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IDENTIFICATION CHANGES.

Continuation to MPC 4938.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1949 QJ2 *	1949 08 21.93720	22 15 37.74	-09 30 55.8	1949 PM	14.3	024	
1949 QJ2	1949 08 22.93246	22 15 00.18	-09 42 34.2	1949 PM	14.3	024	
1950 TO4 *	1950 10 05.92815	23 49 34.47	+10 58 15.2	1950 SB		012	
1950 TO4	1950 10 12.86714	23 44 16.87	+10 23 25.7	1950 SB		012	
1965 WX *	1965 11 20.06040	01 45 21.57	+03 48 42.6	1965 VD	15.4	760	
1965 WX	1965 11 20.10276	01 45 20.06	+03 48 46.6	1965 VD		760	

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IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 4938. Unless otherwise stated, the identifications were made at the Minor Planet Center.

Note	Note
1965 UO1 = (1052) 1	1973 AA = (715) 1973 GN = (741)
1973 GO = (82)	1975 QM = (2066) 2 1976 AB = (364)
1976 MK = (1100) 1	1977 UH = (1493) 1977 YD = (488)
1978 JB = (613)	1979 HE = (1100)

Note 1: identification by O. Kippes. 2: by T. Urata (NOC 1072).

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ROMAN NUMERAL DESIGNATIONS OF COMETS IN 1978.

The following tabulation continues that on MPC 4601 and in 'Catalogue of Cometary Orbits', 1979 edition. The previous record number of Roman numeral designations was 16 in 1974. The calculations on IAUC 3397 suggest that comet 1979h might have been at perihelion in 1978; the orbit of this comet is extremely uncertain, however, and in the absence of any further information this comet is not being given a Roman numeral designation.

Comet	T	Name	Year/letter	Ref.
1978 I	Jan. 6.8	P/Schuster	1977o	MPC 4603
1978 II	Jan. 11.0	P/Tempel 1	1977i	IAUC 3083
1978 III	Feb. 2.5	P/Arend-Rigaux	1977k	IAUC 3095
1978 IV	Feb. 14.9	P/Chernykh	1977l	MPC 4539
1978 V	Feb. 20.7	P/Tempel 2	1977d	IAUC 3055
1978 VI	Mar. 15.9	P/Wolf-Harrington	1977j	IAUC 3091
1978 VII	Mar. 17.7	Bradfield	1978c	IAUC 3233
1978 VIII	Mar. 27.6	P/Whipple	1977h	IAUC 3081

1978	IX	May	7.4	P/Tsuchinshan 1	1978e	IAUC	3188
1978	X	May	24.7	P/Kojima	1977r	IAUC	3151
1978	XI	June	15.9	P/Wild 2	1978b	MPC	4604
1978	XII	July	8.4	P/Daniel	1979b	IAUC	3332
1978	XIII	Aug.	13.6	Machholz	1978l	MPC	4604
1978	XIV	Aug.	19.9	P/Ashbrook-Jackson	1977g	IAUC	3070
1978	XV	Sept.	14.8	Sargent	1978m	MPC	4604
1978	XVI	Sept.	21.0	P/Tsuchinshan 2	1978p	IAUC	3302
1978	XVII	Sept.	24.2	P/Comas Sola	1977n	IAUC	3110
1978	XVIII	Sept.	29.1	Bradfield	1978o	MPC	4605
1978	XIX	Oct.	2.0	P/Denning-Fujikawa	1978n	IAUC	3300
1978	XX	Oct.	9.5	P/Haneda-Campos	1978j	MPC	4604
1978	XXI	Nov.	11.4	Meier	1978f	MPC	5031
1978	XXII	Nov.	21.3	P/Giclas	1978k	MPC	4604
1978	XXIII	Nov.	26.3	P/Clark	1978g	IAUC	3216
1978	XXIV	Dec.	3.0	P/Van Biesbroeck	1977s	IAUC	3152
1978	XXV	Dec.	25.8	P/Tuttle-Giacobini-Kresak	1978r	IAUC	3314
1978	XXVI	Dec.	26.2	P/Jackson-Neujmin	1978q	IAUC	3311

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OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR BY C. T.
KOWAL. MEASUREMENTS AND IDENTIFICATIONS MAINLY BY S. J. BUS.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1976 III	1978 11 29.34653	04 26 24.40	+21 41 27.4		19.0T	675
/1976 III	1978 11 30.34809	04 25 40.02	+21 40 57.0			675
317	1978 11 29.34653	04 11 17.85	+17 56 00.4		14.5	675
317	1978 11 30.34809	04 10 11.50	+17 53 20.2			675
1109	1978 11 30.40503	04 53 05.36	+24 10 01.7		17.5	675
1110	1978 11 29.40486	04 44 59.03	+20 50 34.6		16.0	675
1110	1978 11 30.40503	04 43 45.77	+20 45 26.0			675
1119	1978 11 29.34653	04 12 38.45	+22 58 01.6		17.5	675
1119	1978 11 30.34809	04 11 34.81	+22 57 39.2			675
1123	1978 11 29.40486	04 39 42.63	+19 38 36.7		14.5	675
1123	1978 11 30.40503	04 38 32.49	+19 41 42.7			675
1128	1978 11 29.34653	04 23 28.74	+21 49 16.1		16.5	675
1128	1978 11 30.34809	04 22 30.64	+21 47 22.2			675
1255	1978 11 29.40486	04 40 43.07	+19 38 23.5		16.5	675
1255	1978 11 30.40503	04 39 50.76	+19 33 50.9			675
1378	1978 11 29.40486	04 37 42.51	+24 37 10.8		18.0	675
1378	1978 11 30.40503	04 36 34.64	+24 36 07.7			675
1497	1978 11 29.40486	04 33 32.10	+23 14 15.1		17.5	675
1497	1978 11 30.40503	04 32 35.27	+23 12 07.4			675
1761	1978 11 29.34653	04 05 08.25	+19 57 50.5		17.5	675
1761	1978 11 30.34809	04 04 13.32	+19 56 16.6			675
1841	1978 11 29.40486	04 44 19.18	+23 54 46.5		18.0	675
1841	1978 11 30.40503	04 43 29.56	+23 53 52.9			675
1899	1978 11 29.34653	04 06 20.42	+23 50 16.1		18.0	675
1899	1978 11 30.34809	04 05 06.43	+23 50 25.9			675
2039	1978 11 29.34653	04 10 05.90	+19 05 16.5		18.5	675
2039	1978 11 30.34809	04 09 13.14	+19 03 37.9			675
2169	1978 11 29.40486	04 44 33.67	+22 15 41.5		18.0	675
2169	1978 11 30.40503	04 43 35.22	+22 14 31.7			675
2177	1978 11 29.40486	04 38 20.96	+22 47 32.0		18.5	675
2177	1978 11 30.40503	04 37 28.67	+22 46 11.4			675
2182	1978 11 29.40486	04 44 11.65	+23 22 25.6		18.0	675
2182	1978 11 30.40503	04 43 19.85	+23 21 20.2			675
1977 GA	1978 11 29.40486	04 39 56.23	+18 53 46.6		18.0	675
1977 GA	1978 11 30.40503	04 38 49.84	+18 43 00.2			675

1978	VW2	1978	11	29.34653	04	28	59.32	+19	21	22.4		19.5	675
1978	VW2	1978	11	29.45694	04	28	53.71	+19	21	10.9			675
1978	VW2	1978	11	30.34809	04	28	06.39	+19	19	36.4			675
1978	VW2	1978	11	30.45712	04	28	00.95	+19	19	25.4			675
1978	VX2	1978	11	29.34653	04	26	15.15	+17	51	29.8	20.0	675	
1978	VX2	1978	11	30.34809	04	25	15.34	+17	43	29.5		675	
1978	VC3	1978	11	29.34653	04	26	41.61	+22	59	55.2	19.0	675	
1978	VC3	1978	11	29.45694	04	26	35.16	+22	59	27.2		675	
1978	VC3	1978	11	30.34809	04	25	41.92	+22	55	49.1		675	
1978	VC3	1978	11	30.45712	04	25	35.43	+22	55	23.0		675	
1978	VD3	1978	11	29.34653	04	25	52.33	+23	38	37.0	19.5	675	
1978	VD3	1978	11	29.45694	04	25	45.58	+23	38	20.0		675	
1978	VD3	1978	11	30.34809	04	24	50.34	+23	36	02.9		675	
1978	VE3	1978	11	29.34653	04	28	47.04	+23	10	44.7	19.5	675	
1978	VE3	1978	11	29.45694	04	28	41.38	+23	10	21.5		675	
1978	VE3	1978	11	30.34809	04	27	55.27	+23	07	19.8		675	
1978	VE3	1978	11	30.45712	04	27	49.78	+23	06	57.5		675	
1978	VF3	1978	11	29.34653	04	29	06.46	+22	45	29.2	18.5	675	
1978	VF3	1978	11	29.45694	04	28	59.63	+22	45	21.4		675	
1978	VF3	1978	11	30.34809	04	28	06.44	+22	44	41.5		675	
1978	VF3	1978	11	30.45712	04	27	59.75	+22	44	34.7		675	
1978	VG3	1978	11	29.40486	04	27	03.03	+24	35	18.3	17.0	675	
1978	VH3	1978	11	29.40486	04	29	42.58	+20	41	01.8	19.0	675	
1978	VH3	1978	11	30.34809	04	28	49.18	+20	41	47.8		675	
1978	VH3	1978	11	30.45712	04	28	43.11	+20	41	53.1		675	
1978	VJ3	1978	11	29.34653	04	27	38.73	+23	20	58.0	20.0	675	
1978	VJ3	1978	11	29.45694	04	27	32.93	+23	20	27.8		675	
1978	VJ3	1978	11	30.34809	04	26	45.22	+23	16	27.1		675	
1978	VJ3	1978	11	30.45712	04	26	39.89	+23	16	00.7		675	
1978	VK3	1978	11	29.34653	04	26	12.24	+22	27	28.2	19.5	675	
1978	VK3	1978	11	29.45694	04	26	05.51	+22	27	03.5		675	
1978	VK3	1978	11	30.34809	04	25	10.84	+22	23	39.5		675	
1978	VL3	1978	11	29.34653	04	23	48.45	+23	42	39.4	19.5	675	
1978	VL3	1978	11	30.34809	04	22	36.06	+23	41	29.8		675	
1978	VN3	1978	11	29.34653	04	28	58.60	+19	15	02.1	20.0	675	
1978	VN3	1978	11	29.45694	04	28	52.59	+19	14	38.4		675	
1978	VN3	1978	11	30.34809	04	28	01.42	+19	11	15.1		675	
1978	VN3	1978	11	30.45712	04	27	55.41	+19	10	52.1		675	
1978	VO3	1978	11	29.34653	04	25	30.09	+19	10	47.0	20.0	675	
1978	VO3	1978	11	30.40017	04	24	18.31	+19	07	04.3		675	
1978	VQ3	1978	11	29.40486	04	30	18.85	+19	25	02.5	18.5	675	
1978	VQ3	1978	11	30.34809	04	29	22.98	+19	18	18.2		675	
1978	VQ3	1978	11	30.45712	04	29	16.42	+19	17	32.7		675	
1978	VR3	1978	11	29.45694	04	29	25.19	+20	54	27.0	20.0	675	
1978	VR3	1978	11	30.45712	04	28	23.09	+20	51	02.8		675	
1978	VS3	1978	11	29.39861	04	30	03.83	+19	55	21.3	20.0	675	
1978	VS3	1978	11	29.45694	04	29	59.97	+19	54	57.5		675	
1978	VS3	1978	11	30.40017	04	29	03.07	+19	49	04.1		675	
1978	VS3	1978	11	30.45712	04	28	59.63	+19	48	41.6		675	
1978	VT3	1978	11	29.34653	04	25	47.78	+23	37	20.8	19.5	675	
1978	VT3	1978	11	29.45694	04	25	40.08	+23	37	41.6		675	
1978	VT3	1978	11	30.34809	04	24	37.00	+23	40	33.2		675	
1978	VU3	1978	11	29.34653	04	28	44.37	+21	04	14.8	19.0	675	
1978	VU3	1978	11	29.40486	04	28	40.61	+21	03	57.9		675	
1978	VU3	1978	11	30.34809	04	27	44.33	+20	59	26.4		675	
1978	VU3	1978	11	30.45712	04	27	37.84	+20	58	55.4		675	
1978	VV3	1978	11	29.34653	04	29	31.37	+23	35	11.0	18.5	675	
1978	VV3	1978	11	29.45694	04	29	24.78	+23	35	21.1		675	
1978	VV3	1978	11	30.34809	04	28	31.60	+23	36	57.1		675	

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1978	VV3	1978	11	30.45712	04	28	25.17	+23	37	08.7		675
1978	VW3	1978	11	29.34653	04	27	45.48	+21	29	06.5	20.0	675
1978	VW3	1978	11	29.40486	04	27	41.45	+21	28	48.3		675
1978	VW3	1978	11	30.34809	04	26	40.90	+21	23	47.8		675
1978	VX3	1978	11	29.39861	04	29	43.79	+22	19	49.4	20.0	675
1978	VX3	1978	11	29.45694	04	29	40.18	+22	19	36.0		675
1978	VX3	1978	11	30.34809	04	28	46.82	+22	16	45.1		675
1978	VX3	1978	11	30.45712	04	28	40.29	+22	16	23.3		675
1978	VY3	1978	11	29.34653	04	29	21.70	+23	52	18.4	19.0	675
1978	VY3	1978	11	29.45694	04	29	14.75	+23	51	51.7		675
1978	VY3	1978	11	30.34809	04	28	18.64	+23	48	24.3		675
1978	VY3	1978	11	30.45712	04	28	11.84	+23	47	59.6		675
1978	VZ3	1978	11	29.40486	04	30	19.33	+24	18	28.1	18.5	675
1978	VZ3	1978	11	30.40503	04	29	20.81	+24	16	45.0		675
1978	VB4	1978	11	29.39861	04	29	40.96	+22	27	54.5	19.5	675
1978	VB4	1978	11	29.45694	04	29	36.91	+22	27	30.5		675
1978	VB4	1978	11	30.34809	04	28	40.21	+22	22	06.0		675
1978	VB4	1978	11	30.45712	04	28	33.13	+22	21	25.9		675
1978	VC4	1978	11	29.40486	04	31	25.82	+24	00	43.7	20.0	675
1978	VC4	1978	11	30.40503	04	30	27.51	+23	58	57.3		675
1978	VD4	1978	11	29.34653	04	29	12.31	+23	33	49.5	19.5	675
1978	VD4	1978	11	30.34809	04	28	09.98	+23	32	41.1		675
1978	VE4	1978	11	29.34653	04	27	58.16	+23	51	09.8	20.0	675
1978	VE4	1978	11	29.45694	04	27	50.29	+23	51	10.7		675
1978	VE4	1978	11	30.40503	04	26	43.78	+23	51	26.4		675
1978	VF4	1978	11	29.40486	04	32	08.62	+23	02	52.5	19.0	675
1978	VF4	1978	11	30.40503	04	31	11.99	+23	02	01.3		675
1978	VG4	1978	11	29.40486	04	30	33.32	+22	51	49.7	20.0	675
1978	VG4	1978	11	30.40503	04	29	32.80	+22	50	54.2		675
1978	VH4	1978	11	29.34653	04	30	10.35	+20	53	15.2	19.5	675
1978	VH4	1978	11	29.45694	04	30	02.98	+20	52	52.1		675
1978	VH4	1978	11	30.34809	04	29	05.30	+20	49	55.5		675
1978	VH4	1978	11	30.40503	04	29	01.35	+20	49	44.0		675
1978	VJ4	1978	11	29.40486	04	31	49.03	+20	09	40.9	19.5	675
1978	VJ4	1978	11	30.40503	04	30	49.54	+20	04	31.1		675
1978	VK4	1978	11	29.40486	04	32	38.23	+20	52	36.7	17.5	675
1978	VK4	1978	11	30.40503	04	31	46.08	+20	50	35.0		675
1978	VL4	1978	11	29.40486	04	35	01.47	+19	05	35.6	19.5	675
1978	VL4	1978	11	30.40503	04	34	06.81	+18	59	19.8		675
1978	VM4	1978	11	29.40486	04	30	45.44	+20	16	02.2	19.5	675
1978	VM4	1978	11	30.40017	04	29	43.33	+20	16	06.7		675
1978	VM4	1978	11	30.45712	04	29	39.77	+20	16	07.0		675
1978	VN4	1978	11	29.34653	04	29	26.54	+19	33	48.1	20.0	675
1978	VN4	1978	11	29.45694	04	29	19.15	+19	33	39.9		675
1978	VN4	1978	11	30.34809	04	28	19.90	+19	32	27.2		675
1978	VN4	1978	11	30.45712	04	28	12.73	+19	32	18.8		675
1978	VO4	1978	11	29.34653	04	29	27.43	+19	42	41.9	19.5	675
1978	VO4	1978	11	29.45694	04	29	20.47	+19	42	34.4		675
1978	VO4	1978	11	30.34809	04	28	21.60	+19	41	29.6		675
1978	VO4	1978	11	30.40503	04	28	17.71	+19	41	24.1		675
1978	VP4	1978	11	29.40486	04	33	31.60	+19	21	35.8	20.0	675
1978	VP4	1978	11	30.40503	04	32	35.66	+19	19	18.5		675
1978	VQ4	1978	11	29.34653	04	28	02.27	+19	16	06.4	18.0	675
1978	VQ4	1978	11	29.45694	04	27	54.68	+19	15	38.8		675
1978	VQ4	1978	11	30.34809	04	26	52.40	+19	11	45.9		675
1978	VQ4	1978	11	30.45712	04	26	45.00	+19	11	18.4		675
1978	VR4	1978	11	29.40486	04	31	27.41	+18	59	42.0	18.0	675
1978	VR4	1978	11	30.40503	04	30	21.77	+18	54	16.0		675
1978	VS4	1978	11	29.40486	04	33	44.12	+22	30	24.8	18.0	675

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1978	VS4	1978	11	30.40503	04	32	52.64	+22	28	37.6		675
1978	VT4	1978	11	29.40486	04	33	40.28	+23	18	13.9	19.0	675
1978	VT4	1978	11	30.40503	04	32	45.64	+23	16	52.5		675
1978	VW4	1978	11	29.40486	04	33	07.58	+23	38	57.4	19.5	675
1978	VW4	1978	11	30.45712	04	32	00.81	+23	37	58.0		675
1978	VX4	1978	11	29.34653	04	29	02.13	+22	05	49.7	19.5	675
1978	VX4	1978	11	29.45694	04	28	54.10	+22	05	45.4		675
1978	VX4	1978	11	30.34809	04	27	51.25	+22	05	28.1		675
1978	VX4	1978	11	30.45712	04	27	43.77	+22	05	26.3		675
1978	VZ4	1978	11	29.40486	04	34	15.59	+19	12	37.6	19.0	675
1978	VZ4	1978	11	30.40503	04	33	16.96	+19	10	13.2		675
1978	VA5	1978	11	29.40486	04	36	33.77	+19	51	48.3	19.0	675
1978	VA5	1978	11	30.40503	04	35	39.46	+19	51	15.6		675
1978	VB5	1978	11	29.40486	04	30	53.40	+21	12	48.8	19.0	675
1978	VB5	1978	11	30.34809	04	29	48.98	+21	13	13.6		675
1978	VB5	1978	11	30.40503	04	29	44.75	+21	13	14.8		675
1978	VC5	1978	11	29.40486	04	33	57.50	+19	48	49.6	18.5	675
1978	VC5	1978	11	30.40503	04	32	53.16	+19	45	12.7		675
1978	VD5	1978	11	29.40486	04	36	40.16	+20	17	24.5	19.0	675
1978	VD5	1978	11	30.40503	04	35	46.61	+20	15	20.4		675
1978	VE5	1978	11	29.40486	04	31	38.41	+22	12	53.8	18.0	675
1978	VE5	1978	11	30.40503	04	30	33.53	+22	14	18.0		675
1978	VF5	1978	11	29.40486	04	32	16.16	+22	18	13.0	19.5	675
1978	VF5	1978	11	30.40503	04	31	05.96	+22	19	46.1		675
1978	VG5	1978	11	29.40486	04	36	40.17	+22	52	00.0	18.5	675
1978	VG5	1978	11	30.40503	04	35	45.72	+22	50	09.5		675
1978	VH5	1978	11	29.40486	04	36	03.55	+22	00	00.7	19.5	675
1978	VH5	1978	11	30.40503	04	35	09.96	+21	55	29.9		675
1978	VL5	1978	11	29.40486	04	29	57.10	+24	15	17.5	18.0	675
1978	VL5	1978	11	30.45712	04	28	41.32	+24	10	12.8		675
1978	VO5	1978	11	29.40486	04	32	51.62	+23	53	34.6	19.0	675
1978	VO5	1978	11	30.40503	04	31	44.44	+23	49	38.0		675
1978	VP5	1978	11	29.40486	04	36	39.77	+23	12	32.0	18.5	675
1978	VP5	1978	11	30.40503	04	35	44.50	+23	11	00.4		675
1978	VQ5	1978	11	29.40486	04	37	07.68	+21	50	45.8	18.5	675
1978	VQ5	1978	11	30.40503	04	36	13.54	+21	49	49.8		675
1978	VS5	1978	11	29.40486	04	34	02.66	+21	08	50.9	19.0	675
1978	VS5	1978	11	30.40503	04	32	59.11	+21	06	06.3		675
1978	VU5	1978	11	29.40486	04	34	56.90	+19	04	34.0	19.0	675
1978	VU5	1978	11	30.40503	04	33	53.28	+19	01	43.7		675
1978	VV5	1978	11	29.40486	04	34	28.70	+19	12	18.9	18.5	675
1978	VV5	1978	11	30.40503	04	33	21.68	+19	10	07.3		675
1978	VW5	1978	11	29.40486	04	32	31.78	+19	44	32.9	20.0	675
1978	VW5	1978	11	30.45712	04	31	18.72	+19	40	58.0		675
1978	VX5	1978	11	29.40486	04	31	20.47	+21	42	53.8	20.0	675
1978	VX5	1978	11	30.40503	04	30	07.06	+21	43	10.7		675
1978	VY5	1978	11	29.40486	04	36	48.18	+21	34	05.0	18.5	675
1978	VY5	1978	11	30.40503	04	35	42.74	+21	33	44.7		675
1978	VZ5	1978	11	29.40486	04	38	16.35	+20	44	02.4	19.5	675
1978	VZ5	1978	11	30.40503	04	37	19.99	+20	40	21.3		675
1978	VB6	1978	11	29.40486	04	32	31.02	+19	32	30.2	19.0	675
1978	VB6	1978	11	30.45712	04	31	19.77	+19	22	14.3		675
1978	VC6	1978	11	29.40486	04	32	40.22	+20	41	52.8	19.0	675
1978	VC6	1978	11	30.40503	04	31	33.81	+20	35	12.4		675
1978	VE6	1978	11	29.40486	04	33	16.38	+23	10	02.0	20.0	675
1978	VE6	1978	11	30.40503	04	32	08.08	+23	08	16.0		675
1978	VF6	1978	11	29.40486	04	35	49.73	+23	01	46.4	20.0	675
1978	VF6	1978	11	30.40503	04	34	43.44	+22	56	50.8		675
1978	VO6	1978	11	29.40486	04	35	15.92	+24	35	30.0	19.0	675

1978	VO6	1978	11	30.40503	04	34	05.25	+24	31	21.7		675
1978	VP6	1978	11	29.40486	04	36	08.11	+24	36	12.3	20.0	675
1978	VP6	1978	11	30.40503	04	35	02.30	+24	33	50.0		675
1978	VT6	1978	11	29.40486	04	33	51.28	+23	15	04.4	19.0	675
1978	VT6	1978	11	30.40503	04	32	38.54	+23	10	53.2		675
1978	VU6	1978	11	29.45694	04	38	29.56	+23	17	00.7	19.0	675
1978	VU6	1978	11	30.40503	04	37	30.92	+23	14	01.1		675
1978	VV6	1978	11	29.40486	04	31	59.93	+23	43	09.0	19.5	675
1978	VV6	1978	11	30.40503	04	30	45.39	+23	41	51.7		675
1978	VW6	1978	11	29.40486	04	38	32.82	+19	34	28.1	19.0	675
1978	VW6	1978	11	30.40503	04	37	34.08	+19	24	16.7		675
1978	VX6	1978	11	29.40486	04	35	04.14	+24	26	23.8	19.0	675
1978	VX6	1978	11	30.40503	04	33	54.42	+24	30	09.1		675
1978	VZ6	1978	11	29.40486	04	39	53.68	+21	50	31.7	20.0	675
1978	VZ6	1978	11	30.45712	04	38	58.50	+21	48	14.3		675
1978	VB7	1978	11	29.40486	04	38	47.47	+19	47	32.4	19.5	675
1978	VB7	1978	11	30.40503	04	37	49.99	+19	40	08.6		675
1978	VD7	1978	11	29.40486	04	38	37.42	+21	42	23.2	19.0	675
1978	VD7	1978	11	30.40503	04	37	39.18	+21	41	43.1		675
1978	VE7	1978	11	29.40486	04	35	48.53	+20	41	49.8	19.0	675
1978	VE7	1978	11	30.40503	04	34	39.06	+20	39	21.9		675
1978	VF7	1978	11	29.40486	04	38	29.73	+20	23	44.3	20.0	675
1978	VF7	1978	11	30.40503	04	37	23.78	+20	23	09.1		675
1978	VG7	1978	11	29.40486	04	37	06.69	+20	29	36.9	19.5	675
1978	VG7	1978	11	30.45712	04	35	52.52	+20	27	04.6		675
1978	VH7	1978	11	29.40486	04	39	59.80	+22	44	28.6	19.0	675
1978	VH7	1978	11	30.40503	04	38	52.47	+22	47	51.4		675
1978	VJ7	1978	11	29.40486	04	41	32.06	+21	21	40.4	19.0	675
1978	VJ7	1978	11	30.40503	04	40	40.69	+21	19	56.2		675
1978	VL7	1978	11	29.40486	04	36	03.24	+21	09	47.6	19.0	675
1978	VL7	1978	11	30.45712	04	34	48.83	+21	06	10.3		675
1978	VM7	1978	11	29.40486	04	35	39.54	+20	38	47.2	20.0	675
1978	VM7	1978	11	30.40503	04	34	33.34	+20	33	45.8		675
1978	VQ7	1978	11	29.40486	04	40	37.10	+22	32	23.6	19.5	675
1978	VQ7	1978	11	30.40503	04	39	38.88	+22	27	31.1		675
1978	VU7	1978	11	29.40486	04	42	23.81	+24	15	51.9	18.5	675
1978	VU7	1978	11	30.40503	04	41	25.20	+24	14	04.0		675
1978	VW7	1978	11	29.40486	04	43	26.22	+23	20	25.4	19.5	675
1978	VW7	1978	11	30.40503	04	42	26.47	+23	17	29.7		675
1978	VY7	1978	11	29.40486	04	43	59.97	+24	01	08.0	20.0	675
1978	VY7	1978	11	30.40503	04	43	05.10	+24	00	28.3		675
1978	VZ7	1978	11	29.45694	04	42	08.71	+23	23	15.9	19.5	675
1978	VZ7	1978	11	30.40503	04	41	16.21	+23	21	50.9		675
1978	VC8	1978	11	29.40486	04	41	01.93	+20	55	53.8	20.0	675
1978	VC8	1978	11	30.40503	04	39	56.86	+20	48	52.1		675
1978	VD8	1978	11	29.45694	04	38	08.54	+23	15	20.6	20.0	675
1978	VD8	1978	11	30.40503	04	37	00.77	+23	14	43.8		675
1978	VE8	1978	11	29.40486	04	43	25.77	+23	07	31.5	20.0	675
1978	VE8	1978	11	30.40503	04	42	30.12	+23	06	53.6		675
1978	VF8	1978	11	29.45694	04	36	53.23	+24	02	50.2	20.0	675
1978	VF8	1978	11	30.40503	04	35	42.01	+24	05	33.9		675
1978	VG8	1978	11	29.40486	04	38	23.39	+23	00	15.4	20.0	675
1978	VG8	1978	11	30.40503	04	37	14.30	+23	00	12.3		675
1978	VH8	1978	11	29.40486	04	43	17.22	+22	08	12.1	18.5	675
1978	VH8	1978	11	30.40503	04	42	20.69	+22	06	07.7		675
1978	VJ8	1978	11	29.40486	04	44	13.39	+21	13	25.4	20.0	675
1978	VJ8	1978	11	30.40503	04	43	22.48	+21	11	45.1		675
1978	VK8	1978	11	29.40486	04	43	01.80	+21	13	55.2	18.5	675
1978	VK8	1978	11	30.40503	04	42	03.79	+21	13	10.5		675

1978	VL8	1978	11	29.40486	04	40	01.85	+22	54	17.9		19.5	675
1978	VL8	1978	11	30.40503	04	38	56.91	+22	59	48.3			675
1978	VM8	1978	11	29.40486	04	43	26.03	+18	21	38.2		19.5	675
1978	VM8	1978	11	30.40503	04	42	24.90	+18	15	36.2			675
1978	VO8	1978	11	29.40486	04	43	51.65	+19	49	29.4		19.0	675
1978	VO8	1978	11	30.40503	04	42	57.50	+19	48	18.9			675
1978	VQ8	1978	11	29.40486	04	42	41.63	+19	05	03.2		20.0	675
1978	VQ8	1978	11	30.40503	04	41	41.74	+19	01	31.1			675
1978	VR8	1978	11	29.40486	04	43	25.48	+19	31	50.6		20.0	675
1978	VR8	1978	11	30.40503	04	42	17.69	+19	29	47.6			675
1978	VS8	1978	11	29.40486	04	44	27.74	+19	25	06.9		19.5	675
1978	VS8	1978	11	30.40503	04	43	26.54	+19	22	44.0			675
1978	VT8	1978	11	29.40486	04	46	48.68	+20	00	43.7		19.5	675
1978	VT8	1978	11	30.40503	04	45	55.63	+19	57	46.4			675
1978	VU8	1978	11	29.40486	04	46	12.40	+21	19	22.7		19.5	675
1978	VU8	1978	11	30.40503	04	45	13.25	+21	19	27.3			675
1978	VV8	1978	11	29.40486	04	44	28.02	+21	19	53.0		20.0	675
1978	VV8	1978	11	30.40503	04	43	25.24	+21	19	40.0			675
1978	VW8	1978	11	29.40486	04	46	14.51	+21	35	35.6		18.5	675
1978	VX8	1978	11	29.40486	04	46	22.64	+22	50	14.7		19.5	675
1978	VX8	1978	11	30.40503	04	45	29.29	+22	49	16.5			675
1978	VY8	1978	11	29.40486	04	44	30.93	+21	34	16.5		19.0	675
1978	VY8	1978	11	30.40503	04	43	37.89	+21	29	37.4			675
1978	VZ8	1978	11	29.45694	04	42	37.39	+23	32	41.4		19.5	675
1978	VZ8	1978	11	30.40503	04	41	37.91	+23	32	52.4			675
1978	VA9	1978	11	29.40486	04	45	30.33	+21	47	14.8		19.5	675
1978	VA9	1978	11	30.40503	04	44	32.77	+21	42	07.3			675
1978	VB9	1978	11	29.40486	04	42	21.10	+24	04	44.9		20.0	675
1978	VB9	1978	11	30.40503	04	41	14.84	+24	05	37.3			675
1978	VE9	1978	11	29.40486	04	44	11.18	+23	28	14.1		19.0	675
1978	VE9	1978	11	30.40503	04	43	15.76	+23	26	23.6			675
1978	VH9	1978	11	29.40486	04	44	33.35	+23	53	59.1		19.5	675
1978	VH9	1978	11	30.40503	04	43	30.26	+23	49	34.3			675
1978	VK9	1978	11	29.40486	04	42	35.34	+21	31	59.9		17.5	675
1978	VK9	1978	11	30.45712	04	41	25.00	+21	26	07.0			675
1978	VL9	1978	11	29.40486	04	46	01.24	+19	21	35.6		20.0	675
1978	VL9	1978	11	30.40503	04	45	01.92	+19	19	41.9			675
1978	VM9	1978	11	29.40486	04	44	57.09	+20	42	09.6		19.0	675
1978	VN9	1978	11	29.40486	04	45	24.21	+20	13	33.1		19.0	675
1978	VN9	1978	11	30.40503	04	44	23.16	+20	13	00.1			675
1978	VP9	1978	11	29.40486	04	43	43.36	+19	53	11.5		20.0	675
1978	VP9	1978	11	30.40503	04	42	36.68	+19	48	13.0			675
1978	VQ9	1978	11	29.40486	04	42	16.07	+23	05	54.7		19.0	675
1978	VQ9	1978	11	30.40503	04	41	05.96	+23	08	31.6			675
1978	VR9	1978	11	29.40486	04	48	15.52	+21	49	22.2		18.5	675
1978	VR9	1978	11	30.40503	04	47	21.19	+21	48	38.0			675
1978	VS9	1978	11	29.45694	04	46	20.05	+22	04	33.3		20.0	675
1978	VS9	1978	11	30.40503	04	45	19.95	+22	02	30.6			675
1978	VT9	1978	11	29.40486	04	41	14.59	+24	00	50.5		19.5	675
1978	VT9	1978	11	30.40503	04	39	58.86	+24	00	49.3			675
1978	VU9	1978	11	29.40486	04	46	23.18	+24	29	57.3		19.5	675
1978	VU9	1978	11	30.40503	04	45	18.98	+24	30	58.2			675
1978	VV9	1978	11	29.40486	04	48	29.30	+23	33	57.6		19.5	675
1978	VV9	1978	11	30.40503	04	47	37.73	+23	32	00.6			675
1978	VB10	1978	11	29.40486	04	47	32.91	+24	18	27.4		20.0	675
1978	VB10	1978	11	30.40503	04	46	35.18	+24	14	27.5			675
1978	VD10	1978	11	29.40486	04	46	26.31	+22	19	14.4		20.0	675
1978	VD10	1978	11	30.40503	04	45	22.54	+22	15	46.2			675
1978	VE10	1978	11	29.40486	04	48	42.25	+22	57	25.0		20.0	675

1978	VE10	1978	11	30.40503	04	47	48.06	+22	56	18.4		675
1978	VG10	1978	11	29.40486	04	49	24.83	+21	24	05.7	18.0	675
1978	VG10	1978	11	30.40503	04	48	31.91	+21	22	38.0		675
1978	VJ10	1978	11	29.40486	04	45	03.11	+20	51	45.5	19.5	675
1978	VJ10	1978	11	30.45712	04	43	55.16	+20	52	09.2		675
1978	VK10	1978	11	29.40486	04	44	25.15	+19	42	25.7	18.5	675
1978	VK10	1978	11	30.40503	04	43	19.23	+19	41	43.1		675
1978	VL10	1978	11	29.40486	04	49	06.88	+19	17	09.6	19.0	675
1978	VL10	1978	11	30.40503	04	48	11.43	+19	15	26.4		675
1978	VM10	1978	11	29.40486	04	49	23.05	+19	58	47.5	19.5	675
1978	VM10	1978	11	30.40503	04	48	24.26	+19	58	07.3		675
1978	VN10	1978	11	29.40486	04	52	10.93	+19	19	47.2	19.5	675
1978	VN10	1978	11	30.40503	04	51	18.34	+19	17	15.5		675
1978	VO10	1978	11	29.40486	04	49	05.17	+22	24	43.1	20.0	675
1978	VO10	1978	11	30.40503	04	48	01.26	+22	28	35.4		675
1978	VP10	1978	11	29.40486	04	47	07.62	+21	15	50.3	19.5	675
1978	VP10	1978	11	30.40503	04	46	01.79	+21	15	34.3		675
1978	VQ10	1978	11	29.40486	04	50	40.29	+19	43	22.7	18.5	675
1978	VQ10	1978	11	30.40503	04	49	44.99	+19	37	23.3		675
1978	VR10	1978	11	29.45694	04	49	09.27	+23	07	04.7	20.0	675
1978	VR10	1978	11	30.40503	04	48	10.84	+23	08	42.1		675
1978	VS10	1978	11	29.40486	04	48	24.21	+22	22	28.2	18.5	675
1978	VS10	1978	11	30.40503	04	47	22.78	+22	21	58.1		675
1978	VT10	1978	11	29.40486	04	47	34.40	+21	45	00.5	19.5	675
1978	VT10	1978	11	30.45712	04	46	24.43	+21	42	08.3		675
1978	VU10	1978	11	29.40486	04	45	03.45	+22	44	55.0	19.5	675
1978	VU10	1978	11	30.40503	04	43	50.87	+22	41	45.7		675
1978	VE11	1978	11	29.40486	04	49	44.92	+21	26	37.1	19.0	675
1978	VE11	1978	11	30.40503	04	48	37.20	+21	21	00.6		675
1978	VG11	1978	11	29.40486	04	49	52.29	+23	51	00.4	19.0	675
1978	VG11	1978	11	30.40503	04	48	46.59	+23	53	02.7		675
1978	VH11	1978	11	29.40486	04	50	40.45	+22	30	50.4	19.5	675
1978	VH11	1978	11	30.40503	04	49	38.72	+22	31	05.2		675
1978	VJ11	1978	11	29.40486	04	49	45.80	+22	22	54.7	20.0	675
1978	VJ11	1978	11	30.40503	04	48	45.21	+22	23	48.8		675
1978	VL11	1978	11	29.40486	04	48	34.20	+21	49	11.3	19.0	675
1978	VL11	1978	11	30.40503	04	47	28.26	+21	49	09.3		675
1978	VM11	1978	11	29.40486	04	49	24.38	+21	52	28.0	20.0	675
1978	VM11	1978	11	30.40503	04	48	19.96	+21	52	57.3		675
1978	VN11	1978	11	30.40503	04	52	31.89	+19	50	01.5	18.0	675
1978	VP11	1978	11	30.40503	04	51	56.01	+20	44	29.2	19.0	675
1978	WR *	1978	11	29.34653	04	04	06.52	+19	16	16.9	19.5	675
1978	WR	1978	11	30.34809	04	03	07.74	+19	12	17.1		675
1978	WS *	1978	11	29.34653	04	04	16.68	+21	05	53.9	19.0	675
1978	WS	1978	11	30.34809	04	03	26.04	+21	00	31.7		675
1978	WT *	1978	11	29.34653	04	04	25.76	+21	07	19.6	19.5	675
1978	WT	1978	11	30.34809	04	03	35.03	+21	02	42.6		675
1978	WU *	1978	11	29.34653	04	04	39.05	+19	43	10.3	19.0	675
1978	WU	1978	11	30.34809	04	03	39.18	+19	36	07.1		675
1978	WV *	1978	11	29.34653	04	04	44.91	+24	02	09.1	19.5	675
1978	WV	1978	11	30.34809	04	03	52.71	+23	55	17.3		675
1978	WW *	1978	11	29.34653	04	04	45.01	+19	00	12.4	19.5	675
1978	WW	1978	11	30.34809	04	03	45.69	+18	59	29.2		675
1978	WX *	1978	11	29.34653	04	04	50.33	+23	20	34.0	20.0	675
1978	WX	1978	11	30.34809	04	03	46.03	+23	13	55.6		675
1978	WY *	1978	11	29.34653	04	04	54.45	+19	57	54.2	16.0	675
1978	WY	1978	11	30.34809	04	03	59.43	+19	56	20.2		675
1978	WZ *	1978	11	29.34653	04	04	54.67	+21	05	12.9	19.5	675
1978	WZ	1978	11	30.34809	04	03	45.51	+21	05	31.8		675

1978	WA1	*	1978	11	29.34653	04	05	27.13	+20	23	58.3		19.0	675
1978	WA1		1978	11	30.34809	04	04	21.80	+20	22	24.1		675	
1978	WB1	*	1978	11	29.34653	04	05	44.85	+19	29	43.6		19.0	675
1978	WB1		1978	11	30.34809	04	04	42.51	+19	33	57.9		675	
1978	WC1	*	1978	11	29.34653	04	05	51.78	+19	47	24.5		19.0	675
1978	WC1		1978	11	30.34809	04	04	52.72	+19	45	20.3		675	
1978	WD1	*	1978	11	29.34653	04	05	53.62	+19	34	21.8		19.5	675
1978	WD1		1978	11	30.34809	04	04	51.59	+19	30	37.7		675	
1978	WE1	*	1978	11	29.34653	04	05	54.46	+21	31	25.6		20.0	675
1978	WE1		1978	11	30.34809	04	04	53.68	+21	30	04.3		675	
1978	WF1	*	1978	11	29.34653	04	05	59.42	+22	21	02.1		20.5	675
1978	WF1		1978	11	30.34809	04	05	02.13	+22	21	37.5		675	
1978	WG1	*	1978	11	29.34653	04	06	11.89	+18	04	00.7		19.0	675
1978	WG1		1978	11	30.34809	04	05	14.02	+18	05	54.7		675	
1978	WH1	*	1978	11	29.34653	04	06	19.45	+18	13	28.0		19.5	675
1978	WH1		1978	11	30.34809	04	05	14.66	+18	12	07.0		675	
1978	WJ1	*	1978	11	29.34653	04	06	20.61	+23	35	12.5		18.5	675
1978	WJ1		1978	11	30.34809	04	05	08.65	+23	35	17.9		675	
1978	WK1	*	1978	11	29.34653	04	06	27.22	+18	49	08.3		19.5	675
1978	WK1		1978	11	30.34809	04	05	27.55	+18	47	04.8		675	
1978	WL1	*	1978	11	29.34653	04	06	31.35	+23	03	12.8		19.5	675
1978	WL1		1978	11	30.34809	04	05	26.98	+23	02	22.7		675	
1978	WM1	*	1978	11	29.34653	04	06	38.26	+18	47	21.7		19.5	675
1978	WM1		1978	11	30.34809	04	05	39.11	+18	39	22.3		675	
1978	WN1	*	1978	11	29.34653	04	06	48.36	+18	46	51.5		20.0	675
1978	WN1		1978	11	30.34809	04	05	43.52	+18	45	45.7		675	
1978	WO1	*	1978	11	29.34653	04	06	57.89	+20	10	27.3		20.0	675
1978	WO1		1978	11	30.34809	04	06	06.36	+20	08	35.3		675	
1978	WP1	*	1978	11	29.34653	04	06	58.38	+19	04	16.0		19.5	675
1978	WP1		1978	11	30.34809	04	06	00.59	+19	00	50.7		675	
1978	WQ1	*	1978	11	29.34653	04	07	16.07	+22	49	50.8		19.0	675
1978	WQ1		1978	11	30.34809	04	06	06.48	+22	50	57.7		675	
1978	WR1	*	1978	11	29.34653	04	07	18.86	+17	58	31.4		19.5	675
1978	WR1		1978	11	30.34809	04	06	16.21	+17	56	36.4		675	
1978	WS1	*	1978	11	29.34653	04	07	36.31	+22	39	44.9		20.0	675
1978	WS1		1978	11	30.34809	04	06	37.55	+22	37	31.9		675	
1978	WT1	*	1978	11	29.34653	04	07	52.29	+23	49	23.4		18.0	675
1978	WT1		1978	11	30.34809	04	06	40.12	+23	53	33.1		675	
1978	WU1	*	1978	11	29.34653	04	07	55.80	+18	15	17.4		19.5	675
1978	WU1		1978	11	30.34809	04	06	54.99	+18	14	03.6		675	
1978	WV1	*	1978	11	29.34653	04	08	01.21	+23	52	13.5		19.0	675
1978	WV1		1978	11	30.34809	04	06	57.01	+23	49	34.4		675	
1978	WW1	*	1978	11	29.34653	04	08	07.44	+19	16	17.8		19.0	675
1978	WW1		1978	11	30.34809	04	07	07.64	+19	16	57.9		675	
1978	WX1	*	1978	11	29.34653	04	08	13.75	+21	43	31.3		19.5	675
1978	WX1		1978	11	30.34809	04	07	08.32	+21	41	17.8		675	
1978	WY1	*	1978	11	29.34653	04	08	19.60	+20	04	15.4		20.5	675
1978	WY1		1978	11	30.34809	04	07	17.80	+20	03	26.3		675	
1978	WZ1	*	1978	11	29.34653	04	08	24.23	+23	38	41.2		20.0	675
1978	WZ1		1978	11	30.34809	04	07	15.38	+23	38	12.2		675	
1978	WA2	*	1978	11	29.34653	04	08	25.00	+21	50	03.2		20.0	675
1978	WA2		1978	11	30.34809	04	07	25.58	+21	46	38.7		675	
1978	WB2	*	1978	11	29.34653	04	08	37.46	+20	08	33.4		20.0	675
1978	WB2		1978	11	30.34809	04	07	38.11	+20	06	19.9		675	
1978	WC2	*	1978	11	29.34653	04	08	40.69	+19	28	29.9		19.5	675
1978	WC2		1978	11	30.34809	04	07	37.80	+19	24	55.5		675	
1978	WD2	*	1978	11	29.34653	04	08	48.10	+23	22	47.3		19.0	675
1978	WD2		1978	11	30.34809	04	07	39.57	+23	22	38.1		675	
1978	WE2	*	1978	11	29.34653	04	08	57.46	+22	19	36.1		20.0	675

1978	WE2	1978	11	30.34809	04	07	55.86	+22	18	08.5		675	
1978	WF2	*	1978	11	29.34653	04	09	11.34	+20	18	11.6	17.0	675
1978	WF2	1978	11	30.34809	04	08	17.43	+20	11	48.6		675	
1978	WG2	*	1978	11	29.34653	04	09	28.16	+21	01	39.0	18.5	675
1978	WG2	1978	11	30.34809	04	08	17.77	+21	06	17.2		675	
1978	WH2	*	1978	11	29.34653	04	09	28.45	+18	43	45.0	20.0	675
1978	WH2	1978	11	30.34809	04	08	24.40	+18	44	23.9		675	
1978	WJ2	*	1978	11	29.34653	04	09	31.84	+19	27	33.2	19.5	675
1978	WJ2	1978	11	30.34809	04	08	25.98	+19	26	16.5		675	
1978	WK2	*	1978	11	29.34653	04	09	32.77	+23	21	07.5	19.5	675
1978	WK2	1978	11	30.34809	04	08	35.71	+23	18	42.8		675	
1978	WL2	*	1978	11	29.34653	04	09	43.37	+19	10	01.8	20.0	675
1978	WL2	1978	11	30.34809	04	08	51.71	+19	07	36.6		675	
1978	WM2	*	1978	11	29.34653	04	09	46.63	+21	26	40.4	18.0	675
1978	WM2	1978	11	30.34809	04	08	53.70	+21	21	37.1		675	
1978	WN2	*	1978	11	29.34653	04	09	49.42	+18	05	09.8	20.5	675
1978	WN2	1978	11	30.34809	04	08	47.99	+17	58	54.2		675	
1978	WO2	*	1978	11	29.34653	04	09	53.25	+22	30	24.9	20.0	675
1978	WO2	1978	11	30.34809	04	08	55.92	+22	27	37.3		675	
1978	WP2	*	1978	11	29.34653	04	10	03.62	+23	25	19.1	20.0	675
1978	WP2	1978	11	30.34809	04	08	53.06	+23	22	04.5		675	
1978	WQ2	*	1978	11	29.34653	04	10	04.06	+21	45	00.4	19.5	675
1978	WQ2	1978	11	30.34809	04	08	56.35	+21	44	00.4		675	
1978	WR2	*	1978	11	29.34653	04	10	05.77	+20	31	14.7	19.5	675
1978	WR2	1978	11	30.34809	04	09	11.23	+20	28	32.0		675	
1978	WS2	*	1978	11	29.34653	04	10	11.99	+22	33	40.6	18.5	675
1978	WS2	1978	11	30.34809	04	09	00.57	+22	29	49.5		675	
1978	WT2	*	1978	11	29.34653	04	10	21.22	+19	12	14.0	20.0	675
1978	WT2	1978	11	30.34809	04	09	19.81	+19	10	02.9		675	
1978	WU2	*	1978	11	29.34653	04	10	34.39	+20	11	58.3	20.0	675
1978	WU2	1978	11	30.34809	04	09	36.49	+20	13	44.5		675	
1978	WV2	*	1978	11	29.34653	04	10	35.09	+18	17	03.7	18.5	675
1978	WV2	1978	11	30.34809	04	09	42.68	+18	14	31.9		675	
1978	WW2	*	1978	11	29.34653	04	10	43.51	+23	07	55.0	18.5	675
1978	WW2	1978	11	30.34809	04	09	43.87	+23	02	00.9		675	
1978	WX2	*	1978	11	29.34653	04	10	50.78	+21	20	59.7	19.5	675
1978	WX2	1978	11	30.40017	04	09	44.35	+21	14	24.9		675	
1978	WY2	*	1978	11	29.34653	04	11	06.60	+21	08	27.5	20.0	675
1978	WY2	1978	11	30.34809	04	10	06.43	+21	07	13.5		675	
1978	WZ2	*	1978	11	29.34653	04	11	10.75	+20	47	12.3	20.0	675
1978	WZ2	1978	11	30.40017	04	09	55.29	+20	48	40.2		675	
1978	WA3	*	1978	11	29.34653	04	11	12.16	+20	43	29.8	20.0	675
1978	WA3	1978	11	30.34809	04	10	07.30	+20	36	33.0		675	
1978	WB3	*	1978	11	29.34653	04	11	17.53	+18	23	28.4	20.0	675
1978	WB3	1978	11	30.34809	04	10	26.10	+18	21	13.5		675	
1978	WC3	*	1978	11	29.34653	04	11	23.88	+20	48	29.3	18.5	675
1978	WC3	1978	11	30.34809	04	10	26.10	+20	37	51.6		675	
1978	WD3	*	1978	11	29.34653	04	11	26.01	+18	16	44.4	18.0	675
1978	WD3	1978	11	30.34809	04	10	32.91	+18	16	03.2		675	
1978	WE3	*	1978	11	29.34653	04	11	34.34	+20	46	10.7	20.0	675
1978	WE3	1978	11	30.34809	04	10	23.64	+20	41	26.4		675	
1978	WF3	*	1978	11	29.34653	04	11	41.00	+19	33	38.8	19.5	675
1978	WF3	1978	11	30.34809	04	10	38.93	+19	29	46.2		675	
1978	WG3	*	1978	11	29.34653	04	11	48.76	+22	13	44.5	19.5	675
1978	WG3	1978	11	30.34809	04	10	37.25	+22	08	59.8		675	
1978	WH3	*	1978	11	29.34653	04	11	50.55	+19	10	48.8	20.5	675
1978	WH3	1978	11	30.34809	04	10	44.97	+19	07	09.1		675	
1978	WJ3	*	1978	11	29.34653	04	11	51.48	+22	38	24.3	20.0	675
1978	WJ3	1978	11	30.34809	04	10	42.42	+22	39	24.0		675	

1978	WK3	*	1978	11	29.34653	04	12	01.82	+20	13	21.3		19.0	675
1978	WK3		1978	11	30.34809	04	11	02.17	+20	05	29.3		675	
1978	WL3	*	1978	11	29.34653	04	12	03.44	+18	51	12.7		20.0	675
1978	WL3		1978	11	30.34809	04	11	11.13	+18	47	05.7		675	
1978	WM3	*	1978	11	29.34653	04	12	21.12	+20	50	56.2		20.0	675
1978	WM3		1978	11	30.34809	04	11	24.09	+20	49	26.0		675	
1978	WN3	*	1978	11	29.34653	04	12	21.59	+18	28	49.5		18.0	675
1978	WN3		1978	11	30.34809	04	11	10.57	+18	34	54.3		675	
1978	WO3	*	1978	11	29.34653	04	12	30.63	+21	14	53.0		20.0	675
1978	WO3		1978	11	30.34809	04	11	21.45	+21	16	11.4		675	
1978	WP3	*	1978	11	29.34653	04	12	39.70	+22	34	21.0		19.5	675
1978	WP3		1978	11	30.34809	04	11	36.00	+22	33	04.4		675	
1978	WQ3	*	1978	11	29.34653	04	12	40.36	+20	54	18.5		19.0	675
1978	WQ3		1978	11	30.34809	04	11	28.58	+20	55	52.6		675	
1978	WR3	*	1978	11	29.34653	04	12	48.16	+20	28	05.5		20.0	675
1978	WR3		1978	11	30.40017	04	11	29.71	+20	30	25.1		675	
1978	WS3	*	1978	11	29.34653	04	12	50.23	+22	42	38.1		16.5	675
1978	WS3		1978	11	30.34809	04	11	43.61	+22	36	08.1		675	
1978	WT3	*	1978	11	29.34653	04	12	58.68	+19	11	54.1		19.0	675
1978	WT3		1978	11	30.34809	04	12	08.66	+19	07	32.4		675	
1978	WU3	*	1978	11	29.34653	04	13	04.88	+18	08	25.1		19.0	675
1978	WU3		1978	11	30.34809	04	12	08.65	+18	06	59.0		675	
1978	WV3	*	1978	11	29.34653	04	13	06.17	+20	03	39.0		20.0	675
1978	WV3		1978	11	30.34809	04	12	02.54	+19	58	01.8		675	
1978	WW3	*	1978	11	29.34653	04	13	07.20	+20	24	54.6		19.5	675
1978	WW3		1978	11	30.34809	04	11	59.51	+20	27	27.8		675	
1978	WX3	*	1978	11	29.34653	04	13	08.41	+21	13	13.3		19.5	675
1978	WX3		1978	11	30.34809	04	12	15.74	+21	11	00.8		675	
1978	WY3	*	1978	11	29.34653	04	13	12.63	+22	56	40.0		20.0	675
1978	WY3		1978	11	30.34809	04	12	18.99	+22	56	10.6		675	
1978	WZ3	*	1978	11	29.34653	04	13	14.05	+20	13	24.2		20.5	675
1978	WZ3		1978	11	30.34809	04	12	31.30	+20	11	15.9		675	
1978	WA4	*	1978	11	29.34653	04	13	20.23	+20	49	44.9		20.0	675
1978	WA4		1978	11	30.34809	04	12	20.88	+20	37	16.1		675	
1978	WB4	*	1978	11	29.34653	04	13	24.37	+18	00	50.3		20.0	675
1978	WB4		1978	11	30.34809	04	12	19.98	+17	55	33.3		675	
1978	WC4	*	1978	11	29.34653	04	13	25.62	+20	35	58.1		19.5	675
1978	WC4		1978	11	30.34809	04	12	23.51	+20	32	39.2		675	
1978	WD4	*	1978	11	29.34653	04	13	29.79	+18	10	03.3		18.5	675
1978	WD4		1978	11	30.34809	04	12	17.97	+18	16	16.5		675	
1978	WE4	*	1978	11	29.34653	04	13	33.40	+22	56	39.8		20.0	675
1978	WE4		1978	11	30.34809	04	12	25.63	+22	53	44.8		675	
1978	WF4	*	1978	11	29.34653	04	13	37.58	+21	17	01.5		20.0	675
1978	WF4		1978	11	30.34809	04	12	27.16	+21	17	44.9		675	
1978	WG4	*	1978	11	29.34653	04	13	43.44	+22	22	26.8		20.5	675
1978	WG4		1978	11	30.34809	04	12	42.72	+22	13	23.0		675	
1978	WH4	*	1978	11	29.34653	04	13	50.31	+18	54	04.9		20.5	675
1978	WH4		1978	11	30.34809	04	12	56.93	+18	51	37.1		675	
1978	WJ4	*	1978	11	29.34653	04	13	55.59	+21	22	00.3		20.0	675
1978	WJ4		1978	11	30.34809	04	12	43.95	+21	21	05.7		675	
1978	WK4	*	1978	11	29.34653	04	14	00.08	+21	33	16.1		20.5	675
1978	WK4		1978	11	30.40017	04	13	00.75	+21	31	59.9		675	
1978	WL4	*	1978	11	29.34653	04	14	03.84	+21	58	26.1		20.5	675
1978	WL4		1978	11	30.40017	04	13	29.01	+21	55	00.2		675	
1978	WM4	*	1978	11	29.34653	04	14	14.57	+18	58	50.6		20.0	675
1978	WM4		1978	11	30.34809	04	13	22.95	+18	56	35.8		675	
1978	WN4	*	1978	11	29.34653	04	14	19.72	+23	28	11.0		19.0	675
1978	WN4		1978	11	30.34809	04	13	25.84	+23	24	41.1		675	
1978	WO4	*	1978	11	29.34653	04	14	25.65	+18	24	45.1		20.0	675

1978	WO4	1978	11	30.34809	04	13	16.37	+18	20	30.8		675	
1978	WP4	*	1978	11	29.34653	04	14	42.33	+20	34	37.1	19.5	675
1978	WP4	1978	11	30.34809	04	13	36.42	+20	33	16.0		675	
1978	WQ4	*	1978	11	29.34653	04	14	43.46	+20	19	32.3	20.0	675
1978	WQ4	1978	11	30.34809	04	13	47.47	+20	14	52.8		675	
1978	WR4	*	1978	11	29.34653	04	14	55.12	+23	57	38.5	19.5	675
1978	WR4	1978	11	30.34809	04	13	49.02	+23	51	42.3		675	
1978	WS4	*	1978	11	29.34653	04	14	58.79	+20	18	27.5	19.5	675
1978	WS4	1978	11	30.34809	04	14	05.62	+20	16	15.6		675	
1978	WT4	*	1978	11	29.34653	04	15	08.60	+17	46	52.6	19.5	675
1978	WT4	1978	11	30.34809	04	14	14.10	+17	44	58.2		675	
1978	WU4	*	1978	11	29.34653	04	15	13.97	+23	43	35.8	20.0	675
1978	WU4	1978	11	30.34809	04	14	07.21	+23	42	11.2		675	
1978	WV4	*	1978	11	29.34653	04	15	21.56	+23	09	34.8	18.0	675
1978	WV4	1978	11	30.34809	04	14	19.44	+23	09	38.6		675	
1978	WW4	*	1978	11	29.34653	04	15	31.26	+19	01	39.4	19.5	675
1978	WW4	1978	11	30.34809	04	14	40.59	+19	00	01.1		675	
1978	WX4	*	1978	11	29.34653	04	15	32.79	+18	24	10.5	19.5	675
1978	WX4	1978	11	30.34809	04	14	31.52	+18	18	57.6		675	
1978	WY4	*	1978	11	29.34653	04	15	40.18	+21	18	19.9	17.0	675
1978	WY4	1978	11	30.34809	04	14	47.65	+21	16	07.4		675	
1978	WZ4	*	1978	11	29.34653	04	15	56.44	+18	50	53.3	20.0	675
1978	WZ4	1978	11	30.34809	04	14	57.08	+18	44	15.2		675	
1978	WA5	*	1978	11	29.34653	04	16	00.36	+22	08	21.6	20.0	675
1978	WA5	1978	11	30.34809	04	14	58.77	+22	07	05.4		675	
1978	WB5	*	1978	11	29.34653	04	16	10.81	+22	35	37.3	19.5	675
1978	WB5	1978	11	30.34809	04	15	09.19	+22	35	22.5		675	
1978	WC5	*	1978	11	29.34653	04	16	15.73	+18	59	04.8	19.0	675
1978	WC5	1978	11	30.34809	04	15	24.62	+18	57	24.7		675	
1978	WD5	*	1978	11	29.34653	04	16	25.69	+20	43	24.8	20.0	675
1978	WD5	1978	11	30.34809	04	15	29.67	+20	44	24.2		675	
1978	WE5	*	1978	11	29.34653	04	16	26.09	+20	41	11.2	20.0	675
1978	WE5	1978	11	30.34809	04	15	19.28	+20	42	42.5		675	
1978	WF5	*	1978	11	29.34653	04	16	26.35	+22	09	02.2	18.0	675
1978	WF5	1978	11	30.34809	04	15	29.91	+22	06	25.8		675	
1978	WG5	*	1978	11	29.34653	04	16	29.66	+19	39	55.9	20.0	675
1978	WG5	1978	11	30.34809	04	15	22.81	+19	38	19.9		675	
1978	WH5	*	1978	11	29.34653	04	16	38.05	+20	47	51.5	19.0	675
1978	WH5	1978	11	30.34809	04	15	29.47	+20	43	04.9		675	
1978	WJ5	*	1978	11	29.34653	04	16	39.39	+22	30	28.1	20.0	675
1978	WJ5	1978	11	30.34809	04	15	38.24	+22	30	36.6		675	
1978	WK5	*	1978	11	29.34653	04	16	43.08	+17	54	21.6	20.0	675
1978	WK5	1978	11	30.34809	04	15	40.19	+17	49	19.9		675	
1978	WL5	*	1978	11	29.34653	04	16	56.73	+21	39	33.0	20.0	675
1978	WL5	1978	11	30.34809	04	15	51.11	+21	34	28.2		675	
1978	WM5	*	1978	11	29.34653	04	16	58.96	+22	39	10.9	20.0	675
1978	WM5	1978	11	30.34809	04	15	59.21	+22	35	14.7		675	
1978	WN5	*	1978	11	29.34653	04	17	15.76	+19	41	35.0	19.0	675
1978	WN5	1978	11	30.40017	04	16	20.37	+19	35	32.5		675	
1978	WO5	*	1978	11	29.34653	04	17	19.51	+22	04	07.0	20.0	675
1978	WO5	1978	11	30.34809	04	16	24.82	+21	59	34.7		675	
1978	WP5	*	1978	11	29.34653	04	17	20.09	+19	00	00.6	20.0	675
1978	WP5	1978	11	30.34809	04	16	11.52	+19	02	32.6		675	
1978	WQ5	*	1978	11	29.34653	04	17	23.41	+20	09	39.4	19.0	675
1978	WQ5	1978	11	30.34809	04	16	31.12	+20	04	50.5		675	
1978	WR5	*	1978	11	29.34653	04	17	32.67	+22	57	47.3	20.5	675
1978	WR5	1978	11	30.34809	04	16	28.52	+22	55	00.0		675	
1978	WS5	*	1978	11	29.34653	04	17	34.05	+22	47	55.3	19.5	675
1978	WS5	1978	11	30.34809	04	16	23.42	+22	43	02.0		675	

1978	WT5	*	1978	11	29.34653	04	17	44.69	+23	49	15.2		19.5	675
1978	WT5		1978	11	30.34809	04	16	50.22	+23	47	41.3		675	
1978	WU5	*	1978	11	29.34653	04	17	54.88	+18	59	19.2		19.5	675
1978	WU5		1978	11	30.34809	04	17	03.98	+18	56	13.9		675	
1978	WV5	*	1978	11	29.34653	04	17	55.70	+20	04	54.1		18.5	675
1978	WV5		1978	11	30.34809	04	16	51.01	+19	59	37.3		675	
1978	WW5	*	1978	11	29.34653	04	18	00.30	+22	46	10.9		19.5	675
1978	WW5		1978	11	30.34809	04	16	57.25	+22	46	08.8		675	
1978	WX5	*	1978	11	29.34653	04	18	03.22	+21	34	09.5		18.0	675
1978	WX5		1978	11	30.34809	04	17	07.25	+21	33	11.9		675	
1978	WY5	*	1978	11	29.34653	04	18	08.77	+17	47	33.0		20.5	675
1978	WY5		1978	11	30.34809	04	17	11.98	+17	49	04.5		675	
1978	WZ5	*	1978	11	29.34653	04	18	27.97	+22	43	48.5		19.0	675
1978	WZ5		1978	11	30.34809	04	17	43.82	+22	42	33.4		675	
1978	WA6	*	1978	11	29.34653	04	18	28.14	+19	01	25.3		19.5	675
1978	WA6		1978	11	30.34809	04	17	39.02	+18	59	28.4		675	
1978	WB6	*	1978	11	29.34653	04	18	45.75	+22	20	38.5		19.0	675
1978	WB6		1978	11	30.34809	04	17	38.12	+22	22	58.5		675	
1978	WC6	*	1978	11	29.34653	04	18	57.70	+21	43	49.4		20.0	675
1978	WC6		1978	11	30.34809	04	18	00.71	+21	40	59.0		675	
1978	WD6	*	1978	11	29.34653	04	19	11.58	+19	04	46.3		20.0	675
1978	WD6		1978	11	30.34809	04	18	03.03	+19	01	02.2		675	
1978	WE6	*	1978	11	29.34653	04	19	19.01	+21	15	41.3		20.0	675
1978	WE6		1978	11	30.34809	04	18	25.00	+21	13	12.1		675	
1978	WF6	*	1978	11	29.34653	04	19	19.43	+22	57	42.3		20.0	675
1978	WF6		1978	11	30.34809	04	18	21.94	+22	47	13.7		675	
1978	WG6	*	1978	11	29.34653	04	19	24.82	+19	59	51.3		20.0	675
1978	WG6		1978	11	30.34809	04	18	23.20	+20	00	08.0		675	
1978	WH6	*	1978	11	29.34653	04	19	25.45	+19	01	56.1		20.0	675
1978	WH6		1978	11	30.34809	04	18	22.94	+18	57	31.1		675	
1978	WJ6	*	1978	11	29.34653	04	19	27.20	+19	03	40.1		19.0	675
1978	WJ6		1978	11	30.34809	04	18	28.57	+19	05	09.3		675	
1978	WK6	*	1978	11	29.34653	04	19	30.55	+24	07	18.0		19.0	675
1978	WK6		1978	11	30.34809	04	18	17.48	+24	05	50.4		675	
1978	WL6	*	1978	11	29.34653	04	19	31.97	+17	57	50.6		20.0	675
1978	WL6		1978	11	30.34809	04	18	19.93	+17	56	38.0		675	
1978	WM6	*	1978	11	29.34653	04	19	33.05	+22	27	23.3		20.0	675
1978	WM6		1978	11	30.40017	04	18	33.74	+22	25	11.2		675	
1978	WN6	*	1978	11	29.34653	04	19	37.07	+18	19	08.8		19.0	675
1978	WN6		1978	11	30.34809	04	18	40.67	+18	14	41.8		675	
1978	WO6	*	1978	11	29.34653	04	19	39.28	+19	38	56.5		18.5	675
1978	WO6		1978	11	30.34809	04	18	27.83	+19	40	21.3		675	
1978	WP6	*	1978	11	29.34653	04	19	40.96	+19	17	13.6		20.0	675
1978	WP6		1978	11	30.34809	04	18	46.85	+19	13	23.1		675	
1978	WQ6	*	1978	11	29.34653	04	19	43.04	+22	48	48.8		18.0	675
1978	WQ6		1978	11	30.34809	04	18	44.58	+22	47	29.1		675	
1978	WR6	*	1978	11	29.34653	04	19	43.06	+23	01	38.4		20.0	675
1978	WR6		1978	11	30.34809	04	18	41.83	+23	00	44.2		675	
1978	WS6	*	1978	11	29.34653	04	19	44.17	+23	53	27.5		19.0	675
1978	WS6		1978	11	30.34809	04	18	47.29	+23	51	12.7		675	
1978	WT6	*	1978	11	29.34653	04	19	59.22	+21	37	22.4		20.0	675
1978	WT6		1978	11	30.34809	04	19	01.89	+21	34	31.3		675	
1978	WU6	*	1978	11	29.34653	04	20	02.99	+22	22	11.1		19.5	675
1978	WU6		1978	11	30.34809	04	19	00.66	+22	21	06.8		675	
1978	WV6	*	1978	11	29.34653	04	20	14.81	+19	30	12.7		19.5	675
1978	WV6		1978	11	30.34809	04	19	06.42	+19	24	07.0		675	
1978	WW6	*	1978	11	29.34653	04	20	17.63	+21	39	45.5		20.0	675
1978	WW6		1978	11	30.34809	04	19	14.67	+21	42	34.3		675	
1978	WX6	*	1978	11	29.34653	04	20	24.44	+20	08	37.5		19.0	675

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1978	WX6	1978	11	30.34809	04	19	17.33	+20	09	38.3		675	
1978	WY6	*	1978	11	29.34653	04	20	30.95	+22	14	17.0	19.5	675
1978	WY6	1978	11	30.34809	04	19	37.09	+22	09	39.0		675	
1978	WZ6	*	1978	11	29.34653	04	20	39.88	+22	24	23.2	20.0	675
1978	WZ6	1978	11	30.34809	04	19	46.75	+22	19	35.8		675	
1978	WA7	*	1978	11	29.34653	04	20	41.01	+23	37	07.4	20.0	675
1978	WA7	1978	11	30.40017	04	19	42.10	+23	34	48.3		675	
1978	WB7	*	1978	11	29.34653	04	20	43.33	+18	40	10.0	20.0	675
1978	WB7	1978	11	30.40017	04	19	42.12	+18	41	48.9		675	
1978	WC7	*	1978	11	29.34653	04	20	45.18	+21	02	09.5	19.5	675
1978	WC7	1978	11	30.34809	04	19	50.82	+20	56	45.7		675	
1978	WD7	*	1978	11	29.34653	04	20	49.08	+22	02	52.6	20.0	675
1978	WD7	1978	11	30.34809	04	19	44.84	+22	04	34.3		675	
1978	WE7	*	1978	11	29.34653	04	21	00.47	+22	39	22.0	19.5	675
1978	WE7	1978	11	30.34809	04	19	57.31	+22	38	07.2		675	
1978	WF7	*	1978	11	29.34653	04	21	06.57	+21	34	29.8	20.0	675
1978	WF7	1978	11	30.34809	04	20	02.94	+21	35	01.9		675	
1978	WG7	*	1978	11	29.34653	04	21	10.71	+19	47	14.9	19.0	675
1978	WG7	1978	11	30.34809	04	20	07.87	+19	47	57.0		675	
1978	WH7	*	1978	11	29.34653	04	21	16.58	+22	53	50.5	20.0	675
1978	WH7	1978	11	30.34809	04	20	06.42	+22	53	37.8		675	
1978	WJ7	*	1978	11	29.34653	04	21	32.31	+19	56	55.4	20.0	675
1978	WJ7	1978	11	30.34809	04	20	20.12	+19	55	49.4		675	
1978	WK7	*	1978	11	29.34653	04	21	34.58	+23	59	10.8	19.5	675
1978	WK7	1978	11	30.34809	04	20	29.03	+24	01	09.2		675	
1978	WL7	*	1978	11	29.34653	04	21	56.83	+23	14	59.5	20.5	675
1978	WL7	1978	11	30.34809	04	20	58.55	+23	11	32.1		675	
1978	WM7	*	1978	11	29.34653	04	22	10.81	+20	40	55.0	19.5	675
1978	WM7	1978	11	30.34809	04	21	15.93	+20	40	46.5		675	
1978	WN7	*	1978	11	29.34653	04	22	19.39	+22	34	32.8	19.0	675
1978	WN7	1978	11	30.34809	04	21	25.33	+22	32	54.9		675	
1978	WO7	*	1978	11	29.34653	04	22	27.22	+20	17	45.8	20.0	675
1978	WO7	1978	11	30.34809	04	21	35.46	+20	13	18.8		675	
1978	WP7	*	1978	11	29.34653	04	22	35.37	+21	22	26.9	19.0	675
1978	WP7	1978	11	30.34809	04	21	23.74	+21	27	56.0		675	
1978	WQ7	*	1978	11	29.34653	04	22	36.66	+18	13	12.1	20.5	675
1978	WQ7	1978	11	30.40017	04	21	34.47	+18	01	16.8		675	
1978	WR7	*	1978	11	29.34653	04	22	40.63	+23	43	53.9	20.5	675
1978	WR7	1978	11	30.34809	04	21	46.12	+23	39	49.1		675	
1978	WS7	*	1978	11	29.34653	04	22	44.34	+22	33	58.9	19.5	675
1978	WS7	1978	11	30.34809	04	21	47.84	+22	33	19.0		675	
1978	WT7	*	1978	11	29.34653	04	22	45.43	+19	23	01.1	17.5	675
1978	WT7	1978	11	30.34809	04	21	34.85	+19	28	11.7		675	
1978	WU7	*	1978	11	29.34653	04	22	56.22	+20	55	35.5	20.0	675
1978	WU7	1978	11	30.34809	04	21	49.06	+20	55	56.3		675	
1978	WV7	*	1978	11	29.34653	04	23	02.23	+22	34	15.6	19.0	675
1978	WV7	1978	11	30.34809	04	22	05.19	+22	33	03.0		675	
1978	WW7	*	1978	11	29.34653	04	23	10.05	+20	26	31.6	19.5	675
1978	WW7	1978	11	30.34809	04	22	11.96	+20	25	22.1		675	
1978	WX7	*	1978	11	29.34653	04	23	17.52	+22	48	04.4	18.5	675
1978	WX7	1978	11	30.34809	04	22	20.91	+22	45	46.1		675	
1978	WY7	*	1978	11	29.34653	04	23	18.74	+21	48	21.5	20.0	675
1978	WY7	1978	11	30.34809	04	22	17.62	+21	42	10.9		675	
1978	WZ7	*	1978	11	29.34653	04	23	19.42	+20	20	50.4	20.5	675
1978	WZ7	1978	11	30.34809	04	22	27.43	+20	17	23.6		675	
1978	WA8	*	1978	11	29.34653	04	23	31.89	+23	50	01.9	20.0	675
1978	WA8	1978	11	30.34809	04	22	32.79	+23	46	13.8		675	
1978	WB8	*	1978	11	29.34653	04	23	50.14	+18	39	37.6	20.0	675
1978	WB8	1978	11	30.40017	04	22	52.83	+18	37	05.1		675	

1978	WC8	*	1978	11	29.34653	04	23	54.35	+23	47	55.6		20.0	675
1978	WC8		1978	11	30.34809	04	22	53.70	+23	45	17.5			675
1978	WD8	*	1978	11	29.34653	04	23	55.68	+22	52	24.7		20.0	675
1978	WD8		1978	11	30.40017	04	22	47.32	+22	52	04.7			675
1978	WE8	*	1978	11	29.34653	04	24	12.92	+22	14	14.4		20.0	675
1978	WE8		1978	11	30.34809	04	23	15.62	+22	11	43.5			675
1978	WF8	*	1978	11	29.34653	04	24	14.38	+23	54	00.6		20.0	675
1978	WF8		1978	11	30.34809	04	23	04.42	+23	48	03.7			675
1978	WG8	*	1978	11	29.34653	04	24	17.78	+20	46	04.3		20.0	675
1978	WG8		1978	11	30.34809	04	23	19.66	+20	42	27.9			675
1978	WH8	*	1978	11	29.34653	04	24	18.50	+21	00	39.0		20.0	675
1978	WH8		1978	11	30.34809	04	23	09.66	+21	00	19.4			675
1978	WJ8	*	1978	11	29.34653	04	24	21.08	+22	18	00.2		20.0	675
1978	WJ8		1978	11	30.34809	04	23	09.29	+22	16	07.6			675
1978	WK8	*	1978	11	29.34653	04	24	30.03	+21	04	50.3		20.0	675
1978	WK8		1978	11	30.34809	04	23	34.23	+20	59	49.1			675
1978	WL8	*	1978	11	29.34653	04	24	32.54	+20	00	50.7		20.5	675
1978	WL8		1978	11	30.34809	04	23	28.35	+19	53	29.3			675
1978	WM8	*	1978	11	29.34653	04	24	34.60	+19	54	01.7		19.0	675
1978	WM8		1978	11	30.34809	04	23	41.30	+19	48	52.0			675
1978	WN8	*	1978	11	29.34653	04	24	36.47	+22	51	51.2		19.0	675
1978	WN8		1978	11	30.34809	04	23	37.79	+22	47	58.1			675
1978	WO8	*	1978	11	29.34653	04	24	43.52	+20	06	27.0		20.0	675
1978	WO8		1978	11	30.34809	04	23	39.25	+20	04	35.8			675
1978	WP8	*	1978	11	29.34653	04	24	49.23	+17	51	57.8		18.0	675
1978	WP8		1978	11	30.34809	04	23	50.88	+17	53	52.2			675
1978	WQ8	*	1978	11	29.34653	04	24	52.21	+23	31	37.5		20.0	675
1978	WQ8		1978	11	30.34809	04	23	39.94	+23	31	23.1			675
1978	WR8	*	1978	11	29.34653	04	24	58.15	+20	56	52.9		19.0	675
1978	WR8		1978	11	30.34809	04	24	00.60	+20	55	56.3			675
1978	WS8	*	1978	11	29.34653	04	24	59.84	+22	31	05.5		20.0	675
1978	WS8		1978	11	30.34809	04	24	00.09	+22	28	16.2			675
1978	WT8	*	1978	11	29.34653	04	25	01.41	+18	27	59.7		19.5	675
1978	WT8		1978	11	30.34809	04	23	55.14	+18	27	15.8			675
1978	WU8	*	1978	11	29.34653	04	25	03.60	+21	43	25.8		19.0	675
1978	WU8		1978	11	30.40017	04	24	05.88	+21	41	32.8			675
1978	WV8	*	1978	11	29.34653	04	25	19.24	+21	40	44.9		19.5	675
1978	WV8		1978	11	29.45694	04	25	12.49	+21	40	35.7			675
1978	WV8		1978	11	30.34809	04	24	16.79	+21	39	15.4			675
1978	WW8	*	1978	11	29.34653	04	25	27.54	+20	47	18.4		20.0	675
1978	WW8		1978	11	30.34809	04	24	34.38	+20	46	22.8			675
1978	WX8	*	1978	11	29.34653	04	25	39.38	+18	54	50.4		20.0	675
1978	WX8		1978	11	30.34809	04	24	31.98	+18	54	21.0			675
1978	WY8	*	1978	11	29.34653	04	25	41.01	+20	56	40.7		19.5	675
1978	WY8		1978	11	30.34809	04	24	43.74	+20	55	41.0			675
1978	WZ8	*	1978	11	29.34653	04	25	57.86	+21	04	24.4		20.0	675
1978	WZ8		1978	11	29.45694	04	25	50.87	+21	04	27.4			675
1978	WZ8		1978	11	30.34809	04	24	54.95	+21	04	51.6			675
1978	WA9	*	1978	11	29.34653	04	26	09.61	+20	28	43.0		19.5	675
1978	WA9		1978	11	29.45694	04	26	03.52	+20	28	27.5			675
1978	WA9		1978	11	30.34809	04	25	14.02	+20	26	24.0			675
1978	WB9	*	1978	11	29.34653	04	26	55.40	+21	48	31.9		20.0	675
1978	WB9		1978	11	30.34809	04	25	48.18	+21	44	01.8			675
1978	WC9	*	1978	11	29.34653	04	26	59.59	+23	37	29.9		20.0	675
1978	WC9		1978	11	29.40486	04	26	56.26	+23	37	11.1			675
1978	WC9		1978	11	30.34809	04	26	05.37	+23	32	18.3			675
1978	WD9	*	1978	11	29.34653	04	27	08.37	+18	39	22.6		20.0	675
1978	WD9		1978	11	29.40486	04	27	04.76	+18	39	32.8			675
1978	WD9		1978	11	30.34809	04	26	03.97	+18	42	40.2			675

1978	WD9	1978	11	30.45712	04	25	56.74	+18	42	59.8		675	
1978	WE9	*	1978	11	29.34653	04	27	20.88	+22	33	49.9	20.0	675
1978	WE9	1978	11	29.45694	04	27	14.87	+22	33	36.8		675	
1978	WE9	1978	11	30.40503	04	26	23.70	+22	31	44.3		675	
1978	WF9	*	1978	11	29.34653	04	27	55.11	+23	32	42.9	20.0	675
1978	WF9	1978	11	29.40486	04	27	51.36	+23	32	37.8		675	
1978	WF9	1978	11	30.34809	04	26	56.75	+23	31	33.4		675	
1978	WF9	1978	11	30.40503	04	26	53.27	+23	31	28.3		675	
1978	WG9	*	1978	11	29.34653	04	28	01.81	+22	28	50.5	19.5	675
1978	WG9	1978	11	29.45694	04	27	56.45	+22	28	40.5		675	
1978	WG9	1978	11	30.34809	04	27	11.36	+22	27	20.4		675	
1978	WG9	1978	11	30.45712	04	27	05.82	+22	27	10.5		675	
1978	WH9	*	1978	11	29.34653	04	28	20.38	+19	07	13.7	18.5	675
1978	WH9	1978	11	29.45694	04	28	13.87	+19	07	24.8		675	
1978	WH9	1978	11	30.34809	04	27	18.67	+19	08	55.9		675	
1978	WH9	1978	11	30.45712	04	27	12.15	+19	09	06.3		675	
1978	WJ9	*	1978	11	29.34653	04	28	30.06	+21	19	53.1	20.0	675
1978	WJ9	1978	11	29.45694	04	28	24.64	+21	19	41.3		675	
1978	WJ9	1978	11	30.40503	04	27	37.16	+21	17	51.3		675	
1978	WK9	*	1978	11	29.34653	04	28	45.76	+20	52	40.0	19.5	675
1978	WK9	1978	11	29.45694	04	28	36.96	+20	53	28.9		675	
1978	WK9	1978	11	30.34809	04	27	27.06	+21	00	02.2		675	
1978	WK9	1978	11	30.45712	04	27	18.83	+21	00	46.5		675	
1978	WL9	*	1978	11	29.34653	04	28	51.61	+22	59	50.5	20.0	675
1978	WL9	1978	11	29.45694	04	28	47.99	+22	59	41.1		675	
1978	WL9	1978	11	30.34809	04	28	17.89	+22	58	37.0		675	
1978	WL9	1978	11	30.40503	04	28	15.86	+22	58	31.2		675	
1978	WM9	*	1978	11	29.34653	04	28	58.28	+18	08	38.9	18.0	675
1978	WM9	1978	11	30.34809	04	28	01.86	+18	10	54.9		675	
1978	WN9	*	1978	11	29.34653	04	29	18.85	+18	51	19.8	20.0	675
1978	WN9	1978	11	29.45694	04	29	11.29	+18	51	10.3		675	
1978	WN9	1978	11	30.34809	04	28	08.05	+18	49	53.0		675	
1978	WN9	1978	11	30.45712	04	28	00.57	+18	49	43.6		675	
1978	WO9	*	1978	11	29.34653	04	29	30.27	+18	10	45.9	19.5	675
1978	WO9	1978	11	30.34809	04	28	34.69	+18	08	36.4		675	
1978	WP9	*	1978	11	29.34653	04	29	45.09	+18	52	22.9	19.0	675
1978	WP9	1978	11	29.45694	04	29	38.92	+18	52	33.1		675	
1978	WP9	1978	11	30.34809	04	28	47.91	+18	53	46.1		675	
1978	WP9	1978	11	30.45712	04	28	42.04	+18	53	56.3		675	
1978	WQ9	*	1978	11	29.34653	04	29	49.18	+21	02	22.4	20.0	675
1978	WQ9	1978	11	29.40486	04	29	46.01	+21	02	26.7		675	
1978	WQ9	1978	11	30.45712	04	28	43.93	+21	04	12.0		675	
1978	WR9	*	1978	11	29.39861	04	06	37.15	+18	03	06.8	20.0	675
1978	WR9	1978	11	30.40017	04	06	02.50	+18	02	39.7		675	
1978	WS9	*	1978	11	29.39861	04	08	25.50	+19	35	36.9	19.5	675
1978	WS9	1978	11	30.34809	04	07	35.64	+19	33	21.0		675	
1978	WT9	*	1978	11	29.39861	04	09	46.94	+23	52	51.0	19.5	675
1978	WT9	1978	11	30.34809	04	08	42.73	+23	47	52.2		675	
1978	WU9	*	1978	11	29.39861	04	11	54.40	+23	05	41.9	20.0	675
1978	WU9	1978	11	30.34809	04	11	02.79	+23	01	53.5		675	
1978	WV9	*	1978	11	29.39861	04	13	36.41	+24	01	45.1	20.0	675
1978	WV9	1978	11	30.34809	04	12	31.08	+23	57	25.0		675	
1978	WW9	*	1978	11	29.39861	04	13	46.47	+24	02	49.6	19.5	675
1978	WW9	1978	11	30.34809	04	12	49.40	+23	59	15.7		675	
1978	WX9	*	1978	11	29.39861	04	13	56.69	+23	03	01.7	20.0	675
1978	WX9	1978	11	30.34809	04	12	58.94	+22	51	50.8		675	
1978	WY9	*	1978	11	29.39861	04	14	09.34	+22	00	19.5	20.5	675
1978	WY9	1978	11	30.34809	04	13	03.55	+21	56	15.7		675	
1978	WZ9	*	1978	11	29.39861	04	15	05.83	+21	25	24.9	19.5	675

1978	WZ9	1978	11	30.34809	04	14	14.81	+21	20	15.2		675
1978	WA10*	1978	11	29.39861	04	17	11.99	+20	35	25.4	19.5	675
1978	WA10	1978	11	30.34809	04	16	16.36	+20	29	30.3		675
1978	WB10*	1978	11	29.39861	04	17	24.31	+22	20	28.8	20.0	675
1978	WB10	1978	11	30.40017	04	16	14.07	+22	18	39.6		675
1978	WC10*	1978	11	29.39861	04	18	10.92	+22	26	49.2	20.0	675
1978	WC10	1978	11	30.34809	04	17	05.89	+22	24	08.4		675
1978	WD10*	1978	11	29.39861	04	19	09.14	+21	42	38.1	20.0	675
1978	WD10	1978	11	30.34809	04	18	16.65	+21	41	12.0		675
1978	WE10*	1978	11	29.39861	04	19	41.03	+19	51	01.1	20.0	675
1978	WE10	1978	11	30.34809	04	18	43.94	+19	48	41.5		675
1978	WF10*	1978	11	29.39861	04	20	35.49	+20	55	19.0	20.0	675
1978	WF10	1978	11	30.34809	04	19	33.57	+20	55	47.0		675
1978	WG10*	1978	11	29.39861	04	21	05.31	+20	05	37.8	20.0	675
1978	WG10	1978	11	30.34809	04	20	26.33	+20	04	32.6		675
1978	WH10*	1978	11	29.39861	04	22	22.64	+18	56	46.9	20.0	675
1978	WH10	1978	11	30.34809	04	21	21.87	+18	54	31.3		675
1978	WJ10*	1978	11	29.39861	04	27	32.27	+19	10	15.0	20.5	675
1978	WJ10	1978	11	30.40503	04	26	40.57	+19	09	31.1		675
1978	WK10*	1978	11	29.39861	04	27	55.36	+21	46	05.1	20.0	675
1978	WK10	1978	11	30.34809	04	26	53.51	+21	46	13.0		675
1978	WL10*	1978	11	29.39861	04	28	12.34	+23	27	25.8	20.0	675
1978	WL10	1978	11	30.40017	04	27	15.42	+23	26	06.6		675
1978	WM10*	1978	11	29.39861	04	29	23.18	+22	26	34.5	20.5	675
1978	WM10	1978	11	30.34809	04	28	24.94	+22	27	21.7		675
1978	WN10*	1978	11	29.39861	04	30	05.32	+20	50	37.9	18.5	675
1978	WN10	1978	11	29.45694	04	30	01.10	+20	50	55.2		675
1978	WN10	1978	11	30.34809	04	29	00.19	+20	55	33.8		675
1978	WN10	1978	11	30.45712	04	28	52.58	+20	56	07.1		675
1978	WO10*	1978	11	29.40486	04	26	07.46	+21	02	39.9	20.0	675
1978	WO10	1978	11	30.34809	04	25	08.44	+21	08	22.1		675
1978	WP10*	1978	11	29.40486	04	26	57.07	+24	17	23.7	20.0	675
1978	WP10	1978	11	30.40503	04	25	50.91	+24	14	56.2		675
1978	WQ10*	1978	11	29.40486	04	28	48.38	+23	58	03.2	20.0	675
1978	WQ10	1978	11	30.40503	04	27	40.08	+24	05	20.0		675
1978	WR10*	1978	11	29.40486	04	29	38.98	+20	03	21.0	20.0	675
1978	WR10	1978	11	30.45712	04	28	33.81	+20	00	38.9		675
1978	WS10*	1978	11	29.40486	04	30	14.59	+19	42	00.6	20.0	675
1978	WS10	1978	11	30.34809	04	29	10.03	+19	43	08.0		675
1978	WS10	1978	11	30.40503	04	29	05.70	+19	43	10.5		675
1978	WT10*	1978	11	29.40486	04	30	14.81	+23	20	03.1	20.0	675
1978	WT10	1978	11	30.34809	04	29	12.58	+23	16	20.4		675
1978	WT10	1978	11	30.40503	04	29	08.93	+23	16	05.9		675
1978	WU10*	1978	11	29.40486	04	30	20.55	+18	29	07.9	20.0	675
1978	WU10	1978	11	30.34809	04	29	28.31	+18	27	04.4		675
1978	WU10	1978	11	30.40503	04	29	25.03	+18	26	57.5		675
1978	WV10*	1978	11	29.40486	04	31	10.52	+20	08	10.4	20.0	675
1978	WV10	1978	11	30.40503	04	30	14.57	+20	07	31.2		675
1978	WW10*	1978	11	29.40486	04	31	11.04	+19	06	45.8	19.0	675
1978	WW10	1978	11	30.40503	04	30	15.76	+19	07	28.4		675
1978	WX10*	1978	11	29.40486	04	31	17.43	+19	47	02.6	20.0	675
1978	WX10	1978	11	30.40503	04	30	21.33	+19	47	40.0		675
1978	WY10*	1978	11	29.40486	04	31	30.75	+21	01	43.9	19.5	675
1978	WY10	1978	11	30.40503	04	30	21.25	+21	04	37.3		675
1978	WZ10*	1978	11	29.40486	04	31	58.81	+18	32	35.9	19.5	675
1978	WZ10	1978	11	30.40503	04	31	06.71	+18	31	07.7		675
1978	WA11*	1978	11	29.40486	04	32	02.33	+23	22	33.8	20.0	675
1978	WA11	1978	11	30.40503	04	31	01.64	+23	25	32.7		675
1978	WB11*	1978	11	29.40486	04	32	51.01	+20	19	41.4	20.0	675

1978	WB11	1978	11	30.40503	04	31	41.85	+20	25	12.8		675
1978	WC11*	1978	11	29.40486	04	33	34.10	+18	23	20.7	20.0	675
1978	WC11	1978	11	30.40503	04	32	35.59	+18	20	33.1		675
1978	WD11*	1978	11	29.40486	04	33	36.13	+19	09	36.0	20.5	675
1978	WD11	1978	11	30.40503	04	32	43.55	+19	06	36.2		675
1978	WE11*	1978	11	29.40486	04	33	57.26	+20	43	26.1	20.0	675
1978	WE11	1978	11	30.40503	04	32	48.52	+20	46	38.9		675
1978	WF11*	1978	11	29.40486	04	34	04.86	+18	20	51.3	19.0	675
1978	WF11	1978	11	30.40503	04	33	09.02	+18	18	52.5		675
1978	WG11*	1978	11	29.40486	04	34	07.86	+23	42	11.2	20.0	675
1978	WG11	1978	11	30.40503	04	33	04.28	+23	40	03.9		675
1978	WH11*	1978	11	29.40486	04	34	14.99	+19	25	15.7	18.0	675
1978	WH11	1978	11	30.40503	04	32	16.58	+19	45	06.3		675
1978	WJ11*	1978	11	29.40486	04	34	55.05	+18	21	58.7	20.0	675
1978	WJ11	1978	11	30.40503	04	33	58.78	+18	19	46.8		675
1978	WK11*	1978	11	29.40486	04	34	56.26	+22	20	04.5	20.0	675
1978	WK11	1978	11	30.45712	04	33	50.28	+22	17	53.9		675
1978	WL11*	1978	11	29.40486	04	35	12.72	+19	09	16.3	20.0	675
1978	WL11	1978	11	30.40503	04	34	03.31	+19	15	14.7		675
1978	WM11*	1978	11	29.40486	04	35	27.96	+18	44	53.7	20.0	675
1978	WM11	1978	11	30.40503	04	34	34.14	+18	46	28.7		675
1978	WN11*	1978	11	29.40486	04	35	36.06	+20	12	11.0	20.0	675
1978	WN11	1978	11	30.40503	04	34	35.03	+20	10	38.6		675
1978	WO11*	1978	11	29.40486	04	36	04.16	+19	54	29.7	20.0	675
1978	WO11	1978	11	30.40503	04	35	07.62	+19	53	53.1		675
1978	WP11*	1978	11	29.40486	04	36	24.69	+19	20	19.5	18.5	675
1978	WP11	1978	11	30.40503	04	35	24.78	+19	19	14.1		675
1978	WQ11*	1978	11	29.40486	04	36	48.34	+19	39	30.5	18.5	675
1978	WQ11	1978	11	30.40503	04	35	39.14	+19	40	56.6		675
1978	WR11*	1978	11	29.40486	04	37	34.72	+18	43	35.4	20.0	675
1978	WR11	1978	11	30.40503	04	36	28.93	+18	39	33.9		675
1978	WS11*	1978	11	29.40486	04	37	50.52	+18	16	22.9	19.5	675
1978	WS11	1978	11	30.40503	04	36	06.29	+18	14	09.5		675
1978	WT11*	1978	11	29.40486	04	38	22.95	+22	51	30.2	20.0	675
1978	WT11	1978	11	30.40503	04	37	13.19	+22	49	58.8		675
1978	WU11*	1978	11	29.40486	04	38	26.75	+20	23	26.3	20.0	675
1978	WU11	1978	11	30.40503	04	37	33.20	+20	21	13.3		675
1978	WV11*	1978	11	29.40486	04	38	33.59	+21	22	52.6	20.0	675
1978	WV11	1978	11	30.40503	04	37	28.52	+21	20	11.4		675
1978	WW11*	1978	11	29.40486	04	38	46.73	+18	59	48.9	18.0	675
1978	WW11	1978	11	30.40503	04	37	40.12	+19	00	16.4		675
1978	WX11*	1978	11	29.40486	04	39	02.87	+22	34	39.0	20.5	675
1978	WX11	1978	11	30.40503	04	38	12.58	+22	33	23.8		675
1978	WY11*	1978	11	29.40486	04	39	06.93	+19	40	44.8	20.0	675
1978	WY11	1978	11	30.45712	04	38	04.50	+19	38	07.9		675
1978	WZ11*	1978	11	29.40486	04	39	36.12	+23	33	56.4	19.5	675
1978	WZ11	1978	11	30.40503	04	38	30.52	+23	23	00.7		675
1978	WA12*	1978	11	29.40486	04	39	47.47	+18	36	40.9	19.5	675
1978	WA12	1978	11	30.40503	04	38	53.46	+18	35	33.2		675
1978	WB12*	1978	11	29.40486	04	39	56.31	+23	59	06.3	20.0	675
1978	WB12	1978	11	30.40503	04	39	05.34	+23	58	25.8		675
1978	WC12*	1978	11	29.40486	04	40	20.19	+24	31	49.7	20.0	675
1978	WC12	1978	11	30.40503	04	39	22.79	+24	30	42.8		675
1978	WD12*	1978	11	29.40486	04	40	47.50	+18	40	58.7	19.0	675
1978	WD12	1978	11	30.40503	04	39	52.53	+18	38	57.9		675
1978	WE12*	1978	11	29.40486	04	41	17.16	+23	33	55.6	19.0	675
1978	WE12	1978	11	30.45712	04	40	05.66	+23	32	21.8		675
1978	WF12*	1978	11	29.40486	04	41	30.60	+19	25	31.8	20.0	675
1978	WF12	1978	11	30.40503	04	40	19.59	+19	24	44.4		675

1978	WG12*	1978	11	29.40486	04	42	04.38	+18	20	20.8		19.5	675
1978	WG12	1978	11	30.40503	04	41	02.90	+18	21	38.3		675	
1978	WH12*	1978	11	29.40486	04	42	09.73	+19	06	37.0		20.5	675
1978	WH12	1978	11	30.40503	04	41	18.32	+19	00	46.2		675	
1978	WJ12*	1978	11	29.40486	04	42	33.31	+22	44	51.9		20.0	675
1978	WJ12	1978	11	30.40503	04	41	31.23	+22	46	47.6		675	
1978	WK12*	1978	11	29.40486	04	42	43.22	+18	39	51.5		19.0	675
1978	WK12	1978	11	30.40503	04	41	42.54	+18	39	06.4		675	
1978	WL12*	1978	11	29.40486	04	43	03.60	+18	54	53.3		19.0	675
1978	WL12	1978	11	30.40503	04	42	05.63	+18	55	09.5		675	
1978	WM12*	1978	11	29.40486	04	43	08.13	+23	03	01.2		20.0	675
1978	WM12	1978	11	30.40503	04	42	06.97	+23	00	30.5		675	
1978	WN12*	1978	11	29.40486	04	43	49.41	+20	33	35.8		20.0	675
1978	WN12	1978	11	30.45712	04	42	38.16	+20	39	04.3		675	
1978	WO12*	1978	11	29.40486	04	43	49.89	+21	46	53.6		16.0	675
1978	WO12	1978	11	30.40503	04	42	46.55	+21	52	31.7		675	
1978	WP12*	1978	11	29.40486	04	43	53.78	+23	20	40.2		20.0	675
1978	WP12	1978	11	30.40503	04	43	01.09	+23	19	29.0		675	
1978	WQ12*	1978	11	29.40486	04	44	47.40	+22	56	19.4		20.0	675
1978	WQ12	1978	11	30.40503	04	43	37.71	+22	54	29.4		675	
1978	WR12*	1978	11	29.40486	04	44	52.34	+21	19	41.1		18.5	675
1978	WR12	1978	11	30.40503	04	43	52.96	+21	06	08.8		675	
1978	WS12*	1978	11	29.40486	04	44	53.54	+24	17	50.7		18.5	675
1978	WS12	1978	11	30.40503	04	44	19.72	+24	16	42.6		675	
1978	WT12*	1978	11	29.40486	04	45	05.84	+23	00	33.9		20.0	675
1978	WT12	1978	11	30.40503	04	44	05.71	+22	58	16.5		675	
1978	WU12*	1978	11	29.40486	04	45	07.64	+19	50	02.9		19.0	675
1978	WU12	1978	11	30.40503	04	44	17.72	+19	48	42.1		675	
1978	WV12*	1978	11	29.40486	04	45	21.47	+19	37	58.9		20.0	675
1978	WV12	1978	11	30.40503	04	44	27.60	+19	39	51.7		675	
1978	WW12*	1978	11	29.40486	04	45	24.42	+22	34	33.4		20.0	675
1978	WW12	1978	11	30.40503	04	44	25.00	+22	34	57.0		675	
1978	WX12*	1978	11	29.40486	04	45	50.90	+23	30	06.9		19.5	675
1978	WX12	1978	11	30.40503	04	44	41.54	+23	26	57.4		675	
1978	WY12*	1978	11	29.40486	04	45	52.43	+21	59	20.8		20.0	675
1978	WY12	1978	11	30.40503	04	44	42.09	+21	56	18.0		675	
1978	WZ12*	1978	11	29.40486	04	46	02.87	+22	29	27.5		20.0	675
1978	WZ12	1978	11	30.40503	04	45	09.53	+22	26	38.5		675	
1978	WA13*	1978	11	29.40486	04	47	10.97	+22	36	37.8		20.5	675
1978	WA13	1978	11	30.40503	04	45	58.33	+22	38	00.1		675	
1978	WB13*	1978	11	29.40486	04	47	51.37	+18	48	57.4		19.5	675
1978	WB13	1978	11	30.40503	04	46	53.52	+18	47	17.3		675	
1978	WC13*	1978	11	29.40486	04	47	53.88	+21	11	42.3		20.0	675
1978	WC13	1978	11	30.40503	04	46	57.57	+21	11	07.9		675	
1978	WD13*	1978	11	29.40486	04	48	18.99	+18	50	48.3		20.0	675
1978	WD13	1978	11	30.40503	04	47	12.86	+18	50	37.3		675	
1978	WE13*	1978	11	29.40486	04	48	27.61	+18	32	14.6		20.5	675
1978	WE13	1978	11	30.40503	04	47	53.20	+18	31	26.8		675	
1978	WF13*	1978	11	29.40486	04	48	41.40	+19	59	36.4		20.0	675
1978	WF13	1978	11	30.40503	04	47	33.00	+20	00	03.8		675	
1978	WG13*	1978	11	29.40486	04	49	05.03	+19	15	08.6		19.5	675
1978	WG13	1978	11	30.40503	04	47	50.85	+19	13	59.7		675	
1978	WH13*	1978	11	29.40486	04	49	18.31	+22	28	49.2		19.5	675
1978	WH13	1978	11	30.40503	04	48	25.89	+22	27	22.8		675	
1978	WJ13*	1978	11	29.40486	04	49	52.72	+22	26	39.1		20.0	675
1978	WJ13	1978	11	30.40503	04	48	53.01	+22	28	08.2		675	
1978	WF13*	1978	11	29.40486	04	50	01.83	+19	09	02.5		19.0	675
1978	WK13	1978	11	30.40503	04	49	06.33	+19	08	09.7		675	
1978	WL13*	1978	11	29.40486	04	50	02.00	+18	34	32.4		20.0	675

1978	WL13	1978	11	30.40503	04	49	01.24	+18	33	05.3		675
1978	WM13*	1978	11	29.40486	04	50	53.35	+20	50	01.0	20.0	675
1978	WM13	1978	11	30.45712	04	49	40.61	+20	50	23.1		675
1978	WN13*	1978	11	29.40486	04	51	04.07	+19	37	29.3	20.0	675
1978	WN13	1978	11	30.40503	04	50	05.94	+19	37	48.4		675
1978	WO13*	1978	11	29.40486	04	51	15.84	+18	27	02.2	19.0	675
1978	WO13	1978	11	30.40503	04	50	11.73	+18	25	30.8		675
1978	WP13*	1978	11	29.40486	04	51	53.70	+18	50	48.6	20.0	675
1978	WP13	1978	11	30.40503	04	50	42.49	+18	51	09.7		675
1978	WQ13*	1978	11	29.40486	04	52	12.17	+23	36	02.3	19.0	675
1978	WQ13	1978	11	30.40503	04	50	57.72	+23	32	35.5		675
1978	WR13*	1978	11	29.40486	04	52	35.61	+22	15	01.8	19.5	675
1978	WR13	1978	11	30.40503	04	51	29.78	+22	10	56.7		675
1978	WS13*	1978	11	29.45694	04	30	17.40	+18	35	32.6	20.0	675
1978	WS13	1978	11	30.40503	04	29	25.37	+18	34	11.6		675
1978	WT13*	1978	11	29.45694	04	33	28.75	+19	28	11.8	20.0	675
1978	WT13	1978	11	30.40503	04	32	25.60	+19	27	01.4		675
1978	WU13*	1978	11	29.45694	04	36	41.59	+20	53	27.2	20.5	675
1978	WU13	1978	11	30.45712	04	35	49.25	+20	44	18.3		675
1978	WV13*	1978	11	29.45694	04	38	27.57	+21	04	06.0	20.0	675
1978	WV13	1978	11	30.40503	04	37	21.78	+21	04	04.3		675
1978	WW13*	1978	11	29.45694	04	41	39.19	+23	36	14.3	20.0	675
1978	WW13	1978	11	30.40503	04	40	36.59	+23	35	34.4		675
1978	WX13*	1978	11	29.45694	04	41	52.11	+24	17	26.4	20.0	675
1978	WX13	1978	11	30.40503	04	40	57.05	+24	18	03.9		675
1978	WY13*	1978	11	29.45694	04	42	16.80	+18	47	13.6	20.0	675
1978	WY13	1978	11	30.40503	04	41	10.09	+18	44	06.3		675
1978	WZ13*	1978	11	29.45694	04	42	17.83	+23	10	54.1	20.5	675
1978	WZ13	1978	11	30.40503	04	41	24.97	+23	04	43.2		675
1978	WA14*	1978	11	29.45694	04	44	49.05	+22	26	40.1	20.0	675
1978	WA14	1978	11	30.40503	04	44	16.06	+22	26	50.1		675
1978	WB14*	1978	11	29.45694	04	44	51.41	+23	01	27.6	20.0	675
1978	WB14	1978	11	30.40503	04	43	47.77	+23	06	00.1		675
1978	WC14*	1978	11	29.45694	04	45	24.02	+20	41	33.7	20.5	675
1978	WC14	1978	11	30.40503	04	44	22.30	+20	37	04.0		675
1978	WD14*	1978	11	29.45694	04	46	05.83	+19	40	40.1	20.0	675
1978	WD14	1978	11	30.40503	04	45	16.39	+19	36	22.2		675
1978	WE14*	1978	11	29.45694	04	50	08.56	+20	25	07.1	20.5	675
1978	WE14	1978	11	30.40503	04	49	07.06	+20	27	31.5		675
1978	WF14*	1978	11	29.45694	04	50	59.74	+18	11	55.8	20.0	675
1978	WF14	1978	11	30.40503	04	49	57.68	+18	12	14.9		675
1978	WG14*	1978	11	29.45694	04	51	22.74	+20	42	35.0	20.0	675
1978	WG14	1978	11	30.40503	04	50	21.25	+20	41	27.7		675
1978	YA	1978	11	29.40486	04	41	43.96	+22	27	05.1	17.5	675
1978	YA	1978	11	30.40503	04	40	50.36	+22	25	45.2		675

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

Object	Date	UT	R. A. (1950)	Decl.	O - C	Obs.
2	1978	05	31.87095	17 15 24.89	+25 39 08.7	0.0 0
3	1978	07	10.91896	20 11 28.86	-04 00 50.6	0.0 0
3	1978	07	12.97578	20 09 50.21	-04 07 07.7	0.0 0
3	1978	09	20.80433	19 32 47.16	-11 26 48.4	0.0 0
3	1978	10	25.80374	19 55 09.30	-13 55 44.5	0.0 0
4	1978	05	30.85712	16 57 28.50	-15 33 36.7	0.1+ 1+
4	1978	07	03.92846	16 27 41.34	-17 18 01.5	0.3- 1+
4	1978	07	10.86826	16 24 54.67	-17 48 36.5	0.0 0
4	1978	07	12.93828	16 24 23.20	-17 58 10.0	0.0 0
6	1978	02	28.83216	10 44 31.76	+16 14 20.9	0.0 1+

6	1978	03	01.84668	10	43	37.19	+16	24	13.8	0.0	1+	006
6	1978	04	14.82804	10	17	46.96	+20	28	01.5	0.3-	2+	006
6	1978	05	03.85402	10	20	03.62	+20	17	13.7	0.0	0	006
7	1978	02	17.83832	09	50	11.31	+03	50	43.1	0.1-	1-	006
7	1978	03	01.82237	09	38	41.13	+04	52	48.8	0.1-	0	006
7	1978	03	11.81478	09	31	05.82	+05	44	08.6	0.2-	0	006
7	1978	03	18.81707	09	27	19.39	+06	16	23.2	0.4-	1+	006
7	1978	04	14.85027	09	25	49.17	+07	30	55.7	0.3-	2+	006
7	1978	05	03.83596	09	35	38.47	+07	29	05.5	0.0	0	006
9	1978	09	11.88551	21	41	39.33	-23	22	55.9	0.3-	2-	006
10	1978	07	12.91258	17	22	44.61	-24	20	58.2	0.2-	0	006
11	1978	11	27.78992	04	08	48.44	+14	09	05.5	0.0	0	006
11	1978	12	28.91830	03	43	34.78	+14	01	14.8	0.0	0	006
12	1978	06	02.92775	16	40	48.55	-17	19	00.4	0.0	0	006
14	1978	12	16.77111	04	53	25.64	+20	24	56.6	0.0	0	006
15	1978	01	09.83840	08	19	28.59	+18	01	52.2	0.1+	0	006
15	1978	02	10.86219	07	46	41.31	+17	15	13.3	0.0	0	006
15	1978	02	17.86471	07	41	54.40	+17	04	32.1	0.3-	0	006
16	1978	05	11.84657	14	57	19.38	-12	18	42.7	0.0	0	006
18	1978	12	28.94156	06	16	34.64	+07	48	47.0	0.0	0	006
19	1978	09	11.90912	22	56	41.41	-04	28	56.1	0.1+	0	006
20	1978	06	02.89164	16	38	54.60	-21	20	05.2	0.1-	0	006
29	1978	09	12.92017	23	56	25.42	-00	34	25.0	0.1+	0	006
29	1978	09	14.90822	23	54	36.29	-00	40	14.6	0.1+	0	006
29	1978	10	05.86098	23	35	24.30	-01	41	49.7	0.2-	1-	006
29	1978	10	31.79135	23	21	39.54	-02	06	59.0	0.3-	2-	006
29	1978	11	14.87662	23	21	52.80	-01	41	02.6	0.3-	2-	006
30	1978	09	25.81785	23	56	52.85	+03	10	56.5	0.0	0	006
30	1978	10	23.78786	23	37	02.21	+01	06	00.9	0.4-	3-	006
39	1978	11	17.79105	01	33	48.35	-04	32	19.9	0.0	1-	006
39	1978	12	01.83738	01	30	06.38	-04	25	25.7	0.3-	2-	006
39	1978	12	12.84075	01	30	40.81	-03	50	38.3	0.0	0	006
51	1978	02	28.85091	10	46	06.20	+02	47	37.7	0.1+	1-	006
67	1978	07	10.89951	18	11	51.99	-11	43	35.9	0.0	0	006
79	1978	12	27.95723	05	56	20.07	+15	27	52.2	0.0	0	006
89	1978	01	09.79222	07	13	34.50	+33	16	24.0	0.1-	1+	006
89	1978	02	03.82185	06	47	07.01	+31	00	23.4	0.4-	0	006
118	1978	01	02.78090	04	26	37.19	+30	13	32.0	0.4-	0	006
118	1978	01	12.82635	04	23	02.53	+30	15	43.3	0.4-	0	006
182	1978	12	16.77111	05	00	12.53	+20	56	45.7	0.1-	0	006
230	1978	11	24.80461	02	27	22.28	+17	37	04.3	0.2-	1-	006
230	1978	12	01.80683	02	23	14.99	+16	35	50.2	0.3-	2-	006
324	1978	11	20.79229	02	21	05.11	+37	51	35.4	0.4-	2+	006
389	1978	01	13.83640	07	55	00.87	+17	38	02.4	0.0	0	006
532	1978	05	29.88843	15	02	13.27	+05	47	58.4	0.2-	2+	006
532	1978	05	31.85428	15	00	51.84	+05	35	12.0	0.1-	0	006
554	1978	01	02.84444	05	22	05.33	+25	25	31.9	0.1-	0	006
554	1978	01	12.85413	05	15	23.97	+24	54	36.4	0.2-	0	006

OBSERVATIONS MADE AT THE PINO TORINESE OBSERVATORY UNDER THE DIRECTION OF
V. ZAPPALA.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2	1978	06	04.93725	17 11 56.57	+25 50 30.4
2	1978	06	04.94072	17 11 56.37	+25 50 31.0
2	1978	06	04.94971	17 11 55.89	+25 50 32.2
2	1978	06	27.91825	16 53 16.58	+25 15 38.6
2	1978	06	27.92171	16 53 16.40	+25 15 37.8
2	1978	06	27.93418	16 53 15.90	+25 15 33.3
2	1978	06	28.93421	16 52 34.21	+25 10 28.8

2	1978	06	28.93699	16	52	34.14	+25	10	28.1	022
2	1978	06	28.93976	16	52	34.03	+25	10	28.2	022
2	1978	07	02.91775	16	49	57.56	+24	47	42.0	022
2	1978	07	02.92052	16	49	57.46	+24	47	40.6	022
2	1978	07	02.93438	16	49	56.99	+24	47	36.5	022
2	1978	07	12.95485	16	44	37.63	+23	33	57.2	022
2	1978	07	12.95763	16	44	37.52	+23	33	55.5	022
2	1978	07	12.96039	16	44	37.44	+23	33	54.5	022
2	1978	09	07.79436	16	52	31.58	+13	21	16.4	022
2	1978	09	07.81446	16	52	32.39	+13	21	04.0	022
2	1978	09	07.82207	16	52	32.72	+13	20	58.5	022
2	1978	09	20.77757	17	02	09.83	+11	04	02.5	022
2	1978	09	20.77965	17	02	09.97	+11	04	01.6	022
2	1978	09	20.78381	17	02	10.17	+11	03	58.6	022
2	1978	10	05.77956	17	15	52.84	+08	40	44.6	022
2	1978	10	05.78302	17	15	53.08	+08	40	42.8	022
2	1978	10	05.78787	17	15	53.36	+08	40	39.6	022
3	1978	07	02.95792	20	17	17.38	-03	43	28.1	022
3	1978	07	02.96069	20	17	17.33	-03	43	28.3	022
3	1978	07	02.96485	20	17	17.10	-03	43	28.7	022
3	1978	09	07.86433	19	32	11.50	-10	02	50.7	022
3	1978	09	07.86571	19	32	11.58	-10	02	51.3	022
3	1978	09	07.88440	19	32	11.36	-10	02	59.9	022
3	1978	10	05.79410	19	38	55.14	-12	46	20.6	022
3	1978	10	05.79756	19	38	55.22	-12	46	21.7	022
3	1978	10	05.81211	19	38	55.80	-12	46	26.0	022
3	1978	10	23.73318	19	53	06.10	-13	50	40.0	022
3	1978	10	23.74219	19	53	06.67	-13	50	40.9	022
3	1978	10	23.74495	19	53	06.76	-13	50	42.4	022
6	1978	02	28.90140	10	44	27.92	+16	15	00.2	022
6	1978	02	28.91941	10	44	26.90	+16	15	10.1	022
6	1978	03	28.89697	10	23	08.06	+19	41	49.3	022
6	1978	03	28.92605	10	23	07.12	+19	41	56.7	022
6	1978	04	13.91007	10	17	53.09	+20	26	59.5	022
6	1978	04	13.91457	10	17	53.02	+20	26	58.8	022
6	1978	04	13.92461	10	17	52.93	+20	26	59.5	022
6	1978	05	28.90390	10	34	12.27	+18	49	35.1	022
6	1978	05	28.90668	10	34	12.36	+18	49	34.0	022
6	1978	05	28.92052	10	34	12.95	+18	49	29.7	022
6	1979	05	02.91947	16	31	18.79	+00	28	58.5	022
6	1979	05	02.92293	16	31	18.63	+00	28	59.0	022
6	1979	05	02.92846	16	31	18.42	+00	29	00.9	022
6	1979	05	21.96177	16	15	31.01	+01	48	20.6	022
6	1979	05	21.96454	16	15	30.84	+01	48	20.8	022
6	1979	05	21.97561	16	15	30.24	+01	48	22.1	022
6	1979	05	29.01884	16	08	46.77	+02	01	31.7	022
6	1979	05	29.02161	16	08	46.56	+02	01	32.2	022
6	1979	05	29.03407	16	08	45.84	+02	01	32.4	022
6	1979	06	04.96231	16	02	12.55	+02	04	06.2	022
6	1979	06	04.96647	16	02	12.34	+02	04	05.5	022
6	1979	06	14.97190	15	53	29.37	+01	49	06.6	022
6	1979	06	14.97433	15	53	29.23	+01	49	06.0	022
6	1979	06	14.97675	15	53	29.14	+01	49	06.0	022
7	1978	02	02.89483	10	05	22.23	+02	49	46.5	022
7	1978	02	02.89829	10	05	22.02	+02	49	47.5	022
7	1978	02	02.93014	10	05	20.10	+02	49	52.1	022
7	1978	02	26.89127	09	41	18.61	+04	37	18.3	022
7	1978	02	26.89473	09	41	18.44	+04	37	19.1	022
7	1978	02	26.90998	09	41	17.64	+04	37	24.0	022

7	1978	02	28.84426	09	39	32.64	+04	47	37.4	022
7	1978	02	28.86296	09	39	31.62	+04	47	43.0	022
7	1978	02	28.86573	09	39	31.46	+04	47	44.5	022
7	1978	04	13.87302	09	25	31.71	+07	29	47.6	022
7	1978	04	13.87718	09	25	31.77	+07	29	47.9	022
7	1978	04	13.88757	09	25	31.92	+07	29	47.9	022
7	1979	05	21.93406	15	31	31.74	-22	21	27.7	022
7	1979	05	21.93752	15	31	31.55	-22	21	27.0	022
7	1979	05	21.95484	15	31	30.49	-22	21	20.5	022
7	1979	06	14.95441	15	10	44.75	-20	21	19.8	022
7	1979	06	14.95719	15	10	44.64	-20	21	19.1	022
7	1979	06	14.95995	15	10	44.57	-20	21	17.9	022
11	1978	10	26.94696	04	36	39.38	+15	18	24.1	022
11	1978	10	26.95181	04	36	39.16	+15	18	23.1	022
11	1978	10	26.97397	04	36	38.47	+15	18	19.5	022
11	1978	10	29.90794	04	34	57.18	+15	11	37.3	022
11	1978	10	29.91140	04	34	57.05	+15	11	37.0	022
11	1978	10	29.95642	04	34	55.25	+15	11	31.1	022
11	1978	11	01.91396	04	32	58.14	+15	04	38.1	022
11	1978	11	01.95412	04	32	56.41	+15	04	31.9	022
11	1978	11	07.93947	04	28	17.97	+14	50	28.2	022
11	1978	11	07.95609	04	28	17.10	+14	50	26.2	022
11	1978	11	22.87705	04	13	55.48	+14	17	50.5	022
11	1978	11	22.87981	04	13	55.28	+14	17	50.4	022
11	1978	11	22.89782	04	13	54.13	+14	17	48.8	022
11	1978	11	29.94588	04	06	34.07	+14	05	41.2	022
11	1978	11	29.95003	04	06	33.86	+14	05	40.6	022
11	1978	11	29.95973	04	06	33.19	+14	05	39.7	022
11	1978	11	30.87458	04	05	36.91	+14	04	19.0	022
11	1978	11	30.87736	04	05	36.78	+14	04	19.8	022
11	1978	11	30.89259	04	05	35.81	+14	04	18.1	022
11	1978	12	05.91704	04	00	33.69	+13	58	09.1	022
11	1978	12	05.91980	04	00	33.54	+13	58	08.6	022
11	1978	12	05.94543	04	00	32.02	+13	58	06.9	022
11	1979	01	25.82626	03	42	38.80	+15	17	04.1	022
11	1979	01	25.82972	03	42	38.85	+15	17	04.4	022
11	1979	01	25.87473	03	42	39.79	+15	17	14.8	022
11	1979	01	29.85897	03	44	17.97	+15	33	05.4	022
11	1979	01	29.86728	03	44	18.17	+15	33	06.8	022
11	1979	01	29.88321	03	44	18.60	+15	33	10.7	022
11	1979	01	31.84589	03	45	15.83	+15	41	18.3	022
11	1979	01	31.84935	03	45	15.90	+15	41	19.8	022
11	1979	01	31.86875	03	45	16.52	+15	41	24.4	022
11	1979	02	20.81898	03	59	49.21	+17	12	15.7	022
11	1979	02	20.82245	03	59	49.36	+17	12	16.3	022
11	1979	02	20.83769	03	59	50.25	+17	12	21.3	022
11	1979	02	21.83495	04	00	46.19	+17	17	06.5	022
11	1979	02	21.84118	04	00	46.59	+17	17	08.8	022
11	1979	02	25.83580	04	04	41.51	+17	36	18.7	022
11	1979	02	25.83858	04	04	41.65	+17	36	19.2	022
11	1979	02	25.84965	04	04	42.41	+17	36	22.3	022
17	1978	10	26.94696	04	30	37.82	+14	09	30.8	022
17	1978	10	26.95181	04	30	37.61	+14	09	30.1	022
17	1978	10	26.97397	04	30	36.84	+14	09	26.8	022
17	1978	10	29.90794	04	28	45.50	+14	01	52.5	022
17	1978	10	29.91140	04	28	45.30	+14	01	52.9	022
17	1978	10	29.95642	04	28	43.50	+14	01	45.1	022
17	1978	11	01.90980	04	26	38.85	+13	54	03.2	022
17	1978	11	01.91396	04	26	38.60	+13	54	02.6	022

17	1978	11	01.95412	04	26	36.78	+13	53	56.3	022
17	1978	11	22.87705	04	07	36.19	+13	02	32.9	022
17	1978	11	22.87981	04	07	36.03	+13	02	32.4	022
17	1978	11	22.89782	04	07	34.93	+13	02	30.3	022
17	1978	11	29.94588	04	00	27.78	+12	49	11.6	022
17	1978	11	29.95003	04	00	27.48	+12	49	10.1	022
17	1978	11	29.95973	04	00	26.90	+12	49	09.1	022
17	1978	11	30.87458	03	59	32.36	+12	47	40.2	022
17	1978	11	30.87736	03	59	32.17	+12	47	40.0	022
17	1978	11	30.89259	03	59	31.26	+12	47	38.5	022
17	1978	12	05.91980	03	54	38.07	+12	40	42.4	022
17	1978	12	05.94543	03	54	36.55	+12	40	39.8	022
17	1979	01	25.82626	03	34	45.25	+13	49	59.7	022
17	1979	01	25.82972	03	34	45.31	+13	50	00.5	022
17	1979	01	25.87473	03	34	45.94	+13	50	09.5	022
17	1979	01	29.85897	03	35	58.60	+14	05	17.1	022
17	1979	01	29.86728	03	35	58.81	+14	05	18.8	022
17	1979	01	29.88321	03	35	59.21	+14	05	22.6	022
17	1979	01	31.84589	03	36	43.17	+14	13	10.5	022
17	1979	01	31.84935	03	36	43.23	+14	13	10.6	022
17	1979	01	31.86875	03	36	43.73	+14	13	14.5	022
18	1978	10	26.98332	06	44	13.94	+08	42	47.8	022
18	1978	10	26.99301	06	44	14.29	+08	42	45.1	022
18	1978	10	26.99579	06	44	14.37	+08	42	43.4	022
18	1978	10	29.96819	06	45	57.70	+08	27	02.1	022
18	1978	10	29.97166	06	45	57.84	+08	27	00.6	022
18	1978	10	29.97581	06	45	57.91	+08	26	59.8	022
18	1978	11	01.96417	06	47	22.83	+08	11	43.8	022
18	1978	11	01.96832	06	47	22.94	+08	11	42.5	022
18	1978	11	01.97178	06	47	22.97	+08	11	41.3	022
18	1978	11	22.93453	06	47	53.53	+06	50	55.6	022
18	1978	11	22.93729	06	47	53.43	+06	50	55.8	022
18	1978	11	22.94907	06	47	53.20	+06	50	54.5	022
18	1978	11	30.93760	06	43	42.61	+06	38	37.7	022
18	1978	11	30.94038	06	43	42.50	+06	38	38.0	022
18	1978	11	30.94661	06	43	42.28	+06	38	37.6	022
18	1978	12	05.95409	06	39	59.33	+06	37	53.5	022
18	1978	12	05.98249	06	39	57.86	+06	37	53.8	022
18	1979	01	25.90590	05	54	11.20	+11	13	54.3	022
18	1979	01	25.93014	05	54	10.63	+11	14	06.5	022
18	1979	01	25.93638	05	54	10.47	+11	14	09.5	022
18	1979	01	29.89082	05	52	53.99	+11	46	49.8	022
18	1979	01	29.89498	05	52	53.92	+11	46	52.4	022
18	1979	01	29.92822	05	52	53.40	+11	47	08.6	022
18	1979	01	31.87913	05	52	28.07	+12	03	13.0	022
18	1979	01	31.88259	05	52	27.99	+12	03	14.6	022
18	1979	01	31.91307	05	52	27.52	+12	03	29.5	022
18	1979	02	20.84391	05	55	33.27	+14	39	22.3	022
18	1979	02	20.84738	05	55	33.34	+14	39	25.0	022
18	1979	02	20.87301	05	55	34.06	+14	39	35.3	022
18	1979	02	21.86542	05	56	02.99	+14	46	44.0	022
18	1979	02	21.86889	05	56	03.06	+14	46	45.2	022
18	1979	02	21.89382	05	56	03.74	+14	46	55.5	022
18	1979	02	25.85659	05	58	16.29	+15	14	39.4	022
18	1979	02	25.86005	05	58	16.39	+15	14	41.0	022
18	1979	02	25.88289	05	58	17.19	+15	14	49.7	022
18	1979	03	18.86502	06	16	27.70	+17	18	10.6	022
18	1979	03	18.86780	06	16	27.83	+17	18	11.4	022
18	1979	03	18.88234	06	16	28.82	+17	18	14.8	022

18	1979	03	20.87757	06	18	41.21	+17	27	44.6	022
18	1979	03	20.88035	06	18	41.35	+17	27	45.5	022
18	1979	03	20.88588	06	18	41.72	+17	27	46.2	022
30	1978	11	22.82822	23	40	36.17	+01	03	53.3	022
30	1978	11	22.83237	23	40	36.37	+01	03	54.3	022
30	1978	11	29.80668	23	45	18.83	+01	27	21.0	022
30	1978	11	29.82053	23	45	19.43	+01	27	24.9	022
30	1978	11	29.82469	23	45	19.60	+01	27	25.3	022
30	1978	11	30.79910	23	46	05.14	+01	31	21.5	022
30	1978	11	30.80256	23	46	05.33	+01	31	22.0	022
30	1978	11	30.82611	23	46	06.35	+01	31	28.0	022
30	1978	12	05.83601	23	50	22.72	+01	54	07.3	022
30	1978	12	05.86372	23	50	24.15	+01	54	15.8	022
30	1978	12	05.86648	23	50	24.33	+01	54	16.6	022
39	1977	06	12.94262	17	39	09.00	-07	48	56.5	022
39	1977	06	12.94538	17	39	08.90	-07	48	56.8	022
39	1977	06	12.95647	17	39	08.26	-07	48	56.2	022
39	1977	06	15.97649	17	36	30.98	-07	49	10.0	022
39	1977	06	15.97926	17	36	30.83	-07	49	10.1	022
39	1977	06	15.99450	17	36	30.03	-07	49	10.1	022
39	1977	06	16.96389	17	35	39.39	-07	49	30.5	022
39	1977	06	16.96944	17	35	39.11	-07	49	30.7	022
39	1977	06	16.97500	17	35	38.79	-07	49	30.9	022
39	1977	06	16.98056	17	35	38.48	-07	49	31.0	022
39	1978	10	09.89122	02	00	19.71	-00	59	07.4	022
39	1978	10	09.89469	02	00	19.59	-00	59	09.4	022
39	1978	10	09.90438	02	00	19.22	-00	59	13.6	022
39	1978	10	23.93125	01	49	48.69	-02	49	10.0	022
39	1978	10	23.93610	01	49	48.38	-02	49	12.0	022
39	1978	10	23.95964	01	49	47.36	-02	49	22.1	022
39	1978	10	26.91476	01	47	31.44	-03	08	48.5	022
39	1978	10	26.91752	01	47	31.30	-03	08	49.5	022
39	1978	10	26.93899	01	47	30.37	-03	08	58.0	022
39	1978	10	29.87193	01	45	17.99	-03	26	32.0	022
39	1978	10	29.87470	01	45	17.85	-03	26	34.8	022
39	1978	10	29.89963	01	45	16.73	-03	26	42.7	022
39	1978	11	01.86721	01	43	07.33	-03	42	36.4	022
39	1978	11	01.87067	01	43	07.16	-03	42	37.6	022
39	1978	11	01.90253	01	43	05.75	-03	42	47.2	022
39	1978	11	22.83964	01	31	55.39	-04	35	09.9	022
39	1978	11	22.84311	01	31	55.30	-04	35	09.5	022
39	1978	11	22.87012	01	31	54.77	-04	35	09.8	022
39	1978	11	29.86902	01	30	19.79	-04	29	06.7	022
39	1978	11	29.88564	01	30	19.62	-04	29	05.3	022
39	1978	11	29.89047	01	30	19.59	-04	29	05.0	022
39	1978	11	30.83373	01	30	12.56	-04	27	25.6	022
39	1978	11	30.83649	01	30	12.52	-04	27	25.6	022
39	1978	11	30.86766	01	30	12.30	-04	27	21.1	022
39	1978	12	05.87895	01	29	57.67	-04	15	22.9	022
39	1978	12	05.90666	01	29	57.65	-04	15	18.0	022
39	1978	12	05.90942	01	29	57.60	-04	15	17.8	022
39	1979	01	25.80547	01	59	20.87	+01	08	54.0	022
39	1979	01	25.81032	01	59	20.30	+01	08	49.4	022
39	1979	01	25.82002	01	59	19.94	+01	08	46.5	022
39	1979	01	29.83126	02	03	36.16	+01	43	09.4	022
39	1979	01	29.83473	02	03	36.49	+01	43	10.9	022
39	1979	01	29.85273	02	03	37.61	+01	43	19.8	022
39	1979	01	31.81611	02	05	47.36	+02	00	17.3	022
39	1979	01	31.83550	02	05	48.69	+02	00	27.4	022

39	1979	01	31.83965	02	05	48.86	+02	00	29.4	022
40	1977	11	15.83316	04	59	14.93	+19	11	09.5	022
40	1977	11	15.86017	04	59	13.38	+19	11	09.9	022
40	1977	11	15.86501	04	59	13.15	+19	11	09.6	022
40	1979	05	02.88206	13	43	35.17	-03	50	30.1	022
40	1979	05	02.88622	13	43	34.96	-03	50	28.4	022
40	1979	05	02.89522	13	43	34.44	-03	50	27.1	022
40	1979	05	21.87796	13	29	41.19	-03	16	52.6	022
40	1979	05	21.88074	13	29	41.02	-03	16	52.4	022
40	1979	05	21.89390	13	29	40.65	-03	16	52.9	022
40	1979	05	23.88983	13	28	43.48	-03	17	05.9	022
40	1979	05	23.89259	13	28	43.39	-03	17	06.1	022
40	1979	05	23.89605	13	28	43.29	-03	17	06.7	022
40	1979	05	28.92118	13	26	48.98	-03	20	56.2	022
40	1979	05	28.92464	13	26	48.95	-03	20	56.7	022
40	1979	05	28.93711	13	26	48.73	-03	20	57.8	022
40	1979	06	14.93641	13	25	43.36	-04	06	27.1	022
40	1979	06	14.93987	13	25	43.37	-04	06	28.7	022
40	1979	06	14.94888	13	25	43.46	-04	06	30.4	022
51	1978	02	02.95646	11	03	25.05	-00	56	51.9	022
51	1978	02	02.95992	11	03	25.03	-00	56	51.0	022
51	1978	02	02.97447	11	03	24.65	-00	56	46.7	022
51	1978	02	14.94377	10	56	51.46	+00	29	09.9	022
51	1978	02	14.95902	10	56	50.81	+00	29	17.8	022
51	1978	02	14.96387	10	56	50.61	+00	29	20.0	022
51	1978	02	26.85838	10	47	44.93	+02	26	02.7	022
51	1978	02	26.86323	10	47	44.75	+02	26	05.8	022
51	1978	02	26.88400	10	47	43.69	+02	26	18.2	022
51	1978	02	28.95749	10	46	00.64	+02	48	46.8	022
51	1978	02	28.96234	10	46	00.39	+02	48	49.9	022
51	1978	02	28.97550	10	45	59.67	+02	48	58.3	022
51	1978	03	09.86367	10	38	41.62	+04	28	01.9	022
51	1978	03	09.86920	10	38	41.32	+04	28	06.2	022
51	1978	03	09.88514	10	38	40.58	+04	28	16.8	022
51	1978	03	28.85403	10	26	42.91	+07	43	11.8	022
51	1978	03	28.86096	10	26	42.71	+07	43	15.4	022
51	1978	03	28.89074	10	26	41.92	+07	43	30.9	022
51	1978	04	13.83563	10	23	50.54	+09	35	53.3	022
51	1978	04	13.83910	10	23	50.54	+09	35	54.3	022
51	1978	04	13.86194	10	23	50.59	+09	36	01.1	022
51	1978	05	02.89387	10	30	13.09	+10	32	34.3	022
51	1978	05	02.89802	10	30	13.17	+10	32	34.8	022
51	1978	05	02.91049	10	30	13.71	+10	32	34.6	022
51	1978	05	28.85133	10	52	47.65	+09	51	04.6	022
51	1978	05	28.86414	10	52	48.50	+09	51	01.2	022
51	1978	05	28.86760	10	52	48.77	+09	51	00.5	022
51	1978	05	29.88339	10	53	56.59	+09	47	06.7	022
51	1978	05	29.88755	10	53	56.89	+09	47	05.6	022
51	1978	05	29.89863	10	53	57.53	+09	47	03.4	022
148	1978	02	02.78193	03	46	05.05	-08	35	38.1	022
148	1978	02	02.78541	03	46	05.18	-08	35	34.6	022
148	1978	02	02.80618	03	46	06.07	-08	35	13.4	022
148	1978	02	07.81815	03	50	08.44	-07	13	27.4	022
148	1978	02	07.82230	03	50	08.66	-07	13	24.2	022
148	1978	02	07.83616	03	50	09.53	-07	13	10.3	022
148	1979	01	25.96269	11	48	47.88	+10	43	00.8	022
148	1979	01	25.97793	11	48	47.86	+10	43	09.8	022
148	1979	01	29.93654	11	48	11.39	+11	23	58.8	022
148	1979	01	29.95800	11	48	11.20	+11	24	13.4	022

148	1979	01	31.93593	11	47	44.75	+11	45	33.3	022
148	1979	01	31.96639	11	47	44.30	+11	45	53.2	022
148	1979	02	20.88478	11	38	42.06	+15	44	34.6	022
148	1979	02	20.91248	11	38	40.99	+15	44	54.5	022
148	1979	02	21.90282	11	38	02.67	+15	57	18.0	022
148	1979	02	21.93329	11	38	01.47	+15	57	41.6	022
148	1979	02	25.91579	11	35	18.99	+16	47	17.0	022
148	1979	03	20.89281	11	17	49.50	+20	59	33.6	022
148	1979	03	20.92329	11	17	48.09	+20	59	50.4	022
148	1979	05	02.84190	11	00	46.12	+23	48	42.3	022
148	1979	05	02.85991	11	00	46.07	+23	48	42.1	022
148	1979	05	21.84888	11	05	04.98	+23	09	55.5	022
148	1979	05	21.87035	11	05	05.50	+23	09	50.4	022
148	1979	05	28.85816	11	08	19.69	+22	43	59.2	022
148	1979	05	28.88586	11	08	20.51	+22	43	51.9	022
148	1979	06	14.88377	11	19	15.76	+21	21	52.2	022
148	1979	06	14.89278	11	19	16.02	+21	21	47.7	022
153	1977	09	11.87005	00	49	56.84	+12	18	53.3	022
153	1977	09	11.89983	00	49	55.99	+12	18	46.8	022
153	1977	10	03.86538	00	37	32.48	+10	45	19.8	022
153	1977	10	03.88270	00	37	31.86	+10	45	14.1	022
153	1977	10	11.83073	00	32	49.70	+10	04	40.5	022
153	1977	10	11.84874	00	32	49.06	+10	04	34.7	022
153	1977	10	12.87234	00	32	13.70	+09	59	16.5	022
153	1977	10	12.88785	00	32	13.15	+09	59	11.6	022
197	1978	03	09.92772	11	56	56.47	+14	21	34.3	022
197	1978	03	09.95266	11	56	55.20	+14	21	43.3	022
197	1978	03	28.93333	11	41	07.90	+15	53	35.5	022
197	1978	03	28.95411	11	41	06.81	+15	53	39.9	022
225	1977	11	15.87367	03	09	29.03	+01	48	43.2	022
225	1977	11	15.89583	03	09	28.02	+01	48	34.7	022
334	1977	09	11.90918	00	43	15.74	-00	46	00.9	022
334	1977	09	11.93757	00	43	14.86	-00	46	07.6	022
334	1977	10	03.89931	00	30	30.22	-02	24	23.8	022
334	1977	10	03.91424	00	30	29.68	-02	24	27.6	022
334	1977	10	11.87436	00	25	44.31	-02	56	44.5	022
334	1977	10	11.89583	00	25	43.58	-02	56	50.1	022
334	1977	10	12.89965	00	25	08.83	-03	00	36.4	022
334	1977	10	12.91389	00	25	08.33	-03	00	39.7	022
361	1977	11	15.79196	05	42	18.07	+38	12	05.5	022
361	1977	11	15.82381	05	42	17.03	+38	12	15.6	022
361	1977	12	13.73563	05	19	58.51	+39	37	25.4	022
361	1977	12	13.76472	05	19	56.87	+39	37	26.6	022
389	1978	02	02.85881	07	34	51.35	+17	28	06.8	022
389	1978	02	02.86296	07	34	51.14	+17	28	06.1	022
389	1978	02	02.88721	07	34	49.80	+17	28	06.2	022
389	1978	02	07.89363	07	30	40.28	+17	25	35.8	022
389	1978	02	07.89779	07	30	40.22	+17	25	35.5	022
389	1978	02	07.91995	07	30	38.99	+17	25	34.4	022
389	1978	02	26.78220	07	21	05.19	+17	13	28.8	022
389	1978	02	26.78705	07	21	05.11	+17	13	27.8	022
389	1978	02	26.80713	07	21	04.83	+17	13	27.4	022
389	1978	02	28.78384	07	20	42.07	+17	11	52.1	022
389	1978	02	28.81898	07	20	41.71	+17	11	49.7	022
389	1978	02	28.82453	07	20	41.66	+17	11	50.4	022
389	1978	03	07.85424	07	20	20.01	+17	05	30.0	022
389	1978	03	07.85909	07	20	20.04	+17	05	29.4	022
532	1978	05	29.92471	15	02	11.57	+05	47	45.6	022
532	1978	05	29.94065	15	02	10.89	+05	47	39.2	022

532	1978 06 01.96084	15 00 07.81	+05 27 36.5		022
532	1978 06 01.96500	15 00 07.60	+05 27 34.4		022
532	1978 06 01.97400	15 00 07.27	+05 27 30.9		022
532	1978 06 04.91111	14 58 18.67	+05 06 06.5		022
532	1978 06 04.91457	14 58 18.54	+05 06 03.9		022
532	1978 06 04.93050	14 58 18.02	+05 05 57.4		022
532	1978 06 27.88328	14 51 28.07	+01 29 18.2		022
532	1978 06 27.90751	14 51 28.02	+01 29 02.4		022
532	1978 06 27.91236	14 51 28.04	+01 29 00.1		022
532	1978 06 28.88816	14 51 28.68	+01 18 24.8		022
532	1978 06 28.89231	14 51 28.68	+01 18 21.8		022
532	1978 06 28.89647	14 51 28.68	+01 18 18.8		022
532	1978 07 02.86894	14 51 46.09	+00 34 30.9		022
532	1978 07 02.90079	14 51 46.26	+00 34 09.3		022
532	1978 07 02.90494	14 51 46.26	+00 34 05.9		022
532	1978 07 07.86341	14 52 41.52	-00 21 55.5		022
532	1978 07 07.88869	14 52 41.81	-00 22 13.4		022
532	1978 07 07.89181	14 52 41.89	-00 22 14.9		022
568	1978 10 23.75257	19 24 02.46	-05 15 30.0		022
568	1978 10 23.78028	19 24 03.75	-05 15 34.1		022
617	1977 10 12.94931	02 24 13.47	+08 27 51.2		022
617	1977 10 12.96528	02 24 12.88	+08 27 51.0		022
617	1977 11 27.74531	01 57 26.02	+08 33 31.4		022
617	1977 11 27.76042	01 57 25.62	+08 33 32.1		022
887	1978 03 09.96235	12 30 16.01	+22 29 45.4		022
887	1978 03 09.98451	12 30 14.27	+22 29 54.2		022
1628	1978 03 09.89310	10 34 55.11	-01 00 17.9		022
1628	1978 03 09.91803	10 34 54.15	-01 00 02.9		022

OBSERVATIONS MADE AT KLET BY A. MRKOS, L. BROZEK, J. KVETON AND Z. VAVROVA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1978 XXI	1979 10 20.79206	22 26 20.30	-17 21 00.0		12.7T	046
/1978 XXI	1979 10 20.80635	22 26 20.13	-17 20 57.4			046
/1978 XXI	1979 11 12.74060	22 22 38.06	-15 48 50.6		13 T	046
/1978 XXI	1979 11 12.75692	22 22 38.09	-15 48 47.1			046
/1979i	1979 10 24.74152	12 48 38.74	+58 01 05.9		12.5T	046
/1979i	1979 10 24.74759	12 48 38.02	+58 01 01.4			046
222	1979 09 27.03093	02 44 52.52	+13 43 15.6			046
222	1979 09 27.04644	02 44 52.01	+13 43 13.8			046
280	1979 10 19.90978	02 55 34.06	+22 41 52.5			046
280	1979 10 19.92413	02 55 33.40	+22 41 52.9			046
280	1979 10 20.92128	02 54 46.01	+22 41 57.7			046
280	1979 10 20.93639	02 54 45.32	+22 41 58.0			046
280	1979 10 25.92720	02 50 33.51	+22 40 34.0			046
280	1979 10 25.94161	02 50 32.67	+22 40 33.4			046
351	1979 10 19.94884	02 45 38.18	+02 32 34.5			046
351	1979 10 19.96319	02 45 37.51	+02 32 31.5			046
351	1979 10 20.95959	02 44 50.12	+02 28 33.8			046
351	1979 10 20.97406	02 44 49.46	+02 28 30.5			046
351	1979 10 25.96603	02 40 40.23	+02 09 42.8			046
351	1979 10 25.98044	02 40 39.45	+02 09 39.4			046
420	1979 10 19.87031	02 44 39.67	+20 06 58.7			046
420	1979 10 19.88449	02 44 39.09	+20 06 55.0			046
420	1979 10 20.88118	02 43 59.39	+20 02 54.0			046
420	1979 10 20.89536	02 43 58.88	+20 02 51.1			046
420	1979 10 23.91535	02 41 54.99	+19 50 07.2			046
420	1979 10 23.93022	02 41 54.40	+19 50 02.4			046
420	1979 10 25.85365	02 40 33.13	+19 41 31.7			046
420	1979 10 25.86296	02 40 32.52	+19 41 27.7			046

420	1979	11	25.90220	02	19	02.61	+17	04	25.5	046
420	1979	11	25.91644	02	19	02.13	+17	04	21.4	046
835	1979	10	11.79328	23	24	05.24	+00	44	16.0	046
835	1979	10	11.80792	23	24	04.91	+00	44	13.0	046
835	1979	10	12.85716	23	23	31.84	+00	40	38.9	046
835	1979	10	12.87163	23	23	31.27	+00	40	37.4	046
979	1979	10	19.87031	02	44	30.54	+19	36	57.5	046
979	1979	10	19.88449	02	44	29.88	+19	36	52.4	046
979	1979	10	20.88118	02	43	47.63	+19	30	48.5	046
979	1979	10	20.89536	02	43	47.09	+19	30	43.3	046
979	1979	10	23.91535	02	41	35.04	+19	11	42.3	046
979	1979	10	23.93022	02	41	34.46	+19	11	36.2	046
979	1979	10	25.85365	02	40	07.93	+18	59	02.3	046
979	1979	10	25.86296	02	40	07.27	+18	58	56.9	046
979	1979	11	25.90220	02	18	01.70	+15	23	59.8	046
979	1979	11	25.91644	02	18	01.27	+15	23	55.1	046
1015	1979	10	25.96603	02	42	44.03	+00	58	50.6	046
1015	1979	10	25.98044	02	42	43.38	+00	58	48.0	046
1183	1979	10	12.80682	23	53	53.02	-01	25	51.6	046
1183	1979	10	12.82140	23	53	52.52	-01	25	54.2	046
1822	1979	09	25.93457	00	01	02.19	+01	18	36.2	046
1822	1979	09	25.94887	00	01	01.35	+01	18	31.3	046
1822	1979	09	26.91623	00	00	03.40	+01	11	43.5	046
1822	1979	09	26.93081	00	00	02.63	+01	11	38.8	046
1822	1979	09	27.95649	23	59	01.48	+01	04	28.7	046
1822	1979	09	27.97079	23	59	00.78	+01	04	25.2	046
1856	1979	09	26.99238	01	46	01.96	+09	11	12.0	17.0
1856	1979	09	27.00668	01	46	01.23	+09	11	05.1	046
1925	1979	10	19.94884	02	40	32.49	+01	00	37.5	046
1925	1979	10	19.96319	02	40	31.68	+01	00	33.3	046
1925	1979	10	20.95959	02	39	41.49	+00	56	04.4	046
1925	1979	10	20.97406	02	39	40.79	+00	55	59.3	046
1925	1979	10	25.96603	02	35	17.88	+00	35	28.8	046
1925	1979	10	25.98044	02	35	16.96	+00	35	26.5	046
1925	1979	11	12.87365	02	19	18.38	-00	00	57.8	046
1925	1979	11	12.88794	02	19	17.70	-00	00	57.7	046
1979 QF	1979	10	15.75648	23	03	25.88	+04	19	46.0	046
1979 QF	1979	10	15.77066	23	03	25.65	+04	19	37.0	046
1979 QF	1979	10	19.75648	23	02	40.40	+03	33	29.2	046
1979 QF	1979	10	19.77072	23	02	40.27	+03	33	19.3	046
1979 QF	1979	10	20.82823	23	02	32.68	+03	21	32.8	046
1979 QF	1979	10	20.84264	23	02	32.61	+03	21	24.2	046
1979 SA	1979	10	15.75648	23	01	35.20	+06	32	17.9	046
1979 SA	1979	10	15.77066	23	01	34.83	+06	32	08.4	046
1979 SA	1979	10	19.75648	23	00	12.92	+05	59	34.9	046
1979 SA	1979	10	19.77072	23	00	12.77	+05	59	29.2	046
1979 SA	1979	10	20.82823	22	59	53.83	+05	51	00.3	046
1979 SA	1979	10	20.84264	22	59	53.53	+05	50	52.9	046
1979 SF	1979	10	11.84270	23	26	22.37	+03	24	35.5	046
1979 SF	1979	10	11.85740	23	26	21.62	+03	24	34.3	046
1979 SF	1979	10	15.79450	23	23	53.40	+03	14	34.7	046
1979 SF	1979	10	15.80874	23	23	52.92	+03	14	31.9	046
1979 SF	1979	10	19.79387	23	21	45.02	+03	05	37.4	046
1979 SF	1979	10	19.80816	23	21	44.68	+03	05	35.9	046
1979 SH	1979	10	11.84270	23	30	06.50	+03	19	56.3	046
1979 SH	1979	10	11.85740	23	30	05.87	+03	19	55.5	046
1979 SH	1979	10	15.79450	23	28	09.63	+03	16	58.2	046
1979 SH	1979	10	15.80874	23	28	09.23	+03	16	56.0	046
1979 SJ	1979	10	18.84773	23	44	09.37	+00	38	07.9	046

1979	SJ	1979	10	18.86203	23	44	08.82	+00	38	06.8		046	
1979	SL	1979	09	27.91801	23	34	37.64	+03	42	01.8		046	
1979	SL	1979	09	27.93259	23	34	37.02	+03	41	54.2		046	
1979	SL	1979	10	11.79328	23	26	51.21	+01	55	20.1		046	
1979	SL	1979	10	11.80792	23	26	50.77	+01	55	12.3		046	
1979	SL	1979	10	11.84270	23	26	49.98	+01	55	03.7		046	
1979	SL	1979	10	11.85740	23	26	49.52	+01	54	57.7		046	
1979	SL	1979	10	15.79450	23	25	08.37	+01	27	07.4		046	
1979	SL	1979	10	15.80874	23	25	08.06	+01	27	00.0		046	
1979	SL	1979	10	19.79387	23	23	43.37	+01	00	38.7		046	
1979	SL	1979	10	19.80816	23	23	42.94	+01	00	31.0		046	
1979	SO	1979	10	12.80682	23	53	43.42	-00	56	22.3		046	
1979	SO	1979	10	12.82140	23	53	42.78	-00	56	20.9		046	
1979	SO	1979	10	19.83235	23	49	10.20	-00	45	23.8		046	
1979	SO	1979	10	19.84687	23	49	09.65	-00	45	22.2		046	
1979	SP	1979	10	12.80682	23	50	57.51	-03	13	47.4		046	
1979	SP	1979	10	12.82140	23	50	57.01	-03	13	50.0		046	
1979	SP	1979	10	19.83235	23	47	10.92	-03	39	10.3		046	
1979	SP	1979	10	19.84687	23	47	10.46	-03	39	13.6		046	
1979	SQ	1979	10	12.85716	23	15	10.44	+00	56	07.5		046	
1979	SQ	1979	10	12.87163	23	15	10.02	+00	56	03.6		046	
1979	SQ	1979	10	15.83235	23	13	54.74	+00	44	51.4		046	
1979	SQ	1979	10	15.84659	23	13	54.38	+00	44	48.5		046	
1979	SR	1979	10	15.83235	23	19	32.11	+01	33	48.7		046	
1979	SR	1979	10	15.84659	23	19	31.86	+01	33	41.7		046	
1979	SR	1979	10	19.79387	23	18	35.21	+01	04	08.1		046	
1979	SR	1979	10	19.80816	23	18	34.96	+01	04	01.9		046	
1979	SS	1979	10	11.79328	23	19	04.52	+02	09	42.4		046	
1979	SS	1979	10	11.80792	23	19	04.19	+02	09	41.6		046	
1979	SS	1979	10	12.85716	23	18	29.70	+02	08	45.3		046	
1979	SS	1979	10	12.87163	23	18	29.28	+02	08	45.3		046	
1979	SS	1979	10	15.83235	23	17	03.95	+02	06	39.4		046	
1979	SS	1979	10	15.84659	23	17	03.36	+02	06	39.9		046	
1979	UO	*	1979	10	19.87031	02	39	37.94	+21	31	29.4	17.6	046
1979	UO	*	1979	10	19.88449	02	39	37.06	+21	31	28.7		046
1979	UO	*	1979	10	23.91535	02	37	18.47	+21	15	15.4		046
1979	UO	*	1979	10	23.93022	02	37	17.97	+21	15	14.7		046
1979	UP	*	1979	10	19.87031	02	40	28.05	+19	28	26.8	18.0	046
1979	UP	*	1979	10	19.88449	02	40	27.34	+19	28	25.6		046
1979	UP	*	1979	10	20.88118	02	39	31.32	+19	21	59.2		046
1979	UP	*	1979	10	20.89536	02	39	30.44	+19	21	54.1		046
1979	UQ	*	1979	10	19.87031	02	40	35.48	+18	41	49.0	17.0	046
1979	UQ	*	1979	10	19.88449	02	40	34.79	+18	41	44.4		046
1979	UQ	*	1979	10	20.88118	02	39	47.41	+18	36	21.7		046
1979	UQ	*	1979	10	20.89536	02	39	46.70	+18	36	16.2		046
1979	UQ	*	1979	10	23.91535	02	37	15.15	+18	18	54.7		046
1979	UQ	*	1979	10	23.93022	02	37	14.37	+18	18	48.7		046
1979	UQ	*	1979	10	25.85365	02	35	33.35	+18	07	00.2		046
1979	UQ	*	1979	10	25.86296	02	35	32.52	+18	06	53.9		046
1979	UR	*	1979	10	19.87031	02	42	48.84	+20	07	04.1	17.8	046
1979	UR	*	1979	10	19.88449	02	42	48.01	+20	07	03.7		046
1979	UR	*	1979	10	20.88118	02	41	53.46	+20	06	46.6		046
1979	UR	*	1979	10	20.89536	02	41	52.70	+20	06	45.1		046
1979	UR	*	1979	10	23.91535	02	39	01.84	+20	05	06.8		046
1979	UR	*	1979	10	23.93022	02	39	00.86	+20	05	07.6		046
1979	US	*	1979	10	19.87031	02	43	31.63	+18	59	24.8	17.4	046
1979	US	*	1979	10	19.88449	02	43	30.86	+18	59	23.3		046
1979	US	*	1979	10	20.88118	02	42	42.06	+18	57	56.3		046
1979	US	*	1979	10	20.89536	02	42	41.41	+18	57	55.8		046

1979	US	1979	10	23.91535	02	40	07.66	+18	52	50.1		046	
1979	US	1979	10	23.93022	02	40	07.17	+18	52	48.8		046	
1979	UT	*	1979	10	19.87031	02	45	07.01	+20	29	12.2	17.4	046
1979	UT		1979	10	19.88449	02	45	06.35	+20	29	03.0		046
1979	UT		1979	10	20.88118	02	44	27.56	+20	20	50.8		046
1979	UT		1979	10	20.89536	02	44	27.05	+20	20	44.1		046
1979	UT		1979	10	23.91535	02	42	24.68	+19	54	59.3		046
1979	UT	*	1979	10	23.93022	02	42	24.44	+19	54	52.5		046
1979	UU	*	1979	10	19.87031	02	46	35.38	+18	30	36.9	16.8	046
1979	UU		1979	10	19.88449	02	46	34.76	+18	30	33.5		046
1979	UU		1979	10	20.88118	02	45	46.77	+18	27	25.2		046
1979	UU		1979	10	20.89536	02	45	46.12	+18	27	20.8		046
1979	UU		1979	10	23.91535	02	43	15.13	+18	17	12.6		046
1979	UU		1979	10	23.93022	02	43	14.85	+18	17	06.7		046
1979	UU		1979	10	25.85365	02	41	34.82	+18	10	04.6		046
1979	UU		1979	10	25.86296	02	41	34.35	+18	10	00.3		046
1979	UU		1979	11	25.90220	02	14	55.76	+15	56	22.5		046
1979	UU		1979	11	25.91644	02	14	55.17	+15	56	19.5		046
1979	UV	*	1979	10	19.87031	02	49	38.37	+20	10	14.1	17.6	046
1979	UV		1979	10	19.88449	02	49	37.76	+20	10	07.9		046
1979	UV		1979	10	20.88118	02	48	49.58	+20	02	48.3		046
1979	UV		1979	10	20.89536	02	48	48.70	+20	02	42.4		046
1979	UW	*	1979	10	19.90978	02	50	26.62	+20	58	57.4	17.4	046
1979	UW		1979	10	19.92413	02	50	25.88	+20	58	50.5		046
1979	UW		1979	10	20.92128	02	49	42.24	+20	51	58.7		046
1979	UW		1979	10	20.93639	02	49	41.29	+20	51	55.9		046
1979	UX	*	1979	10	19.90978	02	56	02.12	+20	58	49.3	17.0	046
1979	UX		1979	10	19.92413	02	56	01.52	+20	58	49.0		046
1979	UX		1979	10	20.92128	02	55	13.80	+20	57	16.7		046
1979	UX		1979	10	20.93639	02	55	13.00	+20	57	15.2		046
1979	UX		1979	10	25.92720	02	51	01.07	+20	47	51.5		046
1979	UX		1979	10	25.94161	02	51	00.31	+20	47	50.0		046
1979	UY	*	1979	10	19.90978	02	57	48.28	+22	16	15.4	18.0	046
1979	UY		1979	10	19.92413	02	57	46.86	+22	16	18.0		046
1979	UY		1979	10	25.92720	02	54	47.84	+21	01	03.3		046
1979	UY		1979	10	25.94161	02	54	46.96	+21	01	02.2		046
1979	UZ	*	1979	10	19.94884	02	38	51.92	+00	42	08.8	16.6	046
1979	UZ		1979	10	19.96319	02	38	51.10	+00	42	06.4		046
1979	UZ		1979	10	20.95959	02	38	02.72	+00	39	34.4		046
1979	UZ		1979	10	20.97406	02	38	02.03	+00	39	32.4		046
1979	UZ		1979	10	25.96603	02	33	51.01	+00	27	57.8		046
1979	UZ		1979	10	25.98044	02	33	50.30	+00	27	55.8		046
1979	UZ		1979	11	12.87365	02	18	20.36	+00	06	26.7		046
1979	UZ		1979	11	12.88794	02	18	19.57	+00	06	27.1		046
1979	UA1	*	1979	10	19.94884	02	46	11.67	+01	48	28.6	17.2	046
1979	UA1		1979	10	19.96319	02	46	10.80	+01	48	21.1		046
1979	UA1		1979	10	20.95959	02	45	23.61	+01	42	09.3		046
1979	UA1		1979	10	25.96603	02	41	16.86	+01	11	58.7		046
1979	UA1		1979	10	25.98044	02	41	15.40	+01	11	53.0		046
1979	UB1	*	1979	10	19.94884	02	44	02.92	+02	33	34.6	17.8	046
1979	UB1		1979	10	19.96319	02	44	01.92	+02	33	36.7		046
1979	UB1		1979	10	20.95959	02	43	02.81	+02	33	14.9		046
1979	UB1		1979	10	20.97406	02	43	01.79	+02	33	14.2		046
1979	VB	*	1979	11	12.78244	02	46	25.42	+17	19	22.9	17.0	046
1979	VB		1979	11	12.79679	02	46	24.85	+17	19	25.1		046
1979	WA	*	1979	11	25.90220	02	14	04.54	+18	14	13.5	17.4	046
1979	WA		1979	11	25.91644	02	14	04.12	+18	14	05.2		046
1979	WB	*	1979	11	25.90220	02	18	15.17	+16	33	55.0		046
1979	WB		1979	11	25.91644	02	18	14.76	+16	33	57.0		046

OBSERVATIONS MADE AT TURKU (CODE 062) BY L. OTERMA AND V. LAIHO AND AT THE TUORLA STATION (CODE 063) BY M.-O. SNARE. MEASURED BY SNARE AND J. LEHTINEN.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
/1979i	1979 10 20.89425	12 52 41.68	+58 52 47.6		063
/1979i	1979 10 20.90154	12 52 41.55	+58 52 39.8		063
/1979i	1979 10 23.99685	12 49 26.78	+58 10 48.1		063
/1979i	1979 10 24.00900	12 49 26.29	+58 10 34.2		063
/1979i	1979 10 24.06225	12 49 23.04	+58 09 54.5		063
/1979i	1979 10 24.88056	12 48 29.98	+57 59 20.5		063
/1979i	1979 10 24.88760	12 48 29.26	+57 59 14.4		063
/1979i	1979 10 24.89593	12 48 28.83	+57 59 10.0		063
1942 GG	1942 03 19.03044	14 00 48.98	-06 58 27.3		062
1942 GG	1942 04 14.96478	13 41 04.99	-06 28 03.0		062
1942 GG	1942 04 14.97138	13 41 04.65	-06 28 02.5		062
1942 GG	1942 04 17.91254	13 38 31.41	-06 24 21.3		062
1942 GG	1942 04 17.96022	13 38 28.86	-06 24 18.4		062

OBSERVATIONS MADE AT BUCHAREST UNDER THE DIRECTION OF C. CRISTESCU. REDUCTIONS BY B. MILET.

Object	Date	UT	R. A. (1950)	Decl.	O - C	Obs.
1	1971 01 16.70356	01 48 41.20	+04 31 03.8			073
1	1971 01 16.71049	01 48 41.44	+04 31 07.2			073
1	1971 01 16.71741	01 48 41.70	+04 31 10.1			073
2	1971 10 25.96250	04 38 20.48	-24 06 23.5			073
2	1971 10 25.96597	04 38 20.43	-24 06 27.4			073
2	1971 10 25.96874	04 38 20.38	-24 06 30.3			073
2	1971 12 11.85301	04 05 29.20	-32 02 24.3			073
2	1971 12 11.85993	04 05 28.83	-32 02 24.3			073
3	1971 01 04.77859	03 19 37.51	-02 19 20.7			073
3	1971 01 04.78476	03 19 37.60	-02 19 17.3			073
3	1971 01 04.79376	03 19 37.79	-02 19 12.7			073
3	1971 01 12.71550	03 23 32.52	-01 04 06.1			073
3	1971 01 12.72381	03 23 32.78	-01 04 00.8			073
3	1971 01 16.75412	03 26 13.22	-00 22 54.0			073
3	1971 01 16.76104	03 26 13.52	-00 22 49.3			073
3	1971 01 16.76935	03 26 13.90	-00 22 43.6			073
3	1971 01 28.76418	03 36 41.26	+01 46 44.7			073
3	1971 01 28.77165	03 36 41.69	+01 46 49.4			073
3	1971 02 06.71832	03 46 40.38	+03 26 22.6			073
3	1971 02 06.72456	03 46 40.81	+03 26 26.6			073
3	1971 02 06.73079	03 46 41.28	+03 26 30.8			073
3	1971 02 09.70598	03 50 22.66	+03 59 32.4			073
3	1971 02 09.71326	03 50 22.59	+03 59 37.2			073
3	1971 02 09.72018	03 50 23.14	+03 59 41.7			073
3	1971 02 12.69397	03 54 13.74	+04 32 29.3			073
3	1971 02 12.70159	03 54 14.30	+04 32 39.1			073
4	1971 07 12.90748	20 18 03.13	-22 35 43.0			073
4	1971 07 12.90956	20 18 03.03	-22 35 44.0			073
4	1971 07 12.91094	20 18 02.94	-22 35 44.5			073
4	1971 07 16.86887	20 14 23.66	-23 05 10.0			073
4	1971 07 16.87027	20 14 23.34	-23 05 10.5			073
4	1971 07 16.87164	20 14 23.53	-23 05 11.5			073
4	1971 07 29.90032	20 01 43.15	-24 36 03.6			073
4	1971 07 29.90206	20 01 43.05	-24 36 04.8			073
4	1971 07 29.90379	20 01 42.93	-24 36 05.3			073
4	1971 08 04.84628	19 56 16.39	-25 11 31.1			073
4	1971 08 04.84801	19 56 16.32	-25 11 31.1			073
4	1971 08 04.88455	19 56 16.47	-25 11 30.1			073

4	1971	08	07.85299	19	53	44.37	-25	27	31.5		073	
4	1971	08	07.85472	19	53	44.29	-25	27	32.2		073	
4	1971	08	07.85645	19	53	44.20	-25	27	32.3		073	
4	1971	08	11.83947	19	50	40.60	-25	46	37.8		073	
4	1971	08	11.84155	19	50	40.49	-25	46	38.7		073	
4	1971	08	11.84363	19	50	40.41	-25	46	39.4		073	
4	1971	08	16.81477	19	47	24.93	-26	06	59.5		073	
4	1971	08	16.81685	19	47	24.87	-26	06	59.9		073	
4	1971	08	16.81893	19	47	24.81	-26	07	00.4		073	
4	1971	08	19.81715	19	45	47.48	-26	17	22.9		073	
4	1971	08	19.81853	19	45	47.44	-26	17	23.1		073	
4	1971	08	19.81992	19	45	47.36	-26	17	23.5		073	
4	1971	08	20.80646	19	45	19.09	-26	20	29.3		073	
4	1971	08	20.80819	19	45	19.00	-26	20	30.0		073	
4	1971	08	20.80992	19	45	18.97	-26	20	30.6		073	
4	1971	08	21.78867	19	44	52.67	-26	23	25.7		073	
4	1971	08	21.79074	19	44	52.54	-26	23	26.0		073	
4	1971	08	21.79282	19	44	52.55	-26	23	26.7		073	
4	1971	08	26.80431	19	43	07.45	-26	36	06.5		073	
4	1971	08	26.80778	19	43	07.40	-26	36	07.5		073	
4	1971	08	26.81124	19	43	07.32	-26	36	08.4		073	
4	1971	08	30.77313	19	42	20.20	-26	43	30.5		073	
4	1971	08	30.77520	19	42	20.20	-26	43	31.1		073	
4	1971	08	30.77728	19	42	20.18	-26	43	31.2		073	
4	1971	09	13.72802	19	43	46.35	-26	52	37.6		073	
4	1971	09	13.73010	19	43	46.37	-26	52	37.5		073	
4	1971	09	13.73217	19	43	46.40	-26	52	37.4		073	
4	1971	10	25.67423	20	20	30.49	-25	11	40.6		073	
4	1971	10	25.67596	20	20	30.63	-25	11	40.4		073	
4	1971	10	25.67769	20	20	30.76	-25	11	40.2		073	
5	1969	11	13.85769	03	48	37.04	+10	51	26.6	0.0	0	073
5	1969	11	13.86530	03	48	36.60	+10	51	25.0	0.0	0	073
5	1970	01	15.75048	03	15	06.09	+11	07	46.0	0.0	0	073
5	1970	01	15.76433	03	15	06.39	+11	07	50.7	0.0	0	073
5	1971	04	27.89994	15	06	03.99	-08	14	07.1	0.0	0	073
5	1971	04	27.91587	15	06	03.09	-08	14	02.3	0.0	0	073
5	1971	04	29.88961	15	04	17.92	-08	04	46.8	0.0	0	073
5	1971	04	29.90139	15	04	17.30	-08	04	43.4	0.0	0	073
5	1971	05	11.83516	14	53	28.83	-07	15	42.6	0.0	0	073
5	1971	05	11.84693	14	53	28.20	-07	15	39.9	0.0	0	073
5	1971	05	12.89933	14	52	32.27	-07	12	04.6	0.0	0	073
5	1971	05	12.90764	14	52	31.82	-07	12	03.4	0.0	0	073
5	1971	05	13.83953	14	51	42.92	-07	08	59.9	0.0	0	073
5	1971	05	13.85200	14	51	42.27	-07	08	57.5	0.0	0	073
5	1971	05	18.82464	14	47	30.21	-06	54	38.4	0.0	0	073
5	1971	05	18.83641	14	47	29.62	-06	54	36.6	0.0	0	073
5	1971	05	22.80832	14	44	22.84	-06	45	44.7	0.1-	0	073
5	1971	05	22.82417	14	44	22.17	-06	45	43.5	0.1-	0	073
5	1971	05	26.87221	14	41	28.72	-06	39	14.1	0.0	0	073
5	1971	05	26.88260	14	41	28.27	-06	39	13.3	0.0	0	073
6	1971	01	28.10204	14	05	21.76	+01	02	32.5		073	
6	1971	01	28.11441	14	05	22.19	+01	02	35.0		073	
6	1971	03	24.96698	14	06	13.64	+07	19	40.4		073	
6	1971	03	24.97702	14	06	13.26	+07	19	45.6		073	
6	1971	03	24.98603	14	06	12.95	+07	19	50.4		073	
6	1971	04	16.89836	13	48	28.56	+10	26	41.8		073	
6	1971	04	16.90667	13	48	28.12	+10	26	44.9		073	
6	1971	04	20.90636	13	44	58.81	+10	51	26.2		073	
6	1971	04	20.91675	13	44	58.29	+10	51	41.6		073	

6	1971	04	23.85345	13	42	25.61	+11	07	51.8	073		
6	1971	04	23.86384	13	42	25.04	+11	07	54.8	073		
6	1971	04	23.87492	13	42	24.46	+11	07	58.6	073		
6	1971	04	26.83274	13	39	53.01	+11	22	19.6	073		
6	1971	04	26.84105	13	39	52.57	+11	22	21.7	073		
6	1971	04	27.85424	13	39	01.43	+11	26	49.9	073		
6	1971	04	27.86462	13	39	00.89	+11	26	52.6	073		
6	1971	04	29.86780	13	37	21.42	+11	34	59.4	073		
6	1971	04	29.87853	13	37	20.97	+11	35	01.8	073		
6	1971	05	11.77666	13	28	30.05	+12	03	31.0	073		
6	1971	05	11.78982	13	28	29.50	+12	03	31.7	073		
6	1971	05	12.85016	13	27	48.45	+12	04	26.6	073		
6	1971	05	12.85951	13	27	48.11	+12	04	27.2	073		
6	1971	05	13.78585	13	27	13.23	+12	05	01.9	073		
6	1971	05	13.79935	13	27	12.73	+12	05	02.4	073		
6	1971	05	14.78972	13	26	36.60	+12	05	26.2	073		
6	1971	05	14.80011	13	26	36.20	+12	05	26.1	073		
6	1971	05	17.79825	13	24	53.32	+12	05	16.2	073		
6	1971	05	17.80760	13	24	53.02	+12	05	15.8	073		
6	1971	05	18.77512	13	24	22.11	+12	04	47.0	073		
6	1971	05	18.78620	13	24	21.75	+12	04	46.3	073		
6	1971	05	22.78408	13	22	26.07	+12	00	34.9	073		
6	1971	05	22.79626	13	22	25.73	+12	00	33.7	073		
7	1971	01	29.07153	12	46	32.77	-12	26	33.2	073		
7	1971	01	29.08671	12	46	32.87	-12	26	36.2	073		
7	1971	02	09.96984	12	46	11.06	-12	53	15.8	073		
7	1971	02	09.98231	12	46	10.95	-12	53	17.3	073		
7	1971	04	17.82773	11	57	36.94	-08	09	14.9	073		
7	1971	04	17.83743	11	57	36.50	-08	09	10.6	073		
7	1971	04	20.82118	11	55	41.02	-07	49	43.4	073		
7	1971	04	20.83364	11	55	40.55	-07	49	38.8	073		
7	1971	04	26.81237	11	52	24.10	-07	13	06.5	073		
7	1971	04	26.82236	11	52	23.80	-07	13	03.1	073		
7	1971	04	27.77182	11	51	57.20	-07	07	36.9	073		
7	1971	04	27.78348	11	51	56.83	-07	07	33.8	073		
7	1971	05	03.78392	11	49	38.27	-06	35	47.7	073		
7	1971	05	03.79424	11	49	38.08	-06	35	44.6	073		
8	1971	10	23.91899	02	45	07.02	+03	13	42.5	0.0	0	073
8	1971	10	23.92522	02	45	06.68	+03	13	40.7	0.0	0	073
9	1969	03	10.80606	09	28	42.74	+24	27	38.7	0.0	0	073
9	1969	03	10.81298	09	28	42.48	+24	27	38.7	0.0	0	073
9	1969	03	13.88234	09	27	01.93	+24	27	29.6	0.0	0	073
9	1969	03	13.89204	09	27	01.64	+24	27	29.5	0.0	0	073
9	1969	04	14.77098	09	27	17.89	+22	48	35.0	0.1-	0	073
9	1969	04	14.77860	09	27	18.10	+22	48	32.3	0.1-	0	073
9	1969	04	16.77799	09	28	18.39	+22	37	43.4	0.1-	0	073
9	1969	04	16.78491	09	28	18.59	+22	37	41.1	0.1-	0	073
9	1969	04	21.76542	09	31	14.29	+22	08	55.4	0.0	0	073
9	1969	04	21.77511	09	31	14.65	+22	08	51.8	0.0	0	073
9	1969	05	05.77750	09	42	17.92	+20	35	45.4	0.1-	0	073
9	1969	05	05.78493	09	42	18.36	+20	35	42.2	0.1-	0	073
9	1971	10	11.87311	01	26	05.71	+00	37	33.1	0.1-	2-	073
9	1971	10	11.88280	01	26	05.15	+00	37	30.8	0.2-	2-	073
9	1971	10	23.84419	01	14	23.90	-00	00	59.4	0.0	2+	073
9	1971	10	23.85043	01	14	23.52	-00	01	00.3	0.0	2+	073
9	1971	11	05.78683	01	03	27.04	-00	17	16.2	0.0	1-	073
9	1971	11	05.79237	01	03	26.79	-00	17	16.5	0.0	1+	073
9	1971	11	10.79479	01	00	12.77	-00	14	44.6	0.0	1-	073
9	1971	11	10.80033	01	00	12.58	-00	14	44.2	0.0	1-	073

9	1971	11	11.71484	00	59	41.78	-00	13	43.1	0.0	1-	073
9	1971	11	11.72938	00	59	41.29	-00	13	42.2	0.0	1-	073
10	1971	01	30.91767	08	49	43.94	+15	07	51.9	0.0	0	073
10	1971	01	30.92339	08	49	43.52	+15	07	53.2	0.0	0	073
10	1971	02	12.87819	08	39	03.27	+15	39	43.7	0.1-	1+	073
10	1971	02	12.88996	08	39	02.73	+15	39	45.2	0.1-	1+	073
10	1971	02	26.86412	08	29	21.06	+16	09	16.1	0.0	0	073
10	1971	02	26.87347	08	29	20.74	+16	09	16.8	0.0	0	073
10	1971	03	16.75031	08	22	15.91	+16	31	50.1	0.0	1+	073
10	1971	03	16.76762	08	22	15.65	+16	31	50.3	0.0	1+	073
10	1971	03	18.75139	08	21	29.66	+16	35	45.1	0.1-	3+	073
10	1971	03	18.76455	08	21	28.98	+16	35	42.9	0.1-	3+	073
11	1971	01	16.67897	01	30	13.93	+04	14	04.4			073
11	1971	01	16.68589	01	30	14.35	+04	14	07.6			073
11	1971	01	16.69692	01	30	14.82	+04	14	11.6			073
11	1971	11	27.97570	09	32	37.72	+14	03	38.0			073
11	1971	11	27.98054	09	32	37.91	+14	03	36.9			073
12	1971	07	17.78962	18	55	25.89	-07	41	22.6	0.1+	0	073
12	1971	07	17.79585	18	55	25.52	-07	41	21.3	0.1+	0	073
12	1971	07	23.83458	18	50	53.97	-07	31	57.5	0.1+	0	073
12	1971	07	23.84012	18	50	53.71	-07	31	57.1	0.1+	0	073
12	1971	08	04.78277	18	44	46.39	-07	35	49.7	0.0	1-	073
12	1971	08	04.78569	18	44	46.33	-07	35	50.3	0.0	1-	073
13	1970	12	12.70514	02	00	54.03	+15	34	39.6	0.0	1-	073
13	1970	12	12.71969	02	00	53.65	+15	34	42.8	0.0	1-	073
14	1969	10	08.83787	01	26	38.79	-04	41	12.0	0.0	0	073
14	1969	10	08.84964	01	26	38.14	-04	41	15.3	0.0	0	073
14	1969	10	14.83880	01	21	20.41	-05	07	21.9	0.0	0	073
14	1969	10	14.84919	01	21	19.84	-05	07	24.5	0.0	0	073
14	1969	11	01.84404	01	06	11.68	-05	56	19.2	0.0	0	073
14	1969	11	01.85512	01	06	11.20	-05	56	19.8	0.0	0	073
14	1969	11	04.77144	01	04	02.91	-05	59	15.0	0.0	0	073
14	1969	11	04.80884	01	04	02.47	-05	59	15.1	0.0	0	073
14	1969	11	29.71808	00	52	47.24	-05	23	03.7	0.0	0	073
14	1969	11	29.74163	00	52	46.93	-05	22	58.7	0.0	0	073
14	1971	01	29.89465	07	48	00.36	+29	52	55.1	0.0	0	073
14	1971	01	29.90573	07	47	59.61	+29	52	58.7	0.0	0	073
14	1971	01	30.87901	07	47	01.56	+29	58	04.3	0.0	0	073
14	1971	01	30.88669	07	47	01.00	+29	58	06.7	0.0	0	073
14	1971	02	10.81787	07	37	25.87	+30	43	19.0	0.0	0	073
14	1971	02	10.82929	07	37	25.28	+30	43	21.4	0.0	0	073
14	1971	02	12.73829	07	36	03.88	+30	48	58.1	0.0	0	073
14	1971	02	12.75076	07	36	03.34	+30	49	00.4	0.0	0	073
14	1971	02	15.74461	07	34	08.84	+30	56	29.8	0.0	0	073
14	1971	02	15.75846	07	34	08.33	+30	56	31.8	0.0	0	073
16	1969	08	05.87430	20	38	11.82	-16	42	12.8	0.4+	1+	073
16	1969	08	05.88261	20	38	11.46	-16	42	14.8	0.4+	1+	073
16	1969	08	11.85307	20	33	21.46	-17	07	28.5	0.3+	1+	073
16	1969	08	11.86138	20	33	21.03	-17	07	30.4	0.3+	1+	073
16	1969	08	14.84806	20	31	02.42	-17	19	44.1	0.4+	1+	073
16	1969	08	14.85804	20	31	01.98	-17	19	46.6	0.4+	1+	073
16	1969	09	01.81829	20	20	08.58	-18	22	12.2	0.3+	1+	073
16	1969	09	01.82730	20	20	08.34	-18	22	14.0	0.3+	1+	073
16	1969	09	27.76055	20	17	57.88	-19	03	48.5	0.2+	1+	073
16	1969	09	27.77370	20	17	58.06	-19	03	48.9	0.2+	1+	073
16	1969	09	30.73644	20	18	51.13	-19	04	28.2	0.3+	1+	073
16	1969	09	30.74614	20	18	51.30	-19	04	28.3	0.3+	1+	073
16	1969	10	01.78392	20	19	12.98	-19	04	30.3	0.3+	0	073
16	1969	10	01.80193	20	19	13.36	-19	04	30.2	0.3+	0	073

16	1969	10	07.72149	20	21	48.26	-19	02	40.6	0.3+	0	073
16	1969	10	07.73049	20	21	48.47	-19	02	40.9	0.3+	0	073
16	1969	10	13.71900	20	25	15.92	-18	57	24.8	0.3+	0	073
16	1969	10	13.72830	20	25	16.27	-18	57	24.3	0.3+	0	073
16	1969	10	16.70540	20	27	17.53	-18	53	29.3	0.3+	1+	073
16	1969	10	16.71630	20	27	17.96	-18	53	28.9	0.3+	1+	073
16	1969	10	21.69886	20	31	05.94	-18	45	01.7	0.3+	0	073
16	1969	10	21.70717	20	31	06.30	-18	45	01.5	0.3+	1+	073
16	1969	10	22.69335	20	31	54.99	-18	43	03.9	0.3+	1+	073
16	1969	10	22.70408	20	31	55.52	-18	43	03.1	0.3+	1+	073
16	1970	11	04.00894	05	07	49.50	+18	17	08.4	0.3+	1+	073
16	1970	11	04.01649	05	07	49.29	+18	17	07.5	0.3+	1+	073
16	1970	11	05.96396	05	06	51.79	+18	13	50.8	0.4+	1+	073
16	1970	11	05.97435	05	06	51.45	+18	13	49.7	0.4+	1+	073
16	1970	11	18.92123	04	58	11.96	+17	51	39.3	0.3+	1+	073
16	1970	11	18.93092	04	58	11.49	+17	51	37.9	0.3+	1+	073
16	1970	11	20.90400	04	56	35.02	+17	48	16.5	0.3+	1+	073
16	1970	12	10.84131	04	38	33.70	+17	18	51.0	0.3+	1+	073
16	1970	12	10.84875	04	38	33.29	+17	18	50.4	0.3+	1+	073
16	1971	02	12.71371	04	25	13.05	+18	23	16.5	0.3+	1+	073
16	1971	02	12.72617	04	25	13.38	+18	23	18.2	0.3+	1+	073
17	1969	05	19.97390	17	19	41.90	-14	41	22.6	0.0	0	073
17	1969	05	19.98222	17	19	41.56	-14	41	22.1	0.0	0	073
17	1969	05	27.94862	17	13	33.59	-14	39	36.7	0.0	1-	073
17	1969	05	27.95589	17	13	33.18	-14	39	36.8	0.0	1-	073
17	1969	06	12.85197	16	58	57.21	-14	52	35.4	0.0	0	073
17	1969	06	12.85995	16	58	56.74	-14	52	36.2	0.0	0	073
17	1969	07	09.83092	16	40	15.45	-16	09	02.8	0.0	0	073
17	1969	07	09.84685	16	40	15.07	-16	09	06.1	0.0	0	073
18	1971	10	25.97652	06	13	04.07	+07	44	25.4			073
18	1971	10	25.97998	06	13	04.16	+07	44	24.0			073
18	1971	10	25.98413	06	13	04.26	+07	44	22.3			073
18	1971	11	23.98456	06	09	58.35	+05	33	46.3			073
18	1971	11	23.98664	06	09	58.25	+05	33	46.1			073
18	1971	11	27.96391	06	07	06.57	+05	26	28.2			073
18	1971	11	27.96599	06	07	06.46	+05	26	27.9			073
18	1971	11	27.96807	06	07	06.38	+05	26	27.7			073
18	1971	12	07.94553	05	58	03.86	+05	24	34.0			073
18	1971	12	07.94760	05	58	03.71	+05	24	33.7			073
18	1971	12	07.94968	05	58	03.60	+05	24	34.1			073
18	1971	12	11.86962	05	53	59.82	+05	30	39.2			073
18	1971	12	11.87585	05	53	59.39	+05	30	40.2			073
18	1971	12	13.88459	05	51	50.47	+05	35	19.4			073
18	1971	12	13.88632	05	51	50.37	+05	35	19.5			073
18	1971	12	13.88806	05	51	50.25	+05	35	19.8			073
18	1971	12	18.89312	05	46	25.03	+05	51	21.1			073
18	1971	12	18.89433	05	46	24.95	+05	51	21.8			073
18	1971	12	18.89572	05	46	24.86	+05	51	21.8			073
18	1971	12	25.86750	05	39	03.10	+06	23	37.5			073
18	1971	12	25.87373	05	39	02.71	+06	23	39.4			073
19	1969	04	21.89042	12	36	05.50	-04	30	29.1	0.0	2+	073
19	1969	04	21.90219	12	36	04.98	-04	30	25.0	0.0	2+	073
19	1969	04	26.84668	12	32	37.57	-04	05	18.0	0.0	1+	073
19	1969	04	26.86053	12	32	36.98	-04	05	13.8	0.1-	1+	073
19	1969	05	05.86319	12	27	33.21	-03	27	13.7	0.1-	0	073
19	1969	05	05.87393	12	27	32.91	-03	27	11.4	0.1-	1+	073
19	1969	05	08.78956	12	26	15.88	-03	17	07.7	0.1-	2+	073
19	1969	05	14.79259	12	24	17.28	-03	00	55.2	0.1-	1+	073
19	1969	05	14.80990	12	24	17.77	-03	00	53.1	0.1-	1+	073

19	1969	05	15.82934	12	24	02.55	-02	58	40.3	0.1-	1+	073
19	1969	05	15.84180	12	24	02.39	-02	58	38.7	0.1-	1+	073
19	1969	05	16.80064	12	23	49.53	-02	56	41.2	0.1-	1+	073
19	1969	05	16.81866	12	23	49.30	-02	56	39.7	0.1-	1+	073
19	1969	05	19.83631	12	23	17.35	-02	51	30.7	0.1-	1+	073
19	1969	05	19.86145	12	23	17.04	-02	51	28.3	0.1-	1+	073
21	1970	11	03.98516	05	00	29.30	+21	12	12.1	0.3-	1-	073
21	1970	11	03.99676	05	00	28.83	+21	12	11.7	0.3-	1-	073
21	1970	11	04.95699	04	59	49.93	+21	12	08.4	0.3-	1-	073
21	1970	11	04.96876	04	59	50.40	+21	12	08.6	0.3-	1-	073
21	1970	11	05.99651	04	59	06.81	+21	12	02.8	0.3-	2-	073
21	1970	11	06.00966	04	59	06.24	+21	12	02.4	0.3-	2-	073
21	1970	11	06.02282	04	59	05.67	+21	12	02.8	0.3-	2-	073
21	1970	11	18.89595	04	47	46.24	+21	07	40.3	0.3-	1-	073
21	1970	11	18.90703	04	47	45.57	+21	07	40.0	0.3-	1-	073
22	1969	05	16.92426	15	47	32.85	-16	51	26.2	0.0	0	073
22	1969	05	16.93811	15	47	32.04	-16	51	26.8	0.0	0	073
22	1969	06	13.84231	15	23	57.63	-17	09	56.7	0.0	0	073
22	1969	06	13.85616	15	23	57.08	-17	09	57.5	0.0	0	073
22	1969	06	19.85364	15	20	12.80	-17	17	24.3	0.0	0	073
22	1969	06	19.86749	15	20	12.32	-17	17	25.4	0.0	0	073
22	1971	12	11.82143	03	26	53.46	+17	35	41.4	0.0	1-	073
22	1971	12	11.82836	03	26	53.11	+17	35	42.6	0.0	1-	073
23	1969	05	16.88825	15	00	17.01	-11	58	31.5	0.0	0	073
23	1969	05	16.90349	15	00	16.21	-11	58	32.0	0.1+	0	073
23	1971	10	15.89298	01	31	43.40	-03	02	35.8	0.0	0	073
23	1971	10	15.89336	01	31	43.13	-03	02	36.9	0.0	0	073
25	1969	11	13.81301	01	57	13.82	+08	22	02.2	0.1+	6+	073
25	1969	11	13.82201	01	57	13.46	+08	21	54.7	0.1+	6+	073
26	1971	09	13.88782	23	50	32.72	-05	52	50.8	0.6+	1+	073
26	1971	09	13.89821	23	50	32.16	-05	52	54.2	0.6+	1+	073
27	1971	07	17.94060	21	23	20.25	-16	48	58.9	0.0	2-	073
27	1971	07	17.95098	21	23	19.84	-16	49	00.6	0.0	2-	073
27	1971	08	04.88610	21	07	11.98	-18	13	58.9	0.0	3+	073
27	1971	08	04.89061	21	07	11.73	-18	13	40.3	0.0	3+	073
28	1971	07	17.80867	19	25	42.65	-14	34	18.6	0.1+	4-	073
28	1971	07	17.82182	19	25	43.18	-14	34	18.8	0.1+	4-	073
29	1970	11	04.71529	00	43	08.05	+09	51	38.0	0.0	1+	073
29	1970	11	04.72498	00	43	07.69	+09	51	36.6	0.0	1+	073
29	1970	11	05.76667	00	42	28.78	+09	48	59.9	0.1+	2+	073
29	1970	11	18.73563	00	36	55.75	+09	26	37.3	0.0	2+	073
29	1970	11	18.74878	00	36	55.54	+09	26	36.5	0.0	2+	073
29	1970	11	20.72151	00	36	30.71	+09	25	07.3	0.0	2+	073
29	1970	11	20.74021	00	36	30.46	+09	25	06.4	0.0	2+	073
30	1969	04	14.83089	09	48	19.08	+11	25	25.7	1.8-	8+	073
30	1969	04	14.85028	09	48	18.99	+11	25	26.2	1.8-	8+	073
30	1969	04	21.82775	09	49	46.81	+11	18	30.7	2.1-	10+	073
30	1969	04	21.84644	09	49	47.10	+11	18	28.9	2.1-	10+	073
30	1971	12	03.82837	03	12	47.94	+21	36	36.9	0.0	1+	073
30	1971	12	03.83144	03	12	47.61	+21	36	34.9	0.0	1+	073
30	1971	12	11.80654	03	07	21.08	+21	03	06.5	0.0	1+	073
30	1971	12	11.81347	03	07	20.86	+21	03	05.1	0.0	1+	073
32	1971	12	13.86176	05	43	18.59	+17	19	40.8	0.1+	3-	073
32	1971	12	13.87423	05	43	17.82	+17	19	39.6	0.2+	3-	073
32	1971	12	25.84674	05	31	13.77	+16	56	19.0	0.3+	2-	073
32	1971	12	25.85851	05	31	13.11	+16	56	17.9	0.2+	2-	073
34	1971	08	05.01561	23	26	42.20	-00	04	13.4	0.1-	1-	073
34	1971	08	21.95332	23	17	55.62	-01	14	01.3	0.8-	3-	073
34	1971	08	21.96370	23	17	55.21	-01	14	04.1	0.8-	3-	073

34	1971	08	30.90592	23	11	33.89	-02	05	21.6	0.8-	2-	073
34	1971	08	30.91631	23	11	33.18	-02	05	25.4	0.8-	2-	073
34	1971	09	11.85381	23	02	05.16	-03	22	25.4	0.0	1-	073
34	1971	09	11.86050	23	02	04.64	-03	22	29.4	0.0	1-	073
36	1969	10	07.81351	00	37	17.87	+15	29	48.6	0.1-	0	073
36	1969	10	07.82260	00	37	17.13	+15	29	53.2	0.1-	0	073
36	1969	10	11.85945	00	31	56.40	+16	01	15.6	0.1+	0	073
36	1969	10	11.87261	00	31	55.91	+16	01	16.4	0.1+	1+	073
36	1969	10	13.81383	00	29	23.95	+16	15	23.6	0.1+	1+	073
36	1969	10	13.82335	00	29	23.14	+16	15	27.5	0.1+	1+	073
36	1969	10	16.81949	00	25	34.44	+16	35	58.9	0.0	1+	073
36	1969	10	16.82919	00	25	33.72	+16	36	03.2	0.0	1+	073
36	1969	10	17.91061	00	24	13.11	+16	43	07.0	0.1-	0	073
36	1969	10	17.92377	00	24	12.12	+16	43	12.2	0.1-	0	073
36	1969	10	21.76534	00	19	39.35	+17	06	56.7	0.1-	0	073
36	1969	10	21.77434	00	19	38.69	+17	06	59.9	0.1-	0	073
37	1971	08	22.00457	00	53	16.59	+04	45	16.7	0.0	2-	073
37	1971	08	22.01073	00	53	16.46	+04	45	17.1	0.0	2-	073
37	1971	08	30.98141	00	51	15.04	+04	42	52.7	0.1+	1-	073
37	1971	10	23.82930	00	11	10.22	+01	51	56.5	0.1+	1-	073
37	1971	10	23.83554	00	11	09.98	+01	51	55.9	0.1+	1-	073
39	1971	01	26.00319	10	27	58.96	+06	41	52.3			073
39	1971	01	26.01046	10	27	58.72	+06	41	54.8			073
39	1971	01	29.95800	10	25	42.33	+07	04	39.4			073
39	1971	01	29.96978	10	25	41.93	+07	04	43.6			073
39	1971	02	03.95057	10	22	27.88	+07	36	13.6			073
39	1971	02	03.95819	10	22	27.55	+07	36	16.5			073
39	1971	02	03.96788	10	22	27.17	+07	36	20.3			073
39	1971	02	13.91700	10	15	05.13	+08	46	16.4			073
39	1971	02	13.92462	10	15	04.77	+08	46	19.5			073
39	1971	02	13.93432	10	15	04.29	+08	46	24.0			073
39	1971	03	16.85557	09	52	20.30	+12	25	29.8			073
39	1971	03	16.86804	09	52	19.86	+12	25	34.2			073
39	1971	03	18.81753	09	51	16.51	+12	36	54.4			073
39	1971	03	18.83138	09	51	16.10	+12	36	59.0			073
39	1971	03	20.77188	09	50	17.40	+12	47	47.7			073
39	1971	03	20.78573	09	50	16.96	+12	47	52.2			073
39	1971	03	25.80183	09	48	05.99	+13	13	33.8			073
39	1971	03	25.81707	09	48	05.81	+13	13	36.7			073
40	1971	01	12.68850	02	30	46.18	+11	58	16.7			073
40	1971	01	12.69957	02	30	46.57	+11	58	19.9			073
40	1971	01	16.72675	02	33	36.03	+12	23	01.9			073
40	1971	01	16.73367	02	33	36.32	+12	23	04.6			073
40	1971	01	16.74406	02	33	36.77	+12	23	08.4			073
40	1971	01	28.71832	02	44	15.01	+13	43	03.4			073
40	1971	01	28.73010	02	44	15.76	+13	43	08.0			073
40	1971	01	29.68581	02	45	15.05	+13	49	52.2			073
41	1971	03	18.84662	10	35	11.08	+03	09	42.0	3.6-	6+	073
41	1971	03	18.85839	10	35	10.56	+03	09	51.8	3.6-	6+	073
41	1971	03	20.82730	10	34	00.12	+03	37	09.9	3.6-	6+	073
41	1971	03	20.83907	10	33	59.67	+03	37	19.6	3.6-	6+	073
41	1971	03	23.83674	10	32	20.68	+04	18	18.9	3.6-	6+	073
41	1971	03	23.85267	10	32	20.10	+04	18	32.0	3.6-	6+	073
41	1971	03	25.85931	10	31	20.15	+04	45	28.1	3.5-	5+	073
41	1971	03	25.87040	10	31	19.79	+04	45	37.1	3.5-	5+	073
42	1970	04	02.97236	12	58	09.43	+07	49	48.6	1.0+	5-	073
42	1970	04	02.98552	12	58	08.88	+07	49	52.1	1.0+	5-	073
42	1971	10	11.85579	01	24	20.40	-07	29	30.7	0.2+	1-	073
42	1971	10	11.86480	01	24	20.79	-07	29	29.1	0.2+	1-	073

42	1971	10	15.84835	01	20	25.55	-07	36	37.6	0.1+	1-	073
42	1971	10	15.85804	01	20	24.95	-07	36	38.8	0.1+	1-	073
43	1969	10	07.87356	01	49	14.91	+16	59	30.7	0.1-	0	073
43	1969	10	07.88216	01	49	14.40	+16	59	28.0	0.1-	0	073
43	1969	10	08.86419	01	48	15.67	+16	53	48.3	0.2-	0	073
43	1969	10	08.87527	01	48	14.95	+16	53	44.3	0.2-	0	073
43	1969	10	13.86898	01	43	06.43	+16	22	37.3	0.0	1+	073
43	1969	10	13.87754	01	43	05.86	+16	22	33.9	0.0	1+	073
43	1969	10	16.87801	01	39	56.15	+16	02	18.3	0.1-	0	073
43	1969	10	16.88670	01	39	55.60	+16	02	14.7	0.1-	0	073
43	1969	10	21.81728	01	34	44.82	+15	27	05.7	0.1+	1+	073
43	1969	10	21.82593	01	34	44.28	+15	27	02.0	0.1+	1+	073
43	1969	11	01.86932	01	23	59.27	+14	05	31.3	0.1+	1+	073
43	1969	11	01.87971	01	23	58.70	+14	05	27.4	0.1+	1+	073
43	1969	11	13.78777	01	15	11.70	+12	45	13.5	0.0	0	073
43	1969	11	13.79918	01	15	11.28	+12	45	09.5	0.0	0	073
43	1971	02	15.83428	09	09	06.62	+11	25	10.1	0.1+	1-	073
44	1971	07	17.96414	21	33	01.65	-14	34	13.9	0.0	0	073
44	1971	07	17.97176	21	33	01.99	-14	34	11.7	0.0	0	073
44	1971	08	10.89467	21	12	41.41	-16	40	02.4	0.1-	1-	073
44	1971	08	10.90159	21	12	41.08	-16	40	05.4	0.1-	1-	073
44	1971	08	18.84342	21	05	16.72	-17	22	25.9	0.1-	0	073
44	1971	08	18.84965	21	05	16.35	-17	22	27.7	0.1-	0	073
44	1971	09	01.78551	20	53	49.23	-18	25	56.2	0.1+	0	073
44	1971	09	01.79452	20	53	48.71	-18	25	58.2	0.1+	0	073
44	1971	09	04.76730	20	51	51.61	-18	36	30.3	0.1+	0	073
44	1971	09	04.77595	20	51	51.23	-18	36	28.2	0.1+	0	073
48	1971	05	13.92746	16	26	57.67	-13	38	09.8	0.1-	1-	073
48	1971	05	13.94408	16	26	56.80	-13	38	06.8	0.1-	1-	073
48	1971	05	25.87148	16	17	58.19	-13	01	08.3	0.0	0	073
48	1971	05	25.89156	16	17	57.31	-13	01	04.1	0.0	0	073
48	1971	06	21.80400	15	58	55.52	-12	07	54.8	0.1-	0	073
48	1971	06	21.81924	15	58	55.05	-12	07	54.1	0.1-	0	073
48	1971	06	24.80411	15	57	18.83	-12	05	39.0	0.1-	0	073
48	1971	06	24.81692	15	57	18.44	-12	05	38.3	0.1-	0	073
51	1970	01	15.77541	03	20	45.02	+05	15	12.6	0.1+	0	073
51	1970	01	15.79238	03	20	45.25	+05	15	16.9	0.1+	0	073
51	1971	04	27.87674	13	40	33.58	+00	13	46.2	0.1-	0	073
51	1971	04	27.88852	13	40	32.88	+00	13	53.2	0.1-	0	073
51	1971	05	11.80157	13	31	21.34	+01	45	02.8	0.1-	0	073
51	1971	05	11.82234	13	31	20.68	+01	45	08.6	0.1-	0	073
51	1971	05	13.81044	13	30	21.27	+01	54	00.1	0.1-	0	073
51	1971	05	13.82776	13	30	20.77	+01	54	04.4	0.1-	0	073
51	1971	05	18.79769	13	28	17.82	+02	11	29.3	0.1-	0	073
51	1971	05	18.81154	13	28	17.49	+02	11	31.7	0.1-	0	073
51	1971	05	19.83372	13	27	56.78	+02	14	16.3	0.1-	0	073
51	1971	05	19.84273	13	27	56.68	+02	14	17.2	0.1-	0	073
52	1970	10	26.82330	00	41	56.46	-06	08	33.7	0.1+	0	073
52	1970	10	26.83785	00	41	55.90	-06	08	36.6	0.1+	0	073
54	1970	11	02.76507	00	48	09.85	+24	36	22.8	0.0	0	073
54	1970	11	02.78273	00	48	09.05	+24	36	15.5	0.0	0	073
57	1971	10	09.77122	23	26	03.76	+04	04	29.5	0.1+	1-	073
57	1971	10	09.78230	23	26	04.68	+04	04	35.3	0.1+	1-	073
57	1971	10	11.75191	23	25	07.11	+03	46	26.0	0.1+	1-	073
57	1971	10	11.76369	23	25	06.74	+03	46	19.0	0.1+	1+	073
57	1971	10	15.73997	23	23	23.84	+03	10	41.4	0.1+	1+	073
57	1971	10	15.75139	23	23	23.54	+03	10	36.1	0.1+	1+	073
59	1971	07	12.81919	18	03	38.18	-10	41	30.1	0.0	0	073
59	1971	07	12.82508	18	03	37.88	-10	41	30.9	0.0	0	073

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59	1971	07	12.82785	18	03	37.69	-10	41	31.6	0.0	0	073
59	1971	07	13.81299	18	02	51.90	-10	44	06.9	0.0	0	073
59	1971	07	13.81507	18	02	51.72	-10	44	07.6	0.0	0	073
59	1971	07	13.81680	18	02	51.63	-10	44	06.8	0.0	0	073
59	1971	07	16.80871	18	00	37.19	-10	52	33.9	0.1+	0	073
59	1971	07	16.81085	18	00	37.30	-10	52	33.8	0.1+	0	073
59	1971	07	16.81288	18	00	37.36	-10	52	33.6	0.1+	0	073
60	1971	09	13.84350	22	27	55.39	-06	42	20.4	0.0	0	073
60	1971	09	13.85074	22	27	54.39	-06	42	25.7	0.0	0	073
63	1970	11	04.87423	02	03	57.23	+21	19	25.1	0.0	1-	073
63	1970	11	04.87908	02	03	56.90	+21	19	23.5	0.0	1-	073
63	1970	11	04.88462	02	03	56.55	+21	19	22.0	0.0	1-	073
63	1970	11	16.77639	01	52	51.63	+20	20	33.8	0.0	1+	073
63	1970	11	16.80167	01	52	50.32	+20	20	26.1	0.0	0	073
63	1970	12	01.77991	01	43	29.61	+19	11	34.0	0.0	0	073
63	1970	12	01.79461	01	43	29.22	+19	11	30.5	0.0	0	073
64	1971	04	27.82688	13	07	01.16	-09	20	51.7	0.0	1-	073
64	1971	04	27.84073	13	07	00.57	-09	20	48.1	0.0	1-	073
64	1971	04	29.84287	13	05	35.38	-09	11	40.2	0.0	0	073
64	1971	04	29.85602	13	05	34.80	-09	11	36.8	0.0	0	073
65	1971	08	12.00793	00	15	09.46	+00	16	44.6	0.2-	1-	073
65	1971	08	12.02005	00	15	09.28	+00	16	43.1	0.2-	1-	073
65	1971	08	21.97825	00	12	02.39	-00	14	52.7	0.1+	1+	073
65	1971	08	21.99864	00	12	02.14	-00	14	55.0	0.1+	1+	073
65	1971	09	10.93687	00	01	26.12	-01	45	11.0	0.0	1-	073
65	1971	09	10.95210	00	01	25.48	-01	45	15.7	0.0	1-	073
65	1971	10	21.73814	23	37	12.94	-04	48	03.3	0.0	0	073
65	1971	10	21.75095	23	37	13.25	-04	48	01.2	0.0	0	073
66	1971	12	13.82090	04	43	45.38	+27	26	10.8	0.4-	1-	073
66	1971	12	13.84014	04	43	43.87	+27	26	08.6	0.4-	1-	073
67	1971	10	15.90445	01	47	53.69	+10	30	08.5	0.4-	4-	073
67	1971	10	15.91414	01	47	53.32	+10	30	05.1	0.4-	4-	073
67	1971	10	23.85908	01	40	42.89	+09	21	32.7	0.3-	3-	073
67	1971	10	23.86809	01	40	42.37	+09	21	28.0	0.3-	3-	073
67	1971	11	05.80172	01	30	13.28	+07	39	36.7	0.3-	3-	073
67	1971	11	05.81141	01	30	12.81	+07	39	33.3	0.3-	3-	073
67	1971	11	09.90557	01	27	37.48	+07	13	18.5	0.2-	2-	073
67	1971	11	09.91180	01	27	37.23	+07	13	16.3	0.2-	2-	073
67	1971	11	10.81867	01	26	58.58	+07	06	38.8	0.2-	2-	073
67	1971	11	10.82098	01	26	58.37	+07	06	35.4	0.0	2-	073
68	1969	10	07.85497	01	07	11.58	-00	21	11.8	0.0	3-	073
68	1969	10	07.86311	01	07	11.11	-00	21	12.5	0.0	3-	073
68	1969	10	13.85122	01	01	39.39	-00	27	59.3	0.1+	1-	073
68	1969	10	13.85816	01	01	39.00	-00	27	59.4	0.1+	1-	073
68	1969	10	21.83563	00	54	39.93	-00	30	51.9	0.0	1-	073
68	1969	10	21.84255	00	54	39.57	-00	30	51.9	0.0	1-	073
68	1969	11	01.81007	00	46	43.93	-00	20	25.8	0.1-	1-	073
68	1969	11	01.83054	00	46	43.41	-00	20	24.4	0.1-	1-	073
68	1971	02	15.77231	08	12	44.63	+31	19	33.5	0.0	0	073
68	1971	02	15.80347	08	12	43.86	+31	19	33.8	0.0	0	073
69	1971	08	04.87018	20	25	11.06	-08	45	32.8	0.0	0	073
69	1971	08	04.87814	20	25	10.72	-08	45	34.5	0.0	0	073
71	1971	09	22.83974	22	54	14.43	+16	44	57.9	0.1+	1+	073
71	1971	09	22.85151	22	54	13.82	+16	44	56.1	0.1+	1+	073
71	1971	10	04.80459	22	44	03.31	+16	05	05.9	0.0	0	073
71	1971	10	04.81810	22	44	02.78	+16	05	02.4	0.0	0	073
71	1971	10	11.72248	22	39	25.03	+15	37	11.7	0.0	0	073
71	1971	10	11.73668	22	39	24.50	+15	37	08.6	0.0	0	073
71	1971	10	15.71226	22	37	13.81	+15	20	29.9	0.0	0	073

71	1971	10	15.72438	22	37	13.48	+15	20	27.4	0.0	0	073
72	1971	08	16.89977	22	13	37.29	-01	06	28.9	0.0	0	073
72	1971	08	16.91016	22	13	36.72	-01	06	32.8	0.0	0	073
72	1971	08	20.87010	22	10	18.09	-01	31	53.9	0.0	0	073
72	1971	08	20.89372	22	10	18.08	-01	31	51.3	0.0	0	073
75	1971	08	04.93978	21	58	01.21	-19	53	43.5	0.0	0	073
75	1971	08	04.94462	21	58	00.99	-19	53	43.4	0.0	0	073
77	1971	10	09.84531	00	15	04.56	+02	18	19.9	0.2+	1+	073
77	1971	10	09.85778	00	15	03.91	+02	18	15.7	0.1+	1+	073
77	1971	10	11.81009	00	14	07.49	+02	10	10.0	0.2+	2+	073
77	1971	10	11.82117	00	14	06.94	+02	10	07.2	0.2+	2+	073
77	1971	10	15.79987	00	10	59.01	+01	54	24.6	0.1+	2+	073
77	1971	10	15.81095	00	10	58.48	+01	54	22.3	0.1+	2+	073
77	1971	10	23.80922	00	05	30.02	+01	27	26.3	0.2+	3+	073
77	1971	10	23.81892	00	05	29.69	+01	27	25.3	0.2+	3+	073
79	1970	10	26.75128	00	20	53.27	+03	32	26.7	0.1+	0	073
79	1970	10	26.76513	00	20	52.83	+03	32	20.6	0.1+	0	073
79	1970	10	28.80158	00	20	00.01	+03	18	30.0	0.1+	0	073
79	1970	10	28.81126	00	19	59.77	+03	18	26.0	0.1+	0	073
80	1969	09	30.79254	00	38	51.69	+13	51	53.5	0.1-	1-	073
80	1969	09	30.80120	00	38	51.31	+13	51	47.1	0.1-	1-	073
80	1969	10	07.69435	00	34	06.87	+12	24	17.4	0.1-	1-	073
80	1969	10	07.70230	00	34	06.55	+12	24	11.4	0.1-	1-	073
80	1969	10	16.77890	00	28	37.49	+10	25	25.4	0.1-	0	073
80	1969	10	16.78798	00	28	37.15	+10	25	18.3	0.1-	0	073
80	1969	10	21.65243	00	26	15.71	+09	21	29.0	0.2-	2-	073
80	1969	10	21.65960	00	26	15.50	+09	21	23.8	0.2-	2-	073
82	1969	10	17.80707	23	56	44.15	-01	49	47.9	0.4+	3+	073
82	1969	10	17.83616	23	56	42.93	-01	49	54.6	0.4+	3+	073
82	1971	02	03.87612	08	21	10.97	+24	41	19.6	0.1+	0	073
82	1971	02	03.89482	08	21	09.94	+24	41	21.6	0.1+	0	073
82	1971	02	13.83319	08	13	11.69	+24	53	45.3	0.0	0	073
82	1971	02	13.85082	08	13	09.50	+24	53	46.5	0.0	0	073
82	1971	02	26.83607	08	06	45.17	+24	49	07.9	0.0	0	073
82	1971	02	26.84038	08	06	44.91	+24	49	07.2	0.0	0	073
83	1969	11	29.75721	02	23	16.75	+17	17	15.3	0.3+	2+	073
83	1969	11	29.76968	02	23	16.11	+17	17	13.2	0.3+	2+	073
83	1971	03	16.91271	11	50	28.44	+06	15	02.1	0.5+	4-	073
83	1971	03	16.92379	11	50	27.68	+06	15	04.9	0.5+	4-	073
83	1971	03	18.89406	11	48	32.37	+06	22	22.7	0.5+	4-	073
83	1971	03	18.90514	11	48	31.38	+06	22	25.3	0.5+	4-	073
83	1971	03	20.85015	11	46	37.64	+06	29	20.0	0.4+	4-	073
83	1971	03	20.86331	11	46	36.85	+06	29	22.8	0.4+	4-	073
83	1971	03	23.86548	11	43	42.07	+06	39	23.5	0.4+	3-	073
83	1971	03	23.88071	11	43	41.31	+06	39	26.3	0.4+	3-	073
83	1971	03	25.88321	11	41	46.61	+06	45	33.9	0.4+	4-	073
83	1971	03	25.89706	11	41	45.80	+06	45	36.4	0.4+	4-	073
83	1971	04	16.82184	11	25	05.73	+07	12	21.2	0.4+	4-	073
86	1969	10	09.87254	00	21	04.13	-06	16	51.3	0.8+	4+	073
86	1969	10	09.89035	00	21	03.17	-06	16	55.1	0.8+	4+	073
86	1969	10	15.83434	00	16	59.42	-06	32	56.1	0.9+	4+	073
86	1969	10	15.85165	00	16	58.70	-06	32	58.4	0.9+	4+	073
90	1970	03	30.90436	10	57	34.37	+09	54	16.4	0.0	0	073
90	1970	03	30.93034	10	57	33.41	+09	54	21.0	0.0	0	073
90	1970	04	01.88540	10	56	24.87	+10	00	15.3	0.1-	0	073
90	1970	04	01.91102	10	56	24.16	+10	00	18.5	0.1-	1+	073
93	1971	04	29.80547	12	35	42.15	-08	12	14.1	0.6+	4-	073
93	1971	04	29.82140	12	35	41.51	-08	12	12.6	0.6+	4-	073
95	1969	11	14.87193	02	21	22.33	+21	16	10.5	0.1-	1-	073

95	1969	11	14.88578	02	21	21.76	+21	16	02.9	0.1-	1-	073
97	1971	12	11.83703	04	04	08.82	-01	55	41.8	1.0+	5+	073
97	1971	12	11.84395	04	04	08.55	-01	55	40.7	1.0+	5+	073
100	1970	04	06.90846	11	51	16.58	+08	47	10.9	0.1+	1-	073
100	1970	04	06.93755	11	51	15.56	+08	47	18.8	0.1+	1-	073
100	1971	06	23.86536	17	34	34.34	-16	35	06.2	0.0	1-	073
100	1971	06	23.87921	17	34	33.59	-16	35	07.8	0.0	1-	073
103	1971	12	25.88413	05	59	08.92	+17	33	01.4	4.0-	0	073
103	1971	12	25.89313	05	59	08.43	+17	33	01.9	4.0-	0	073
107	1971	09	13.76871	21	13	16.61	-09	36	32.4	0.0	1-	073
107	1971	09	13.77771	21	13	16.37	-09	36	35.0	0.0	4-	073
109	1971	11	09.07593	02	57	57.55	+29	04	28.8	1.9+	4+	073
109	1971	11	09.08075	02	57	57.25	+29	04	29.1	1.9+	4+	073
109	1971	12	03.78058	02	37	47.96	+28	58	37.8	2.4+	4+	073
109	1971	12	03.78993	02	37	48.27	+28	58	39.1	2.4+	4+	073
109	1971	12	11.69261	02	34	03.49	+28	44	13.9	2.4+	3+	073
109	1971	12	11.70369	02	34	03.34	+28	44	13.3	2.4+	3+	073
111	1971	10	15.92765	02	18	25.88	+22	15	24.7	1.2-	6-	073
111	1971	10	15.93838	02	18	25.38	+22	15	23.0	1.2-	6-	073
111	1971	10	23.87917	02	11	12.13	+21	48	36.2	1.2-	6-	073
111	1971	10	23.88748	02	11	11.66	+21	48	34.4	1.2-	6-	073
111	1971	11	10.82941	01	54	22.47	+20	18	35.7	1.1-	6-	073
111	1971	11	10.83910	01	54	21.99	+20	18	32.7	1.1-	6-	073
111	1971	12	03.70960	01	40	31.75	+18	17	08.3	1.0-	6-	073
111	1971	12	03.72033	01	40	31.55	+18	17	05.7	1.0-	6-	073
114	1971	06	05.88789	17	13	25.76	-15	07	55.5	0.1+	0	073
114	1971	06	05.89794	17	13	25.43	-15	07	54.3	0.1+	0	073
122	1971	11	09.90557	01	26	47.09	+07	50	58.4	0.1+	1-	073
122	1971	11	09.91180	01	26	46.85	+07	50	56.8	0.1+	0	073
124	1971	12	18.72708	03	44	21.73	+15	58	52.1	0.0	0	073
124	1971	12	18.73747	03	44	21.28	+15	58	50.5	0.0	0	073
125	1971	05	26.92692	15	56	33.99	-12	58	58.9	0.7+	4-	073
125	1971	05	26.94042	15	56	34.04	-12	58	58.5	0.7+	4-	073
126	1971	11	09.92980	01	32	46.91	+10	46	37.4	0.2+	1+	073
126	1971	11	09.94158	01	32	46.37	+10	46	35.2	0.2+	1+	073
126	1971	11	11.79308	01	31	18.39	+10	40	59.2	0.1+	1+	073
126	1971	11	11.80347	01	31	17.93	+10	40	57.4	0.1+	1+	073
128	1970	03	30.95007	12	12	48.27	+08	13	00.0	0.7+	3-	073
128	1970	03	30.96323	12	12	47.61	+08	13	03.4	0.7+	3-	073
129	1971	04	29.91212	15	37	37.98	+02	33	24.3	0.0	0	073
129	1971	04	29.92459	15	37	37.48	+02	33	28.5	0.0	0	073
129	1971	05	11.85940	15	29	04.81	+03	25	16.1	0.0	0	073
129	1971	05	11.87325	15	29	04.21	+03	25	18.3	0.0	0	073
129	1971	05	12.91942	15	28	15.84	+03	28	16.9	0.0	0	073
129	1971	05	12.92807	15	28	15.40	+03	28	18.1	0.0	0	073
129	1971	05	13.90149	15	27	30.33	+03	30	48.7	0.0	0	073
129	1971	05	13.91326	15	27	29.76	+03	30	50.9	0.0	0	073
129	1971	05	18.88699	15	23	38.15	+03	39	46.3	0.0	0	073
129	1971	05	19.92169	15	22	51.12	+03	40	45.8	0.1-	0	073
129	1971	05	19.93069	15	22	50.65	+03	40	46.0	0.1-	0	073
129	1971	05	22.86823	15	20	37.57	+03	41	58.8	0.1-	0	073
129	1971	05	22.88138	15	20	37.03	+03	41	58.8	0.1-	0	073
129	1971	05	25.85694	15	18	24.17	+03	40	42.7	0.0	0	073
130	1970	11	07.96335	03	37	38.15	-18	05	30.7	0.0	0	073
130	1970	11	07.97166	03	37	37.76	-18	05	33.6	0.0	0	073
130	1970	11	11.96628	03	34	34.01	-18	20	59.6	0.0	0	073
130	1970	11	11.97459	03	34	33.74	-18	21	01.4	0.0	0	073
137	1969	10	27.73580	23	14	21.16	+01	17	06.2	0.0	0	073
137	1969	10	27.75796	23	14	21.16	+01	16	57.2	0.0	0	073

137	1969	10	31.76435	23	14	40.75	+00	50	51.8	0.0	0	073
137	1969	10	31.78167	23	14	40.83	+00	50	46.2	0.0	0	073
137	1969	11	03.75963	23	15	09.89	+00	33	25.5	0.0	0	073
137	1969	11	03.78110	23	15	10.09	+00	33	18.6	0.0	0	073
137	1969	11	14.71922	23	18	39.09	-00	15	02.3	0.0	0	073
137	1969	11	14.73654	23	18	39.51	-00	15	05.5	0.0	0	073
137	1970	12	21.85893	05	18	19.90	+06	56	35.3	0.2+	3+	073
137	1970	12	21.87452	05	18	17.27	+06	57	17.4	0.2+	3+	073
137	1971	01	04.80519	05	08	05.29	+06	51	02.5	0.1-	0	073
137	1971	01	04.81904	05	08	04.71	+06	51	03.2	0.1-	0	073
144	1971	10	23.89821	02	38	20.23	+09	04	47.2	0.0	0	073
144	1971	10	23.90514	02	38	19.93	+09	04	46.5	0.0	0	073
144	1971	11	09.87963	02	22	58.82	+08	41	41.3	0.1-	0	073
144	1971	11	09.89067	02	22	58.18	+08	41	40.6	0.1-	0	073
145	1971	06	05.83090	16	18	20.66	-18	25	32.2	0.1+	0	073
145	1971	06	05.83387	16	18	19.88	-18	25	34.0	0.1+	0	073
148	1971	06	21.83517	16	47	40.60	+11	35	25.0	0.0	1-	073
148	1971	06	21.84659	16	47	40.04	+11	35	21.8	0.0	1-	073
156	1970	10	30.00626	04	37	58.06	+22	20	59.4	0.6+	3+	073
156	1970	10	30.03580	04	37	57.36	+22	20	55.8	0.5+	3+	073
158	1971	08	21.92492	23	06	22.16	-04	17	41.6	0.2-	2-	073
158	1971	08	21.93670	23	06	21.64	-04	17	44.7	0.2-	2-	073
158	1971	08	26.93832	23	02	44.68	-04	38	42.9	0.2-	2-	073
158	1971	08	26.95702	23	02	45.52	-04	38	38.0	0.2-	2-	073
161	1971	02	03.98138	11	21	58.00	+14	23	30.0	0.0	0	073
161	1971	02	03.99629	11	21	57.44	+14	23	33.9	0.0	0	073
162	1970	03	06.82754	09	30	39.24	+24	11	19.3	0.0	1-	073
162	1970	03	06.85247	09	30	38.09	+24	11	18.9	0.1-	1-	073
170	1971	03	16.78216	08	52	34.91	+06	35	10.1	0.1+	2-	073
170	1971	03	16.80398	08	52	35.42	+06	35	10.8	0.1+	2+	073
170	1971	03	18.77771	08	51	53.25	+06	34	28.4	0.1+	2-	073
170	1971	03	18.79849	08	51	52.78	+06	34	27.8	0.1+	2-	073
171	1971	01	04.83566	05	17	47.37	+22	14	54.9	0.1-	0	073
171	1971	01	04.85296	05	17	46.55	+22	14	55.1	0.1-	0	073
174	1970	12	01.87645	04	34	49.38	+38	58	06.8	0.7+	2-	073
174	1970	12	01.89026	04	34	48.58	+38	58	04.9	0.7+	2-	073
174	1970	12	21.80180	04	14	41.88	+37	43	37.9	0.7+	1-	073
174	1970	12	21.81530	04	14	41.16	+37	43	33.9	0.7+	1-	073
177	1969	10	09.82545	23	36	09.30	-01	48	27.4	0.1-	0	073
177	1969	10	09.85315	23	36	08.25	-01	48	32.4	0.1-	0	073
184	1971	07	29.99937	22	40	00.25	-08	32	02.0	0.0	0	073
184	1971	07	30.00699	22	39	59.99	-08	32	03.3	0.0	0	073
184	1971	09	13.81511	22	09	18.20	-11	16	42.3	0.0	0	073
184	1971	09	13.82688	22	09	17.73	-11	16	44.4	0.0	0	073
191	1971	08	11.79844	19	06	46.12	-11	10	31.3	0.0	1-	073
191	1971	08	11.80744	19	06	45.83	-11	10	34.7	0.0	1-	073
191	1971	08	16.79450	19	04	29.45	-11	39	57.6	0.0	0	073
191	1971	08	16.80351	19	04	29.22	-11	40	01.0	0.0	0	073
192	1969	04	21.91535	13	28	32.67	-17	10	08.0	0.2-	1+	073
192	1969	04	21.92851	13	28	31.86	-17	10	04.2	0.2-	1+	073
192	1969	05	14.82514	13	09	04.52	-15	24	42.7	0.2-	1+	073
192	1969	05	14.83830	13	09	04.00	-15	24	39.7	0.2-	1+	073
192	1969	05	16.83216	13	07	48.51	-15	16	11.8	0.2-	2+	073
192	1969	05	16.84739	13	07	47.91	-15	16	08.2	0.2-	2+	073
192	1970	10	28.73267	22	00	05.61	-09	10	54.1	0.3-	4-	073
192	1970	10	28.74166	22	00	06.08	-09	10	49.5	0.3-	4-	073
192	1970	11	05.72076	22	07	45.47	-08	01	15.2	0.4-	4-	073
192	1970	11	05.73334	22	07	46.26	-08	01	08.5	0.4-	4-	073
192	1970	11	20.69485	22	26	25.25	-05	33	23.9	0.3-	3-	073

192	1970	11	20.70593	22	26	26.16	-05	33	17.0	0.3-	3-	073
194	1970	12	21.97043	07	29	57.27	+00	18	55.8	0.0	1+	073
194	1970	12	21.98117	07	29	56.74	+00	18	56.6	0.0	1+	073
196	1970	11	12.97810	05	19	59.64	+22	55	10.3	0.0	0	073
196	1970	11	12.98641	05	19	59.34	+22	55	11.1	0.0	0	073
197	1971	12	13.78695	03	37	18.20	+15	22	15.1	0.0	0	073
197	1971	12	13.80288	03	37	17.46	+15	22	16.8	0.0	0	073
197	1971	12	18.69938	03	33	51.64	+15	29	04.1	0.0	0	073
197	1971	12	18.71116	03	33	51.17	+15	29	04.0	0.0	0	073
201	1971	07	12.92446	21	33	35.91	-09	33	36.5	0.5+	1+	073
201	1971	07	12.93346	21	33	35.75	-09	33	38.0	0.5+	1+	073
201	1971	07	13.93350	21	33	16.18	-09	36	48.3	0.5+	1+	073
201	1971	07	13.94354	21	33	15.97	-09	36	50.4	0.5+	1+	073
201	1971	07	15.94259	21	32	32.14	-09	43	48.6	0.5+	1+	073
201	1971	07	15.95160	21	32	31.90	-09	43	51.2	0.5+	1+	073
205	1971	07	12.94662	22	10	34.76	+04	02	06.5	0.1-	0	073
205	1971	07	12.96047	22	10	34.38	+04	02	07.0	0.1-	0	073
205	1971	07	26.97360	22	04	55.26	+04	09	54.8	0.0	0	073
205	1971	07	26.98260	22	04	54.95	+04	09	55.0	0.0	0	073
205	1971	07	29.97305	22	03	14.40	+04	06	02.5	0.1-	0	073
205	1971	07	29.98483	22	03	13.95	+04	06	01.4	0.1-	0	073
205	1971	07	30.96825	22	02	38.55	+04	04	18.5	0.1-	0	073
205	1971	07	30.97726	22	02	38.92	+04	04	20.0	0.1-	0	073
212	1971	11	05.68918	00	25	07.70	+08	56	30.5	0.0	0	073
212	1971	11	05.70303	00	25	07.22	+08	56	24.9	0.0	0	073
212	1971	11	10.70475	00	23	15.94	+08	39	55.4	0.0	0	073
212	1971	11	10.71999	00	23	15.66	+08	39	51.5	0.0	0	073
214	1971	12	21.82255	03	59	28.65	+26	03	44.4	0.1-	0	073
214	1971	12	21.83640	03	59	28.19	+26	03	42.6	0.1-	0	073
216	1971	12	27.66821	03	45	05.74	+06	27	31.7	0.0	0	073
216	1971	12	27.67859	03	45	05.63	+06	27	30.8	0.0	0	073
218	1971	07	23.85018	19	23	14.61	-00	59	39.5			073
218	1971	07	23.86265	19	23	14.12	-00	59	44.3			073
218	1971	08	07.83847	19	13	06.47	-03	05	34.1	0.2-	3+	073
218	1971	08	07.84401	19	13	06.29	-03	05	37.2	0.2-	3+	073
224	1970	10	29.97475	03	57	26.91	+28	19	12.9	0.1+	1-	073
224	1970	10	29.98860	03	57	26.21	+28	19	12.9	0.1+	1-	073
229	1971	11	09.85052	01	59	09.96	+12	38	35.1	0.0	0	073
229	1971	11	09.86229	01	59	09.40	+12	38	32.9	0.0	0	073
230	1969	04	14.88802	11	24	36.13	-09	08	26.3	0.1+	1-	073
230	1969	04	14.89633	11	24	35.89	-09	08	22.3	0.1+	1-	073
230	1969	04	21.86099	11	21	41.54	-08	10	40.7	0.0	1-	073
230	1969	04	21.87899	11	21	41.15	-08	10	31.9	0.0	1-	073
230	1969	04	24.80919	11	20	50.93	-07	47	58.3	0.1+	1-	073
230	1969	04	24.82650	11	20	50.62	-07	47	50.8	0.1+	1-	073
233	1971	10	09.87337	00	27	31.64	+09	59	54.4	0.1-	1-	073
233	1971	10	09.89069	00	27	30.98	+09	59	45.0	0.1-	1-	073
233	1971	10	11.83363	00	26	04.89	+09	42	38.1	0.0	0	073
233	1971	10	11.84541	00	26	04.28	+09	42	31.4	0.0	0	073
233	1971	10	15.82342	00	23	16.25	+09	07	28.6	0.0	0	073
233	1971	10	15.83519	00	23	15.84	+09	07	22.8	0.0	0	073
234	1971	04	29.93982	15	34	17.94	+06	40	43.7	0.0	0	073
234	1971	04	29.95991	15	34	16.99	+06	40	52.0	0.0	0	073
234	1971	05	13.86723	15	21	43.58	+08	11	26.9	0.0	0	073
235	1971	10	25.90622	03	22	35.30	+13	37	03.6	0.2+	1+	073
235	1971	10	25.92077	03	22	34.54	+13	37	02.9	0.2+	1+	073
235	1971	11	10.89764	03	08	35.22	+13	17	20.1	0.3+	2+	073
235	1971	11	10.91564	03	08	34.17	+13	17	18.9	0.3+	2+	073
239	1971	08	30.84152	21	01	02.80	-10	40	38.3	0.0	1-	073

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239	1971	08	30.85329	21	01	02.34	-10	40	41.9	0.0	1-	073
241	1970	11	12.95213	05	20	09.99	+25	48	45.2	0.0	0	073
241	1970	11	12.96667	05	20	09.40	+25	48	43.8	0.0	0	073
241	1970	11	19.00329	05	15	54.26	+25	38	10.5	0.0	0	073
241	1970	11	19.01901	05	15	53.58	+25	38	08.8	0.0	0	073
248	1971	07	26.94866	21	48	06.98	-06	33	34.8	0.0	1-	073
248	1971	07	26.95905	21	48	06.54	-06	33	34.8	0.0	1-	073
248	1971	07	29.94743	21	45	51.34	-06	39	55.1	0.1-	1-	073
248	1971	07	29.95782	21	45	50.81	-06	39	55.8	0.1-	1-	073
248	1971	07	30.94192	21	45	04.32	-06	42	18.7	0.1-	1-	073
248	1971	07	30.95334	21	45	04.75	-06	42	20.7	0.1-	1-	073
248	1971	09	13.76871	21	09	50.12	-09	40	15.1	0.0	1-	073
248	1971	09	13.77771	21	09	49.84	-09	40	17.3	0.0	1-	073
250	1969	10	17.87875	00	29	09.87	-01	33	33.4	0.0	0	073
250	1969	10	17.89607	00	29	09.01	-01	33	33.8	0.0	0	073
250	1971	01	29.86487	07	28	51.26	+41	29	43.7	0.0	0	073
250	1971	01	29.88149	07	28	50.43	+41	29	42.3	0.0	0	073
250	1971	02	12.76634	07	18	34.01	+40	50	07.1	0.1+	0	073
250	1971	02	12.78435	07	18	33.51	+40	50	02.9	0.1+	0	073
250	1971	02	13.74039	07	18	02.13	+40	45	57.8	0.0	0	073
250	1971	02	13.75251	07	18	03.12	+40	46	04.6	0.1+	0	073
257	1971	11	09.85052	01	55	20.50	+12	00	22.5	0.0	1-	073
257	1971	11	09.86229	01	55	19.97	+12	00	20.5	0.0	1-	073
268	1971	11	09.93362	03	21	46.25	+15	06	54.4	0.7-	1-	073
268	1971	11	09.94332	03	21	45.76	+15	06	52.4	0.7-	1-	073
268	1971	12	11.72309	02	58	03.78	+13	45	56.3	0.0	0	073
268	1971	12	11.74040	02	58	03.30	+13	45	54.7	0.0	1+	073
268	1971	12	13.73572	02	56	58.22	+13	42	54.5	0.0	0	073
268	1971	12	13.75165	02	56	57.72	+13	42	53.7	0.0	0	073
268	1971	12	21.74325	02	53	23.82	+13	34	36.3	0.0	1-	073
268	1971	12	21.76195	02	53	23.41	+13	34	35.6	0.0	0	073
275	1971	03	18.91934	12	08	45.63	+05	26	01.1	0.1-	2+	073
275	1971	03	18.93665	12	08	44.74	+05	26	08.8	0.1-	2+	073
275	1971	03	20.87681	12	07	16.28	+05	39	54.3	0.2-	2+	073
275	1971	03	20.89343	12	07	15.47	+05	40	01.3	0.2-	2+	073
275	1971	03	25.91126	12	03	25.00	+06	14	14.8	0.0	1+	073
275	1971	03	25.92684	12	03	24.30	+06	14	20.4	0.0	1+	073
275	1971	04	17.79515	11	49	06.87	+08	01	32.1	0.1+	1+	073
275	1971	04	17.81419	11	49	06.38	+08	01	35.0	0.1+	1+	073
275	1971	04	20.75641	11	47	59.61	+08	07	45.5	0.0	1+	073
275	1971	04	20.78134	11	47	59.30	+08	07	47.9	0.0	1+	073
275	1971	04	23.77968	11	47	04.53	+08	12	08.5	0.0	1+	073
275	1971	04	23.79769	11	47	04.16	+08	12	09.5	0.0	1+	073
283	1971	08	04.85563	20	17	05.54	-19	26	32.1	0.0	1-	073
283	1971	08	04.86083	20	17	05.28	-19	26	31.2	0.0	1-	073
287	1971	04	17.84881	12	05	50.58	+12	34	01.2	0.0	0	073
287	1971	04	17.86405	12	05	49.92	+12	34	05.4	0.0	0	073
287	1971	04	20.84507	12	04	08.55	+12	45	18.3	0.1-	0	073
287	1971	04	20.86238	12	04	07.96	+12	45	21.9	0.1-	0	073
291	1971	12	18.72708	03	42	37.14	+16	20	41.9	0.0	2+	073
291	1971	12	18.73747	03	42	36.67	+16	20	39.2	0.0	0	073
300	1971	10	25.87437	02	30	00.38	+14	40	18.8	0.0	0	073
300	1971	10	25.88891	02	29	59.68	+14	40	16.1	0.0	0	073
300	1971	11	10.85747	02	17	32.16	+13	42	10.8	0.1+	0	073
300	1971	11	10.87409	02	17	33.03	+13	42	16.0	0.1+	0	073
312	1970	10	26.78036	00	34	12.90	+06	35	37.4	0.0	1-	073
312	1970	10	26.79941	00	34	12.08	+06	35	34.4	0.0	1-	073
312	1970	10	28.82506	00	32	46.14	+06	31	11.5	0.0	1-	073
312	1970	10	28.84277	00	32	45.42	+06	31	08.6	0.0	1-	073

316	1971	10	25.90622	03	26	58.21	+15	12	09.1	0.1-	1-	073
316	1971	10	25.92077	03	26	57.56	+15	12	06.8	0.1-	1-	073
316	1971	11	10.89764	03	14	50.69	+14	23	36.0	0.0	1-	073
316	1971	11	10.91564	03	14	49.59	+14	23	30.8	0.0	1-	073
316	1971	12	13.73572	02	51	52.96	+13	10	58.3	0.0	1-	073
316	1971	12	13.75165	02	51	52.56	+13	10	58.4	0.0	1-	073
317	1971	11	09.93362	03	25	54.52	+15	31	19.7	0.0	0	073
317	1971	11	09.94332	03	25	53.87	+15	31	17.5	0.0	0	073
317	1971	12	11.72309	02	57	12.92	+13	48	18.9	0.0	1+	073
317	1971	12	11.74040	02	57	12.20	+13	48	19.4	0.0	0	073
317	1971	12	13.73572	02	56	10.35	+13	45	42.6	0.0	0	073
317	1971	12	13.75165	02	56	09.86	+13	45	42.8	0.0	0	073
317	1971	12	21.74325	02	53	19.26	+13	41	39.7	0.0	0	073
317	1971	12	21.76195	02	53	18.87	+13	41	40.8	0.0	0	073
318	1971	07	29.87817	20	00	40.50	-10	37	55.5	0.0	4+	073
318	1971	07	29.88995	20	00	39.83	-10	37	55.6	0.0	4+	073
322	1970	11	12.92131	05	15	18.71	+24	14	14.8	0.0	1-	073
322	1970	11	12.93724	05	15	18.00	+24	14	10.8	0.0	1-	073
324	1969	08	14.87918	22	58	58.14	-04	41	41.0	0.6+	5+	073
324	1969	08	14.88818	22	58	57.74	-04	41	36.8	0.6+	5+	073
324	1969	09	01.84079	22	42	58.40	-02	36	56.1	0.8+	6+	073
324	1969	09	01.84841	22	42	57.92	-02	36	53.3	0.8+	6+	073
324	1969	09	27.78894	22	20	06.72	-00	10	10.5	0.5+	6+	073
324	1969	09	27.80002	22	20	06.36	-00	10	06.9	0.5+	6+	073
324	1969	09	30.75884	22	18	37.22	+00	05	16.5	0.5+	6+	073
324	1969	09	30.76761	22	18	36.94	+00	05	19.3	0.5+	6+	073
324	1969	10	01.83586	22	18	09.34	+00	10	52.0	0.6+	7+	073
324	1969	10	01.85248	22	18	08.87	+00	10	57.3	0.6+	7+	073
324	1969	10	03.80443	22	17	25.81	+00	21	05.2	0.6+	7+	073
324	1969	10	03.81897	22	17	25.48	+00	21	09.9	0.6+	7+	073
324	1969	10	07.73967	22	16	26.47	+00	41	38.0	0.6+	6+	073
324	1969	10	07.74815	22	16	26.36	+00	41	40.6	0.6+	6+	073
324	1969	10	08.77450	22	16	16.98	+00	47	05.0	0.6+	6+	073
324	1969	10	08.79181	22	16	16.78	+00	47	10.8	0.6+	6+	073
324	1969	10	11.78119	22	16	04.65	+01	03	04.6	0.5+	6+	073
324	1969	10	11.79712	22	16	04.60	+01	03	09.7	0.5+	6+	073
324	1969	10	13.74135	22	16	08.77	+01	13	40.1	0.5+	6+	073
324	1969	10	13.75080	22	16	08.78	+01	13	43.5	0.5+	6+	073
324	1969	10	14.79552	22	16	14.69	+01	19	26.0	0.5+	6+	073
324	1969	10	14.80279	22	16	14.73	+01	19	28.5	0.5+	6+	073
324	1969	10	16.72611	22	16	33.18	+01	30	07.7	0.5+	6+	073
324	1969	10	16.73466	22	16	33.23	+01	30	10.5	0.5+	6+	073
324	1969	10	21.71755	22	18	02.17	+01	58	41.6	0.5+	6+	073
324	1969	10	21.72621	22	18	02.36	+01	58	44.5	0.5+	6+	073
324	1969	11	01.72943	22	24	37.54	+03	07	21.9	0.4+	6+	073
324	1969	11	01.73843	22	24	37.93	+03	07	25.6	0.4+	6+	073
324	1969	11	04.72192	22	27	08.44	+03	27	32.8	0.4+	5+	073
324	1969	11	04.73023	22	27	09.03	+03	27	36.8	0.4+	5+	073
324	1969	11	29.67514	22	57	56.79	+06	45	37.5	0.4+	5+	073
324	1969	11	29.68276	22	57	57.50	+06	45	41.8	0.4+	5+	073
329	1971	07	26.97360	22	09	55.86	+04	22	21.3	0.0	1-	073
329	1971	07	26.98260	22	09	55.57	+04	22	19.3	0.0	1-	073
329	1971	07	29.97305	22	08	19.03	+04	07	02.9	0.0	1-	073
329	1971	07	29.98483	22	08	18.59	+04	06	59.4	0.0	1-	073
329	1971	07	30.96825	22	07	44.32	+04	01	22.1	0.0	1-	073
329	1971	07	30.97726	22	07	44.65	+04	01	25.2	0.0	1-	073
329	1971	09	13.79293	21	35	58.07	-03	25	26.2	0.0	1-	073
329	1971	09	13.80055	21	35	57.81	-03	25	31.0	0.0	1-	073
335	1970	11	12.78592	01	37	22.94	+02	10	20.1	1.2-	14-	073

335	1970	11	12.81085	01	37	22.02	+02	10	20.0	1.2-	14-	073
337	1971	01	25.96953	10	34	09.64	+17	24	59.9			073
337	1971	01	25.98927	10	34	08.75	+17	25	02.4			073
337	1971	03	20.73830	09	43	41.57	+17	48	48.1	0.0	0	073
337	1971	03	20.75839	09	43	41.21	+17	48	52.1	0.0	0	073
337	1971	03	23.79795	09	42	19.34	+17	38	37.9	0.0	0	073
337	1971	03	23.82115	09	42	18.78	+17	38	34.1	0.0	0	073
337	1971	03	25.77067	09	41	35.10	+17	31	22.9	0.0	0	073
337	1971	03	25.78937	09	41	35.66	+17	31	18.3	0.0	0	073
338	1971	09	13.76871	21	11	00.57	-10	19	41.2	0.1-	1-	073
338	1971	09	13.77771	21	11	00.28	-10	19	41.7	0.1-	1-	073
340	1970	12	21.91468	06	01	03.08	+30	25	13.7	1.9+	1+	073
340	1970	12	21.93061	06	01	02.00	+30	25	14.1	1.9+	1+	073
349	1969	04	14.86274	10	30	51.86	+17	31	48.0	0.0	1-	073
349	1969	04	14.87590	10	30	51.70	+17	31	46.2	0.0	1-	073
352	1971	01	04.93955	08	24	13.97	+14	38	24.4	0.2-	1+	073
352	1971	01	04.95686	08	24	12.78	+14	38	28.8	0.2-	1+	073
352	1971	01	29.92512	07	56	17.97	+15	33	19.7	0.2-	2+	073
352	1971	01	29.94243	07	56	16.22	+15	33	24.6	0.2-	2+	073
354	1969	05	27.93177	17	22	39.95	+02	25	18.0	0.0	0	073
354	1969	05	27.93996	17	22	39.52	+02	25	18.2	0.0	0	073
354	1969	07	09.85861	16	49	58.36	-00	03	08.5	0.0	0	073
354	1969	07	09.87246	16	49	57.93	-00	03	14.5	0.0	0	073
354	1971	12	27.69307	03	44	27.28	-05	52	21.8	0.0	0	073
354	1971	12	27.70900	03	44	26.77	-05	52	14.5	0.0	0	073
356	1971	01	29.98537	11	10	13.23	+11	01	55.2	0.2-	3+	073
356	1971	01	29.99853	11	10	12.57	+11	01	57.0	0.2-	3+	073
356	1971	03	20.79855	10	26	17.88	+12	41	31.8	0.2-	3+	073
356	1971	03	20.81379	10	26	17.20	+12	41	32.2	0.2-	3+	073
356	1971	03	25.82953	10	22	54.86	+12	41	11.9	0.2-	3+	073
356	1971	03	25.84616	10	22	53.90	+12	41	11.3	0.2-	3+	073
374	1971	06	24.92149	19	03	39.06	-09	42	13.2	0.3-	2-	073
374	1971	06	24.93223	19	03	38.46	-09	42	12.8	0.3-	2-	073
374	1971	07	05.93189	18	54	19.35	-09	30	40.0	0.2-	2-	073
374	1971	07	05.94297	18	54	18.70	-09	30	40.2	0.2-	2-	073
385	1971	04	16.84746	11	56	35.82	-10	39	20.7	0.1-	1+	073
385	1971	04	16.85785	11	56	35.49	-10	39	20.0	0.1-	1+	073
385	1971	04	20.79589	11	53	47.87	-10	34	49.5	0.1-	1+	073
385	1971	04	20.80939	11	53	47.29	-10	34	49.2	0.1-	1+	073
389	1970	03	25.83109	10	49	51.32	-06	19	34.4	0.3-	5+	073
389	1970	03	25.84529	10	49	50.68	-06	19	29.7	0.3-	5+	073
389	1970	04	01.84662	10	45	13.89	-05	42	07.0	0.4-	5+	073
389	1970	04	01.86462	10	45	13.40	-05	42	02.5	0.4-	5+	073
389	1971	08	11.82129	19	25	32.16	-17	57	18.4	0.2-	2-	073
389	1971	08	11.82891	19	25	31.82	-17	57	18.1	0.2-	2-	073
389	1971	08	12.83381	19	24	51.94	-17	56	47.2	0.2-	2-	073
389	1971	08	12.84558	19	24	52.35	-17	56	47.6	0.2-	2-	073
389	1971	08	19.76867	19	21	00.50	-17	52	59.3	0.2-	3-	073
389	1971	08	19.78493	19	21	00.07	-17	52	58.7	0.2-	3-	073
401	1971	11	09.85052	01	57	17.27	+11	53	03.5	0.0	0	073
401	1971	11	09.86229	01	57	16.74	+11	53	01.6	0.0	0	073
403	1971	07	30.87268	19	20	21.05	-11	37	12.7	0.2+	1-	073
403	1971	07	30.88030	19	20	20.87	-11	37	13.7	0.2+	1-	073
403	1971	08	16.79450	19	08	55.92	-12	09	27.7	0.5-	6-	073
403	1971	08	16.80351	19	08	55.24	-12	09	32.0	0.5-	6-	073
407	1971	07	12.92446	21	38	07.50	-10	42	41.2	0.0	1-	073
407	1971	07	12.93346	21	38	07.19	-10	42	41.1	0.0	1-	073
407	1971	07	13.93350	21	37	33.92	-10	41	44.8	0.0	1-	073
407	1971	07	13.94354	21	37	33.44	-10	41	43.6	0.0	1-	073

407	1971	08	30.84152	20	57	24.07	-11	13	52.1	0.0	1-	073
407	1971	08	30.85329	20	57	23.52	-11	13	52.6	0.0	1-	073
407	1971	09	13.74377	20	49	30.39	-11	28	23.9	0.0	1-	073
407	1971	09	13.75416	20	49	30.12	-11	28	24.4	0.0	1-	073
409	1971	02	15.77196	08	04	38.24	+03	41	17.3	0.1+	0	073
409	1971	02	15.78720	08	04	37.55	+03	41	20.7	0.1+	0	073
415	1969	11	29.78387	02	31	40.81	-00	37	25.6	0.1+	1+	073
415	1969	11	29.79772	02	31	40.49	-00	37	22.2	0.1+	1+	073
418	1971	08	04.92142	21	27	04.57	-03	29	27.6	0.5+	2+	073
418	1971	08	04.92904	21	27	04.17	-03	29	28.2	0.5+	2+	073
418	1971	08	11.90371	21	21	00.32	-03	45	03.8	0.5+	2+	073
418	1971	08	11.91132	21	20	59.86	-03	45	04.6	0.5+	2+	073
419	1971	07	17.91913	20	46	13.08	-10	09	24.4	0.1-	9-	073
419	1971	07	17.92605	20	46	14.76	-10	09	24.8	0.1-	9-	073
419	1971	09	01.76508	20	17	16.96	-12	29	03.7	0.1-	9-	073
419	1971	09	01.77547	20	17	16.93	-12	29	01.5	0.1-	9-	073
420	1971	07	12.88291	19	10	32.42	-15	55	10.3	0.0	0	073
420	1971	07	12.89468	19	10	31.91	-15	55	10.6	0.0	0	073
420	1971	08	16.77442	18	49	38.25	-16	21	02.4	0.0	0	073
420	1971	08	16.78204	18	49	38.08	-16	21	02.9	0.0	0	073
423	1971	10	25.85222	02	16	23.79	+03	02	33.4	0.0	1-	073
423	1971	10	25.86087	02	16	23.36	+03	02	32.5	0.0	1-	073
423	1971	12	03.73280	01	49	30.86	+03	06	33.8	0.0	0	073
423	1971	12	03.74596	01	49	30.38	+03	06	35.4	0.0	0	073
425	1971	01	25.93040	10	27	23.10	+16	07	09.6	0.0	0	073
425	1971	01	25.95014	10	27	22.31	+16	07	14.3	0.0	0	073
425	1971	01	25.96953	10	27	21.49	+16	07	20.7	0.0	0	073
425	1971	01	25.98927	10	27	20.80	+16	07	27.1	0.0	0	073
425	1971	02	03.91317	10	21	34.37	+16	52	06.9	0.0	0	073
425	1971	02	13.87959	10	13	41.15	+17	43	31.8	0.0	0	073
425	1971	02	13.89725	10	13	40.32	+17	43	36.6	0.0	0	073
425	1971	03	16.82087	09	49	23.77	+19	32	39.4	0.0	0	073
425	1971	03	16.84026	09	49	23.06	+19	32	42.3	0.0	0	073
434	1971	06	24.97655	20	28	03.70	+20	19	29.1	0.0	1-	073
434	1971	06	24.98659	20	28	03.49	+20	19	31.7	0.0	1-	073
434	1971	07	17.86303	20	14	23.58	+19	54	54.6	0.0	0	073
434	1971	07	17.88069	20	14	22.59	+19	54	46.0	0.0	0	073
451	1971	04	29.76876	12	37	52.22	+17	57	37.5	0.0	0	073
451	1971	04	29.78954	12	37	52.99	+17	57	39.6	0.0	0	073
454	1970	11	26.71933	01	57	21.42	+13	42	14.6	0.9+	4+	073
454	1970	11	26.74807	01	57	20.23	+13	42	12.2	0.9+	4+	073
456	1971	11	11.76330	01	13	39.93	+14	58	07.9	0.1+	1+	073
456	1971	11	11.77577	01	13	39.45	+14	58	01.8	0.1+	1+	073
471	1971	12	03.80136	03	07	26.12	+05	06	36.2	0.0	0	073
471	1971	12	03.81036	03	07	25.73	+05	06	40.0	0.0	0	073
471	1971	12	11.79062	03	02	05.14	+06	11	58.2	0.1+	0	073
471	1971	12	11.79754	03	02	04.91	+06	12	01.7	0.1+	0	073
471	1971	12	13.77276	03	01	01.80	+06	29	26.1	0.0	0	073
471	1971	12	13.78445	03	01	02.06	+06	29	21.9	0.0	0	073
471	1971	12	18.67791	02	58	55.57	+07	14	29.4	0.0	1+	073
471	1971	12	18.68345	02	58	55.43	+07	14	32.1	0.0	1+	073
471	1971	12	21.77823	02	57	58.76	+07	44	08.3	0.0	0	073
471	1971	12	21.79069	02	57	58.55	+07	44	15.4	0.0	0	073
478	1969	10	09.78251	23	35	22.48	+13	15	48.6	0.0	1-	073
478	1969	10	09.80398	23	35	21.69	+13	15	38.6	0.0	1-	073
478	1969	10	15.75608	23	32	05.13	+12	26	27.7	0.0	0	073
478	1969	10	15.77755	23	32	04.48	+12	26	17.1	0.0	0	073
480	1971	11	05.71827	00	44	31.26	+22	56	18.6	0.5+	2-	073
480	1971	11	05.73419	00	44	30.75	+22	56	05.9	0.5+	2-	073

480	1971	11	10.73696	00	42	25.09	+21	46	07.9	0.4+	2-	073
480	1971	11	10.75116	00	42	24.67	+21	45	57.3	0.4+	2-	073
482	1971	09	13.79293	21	31	45.36	-04	16	38.8	0.1-	0	073
482	1971	09	13.80155	21	31	45.19	-04	16	42.6	0.1-	0	073
485	1971	06	24.86782	17	52	15.88	-04	04	58.7	0.1+	1-	073
485	1971	06	24.88098	17	52	15.19	-04	04	57.7	0.1+	1-	073
494	1969	11	14.82311	01	05	25.82	+04	56	16.6	0.0	0	073
494	1969	11	14.84942	01	05	24.96	+04	56	15.7	0.0	0	073
494	1971	01	16.82614	06	19	05.62	+32	18	24.8	0.0	0	073
494	1971	01	16.84934	06	19	04.72	+32	18	24.2	0.0	0	073
498	1971	10	23.96643	03	43	37.04	+06	40	43.1	0.1+	0	073
498	1971	10	23.97751	03	43	36.54	+06	40	41.9	0.1+	0	073
498	1971	12	11.75634	03	00	44.43	+07	12	48.3	0.0	0	073
498	1971	12	11.77020	03	00	43.84	+07	12	51.9	0.0	0	073
498	1971	12	13.76445	02	59	42.07	+07	21	04.8	0.0	0	073
498	1971	12	13.77276	02	59	41.83	+07	21	07.0	0.0	0	073
498	1971	12	18.67791	02	57	38.54	+07	43	27.6	0.0	1+	073
498	1971	12	18.68345	02	57	38.42	+07	43	29.6	0.0	1+	073
498	1971	12	21.77823	02	56	42.05	+07	59	03.8	0.0	1+	073
498	1971	12	21.79069	02	56	41.76	+07	59	07.2	0.0	1+	073
506	1970	11	03.87626	02	08	30.09	+40	55	08.1	0.1-	1-	073
506	1970	11	03.89288	02	08	28.92	+40	55	04.6	0.1-	1-	073
506	1970	11	05.86943	02	06	27.48	+40	47	03.2	0.0	1-	073
506	1970	11	05.88674	02	06	26.51	+40	46	58.6	0.0	1-	073
509	1969	10	15.79590	23	29	12.46	+10	15	48.4	0.0	0	073
509	1969	10	15.81598	23	29	11.93	+10	15	35.4	0.0	0	073
510	1971	07	29.02461	23	11	51.65	+07	43	15.7	0.9+	3+	073
510	1971	07	29.03465	23	11	51.54	+07	43	15.8	0.9+	3+	073
510	1971	09	22.79472	22	40	19.77	+01	36	22.9	1.1+	5+	073
510	1971	09	22.80788	22	40	19.33	+01	36	15.5	1.1+	5+	073
511	1970	03	18.86198	13	31	03.29	+14	14	16.8	0.0	1+	073
511	1970	03	18.87583	13	31	02.70	+14	14	22.3	0.0	1+	073
511	1971	05	22.92848	17	03	20.46	-09	49	13.6	0.0	0	073
511	1971	05	22.94579	17	03	19.72	-09	49	13.6	0.0	0	073
511	1971	05	25.91442	17	01	08.41	-09	49	50.0	0.0	0	073
511	1971	05	25.93104	17	01	07.66	-09	49	50.0	0.0	0	073
513	1971	08	04.99137	22	58	01.78	+00	59	05.8	0.1+	0	073
513	1971	08	04.99968	22	58	01.55	+00	59	02.9	0.1+	0	073
513	1971	08	11.92518	22	54	51.38	+00	30	51.8	0.1+	0	073
513	1971	08	11.93280	22	54	51.09	+00	30	48.5	0.1+	0	073
518	1971	06	24.83112	16	25	21.26	-11	23	59.5	0.2-	16+	073
518	1971	06	24.84635	16	25	21.13	-11	23	57.6	0.2-	16+	073
521	1971	11	19.93507	03	37	55.19	+06	54	32.1			073
521	1971	11	19.94046	03	37	55.78	+06	54	33.1			073
532	1969	07	09.88771	16	50	25.55	-12	43	20.1	0.1-	0	073
532	1969	07	09.90294	16	50	25.06	-12	43	26.9	0.1-	0	073
532	1969	08	08.78993	16	46	33.25	-16	26	13.6	0.1-	0	073
532	1969	08	08.80517	16	46	33.46	-16	26	19.6	0.1-	0	073
532	1969	08	11.78589	16	47	26.40	-16	48	01.2	0.0	0	073
532	1969	08	11.80113	16	47	26.69	-16	48	07.2	0.0	0	073
532	1971	10	25.93671	03	57	26.68	-00	04	32.7	0.0	0	073
532	1971	10	25.95056	03	57	26.12	-00	04	35.2	0.0	0	073
549	1970	11	26.96553	05	34	15.43	+27	55	47.4	0.0	1-	073
549	1970	11	26.98527	05	34	14.45	+27	55	45.3	0.0	1-	073
558	1971	07	12.84309	18	30	41.78	-14	49	58.6	0.0	1-	073
558	1971	07	12.85105	18	30	41.39	-14	49	58.9	0.0	1-	073
558	1971	07	13.84140	18	29	54.33	-14	53	04.8	0.0	1-	073
558	1971	07	13.84901	18	29	53.93	-14	53	05.7	0.0	1-	073
563	1971	02	12.79785	08	03	26.13	+32	01	42.8	0.5-	3+	073

563	1971	02	12.86641	08	03	23.13	+32	01	53.3	0.5-	3+	073
563	1971	02	13.79995	08	02	45.64	+32	04	15.6	0.4-	3+	073
563	1971	02	13.81449	08	02	44.88	+32	04	13.9	0.4-	3+	073
568	1969	10	17.76067	00	15	16.61	+27	32	52.6	0.8-	9+	073
568	1969	10	17.78630	00	15	15.59	+27	32	36.3	0.8-	9+	073
582	1971	08	16.82913	20	03	03.03	+00	19	50.7	0.0	0	073
582	1971	08	16.83213	20	03	02.59	+00	19	45.3	0.0	0	073
582	1971	08	21.80442	19	59	42.22	-00	36	37.0	0.0	1-	073
582	1971	08	21.81481	19	59	41.81	-00	36	44.0	0.0	1-	073
622	1970	12	21.94619	07	13	50.55	+11	04	30.4	0.1-	3+	073
622	1970	12	21.95866	07	13	49.57	+11	04	32.5	0.1-	3+	073
631	1970	12	21.70900	04	04	30.28	+07	43	06.0	0.1-	0	073
631	1970	12	21.72596	04	04	29.62	+07	43	00.6	0.1-	0	073
636	1969	11	04.76105	00	24	35.43	-00	58	46.8	0.2+	2+	073
636	1969	11	04.77837	00	24	35.06	-00	58	45.5	0.2+	2+	073
638	1971	08	30.87684	22	00	49.54	-21	26	51.9	0.0	0	073
638	1971	08	30.88861	22	00	48.88	-21	26	54.8	0.0	0	073
639	1971	12	21.82255	04	00	15.35	+26	40	54.1	0.0	1+	073
639	1971	12	21.83640	04	00	14.89	+26	40	49.7	0.0	1+	073
666	1971	10	25.87437	02	27	36.57	+14	33	19.5	0.4-	2-	073
666	1971	10	25.88891	02	27	35.91	+14	33	10.9	0.4-	2-	073
681	1971	10	25.85222	02	17	26.11	+02	45	40.3	0.2-	0	073
681	1971	10	25.86087	02	17	25.75	+02	45	34.4	0.2-	0	073
688	1971	08	04.99137	22	56	01.79	-00	36	43.1	0.8+	5+	073
688	1971	08	04.99968	22	56	01.63	-00	36	46.4	0.8+	5+	073
695	1971	01	04.86717	06	46	10.72	+20	34	02.9	0.7+	3-	073
695	1971	01	04.87395	06	46	09.89	+20	33	59.8	0.7+	3-	073
697	1971	08	30.92947	23	47	10.03	-15	46	36.8	0.0	1-	073
697	1971	08	30.93709	23	47	09.57	-15	46	37.0	0.0	1-	073
704	1969	10	07.83368	01	59	45.71	+38	53	16.7	0.1-	1-	073
704	1969	10	07.84060	01	59	45.37	+38	53	16.3	0.1-	1-	073
704	1969	10	13.83426	01	54	56.54	+38	40	31.2	0.1-	1-	073
704	1969	10	13.84153	01	54	56.14	+38	40	29.8	0.1-	1-	073
704	1969	10	16.86011	01	52	20.77	+38	29	42.1	0.1-	1-	073
704	1969	10	16.86797	01	52	20.36	+38	29	40.2	0.1-	1-	073
704	1969	10	21.80031	01	47	59.78	+38	05	50.0	0.0	1-	073
704	1969	10	21.80723	01	47	59.42	+38	05	47.6	0.0	1-	073
704	1969	11	07.86678	01	33	51.85	+35	52	00.8	0.2-	1-	073
704	1969	11	07.87579	01	33	51.43	+35	51	55.4	0.2-	1-	073
704	1969	11	13.72858	01	30	04.50	+34	52	38.5	0.4-	1+	073
704	1969	11	13.73753	01	30	04.17	+34	52	32.8	0.4-	1+	073
712	1971	07	15.84148	18	48	43.85	-06	28	09.5	0.8-	0	073
712	1971	07	15.84910	18	48	43.63	-06	28	09.7	0.8-	0	073
713	1970	11	04.78870	00	56	47.90	+10	15	27.8	0.1-	1-	073
713	1970	11	04.80605	00	56	46.98	+10	15	22.6	0.1-	1-	073
714	1969	10	15.86862	00	18	29.41	+18	00	45.9	0.0	2-	073
714	1969	10	15.87277	00	18	28.29	+18	00	29.3	0.0	2-	073
737	1970	10	29.68076	00	30	30.91	-02	35	33.1	0.3+	3+	073
737	1970	10	29.69115	00	30	30.65	-02	35	37.9	0.3+	3+	073
743	1971	08	16.89977	22	18	49.37	-02	24	03.8	0.2+	11+	073
743	1971	08	16.91016	22	18	48.86	-02	24	09.5	0.2+	11+	073
747	1970	03	18.82978	11	07	54.24	+21	45	06.3	0.0	1+	073
747	1970	03	18.84709	11	07	53.45	+21	45	10.9	0.0	1+	073
751	1970	04	03.00734	14	12	03.58	+07	11	35.0	0.4+	0	073
751	1970	04	03.03296	14	12	02.38	+07	11	43.0	0.4+	0	073
755	1971	06	24.94885	19	49	15.89	-16	32	38.2	0.6+	2-	073
755	1971	06	24.96235	19	49	15.18	-16	32	34.4	0.6+	2-	073
760	1970	11	26.77335	02	00	51.72	+30	11	39.9	0.6+	0	073

760	1970	11	26.80174	02	00	50.71	+30	11	32.5	0.6+	0	073
778	1969	11	29.81469	02	36	32.33	+38	13	36.2	0.1-	1-	073
778	1969	11	29.82923	02	36	31.60	+38	13	30.7	0.1-	1-	073
788	1971	11	11.68575	00	38	53.38	-02	48	32.8	0.6-	2-	073
788	1971	11	11.69545	00	38	53.35	-02	48	31.4	0.6-	2-	073
790	1971	08	04.95397	22	09	51.38	+19	50	58.0	0.1+	0	073
790	1971	08	04.96090	22	09	51.11	+19	50	59.4	0.1+	0	073
790	1971	09	01.81044	21	49	54.68	+19	23	30.3	0.0	0	073
790	1971	09	01.82499	21	49	54.08	+19	23	26.9	0.0	0	073
790	1971	09	22.74201	21	38	14.40	+17	11	41.5	0.0	0	073
790	1971	09	22.75455	21	38	14.16	+17	11	36.1	0.0	1-	073
808	1970	12	04.00809	07	10	18.70	+15	01	25.2	0.0	0	073
808	1970	12	04.02470	07	10	18.17	+15	01	23.4	0.0	0	073
813	1971	08	19.97331	23	11	33.91	-17	23	46.6	0.1-	2-	073
813	1971	08	19.98716	23	11	33.49	-17	23	46.3	0.1-	2-	073
845	1971	11	11.68575	00	39	03.45	-03	16	46.8	0.3+	1+	073
845	1971	11	11.69545	00	39	03.35	-03	16	46.5	0.3+	1+	073
856	1971	10	25.93671	04	00	46.49	-01	03	59.7	0.1-	1-	073
856	1971	10	25.95056	04	00	45.91	-01	04	03.4	0.1-	1-	073
862	1971	07	26.94866	21	49	03.39	-05	52	09.2	0.1+	0	073
862	1971	07	26.95905	21	49	02.95	-05	52	08.2	0.1+	0	073
862	1971	07	30.94192	21	45	52.82	-05	46	02.6	0.0	1-	073
862	1971	07	30.95334	21	45	52.29	-05	46	00.8	0.0	1-	073
875	1971	11	11.71484	00	56	57.44	+01	09	59.1	0.2-	0	073
875	1971	11	11.72938	00	56	57.33	+01	09	59.9	0.2-	0	073
895	1971	09	22.86952	23	44	38.62	+38	26	45.8	0.1+	0	073
895	1971	09	22.88475	23	44	37.88	+38	26	42.6	0.1+	0	073
895	1971	10	09.80895	23	31	09.79	+36	44	56.9	0.0	0	073
895	1971	10	09.82662	23	31	09.19	+36	44	50.5	0.0	0	073
895	1971	10	11.77961	23	29	48.71	+36	28	15.1			073
895	1971	10	11.79554	23	29	48.08	+36	28	07.3			073
895	1971	10	15.76594	23	27	17.19	+35	51	59.3	0.0	0	073
895	1971	10	15.77562	23	27	16.46	+35	51	51.1	0.0	0	073
901	1971	07	12.92446	21	32	49.62	-09	39	09.2	0.0	1-	073
901	1971	07	12.93346	21	32	49.51	-09	39	07.3	0.0	1-	073
901	1971	07	13.93350	21	32	37.50	-09	35	07.5	0.0	0	073
901	1971	07	13.94354	21	32	37.29	-09	35	02.1	0.0	0	073
901	1971	07	15.94259	21	32	01.47	-09	28	46.7	0.0	1-	073
901	1971	07	15.95160	21	32	01.26	-09	28	44.9	0.0	1-	073
901	1971	08	30.84152	21	00	28.53	-09	44	31.6	0.0	1-	073
901	1971	08	30.85329	21	00	28.13	-09	44	33.4	0.0	1-	073
901	1971	09	13.74377	20	56	56.53	-10	10	16.9			073
901	1971	09	13.75416	20	56	56.38	-10	10	18.1			073
924	1971	01	16.78528	05	31	55.06	+12	25	38.8	0.7+	5+	073
924	1971	01	16.80329	05	31	54.25	+12	25	45.9	0.7+	5+	073
925	1971	08	04.97025	22	53	55.66	+13	21	18.4	0.5-	6-	073
925	1971	08	04.97648	22	53	55.39	+13	21	20.8	0.5-	6-	073
925	1971	09	01.84022	22	29	18.67	+14	36	09.3	0.4-	7-	073
925	1971	09	01.85338	22	29	18.02	+14	36	08.7	0.4-	7-	073
925	1971	09	22.76702	22	10	04.01	+13	50	00.2	0.5-	6-	073
925	1971	09	22.77741	22	10	03.57	+13	49	58.5	0.5-	6-	073
954	1971	07	29.99937	22	37	45.07	-08	04	19.6	0.1-	0	073
954	1971	07	30.00699	22	37	44.94	-08	04	20.0	0.1-	0	073
980	1971	09	01.86515	23	01	31.74	+21	01	27.2	0.1+	7+	073
980	1971	09	01.87762	23	01	31.29	+21	01	28.4	0.1+	7+	073
980	1971	09	04.84209	22	58	46.99	+21	08	16.5	0.0	8+	073
980	1971	09	04.85248	22	58	46.34	+21	08	17.3	0.0	8+	073
980	1971	09	22.81964	22	42	32.12	+20	45	44.3	0.0	1+	073

980	1971	09	22.82657	22	42	31.78	+20	45	42.6	0.0	1-	073
980	1971	09	27.81780	22	38	48.42	+20	22	59.2	0.0	1-	073
980	1971	09	27.82957	22	38	47.95	+20	22	55.8	0.0	1-	073
980	1971	10	04.77620	22	34	40.26	+19	43	25.8	0.0	1-	073
980	1971	10	04.78866	22	34	39.84	+19	43	21.1	0.0	1-	073
980	1971	10	09.72620	22	32	35.46	+19	11	34.1	0.0	2-	073
980	1971	10	09.73520	22	32	35.31	+19	11	31.1	0.0	2-	073
980	1971	10	15.69322	22	31	07.56	+18	31	07.5	0.0	1-	073
980	1971	10	15.70153	22	31	07.48	+18	31	04.4	0.0	1-	073
982	1971	07	12.92446	21	31	59.00	-10	53	36.5	0.0	1-	073
982	1971	07	12.93346	21	31	58.60	-10	53	33.7	0.0	1-	073
982	1971	07	13.93350	21	31	21.98	-10	48	42.6	0.0	1-	073
982	1971	07	13.94354	21	31	21.61	-10	48	38.5	0.0	1-	073
982	1971	07	15.94259	21	30	04.26	-10	39	09.6	0.0	1-	073
982	1971	07	15.95160	21	30	03.80	-10	39	07.9	0.0	1-	073
1001	1969	11	14.77670	01	06	29.70	+18	14	24.1	0.2+	0	073
1001	1969	11	14.80094	01	06	29.15	+18	14	13.8	0.2+	0	073
1013	1971	12	11.66526	02	14	54.66	+22	24	54.9	0.0	0	073
1013	1971	12	11.67981	02	14	54.30	+22	24	55.6	0.0	0	073
1021	1971	06	16.90355	18	07	12.53	-12	59	26.8	0.0	1-	073
1021	1971	06	16.91601	18	07	11.92	-12	59	29.0	0.0	1-	073
1022	1971	07	29.81723	18	25	18.97	-20	57	55.0	0.3+	9-	073
1022	1971	07	29.82900	18	25	18.85	-20	57	57.5	0.3+	9-	073
1032	1971	12	13.92617	06	48	57.01	+27	10	25.9	0.1+	0	073
1032	1971	12	13.94140	06	48	56.35	+27	10	30.3	0.1+	0	073
1047	1971	12	13.73572	02	55	06.70	+13	47	10.9	0.0	2+	073
1047	1971	12	13.75165	02	55	06.39	+13	47	17.2	0.0	2+	073
1058	1971	11	09.85052	01	55	03.96	+12	13	02.8	0.2+	1+	073
1058	1971	11	09.86229	01	55	03.37	+12	12	57.6	0.2+	1+	073
1085	1971	06	24.83112	16	28	22.72	-13	01	22.0	1.2-	6-	073
1085	1971	06	24.84635	16	28	22.54	-13	01	20.9	1.2-	6-	073
1111	1971	11	09.87963	02	20	28.85	+07	38	12.3	0.1-	0	073
1111	1971	11	09.89067	02	20	28.25	+07	38	10.2	0.1-	0	073
1117	1971	08	11.82129	19	30	11.64	-18	28	44.5	0.5-	1-	073
1117	1971	08	11.82891	19	30	11.56	-18	28	50.9	0.5-	1-	073
1117	1971	08	20.77391	19	29	12.62	-19	17	03.5	0.3+	0	073
1117	1971	08	20.78915	19	29	11.93	-19	17	15.1	0.3+	0	073
1133	1971	08	16.92816	23	14	02.67	-17	36	38.1	0.2+	1+	073
1133	1971	08	16.93933	23	14	02.33	-17	36	44.8	0.2+	1+	073
1215	1971	07	12.88291	19	10	21.29	-15	18	54.9	0.1-	0	073
1215	1971	07	12.89468	19	10	20.66	-15	18	58.8	0.1-	0	073
1251	1971	07	29.84562	19	14	16.09	-17	54	28.0	0.6+	4+	073
1251	1971	07	29.85740	19	14	15.75	-17	54	24.9	0.6+	4+	073
1283	1971	09	13.81511	22	12	51.13	-11	14	19.7	0.1+	7-	073
1283	1971	09	13.82688	22	12	50.64	-11	14	29.1	0.1+	7-	073
1317	1969	10	15.91190	00	15	25.59	+05	21	04.4	0.5+	10+	073
1317	1969	10	15.93233	00	15	24.33	+05	21	09.8	0.5+	10+	073
1331	1971	08	21.83351	20	29	43.13	-20	05	12.4	0.0	0	073
1331	1971	08	21.84666	20	29	42.43	-20	05	09.3	0.0	0	073
1349	1971	07	15.96891	21	34	01.82	-13	27	44.5	0.1-	2-	073
1349	1971	07	15.98034	21	34	01.36	-13	27	43.8	0.1-	2-	073
1561	1971	08	30.84152	20	58	37.49	-10	27	37.3	0.7-	14-	073
1561	1971	08	30.85329	20	58	36.42	-10	27	39.0	0.7-	14-	073
1572	1971	09	13.88782	23	51	32.55	-06	19	58.3	0.0	1-	073
1572	1971	09	13.89821	23	51	31.97	-06	19	57.9	0.0	1-	073
1593	1971	07	29.81723	18	23	41.34	-20	56	11.1	0.6+	0	073
1593	1971	07	29.82900	18	23	41.21	-20	56	19.3	0.6+	0	073
1619	1970	11	26.91601	04	46	03.81	+23	58	31.9	0.1+	0	073

1619	1970	11	26.94198	04	46	02.77	+23	58	34.9	0.1+	0	073
1619	1970	12	21.83227	04	18	46.07	+24	58	19.2	0.1+	0	073
1620	1969	09	08.67693	20	20	21.40	-07	58	43.5	0.7+	24+	073
1620	1969	09	09.62711	20	25	03.17	-06	27	35.5	0.3+	15+	073
1620	1969	09	09.66727	20	25	14.43	-06	24	01.3	0.8+	15+	073
1620	1969	09	10.59529	20	29	18.66	-05	06	09.7	0.7+	12+	073
1620	1969	09	10.63546	20	29	28.85	-05	03	00.6	0.7+	12+	073
1620	1969	09	10.64412	20	29	30.03	-05	02	18.8	0.7+	12+	073
1620	1969	09	10.70437	20	29	45.38	-04	57	33.7	0.7+	12+	073
1620	1969	09	13.57255	20	40	19.52	-01	42	24.7	0.5+	10+	073

OBSERVATIONS MADE AT KITAB BY E. RAKHMATOV. REDUCED BY G. R. KASTEL'.
FROM KIEV KOMET. TSIRK. NO. 255.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
/1976 VI	1976	03	10.02906	21 25 20.84	+08 57 10.7	186
/1976 VI	1976	03	10.02952	21 25 20.75	+08 57 11.3	186
/1976 VI	1976	03	10.03218	21 25 20.32	+08 10 13.5	186
/1976 VI	1976	03	10.03252	21 25 20.29	+08 57 13.2	186
/1976 VI	1976	03	10.03408	21 25 20.15	+08 57 14.3	186
/1976 VI	1976	03	10.03443	21 25 19.98	+08 57 16.3	186
/1976 VI	1976	03	10.04230	21 25 18.18	+08 57 28.3	186
/1976 VI	1976	03	10.04303	21 25 17.45	+08 57 29.2	186
/1976 VI	1976	05	25.96360	19 12 56.76	+17 52 00.0	1 186
/1976 VI	1976	06	01.86397	18 55 40.95	+17 14 28.3	1 186
/1976 VI	1976	06	01.86397	18 55 39.24	+17 14 40.4	2 186
/1976 VI	1976	06	01.86397	18 55 37.71	+17 14 48.2	3 186
/1976 VI	1976	06	05.88764	18 45 50.40	+16 29 00.2	3 186
/1976 VI	1976	06	07.91632	18 40 32.57	+16 24 52.9	1 186
/1976 VI	1976	06	21.75499	18 09 24.62	+13 44 45.5	1 186
/1976 VI	1976	06	23.79624	18 05 17.28	+13 17 19.9	2 186
/1976 VI	1976	06	30.75202	17 53 42.69	+11 38 35.8	1 186
/1976 VI	1976	07	01.73303	17 27 44.73	+11 19 51.9	3 186

Note 1: nucleus A. 2: nucleus D. 3: nucleus B.

OBSERVATIONS MADE AT ALMA-ATA BY D. A. ROZHKOVSKIY. MEASURED BY L. A. USOL'TSEVA. FROM KIEV KOMET. TSIRK. NO. 254.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1978 XXIV	1979	08	20.77917	00 25 07.12	-01 29 35.1	18.5T 210
/1978 XXIV	1979	08	20.80000	00 25 06.50	-01 29 41.8	18 T 210

OBSERVATIONS MADE AT THE PURPLE MOUNTAIN OBSERVATORY BY J.-X. ZHANG, J.-X. YANG, Q. WANG, S. WEI, Y. GE AND C.-Y. SHAO. MEASURED BY SHAO.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1978 XXI	1979	11	13.53914	22 22 38.99	-15 45 11.5	330
2181	1979	11	13.59921	02 05 55.36	+22 23 07.7	330
1979 VA	1979	11	18.58601	01 54 40.52	+24 42 41.5	13 330

OBSERVATIONS MADE AT GEISEI (CODE 372) BY T. SEKI AND AT TOKAI (CODE 879)
BY T. FURUTA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1975 QK	1979	11	20.51076	01 12 04.46	-17 27 20.6	16 879
1975 QK	1979	11	20.52257	01 12 04.47	-17 27 14.8	879
1975 QK	1979	11	20.53507	01 12 04.49	-17 27 06.9	879
1979 VA	1979	11	19.43056	01 59 54.03	+24 34 18.8	372
1979 VA	1979	11	19.44097	01 59 57.72	+24 34 11.7	372
1979 XA	1979	12	16.46424	02 19 01.5	+13 18 04	879
1979 XA	1979	12	16.47014	02 18 59.3	+13 17 57	879
1979 XA	1979	12	17.61042	02 12 35.20	+12 54 27.9	15.0 372
1979 XA	1979	12	17.63090	02 12 28.63	+12 54 04.0	372

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT COONABARABRAN BY
K. S. RUSSELL.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
164	1979 11 20.46736	00 06 47.31	-33 35 26.7		15	413
164	1979 11 20.51250	00 06 49.29	-33 34 08.1			413
164	1979 11 21.48495	00 07 34.81	-33 04 33.1			413
164	1979 11 21.55787	00 07 37.80	-33 02 21.8			413
164	1979 11 22.45729	00 08 21.53	-32 34 59.5			413
164	1979 11 22.47118	00 08 22.11	-32 34 35.1			413
1979 XB *	1979 12 11.51059	04 24 04.83	-29 36 08.7		16	413
1979 XB	1979 12 11.55573	04 23 25.28	-29 42 08.5			413
1979 XB	1979 12 13.44144	03 46 10.73	-34 55 38.9			413
1979 XB	1979 12 13.44838	03 45 59.17	-34 57 01.4			413
1979 XB	1979 12 14.43661	03 11 23.42	-38 40 02.9			413
1979 XB	1979 12 14.44355	03 11 04.67	-38 41 45.5			413
1979 XB	1979 12 15.41910	02 16 43.39	-42 40 34.2			413
1979 XB	1979 12 15.41979	02 16 40.57	-42 40 45.1			413
1979 XB	1979 12 15.42049	02 16 37.60	-42 40 52.1			413
1979 XB	1979 12 15.42118	02 16 34.70	-42 41 03.6			413
1979 XB	1979 12 15.42187	02 16 31.63	-42 41 11.7			413
1979 XB	1979 12 15.42257	02 16 28.70	-42 41 23.0			413
1979 XB	1979 12 15.42326	02 16 25.80	-42 41 31.7			413
1979 XB	1979 12 15.42396	02 16 23.02	-42 41 41.7			413
1979 XB	1979 12 15.42465	02 16 19.77	-42 41 49.4			413
1979 XB	1979 12 15.42535	02 16 16.93	-42 42 01.8			413
1979 XB	1979 12 15.42604	02 16 13.75	-42 42 09.0			413
1979 XB	1979 12 15.42951	02 15 58.84	-42 42 59.3			413

OBSERVATIONS MADE AT HAPPY VALLEY, WELLINGTON, BY A. C. GILMORE AND
P. M. KILMARTIN.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1979 VA	1979 11 23.42936	02 20 44.76	+23 54 42.1		14	1	484
1979 VA	1979 11 23.44603	02 20 49.14	+23 54 33.6			1	484

Note 1: observatory code 484, Long. and Parallax 174.75, -321, +280 (see
MPC 4766).

OBSERVATIONS MADE AT STAKENBRIDGE BY B. MANNING. COMMUNICATED BY
G. M. HURST.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
246	1979 08 21.90208	20 26 47.45	-07 11 17.3		11.5V	494
246	1979 08 25.89965	20 24 38.14	-07 53 23.4		11.6V	494
433	1979 08 25.91215	21 15 33.07	-05 28 29.4		11.3V	494
1979 VA	1979 11 18.83073	01 56 13.93	+24 39 59.3		13 V	494
1979 VA	1979 11 18.84635	01 56 19.50	+24 39 49.2			494
1979 VA	1979 11 18.85903	01 56 24.20	+24 39 42.6			494

OBSERVATIONS MADE AT THE LICK OBSERVATORY BY E. A. HARLAN. MEASURED BY
A. R. KLEMOLA.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1979 VA	1979 11 16.29375	01 38 50.46	+25 03 26.4		662
1979 VA	1979 11 16.30069	01 38 53.38	+25 03 23.0		662

OBSERVATIONS MADE AT PALOMAR.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1953 XK1 *	1953 12 07.50278	09 08 08.7	-09 02 17			1	675
1953 XK1	1953 12 07.53403	09 08 09.7	-09 03 10			1	675
1953 XK1	1953 12 07.54097	09 08 09.9	-09 03 24			14	1 675
1979 VA *	1979 11 15.17569	01 30 07.53	+25 12 03.2			11	2 675
1979 VA	1979 11 15.24792	01 30 41.16	+25 11 35.9			2	675

1979	VA	1979	11	15.42847	01	32	05.44	+25	10	03.4		2	675
1979	VA	1979	11	16.10694	01	37	29.19	+25	04	55.8	11	2	675
1979	VA	1979	11	16.28056	01	38	44.47	+25	03	35.3		2	675
1979	VA	1979	11	16.35000	01	39	14.50	+25	02	57.9		2	675
1979	VA	1979	11	24.23750	02	24	20.70	+23	45	58.9		3	675
1979	VA	1979	11	24.25833	02	24	25.83	+23	45	47.0		3	675
1979	VA	1979	12	12.23403	03	15	19.73	+21	37	09.6	15	4	675
1979	VA	1979	12	14.24028	03	19	06.93	+21	28	45.4		4	675
1979	XA *	1979	12	13.13681	02	36	45.02	+14	20	30.3	14.5	4	675
1979	XA	1979	12	13.34236	02	35	39.61	+14	16	52.3		4	675
1979	XA	1979	12	14.10139	02	31	45.34	+14	03	16.4		4	675
1979	XA	1979	12	14.25069	02	30	56.68	+14	00	33.0		4	675
1979	XA	1979	12	14.39792	02	30	08.99	+13	57	48.1		4	675

Note 1: identified by J. Dengel, H. Hartl and R. Weinberger on Palomar Sky Survey prints. 2: observations by E. Helin and S. J. Bus with the 0.46-m Schmidt telescope. 3: observations by C. Kowal with the 1.2-m Schmidt telescope. 4: observations by Q. R. Passey and Bus with the 0.46-m Schmidt telescope. Measured by Bus, Passey and R. Weeks.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY, ANDERSON MESA STATION, BY H. L. GICLAS AND E. BOWELL. MEASURED BY M. L. KANTZ.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1975 SD	1975 09	28.22708	00 29 38.04	+00 05 25.0		688
1975 SD	1975 10	04.33056	00 25 04.83	-00 21 11.4		688
1975 SD	1975 10	10.25486	00 20 43.42	-00 45 49.4		688
1975 SD	1975 10	11.27639	00 19 59.44	-00 49 52.3		688
1979 VA	1979 11	16.22014	01 38 18.25	+25 04 02.3	12	688
1979 VA	1979 11	17.21181	01 45 31.02	+24 55 30.5		688
1979 VA	1979 11	22.15590	02 14 42.85	+24 06 42.6		688
1979 VA	1979 12	07.15313	03 04 40.10	+22 03 18.0		688
1979 VA	1979 12	17.17986	03 24 21.05	+21 18 13.4		688
1979 XA	1979 12	14.26389	02 30 52.21	+14 00 14.4	14	688
1979 XA	1979 12	17.15417	02 15 11.22	+13 03 59.1		688

OBSERVATIONS MADE AT THE GOETHE LINK OBSERVATORY, MEASURED AT INDIANA UNIVERSITY, REDUCED AT THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1949 SO1	1949 09	25.22564	23 15 29.67	-08 09 13.3	760
1949 SO1	1949 09	25.27046	23 15 27.78	-08 09 27.9	760
1954 JN	1954 05	10.29873	16 08 08.37	-14 46 34.2	760
1954 JN	1954 05	10.34144	16 08 06.58	-14 46 22.6	760
1956 AF	1956 01	13.40558	08 59 45.79	+13 50 33.2	760
1956 AF	1956 01	13.44794	08 59 43.34	+13 50 36.2	760
1965 JC	1965 05	03.15955	14 13 41.38	-10 56 33.8	760
1965 JC	1965 05	03.20260	14 13 38.84	-10 56 33.6	760

OBSERVATIONS MADE AT THE HARVARD COLLEGE OBSERVATORY AGASSIZ STATION BY R. E. MC CROSKY, C.-Y. SHAO, G. SCHWARTZ AND J. H. BULGER (WITH ASSISTANCE FROM C. M. BARDWELL AND B. G. MARSDEN).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1978 XXIV	1979 09	21.24622	00 08 54.51	-04 21 24.1		801
/1979e	1979 10	23.01436	18 33 24.09	-00 36 22.7		801
/1979f	1979 09	01.32601	04 55 40.85	+42 15 03.4		801
/1979k	1979 12	14.98141	23 39 07.87	-06 03 01.2	20.5N	801
/1979k	1979 12	15.99677	23 39 34.00	-05 59 25.7		801
1921	1979 10	22.20609	02 45 57.58	+45 09 27.9		801
1922	1979 10	19.08184	22 29 50.68	+29 51 33.7		801
2074	1979 10	26.29259	04 51 07.83	-03 03 58.4		801

1973	SU4	1979	11	24.31037	06	58	13.38	+12	58	54.1	801	
1975	AK	1979	11	21.35692	06	33	49.84	+18	14	50.6	801	
1975	VF	1979	08	23.28755	00	01	37.39	+05	38	12.8	801	
1975	VF	1979	09	16.16538	23	47	11.52	+03	56	30.7	801	
1975	VF	1979	11	20.06292	23	29	39.40	-00	52	13.0	801	
1976	GR3	1979	11	24.27773	06	54	34.72	+29	29	09.7	801	
1977	HC	1979	11	21.23287	05	29	14.07	+05	28	16.1	801	
1977	QH1	1979	11	21.15582	04	39	26.94	+13	39	57.4	801	
1977	QH1	1979	11	22.21816	04	38	53.12	+13	38	24.7	801	
1977	TL3	1979	11	21.31877	06	05	56.43	+09	44	34.2	801	
1978	GC	1979	11	21.28964	05	38	14.86	-16	36	02.7	801	
1978	LA	1979	08	31.34119	04	50	56.05	+13	55	50.4	801	
1978	LA	1979	11	21.17970	04	56	05.01	+09	38	30.8	801	
1978	RC	1979	11	24.34485	07	04	10.64	+36	28	26.2	801	
1979	OA	1979	09	13.11744	20	43	16.34	+08	47	33.7	801	
1979	OA	1979	11	16.98778	21	21	26.43	+09	42	13.2	801	
1979	OB	1979	09	13.14358	22	22	12.41	-05	41	00.3	801	
1979	OB	1979	10	22.11368	22	35	02.35	-09	34	16.9	801	
1979	OB	1979	11	19.97399	23	10	26.88	-07	55	48.9	801	
1979	OC	1979	10	22.08465	21	11	13.09	-05	33	02.9	801	
1979	OC	1979	11	16.95958	21	39	54.61	-04	59	09.1	801	
1979	QL	*	1979	08	23.25413	22	39	22.69	-15	11	18.3	17.5
1979	UC1	*	1979	10	31.30868	05	48	46.59	-11	48	39.6	18
1979	VA	1979	11	16.96344	01	43	47.69	+24	57	30.3	801	
1979	VA	1979	11	16.97740	01	43	53.87	+24	57	26.1	801	
1979	VA	1979	11	17.14603	01	45	02.49	+24	55	59.8	801	
1979	VA	1979	11	17.15610	01	45	06.54	+24	55	54.3	801	
1979	VA	1979	11	22.18951	02	14	50.23	+24	06	20.5	801	
1979	VA	1979	11	28.28679	02	39	55.35	+23	07	58.8	801	
1979	XA	1979	12	15.03354	02	26	48.42	+13	45	55.4	801	
1979	XA	1979	12	15.09929	02	26	26.48	+13	44	40.2	801	
1979	XA	1979	12	18.00833	02	10	22.45	+12	46	06.0	801	
2528	P-L	1979	09	16.08184	20	35	43.46	-22	31	07.1	801	
6090	P-L	1979	11	20.09192	01	23	01.28	+14	24	20.3	801	
6512	P-L	1979	08	23.25413	22	39	20.21	-14	54	07.6	801	

OBSERVATIONS MADE AT RIO DE JANEIRO BY H. DEBEHOGNE AND R. R. DE FREITAS MOURAO. MEASURED BY L. E. S. MACHADO, J. F. C. CALDEIRA, E. RANGEL NETTO AND G. G. VIEIRA. FROM ASTRON. ASTROPHYS. SUPPL. 36, 407, 1979.

Object	Date	UT	R. A. (1950)	Decl.	O - C	Obs.
8	1977	09 09.05546	18 40 04.18	-25 07 07.9	0.4- 1-	880
8	1977	09 09.07277	18 40 04.56	-25 07 09.8	0.4- 1-	880
8	1977	09 09.09008	18 40 05.16	-25 07 10.5	0.4- 1-	880
11	1977	09 10.91876	17 50 14.09	-22 21 11.4	0.3- 0	880
11	1977	09 10.96170	17 50 16.76	-22 21 18.8	0.3- 0	880
14	1977	09 10.20405	23 55 22.11	-15 20 23.8	0.1+ 1-	880
14	1977	09 10.22622	23 55 21.02	-15 20 31.5	0.1+ 1-	880
14	1977	09 10.25253	23 55 19.69	-15 20 41.2	0.1+ 1-	880
14	1977	09 11.27681	23 54 28.08	-15 26 55.0	0.0 1-	880
14	1977	09 11.29828	23 54 26.89	-15 27 02.1	0.0 1-	880
17	1977	09 10.98663	19 51 43.27	-22 39 26.3	0.4- 1-	880
17	1977	09 11.03995	19 51 43.91	-22 39 32.6	0.4- 1-	880
17	1977	09 11.09397	19 51 44.59	-22 39 37.6	0.4- 1-	880
21	1977	09 09.22236	21 44 14.16	-19 28 30.0	0.3- 3-	880
21	1977	09 09.23967	21 44 13.46	-19 28 32.4	0.3- 3-	880
21	1977	09 09.25699	21 44 12.84	-19 28 34.6	0.3- 3-	880
21	1977	09 11.19647	21 43 05.96	-19 32 20.4	0.0 2-	880
21	1977	09 11.21725	21 43 05.20	-19 32 24.0	0.0 2-	880
21	1977	09 11.23872	21 43 04.54	-19 32 26.3	0.0 2-	880

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are A = K. Reinmuth, B = C. M. Bardwell, F = E. Fogelin, M = B. G. Marsden, P = O. Kippes, T = B. Potter, W = J. G. Williams, X = W. Strobel. For further explanation see MPC 4499.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1949 DA	14.0	490305	354.39	355.90	161.74	3.29	0.0244	2.1922	16	8		B
1949 GJ	13.5	490414	9.72	162.02	27.74	9.12	0.1308	2.3847	21	6		B
1949 GK	14.5	490414	347.40	51.29	170.42	2.34	0.1962	2.3076	21	6		B
1949 PV	14.0	490812	356.68	199.45	132.15	6.18	0.1744	2.4128	24	3	2	B
1949 QJ2	14.5	490812	337.55	212.01	153.88	9.97	0.2698	2.6709	4	4	3	B
1949 UG	12.0	491031	344.63	25.14	37.16	7.63	0.2294	3.1576	28	3	2	B
1950 CJ	12.5	500208	91.91	254.11	105.27	5.24	0.3502	3.0279	14	6		B
1950 KC	12.5	500519	65.60	335.97	186.68	13.05	0.1210	2.6212	21	4	2	B
1950 SH	14.0	501006	12.43	95.60	258.11	3.14	0.1818	2.2796	23	4	2	B
1950 TF	13.5	501006	43.87	0.43	315.92	5.81	0.1197	2.3502	7	3	2	B
1950 TO4	13.0	501006	322.66	117.53	298.82	7.15	0.1555	2.7462	7	3	2	B
1951 GC	15.0	510404	336.77	172.64	56.98	9.33	0.1902	2.2540	5	3		B
1951 JQ	13.5	510514	312.34	24.15	263.19	7.74	0.1588	2.8150	31	4	2	B
1951 OM	12.5	510822	6.61	260.60	45.14	1.53	0.1541	3.1207	33	4		B
1951 RL	13.5	511001	2.24	16.62	335.50	13.24	0.1706	2.6770	30	4		B
1951 TA	13.5	511001	359.54	199.35	202.05	13.60	0.2264	3.1473	16	5		M
1951 WO2	12.7	511220	55.73	200.36	146.43	17.35	0.1037	3.1722	86	0		W
1952 HS	14.0	520418	327.13	63.26	190.57	5.67	0.1460	2.2992	10	5		B
1952 JH	13.0	520518	52.33	301.73	231.25	8.60	0.1853	2.6860	24	5	2	B
1952 QX	14.5	520925	342.33	271.35	104.39	5.09	0.1710	2.2426	42	0	2	B
1952 SG	15.5	520925	23.13	193.57	124.42	4.89	0.1919	2.3040	9	6	2	B
1956 PG	13.5	560815	303.19	81.57	306.12	1.09	0.1317	2.7258	32	3		B
1978 VW2	16.0	781108	311.10	350.70	134.98	1.72	0.1386	3.1581	25	8		M
1978 VX2	17.5	781108	295.54	259.23	236.84	12.46	0.0900	2.5519	25	6		M
1978 VC3	16.0	781108	66.39	76.25	256.66	5.23	0.2086	2.7965	25	8		M
1978 VD3	16.5	781108	13.74	101.05	307.52	1.38	0.0108	2.6091	24	6		M
1978 VE3	15.0	781108	119.97	37.22	256.19	7.07	0.1279	3.1500	25	8		M
1978 VF3	17.5	781108	1.55	5.50	50.42	1.49	0.2298	2.4066	23	6		M
1978 VG3	14.0	781108	342.97	24.43	61.68	15.51	0.1533	3.0296	24	5		M
1978 VH3	15.0	781108	92.86	247.55	72.26	10.65	0.1028	3.0515	25	7		M
1978 VJ3	16.0	781108	262.43	274.69	254.68	9.27	0.0683	3.0575	25	8		M
1978 VK3	16.5	781108	122.56	41.71	254.24	4.13	0.0469	2.5953	24	5		M
1978 VL3	17.0	781108	83.75	272.65	47.47	3.52	0.1544	2.2831	25	5		M
1978 VN3	17.5	781108	359.36	198.70	224.05	3.75	0.1024	2.7304	25	8		M
1978 VO3	18.0	781108	63.23	123.86	210.93	2.34	0.2029	2.3275	25	5		M
1978 VQ3	16.0	781108	328.28	222.16	239.15	8.99	0.1165	2.5471	25	7		M
1978 VR3	18.5	781108	15.54	166.00	230.15	1.49	0.1923	2.3738	25	5		M
1978 VS3	18.5	781108	338.83	212.31	236.98	5.13	0.1655	2.3564	24	6		M
1978 VT3	16.5	781108	167.95	190.53	63.53	16.10	0.0540	2.5400	24	6		M
1978 VU3	16.5	781108	40.55	111.46	243.31	5.37	0.2743	2.8131	24	7		M
1978 VV3	15.0	781108	293.05	78.28	63.02	12.29	0.0920	3.0333	24	7		M
1978 VW3	17.5	781108	323.10	213.71	246.14	5.80	0.0165	2.3821	24	5		M
1978 VX3	16.0	781108	258.76	300.81	253.09	3.99	0.2770	2.7313	24	7		M
1978 VY3	16.5	781108	38.64	100.93	269.33	3.21	0.1540	2.5616	24	7		M
1978 VZ3	15.5	781108	7.43	48.22	6.60	1.73	0.0710	2.8538	24	5		M
1978 VB4	18.0	781108	15.79	146.35	251.60	4.77	0.1546	2.2960	25	8		F
1978 VC4	16.5	781108	335.38	87.73	3.52	1.47	0.0567	2.8495	24	5		F
1978 VD4	16.0	781108	110.82	254.75	48.97	3.38	0.0901	2.6474	24	5		F
1978 VE4	18.5	781108	29.37	326.68	52.33	3.96	0.1683	2.2995	24	6		F
1978 VF4	15.5	781108	33.17	322.09	54.64	2.94	0.1783	3.0707	24	5		F
1978 VG4	16.5	781108	230.69	138.17	57.86	3.51	0.0328	2.7163	24	5		F

1978	VH4	17.5	781108	303.32	265.89	229.23	1.63	0.1617	2.3907	24	7	F
1978	VJ4	18.0	781108	9.93	169.82	235.40	4.06	0.1871	2.4522	24	5	F
1978	VK4	13.5	781108	68.33	141.98	201.29	0.97	0.1178	3.1870	24	5	1 F
1978	VL4	18.5	781108	352.29	201.09	229.73	4.10	0.2310	2.3069	24	5	F
1978	VM4	17.5	781108	16.29	313.74	82.16	3.38	0.1937	2.5337	24	6	F
1978	VN4	17.5	781108	49.78	250.09	102.70	2.17	0.1838	2.4249	24	7	F
1978	VO4	16.0	781108	153.34	175.26	87.88	3.89	0.1639	2.3727	24	7	F
1978	VP4	16.5	781108	359.36	241.12	183.21	1.80	0.0534	2.8617	24	5	F
1978	VR4	16.5	781108	322.62	239.18	227.17	4.10	0.1142	2.1969	25	6	F
1978	VS4	13.0	781108	169.34	292.85	321.06	0.41	0.1801	3.0806	24	5	F
1978	VT4	15.5	781108	327.57	71.22	34.96	1.53	0.1354	3.1201	24	5	F
1978	VW4	18.0	781108	4.16	15.13	38.60	1.69	0.1857	2.3913	25	6	F
1978	VX4	17.0	781108	59.76	277.05	65.50	3.99	0.1753	2.3527	24	7	F
1978	VZ4	15.0	781108	203.55	37.46	189.72	2.15	0.1488	2.6336	25	6	F
1978	VA5	16.0	781108	20.35	291.35	95.34	2.92	0.2733	3.2010	24	5	F
1978	VB5	16.0	781108	217.87	140.72	71.28	7.38	0.1034	2.3805	24	6	F
1978	VC5	16.5	781108	306.15	278.52	217.11	2.23	0.1928	2.3910	24	5	F
1978	VD5	15.5	781108	314.89	299.11	183.67	1.25	0.1444	3.0871	24	5	F
1978	VE5	15.0	781108	47.97	283.73	67.06	8.37	0.2346	2.7836	24	5	F
1978	VF5	17.0	781108	296.14	67.45	66.66	7.40	0.0756	2.3632	25	5	F
1978	VG5	15.0	781108	305.11	174.61	320.92	0.55	0.1516	3.1060	24	5	F
1978	VH5	15.5	781108	284.59	254.70	249.04	9.03	0.0284	3.0173	25	6	F
1978	VL5	15.5	781108	80.35	55.53	265.68	4.53	0.1790	2.2419	25	6	1 F
1978	VO5	17.5	781108	23.48	120.18	271.58	2.58	0.1100	2.2912	25	6	M
1978	VP5	14.5	781108	73.54	297.02	33.25	1.30	0.1898	3.1057	25	6	F
1978	VQ5	14.5	781108	221.31	136.49	72.20	3.35	0.0585	3.0386	24	5	F
1978	VS5	15.5	781108	181.45	12.09	231.59	1.81	0.1640	2.4342	25	6	F
1978	VU5	16.5	781108	58.56	166.34	194.13	2.10	0.0368	2.4219	25	6	F
1978	VV5	15.5	781108	251.48	45.85	139.49	1.73	0.1341	2.3254	24	5	F
1978	VW5	18.0	781108	55.48	125.31	213.88	2.12	0.2439	2.3455	24	5	F
1978	VX5	17.5	781108	100.75	234.93	69.11	6.46	0.1691	2.2513	25	5	F
1978	VY5	17.0	781108	340.58	11.98	74.88	2.18	0.1595	2.2581	24	5	F
1978	VZ5	16.0	781108	297.54	266.33	238.62	4.69	0.1632	2.8713	24	5	F
1978	VB6	15.5	781108	140.39	26.98	244.86	23.43	0.2013	2.3306	25	6	B
1978	VC6	16.5	781108	52.54	87.68	244.07	9.66	0.3405	2.6305	24	5	B
1978	VE6	17.0	781108	127.00	236.34	45.50	1.94	0.1982	2.3516	25	4	M
1978	VF6	17.5	781108	283.36	257.80	254.98	5.23	0.1167	2.3524	25	6	B
1978	VG6	11.5	781108	234.17	282.47	291.65	2.53	0.2282	4.9855	25	6	2 M
1978	VO6	16.5	781108	82.84	55.42	272.23	3.64	0.1064	2.2534	25	6	B
1978	VP6	17.0	781108	62.55	12.25	324.94	1.58	0.2132	2.5856	25	5	B
1978	VT6	16.5	781108	132.01	23.31	260.77	3.41	0.0825	2.1428	25	6	B
1978	VU6	17.0	781108	6.93	142.28	269.17	1.73	0.1661	2.4519	24	5	B
1978	VV6	17.0	781108	75.90	275.39	47.17	2.81	0.2076	2.2508	24	5	B
1978	VW6	17.0	781108	0.51	178.39	242.89	13.15	0.1505	2.5663	24	5	B
1978	VX6	16.5	781108	302.26	74.36	62.48	12.37	0.1481	2.5952	24	5	B
1978	VZ6	15.5	781108	182.05	1.33	243.09	1.90	0.0397	3.0803	25	6	1 B
1978	VB7	16.5	781108	28.73	142.83	242.29	11.51	0.1460	2.7509	25	6	B
1978	VD7	16.0	781108	16.12	331.30	74.22	3.12	0.0756	2.8402	25	6	B
1978	VE7	17.0	781108	52.85	170.66	175.95	0.76	0.2103	2.3293	25	5	B
1978	VF7	17.5	781108	282.59	75.68	84.89	3.70	0.1714	2.4520	25	5	B
1978	VG7	17.0	781108	78.73	158.77	164.41	0.91	0.1825	2.2797	25	5	B
1978	VH7	18.0	781108	356.66	358.45	66.28	5.84	0.1796	2.2679	24	4	B
1978	VJ7	14.0	781108	200.01	39.23	192.81	0.73	0.1422	3.0889	24	5	B
1978	VL7	16.5	781108	159.68	25.87	235.08	2.12	0.0620	2.1779	25	6	B
1978	VM7	17.5	781108	56.43	90.19	241.29	6.26	0.3106	2.5792	25	5	B
1978	VQ7	16.5	781108	295.11	249.89	251.33	7.68	0.1061	2.7490	25	6	B
1978	VU7	15.0	781108	27.04	60.69	333.04	1.26	0.0758	2.8238	25	6	B
1978	VW7	18.5	781108	3.49	143.06	271.58	1.31	0.2165	2.3753	25	6	B
1978	VY7	16.0	781108	295.74	97.45	48.93	3.08	0.1420	3.1224	25	6	B

1978	VZ7	15.0	781108	88.40	292.02	24.47	1.09	0.1948	3.0454	24	5	B
1978	VC8	18.5	781108	12.09	162.25	243.25	6.28	0.1211	2.2257	25	6	B
1978	VD8	17.5	781108	162.56	201.18	58.23	3.43	0.0479	2.2426	25	6	B
1978	VE8	16.5	781108	313.13	58.28	60.37	3.17	0.0653	3.0168	25	5	B
1978	VF8	18.0	781108	40.72	307.14	61.37	7.75	0.1424	2.2484	24	5	B
1978	VG8	17.5	781108	50.31	281.32	62.59	4.35	0.2692	2.5634	24	5	B
1978	VH8	14.5	781108	135.00	42.33	245.20	1.04	0.0478	2.8447	24	5	B
1978	VJ8	15.5	781108	163.68	75.13	185.80	0.85	0.1039	3.1395	24	5	B
1978	VK8	16.0	781108	12.41	320.91	85.61	2.22	0.1563	2.8127	24	5	B
1978	VL8	16.5	781108	28.14	313.10	68.30	18.19	0.2128	3.1223	25	5	B
1978	VM8	17.5	781108	323.66	241.07	229.09	5.93	0.1486	2.3706	24	5	B
1978	VO8	15.0	781108	292.92	40.92	109.84	2.54	0.1582	3.0519	25	6	B
1978	VQ8	16.5	781108	259.69	315.00	222.81	4.35	0.1142	2.5842	25	6	B
1978	VR8	18.0	781108	294.77	14.62	138.38	1.57	0.2203	2.2957	24	5	B
1978	VS8	16.5	781108	309.14	295.75	184.72	1.88	0.0581	2.5260	24	5	B
1978	VT8	15.5	781108	238.22	322.35	231.73	4.89	0.0565	2.9866	24	5	B
1978	VU8	18.0	781108	349.86	355.26	82.00	2.48	0.2057	2.5250	24	5	B
1978	VV8	18.5	781108	6.87	330.05	81.81	2.37	0.1695	2.4352	24	5	B
1978	VW8	15.5	781108	359.45	344.76	81.21	2.59	0.1459	3.0977	24	5	B
1978	VX8	16.0	781108	345.65	26.41	58.97	1.46	0.1582	3.1717	24	5	B
1978	VY8	15.0	781108	102.46	76.10	247.83	10.48	0.0018	3.0430	24	4	B
1978	VZ8	17.0	781108	0.51	3.97	58.89	3.86	0.1125	2.6038	24	5	B
1978	VA9	18.0	781108	326.38	231.31	246.04	4.48	0.2576	2.5685	24	5	M
1978	VB9	19.0	781108	14.51	344.03	54.30	3.40	0.2030	2.3363	25	5	M
1978	VE9	15.0	781108	81.17	30.19	298.10	1.07	0.1509	3.0519	25	6	M
1978	VH9	17.0	781108	302.86	248.50	260.19	5.11	0.2481	2.5718	25	6	M
1978	VK9	16.0	781108	31.96	132.65	244.72	4.57	0.1640	2.2494	25	6	M
1978	VL9	18.0	781108	15.24	240.33	161.31	1.66	0.1630	2.6066	25	5	M
1978	VM9	17.0	781108	348.59	357.47	79.33	5.15	0.1117	2.3893	24	5	M
1978	VN9	15.5	781108	218.28	121.17	89.45	4.05	0.0493	2.5905	25	6	1 M
1978	VP9	17.5	781108	92.72	79.54	237.22	6.47	0.1321	2.3311	25	6	M
1978	VQ9	16.0	781108	82.70	250.64	67.77	13.16	0.2125	2.5645	24	5	M
1978	VR9	15.5	781108	4.61	337.81	81.20	2.05	0.1543	3.0767	24	5	M
1978	VS9	18.5	781108	8.82	179.57	230.62	0.46	0.1446	2.3744	24	5	M
1978	VT9	17.5	781108	61.51	285.40	55.37	3.94	0.1831	2.2127	24	5	M
1978	VU9	18.0	781108	357.33	12.30	53.73	3.92	0.1633	2.4490	24	5	M
1978	VV9	15.0	781108	205.48	317.83	270.06	2.54	0.1127	3.1286	24	5	M
1978	VB10	16.0	781108	185.63	344.06	259.15	9.35	0.1311	2.7473	25	6	M
1978	VD10	18.5	781108	28.35	120.14	249.15	2.18	0.3069	2.5936	25	5	M
1978	VE10	16.0	781108	75.07	266.04	59.83	1.79	0.2334	3.1872	25	5	1 M
1978	VG10	14.0	781108	84.94	187.43	140.70	0.77	0.1273	3.1223	25	6	M
1978	VJ10	17.0	781108	43.32	274.43	80.52	4.64	0.2582	2.7023	25	5	M
1978	VK10	16.0	781108	114.09	209.32	96.15	3.48	0.0472	2.3844	24	5	M
1978	VL10	16.0	781108	18.39	241.21	161.14	1.95	0.1118	2.8928	24	5	M
1978	VM10	16.0	781108	163.63	165.51	95.99	3.79	0.0482	2.6978	25	6	M
1978	VN10	16.0	781108	321.41	271.22	208.10	2.94	0.1720	3.0514	24	5	M
1978	VO10	18.0	781108	350.75	5.92	70.49	8.83	0.1699	2.6043	25	5	M
1978	VP10	16.5	781108	101.71	236.81	80.17	3.98	0.0573	2.4274	24	5	M
1978	VQ10	16.5	781108	14.30	162.44	238.31	7.25	0.2213	2.7827	24	5	M
1978	VR10	16.5	781108	269.58	110.87	69.00	10.95	0.1997	2.8089	24	5	M
1978	VS10	15.0	781108	93.16	252.80	71.47	3.47	0.0774	2.6647	24	5	M
1978	VT10	17.0	781108	75.97	94.36	237.69	1.74	0.1462	2.4084	24	5	M
1978	VU10	17.0	781108	82.48	61.62	256.81	2.04	0.2042	2.2451	24	5	M
1978	VE11	17.0	781108	277.44	268.74	245.25	6.19	0.0652	2.2139	25	6	M
1978	VG11	16.5	781108	32.90	309.70	64.12	6.73	0.2183	2.6493	25	6	M
1978	VH11	16.5	781108	43.76	304.35	70.91	4.64	0.0787	2.6662	24	5	M
1978	VJ11	17.0	781108	44.12	300.75	71.48	6.41	0.1079	2.7876	25	5	M
1978	VL11	15.5	781108	218.31	143.59	74.81	5.73	0.1665	2.4140	25	6	M
1978	VM11	17.0	781108	283.67	92.52	74.38	5.67	0.2160	2.5810	25	5	M

1978	VN11	15.0	781108	356.41	290.39	140.57	1.81	0.1489	3.0873	25	5	M
1978	VP11	15.0	781108	60.17	252.85	94.52	3.11	0.1829	3.1844	25	5	1 M
1979	KA	12.5	790726	316.08	190.52	142.47	8.90	0.1412	2.7368	123	9	M
1979	OA	14.5	790904	24.03	340.65	297.64	24.95	0.3777	2.9099	117	9	M
1979	OB	16.0	790904	10.06	139.56	180.72	5.61	0.2838	2.2241	117	0	M
1979	OC	14.5	790904	7.65	64.40	255.25	7.45	0.0856	2.2907	117	0	M
1979	QB	15.0	790924	359.71	11.34	342.16	3.37	0.4422	2.3294	67	0	M
1979	SA	11.5	790924	254.74	273.49	205.09	18.80	0.1928	3.2301	53	0	M
1979	SE	13.5	791014	239.09	18.76	88.11	3.27	0.0257	2.8444	40	7	M
1979	SF	13.5	791014	62.26	319.29	333.76	8.49	0.0764	2.6800	32	0	M
1979	SH	16.0	791014	352.99	48.40	331.89	5.26	0.2786	2.6112	28	0	M
1979	SJ	16.0	791014	19.60	338.71	359.66	5.48	0.2163	2.3273	29	0	M
1979	SO	15.0	791014	6.31	349.18	8.37	8.20	0.2295	2.7765	24	0	M
1979	SP	13.0	791014	335.67	257.86	140.43	1.92	0.1594	3.1437	24	0	M
1979	SQ	13.5	791014	18.71	48.73	289.77	3.26	0.1269	2.5478	20	0	M
1979	SR	14.0	791014	21.03	126.95	206.33	8.56	0.1687	2.7693	24	0	M
1979	SS	15.5	791014	8.04	19.17	334.52	6.32	0.1749	2.3841	20	0	M
1979	UQ	16.0	791014	12.63	124.51	246.87	2.33	0.1984	2.1438	6	8	M
1979	UR	15.0	791014	29.58	344.13	16.35	7.13	0.0870	2.6547	4	6	M
1979	US	14.5	791014	13.97	7.11	7.65	3.67	0.1731	2.8158	4	6	M
1979	UT	14.0	791014	7.69	156.62	228.46	14.71	0.1709	3.2053	4	6	1 M
1979	UU	13.5	791014	297.62	158.62	308.07	1.46	0.0774	2.6832	37	0	M
1979	UX	13.5	791014	40.71	343.77	357.48	3.84	0.1804	2.9482	6	6	M
1979	UZ	12.0	791014	229.22	99.62	75.67	14.61	0.1654	2.9094	24	8	M
1979	UA1	13.5	791014	156.33	87.24	146.19	9.61	0.0985	2.5999	6	5	M

Note 1: e assumed. 2: double designations 1949 PV = 1949 QD1 (P, NAZ 12, 22); 1949 QJ2 = 1949 QA1 (A, MPC 383; see also MPC 5067); 1949 UG = 1949 UU (X, MPC 782); 1950 KC = 1950 LQ (T, MPC 491); 1950 SH = 1950 TK = 1950 TW2 (P, MPC 650 and 1331); 1950 TF = 1950 TU2 (P, MPC 650); 1950 TO4 = 1950 TU (P, MPC 777; see also MPC 5067); 1951 JQ = 1951 LE (P, MPC 1968); 1952 JH = 1952 KB (P, MPC 1968); 1952 QX = 1952 SC = 1952 TJ (P, MPC 936 and 1331); 1952 SG = 1952 SS (P, MPC 936); 1978 VG6 = 1978 WS12 (W).
 3 = 1 + 2.

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ORBITAL ELEMENTS BY D. K. YEOMANS, JET PROPULSION LABORATORY.

Periodic Comet Tuttle

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

T 1980 Dec. 14.71195 ET

q	1.0149415	(1950.0)	P	Q
n	0.07203584	Peri.	-0.26107416	-0.51930930
a	5.7205391	Node	+0.96516246	-0.12525874
e	0.8225794	Incl.	+0.01736924	-0.84535679
P	13.68			

From 58 observations 1912-1967. Nongravitational parameters A1 = -0.04, A2 = +0.0131.

Periodic Comet Borrelly

Epoch 1981 Feb. 25.0 ET = JDE 2444660.5

T 1981 Feb. 20.02959 ET

q	1.3192461	(1950.0)	P	Q
n	0.14550969	Peri.	+0.36086641	-0.79596332
a	3.5799320	Node	+0.87882852	+0.11580120
e	0.6314885	Incl.	+0.31214716	+0.59416536
P	6.77			

From 40 observations 1932-1975. Nongravitational parameters A1 = +0.10, A2 = -0.0378.

ORBITAL ELEMENTS BY S. NAKANO, SUMOTO, AND T. URATA, SHIMIZU, JAPAN.

The following orbital elements are from NOC 1083, 1077, 1082, 1078 and 1081, respectively. Identifications are by Urata unless otherwise stated.

(2189)* 1975 QK = 1976 UE

Discovered 1975 Aug. 30 at the El Leoncito Station of the Felix Aguilar Observatory.

Epoch 1979 Nov. 23.0 ET = JDE 2444200.5

M	31.02056	(1950.0)	P	Q
n	0.26468006	Peri. 216.19083	+0.95102891	+0.24482723
a	2.4024548	Node 128.53318	-0.19501034	+0.94885866
e	0.2258004	Incl. 13.95822	-0.23982282	+0.19931598
P	3.72	B(1,0) 14.0		

Residuals in seconds of arc

750830	808	0.5-	0.6-	750909	808	1.2+	0.7-	761101	809	0.9+	0.3-
750830	808	0.1+	0.6-	761024	809	1.5-	0.9-	761102	809	0.5+	0.6-
750831	808	0.1+	0.3+	761025	809	0.2-	0.4+	761102	809	0.4-	0.4+
750902	808	0.3-	0.2+	761031	809	0.2+	0.1-	791120	879	1.0-	0.5+
750905	808	0.7-	0.3+	761031	809	0.6+	0.7-	791120	879	0.1-	0.3-
750906	808	0.1-	0.0	761101	809	0.1-	0.2-	791120	879	0.9+	0.6+

(2190)* 1976 GV3 = 1973 QR = 1977 QO1

Discovered 1976 Apr. 2 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1979 Nov. 23.0 ET = JDE 2444200.5

M	329.60952	(1950.0)	P	Q
n	0.25382980	Peri. 316.92110	-0.77756683	+0.62863665
a	2.4704400	Node 262.03410	-0.57287690	-0.71763346
e	0.0914728	Incl. 0.82995	-0.25923325	-0.29969679
P	3.88	B(1,0) 13.6		

Residuals in seconds of arc

730827	095	1.0+	1.6-	760423	808	2.1+	0.8+	760502	095	1.4-	0.2-
730905	095	0.2-	0.3-	760423	808	0.7+	1.0+	760503	808	0.5+	1.5-
760401	808	(3.7-	1.2+)	760427	808	1.0-	0.0	760503	808	0.5+	0.5+
760401	808	0.3-	1.6+	760427	808	1.0-	0.4-	770819	095	0.5-	1.5+
760402	095	0.2-	1.4-	760430	808	0.1-	0.3+	770820	095	0.8-	1.1+
760405	095	(3.0+	0.2-)	760430	808	0.2+	0.4-	770909	095	0.2+	0.2-

(2191)* 1977 PA1 = 1972 RP3 = 1978 VB1

Discovered 1977 Aug. 6 by C.-I. Lagerkvist at the Uppsala Southern Station, Mount Stromlo.

Epoch 1979 Nov. 23.0 ET = JDE 2444200.5

M	58.37507	(1950.0)	P	Q
n	0.18779676	Peri. 179.89885	+0.38394266	-0.91189375
a	3.0200258	Node 247.52178	+0.84701147	+0.41036876
e	0.0852029	Incl. 9.03107	+0.36764057	+0.00687591
P	5.25	B(1,0) 12.4		

Residuals in seconds of arc

720905	095	0.7+	1.8-	770814	414	1.4-	1.4-	781030	010	1.1-	1.1+
770806	414	0.7-	0.8+	770904	414	0.9-	0.5-	781101	010	0.4-	1.2+
770809	414	0.1-	1.3+	770904	414	1.6-	1.2-	781101	010	0.1-	0.9+
770809	414	0.5+	1.2+	770907	414	0.5+	1.0+	781102	010	1.1+	1.0-
770814	414	2.3+	0.5-	770907	414	0.8+	0.9+	781102	010	0.4+	1.4-

1976 GC8 = 1976 JJ = 1972 LT

The double designation 1976 GC8 = 1976 JJ is by B. G. Marsden (MPC 4927).
 Epoch 1979 Nov. 23.0 ET = JDE 2444200.5

M 195.55443	(1950.0)	P	Q
n 0.21216050	Peri. 240.76541	+0.31689879	+0.94784751
a 2.7841525	Node 47.75141	-0.85339466	+0.30062334
e 0.0452874	Incl. 2.63745	-0.41387524	+0.10588063
P 4.65	B(1,0) 13.2		

Residuals in seconds of arc

720609 095 1.4-	1.3-	760428 805 0.1+	0.2-	760502 805 1.0+	1.2-
720615 095 1.4+	1.2+	760428 805 0.0	1.5+	760502 805 0.5+	0.1+
760404 095 0.2+	0.2-	760429 805 0.6-	0.2+	760502 095 1.2-	0.1-

1978 VT = 1969 RF1 = 1971 BV1 = 1975 AA1 = 1976 GB5

Epoch 1979 Nov. 23.0 ET = JDE 2444200.5

M 113.16433	(1950.0)	P	Q
n 0.23266948	Peri. 24.97311	+0.91986746	-0.39222180
a 2.6180409	Node 358.11463	+0.34629497	+0.81503540
e 0.0712471	Incl. 4.23702	+0.18418371	+0.42647316
P 4.24	B(1,0) 12.8		

Residuals in seconds of arc

690913 095 0.6+	1.2-	760402 095 1.0-	2.1-	781101 010 0.8-	0.4-
710130 095 0.4-	0.1+	781030 010 0.1-	0.0	781102 010 0.3-	0.1-
750109 330 0.7+	0.5+	781101 010 0.5+	0.2+	781102 010 0.7+	1.1-

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

Comet Lovas (1976 XII)

Epoch 1976 Oct. 29.0 ET = JDE 2443080.5

T 1976 Oct. 31.98255 ET

q 5.7152080	(1950.0)	P	Q
z -0.0006135	Peri. 146.27718	-0.67675364	-0.64989999
+/-0.0000406	Node 337.47120	+0.29534729	+0.19068513
e 1.0035061	Incl. 64.52041	+0.67436969	-0.73570998

From 16 observations 1977 Feb. 17-1978 Mar. 14, mean residual 1".4.

Comet Torres (1979e)

T 1979 July 15.89856 ET

q 4.6863392	(1950.0)	P	Q
	Peri. 10.17447	+0.36948896	-0.10172179
	Node 292.43576	-0.90722557	-0.25454595
e 1.0	Incl. 92.16099	-0.20104642	+0.96169591

From 21 observations 1979 June 26-Oct. 23.

Periodic Comet Honda-Mrkos-Pajdusakova

Epoch 1980 May 1.0 ET = JDE 2444360.5

T 1980 Apr. 11.07297 ET

q 0.5806079	(1950.0)	P	Q
n 0.18651481	Peri. 184.63263	+0.53808011	-0.82321074
a 3.0338482	Node 232.92857	+0.78041252	+0.56773581
e 0.8086233	Incl. 13.11837	+0.31847462	-0.00036050
P 5.28			

From 32 observations 1964-1975, mean residual 1".3. Nongravitational parameters A1 = +0.06, A2 = -0.0488.

Periodic Comet de Vico-Swift

Epoch 1980 July 20.0 ET = JDE 2444440.5

T 1980 July 13.91694 ET

q	2.1916665	(1950.0)	P	Q
n	0.13287277	Peri. 1.96461	+0.99995350	-0.00926731
a	3.8034589	Node 358.55825	+0.00674916	+0.87008337
e	0.4237702	Incl. 6.08487	+0.00688803	+0.49281744
P	7.42			

From an approximate linkage 1844-1965, with some allowance for nongravitational effects. T is uncertain by several days.

Periodic Comet Encke

Epoch 1980 Nov. 17.0 ET = JDE 2444560.5

T 1980 Dec. 6.57730 ET

q	0.3399359	(1950.0)	P	Q
n	0.29830752	Peri. 185.98135	-0.93976637	-0.32972901
a	2.2183322	Node 334.19633	+0.32155294	-0.76337923
e	0.8467606	Incl. 11.94591	+0.11594337	-0.55545560
P	3.30			

From 62 observations 1963-1977. Nongravitational parameters A1 = 0.00, A2 = -0.0035.

Periodic Comet Kearns-Kwee

Epoch 1981 Nov. 12.0 ET = JDE 2444920.5

T 1981 Nov. 30.54157 ET

q	2.2235422	(1950.0)	P	Q
n	0.10969182	Peri. 131.38083	+0.05207710	-0.99257377
a	4.3220179	Node 315.26210	+0.86323382	+0.10009091
e	0.4855315	Incl. 8.98552	+0.50211089	-0.06913113
P	8.99			

From 110 observations 1963-1973, mean residual 1".3.

(2192)* 1972 HP = 1971 DY1 = 1974 VY1 = 1977 EJ1 = 1979 SL

Discovered 1972 Apr. 18 by T. Smirnova at the Crimean Astrophysical Observatory. The identifications 1972 HP = 1974 VY1 = 1977 EJ1 = 1979 SL are by B. G. Marsden. The identification 1977 EJ1 = 1971 DY1 was suggested by T. Urata (NOC 1053), who later independently found 1979 SL = 1972 HP = 1977 EJ1 (NOC 1084). The identifications 1972 HP = 1974 VT1 (NOC 986) and 1969 TD2 = 1974 VY1 (NOC 1067) are invalid.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	98.12622	(1950.0)	P	Q
n	0.17774521	Peri. 136.13078	+0.92177250	+0.38266675
a	3.1328344	Node 201.60861	-0.38574749	+0.88880336
e	0.0903354	Incl. 9.76539	-0.03917053	+0.25217996
P	5.55	B(1,0) 12.5		

Residuals in seconds of arc

710223	095	0.6+	5.1-	790919	046	1.2+	0.9-	791011	046	0.4-	2.6-
720418	095	1.6+	1.3+	790919	046	1.4-	2.6-	791011	046	0.7-	4.0-
720509	095	1.0+	0.9+	790925	046	0.1+	0.1-	791011	046	2.6+	2.5+
720512	095	3.1-	0.4-	790925	046	1.5+	0.2-	791011	046	2.1+	2.9+
741115	095	1.5-	3.0+	790926	046	0.2-	0.5-	791015	046	0.4-	0.2+
770313	095	0.9+	0.2-	790926	046	0.8+	0.3+	791015	046	0.2+	1.3-
770322	095	0.4-	1.3-	790927	046	0.2+	0.6+	791019	046	0.4-	0.4+
770325	095	2.1-	1.0-	790927	046	0.4-	0.0	791019	046	2.6-	1.8-

1938 TB = 1949 SO1 = 1972 TB2

The key identification 1938 TB = 1972 TB2 is by J. Lehtinen. The identification with 1949 SO1 is by B. G. Marsden.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 170.20367	(1950.0)	P	Q
n 0.17511870	Peri. 267.92951	+0.89774135	-0.43897639
a 3.1640881	Node 118.10730	+0.41895511	+0.82491569
e 0.2025907	Incl. 2.39634	+0.13615094	+0.35610928
P 5.63	B(1,0) 12.5		
Residuals in seconds of arc			
380922 062 0.8+	0.7- 381021 062 0.2-	1.1+ 721008 095 0.3-	1.5-
381015 062 1.3-	0.9- 381115 062 0.3+	1.0+ 721202 095 2.3-	0.8-
381015 062 0.9-	0.5+ 490925 760 0.3+	0.9+ 721206 095 0.7-	0.2+
381021 062 1.7-	1.1+ 490925 760 0.2-	1.8- 721008 095 0.3-	1.5-

1947 XC = 1979 XA

The identification is by J. G. Williams.

Epoch 1979 Dec. 13.0 ET = JDE 2444220.5

M 335.33473	(1950.0)	P	Q
n 0.36659735	Peri. 93.74437	-0.98704706	-0.15576471
a 1.9334955	Node 77.29734	+0.12706959	-0.90521270
e 0.6611710	Incl. 2.25662	+0.09793577	-0.39538249
P 2.69	B(1,0) 17.0		

From 12 observations 1979 Dec. 13-18; not linked to 1947.

1964 XA

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 140.67670	(1950.0)	P	Q
n 0.27376784	Peri. 94.91532	-0.47671309	-0.86400843
a 2.3489943	Node 25.62057	+0.58170731	-0.44819938
e 0.2974463	Incl. 21.99798	+0.65906087	-0.22936162
P 3.60	B(1,0) 14.5		

From 5 observations 1964 Dec. 8-1965 Feb. 24, mean residual 0".5.

1978 GC

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 290.84829	(1950.0)	P	Q
n 0.37365526	Peri. 102.00841	+0.19857850	+0.98007461
a 1.9090744	Node 179.38833	-0.97975630	+0.19839067
e 0.1682786	Incl. 24.98328	+0.02538025	-0.00974125
P 2.64	B(1,0) 14.5		

Residuals in seconds of arc

780408 807 0.5-	0.2- 780415 801 0.4+	1.2- 790924 801 0.4+	0.8+
780409 807 1.2-	1.7+ 780503 801 0.9-	0.5+ 791121 801 0.5-	0.9-
780414 801 0.6+	0.3- 790918 801 1.0+	0.5+ 790924 801 0.4+	0.8+

1979 VA

Epoch 1979 Dec. 13.0 ET = JDE 2444220.5

M 15.87771	(1950.0)	P	Q
n 0.23189849	Peri. 89.34996	+0.99862451	-0.01992593
a 2.6238405	Node 271.79102	-0.00106985	+0.91703564
e 0.6265278	Incl. 2.78118	+0.05242087	+0.39830715
P 4.25	B(1,0) 17.3		

From 30 observations 1979 Nov. 15-Dec. 17.

1979 XB

Epoch 1979 Dec. 13.0 ET = JDE 2444220.5

M 346.38008	(1950.0)	P	Q
n 0.28962630	Peri. 75.50605	-0.85530163	-0.30463461
a 2.2624416	Node 85.36106	+0.13205866	-0.91035305
e 0.7132964	Incl. 24.86565	+0.50101860	-0.28009832
P 3.40	B(1,0) 20.0		

From 18 observations 1979 Dec. 11-15.

* * * *

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

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

(2193)* 1926 KB = 1931 GL = 1942 GG = 1950 WB = 1953 JM = 1965 PC
= 1966 UT = 1972 XX = 1977 VH

Discovered 1926 May 18 by H. E. Wood at Johannesburg. The key identification 1926 KB = 1931 GL is by A. Patry (J. Obs. 35, 163). The identification 1926 KB = 1942 GG was found independently by L. Oterma.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 342.83101	(1950.0)	P	Q
n 0.17986411	Peri. 216.66715	-0.29308151	+0.94834829
a 3.1081815	Node 36.73535	-0.82184553	-0.18500750
e 0.0617535	Incl. 11.71097	-0.48854186	-0.25769698
P 5.48	B(1,0) 11.5		

Residuals in seconds of arc

260518 078(14.0- 5.9-)Y	420415 078(39.9+ 15.0-)X	661020 095	3.3+	5.2+
260519 078 0.9+ 4.2+ Y	420417 062 0.3- 0.4+	721202 095	3.6-	0.1-
260520 078 (3.7- 17.4-)Y	420417 062 0.6- 0.2-	721206 095	4.6+	2.3+
260602 078(10.5+ 24.8-)Y	420421 078(56.5- 18.9-)X	771010 330	1.2-	2.1-
260603 078(19.5+ 64.1-)Y	420506 078 (0.2- 94.8-)X	771021 330	3.7+	1.3-
260608 078(22.3+ 4.9-)Y	420519 078(46.0- 88.1-)X	771103 330	0.9-	0.5-
310409 690 4.0+ 1.4-	501116 711 3.6+ 1.1- Y	771111 805	0.7+	0.9+
310411 690 5.2- 3.3-	501203 711 6.6- 0.7- Y	771112 805	1.3-	0.1+
420319 062 0.4+ 0.1-	530515 210 (1.1+ 28.0+)X	771112 330	3.3-	0.3-
420414 062 0.1- 0.9+	650803 822 0.4+ 2.3-	771114 805	0.4-	0.4+
420414 062 0.0 0.9+	650803 822 0.2+ 0.5-			

(2194)* 1940 GE = 1965 JC = 1973 QB1 = 1977 VP

Discovered 1940 Apr. 3 by Y. Vaisala at Turku.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 211.55602	(1950.0)	P	Q
n 0.27748439	Peri. 101.74385	-0.84514397	-0.52349129
a 2.3279680	Node 46.79970	+0.41418978	-0.76918327
e 0.0417429	Incl. 8.52906	+0.33790309	-0.36648869
P 3.55	B(1,0) 13.5		

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

400403 062 0.7+ 1.1-	650503 760 0.6+ 2.2+	771103 330	1.0-	0.1+
400404 062 0.1- 0.8-	650503 760 5.1+ 0.9+	771111 805	0.8-	0.4+
400412 062 0.8- 1.1+	730828 095 0.4+ 0.5-	771112 805	0.3-	0.2+
400428 062 1.0- 1.5-	730901 095(0.00- 0.04+)	771112 330	0.8-	0.7+
650502 760 1.7- 0.2+	771010 330 0.8+ 0.1-	771114 805	1.0-	0.6+
650502 760 2.3- 0.0	771021 330 2.3+ 0.9-			

(2195)* 1941 SP1 = 1931 TC3 = 1934 PQ = 1936 DF = 1943 GT = 1944 QD
= 1951 VA = 1973 GC1 = 1974 RC2 = 1976 GO4

Discovered 1941 Sept. 27 by L. Oterma at Turku.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 290.51273	(1950.0)	P	Q
n 0.29762458	Peri. 294.74438	+0.81272350	-0.57735043
a 2.2217244	Node 100.61207	+0.55922018	+0.73517296
e 0.1060447	Incl. 4.57518	+0.16356434	+0.35522838
P 3.31	B(1,0) 13.5		

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

311010 690 1.0+	4.0-	410930 062 0.9+	0.4+	440825 078(39.6-	6.3-)X
311012 690 2.3-	1.2-	411027 062 0.5-	4.2+	440905 078(0.02-	0.04+)X
311014 690(28.5-	0.8-)	411112 062 0.8-	1.3+	511101 020(0.06+	0.04+)X
340807 078 (6.0-	1.1-)X	430403 062 0.1-	2.7-	511103 711 2.2+	1.8+ Y
360220 024 2.1-	1.1-	430403 062 1.9-	2.5+	730401 095 4.8+	4.6+
360311 024 0.6-	0.1+	430407 062 0.3-	4.9-	740913 026 3.9-	1.5+
410927 062 0.1-	1.5+	440816 078(47.7+ 54.6+)X		760402 095 2.6+	8.5+
410930 062 0.9+	0.4+				

(2196)* 1965 BC = A906 VJ = 1948 LD = 1951 YD2 = 1954 JN = 1954 KN
= 1966 FC = 1969 TM5 = 1972 FL = 1976 UH4

Discovered 1965 Jan. 29 at the Goethe Link Observatory, Indiana University. The double designation 1954 JN = 1954 KN was found by O. Kippes (MPC 1746).

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 125.40158	(1950.0)	P	Q
n 0.15500818	Peri. 322.36612	-0.99046846	-0.09898065
a 3.4321504	Node 212.34741	+0.12037663	-0.96002761
e 0.0634189	Incl. 10.31286	-0.06694547	-0.26182017
P 6.36	B(1,0) 11.0		

Residuals in seconds of arc

061115 803(46.4- 99.8+)Y	540510 760 1.2-	0.2-	650131 760 0.2-	0.4-
061120 803(23.8- 88.4+)Y	540525 024 (2.0-	1.4-)	660318 760 1.2+	1.8+
061124 803(15.2- 21.2-)Y	650101 330 0.3+	0.8+	660318 760 0.7+	0.5+
061126 786(12.3- 0.6+)	650110 330 1.4-	0.1+	691015 095 4.0-	4.4+
480611 078 (7.5- 44.6-)X	650129 760 4.2-	0.1+	691017 095 1.9+	0.2+
511228 711 4.2+ 1.0- Y	650129 760 2.2-	0.5+	720318 095 2.9+	0.4+
540510 760 1.0- 0.0	650131 760 0.4+	0.4-	761028 095 1.7+	1.1-

(2197)* 1965 YN = 1955 DA = 1964 UN = 1975 SD

Discovered 1965 Dec. 30 at the Purple Mountain Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 242.41477	(1950.0)	P	Q
n 0.17564022	Peri. 57.10761	-0.41240715	-0.91024495
a 3.1578154	Node 57.29169	+0.82037471	-0.38876885
e 0.1236209	Incl. 2.52530	+0.39611320	-0.14252336
P 5.61	B(1,0) 11.5		

Residuals in seconds of arc

550117 388 (0.6- 10.6-)	651230 330 1.0+	1.0-	751004 688 0.7-	0.2-
550223 760 0.5+ 0.1+	660120 330 1.4-	0.9+	751010 688 0.3+	0.1-
550223 760 0.2- 1.5+	660128 330 0.1+	1.7-	751011 688 1.6+	0.2+
641030 330 1.4- 2.9+	750928 688 0.0	2.4-		

(2198)* 1975 VF

Discovered 1975 Nov. 7 at the Harvard College Observatory, Agassiz Station.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 78.53458	(1950.0)	P	Q
n 0.23595494	Peri. 179.57334	+0.73828034	-0.67311947
a 2.5936816	Node 222.84067	+0.61861802	+0.70116952
e 0.1970135	Incl. 3.62899	+0.26880082	+0.23509886
P 4.18	B(1,0) 15.7		

Residuals in seconds of arc

751027	675	0.6-	1.5-	751110	801	0.6+	0.9+	790823	801	0.5+	2.0+
751028	675	0.7-	0.3-	751230	801	0.2+	0.2+	790916	801	1.3-	0.5+
751030	675	0.7+	0.1-	770218	801	0.7+	0.9+	791023	801	0.5+	1.6+
751107	801	0.2+	0.3-	770219	801	1.4+	0.8+	791120	801	1.4-	0.4-
751109	801	0.3+	0.0	770320	801	0.8-	1.9+				

(2199)* 1978 LA = 1975 RU

Discovered 1978 June 6 by A. Mrkos at the Klet Observatory. The identification is by E. Bowell (MPC 4781).

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	240.16237	(1950.0)	P	Q
n	0.29369245	Peri.	141.75887	+0.31865184
a	2.2415110	Node	146.61297	-0.90090727
e	0.2013998	Incl.	8.18454	-0.29466435
P	3.36	B(1,0)	14.5	+0.02016632

Residuals in seconds of arc

750903	095	1.1-	1.7-	780609	046	3.0-	0.5-	780710	046	3.2+	1.2-
750906	095	1.0+	2.0+	780611	046	0.6-	1.3-	780710	046	0.2+	1.0-
780606	046	0.3+	0.2-	780611	046	0.3+	1.2-	790831	801	0.2+	0.5-
780606	046	1.9+	0.6-	780629	046	0.9-	0.8-	790918	801	1.2+	0.5-
780608	046	0.3-	1.4+	780629	046	2.6-	0.5+	791121	801	0.6-	1.4-
780609	046	0.2-	0.3-	780630	046	0.7-	0.1+				
780609	046	2.5+	3.0+	780630	046	0.4-	0.1+				

(2200)* 6090 P-L = 1966 DJ = 1977 AT1

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels. The key identification 6090 P-L = 1977 AT1 was found independently by E. Bowell and C. M. Bardwell (MPC 4664).

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	313.90459	(1950.0)	P	Q
n	0.26411154	Peri.	209.76889	-0.96573134
a	2.4059013	Node	345.18384	-0.21948655
e	0.1460711	Incl.	4.59278	-0.13852307
P	3.73	B(1,0)	13.9	-0.44710417

Residuals in seconds of arc

600924	675	0.1+	0.3+	601026	675	0.4-	0.8-	770113	095	1.4-	0.9-
600925	675	0.8+	0.2+	660130	330	1.9+	0.5+	770120	095	0.9+	1.7-
600926	675	1.3+	0.3-	660214	330	0.5-	0.4+	791023	801	1.2-	1.9+
601017	675	0.6-	0.4+	660218	760	0.9-	1.0+	791120	801	0.5+	0.1-
601022	675	0.8-	0.1-	660218	760	0.3+	0.7+				
601024	675	0.1+	0.6-	660224	330	0.3+	0.9-				

1978 VQ4 = 1968 US1 = 1977 JG

The key identification 1978 VQ4 = 1977 JG is by J. G. Williams.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	333.21260	(1950.0)	P	Q
n	0.29887179	Peri.	77.50045	+0.56242091
a	2.2155436	Node	226.84946	-0.78365942
e	0.1622057	Incl.	4.10191	-0.26374348
P	3.30	B(1,0)	15.0	+0.23885685

Residuals in seconds of arc

681023	095	0.4+	0.3+	781106	675	0.1+	0.9-	781129	675	2.5+	1.8+
770515	095	0.5+	1.1-	781107	675	0.1-	0.5+	781130	675	1.9-	0.4+
770523	095	1.6-	0.1-	781108	675	0.4-	0.5-	781130	675	4.0+	1.9+
781105	675	0.5-	0.6-	781129	675	2.4-	0.0				

EPHEMERIDES.

1975 VD				Elements MPC				5033
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1979	12 13	08 09.82	+28 29.6	1.586	2.429	-1.55	+5.7	19.3
1979	12 23	08 01.65	+29 08.3					
1980	01 02	07 50.73	+29 43.5	1.519	2.478	-1.74	+5.2	19.0
1980	01 12	07 38.31	+30 08.9					
1980	01 22	07 25.93	+30 20.3	1.561	2.525	-1.74	+3.7	19.1
1980	02 01	07 15.19	+30 16.9					
1980	02 11	07 07.17	+30 01.3	1.712	2.570	-1.57	+2.4	19.5
1980	02 21	07 02.45	+29 36.8					
1980	03 02	07 01.13	+29 07.0	1.947	2.611	-1.33	+1.9	20.0
1980	03 12	07 02.94	+28 34.0					
1980	03 22	07 07.51	+27 58.7	2.230	2.650	-1.11	+1.8	20.4
1980	04 01	07 14.41	+27 21.4					
1980	04 11	07 23.21	+26 41.9	2.532	2.686	-0.95	+2.0	20.7
1980	04 21	07 33.55	+25 59.5					
1980	05 01	07 45.10	+25 13.9	2.831	2.719	-0.82	+2.3	20.9
 1976 GC8								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elements MPC	5128	
1979	12 13	09 51.56	+16 23.6	2.341	2.903	Elong.	Phase	Mag.
1979	12 23	09 52.39	+16 31.8			115.4	17.8	17.8
1980	01 02	09 50.73	+16 52.5	2.111	2.900	136.1	13.6	17.4
1980	01 12	09 46.58	+17 24.5					
1980	01 22	09 40.16	+18 05.0	1.956	2.896	159.0	7.0	17.1
1980	02 01	09 32.03	+18 49.6					
1980	02 11	09 23.04	+19 32.7	1.908	2.892	174.4	1.9	16.8
1980	02 21	09 14.17	+20 09.5					
1980	03 02	09 06.45	+20 36.2	1.977	2.887	151.6	9.4	17.2
1980	03 12	09 00.65	+20 51.0					
1980	03 22	08 57.24	+20 53.7	2.142	2.882	129.6	15.4	17.5
1980	04 01	08 56.40	+20 45.1					
1980	04 11	08 58.05	+20 26.3	2.370	2.876	110.3	19.1	17.8
1980	04 21	09 02.00	+19 58.2					
1980	05 01	09 07.95	+19 21.9	2.629	2.869	93.3	20.5	18.1
1980	05 11	09 15.62	+18 37.9					
1980	05 21	09 24.72	+17 46.9	2.891	2.862	78.3	20.3	18.3
 (2191) 1977 PA1								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elements MPC	5127	
1979	12 13	10 23.61	-00 27.6	2.551	2.918	Elong.	Phase	Mag.
1979	12 23	10 26.32	-01 25.9			101.9	19.3	17.2
1980	01 02	10 26.87	-02 12.5	2.311	2.934	120.4	16.8	16.9
1980	01 12	10 25.17	-02 44.9					
1980	01 22	10 21.25	-03 01.0	2.122	2.951	140.7	12.2	16.7
1980	02 01	10 15.40	-02 59.3					
1980	02 11	10 08.14	-02 40.1	2.017	2.967	160.8	6.3	16.4
1980	02 21	10 00.20	-02 05.4					
1980	03 02	09 52.46	-01 19.5	2.022	2.984	163.1	5.5	16.4
1980	03 12	09 45.76	-00 27.5					
1980	03 22	09 40.72	+00 24.9	2.136	3.001	144.2	11.2	16.7
1980	04 01	09 37.79	+01 12.8					
1980	04 11	09 37.10	+01 52.9	2.338	3.018	124.3	15.9	17.0
1980	04 21	09 38.60	+02 22.8					
1980	05 01	09 42.16	+02 41.5	2.595	3.035	106.2	18.6	17.3
1980	05 11	09 47.51	+02 48.7					
1980	05 21	09 54.44	+02 44.8	2.877	3.051	90.1	19.4	17.6

M. P. C. 5135

1980 JAN. 1

1978 VT		Elements MPC 5128						
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1979	12 13	11 23.78	+06 24.7	2.517	2.715	90.8	21.3	17.5
1979	12 23	11 30.38	+05 40.8					
1980	01 02	11 35.02	+05 08.7	2.257	2.727	108.1	20.0	17.2
1980	01 12	11 37.45	+04 49.8					
1980	01 22	11 37.45	+04 45.2	2.023	2.739	127.7	16.5	16.9
1980	02 01	11 34.89	+04 55.3					
1980	02 11	11 29.87	+05 19.0	1.850	2.749	150.0	10.4	16.6
1980	02 21	11 22.72	+05 53.6					
1980	03 02	11 14.13	+06 34.7	1.771	2.759	174.1	2.1	16.1
1980	03 12	11 05.03	+07 16.5					
1980	03 22	10 56.42	+07 53.5	1.806	2.768	161.2	6.7	16.4
1980	04 01	10 49.24	+08 20.7					
1980	04 11	10 44.12	+08 35.6	1.946	2.776	138.4	13.9	16.8
1980	04 21	10 41.39	+08 37.0					
1980	05 01	10 41.12	+08 25.0	2.161	2.783	118.3	18.6	17.1
1980	05 11	10 43.16	+08 00.5					
1980	05 21	10 47.28	+07 24.6	2.417	2.789	100.7	20.9	17.4
1978 VQ4		Elements MPC 5133						
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980	01 02	11 58.30	-04 38.9	2.144	2.492	98.8	22.9	19.2
1980	01 12	12 03.90	-05 29.2					
1980	01 22	12 07.28	-06 05.4	1.868	2.470	116.5	20.9	18.8
1980	02 01	12 08.13	-06 24.9					
1980	02 11	12 06.23	-06 25.2	1.630	2.445	136.7	16.1	18.4
1980	02 21	12 01.52	-06 04.3					
1980	03 02	11 54.31	-05 21.9	1.463	2.417	159.6	8.2	17.9
1980	03 12	11 45.26	-04 20.8					
1980	03 22	11 35.44	-03 06.9	1.396	2.388	172.4	3.2	17.6
1980	04 01	11 26.14	-01 49.0					
1980	04 11	11 18.49	-00 36.1	1.437	2.356	149.5	12.5	17.9
1980	04 21	11 13.32	+00 24.3					
1980	05 01	11 11.08	+01 07.4	1.564	2.323	127.9	20.0	18.3
1980	05 11	11 11.79	+01 31.4					
1980	05 21	11 15.30	+01 36.4	1.743	2.288	109.4	24.7	18.6
1980	05 31	11 21.31	+01 23.4					
1980	06 10	11 29.48	+00 54.3	1.944	2.252	93.8	26.7	18.8
(2193) 1926 KB		Elements MPC 5131						
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980	01 02	12 29.61	+07 50.9	2.822	3.093	96.6	18.4	16.6
1980	01 12	12 34.66	+07 35.4					
1980	01 22	12 37.83	+07 31.6	2.539	3.081	114.6	16.9	16.4
1980	02 01	12 38.92	+07 39.6					
1980	02 11	12 37.77	+07 58.3	2.296	3.069	134.4	13.3	16.0
1980	02 21	12 34.36	+08 26.0					
1980	03 02	12 28.85	+08 59.1	2.127	3.057	155.6	7.7	15.7
1980	03 12	12 21.67	+09 33.0					
1980	03 22	12 13.47	+10 02.5	2.061	3.045	169.3	3.5	15.5
1980	04 01	12 05.08	+10 22.7					
1980	04 11	11 57.35	+10 30.0	2.108	3.034	152.8	8.7	15.7
1980	04 21	11 50.99	+10 22.6					
1980	05 01	11 46.52	+10 00.2	2.253	3.023	132.1	14.3	16.0
1980	05 11	11 44.16	+09 23.9					
1980	05 21	11 43.97	+08 35.3	2.467	3.012	113.1	18.0	16.3
1980	05 31	11 45.85	+07 36.2					
1980	06 10	11 49.60	+06 28.1	2.717	3.001	96.2	19.7	16.5

1964 XA		Elements MPC 5130						
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1980 03 02	15	43.81	-23 16.8	1.731	2.168	-1.03 +12.0	18.0	
1980 03 12	15	47.27	-25 14.7					
1980 03 22	15	47.16	-27 11.1	1.564	2.238	-1.25 +12.3	17.7	
1980 04 01	15	43.12	-29 03.2					
1980 04 11	15	35.02	-30 46.1	1.442	2.306	-1.50 +13.2	17.5	
1980 04 21	15	23.22	-32 12.7					
1980 05 01	15	08.81	-33 16.1	1.402	2.373	-1.65 +14.5	17.3	
1980 05 11	14	53.41	-33 52.4					
1980 05 21	14	38.90	-34 03.0	1.466	2.438	-1.56 +15.3	17.5	
1980 05 31	14	26.89	-33 54.8					
1980 06 10	14	18.27	-33 36.7	1.631	2.501	-1.33 +14.6	17.9	
1980 06 20	14	13.39	-33 16.9					
1980 06 30	14	12.10	-33 01.5	1.870	2.561	-1.10 +12.8	18.4	
1980 07 10	14	14.02	-32 53.6					
1980 07 20	14	18.74	-32 54.6	2.154	2.618	-0.93 +10.8	18.8	
1980 07 30	14	25.84	-33 04.5					
1980 08 09	14	34.94	-33 22.2	2.457	2.671	-0.82 +8.9	19.1	
(2190) 1976 GV3		Elements MPC 5127						
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 03 02	15	43.96	-20 34.3	1.808	2.246	102.7	25.5	17.1
1980 03 12	15	52.39	-21 01.4					
1980 03 22	15	58.19	-21 19.1	1.582	2.244	119.3	22.8	16.8
1980 04 01	16	00.98	-21 27.3					
1980 04 11	16	00.52	-21 25.8	1.395	2.246	138.5	17.2	16.4
1980 04 21	15	56.77	-21 13.9					
1980 05 01	15	50.13	-20 52.0	1.274	2.249	160.5	8.6	16.0
1980 05 11	15	41.43	-20 21.3					
1980 05 21	15	31.90	-19 44.9	1.243	2.254	175.7	1.9	15.6
1980 05 31	15	22.98	-19 07.8					
1980 06 10	15	15.86	-18 35.5	1.311	2.261	152.7	11.9	16.1
1980 06 20	15	11.38	-18 12.4					
1980 06 30	15	09.94	-18 01.4	1.460	2.271	132.1	19.4	16.5
1980 07 10	15	11.53	-18 02.7					
1980 07 20	15	15.98	-18 15.7	1.665	2.282	114.5	23.9	16.9
1980 07 30	15	23.01	-18 38.3					
1980 08 09	15	32.29	-19 08.1	1.901	2.295	99.3	25.9	17.3
(2195) 1941 SP1		Elements MPC 5131						
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 03 22	17	23.95	-19 29.7	2.063	2.436	99.6	23.8	17.6
1980 04 01	17	31.23	-19 32.1					
1980 04 11	17	36.01	-19 32.5	1.807	2.426	116.4	21.7	17.2
1980 04 21	17	37.96	-19 32.3					
1980 05 01	17	36.80	-19 32.4	1.587	2.413	135.7	17.0	16.8
1980 05 11	17	32.45	-19 33.5					
1980 05 21	17	25.09	-19 35.7	1.432	2.399	157.6	9.2	16.4
1980 05 31	17	15.37	-19 38.9					
1980 06 10	17	04.35	-19 42.9	1.370	2.384	176.3	1.6	15.9
1980 06 20	16	53.35	-19 48.1					
1980 06 30	16	43.74	-19 55.8	1.410	2.366	154.1	10.8	16.4
1980 07 10	16	36.55	-20 07.2					
1980 07 20	16	32.41	-20 23.6	1.538	2.347	132.5	18.6	16.7
1980 07 30	16	31.56	-20 45.3					
1980 08 09	16	33.88	-21 11.7	1.725	2.327	113.9	23.5	17.1
1980 08 19	16	39.18	-21 41.6					
1980 08 29	16	47.15	-22 13.6	1.940	2.306	97.8	25.7	17.3