09	48	17.9	809
1983	RS2		1983	09	08.29498	22	32	02.23	-09	48	19.9	809
1983	RS2		1983	09	11.25771	22	29	25.25	-10	00	20.5	809
1983	RS2		1983	09	11.26325	22	29	24.98	-10	00	21.7	809
1983	RS2		1983	09	11.26879	22	29	24.69	-10	00	22.9	809
1983	RS2		1983	09	16.29530	22	25	11.36	-10	19	12.6	809
1983	RS2		1983	09	16.30362	22	25	10.99	-10	19	14.8	809
1983	RX2		1983	09	13.08326	21	43	00.00	-25	02	35.3	809
1983	RX2		1983	09	13.11304	21	42	58.93	-25	02	34.9	809
1983	RX2		1983	09	13.12550	21	42	58.48	-25	02	34.7	809
1983	RH3	*	1983	09	01.23445	21	41	42.22	-07	44	20.0	17.3 809
1983	RH3		1983	09	01.23999	21	41	41.90	-07	44	18.6	809
1983	RH3		1983	09	01.24553	21	41	41.57	-07	44	17.3	809
1983	RH3		1983	09	02.10153	21	40	51.24	-07	40	32.4	809
1983	RH3		1983	09	02.10707	21	40	50.92	-07	40	30.8	809
1983	RH3		1983	09	02.11261	21	40	50.59	-07	40	29.5	809
1983	RH3		1983	09	06.07744	21	37	07.68	-07	23	23.6	809
1983	RH3		1983	09	06.08298	21	37	07.36	-07	23	22.1	809
1983	RH3		1983	09	06.08852	21	37	07.05	-07	23	20.5	809
1983	RH3		1983	09	07.07195	21	36	15.28	-07	19	10.1	809
1983	RH3		1983	09	07.07887	21	36	14.92	-07	19	08.3	809
1983	RH3		1983	09	07.08580	21	36	14.56	-07	19	06.5	809
1983	RH3		1983	09	09.09211	21	34	33.46	-07	10	36.6	809
1983	RH3		1983	09	09.09765	21	34	33.18	-07	10	35.2	809
1983	RH3		1983	09	09.10319	21	34	32.87	-07	10	33.6	809
1983	RJ3	*	1983	09	01.29817	22	29	44.92	-08	32	19.3	17.6 809
1983	RJ3		1983	09	01.30371	22	29	44.63	-08	32	21.4	809
1983	RJ3		1983	09	01.30925	22	29	44.34	-08	32	23.3	809
1983	RJ3		1983	09	02.21995	22	28	55.84	-08	38	13.9	809
1983	RJ3		1983	09	02.22550	22	28	55.55	-08	38	16.0	809
1983	RJ3		1983	09	02.23104	22	28	55.27	-08	38	18.2	809
1983	RJ3		1983	09	03.18328	22	28	04.27	-08	44	22.3	809
1983	RJ3		1983	09	03.18883	22	28	03.98	-08	44	24.5	809
1983	RJ3		1983	09	03.19437	22	28	03.69	-08	44	26.6	809
1983	RK3	*	1983	09	01.31929	22	42	16.59	-10	42	01.7	17.2 809
1983	RK3		1983	09	01.32414	22	42	16.34	-10	42	03.1	809
1983	RK3		1983	09	01.32899	22	42	16.08	-10	42	04.0	809
1983	RK3		1983	09	04.17085	22	39	56.51	-10	54	30.6	809
1983	RK3		1983	09	04.17639	22	39	56.24	-10	54	32.0	809
1983	RK3		1983	09	04.18193	22	39	55.95	-10	54	33.3	809
1983	RK3		1983	09	06.18963	22	38	17.15	-11	03	08.8	809
1983	RK3		1983	09	06.19517	22	38	16.88	-11	03	10.2	809
1983	RK3		1983	09	06.20071	22	38	16.61	-11	03	11.5	809
1983	RK3		1983	09	08.27836	22	36	34.85	-11	11	52.3	809
1983	RK3		1983	09	08.28667	22	36	34.45	-11	11	54.4	809
1983	RK3		1983	09	08.29498	22	36	34.04	-11	11	56.5	809

1983	RK3		1983	09	09.25486	22	35	47.53	-11	15	53.4	809
1983	RK3		1983	09	09.26040	22	35	47.25	-11	15	54.8	809
1983	RK3		1983	09	09.26594	22	35	46.97	-11	15	56.1	809
1983	RK3		1983	09	14.28968	22	31	49.95	-11	35	24.1	809
1983	RK3		1983	09	14.30215	22	31	49.35	-11	35	27.0	809
1983	RK3		1983	09	16.31470	22	30	18.78	-11	42	33.3	809
1983	RK3		1983	09	16.32303	22	30	18.41	-11	42	34.9	809
1983	RL3	*	1983	09	01.33678	22	37	34.95	-03	42	37.6	17.0 809
1983	RL3		1983	09	01.34163	22	37	34.68	-03	42	38.6	809
1983	RL3		1983	09	01.34630	22	37	34.41	-03	42	39.7	809
1983	RL3		1983	09	02.27190	22	36	41.34	-03	45	52.2	809
1983	RL3		1983	09	02.27744	22	36	41.02	-03	45	53.6	809
1983	RL3		1983	09	02.28298	22	36	40.70	-03	45	55.2	809
1983	RL3		1983	09	04.23180	22	34	48.85	-03	52	55.5	809
1983	RL3		1983	09	04.23734	22	34	48.52	-03	52	56.5	809
1983	RL3		1983	09	04.24288	22	34	48.20	-03	52	57.6	809
1983	RL3		1983	09	06.24158	22	32	54.09	-04	00	23.4	809
1983	RL3		1983	09	06.24712	22	32	53.75	-04	00	24.9	809
1983	RL3		1983	09	06.25265	22	32	53.45	-04	00	26.4	809
1983	RL3		1983	09	08.31922	22	30	57.25	-04	08	19.5	809
1983	RL3		1983	09	08.32753	22	30	56.79	-04	08	21.2	809
1983	RL3		1983	09	08.33584	22	30	56.32	-04	08	22.8	809
1983	RL3		1983	09	12.29653	22	27	22.58	-04	23	39.6	809
1983	RL3		1983	09	12.30415	22	27	22.16	-04	23	41.6	809
1983	RL3		1983	09	12.31315	22	27	21.68	-04	23	43.8	809
1983	RL3		1983	09	13.27856	22	26	31.94	-04	27	25.3	809
1983	RL3		1983	09	14.32431	22	25	39.10	-04	31	24.3	809
1983	RL3		1983	09	14.33678	22	25	38.47	-04	31	27.6	809
1983	RL3		1983	09	16.33755	22	24	01.42	-04	38	57.2	809
1983	RL3		1983	09	16.34448	22	24	01.08	-04	38	58.7	809
1983	RM3	*	1983	09	01.33678	22	38	36.60	-03	30	50.0	17.0 809
1983	RM3		1983	09	01.34163	22	38	36.28	-03	30	50.9	809
1983	RM3		1983	09	01.34630	22	38	35.97	-03	30	51.5	809
1983	RM3		1983	09	02.27190	22	37	35.88	-03	33	23.9	809
1983	RM3		1983	09	02.27744	22	37	35.53	-03	33	25.2	809
1983	RM3		1983	09	02.28298	22	37	35.18	-03	33	26.1	809
1983	RM3		1983	09	04.23180	22	35	28.37	-03	39	04.0	809
1983	RM3		1983	09	04.23734	22	35	28.00	-03	39	05.0	809
1983	RM3		1983	09	04.24288	22	35	27.65	-03	39	06.2	809
1983	RM3		1983	09	06.24158	22	33	17.70	-03	45	04.4	809
1983	RM3		1983	09	06.24712	22	33	17.33	-03	45	05.7	809
1983	RM3		1983	09	06.25265	22	33	16.97	-03	45	06.9	809
1983	RM3		1983	09	08.31922	22	31	03.47	-03	51	27.1	809
1983	RM3		1983	09	08.32753	22	31	02.94	-03	51	28.7	809
1983	RM3		1983	09	08.33584	22	31	02.38	-03	51	30.3	809
1983	RM3		1983	09	12.29653	22	26	52.39	-04	03	53.7	809
1983	RM3		1983	09	12.30415	22	26	51.91	-04	03	55.2	809
1983	RM3		1983	09	12.31315	22	26	51.33	-04	03	56.9	809
1983	RM3		1983	09	14.32431	22	24	48.56	-04	10	13.0	809
1983	RM3		1983	09	14.33678	22	24	47.84	-04	10	15.2	809
1983	RM3		1983	09	16.33755	22	22	49.33	-04	16	25.9	809
1983	RM3		1983	09	16.34448	22	22	48.96	-04	16	27.7	809
1983	RN3	*	1983	09	01.33678	22	38	48.81	-03	49	11.0	16.2 809
1983	RN3		1983	09	01.34163	22	38	48.55	-03	49	11.9	809
1983	RN3		1983	09	01.34630	22	38	48.30	-03	49	12.5	809
1983	RN3		1983	09	02.27190	22	37	59.50	-03	50	51.5	809
1983	RN3		1983	09	02.27744	22	37	59.21	-03	50	52.1	809
1983	RN3		1983	09	02.28298	22	37	58.90	-03	50	52.7	809
1983	RN3		1983	09	04.23180	22	36	16.70	-03	54	37.5	809

1983	RN3		1983	09	04.23734	22	36	16.39	-03	54	38.1	809
1983	RN3		1983	09	04.24288	22	36	16.10	-03	54	38.7	809
1983	RN3		1983	09	06.24158	22	34	32.88	-03	58	41.5	809
1983	RN3		1983	09	06.24712	22	34	32.59	-03	58	42.1	809
1983	RN3		1983	09	06.25265	22	34	32.29	-03	58	42.9	809
1983	RN3		1983	09	08.31922	22	32	48.19	-04	03	03.7	809
1983	RN3		1983	09	08.32753	22	32	47.77	-04	03	04.7	809
1983	RN3		1983	09	08.33584	22	32	47.36	-04	03	05.8	809
1983	RN3		1983	09	12.29653	22	29	39.36	-04	11	34.2	809
1983	RN3		1983	09	12.30415	22	29	39.00	-04	11	35.2	809
1983	RN3		1983	09	12.31315	22	29	38.60	-04	11	36.3	809
1983	RN3		1983	09	14.32431	22	28	10.09	-04	15	50.8	809
1983	RN3		1983	09	14.33678	22	28	09.60	-04	15	53.6	809
1983	RO3	*	1983	09	02.14793	22	20	56.80	-12	57	56.8	17.5 809
1983	RO3		1983	09	02.15347	22	20	56.61	-12	57	58.3	809
1983	RO3		1983	09	02.15901	22	20	56.42	-12	57	59.6	809
1983	RO3		1983	09	04.08844	22	19	27.26	-13	06	06.3	809
1983	RO3		1983	09	04.09398	22	19	26.98	-13	06	07.8	809
1983	RO3		1983	09	04.09952	22	19	26.73	-13	06	09.0	809
1983	RO3		1983	09	07.21669	22	17	04.65	-13	18	48.8	809
1983	RO3		1983	09	07.22223	22	17	04.39	-13	18	50.1	809
1983	RO3		1983	09	07.22777	22	17	04.12	-13	18	51.4	809
1983	RO3		1983	09	09.17037	22	15	37.68	-13	26	23.3	809
1983	RO3		1983	09	09.17591	22	15	37.45	-13	26	24.7	809
1983	RO3		1983	09	09.18145	22	15	37.21	-13	26	26.0	809
1983	RO3		1983	09	12.25290	22	13	24.48	-13	37	44.9	809
1983	RO3		1983	09	12.26536	22	13	23.96	-13	37	47.8	809
1983	RO3		1983	09	12.27783	22	13	23.43	-13	37	50.7	809
1983	RP3	*	1983	09	02.14793	22	23	14.18	-12	38	03.2	17.5 809
1983	RP3		1983	09	02.15347	22	23	13.89	-12	38	05.4	809
1983	RP3		1983	09	02.15901	22	23	13.61	-12	38	07.7	809
1983	RP3		1983	09	04.08844	22	21	34.07	-12	50	24.2	809
1983	RP3		1983	09	04.09398	22	21	33.77	-12	50	26.7	809
1983	RP3		1983	09	04.09952	22	21	33.50	-12	50	28.8	809
1983	RP3		1983	09	09.17037	22	17	20.58	-13	20	58.6	809
1983	RP3		1983	09	09.17591	22	17	20.31	-13	21	00.5	809
1983	RP3		1983	09	09.18145	22	17	20.04	-13	21	02.4	809
1983	RP3		1983	09	12.25290	22	14	56.81	-13	37	56.5	809
1983	RP3		1983	09	12.26536	22	14	56.23	-13	38	00.8	809
1983	RP3		1983	09	12.27783	22	14	55.65	-13	38	04.9	809
1983	RQ3	*	1983	09	02.21995	22	21	09.25	-08	45	29.1	17.0 809
1983	RQ3		1983	09	02.22550	22	21	08.96	-08	45	28.6	809
1983	RQ3		1983	09	02.23104	22	21	08.68	-08	45	28.6	809
1983	RQ3		1983	09	06.15501	22	17	49.76	-08	43	49.0	809
1983	RQ3		1983	09	06.16055	22	17	49.48	-08	43	48.9	809
1983	RQ3		1983	09	06.16609	22	17	49.20	-08	43	48.8	809
1983	RQ3		1983	09	07.23954	22	16	56.61	-08	43	16.5	809
1983	RQ3		1983	09	07.24508	22	16	56.31	-08	43	16.3	809
1983	RQ3		1983	09	07.25062	22	16	56.04	-08	43	16.1	809
1983	RQ3		1983	09	08.25205	22	16	08.32	-08	42	43.7	809
1983	RQ3		1983	09	08.25758	22	16	08.07	-08	42	43.5	809
1983	RQ3		1983	09	08.26312	22	16	07.79	-08	42	43.3	809
1983	RQ3		1983	09	09.20223	22	15	24.31	-08	42	10.3	809
1983	RQ3		1983	09	09.20777	22	15	24.05	-08	42	10.2	809
1983	RQ3		1983	09	09.21331	22	15	23.80	-08	42	10.0	809
1983	RQ3		1983	09	11.23486	22	13	53.44	-08	40	49.3	809
1983	RQ3		1983	09	11.24040	22	13	53.19	-08	40	49.0	809
1983	RQ3		1983	09	11.24594	22	13	52.93	-08	40	48.8	809
1983	RQ3		1983	09	13.21069	22	12	30.98	-08	39	14.1	809

1983	RQ3		1983	09	13.21761	22	12	30.70	-08	39	13.9	809
1983	RQ3		1983	09	13.22454	22	12	30.40	-08	39	13.6	809
1983	RQ3		1983	09	15.26755	22	11	11.50	-08	37	17.1	809
1983	RQ3		1983	09	15.27310	22	11	11.27	-08	37	16.5	809
1983	RQ3		1983	09	15.27864	22	11	11.05	-08	37	16.3	809
1983	RQ3		1983	09	16.26968	22	10	35.41	-08	36	14.0	809
1983	RQ3		1983	09	16.27799	22	10	35.11	-08	36	13.5	809
1983	RQ3		1983	09	17.33066	22	09	59.07	-08	34	59.4	809
1983	RQ3		1983	09	17.33620	22	09	58.88	-08	34	59.0	809
1983	RR3	*	1983	09	02.21995	22	24	31.44	-08	24	59.4	17.6 809
1983	RR3		1983	09	02.22550	22	24	31.14	-08	25	02.2	809
1983	RR3		1983	09	02.23104	22	24	30.84	-08	25	04.9	809
1983	RR3		1983	09	03.18328	22	23	38.40	-08	33	01.5	809
1983	RR3		1983	09	03.18883	22	23	38.09	-08	33	04.3	809
1983	RR3		1983	09	03.19437	22	23	37.80	-08	33	07.0	809
1983	RR3		1983	09	04.14246	22	22	46.12	-08	40	57.6	809
1983	RR3		1983	09	04.14800	22	22	45.82	-08	41	00.6	809
1983	RR3		1983	09	04.15354	22	22	45.52	-08	41	03.3	809
1983	RS3	*	1983	09	02.27190	22	33	31.03	-04	31	57.8	17.4 809
1983	RS3		1983	09	02.27744	22	33	30.70	-04	31	58.8	809
1983	RS3		1983	09	02.28298	22	33	30.37	-04	31	59.7	809
1983	RS3		1983	09	04.23180	22	31	34.17	-04	37	55.2	809
1983	RS3		1983	09	04.23734	22	31	33.84	-04	37	56.2	809
1983	RS3		1983	09	04.24288	22	31	33.51	-04	37	57.3	809
1983	RS3		1983	09	06.24158	22	29	34.93	-04	44	09.1	809
1983	RS3		1983	09	06.24712	22	29	34.61	-04	44	09.9	809
1983	RS3		1983	09	06.25265	22	29	34.28	-04	44	10.6	809
1983	RS3		1983	09	08.31922	22	27	33.21	-04	50	43.1	809
1983	RS3		1983	09	08.32753	22	27	32.73	-04	50	44.9	809
1983	RS3		1983	09	08.33584	22	27	32.23	-04	50	46.5	809
1983	RS3		1983	09	09.27979	22	26	37.51	-04	53	45.6	809
1983	RS3		1983	09	09.28533	22	26	37.17	-04	53	46.7	809
1983	RS3		1983	09	09.29087	22	26	36.84	-04	53	47.8	809
1983	RS3		1983	09	13.25016	22	22	54.50	-05	06	12.4	809
1983	RS3		1983	09	13.25709	22	22	54.13	-05	06	13.5	809
1983	RS3		1983	09	13.26401	22	22	53.74	-05	06	14.8	809
1983	RS3		1983	09	14.32431	22	21	56.14	-05	09	32.9	809
1983	RS3		1983	09	14.33678	22	21	55.49	-05	09	35.3	809
1983	RT3	*	1983	09	02.27190	22	38	29.50	-04	42	16.7	17.2 809
1983	RT3		1983	09	02.27744	22	38	29.15	-04	42	16.3	809
1983	RT3		1983	09	02.28298	22	38	28.80	-04	42	16.0	809
1983	RT3		1983	09	04.23180	22	36	23.10	-04	39	56.9	809
1983	RT3		1983	09	04.23734	22	36	22.75	-04	39	56.4	809
1983	RT3		1983	09	04.24288	22	36	22.38	-04	39	56.0	809
1983	RT3		1983	09	06.24158	22	34	13.56	-04	37	40.8	809
1983	RT3		1983	09	06.24712	22	34	13.20	-04	37	40.4	809
1983	RT3		1983	09	06.25265	22	34	12.84	-04	37	40.0	809
1983	RT3		1983	09	08.31922	22	32	00.63	-04	35	25.0	809
1983	RT3		1983	09	08.32753	22	32	00.11	-04	35	24.5	809
1983	RT3		1983	09	08.33584	22	31	59.58	-04	35	24.1	809
1983	RT3		1983	09	12.29653	22	27	52.34	-04	31	16.6	809
1983	RT3		1983	09	12.30415	22	27	51.87	-04	31	16.5	809
1983	RT3		1983	09	12.31315	22	27	51.32	-04	31	16.3	809
1983	RT3		1983	09	13.27856	22	26	52.85	-04	30	16.2	809
1983	RT3		1983	09	14.32431	22	25	50.20	-04	29	09.7	809
1983	RT3		1983	09	14.33678	22	25	49.45	-04	29	09.3	809
1983	RT3		1983	09	16.33755	22	23	52.75	-04	27	00.0	809
1983	RT3		1983	09	16.34448	22	23	52.35	-04	26	59.5	809
1983	RU3	*	1983	09	02.29475	22	22	58.64	-14	11	42.3	17.4 809

1983	RU3		1983	09	02.30029	22	22	58.42	-14	11	45.3	809
1983	RU3		1983	09	02.30583	22	22	58.21	-14	11	48.3	809
1983	RU3		1983	09	04.11753	22	21	47.29	-14	28	07.4	809
1983	RU3		1983	09	04.12307	22	21	47.06	-14	28	10.2	809
1983	RU3		1983	09	04.12861	22	21	46.84	-14	28	13.1	809
1983	RU3		1983	09	09.12951	22	18	36.80	-15	11	30.0	809
1983	RU3		1983	09	09.13505	22	18	36.59	-15	11	32.7	809
1983	RU3		1983	09	09.14059	22	18	36.39	-15	11	35.4	809
1983	RU3		1983	09	12.16702	22	16	47.87	-15	36	17.6	809
1983	RU3		1983	09	12.17533	22	16	47.56	-15	36	21.5	809
1983	RU3		1983	09	12.18364	22	16	47.25	-15	36	25.5	809
1983	RV3	*	1983	09	04.14246	22	22	41.81	-06	54	51.1	17.4 809
1983	RV3		1983	09	04.14800	22	22	41.58	-06	54	53.7	809
1983	RV3		1983	09	04.15354	22	22	41.35	-06	54	56.2	809
1983	RV3		1983	09	06.15501	22	21	15.88	-07	10	00.1	809
1983	RV3		1983	09	06.16055	22	21	15.64	-07	10	02.6	809
1983	RV3		1983	09	06.16609	22	21	15.41	-07	10	05.0	809
1983	RV3		1983	09	07.23954	22	20	30.31	-07	18	07.1	809
1983	RV3		1983	09	07.24508	22	20	30.08	-07	18	09.9	809
1983	RV3		1983	09	07.25062	22	20	29.85	-07	18	12.2	809
1983	RV3		1983	09	08.25205	22	19	48.57	-07	25	38.1	809
1983	RV3		1983	09	08.25758	22	19	48.35	-07	25	40.9	809
1983	RV3		1983	09	08.26312	22	19	48.10	-07	25	43.3	809
1983	RV3		1983	09	09.20223	22	19	10.25	-07	32	38.9	809
1983	RV3		1983	09	09.20777	22	19	10.00	-07	32	41.4	809
1983	RV3		1983	09	09.21331	22	19	09.77	-07	32	43.9	809
1983	RV3		1983	09	11.23486	22	17	50.13	-07	47	28.3	809
1983	RV3		1983	09	11.24040	22	17	49.92	-07	47	30.9	809
1983	RV3		1983	09	11.24594	22	17	49.71	-07	47	33.1	809
1983	RV3		1983	09	13.21069	22	16	35.97	-08	01	32.9	809
1983	RV3		1983	09	13.21761	22	16	35.71	-08	01	35.9	809
1983	RV3		1983	09	13.22454	22	16	35.44	-08	01	38.9	809
1983	RV3		1983	09	15.26755	22	15	22.73	-08	15	49.7	809
1983	RV3		1983	09	15.27310	22	15	22.53	-08	15	52.1	809
1983	RV3		1983	09	15.27864	22	15	22.35	-08	15	54.3	809
1983	RV3		1983	09	16.26968	22	14	48.76	-08	22	37.3	809
1983	RV3		1983	09	16.27799	22	14	48.48	-08	22	40.7	809
1983	RV3		1983	09	17.33066	22	14	14.05	-08	29	42.2	809
1983	RV3		1983	09	17.33620	22	14	13.88	-08	29	44.2	809
1983	RW3	*	1983	09	04.25604	23	38	01.25	-05	16	38.9	17.6 809
1983	RW3		1983	09	04.26158	23	38	00.85	-05	16	37.4	809
1983	RW3		1983	09	04.26712	23	38	00.47	-05	16	35.9	809
1983	RW3		1983	09	07.35451	23	34	16.52	-05	03	03.4	809
1983	RW3		1983	09	07.36282	23	34	15.91	-05	03	01.2	809
1983	RW3		1983	09	07.37113	23	34	15.32	-05	02	58.9	809
1983	RW3		1983	09	09.38090	23	31	46.31	-04	54	17.0	809
1983	RW3		1983	09	09.38921	23	31	45.66	-04	54	14.9	809
1983	RW3		1983	09	14.35894	23	25	32.84	-04	32	36.0	809
1983	RW3		1983	09	15.32711	23	24	20.27	-04	28	19.8	809
1983	RW3		1983	09	15.33474	23	24	19.70	-04	28	18.1	809
1983	RW3		1983	09	15.34374	23	24	19.04	-04	28	15.9	809
1983	RW3		1983	09	16.36041	23	23	03.45	-04	23	48.3	809
1983	RW3		1983	09	16.37010	23	23	02.73	-04	23	45.7	809

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY BY C.-I. LAGERKVIST, G. HAHN AND K. OLOFSSON.

Plates with the 0.4-m f/10 GPO (Grand Prisme Objectif) astrograph. Measurements and reductions as on MPC 8605. Generally SAO reference stars, mean errors 0".70 in R.A., 0".74 in Decl. AGK3 reference stars for (664),

mean errors 0".50 in R.A., 0".43 in Decl. Contact: C.-I. Lagerkvist, Astronomiska Observatoriet, Box 515, S-75120 Uppsala, Sweden.

Object		Date	UT	R. A. (1950)	Decl.	Obs.
27		1982	08 15.33125	22 54 30.76	-09 24 24.7	809
27		1982	08 15.33889	22 54 30.43	-09 24 28.1	809
27		1982	08 15.34653	22 54 30.04	-09 24 30.5	809
27		1982	08 18.23333	22 52 13.98	-09 40 38.8	809
27		1982	08 18.24097	22 52 13.60	-09 40 41.6	809
27		1982	08 18.24861	22 52 13.21	-09 40 44.1	809
27		1982	08 21.15764	22 49 47.06	-09 57 42.6	809
27		1982	08 21.16528	22 49 46.67	-09 57 45.3	809
27		1982	08 21.17292	22 49 46.25	-09 57 48.2	809
27		1982	08 22.23055	22 48 50.99	-10 04 07.2	809
27		1982	08 22.23820	22 48 50.56	-10 04 09.9	809
27		1982	08 22.24583	22 48 50.14	-10 04 12.2	809
664		1982	08 22.33681	00 33 50.27	+03 23 29.7	809
664		1982	08 22.34583	00 33 50.07	+03 23 26.7	809
664		1982	08 22.35486	00 33 49.89	+03 23 24.6	809
1982	QW1 *	1982	08 17.11736	22 58 32.93	-12 53 25.2	809
1982	QW1	1982	08 17.12500	22 58 32.67	-12 53 25.1	809
1982	QW1	1982	08 19.24236	22 56 52.04	-12 55 57.4	809
1982	QW1	1982	08 19.25000	22 56 51.62	-12 55 58.0	809
1982	QW1	1982	08 19.25764	22 56 51.25	-12 55 58.3	809
1982	QW1	1982	08 21.22847	22 55 15.42	-12 58 19.6	809
1982	QW1	1982	08 21.24375	22 55 14.78	-12 58 20.5	809
1982	QW1	1982	08 22.29097	22 54 23.07	-12 59 34.8	809
1982	QW1	1982	08 22.29861	22 54 22.74	-12 59 34.9	809
1982	QX1	1982	08 17.10973	22 59 04.09	-11 54 32.4	809
1982	QX1 *	1982	08 17.11736	22 59 03.68	-11 54 37.4	809
1982	QX1	1982	08 17.12500	22 59 03.55	-11 54 44.9	809
1982	QX1	1982	08 19.24236	22 57 36.39	-12 15 45.4	809
1982	QX1	1982	08 19.25000	22 57 36.06	-12 15 48.8	809
1982	QX1	1982	08 21.22847	22 56 10.55	-12 35 38.4	809
1982	QX1	1982	08 21.24375	22 56 10.00	-12 35 47.7	809
1982	QX1	1982	08 22.28333	22 55 23.41	-12 46 14.3	809
1982	QX1	1982	08 22.29861	22 55 22.72	-12 46 23.5	809

OBSERVATIONS MADE AT LA PLATA.

Contact: L. Boyer, 2 Avenue Joseph Giorden, F-06200 Nice, France.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1301	1937	11 30.08617	03 31 24.87	-35 18 21.8	839
1301	1937	12 02.16762	03 29 50.00	-35 16 55.6	839

OBSERVATION MADE AT KARASUYAMA BY Y. BANNO.

Measurements by T. Urata. Copied from Nihondaira Obs. Circ. No. 1468. Contact: T. Urata, Nishitaka-cho 8-23, Shimizu, Shizuoka 424, Japan.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1983 WB	1984	01 07.49434	03 48 37.54	+20 11 47.7	889

OBSERVATIONS MADE AT EASTFIELD BY H. B. RIDLEY.

Plates obtained with a 0.5-m focal-length Ross lens from site near Yeovil, Somerset. Measured by R. Miles on a Cambridge Instruments machine. Reduced by A. J. Hollis using SAO Catalogue. Contact: A. J. Hollis, Ormada, 85 Forest Road, Cuddington, Northwich, Cheshire CW8 2ED, England.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
116	1984	01 30.00208	10 32 36.16	+15 21 05.9	984
116	1984	02 09.00347	10 25 51.53	+16 14 00.9	984
202	1984	01 30.00208	10 00 15.07	+13 13 17.3	984
202	1984	02 09.00347	09 53 14.83	+14 25 35.3	984

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are a = A. Lowe, B = C. M. Bardwell, E = E. L. G. Bowell, G = D. W. E. Green, l = W. Landgraf, M = B. G. Marsden, U = T. Urata. For further information see MPC 7828.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1973 QG2	13.5	730915	348.36	325.49	47.36	2.84	0.2006	3.0480	27	3	1	B
1974 RV1	14.0	740930	64.06	329.67	302.80	3.30	0.1793	2.3319	9	4	2	M
1981 EN	15.5	810317	15.80	349.42	163.54	9.49	0.1636	2.3614	16	0	1	l
1982 QW1		820819	159.05	184.23	346.99	21.72	0.1525	3.2073	5	9		M
1982 QX1		820819	34.03	157.82	132.81	7.77	0.1246	2.3744	5	9		M
1983 QJ		830903	296.31	336.50	71.63	6.48	0.0567	2.7417	12	0		M
1983 RJ1	16.0	830903	12.80	90.98	226.02	1.46	0.2205	2.4613	15	0		M
1983 RS2	14.5	830903	308.30	60.88	348.82	1.96	0.1916	2.6021	10	0		M
1983 RE3	13.5	830903	25.35	71.35	242.05	13.57	0.1505	2.8433	13	8		G
1983 RF3	14.5	830903	301.95	145.79	280.60	12.53	0.1719	2.6249	12	7		G
1983 RH3	15.5	830903	352.70	25.28	318.65	13.01	0.2150	2.5635	8	0		G
1983 RJ3	17.0	830903	325.23	218.75	175.06	1.25	0.2500	2.2586	2	9	3	G
1983 RK3	14.0	830903	309.31	15.76	28.50	1.86	0.1528	2.9004	15	0		G
1983 RL3	16.0	830903	342.94	67.85	294.38	3.06	0.1433	2.1688	15	0		G
1983 RM3	15.0	830903	273.17	127.16	315.96	6.62	0.1466	2.2254	15	0		G
1983 RN3	15.5	830903	17.34	2.12	308.68	3.92	0.2409	2.3485	13	0		G
1983 RO3	13.5	830903	278.19	8.41	62.09	1.67	0.1229	3.0544	10	0		G
1983 RP3	15.5	830903	3.52	201.67	130.12	3.08	0.0634	2.4123	10	0		G
1983 RQ3	16.5	830903	0.07	7.89	329.01	4.63	0.2427	2.3531	15	0		G
1983 RR3	16.0	830903	70.79	76.73	166.38	4.52	0.2000	2.2373	2	9	3	G
1983 RS3	15.0	830903	287.69	106.56	314.29	5.84	0.0865	2.3841	12	0		G
1983 RT3	15.0	830903	324.56	60.30	329.72	11.86	0.1858	2.5684	14	0		G
1983 RU3	14.0	830903	43.40	131.99	146.08	16.51	0.1507	3.2429	10	0		G
1983 RV3	15.0	830903	15.86	139.55	175.15	5.55	0.1650	2.7453	13	0		G
1983 RW3	16.5	830903	15.53	331.79	351.96	13.19	0.1709	2.2877	12	0		G
1983 WU	15.5	831212	0.78	12.21	60.51	10.54	0.2573	2.6718	36	6		M
1983 YK	13.5	840101	305.63	353.83	161.01	9.92	0.0344	3.2292	13	5		B
1984 AU	14.0	840121	39.51	91.11	330.81	3.20	0.1310	2.5245	21	9		M
1984 AW	12.6	840101	76.62	344.95	35.89	3.33	0.1158	3.1454	21	6		E
1984 AZ	14.5	840101	327.95	59.28	92.62	5.75	0.1522	2.3399	21	6		E
1984 AB1	14.7	840121	68.49	286.50	110.92	4.46	0.1649	2.2450	27	6		E
1984 AC1	14.5	840121	46.14	300.54	112.43	7.45	0.2495	2.2471	27	0		B
1984 AF1	12.4	840121	74.38	297.19	84.55	8.57	0.2724	3.1453	27	8		E
1984 BA	13.0	840121	247.33	338.80	258.32	5.09	0.1199	2.2432	26	0		M
1984 BJ	13.5	840210	51.13	120.51	307.22	8.13	0.0592	3.0184	13	0		U
1984 BK	14.0	840121	94.19	67.35	303.77	4.67	0.1377	2.3909	6	0		B
1984 BT	12.5	840210	353.08	62.69	78.66	9.66	0.0381	3.2147	25	9		M
1984 BY		840210	354.66	215.44	280.77	3.55	0.1044	2.2209	6	7	3	M
1984 BZ		840210	9.63	105.62	11.10	5.05	0.1745	2.4549	5	5		M
1984 BB1	14.5	840210	349.24	3.78	156.81	2.93	0.1156	2.4553	38	8		M
1984 CE	14.5	840301	80.61	292.57	106.91	13.31	0.2401	2.5644	40	5		B
1984 CF	13.5	840301	3.89	50.25	93.28	10.16	0.1009	2.7851	40	5		B
1984 CM	13.9	840210	45.30	59.50	26.19	9.84	0.0859	2.6014	29	6		E
1984 CQ	14.5	840210	22.10	353.78	128.22	6.70	0.0806	2.2507	38	8		M
1984 CZ	13.7	840210	323.16	53.68	146.34	9.88	0.0864	2.6335	27	6		E
1984 CC1	14.5	840210	66.33	301.67	140.27	4.02	0.0728	2.1862	27	0		M
1984 CM1	13.9	840210	359.81	358.89	161.81	9.81	0.2066	2.7390	32	6		E
1984 CO1	12.4	840210	119.14	56.22	342.75	9.00	0.1040	3.0074	29	6		E
1984 DA	15.5	840301	354.14	351.19	159.19	22.74	0.0449	1.8746	12	6		M
1984 DB	15.0	840301	31.07	304.08	154.28	20.63	0.1906	2.2510	12	6		M
1984 DC	15.5	840301	41.39	296.03	145.78	19.43	0.2903	2.2740	11	0		M
1984 DE	15.5	840301	344.06	234.40	305.53	2.95	0.2360	2.3297	4	5		M

1984 EA	15.5	840301	16.96	140.87	348.01	23.52	0.2481	2.3496	8 6	E
1984 EB	13.0	840301	358.14	13.48	145.91	13.96	0.0820	3.1057	8 6	M
1984 EC	14.1	840301	317.16	219.35	353.48	11.28	0.1380	2.6499	8 6	E
1984 ED	13.2	840301	48.79	331.24	132.58	11.44	0.0571	3.0126	8 6	E
1984 EG	15.2	840301	315.22	85.88	127.64	5.91	0.1082	2.2172	8 6	E
1984 EJ	13.0	840301	253.59	118.88	165.95	6.70	0.1491	2.3013	7 0 3	M
1984 EZ	13.5	840301	311.25	77.67	154.63	12.96	0.1280	2.6673	8 6	M

Note 1: double designations 1973 QG2 = 1973 SF5 (B), 1981 EN = 1981 EG35 (a, l). 2: the identification 1974 RV1 = 1969 AX (NOC 1053) is invalid (see MPC 8672), and the identification 1974 RV1 = 1975 XP5 (NOC 1126) and the orbit on MPC 5440 must therefore be questioned. 3: e assumed.

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ORBITAL ELEMENTS BY W. LANDGRAF, MAX-PLANCK-INSTITUT FUR AERONOMIE, LINDAU.

Periodic Comet Halley (1982i)
Epoch 1986 Feb. 19.0 ET = JDE 2446480.5
T 1986 Feb. 9.44912 ET

		(1950.0)	P	Q
q 0.58710144				
n 0.01297144	Peri.	111.84651	+0.55440136	-0.79089152
a 17.9395136	Node	58.14386	-0.83064658	-0.50652401
e 0.96727328	Incl.	162.23940	-0.05162744	-0.34340067
P 75.98				

From 84 observations and normals 1835-1984, mean residual 1".0. Non-gravitational parameters A1 = +0.12, A2 = +0.0155.

Periodic Comet Halley (1982i)
Epoch 1986 Feb. 19.0 ET = JDE 2446480.5
T 1986 Feb. 9.50762 ET

		(1950.0)	P	Q
q 0.58710485				
n 0.01296786	Peri.	111.84718	+0.55438814	-0.79089993
a 17.9428087	Node	58.14364	-0.83065531	-0.50651116
e 0.96727910	Incl.	162.23917	-0.05162881	-0.34340026
P 76.00				

From 91 observations and normals 1607-1984, mean residual (1835-1984) 1".3. Nongravitational parameters A1 = -0.01(1-Bt), A2 = +0.0160(1-Bt), B = -0.0050, t in units of 10 000 days from Epoch.

(2) Pallas
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 249.10919				
n 0.21361365	Peri.	309.92986	-0.55601398	-0.82795938
a 2.77151165	Node	172.64944	+0.82241135	-0.53530385
e 0.23345291	Incl.	34.80088	-0.12036618	+0.16713181
P 4.61	B(1,0)	5.0		

From 1135 observations and normals 1802-1983, mean residual 0".5. Mass of (1) Ceres = (4.99 +/- 0.09) x 10 .

(1566) Icarus
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 263.70035				
n 0.88070907	Peri.	31.12904	-0.43901762	-0.80992245
a 1.07790645	Node	87.54114	+0.72327081	-0.57541111
e 0.82681997	Incl.	22.91204	+0.53305053	+0.11369997
P 1.12	B(1,0)	17.7		

From 513 observations at 14 oppositions 1949-1982, mean residual 0".9.

(1825) Klare
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	250.51317		(1950.0)		P		Q				
n	0.22486078	Peri.	142.71705		+0.32080944		-0.94478274				
a	2.6783063	Node	288.48464		+0.85107714		+0.31851736				
e	0.1147937	Incl.	4.04100		+0.41563084		+0.07702120				
P	4.38	B(1,0)	13.0								

Residuals in seconds of arc

340213	012	0.3+	1.8+	710825	808	0.3-	0.5-	771020	809	0.2-	0.4+
520226	711	0.2-	(8.9-)Y	710825	808	0.2+	0.4-	800714	688	(20.3-	17.0+)
540831	024	0.8-	1.4+	721110	095	0.6-	0.2+	800717	688	1.0+	2.1-
540901	024	2.0+	2.4+	721110	095	2.1-	(5.1-)	800717	688	1.2+	1.6-
540922	760	1.6-	1.6-	721206	095	1.0+	2.0-	800904	095	0.8-	0.4-
540922	760	0.6+	1.8+	740320	095	(5.9-)	1.1+	800911	559	0.5-	1.5+
540927	012	1.3-	1.3-	771016	809	1.0-	0.1-	800911	559	0.5+	1.3+
609115	095	1.5+	1.2-	771017	809	0.6-	1.0-				

(2118) Flagstaff
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	98.73395		(1950.0)		P		Q				
n	0.24255028	Peri.	101.11593		+0.30135067		-0.95203180				
a	2.54644824	Node	331.17210		+0.82612344		+0.28851047				
e	0.21798361	Incl.	6.32658		+0.47613845		+0.10196645				
P	4.06	B(1,0)	12.0								

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

070213	690	(0.04+	0.03-)X	580913	024	(4.2-	6.3-)	780902	688	1.2+	1.5-
070214	690	(0.06-	0.01+)X	581007	690	1.5+	0.9+	780908	688	(3.0+)	2.5-
070216	803	(14.2+	48.4-)Y	581008	690	2.2+	0.3+	800122	095	1.4-	0.5+
150206	029	(0.07+	0.02-)X	660820	095	(4.1+	4.1+)	800125	810	0.4-	0.4-
301126	094	(0.24+	0.01+)X	660822	095	(3.2-	5.0+)	800125	810	0.6+	0.5+
301222	012	(6.3+)	0.3-	760201	330	0.2+	0.6-	800209	879	0.2+	0.7-
301224	690	(7.2-	75.9+)X	780710	414	0.2+	0.9+	800209	879	0.4-	0.2-
301225	690	(69.3-	51.0+)X	780710	414	0.6+	0.4-	810509	808	0.8+	1.9-
461022	062	1.0-	0.9-	780727	414	0.6+	0.4+	810509	808	0.2-	0.6-
461025	062	0.6+	0.0	780727	414	0.1+	0.3-	810604	805	0.3+	2.9+
501005	012	0.7-	1.1+	780730	414	1.4-	0.0	810604	805	0.4-	(3.1+)
501008	711	(9.6-	8.5+)Y	780730	414	1.1-	0.2+	840128	688	0.8+	(2.9-)
501013	012	1.6-	1.9+	780805	688	0.7+	2.1-	840128	688	1.3+	1.4-
501013	024	0.2-	1.8-	780810	688	0.5+	2.0-	840201	046	1.2-	2.1-
501014	012	(4.7+	2.0+)	780823	688	1.9-	(6.2-)	840201	046	1.4-	1.5-
541024	760	1.8-	0.7-	780826	688	0.8+	2.8-				
541024	760	1.3-	1.0-	780830	688	1.2+	(3.4-)				

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ORBITAL ELEMENTS BY G. SITARSKI, POLISH ACADEMY OF SCIENCES, WARSAW.

(2042) Sitarski
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	44.13383		(1950.0)		P		Q
n	0.21576140	Peri.	54.63773		+0.31446744		-0.94887393
a	2.7530888	Node	17.09639		+0.83790930		+0.26391736
e	0.1515712	Incl.	5.33984		+0.44611459		+0.17316437
P	4.57	B(1,0)	14.0				

From 37 observations at 6 oppositions 1960-1983, mean residual 1".8.

(2060) Chiron
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 278.90502	(1950.0)	P	Q	
n 0.01960963	Peri. 339.80783	-0.98771564	+0.14505756	
a 13.6193499	Node 208.72443	-0.12154967	-0.94689187	
e 0.3808274	Incl. 6.94407	-0.09820131	-0.28697402	
P 50.26	B(1,0) 6.0			

Residuals in seconds of arc

950424	802	0.4+	2.3+	771012	675	0.4-	0.3+	771209	801	0.9-	0.5-
410123	074	1.4+	0.4+	771018	675	1.0+	0.4+	780109	809	0.5+	0.4-
430308	074	0.7-	0.4+	771019	675	0.4+	0.7+	780110	809	1.2+	0.7-
450416	062	0.3+	1.6-	771103	675	0.1+	1.5+	810829	801	0.6-	0.2+
480804	074	0.2+	(5.3+)	771104	675	0.0	1.4+	810905	801	0.2+	0.4-
520823	675	0.7-	0.8+	771109	675	2.1-	1.9+	811125	801	(2.6+	0.9-)
690910	675	0.9+	0.0	771110	675	1.6-	0.8+	821114	381	0.6+	0.1-
690911	675	1.1+	0.3-	771112	801	0.6+	0.4-	821114	381	0.5+	0.1-
761022	381	0.4+	1.0-	771112	711	0.3+	0.1-	821213	381	0.0	0.3+
761022	381	0.1+	1.6-	771113	675	1.5-	1.4+	821214	381	0.4+	0.6-
761024	381	0.6+	1.6-	771114	711	0.7+	0.0	821214	381	1.2+	0.3+
761117	801	0.2+	0.6+	771114	675	1.8-	2.1+	830114	801	3.6-	2.8-
761216	801	(8.2-	12.2+)	771115	801	0.4+	0.3+	831007	801	0.4-	0.0
771011	675	0.1-	0.6+	771118	675	0.7+	1.2-				

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ORBITAL ELEMENTS BY T. URATA, SHIMIZU, JAPAN.

The following orbital elements are from NOC 1469-1479. The identifications are by T. Urata unless otherwise stated.

(3008)* 1938 WA = 1972 YG1 = 1973 AR2

Discovered 1938 Nov. 17 by K. Reinmuth at Heidelberg. The double designation 1972 YG1 = 1973 AR2 was found independently by C. M. Bardwell (MPC 6840).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 22.91324	(1950.0)	P	Q	
n 0.17526823	Peri. 303.88003	-0.37742193	-0.92603708	
a 3.1622818	Node 168.29303	+0.85412894	-0.34929301	
e 0.1453498	Incl. 0.79979	+0.35779387	-0.14300254	
P 5.62	B(1,0) 13.0			

Residuals in seconds of arc

381117	024	2.1+	1.3-	831205	688	1.2+	0.9-	831209	372	0.4-	0.1+
381128	024	1.8-	4.0-	831205	688	1.3-	0.4-	831209	372	0.2+	0.9+
381217	024	0.1+	2.1+	831205	372	1.6-	1.5-	831212	372	0.9-	0.7-
721230	095	2.7+	1.0+	831205	372	1.4-	0.8-	831212	372	3.9-	0.6+
730102	095	2.7-	1.5-	831205	552	3.2-	1.9+	831227	552	0.2+	3.2+
831128	688	0.1-	0.1-	831205	552	1.8-	1.5+	831227	552	1.5-	2.5+
831128	688	0.2-	1.3-	831206	688	0.1-	0.4+	831228	552	0.1-	1.7+
831128	372	0.6-	2.7+	831206	688	0.6+	1.2-	831228	552	1.7-	2.4+
831128	372	0.4+	2.3+	831206	552	1.9+	2.8-	831229	688	0.6-	1.0-
831130	372	(1.3-	7.7+)	831206	552	1.2+	0.6-	831229	688	1.9-	1.1-
831130	372	0.8+	2.6+	831207	372	0.9+	1.4-	831229	552	0.7-	2.7+
831201	688	1.4-	1.2-	831207	372	0.1-	2.1-	831229	552	0.6+	1.8+
831201	688	0.7-	0.5-	831208	552	1.7+	1.8-	840102	688	1.8+	0.0
831201	889	0.3-	0.9+	831208	552	4.1+	0.8+	840104	688	0.7+	1.8-
831201	889	2.8+	1.8+	831209	688	0.7-	1.7-	840104	688	1.7+	4.6-
831202	372	0.5+	1.8-	831209	688	2.9+	3.0+				

(3009)* 1973 SM2 = 1979 JB = 1982 FV3

Discovered 1973 Sept. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	164.59068			
n	0.30271488	Peri. 315.84369	+0.80852928	+0.58834858
a	2.1967478	Node 8.13912	-0.51547579	+0.71733998
e	0.2048421	Incl. 4.55372	-0.28383993	+0.37318803
P	3.26	B(1,0) 15.5		

Residuals in seconds of arc

730922	095	0.3-	1.5-	820328	809	0.9+	0.0	820401 809	0.4- 2.5-
730923	095	2.5+	2.1-	820329	809	1.9-	0.9-	820401 809	0.2- 2.5-
730925	095	0.6-	1.5-	820329	809	1.8-	0.2-	820401 809	0.6- 2.5-
730928	095	1.8+	1.6-	820329	809	1.7-	0.4+	831107 801	1.6- 1.3-
790502	801	1.3-	2.2-	820331	809	0.0	0.8-	831112 372	0.5- 2.8-
820328	809	0.3-	0.4-	820331	809	0.3+	0.8-	831112 372	2.6+ 0.3-
820328	809	0.1+	0.2+	820331	809	0.4+	0.7-	831204 801	1.6+ 0.2-

(3010)* 1978 SB5 = 1982 FR3

Discovered 1978 Sept. 27 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	82.37919			
n	0.17190028	Peri. 170.13046	+0.45283535	+0.89113897
a	3.2034527	Node 126.78970	-0.82038818	+0.42896905
e	0.1891479	Incl. 2.03848	-0.34914664	+0.14784073
P	5.73	B(1,0) 13.5		

Residuals in seconds of arc

780913	095	2.0+	1.0-	820322	809	0.8-	0.1+	820324 809	0.9+ 1.3-
780927	095	1.1-	1.3-	820323	809	0.7-	0.4-	830710 688	0.5+ 0.1-
781003	095	0.5+	1.1-	820323	809	0.5-	0.3+	830710 688	0.7- 1.1-
781007	095	0.2+	0.7-	820323	809	0.3-	0.2+	830713 688	0.6+ 0.5+
820322	809	0.2-	0.3-	820324	809	0.1+	1.1-	830713 688	0.3+ 0.6-
820322	809	0.5-	0.3+	820324	809	0.4+	1.2-	831007 801	0.9- 1.8+

(3011)* 1978 WM14 = 1978 UG2 = 1972 TT1

Discovered 1978 Nov. 26 at the Purple Mountain Observatory. The double designation 1978 WM14 = 1978 UG2 is by O. Kippes (MPC 6190). The identification was found independently by C. M. Bardwell (MPC 6305).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	7.94136			
n	0.17104564	Peri. 210.58363	+0.53773103	-0.84169833
a	3.2141148	Node 206.97832	+0.79368172	+0.52491069
e	0.1906804	Incl. 6.18549	+0.28445503	+0.12654122
P	5.76	B(1,0) 13.0		

Residuals in seconds of arc

721006	095	1.8-	1.0+	781203	675	3.1-	1.5-	820619 801	0.8- 0.2+
721007	095	0.4+	2.2-	781203	675	3.0-	1.0-	830814 801	1.3+ 2.4+
721013	095	1.2+	2.5+	781205	675	3.0-	2.8-	830904 801	2.9- 1.3-
781028	330	0.7-	1.4-	781205	330	4.6+	3.0+	830907 801	0.2+ 1.4-
781031	330	1.0-	2.3-	781206	675	2.9-	1.7-	830908 801	2.1+ 0.5+
781126	330	5.5+	2.6+	781206	675	2.4-	1.6-		
781130	330	5.0+	5.8+	800316	095	0.6+	0.1+		

(3012)* 1979 QU9 = 1973 SN2

Discovered 1979 Aug. 27 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	251.86069	(1950.0)	P	Q
n	0.17008175	Peri. 76.56871	+0.31132881	-0.94991405
a	3.2262467	Node 355.03536	+0.70418138	+0.24979461
e	0.0592601	Incl. 18.29094	+0.63812456	+0.18779232
P	5.79	B(1,0) 12.0		

Residuals in seconds of arc

730922	095	0.6-	1.3-	790902	095	1.0-	2.3+	830416	474	0.3+	0.8+
730923	095	0.4+	1.4-	790924	095	2.4-	1.6+	830417	474	0.0	0.3+
730925	095	0.3-	0.5+	830318	474	1.5-	1.0-	830417	474	0.2+	0.4+
730928	095	3.4+	1.2-	830318	474	0.6-	0.2+	830522	474	0.7+	0.4-
790827	095	0.3+	0.3-	830416	474	0.5+	0.4+	830522	474	0.5+	0.1+

(3013)* 1979 SD7 = 1981 GS

Discovered 1979 Sept. 23 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identification was also found independently by T. Furuta (JAM 1194) and by L. D. Schmadel.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	70.49403	(1950.0)	P	Q
n	0.27219135	Peri. 93.44815	-0.17899824	-0.98381969
a	2.3580509	Node 6.87747	+0.87537028	-0.16280384
e	0.1415658	Incl. 3.66018	+0.44909521	-0.07479116
P	3.62	B(1,0) 14.5		

Residuals in seconds of arc

790923	095	2.1+	1.1-	810407	688	1.4-	0.7+	831208	567	0.2+	0.4+
791014	095	0.6-	0.1+	810409	688	0.0	1.2-	831208	567	2.4-	1.7+
791110	095	1.6-	0.0	810409	688	0.1+	0.8-	840104	801	0.2+	0.6+
791111	095	0.2+	0.7+	831107	801	1.2-	0.8-	840105	552	(1.5+	0.0)
810405	688	0.6+	0.6+	831129	688	0.0	2.4-	840105	552	(1.8+	0.3-)
810405	688	0.7-	0.2-	831129	688	1.5+	0.2-				
810407	688	0.8+	0.0	831208	801	1.5+	0.0				

(3014)* 1979 TM = 1978 EK2 = 1978 GY

Discovered 1979 Oct. 11 at the Purple Mountain Observatory. The identification and double designation were independently found by T. Furuta (JAM 1195).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	173.67044	(1950.0)	P	Q
n	0.27116244	Peri. 179.69654	+0.76587469	+0.64289591
a	2.3640121	Node 140.28829	-0.58993891	+0.70938177
e	0.2278279	Incl. 0.98575	-0.25574997	+0.28889854
P	3.63	B(1,0) 14.0		

Residuals in seconds of arc

780305	095	0.7-	0.7-	831113	372	0.0	0.1+	831201	889	0.6-	0.5-
780407	095	0.1-	1.2-	831113	372	3.0+	0.5+	831204	046	5.2-	1.1+
790923	095	3.8+	0.8+	831128	889	1.2-	0.8-	831204	046	1.9-	0.5-
791011	330	0.9-	1.8-	831128	889	0.9-	0.5+	831205	046	3.8-	1.0+
791014	095	0.4+	0.8-	831129	688	0.0	0.7-	831205	046	0.4+	2.2+
791015	330	5.3-	0.6-	831129	688	1.5+	0.9-	831229	688	2.7+	1.6-
791019	330	1.7+	0.9+	831201	688	0.2+	1.8-	831229	688	0.3-	1.1-
781022	330	1.1+	0.6-	831201	688	4.0+	2.6+	840104	688	3.8+	1.7-
831103	801	0.6+	0.2+	831201	889	0.5+	0.8+	840104	688	2.3-	0.8+

(3015)* 1980 VN = 1974 VL2 = 1974 XC

Discovered 1980 Nov. 9 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	266.99543			
n	0.15716912	Peri. 305.31079	+0.93525678	+0.30216246
a	3.4006184	Node 38.07890	-0.13824997	+0.79131475
e	0.1612253	Incl. 17.39402	-0.32585533	+0.53152499
P	6.27	B(1,0) 12.5		

Residuals in seconds of arc

741115	095	1.7+	0.1+	801113	688	0.0	0.4-	801204	688	2.3+	0.0
741214	095	2.7-	1.2+	801114	688	0.2+	0.8-	801210	688	1.7+	1.0-
801017	095	1.0-	1.3+	801114	688	0.2-	0.0	801210	688	0.1-	0.1+
801109	688	0.3-	0.3-	801129	688	0.3+	0.5+	811221	801	0.1+	0.8+
801109	688	0.6+	0.1+	801129	688	0.7-	0.1-	830122	801	0.1-	0.1+
801113	688	1.1-	0.7-	801204	688	0.1+	0.4-	830215	801	0.6-	1.1-

(3016)* 1981 EK = 1974 TY = 1974 VS2

Discovered 1981 Mar. 1 by H. Debehogne and G. De Sanctis at the European Southern Observatory. The identification is by T. Furuta (JAM 878).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	339.22338			
n	0.20654881	Peri. 321.47388	-0.00165233	-0.99922098
a	2.8343551	Node 128.58527	+0.92948383	-0.01607872
e	0.0438572	Incl. 2.89136	+0.36885916	+0.03604049
P	4.77	B(1,0) 13.5		

Residuals in seconds of arc

741010	808	0.5+	0.7-	810306	809	0.7+	0.6-	810310	809	0.9+	0.9-
741010	808	0.6+	0.6-	810306	809	0.4+	0.3-	810312	809	0.1-	0.4+
741012	808	0.1+	0.3-	810306	809	0.3+	0.1+	810312	809	0.0	0.1+
741012	808	1.0+	0.2+	810307	809	1.6-	1.7+	810312	809	0.3-	0.1-
741109	808	1.2-	0.4-	810307	809	1.3-	1.6+	810314	809	1.0-	0.6+
741109	808	0.4-	0.4+	810307	809	0.9-	1.5+	810314	809	0.4-	0.2+
810301	809	0.3+	0.5-	810307	809	0.8-	0.6-	810314	809	0.1+	0.1-
810301	809	0.9+	0.4-	810307	809	0.7-	0.4-	810315	809	0.2-	0.8-
810301	809	0.7+	0.5-	810307	809	0.4-	0.4-	810315	809	0.1+	0.8-
810302	809	0.4+	0.2+	810308	809	0.8-	0.0	810315	809	0.1+	1.5-
810302	809	0.7+	0.1-	810308	809	0.1-	0.2-	810315	809	0.6-	1.0-
810302	809	1.1+	0.3-	810308	809	0.0	0.6-	810315	809	0.3-	1.0-
810303	809	0.1-	0.4+	810308	809	0.2+	0.1-	810315	809	0.1+	0.7-
810303	809	0.0	0.2+	810308	809	0.8-	0.0	820621	801	0.7+	0.6-
810303	809	0.2+	0.3+	810308	809	0.5-	0.0	820725	801	0.9-	0.4-
810304	809	0.5+	0.1-	810308	809	0.3-	0.0	830906	688	1.1+	0.9+
810304	809	0.4+	0.1-	810309	809	0.0	0.1-	830906	688	0.3-	1.6-
810304	809	0.7+	0.1-	810309	809	0.3+	0.0	830910	688	1.5+	2.1-
810305	809	0.1-	0.3-	810309	809	0.2+	0.1+	830910	688	0.6+	1.3-
810305	809	0.2-	0.2-	810310	809	0.0	0.1-	830912	688	0.7-	0.0
810305	809	0.4-	0.1+	810310	809	0.4+	0.5-	830912	688	0.6-	0.4-

(3017)* 1981 UL = 1970 CQ

Discovered 1981 Oct. 25 by A. Mrkos at Klet.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	193.60254			
n	0.23388886	Peri. 215.00011	-0.37100837	-0.90670524
a	2.6089336	Node 257.51675	+0.89195886	-0.28784065
e	0.1293225	Incl. 11.85597	+0.25838377	-0.30827484
P	4.21	B(1,0) 13.5		

Residuals in seconds of arc

700209	805	0.5+	0.7-	811025	046	0.2+	0.1+	830215	372	0.4-	1.4+
700209	805	0.7+	0.3-	811117	046	0.2-	0.5+	830215	372	0.3-	3.3+
700209	805	0.2-	0.1+	811117	046	0.4+	0.1+	830220	801	1.3+	1.0+
700210	805	0.3-	0.5-	811123	046	1.5-	0.6-	830317	688	0.4+	2.7-
700210	805	0.4-	0.3+	811123	046	0.9+	0.5+	830317	688	0.2+	2.3-
700210	805	0.6-	0.0	830120	372	0.8-	0.6-	830320	474	1.0-	0.5+
811025	046	0.1+	0.3-	830120	372	1.4+	0.4+	830220	474	0.6-	0.5+

(3018)* 1982 KM = 1979 VK

Discovered 1982 May 21 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The identification is by T. Furuta (JAM 1229).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	199.19105		(1950.0)	P	Q
n	0.27042983	Peri.	71.63547	+0.49403546	+0.86726822
a	2.3682797	Node	228.12961	-0.82557242	+0.44577200
e	0.1868634	Incl.	4.73268	-0.27268874	+0.22165999
P	3.64	B(1,0)	14.0		

Residuals in seconds of arc

790920	049	1.8-	5.8-	831112	372	2.2+	3.4+	831206	688	1.1+	1.5-
791111	095	1.9+	4.7+	831112	372	0.6+	2.1+	831206	801	1.4-	1.1+
791116	095	0.7-	2.4+	831128	688	0.9-	0.3-	831208	046	2.5+	0.9-
820521	688	0.5-	0.6+	831128	688	4.0+	1.0+	831208	046	1.9+	0.5+
820521	688	1.7-	1.2-	831128	889	3.6-	0.3-	831209	688	0.1-	1.1-
820524	704	1.2-	0.3-	831128	889	1.5-	0.4+	831209	688	1.3-	0.8-
820525	704	1.4-	2.8+	831201	688	4.2+	1.2-	831229	688	0.9-	0.4+
820526	704	0.4+	2.3+	831201	688	1.0+	0.7-	831229	688	0.1-	0.5+
820528	688	1.6+	2.0-	831205	688	0.4-	0.3-	840104	688	2.2-	0.8+
820528	688	0.6+	0.7-	831205	688	2.4-	2.8-	840104	688	0.2+	2.1-
820618	688	2.3+	0.6-	831206	688	2.8-	0.8+				

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

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

Comet IRAS (1983k)

Epoch 1983 Apr. 16.0 ET = JDE 2445440.5

T 1983 May 2.70030 ET

q	2.4179038		(1950.0)	P	Q
z	+0.0003965	Peri.	265.57677	-0.04005972	-0.99398595
	+/-0.0003271	Node	171.09113	-0.43027848	+0.10921819
e	0.9990414	Incl.	138.84401	-0.90180687	-0.00795674

From 10 observations 1983 July 14-1984 Mar. 7, mean residual 1".3.

Comet IRAS (1983o)

Epoch 1983 Dec. 12.0 ET = JDE 2445680.5

T 1983 Nov. 27.99359 ET

q	2.2547817		(1950.0)	P	Q
z	-0.0000868	Peri.	333.97937	-0.76263368	-0.57208287
	+/-0.0000227	Node	200.56082	-0.33216225	-0.05405156
e	1.0001957	Incl.	120.74318	-0.55502982	+0.81841286

From 14 observations 1983 Aug. 4-1984 Mar. 30, mean residual 1".4.

Comet Bradfield (1984a)
T 1983 Dec. 27.90095 ET

		(1950.0)	P	Q
q 1.3588620				
n 0.00554055	Peri.	219.25496	-0.79858886	+0.59961730
a 31.6301067	Node	356.19774	-0.11336741	-0.23487573
e 0.9570390	Incl.	51.78904	-0.59110376	-0.76504410

P 177.89
From 23 observations 1984 Jan. 9-Feb. 29.

Periodic Comet Russell 4 (1984d)
T 1984 Jan. 6.71849 ET

		(1950.0)	P	Q
q 2.1272025				
n 0.15456988	Peri.	91.66311	-0.95297495	-0.28483272
a 3.4386354	Node	71.79785	+0.21613556	-0.87817145
e 0.3813818	Incl.	6.25397	+0.21242448	-0.38429834

P 6.38
From 16 observations 1984 Mar. 2-Apr. 4.

Periodic Comet Hartley-IRAS (1983v)
Epoch 1984 Jan. 21.0 ET = JDE 2445720.5
T 1984 Jan. 8.70657 ET

		(1950.0)	P	Q
q 1.2824901				
n 0.04591004	Peri.	47.11115	+0.68153248	-0.73165598
a 7.7243910	Node	0.80001	-0.34839294	-0.34110366
e 0.8339688	Incl.	95.72507	+0.64353387	+0.59019303

P 21.47
From 32 observations 1983 Nov. 4-1984 Mar. 30, mean residual 1".6.

(3019)* 1940 AC = 1969 AX = 1970 HG = 1972 TV6 = 1974 CX = 1976 OJ = 1977 TO5 = 1982 XT3 = 1984 EF

Discovered 1940 Jan. 7 by G. Kulin at Budapest. The key identification 1940 AC = 1984 EF is by E. Bowell. The identification 1974 RV1 = 1969 AX (NOC 1053) is invalid (see also MPC 8665).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 139.14133				
n 0.20357595	Peri.	318.61574	+0.45883468	-0.88684679
a 2.8618821	Node	104.00693	+0.82923276	+0.40536783
e 0.0551059	Incl.	3.22177	+0.31912970	+0.22176494

P 4.84 B(1,0) 12.5

Residuals in seconds of arc

400107	053	3.0-	0.1-		690115	095	0.0	1.2-		821214	381	0.7-	0.3-
400110	053	1.1+	0.2+		700429	095	1.7-	2.4+		840301	688	0.6+	0.3-
400112	053	3.4+	1.2+		721006	094	(1.7-	19.3-)		840301	688	0.4-	0.1+
400130	053	0.9-	0.7+		740215	095	0.6+	1.8+		840306	688	0.0	1.5-
400226	053	(4.1+	15.3-)X		760727	095	1.0+	0.7+		840306	688	0.9+	1.1-
400315	053	(37.4+ | 1.3-)X		771008	095	0.6+	1.9+		840309	688	(1.7- | 1.6-)
400327	053	(26.3- | 20.6+)X		821213	381	0.9-	0.7-		840309	688	(0.5- | 2.2-)
400330	053	(0.5-	7.9-)X		821214	381	0.5-	0.9-					

(3020)* 1949 PR = 1931 TG4 = 1977 SJ3 = 1977 TR6 = 1984 EE

Discovered 1949 Aug. 2 by K. Reinmuth at Heidelberg. The key identification 1949 PR = 1984 EE is by E. Bowell.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 232.90696		(1950.0)	P	Q
n 0.21490552	Peri.	195.85610	+0.92274925	+0.37938543
a 2.7603935	Node	141.62671	-0.34064095	+0.88517233
e 0.0616044	Incl.	6.27271	-0.18027082	+0.26932628
P 4.59	B(1,0)	13.0		

Residuals in seconds of arc

311006 690	1.0+	0.0	490822 024	1.4+	2.4+	840301 688	1.2+	0.2+
311007 690	4.3-	3.1-	490824 690	1.2+	4.9-	840306 688	0.7-	2.6-
311009 690	4.7+	1.5-	490826 690	1.2+	0.9-	840306 688	1.2-	2.7-
490802 024	1.1+	0.1-	770923 095	0.4-	0.9+	840309 688	0.2+	1.3-
490820 690	0.1+	2.6-	771008 095	0.5-	1.3+	840309 688	1.0-	2.8-
490821 024	3.2-	0.0	840301 688	0.9-	0.1+			

(3021)* 1967 CB = 1973 FM2 = 1973 GG1 = 1976 SO6 = 1982 SF1 = 1984 EH

Discovered 1967 Feb. 6 by P. Wild at Zimmerwald. The key identification 1967 CB = 1984 EH is by E. Bowell.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 84.83548		(1950.0)	P	Q
n 0.17491035	Peri.	97.42261	-0.00822981	-0.99931708
a 3.1665939	Node	352.75058	+0.76724835	+0.01679255
e 0.2624555	Incl.	16.58684	+0.64129730	-0.03291491
P 5.63	B(1,0)	13.0		

Residuals in seconds of arc

670206 026	2.1+	0.0	760925 095	1.4+	1.0+	840301 688	1.1-	1.4-
670207 026	0.5-	0.7-	820922 688	0.9+	2.0+	840306 688	0.2+	0.9-
670210 026	1.4+	2.3+	820922 688	2.3-	0.7+	840306 688	1.4-	0.8-
670303 026	0.3-	1.1+	821011 688	0.5-	1.9-	840309 688	0.7-	1.1-
730327 095	1.8+	2.9+	821011 688	0.1-	0.6-	840309 688	0.9-	0.6-
730402 095	0.7-	1.3+	840301 688	1.0+	0.6-			

(3022)* 1980 SH

Discovered 1980 Sept. 16 by Z. Vavrova at Klet.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 140.02473		(1950.0)	P	Q
n 0.36733809	Peri.	246.96326	+0.38586989	-0.92254962
a 1.9308954	Node	180.36962	+0.92255318	+0.38586771
e 0.1039058	Incl.	23.52158	-0.00021986	-0.00288266
P 2.68	B(1,0)	15.0		

Residuals in seconds of arc

800916 046	0.9+	1.7+	801107 046	0.7+	0.7-	820521 801	2.1+	0.2-
800916 046	0.3+	3.9+	801111 046	0.1-	0.8-	820624 801	1.0+	1.1+
801003 046	1.4-	2.2+	801111 046	0.8+	0.3+	820724 801	0.4+	0.1+
801003 046	2.5-	5.5-	820513 675	0.5-	1.1-	831204 474	0.4+	0.3+
801005 046	1.0+	1.7-	820514 675	0.5+	1.2-	831204 474	0.4-	0.1-
801005 046	2.2+	0.2+	820514 046	2.7-	1.8+	840102 474	0.2-	0.7+
801107 046	1.9-	0.6+	820514 046	0.3-	0.2-	840102 474	0.1-	0.5+

(3023)* 1981 JS = 1964 DF = 1979 YB2

Discovered 1981 May 5 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The identification 1981 JS = 1964 DE (MPC 7155) is invalid.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 32.70154		(1950.0)	P	Q
n 0.29875617	Peri.	344.29474	-0.82298704	+0.56553029
a 2.2161108	Node	230.26933	-0.51337275	-0.78080347
e 0.0848997	Incl.	3.99292	-0.24318871	-0.26555868
P 3.30	B(1,0)	14.5		

Residuals in seconds of arc

640217	760(81.5+	24.0+)X	821013	688	1.3-	3.2-	840301	675	1.3-	0.1+
791223	095	0.1-	0.1+	821013	688	3.0+	0.8-	840301	675	1.9-	0.2-
810505	688	1.3-	0.3+	821018	801	2.1+	0.5+	840304	675	0.2-	0.5+
810505	688	2.4+	0.5-	840109	801	(3.0+	6.5+)	840304	675	1.9-	1.0+
810604	688	0.3-	1.3-	840206	688	1.1+	0.8-	840306	688	0.9+	0.5-
810604	688	0.9-	0.1+	840206	688	2.0+	0.2-	840306	688	0.3-	2.2-
810609	688	0.3-	0.6-	840301	688	1.1+	0.2-	840308	801	(1.5-	0.6+)
820915	801	3.1-	0.4-	840301	688	0.1+	0.3+				

(3024)* 1981 UW9 = 1943 VG = 1962 WH = 1968 TA

Discovered 1981 Oct. 23 at the Purple Mountain Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	195.63919		(1950.0)	P	Q
n	0.15530716	Peri.	342.11726	+0.97990711	-0.15960816
a	3.4277442	Node	27.92591	+0.19945183	+0.78108265
e	0.1096671	Incl.	14.79751	+0.00101511	+0.60368462
P	6.35	B(1,0)	12.0		

Residuals in seconds of arc

431103	062	0.6-	1.0+	811127	330	1.0-	0.0	840211	675	1.7-	0.7+
431103	062	0.7+	0.4-	811201	330	0.8-	0.5+	840301	801	0.5-	1.0+
621124	760	0.3-	0.4+	821206	675	0.6-	0.4-	840309	688	1.0+	2.6-
681002	095	0.6+	2.4-	821206	675	0.7-	0.4-	840309	688	1.6+	1.1-
811023	330	0.7+	0.9+	840201	801	0.6+	1.0+				
811028	330	1.3+	0.2-	840210	675	1.3-	0.3+				

(3025)* 1982 QR = 1927 BE

Discovered 1982 Aug. 20 by C. Shoemaker and E. Shoemaker at Palomar. The identification is by L. D. Schmadel (MPC 7840).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	78.06181		(1950.0)	P	Q
n	0.17198368	Peri.	124.00268	+0.49162288	-0.80635475
a	3.2024171	Node	293.17534	+0.63321036	+0.59021253
e	0.0838743	Incl.	20.95559	+0.59778890	+0.03796281
P	5.73	B(1,0)	13.0		

Residuals in seconds of arc

270126	389	6.6-	5.0- Y	820829	675	0.5-	1.0-	831228	552	0.7+	1.1-
270128	389	1.3+	0.9+ Y	821106	675	0.6+	0.2+	840108	801	0.2+	0.1-
270129	389	0.6+	3.3- Y	821107	675	0.2+	0.0	840109	801	1.4+	0.9+
820820	675	0.6-	1.3-	821204	675	2.2+	0.2+	840208	801	0.4-	2.1+
820820	675	0.3-	0.9-	821205	675	2.4+	0.4+	840209	801	0.2-	2.7+
820826	675	1.0-	1.4-	831206	801	1.6+	2.5-				
820826	675	0.6-	1.9-	831228	552	0.4+	0.3-				

1975 TJ6 = 1984 BW

The identification was found independently by T. Furuta (JAM 1567).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	109.96924		(1950.0)	P	Q
n	0.27073969	Peri.	319.92223	+0.07406856	-0.98231120
a	2.3664770	Node	125.15310	+0.96032543	+0.02376138
e	0.1832329	Incl.	12.14276	+0.26886597	+0.18574205
P	3.64	B(1,0)	14.5		

Residuals in seconds of arc

751001	808	1.6+	0.0	751008	808	1.0-	0.3-	840221	046	0.9+	0.8-
751002	808	0.7-	0.3+	840129	046	0.5+	0.3+	840221	046	3.0-	3.3+
751004	808	0.9+	0.2-	840129	046	0.1-	1.0+	840222	046	1.4+	0.1-
751004	808	0.1+	0.3+	840204	046	1.6+	2.9-	840222	046	1.7-	0.3-
751008	808	1.1-	0.3-	840204	046	0.3+	0.2+				

1978 SL7 = 1951 AU1 = 1980 EV = 1984 AG1
The key identification 1978 SL7 = 1984 AG1 is by E. Bowell.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	50.01031		(1950.0)	P	Q
n	0.24010874	Peri.	143.25714	-0.85120659	-0.52468586
a	2.5636866	Node	5.14173	+0.44278479	-0.73055572
e	0.1368317	Incl.	7.90957	+0.28176049	-0.43702755
P	4.10	B(1,0)	14.0		

Residuals in seconds of arc

510106	760	2.5-	0.1-	Y	781008	095	0.8-	0.5+	840126	688	0.8- 1.7-
510106	760	2.8+	1.7+	Y	800315	095	1.2+	2.3+	840126	688	0.5- 1.9-
780926	095	0.2+	0.8-		840108	688	0.6-	0.6+	840204	688	0.8+ 1.4-
781002	095	0.5+	0.6+		840108	688	1.3-	2.8+	840204	688	1.1+ 1.4-

1979 HP = 1938 WQ = 1982 VH1 = 1984 CB1
The key identification 1979 HP = 1984 CB1 is by E. Bowell.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	40.53612		(1950.0)	P	Q
n	0.17845999	Peri.	45.54691	-0.96981136	-0.24125321
a	3.1244698	Node	120.46227	+0.21037856	-0.90143150
e	0.1175396	Incl.	2.36280	+0.12331580	-0.35946924
P	5.52	B(1,0)	13.0		

Residuals in seconds of arc

381128	024	0.3-	2.0+		821115	688	0.4+	1.4-	840301	688	0.9- 1.2+
790419	807	0.8-	0.0		821115	688	0.2+	1.8-	840306	688	0.2- 0.4+
790424	095	0.4-	0.4-		840208	688	0.6+	1.8-	840306	688	0.2+ 0.7+
790426	807	0.1+	1.1-		840208	688	0.4+	1.4-			
790426	807	0.6+	0.1-		840301	688	0.2+	1.2+			

1979 MV6 = 1980 XU
The identification is by C. Atallah.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	122.27642		(1950.0)	P	Q
n	0.26191725	Peri.	99.29869	+0.81655690	+0.57558428
a	2.4193248	Node	225.57612	-0.55085697	+0.75413398
e	0.0594652	Incl.	3.53362	-0.17260194	+0.31620352
P	3.76	B(1,0)	15.0		

Residuals in seconds of arc

790623	413	2.3+	2.0-		830901	809	1.2-	1.5-	830909	809	0.2+ 1.4-
790624	413	2.3+	2.3-		830901	809	1.1-	1.4-	830909	809	0.3+ 1.4-
790625	413	1.9+	1.7-		830901	809	1.0-	1.3-	830909	809	0.3+ 1.4-
790629	413	1.5+	2.5-		830902	809	1.2-	1.1-	830913	809	0.6- 1.0-
790726	675	0.1+	3.5-		830902	809	1.1-	1.2-	830913	809	0.2- 1.0-
790727	675	0.2-	2.7-		830902	809	0.8-	1.0-	830913	809	0.5- 1.1-
790728	413	1.5-	4.6-		830906	809	2.0-	1.4-	830913	809	1.0- 1.0-
790823	675	3.0-	2.5-		830906	809	1.9-	1.3-	830914	809	0.5- 0.0
801214	675	0.8+	2.3+		830906	809	1.8-	1.4-	830914	809	1.0- 0.7-

1979 XK = 1979 YC3 = 1949 XM = 1975 TD5 = 1975 VJ7 = 1984 AK1
The key identification 1979 XK = 1984 AK1 is by E. Bowell.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	72.61276		(1950.0)	P	Q
n	0.26313830	Peri.	34.50009	-0.74026558	-0.67218076
a	2.4118347	Node	103.25841	+0.61365922	-0.68369697
e	0.2244471	Incl.	0.78954	+0.27464381	-0.28413284
P	3.75	B(1,0)	15.0		

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

491214	760(0.16-	0.00+)X	791219	809	0.2-	0.4+	791225	809	0.6-	0.9+
751014	095	1.6+	0.4-	791220	809	0.3+	0.3+	791225	809	0.6-	0.3+
751106	095	0.2+	4.0-	791220	809	0.0	0.7+	791226	809	0.6+	1.0+
791215	809	1.4-	1.7+	791220	809	0.2-	0.7+	791226	809	0.8+	0.5+
791215	809	1.0+	0.8+	791221	809	1.4-	0.8+	791228	809	1.3-	0.3+
791215	809	0.0	1.6+	791221	809	0.9+	0.2+	791228	809	0.7-	0.0
791216	809	0.0	1.0+	791222	809	0.4-	0.8+	791229	809	0.2-	0.2+
791216	809	0.7+	1.0+	791222	809	0.2-	0.8+	791229	809	0.6+	0.4+
791216	809	0.2-	1.5+	791222	809	0.1-	0.7+	840108	688	0.4+	0.3-
791217	809	0.8+	0.5+	791223	809	0.0	0.3+	840108	688	0.4-	0.6-
791217	809	0.3-	0.7+	791223	809	0.3-	0.4+	840128	688	0.2+	1.7-
791217	809	0.5-	1.2+	791224	809	0.3-	0.3+	840128	688	0.3-	0.2-
791217	809	0.1+	0.7+	791224	809	1.1-	0.5+	840205	688	0.2-	0.1+
791217	809	2.0+	0.0	791224	809	0.2-	0.2+	840205	688	0.5+	0.3-
791217	809	2.4-	1.6-	791224	095	1.3-	0.6-				
791219	809	2.3+	0.8+	791225	809	0.3-	0.5+				

1980 BV = 1978 TK7 = 1978 VP14 = 1984 AN
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	359.60601		(1950.0)	P	Q
n	0.23032261	Peri.	75.85483	-0.97318356	+0.06175594
a	2.6357952	Node	107.32009	-0.13313061	-0.93677485
e	0.1036923	Incl.	13.42132	+0.18758998	-0.34444024
P	4.28	B(1,0)	14.0		

Residuals in seconds of arc

781002	095	1.9-	1.2-	831229	033	0.7-	1.2+	840105	688	0.5-	1.9-
781101	095	1.8+	1.0+	831230	033	0.4-	1.7+	840108	688	0.3+	0.4-
800123	095	1.6-	1.5+	840105	688	0.9+	0.1+	840108	688	(12.3+	2.7-)
800123	095	2.4+	3.0-	840105	688	0.6-	1.3+	840108	688	0.5-	0.6-
800220	095	1.0-	1.1+	840105	688	1.4+	0.9-				

1981 EX6
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	60.75066		(1950.0)	P	Q
n	0.17123428	Peri.	12.16065	+0.99150827	+0.09302068
a	3.2117601	Node	341.74366	-0.12962797	+0.76279400
e	0.1582295	Incl.	16.86338	+0.01038990	+0.63991597
P	5.76	B(1,0)	14.0		

Residuals in seconds of arc

810301	413	0.9-	0.7+	810408	413	0.3+	0.1+	830906	809	0.9+	0.1+
810301	413	2.3+	0.8-	810408	413	1.2-	0.3+	830906	809	1.0+	0.2-
810306	413	0.3-	1.1+	810409	413	0.8-	0.5+	830908	809	0.4+	0.2+
810306	413	1.3-	0.2-	810409	413	1.3+	0.3-	830908	809	0.6+	0.2+
810306	413	0.9-	0.0	830901	809	0.1-	0.4-	830908	809	0.9+	0.1+
810306	413	1.3+	2.1-	830901	809	0.1-	0.6-	830911	809	0.9+	0.9-
810308	413	2.5-	0.6+	830901	809	0.1+	0.8-	830911	809	0.9+	0.7-
810308	413	0.3+	0.2-	830904	809	2.5-	0.5+	830911	809	0.9+	0.5-
810308	413	3.3+	0.3+	830904	809	2.2-	0.4+	830916	809	0.2-	1.0+
810312	413	1.2-	0.1-	830904	809	2.0-	0.5+	830916	809	0.2-	0.9+
810312	413	0.3+	0.1+	830906	809	0.8+	0.3+				

1981 EG14
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	117.69562		(1950.0)	P	Q
n	0.27281374	Peri.	190.32610	+0.59486722	-0.80037074
a	2.3544678	Node	223.22255	+0.74499243	+0.58373227
e	0.1028028	Incl.	6.23933	+0.30185967	+0.13661377
P	3.61	B(1,0)	14.5		

Residuals in seconds of arc

810301	413	1.4+	1.0-	810312	413	0.7+	0.1-	810409	413	0.6-	0.2+
810306	413	1.2-	0.1-	810406	413	0.2-	0.6+	810409	413	0.6+	0.5-
810308	413	1.0-	0.1-	810406	413	0.2-	1.1+	840105	552	0.1+	0.5-
810308	413	0.5+	0.3-	810408	413	0.9-	0.3+	840105	552	0.1+	0.8-
810312	413	0.6-	1.5+	810408	413	1.6+	1.7-	840221	675	0.0	1.4+

1981 EX16 = 1969 RG = 1969 RR1 = 1979 YH1

The identification and double designation 1981 EX16 = 1969 RG = 1969 RR1 are by L. D. Schmadel and T. Urata (MPC 7771), who found them independently.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	52.80101		(1950.0)	P	Q
n	0.21196792	Peri.	43.66935	+0.79665527	-0.60341167
a	2.7858442	Node	353.16982	+0.44081151	+0.61979111
e	0.1586871	Incl.	17.18545	+0.41355240	+0.50175027
P	4.65	B(1,0)	13.5		

Residuals in seconds of arc

690908	095	4.4-	9.7+	810408	413	1.0-	0.0	830907	809	0.6-	0.3-
690913	095	0.4+	4.9-	810408	413	1.6+	0.6-	830907	809	0.3-	0.3-
791218	095	0.1+	1.6+	810409	413	1.0-	0.4-	830909	809	0.3-	0.6+
810302	413	0.5-	1.1+	810409	413	0.0	0.4-	830909	809	0.2-	0.4+
810306	413	0.8-	0.1+	830901	809	0.3-	0.6-	830914	809	1.8-	0.5-
810306	413	3.0+	0.0	830901	809	0.3-	0.6-	830915	809	1.2+	0.4+
810306	413	1.1+	0.5+	830901	809	0.4-	0.6-	830915	809	1.2+	0.4+
810308	413	0.3-	0.8+	830902	809	0.5+	0.4-	830915	809	1.6+	0.4+
810308	413	1.4+	0.5+	830902	809	0.7+	0.2-	830916	809	1.4+	0.9+
810311	413	0.5-	0.6-	830902	809	0.6+	0.1-	830916	809	0.7+	0.4+
810311	413	1.0+	0.2+	830904	809	0.6-	0.2-	830918	809	0.3-	0.1-
810312	413	0.3-	1.4+	830904	809	0.4-	0.1-	830918	809	0.1-	0.2-
810312	413	1.3+	0.9+	830904	809	0.1-	0.2-				
810406	413	1.7-	0.5+	830907	809	1.1-	0.2-				

1982 RU

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	141.96047		(1950.0)	P	Q
n	0.17636536	Peri.	187.38050	+0.99470545	-0.10253150
a	3.1491599	Node	178.45246	+0.10242563	+0.98361858
e	0.2018132	Incl.	14.92029	+0.00836951	+0.14826249
P	5.59	B(1,0)	13.5		

Residuals in seconds of arc

820915	688	0.2+	2.2-	821013	688	0.4-	0.6-	830117	801	0.9+	0.1-
820915	688	1.1+	0.1+	821017	688	1.8-	1.0-	840103	474	0.2-	0.4-
820922	688	0.2+	0.7+	821021	688	0.6+	0.9-	840128	474	0.0	0.4-
820922	688	0.2-	1.1+	821021	688	0.6-	0.5+	840128	474	0.2+	0.1-
821013	688	0.6+	0.0	821217	801	0.0	3.0+				

1983 PB

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	134.68546		(1950.0)	P	Q
n	0.29905731	Peri.	242.83946	+0.71229501	+0.69450433
a	2.2146228	Node	72.97614	-0.60050260	+0.67786442
e	0.2315508	Incl.	6.09270	-0.36336268	+0.24117121
P	3.30	B(1,0)	16.0		

From 11 observations 1983 Aug. 4-Nov. 1, mean residual 1".6.

1983 QD
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	39.78918		(1950.0)		P	Q
n	0.22748363	Peri.	121.51493	+0.26187562		-0.95334345
a	2.6576795	Node	312.51951	+0.80183867		+0.30153131
e	0.1668785	Incl.	11.75776	+0.53709952		+0.01466756
P	4.33	B(1,0)	12.5			

From 11 observations 1983 Aug. 31-1984 Feb. 22, mean residual 0".7.

1983 QG = 1979 YL9
The identification is by C. M. Bardwell.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	98.73179		(1950.0)		P	Q
n	0.22931338	Peri.	279.65992	+0.96987156		+0.00728916
a	2.6435232	Node	80.21624	+0.09970616		+0.90012598
e	0.3461693	Incl.	14.30606	-0.22227873		+0.43556868
P	4.30	B(1,0)	14.5			

Residuals in seconds of arc

791225	095	0.1-	0.5+	830903	801	1.9-	0.1-	830912	801	3.4+	0.7-
830831	500(29.7-	5.2-)X	830905	801	0.3-	0.2+	831007	801	0.2-	1.5+
830831	500(36.8+	3.0+)X	830907	675	0.4-	0.2+	831206	801	1.2-	1.1-
830902	801	0.2-	0.7-	830907	675	0.2-	0.8+	840108	801	0.8+	0.2+
830902	675	0.7-	0.0	830908	801	0.7+	0.6-	840203	801	0.5+	0.4-

1983 SA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	52.00649		(1950.0)		P	Q
n	0.11333569	Peri.	316.54282	+0.61298030		+0.78514573
a	4.2288757	Node	350.05975	-0.50895635		+0.30688107
e	0.7146878	Incl.	30.77518	-0.60433317		+0.53793140
P	8.70	B(1,0)	14.5			

From 54 observations 1983 Sept. 10-1984 Mar. 3, mean residual 1".2.

1983 TB
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	290.32832		(1950.0)		P	Q
n	0.68746074	Peri.	321.68392	-0.64048733		+0.67088709
a	1.2714641	Node	265.03320	-0.57892498		-0.74155911
e	0.8902365	Incl.	22.03391	-0.50460068		-0.00076810
P	1.43	B(1,0)	16.0			

From 24 observations 1983 Oct. 12-1984 Jan. 24, mean residual 1".2.

1983 VA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	73.65311		(1950.0)		P	Q
n	0.23389709	Peri.	11.68246	+0.03309172		-0.96162269
a	2.6088724	Node	76.87226	+0.89292848		-0.09397833
e	0.6918372	Incl.	16.24120	+0.44898069		+0.25777875
P	4.21	B(1,0)	17.5			

From 10 observations 1983 Oct. 27-1984 Mar. 2, mean residual 2".5.

1983 VQ1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	99.27267		(1950.0)		P	Q
n	0.27624178	Peri.	346.91892	+0.71959120		-0.58695091
a	2.3349440	Node	55.38398	+0.67075119		+0.44927508
e	0.2906088	Incl.	26.79896	+0.17967009		+0.67352842
P	3.57	B(1,0)	16.5			

From 9 observations 1983 Nov. 6-1984 Feb. 22, mean residual 0".2.

1983 WP
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	19.45953	(1950.0)	P	Q
n	0.23127829	Peri. 56.74559	-0.71108220	-0.66058692
a	2.6285292	Node 80.64887	+0.53608602	-0.73098093
e	0.1158300	Incl. 14.12559	+0.45494382	-0.17114846
P	4.26	B(1,0) 13.5		

From 16 observations 1983 Nov. 28-1984 Mar. 4, mean residual 1".3.

1983 WF1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	89.25966	(1950.0)	P	Q
n	0.17373068	Peri. 275.32256	+0.91498685	-0.18740643
a	3.1809124	Node 95.83832	+0.31367865	+0.88740671
e	0.3108896	Incl. 21.05006	-0.25378094	+0.42117474
P	5.67	B(1,0) 13.0		

From 9 observations 1983 Nov. 29-1984 Mar. 22, mean residual 0".7.

1983 XF
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	41.77698	(1950.0)	P	Q
n	0.17921693	Peri. 54.68186	-0.61229774	-0.78757288
a	3.1156598	Node 73.22318	+0.69977402	-0.58071480
e	0.5352411	Incl. 4.15851	+0.36797798	-0.20615355
P	5.50	B(1,0) 16.0		

From 35 observations 1983 Nov. 28-1984 Mar. 8, mean residual 1".5.

1984 AB = 1975 XL4
The identification is by C. M. Bardwell.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	43.73020	(1950.0)	P	Q
n	0.49722675	Peri. 115.35775	-0.83330782	+0.49031799
a	1.5779736	Node 94.94484	-0.55266253	-0.74955259
e	0.0755230	Incl. 14.84885	+0.01273624	-0.44470122
P	1.98	B(1,0) 16.5		

Residuals in seconds of arc

751203	095	0.1+	0.1-	840107	675	2.7-	0.9+	840130	675	(12.8-	2.1+)
840104	675	3.6-	2.9+	840107	675	1.9+	1.3-	840130	675	(11.0-	0.8+)
840104	675	0.7-	1.0-	840108	688	4.1+	0.9-	840209	801	0.0	0.1+
840105	688	0.7+	0.5-	840108	688	1.5+	0.2+	840210	675	0.3+	0.4-
840105	675	3.4-	1.9+	840125	707	2.4-	0.0	840302	801	0.3-	1.4+
840105	688	1.9+	0.7-	840125	707	1.4-	1.1+	840321	675	0.2+	0.3+
840105	675	0.5+	0.6-	840125	675	4.5+	4.0-				

1984 BC
Epoch 1984 Jan. 21.0 ET = JDE 2445720.5

M	349.55402	(1950.0)	P	Q
n	0.15637713	Peri. 41.09973	-0.95016655	-0.10808073
a	3.4120906	Node 130.16301	+0.06888374	-0.98758187
e	0.5455417	Incl. 22.49642	+0.30403709	-0.11402016
P	6.30	B(1,0) 17.0		

From 7 observations 1984 Jan. 30-Mar. 3.

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

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

(3026)* 1977 TA1 = 1961 UE = 1969 DB = 1971 OM1 = 1975 HA = 1982 RQ

Discovered 1977 Oct. 12 by P. Wild at Zimmerwald. The key identification 1977 TA1 = 1975 HA is by L. D. Schmadel (MPC 7607).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 162.44613		(1950.0)	P	Q
n 0.18681968	Peri.	123.83123	+0.93031525	+0.35345549
a 3.0305466	Node	215.75133	-0.36668768	+0.89105472
e 0.0227164	Incl.	9.64513	-0.00732623	+0.28476429
P 5.28	B(1,0)	13.0		

Residuals in seconds of arc

611017	760	2.2-	1.1+	771013	026	2.6+	0.8-	771110	026	0.2+	1.4+
611017	760	0.8-	2.5+	771013	095	1.5-	1.9+	820915	688	1.7-	1.3-
690221	095	0.1+	0.1+	771018	026	1.9+	2.5+	820915	688	1.0-	2.1-
710729	095	0.2-	0.4-	771019	026	0.1+	0.6-	831201	801	1.3-	0.3-
750420	805	0.7+	1.3-	771020	026	0.5-	1.2-	840201	801	0.3-	0.3-
771007	095	1.4-	1.8-	771108	026	0.6+	1.0+	840209	801	1.0-	0.5-
771012	026	2.4+	1.0-	771109	026	3.1+	2.1-				

(3027)* 1978 PQ2 = 1952 SA1 = 1974 VV

Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 139.92227		(1950.0)	P	Q
n 0.22542560	Peri.	154.02896	+0.97935671	+0.20196167
a 2.6738306	Node	194.32699	-0.19091012	+0.91034628
e 0.2186969	Incl.	1.96405	-0.06643621	+0.36122171
P 4.37	B(1,0)	14.5		

Residuals in seconds of arc

520929	760	1.8+	1.7-	741117	095	1.0+	3.1-	820725	474	0.5+	1.1-
520929	760	1.9-	2.2+	780808	095	0.9-	0.5+	820725	474	0.1+	1.3-
741112	095	0.8-	2.9-	780903	095	1.4-	0.5+	831201	801	0.9-	0.3+
741115	095	2.6+	4.1+	780928	095	0.9+	0.4+	840203	801	0.9-	0.2+

(3028)* 1978 TA2 = A902 GC = A904 SG = 1931 XP = 1941 VD = 1949 FB1 = 1950 LC1 = 1965 JJ = 1970 GQ = 1971 KC1 = 1983 TO

Discovered 1978 Oct. 9 at the Purple Mountain Observatory. The key identification 1978 TA2 = 1983 TO is by T. Furuta (JAM 1567).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 270.48981		(1950.0)	P	Q
n 0.18785667	Peri.	355.42198	-0.99606859	+0.08424720
a 3.0193836	Node	189.54130	-0.07512012	-0.96712384
e 0.0300510	Incl.	9.50842	-0.04695035	-0.23994557
P 5.25	B(1,0)	12.0		

Residuals in seconds of arc

020404	024	6.8-	0.2+	500613	094	(53.4-	34.2+)X	781009	330	1.5-	0.5+
020407	024	(8.8+	4.6-)	650502	095	0.2-	1.7-	831005	046	0.3-	1.6-
040919	024	3.3+	4.0+	700410	805	1.9+	0.2+	831005	046	0.3-	2.7-
311205	690	3.4+	1.5+	700410	805	1.1+	0.1-	831006	046	0.5-	0.3+
311207	690	0.9+	2.7-	700410	805	1.9+	0.7-	831006	046	1.5-	0.7-
411109	053	(3.3-	15.4+)X	710529	095	1.3+	1.8-	831007	046	0.1-	2.3-
411116	053	(18.3+	7.2+)X	710625	095	1.1+	0.6-	831007	046	0.3+	1.9-
490325	094	(14.4-	69.6+)X	780928	095	3.0-	1.9+	831009	675	0.1-	0.4-
500609	094	(34.4-	36.7+)X	781005	095	0.3-	0.2+	831009	675	0.2-	0.5+

(3029)* 1981 EA8 = 1944 DD = 1948 MG = 1951 JG = 1973 YA4 = 1974 CH

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey. The key identification 1981 EA8 = 1944 DD is by E. Bowell (MPC 8150).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	349.78935	(1950.0)	P	Q
n	0.29408581	Peri. 268.90604	-0.73931392	+0.67195886
a	2.2395117	Node 313.31048	-0.59159162	-0.67898903
e	0.1113224	Incl. 3.42181	-0.32161199	-0.29571133
P	3.35	B(1,0) 14.5		

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

440221 062	0.6-	1.7-	810301 413	0.3-	0.3-	810407 413	0.8+	0.4+
440221 062	0.5-	0.9+	810307 413	2.2-	0.1+	810410 413	0.1-	1.6+
440221 062	0.0	1.3+	810307 413	0.8-	0.2-	810410 413	2.5+	0.7-
440221 062	0.6+	0.8+	810311 413	0.9-	0.1-	810412 413	2.0-	1.8+
440228 062	0.4+	2.7+	810315 413	0.0	0.8-	810412 413	3.8+	1.0-
480630 078	(0.04-	0.00+)X	810405 413	1.5-	0.3-	840109 801	1.3-	1.0+
510508 094	(63.6+	0.5+)X	810405 413	0.8-	1.3-	840201 801	0.5-	1.8+
731226 095	0.0	1.9+	810406 413	1.1-	1.0+	840209 801	0.5-	0.7+
740214 095	1.3+	2.1+	810406 413	0.2+	0.1+			
810301 413	2.7-	1.1+	810407 413	0.9-	1.7+			

(3030)* 1981 EH16 = 1962 SC = 1969 XD = 1977 BU

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	140.30125	(1950.0)	P	Q
n	0.28839335	Peri. 109.42344	+0.74210292	-0.66792827
a	2.2688854	Node 292.52771	+0.58987190	+0.69057407
e	0.2456505	Incl. 3.48632	+0.31833064	+0.27745138
P	3.42	B(1,0) 15.5		

Residuals in seconds of arc

620922 760	0.2-	1.8+	810306 413	1.2+	0.3-	810408 413	0.4-	0.9-
620923 760	0.4-	1.2+	810308 413	0.4-	0.1+	810408 413	0.6+	0.6-
691201 095	0.9-	3.7-	810308 413	0.5+	0.4+	810409 413	1.0-	0.4-
770120 095	2.2+	1.3-	810312 413	2.0-	1.3+	810409 413	0.7+	0.8-
810301 413	2.2-	0.4-	810312 413	1.0+	0.3+	831208 801	0.6+	3.1+
810301 413	0.5+	0.8-	810406 413	0.4-	0.5+	840202 801	0.9+	3.1+
810306 413	2.1-	0.9+	810406 413	2.7+	0.7-			

(3031)* 1984 CX = 1954 EF = 1978 NP = 1979 VT1 = 1981 JL1

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

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	33.90972	(1950.0)	P	Q
n	0.29475490	Peri. 249.02961	-0.89351368	+0.44610958
a	2.2361213	Node 317.42033	-0.37872999	-0.80993917
e	0.0977422	Incl. 4.33819	-0.24124032	-0.38076866
P	3.34	B(1,0) 14.0		

Residuals in seconds of arc

540305 760	0.8+	2.4+	810509 808	0.6-	1.0-	840302 675	0.8+	1.2+
540305 760	1.0+	0.4+	810509 808	0.5-	1.3-	840304 675	1.0-	2.2+
780711 675	0.4+	0.5+	840208 688	0.5-	0.3-	840304 675	0.4-	1.9+
780712 675	0.0	0.6-	840208 688	0.4-	1.1-	840306 688	0.3+	2.2-
780713 675	0.1-	0.0	840301 688	1.2+	2.0-	840306 688	0.6-	1.7-
780714 675	0.1+	0.3+	840301 688	0.6+	1.9-			
791114 095	0.2-	1.2-	840302 675	0.6-	1.4+			

(3032)* 1984 CA1 = 1935 FD = 1952 VA = 1957 UO = 1969 BF = 1972 XT1
= 1976 PK = 1979 FV2

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

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	201.99382			
n	0.20045119	Peri. 275.94263	+0.99578716	-0.07239973
a	2.8915472	Node 88.21862	+0.08889657	+0.91269464
e	0.0845680	Incl. 3.22724	-0.02247938	+0.40217752
P	4.92	B(1,0) 13.0		

Residuals in seconds of arc

350329	012	2.4-	3.6+	571030	024	0.4-	1.2-	840208	688	0.4+	0.2+
350403	012	4.8+	2.1+	690120	095	0.2+	2.1+	840301	688	0.2-	1.7-
521112	760	2.0-	0.8+	721201	095	(2.4+	13.7+)	840301	688	2.6-	2.4-
521112	760	0.3-	1.7+	760801	095	0.2+	1.3-	840306	688	0.4-	2.2-
521114	760	0.9+	0.3-	790331	095	0.8-	0.3-	840306	688	0.5+	1.8-
521114	760	1.9+	0.2-	840208	688	0.4+	0.1+				

1979 FE2 = 1936 HG = 1968 UM1 = 1983 CE3

The key identification 1979 FE2 = 1983 CE3 is by T. Furuta (JAM 1568). The identification 1979 FE2 = 1936 HG is by L. D. Schmadel. The double designation 1936 HG = 1936 FX1 (BZ 18, 38) is invalid.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

		(1950.0)	P	Q
M	71.74491			
n	0.22853036	Peri. 50.51653	-0.73243314	+0.67996283
a	2.6495634	Node 172.10544	-0.67592494	-0.72012876
e	0.0718028	Incl. 14.55992	-0.08165271	-0.13807649
P	4.31	B(1,0) 13.0		

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

360419	094(0.07+	0.01+)X		790329	095	0.4-	1.8+	830212	704	3.3+	1.0+
360421	094(0.06+	0.02-)X		790420	095	1.2+	3.9-	830213	704	1.5-	0.7+
681023	095	0.3-	0.6+	790425	095	1.1-	1.9+	830214	704	2.3-	2.6-
790323	095	1.7+	0.9+	830212	704	0.4-	2.0+	830215	704	0.7+	2.9-

1980 KL = 1950 HE = 1953 EG1 = 1958 VY = 1963 DO = 1981 VZ = 1983 CT3

The key identifications 1980 KL = 1981 VZ = 1983 CT3 are by T. Furuta (JAM 1568).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

		(1950.0)	P	Q
M	165.38017			
n	0.29694734	Peri. 319.34493	-0.99581370	+0.07165168
a	2.2251056	Node 224.86359	-0.04784525	-0.93764936
e	0.0753213	Incl. 4.61473	-0.07788390	-0.34011719
P	3.32	B(1,0) 14.5		

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

500421	760	4.5-	0.1-	800525	809	0.7+	0.3+	800611	809	0.6+	1.4+
500421	760	3.7+	4.0-	800526	809	0.7+	0.5+	800611	809	0.4+	1.7+
530314	760	0.6-	1.8-	800526	809	0.3+	0.4+	800611	809	0.1+	1.3+
530314	760	1.7-	3.5-	800531	809	0.2+	0.8-	800612	809	1.5+	0.6-
581111	760(37.7-	10.0+)X		800531	809	0.4+	0.9-	800612	809	1.4+	0.2-
630227	760(0.03-	0.01+)X		800531	809	0.3+	0.6-	800612	809	1.5+	0.2-
800522	809	1.2-	1.0+	800601	809	1.3-	0.1-	811102	688	0.7+	1.9-
800522	809	1.0-	0.2+	800601	809	0.4-	0.5-	811102	688	0.8+	2.2-
800522	809	1.6-	0.5+	800602	809	0.0	0.7-	830215	809	0.6+	0.6+
800523	809	1.1-	0.7+	800603	809	0.1-	1.1-	830215	809	0.8+	0.6+
800523	809	1.3-	0.6+	800603	809	0.4+	1.0-	830215	809	1.0+	0.9+
800523	809	1.8-	0.4+	800603	809	0.5+	1.0-	830217	809	0.5-	1.1+
800524	809	0.8-	0.3-	800604	809	0.4+	0.7-	830217	809	0.1-	1.1+
800524	809	1.3-	0.2-	800604	809	0.7+	0.5-	830217	809	0.6+	0.9+
800525	809	1.3+	0.4+	800604	809	0.8+	0.4-				

1981 CB1 = 1983 VK1
The identification is by T. Furuta (JAM 1569).
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	54.38557		(1950.0)		P		Q				
n	0.28051677	Peri.	67.76666		-0.23100866		-0.97124624				
a	2.3111654	Node	35.74493		+0.85238485		-0.23056367				
e	0.1469752	Incl.	5.65684		+0.46912159		-0.05933922				
P	3.51	B(1,0)	15.0								

Residuals in seconds of arc

810206	688	0.1-	0.0	810330	688	2.5+	1.9+	831108	046	2.3-	0.3-
810206	688	0.3+	0.1+	831106	046	1.8+	0.0	831108	046	0.7-	1.6+
810325	688	2.7-	2.0-	831106	046	2.4+	0.1-	831109	046	0.2-	0.2+
810325	688	1.4-	1.8-	831107	046	0.6+	0.5-	831109	046	0.7-	0.6+
810330	688	0.8+	3.5+	831107	046	1.0-	0.9+				

1981 EB20 = 1976 SH9
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	101.19897		(1950.0)		P		Q				
n	0.31236554	Peri.	204.30280		-0.46721713		-0.88392766				
a	2.1512696	Node	273.55608		+0.81431001		-0.42162142				
e	0.0939043	Incl.	1.11919		+0.34439419		-0.20225543				
P	3.16	B(1,0)	14.5								

Residuals in seconds of arc

760929	095	0.2-	0.6+	810316	413	0.5-	0.5+	810408	413	0.4+	0.4-
810302	413	0.3-	1.1+	810316	413	1.1+	0.4+	810411	413	2.0-	0.3+
810303	413	0.3+	0.4+	810329	413	0.7-	0.7+	810411	413	0.7-	1.0-
810307	413	0.1+	0.9+	810329	413	0.4+	0.1-	840306	567	0.4-	0.2+
810307	413	2.0+	0.4-	810407	413	1.7-	0.2+	840306	567	1.7-	0.5-
810311	413	0.2+	0.7+	810407	413	0.3-	0.3-				
810311	413	1.4+	0.1+	810408	413	1.8-	0.8+				

1982 DB
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	191.24669		(1950.0)		P		Q				
n	0.54221136	Peri.	157.87413		-0.37354967		-0.92743904				
a	1.4894422	Node	314.05543		+0.84726529		-0.33331209				
e	0.3602384	Incl.	1.42068		+0.37762702		-0.16958739				
P	1.82	B(1,0)	19.5								

From 20 observations 1982 Feb. 28-May 14, mean residual 1".5.

1982 RZ1 = 1974 HO1 = 1984 AA1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	103.82999		(1950.0)		P		Q				
n	0.17929712	Peri.	342.63236		+0.59412264		-0.80315926				
a	3.1147369	Node	70.89554		+0.74340702		+0.52727736				
e	0.1756467	Incl.	2.68097		+0.30718771		+0.27733335				
P	5.50	B(1,0)	13.0								

Residuals in seconds of arc

740424	805	1.1+	1.1-	820917	046	1.3-	0.5-	840108	688	1.9+	0.3+
740425	805	0.2+	0.4-	820917	046	0.4-	0.3+	840108	688	0.4-	0.2+
820915	046	1.8+	2.4+	820917	046	1.7+	0.4-	840126	688	0.3+	0.8+
820915	046	1.2+	0.7+	820917	046	0.2-	0.7+	840126	688	0.5+	1.0+
820916	046	1.1-	0.3+	820918	046	1.8+	0.6-	840204	688	0.2+	1.5+
820916	046	1.4+	0.7+	820918	046	0.8-	0.5-	840204	688	0.6+	1.9+

1984 CN = 1977 TP3 = 1977 VJ
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	275.33829	(1950.0)	P	Q
n	0.21143430	Peri. 245.40517	+0.29803817	+0.94935575
a	2.7905295	Node 42.33830	-0.81359239	+0.30715048
e	0.0932109	Incl. 8.49420	-0.49924008	+0.06619851
P	4.66	B(1,0) 13.0		

Residuals in seconds of arc

771010	330	0.9-	1.9-	840128	688	0.5+	1.3-	840226 688 0.4- 1.7-
771103	330	0.6-	0.0	840128	688	1.7+	0.0	840226 688 1.4- 1.0-
771111	805	1.7+	0.7+	840205	688	1.4-	0.3-	
771112	805	0.8+	0.4-	840205	688	1.1-	1.4-	

1984 CV = 1951 YW1 = 1955 US1 = 1975 EK2 = 1980 JV
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	62.32614	(1950.0)	P	Q
n	0.21999961	Peri. 208.21170	-0.87507702	-0.47986086
a	2.7176215	Node 302.97541	+0.45696064	-0.77626625
e	0.0642998	Incl. 4.30944	+0.15945904	-0.40883279
P	4.48	B(1,0) 13.5		

Residuals in seconds of arc

511227	711	2.3+	3.8+ Y	800510	095	1.1+	0.2+	840301 688 0.5+ 0.5-
551025	760	0.1-	0.7-	840208	688	1.3+	1.0+	840306 688 0.1+ 1.3-
551025	760	0.1+	0.2-	840208	688	0.0	1.5+	840306 688 0.6+ 1.3-
750308	095	5.9-	0.0	840301	688	0.8+	0.1-	

1984 CW = 1971 SV2 = 1978 SJ2
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	311.86993	(1950.0)	P	Q
n	0.27815271	Peri. 325.91188	+0.28986351	+0.95446415
a	2.3242422	Node 320.80541	-0.85127598	+0.22343294
e	0.0965913	Incl. 6.40973	-0.43738809	+0.19767625
P	3.54	B(1,0) 14.0		

Residuals in seconds of arc

710927	095	1.2+	0.4+	840208	688	0.2+	0.1+	840306 688 1.8+ 0.1+
711011	095	0.7-	0.5-	840208	688	2.4-	1.8+	840306 688 0.8- 0.6-
780926	095	1.8-	0.4-	840301	688	1.0+	0.3-	
781002	095	0.2-	0.2-	840301	688	1.9+	0.3-	

1984 CD1 = 1951 JA1 = 1958 DV = 1962 JK = 1978 TD6 = 1980 BQ5
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	15.71314	(1950.0)	P	Q
n	0.26639375	Peri. 177.79919	-0.68910829	+0.72352121
a	2.3921453	Node 48.63791	-0.66565178	-0.60986894
e	0.1624303	Incl. 3.09941	-0.28642184	-0.32338356
P	3.70	B(1,0) 14.5		

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

510505	711	0.1+	0.1+ Y	800123	095	0.3+	1.7+	840301 688 1.4- 0.1+
580224	760	(0.05-	0.00+)X	840208	688	0.1-	0.2-	840306 688 1.2+ 0.2-
620505	760	(7.7-	68.6+)X	840208	688	0.1-	1.2-	840306 688 0.7- 0.3-
781007	095	0.6+	1.3-	840301	688	0.2+	0.2-	

1984 CN1 = 1951 GO = 1979 HY4
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	26.03604	(1950.0)	P	Q
n	0.17880512	Peri. 349.89597	-0.98285758	+0.17721360
a	3.1204480	Node 200.52412	-0.15740051	-0.95017932
e	0.0891908	Incl. 8.34034	-0.09600027	-0.25642659
P	5.51	B(1,0) 12.5		

Residuals in seconds of arc

510401	711	0.5-	1.2+	Y	840206	688	1.8+	0.9+	840304	675	0.1-	0.5-
790425	095	0.8+	1.3+		840301	688	0.2-	0.9-	840304	675	0.9-	0.5+
790428	095	1.3-	1.0-		840301	688	0.5+	1.2-	840306	688	0.4+	1.7-
790430	095	0.8+	0.7-		840301	675	0.7-	0.3+	840306	688	0.0	1.1-
840206	688	1.0+	1.2+		840301	675	1.0-	1.0+				

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EPHEMERIDES.

1984 BC a,e,i = 3.41, 0.55, 22 Elements MPC 8679

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	10 16.72	+43 21.8	0.706	1.552	130.8	29.1	17.9
1984	03 31	10 27.34	+44 46.7					
1984	04 10	10 41.34	+44 56.4	0.818	1.556	117.2	34.9	18.3
1984	04 20	10 57.99	+44 03.1					
1984	04 30	11 16.33	+42 18.2	0.953	1.587	108.1	37.1	18.8
1984	05 10	11 35.63	+39 51.8					
1984	05 20	11 55.30	+36 53.7	1.107	1.641	101.5	37.2	19.2
1984	05 30	12 14.94	+33 32.2					
1984	06 09	12 34.40	+29 55.0	1.283	1.716	95.9	36.1	19.5
1984	06 19	12 53.58	+26 09.3					
1984	06 29	13 12.47	+22 20.7	1.488	1.806	90.3	34.3	19.9
1984	07 09	13 31.12	+18 34.3					
1984	07 19	13 49.55	+14 54.1	1.723	1.909	84.1	32.0	20.3

Periodic Comet Russell 4 (1984d) Elements MPC 8672

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984	03 21	13 26.59	+01 24.5	1.237	2.194	158.4	9.6	15.9
1984	03 31	13 20.12	+01 52.1					
1984	04 10	13 12.73	+02 12.1	1.239	2.233	170.0	4.5	16.0
1984	04 20	13 05.66	+02 18.6					
1984	04 30	12 59.96	+02 08.5	1.338	2.279	152.5	11.8	16.2
1984	05 10	12 56.39	+01 40.9					
1984	05 20	12 55.30	+00 57.1	1.519	2.332	133.3	18.4	16.6
1984	05 30	12 56.71	-00 00.4					
1984	06 09	13 00.47	-01 09.2	1.760	2.391	116.4	22.4	17.0
1984	06 19	13 06.30	-02 26.6					
1984	06 29	13 13.92	-03 50.3	2.040	2.455	101.5	23.9	17.4
1984	07 09	13 23.07	-05 18.6					
1984	07 19	13 33.50	-06 49.6	2.342	2.522	88.1	23.7	17.9
1984	07 29	13 45.02	-08 21.9					
1984	08 08	13 57.46	-09 54.4	2.650	2.592	75.6	22.3	18.3
1984	08 18	14 10.70	-11 25.8					
1984	08 28	14 24.61	-12 55.2	2.954	2.665	63.7	19.9	18.6
1984	09 07	14 39.13	-14 21.7					
1984	09 17	14 54.15	-15 44.5	3.242	2.740	52.0	16.8	18.9

1982 DB a,e,i = 1.49, 0.36, 1 Elements MPC 8683

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 21	17 44.55	-25 23.5	1.079	1.514	-1.61	-0.2	21.5
1984	03 31	17 55.93	-25 35.6					
1984	04 10	18 02.96	-25 45.4	0.973	1.609	-2.01	-1.2	21.3
1984	04 20	18 05.01	-25 54.9					
1984	04 30	18 01.48	-26 04.2	0.871	1.696	-2.65	-1.0	21.0
1984	05 10	17 52.07	-26 10.5					
1984	05 20	17 37.33	-26 08.7	0.809	1.774	-3.30	+1.5	20.6
1984	05 30	17 18.85	-25 53.4					

1984 06 09	16 59.33	-25 23.1	0.826	1.841	-3.36	+5.3	20.3
1984 06 19	16 41.70	-24 42.6					
1984 06 29	16 28.03	-24 00.6	0.939	1.898	-2.81	+6.6	21.1
1984 07 09	16 19.30	-23 25.3					
1984 07 19	16 15.49	-23 01.1	1.128	1.944	-2.17	+5.7	21.7

1981 CW a,e,i = 1.88, 0.37, 5 Elements MPC 6950

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 03 21		18 08.04	-19 34.1	1.741	1.978	-1.06	+2.0	20.9
1984 03 31		18 18.10	-19 28.2					
1984 04 10		18 25.18	-19 22.1	1.579	2.063	-1.18	+1.9	20.7
1984 04 20		18 28.94	-19 18.3					
1984 04 30		18 29.03	-19 18.4	1.425	2.141	-1.40	+1.9	20.5
1984 05 10		18 25.19	-19 23.6					
1984 05 20		18 17.52	-19 33.9	1.310	2.213	-1.66	+2.3	20.2
1984 05 30		18 06.47	-19 48.0					
1984 06 09		17 53.08	-20 03.7	1.274	2.278	-1.83	+3.1	19.9
1984 06 19		17 38.91	-20 19.1					
1984 06 29		17 25.58	-20 33.4	1.341	2.337	-1.76	+3.8	20.1
1984 07 09		17 14.52	-20 47.3					
1984 07 19		17 06.60	-21 02.0	1.509	2.390	-1.53	+3.8	20.6
1984 07 29		17 02.13	-21 18.6					
1984 08 08		17 01.07	-21 37.4	1.751	2.435	-1.27	+3.3	21.1

Periodic Comet Hartley-IRAS (1983v) Elements MPC 8672

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 03 21		20 35.17	+54 14.4	1.683	1.612	68.5	35.1	11.7
1984 03 31		20 17.32	+62 32.8					
1984 04 10		19 34.91	+71 00.8	1.635	1.777	80.9	33.8	12.1
1984 04 20		17 44.50	+77 42.5					
1984 04 30		14 34.64	+77 49.4	1.718	1.954	87.6	31.0	12.6
1984 05 10		12 46.23	+71 40.6					
1984 05 20		12 05.41	+64 10.0	1.957	2.138	85.9	28.2	13.3
1984 05 30		11 49.24	+57 00.3					
1984 06 09		11 43.40	+50 35.1	2.314	2.325	78.0	25.3	14.0
1984 06 19		11 42.67	+44 57.1					
1984 06 29		11 44.82	+40 01.9	2.731	2.512	66.9	21.9	14.7
1984 07 09		11 48.73	+35 43.3					
1984 07 19		11 53.76	+31 55.8	3.157	2.698	54.5	17.9	15.3
1984 07 29		11 59.54	+28 34.0					
1984 08 08		12 05.83	+25 33.8	3.557	2.881	41.8	13.6	15.9
1984 08 18		12 12.42	+22 51.9					
1984 08 28		12 19.21	+20 25.5	3.902	3.062	29.4	9.3	16.3

Comet Bradfield (1984a) Elements MPC 8672

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 03 21		22 35.87	-52 58.2	2.158	1.799	55.9	27.3	14.2
1984 03 31		23 05.11	-50 38.8					
1984 04 10		23 28.91	-48 33.2	2.267	1.982	60.8	26.2	14.7
1984 04 20		23 48.43	-46 46.4					
1984 04 30		00 04.48	-45 21.2	2.338	2.175	68.2	25.5	15.2
1984 05 10		00 17.50	-44 19.2					
1984 05 20		00 27.71	-43 40.6	2.366	2.373	78.1	24.7	15.6
1984 05 30		00 35.21	-43 25.3					
1984 06 09		00 39.89	-43 32.5	2.360	2.574	90.3	23.2	16.0
1984 06 19		00 41.55	-44 00.2					
1984 06 29		00 39.95	-44 45.2	2.341	2.776	104.5	20.8	16.3
1984 07 09		00 34.77	-45 42.3					
1984 07 19		00 25.85	-46 44.0	2.340	2.977	119.7	17.2	16.6

1984 07 29	00 13.24	-47 41.2				
1984 08 08	23 57.41	-48 23.3	2.395	3.177	133.3	13.4	16.9
1984 08 18	23 39.41	-48 40.9				
1984 08 28	23 20.67	-48 28.2	2.541	3.375	139.7	11.2	17.3
1984 09 07	23 02.80	-47 43.8				
1984 09 17	22 47.12	-46 31.6	2.793	3.571	134.6	11.6	17.8
1984 09 27	22 34.41	-44 58.1				
1984 10 07	22 24.98	-43 10.4	3.144	3.764	121.6	13.1	18.2
1984 10 17	22 18.69	-41 15.1				
1984 10 27	22 15.21	-39 16.8	3.569	3.955	105.7	14.0	18.7

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

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21	09 42.52	+15 05.6	1.008	1.900	142.7	18.5	16.8
1984 03 31	09 42.94	+15 01.4					
1984 04 10	09 46.82	+14 38.8	1.173	1.923	124.1	25.5	17.4
1984 04 20	09 53.77	+13 59.4					
1984 04 30	10 03.23	+13 05.3	1.378	1.953	108.9	29.2	17.8
1984 05 10	10 14.75	+11 58.3					
1984 05 20	10 27.84	+10 40.1	1.608	1.988	96.1	30.4	18.2
1984 05 30	10 42.14	+09 12.4					
1984 06 09	10 57.38	+07 36.6	1.850	2.028	84.8	29.9	18.6
1984 06 19	11 13.30	+05 54.1					
1984 06 29	11 29.76	+04 06.4	2.097	2.071	74.5	28.2	18.8

(3019) 1940 AC a,e,i = 2.86, 0.06, 3 Elements MPC 8672

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21	10 32.09	+13 37.0	1.953	2.882	154.2	8.6	16.4
1984 03 31	10 26.60	+14 04.6					
1984 04 10	10 23.23	+14 17.3	2.121	2.893	132.4	14.8	16.8
1984 04 20	10 22.17	+14 15.1					
1984 04 30	10 23.38	+13 59.4	2.357	2.904	113.1	18.6	17.1
1984 05 10	10 26.71	+13 31.3					
1984 05 20	10 31.90	+12 52.5	2.627	2.915	96.2	20.2	17.4
1984 05 30	10 38.70	+12 04.3					
1984 06 09	10 46.86	+11 07.8	2.905	2.925	81.1	20.1	17.6
1984 06 19	10 56.16	+10 04.2					
1984 06 29	11 06.41	+08 54.5	3.173	2.935	67.3	18.6	17.8

1984 CV a,e,i = 2.72, 0.06, 4 Elements MPC 8684

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21	10 34.35	+03 50.7	1.597	2.549	158.2	8.4	16.7
1984 03 31	10 28.35	+04 23.9					
1984 04 10	10 24.77	+04 47.0	1.734	2.553	136.1	15.8	17.1
1984 04 20	10 23.84	+04 57.6					
1984 04 30	10 25.50	+04 55.1	1.940	2.558	116.9	20.6	17.5
1984 05 10	10 29.56	+04 39.5					
1984 05 20	10 35.71	+04 11.4	2.184	2.565	100.2	22.8	17.8
1984 05 30	10 43.64	+03 32.0					
1984 06 09	10 53.08	+02 42.3	2.441	2.572	85.7	23.2	18.0
1984 06 19	11 03.77	+01 43.3					
1984 06 29	11 15.49	+00 36.3	2.695	2.580	72.6	22.1	18.2

(3021) 1967 CB a,e,i = 3.17, 0.26, 17 Elements MPC 8673

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21	10 33.41	+13 22.9	1.808	2.742	154.6	9.0	16.7
1984 03 31	10 26.64	+12 52.7					
1984 04 10	10 22.34	+12 12.7	2.011	2.793	133.1	15.2	17.1
1984 04 20	10 20.62	+11 24.3					

1984 04 30	10 21.31	+10 28.5	2.282	2.845	114.0	18.9	17.5
1984 05 10	10 24.18	+09 26.4					
1984 05 20	10 28.92	+08 18.7	2.591	2.897	97.2	20.3	17.8
1984 05 30	10 35.23	+07 06.1					
1984 06 09	10 42.84	+05 49.0	2.912	2.950	82.1	19.9	18.1
1984 06 19	10 51.50	+04 28.0					
1984 06 29	11 01.04	+03 03.3	3.225	3.002	68.3	18.3	18.4

1984 CW a,e,i = 2.32, 0.10, 6 Elements MPC 8684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21		10 33.55	+03 58.9	1.464	2.417	157.9	8.9	16.9
1984 03 31		10 25.97	+04 28.4					
1984 04 10		10 21.09	+04 47.6	1.580	2.397	135.3	17.1	17.3
1984 04 20		10 19.21	+04 53.9					
1984 04 30		10 20.27	+04 46.6	1.760	2.377	115.7	22.5	17.6
1984 05 10		10 24.05	+04 25.6					
1984 05 20		10 30.21	+03 51.7	1.974	2.356	99.1	25.1	17.9
1984 05 30		10 38.40	+03 05.9					
1984 06 09		10 48.32	+02 09.0	2.196	2.334	84.8	25.7	18.1
1984 06 19		10 59.68	+01 02.1					
1984 06 29		11 12.25	-00 13.6	2.411	2.313	72.2	24.7	18.3

(3031) 1984 CX a,e,i = 2.24, 0.10, 4 Elements MPC 8681

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21		10 35.75	+04 15.4	1.096	2.055	158.4	10.3	16.0
1984 03 31		10 28.75	+04 42.4					
1984 04 10		10 25.01	+04 56.6	1.198	2.043	136.2	19.9	16.4
1984 04 20		10 24.78	+04 55.3					
1984 04 30		10 27.89	+04 38.1	1.360	2.032	117.5	26.1	16.8
1984 05 10		10 34.00	+04 05.3					
1984 05 20		10 42.67	+03 18.1	1.553	2.025	102.2	29.2	17.2
1984 05 30		10 53.45	+02 17.9					
1984 06 09		11 05.98	+01 06.0	1.759	2.020	89.3	30.2	17.4
1984 06 19		11 19.94	-00 16.1					
1984 06 29		11 35.08	-01 46.7	1.966	2.018	78.1	29.5	17.7

(3032) 1984 CA1 a,e,i = 2.89, 0.08, 3 Elements MPC 8682

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21		10 47.96	+12 31.2	2.174	3.121	158.1	6.8	17.3
1984 03 31		10 41.72	+13 01.9					
1984 04 10		10 37.26	+13 19.1	2.327	3.126	135.9	12.9	17.6
1984 04 20		10 34.87	+13 22.3					
1984 04 30		10 34.61	+13 12.2	2.555	3.130	115.9	16.8	17.9
1984 05 10		10 36.41	+12 50.1					
1984 05 20		10 40.07	+12 17.2	2.824	3.133	98.2	18.6	18.2
1984 05 30		10 45.39	+11 34.8					
1984 06 09		10 52.14	+10 44.2	3.103	3.135	82.4	18.7	18.4
1984 06 19		11 00.09	+09 46.4					
1984 06 29		11 09.07	+08 42.4	3.372	3.136	68.0	17.5	18.5

1979 HP a,e,i = 3.12, 0.12, 2 Elements MPC 8675

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21		10 52.92	+10 00.3	1.798	2.757	160.5	6.9	16.6
1984 03 31		10 47.17	+10 36.2					
1984 04 10		10 43.36	+10 57.8	1.929	2.759	138.3	14.0	17.0
1984 04 20		10 41.81	+11 04.0					
1984 04 30		10 42.60	+10 55.2	2.134	2.762	118.6	18.7	17.3
1984 05 10		10 45.61	+10 32.5					
1984 05 20		10 50.63	+09 57.3	2.382	2.767	101.5	21.0	17.6

1984 05 30	10 57.39	+09 11.1					
1984 06 09	11 05.66	+08 15.3	2.646	2.774	86.4	21.4	17.8
1984 06 19	11 15.19	+07 11.2					
1984 06 29	11 25.77	+05 59.9	2.908	2.783	72.8	20.4	18.0
1984 07 09	11 37.24	+04 42.5					
1984 07 19	11 49.45	+03 20.2	3.155	2.793	60.2	18.4	18.1

1984 CD1 a,e,i = 2.39, 0.16, 3 Elements MPC 8684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21		10 51.45	+12 31.9	1.183	2.143	158.8	9.7	16.7
1984 03 31		10 44.00	+12 54.9					
1984 04 10		10 39.36	+12 57.0	1.270	2.113	136.5	19.0	17.1
1984 04 20		10 38.00	+12 38.0					
1984 04 30		10 39.90	+11 59.9	1.418	2.086	117.6	25.3	17.4
1984 05 10		10 44.84	+11 04.9					
1984 05 20		10 52.42	+09 55.1	1.599	2.062	101.9	28.7	17.8
1984 05 30		11 02.23	+08 32.8					
1984 06 09		11 13.91	+06 59.4	1.793	2.042	88.8	29.8	18.0
1984 06 19		11 27.12	+05 16.7					
1984 06 29		11 41.63	+03 26.1	1.986	2.026	77.5	29.3	18.2
1984 07 09		11 57.23	+01 29.1					
1984 07 19		12 13.76	-00 33.1	2.173	2.014	67.4	27.8	18.3

1984 CN1 a,e,i = 3.12, 0.09, 8 Elements MPC 8684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 03 21		11 21.21	-01 53.9	1.865	2.851	170.0	3.5	16.1
1984 03 31		11 14.95	-00 40.5					
1984 04 10		11 10.12	+00 26.9	1.946	2.847	148.2	10.7	16.5
1984 04 20		11 07.22	+01 23.2					
1984 04 30		11 06.48	+02 05.3	2.117	2.844	127.4	16.3	16.8
1984 05 10		11 07.95	+02 31.7					
1984 05 20		11 11.50	+02 42.4	2.346	2.842	109.1	19.7	17.1
1984 05 30		11 16.93	+02 38.5					
1984 06 09		11 24.01	+02 21.0	2.603	2.842	92.9	20.9	17.3
1984 06 19		11 32.52	+01 51.7					
1984 06 29		11 42.24	+01 12.0	2.866	2.843	78.5	20.5	17.5
1984 07 09		11 52.99	+00 23.3					
1984 07 19		12 04.62	-00 33.0	3.117	2.846	65.3	18.9	17.7

1979 FE2 a,e,i = 2.65, 0.07, 15 Elements MPC 8682

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 04 10		18 23.63	-05 54.2	2.055	2.482	103.0	23.2	17.1
1984 04 20		18 29.44	-04 39.7					
1984 04 30		18 32.75	-03 25.1	1.844	2.490	118.7	20.8	16.8
1984 05 10		18 33.40	-02 14.1					
1984 05 20		18 31.35	-01 11.5	1.675	2.499	135.4	16.5	16.5
1984 05 30		18 26.75	-00 21.9					
1984 06 09		18 20.02	+00 09.4	1.573	2.509	150.9	11.3	16.2
1984 06 19		18 11.91	+00 18.7					
1984 06 29		18 03.35	+00 04.5	1.559	2.521	155.8	9.5	16.2
1984 07 09		17 55.38	-00 32.4					
1984 07 19		17 48.94	-01 28.3	1.638	2.533	144.2	13.6	16.4
1984 07 29		17 44.64	-02 38.3					
1984 08 08		17 42.89	-03 57.1	1.797	2.546	127.6	18.4	16.7
1984 08 18		17 43.78	-05 19.5					
1984 08 28		17 47.20	-06 41.6	2.013	2.559	111.3	21.6	17.1
1984 09 07		17 52.99	-08 00.2					
1984 09 17		18 00.88	-09 12.9	2.262	2.573	96.2	22.8	17.4

(3012) 1979 QU9 a,e,i = 3.23, 0.06, 18 Elements MPC 8689

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 15.25	-35 44.1	2.923	3.368	107.5	16.7	17.3
1984	05 30	21 18.24	-36 09.0					
1984	06 09	21 18.88	-36 41.1	2.677	3.360	124.7	14.4	17.1
1984	06 19	21 17.04	-37 18.1					
1984	06 29	21 12.67	-37 56.7	2.488	3.352	142.5	10.6	16.9
1984	07 09	21 05.93	-38 31.9					
1984	07 19	20 57.30	-38 58.4	2.384	3.344	157.2	6.8	16.6
1984	07 29	20 47.46	-39 11.3					
1984	08 08	20 37.38	-39 07.0	2.382	3.335	156.1	7.1	16.7
1984	08 18	20 28.05	-38 44.8					
1984	08 28	20 20.32	-38 05.9	2.485	3.325	140.3	11.2	16.8
1984	09 07	20 14.80	-37 13.5					
1984	09 17	20 11.78	-36 10.9	2.673	3.316	121.9	14.9	17.1
1984	09 27	20 11.29	-35 01.5					
1984	10 07	20 13.22	-33 47.6	2.916	3.306	104.2	17.0	17.3
1984	10 17	20 17.30	-32 30.8					
1984	10 27	20 23.28	-31 11.9	3.186	3.296	87.5	17.5	17.5

1980 KL a,e,i = 2.23, 0.08, 5 Elements MPC 8682

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 39.92	-02 33.8	1.968	2.327	97.3	25.6	18.4
1984	06 19	22 46.60	-01 30.8					
1984	06 29	22 51.08	-00 39.9	1.747	2.339	113.0	23.6	18.1
1984	07 09	22 53.07	-00 03.9					
1984	07 19	22 52.38	+00 14.5	1.554	2.351	131.2	19.0	17.8
1984	07 29	22 48.91	+00 12.9					
1984	08 08	22 42.82	-00 09.7	1.417	2.361	152.1	11.6	17.4
1984	08 18	22 34.66	-00 52.2					
1984	08 28	22 25.31	-01 50.6	1.365	2.370	171.9	3.4	17.0
1984	09 07	22 15.94	-02 58.2					
1984	09 17	22 07.75	-04 06.7	1.417	2.377	157.6	9.3	17.3
1984	09 27	22 01.68	-05 09.0					
1984	10 07	21 58.36	-05 59.4	1.563	2.383	135.8	17.0	17.7
1984	10 17	21 57.96	-06 34.6					
1984	10 27	22 00.39	-06 53.6	1.774	2.388	116.4	21.9	18.1
1984	11 06	22 05.41	-06 56.3					
1984	11 16	22 12.68	-06 43.6	2.023	2.391	99.3	24.1	18.5

6591 P-L a,e,i = 5.29, 0.01, 7 Elements MPC 4831

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 48.25	-06 08.4	5.020	5.326	102.1	10.8	19.9
1984	07 09	23 49.34	-06 04.1					
1984	07 19	23 49.30	-06 06.5	4.732	5.325	120.8	9.4	19.7
1984	07 29	23 48.12	-06 15.6					
1984	08 08	23 45.83	-06 30.6	4.500	5.324	140.8	6.9	19.5
1984	08 18	23 42.55	-06 50.5					
1984	08 28	23 38.44	-07 13.9	4.355	5.323	161.7	3.4	19.3
1984	09 07	23 33.76	-07 38.8					
1984	09 17	23 28.82	-08 03.1	4.321	5.322	174.0	1.1	19.1
1984	09 27	23 23.95	-08 24.9					
1984	10 07	23 19.51	-08 42.1	4.408	5.321	153.6	4.8	19.4
1984	10 17	23 15.77	-08 53.5					
1984	10 27	23 12.98	-08 58.1	4.600	5.320	132.3	7.9	19.6
1984	11 06	23 11.30	-08 55.3					
1984	11 16	23 10.80	-08 45.1	4.870	5.319	111.9	9.9	19.8
1984	11 26	23 11.51	-08 27.7					
1984	12 06	23 13.38	-08 03.5	5.182	5.318	92.6	10.7	19.9