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    Smithsonian Astrophysical Observatory
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TWX 710-320-6842 ASTROGRAM CAM    **          Brian G. Marsden, Director
Telephone 617-864-5758          **          Conrad M. Bardwell, Associate Director
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ERRATA.

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MPC      Line
2492      2          For 1939 RF read 1939 PE ( = 1818)
6045      22         Add 1969 TZ7 to the double designation
6485     -24         Delete the entry 1953 TY = (1446)
6710      2 to 3     For H. Debehogne at the European Southern Observatory
                    read C. S. Shoemaker on plates taken at Palomar by
                    E. Helin and S. J. Bus
    
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CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N Obs.
628	1973 01	08.90536	07 09 11.65	+20 52 18.2	MPC 3914		1 022
628	1973 01	08.92613	07 09 10.36	+20 52 25.2	MPC 3914		1 022
628	1973 01	11.94773	07 06 05.29	+21 10 15.9	MPC 3914		1 022
628	1973 01	11.96849	07 06 04.02	+21 10 23.0	MPC 3914		1 022
628	1973 01	23.86267	06 54 42.08	+22 17 20.4	MPC 3914		1 022
628	1973 01	23.88103	06 54 41.08	+22 17 25.4	MPC 3914		1 022
628	1973 01	26.86521	06 52 10.32	+22 33 02.3	MPC 3914		1 022
628	1973 01	26.88252	06 52 09.37	+22 33 08.5	MPC 3914		1 022
628	1973 01	29.86949	06 49 49.81	+22 48 07.9	MPC 3914		1 022
628	1973 01	29.89027	06 49 48.97	+22 48 14.5	MPC 3914		1 022
628	1973 02	04.85865	06 45 49.14	+23 16 19.8	MPC 3914		1 022
628	1973 02	04.87803	06 45 48.41	+23 16 25.2	MPC 3914		1 022
628	1973 02	07.84215	06 44 10.85	+23 29 23.2	MPC 3914		1 022
628	1973 02	07.86293	06 44 10.15	+23 29 28.7	MPC 3914		1 022
706	1973 09	01.83579	22 59 03.92	+02 31 20.5	MPC 3914		1 022
706	1973 09	01.85310	22 59 02.79	+02 31 24.4	MPC 3914		1 022
706	1973 09	03.94687	22 56 50.29	+02 38 09.0	MPC 3914		1 022
706	1973 09	03.96076	22 56 49.44	+02 38 10.4	MPC 3914		1 022
706	1973 09	06.83944	22 53 46.43	+02 46 31.6	MPC 3914		1 022
706	1973 09	06.85676	22 53 45.32	+02 46 34.5	MPC 3914		1 022
706	1973 09	26.79073	22 34 37.91	+03 21 33.5	MPC 3914		1 022
706	1973 09	26.80596	22 34 37.25	+03 21 34.5	MPC 3914		1 022
706	1973 09	27.84653	22 33 49.70	+03 22 42.5	MPC 3914		1 022
706	1973 09	27.86806	22 33 48.74	+03 22 42.9	MPC 3914		1 022
1935 SC	1935 09	21.84368	00 49 39.85	+08 43 58.8			094
1937 TO	1937 10	11.04110	02 16 16.74	+17 52 51.9			094
1955 RC	1955 09	19.16453	21 10 47.06	-03 52 38.0	MPC 1628	17.1	760
1955 RC	1955 09	19.20689	21 10 46.30	-03 52 50.4	MPC 1628		760
1975 GM *	1975 04	15.18414	12 34 00.98	+02 57 05.8	MPC 4051	16.5	805

Note 1: the observations of (628) and (706) were interchanged.

IDENTIFICATION CHANGES.

Continuation to MPC 6655.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1925 YA *	1925 12 21.8		03 37.7	+23 44	1925 VF	14.0	008
1931 TO4 *	1931 10 14.51909		00 17.6	+04 04	1931 TW	14.5	377
1932 EF1 *	1932 03 12.97		10 47.9	+10 34	1932 CB1		012
1933 RJ *	1933 09 15.92743		21 07 48.75	-13 25 37.4	1933 OB	15	024
1933 WS *	1933 11 19.85149		01 03 57.27	+08 02 02.4	1933 UR		012
1934 RG1 *	1934 09 12.90546		22 50 28.40	-08 00 32.9	1934 RD		012
1948 AJ *	1948 01 08.82983		03 35 59.28	+26 00 19.5	1947 XA		020
1953 PC1 *	1953 08 10.90342		19 29 54.88	-08 26 10.3	1953 NC		020
1953 QU *	1953 08 28.82746		19 19 28.10	-09 15 39.7	1953 NC	15.0	020
1953 QU	1953 08 31.83934		19 18 15.94	-09 23 58.7	1953 NC		020
1953 WB *	1953 11 25.59		00 41.3	+18 52	1953 TH		210
1954 GO *	1954 04 01.92452		11 11 12.34	+06 15 09.0	1954 DE		020
1954 GO	1954 04 03.88031		11 09 34.67	+06 16 16.4	1954 DE		020
1954 KP *	1954 05 22.87457		11 40 27.57	+00 38 49.0	1954 DE	15.0	020
1968 QY1 *	1968 08 23.14979		20 26 00.05	-11 37 17.2	1968 OK1		805
1969 VH3 *	1969 11 03.91593		01 31 27.77	+09 43 58.8	1969 TV6		020
1969 VH3	1969 11 03.93324		01 31 26.91	+09 43 58.8	1969 TV6		020

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

- 046 Klet. Observer Z. Vavrova.
 372 Geisei. Observer T. Seki. From Orient. Astron. Assoc. Comet Bull. No. 231.
 489 Hemingford Abbots. Observer A. Young. Measured by B. Manning.
 494 Stakenbridge. Observer B. Manning. Communicated by G. M. Hurst.
 675 Palomar. 1.2-m Schmidt. Observer J. Gibson.
 707 Chamberlin Observatory field station. Observer E. Everhart.
 801 Oak Ridge Observatory. Observers R. E. McCrosky and G. Schwartz (assisted by C. M. Bardwell and B. G. Marsden).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
Periodic Comet Schwassmann-Wachmann 1						
/1974 II	1982 02 21.97407		11 49 02.68	-07 04 19.2	17.4N	1 046
/1974 II	1982 02 21.98860		11 49 02.42	-07 04 17.8		1 046
Periodic Comet Gunn						
/1976 III	1982 02 27.40519		14 08 45.88	-01 19 26.7		801
/1976 III	1982 03 26.34722		14 02 40.76	-00 18 07.2		707
Periodic Comet Encke						
/1977 XI	1978 09 02.21497		21 53 31.48	-14 20 01.1		2 801
Periodic Comet Giacobini-Zinner						
/1979 III	1978 07 01.17638		15 07 49.72	+14 20 49.3		3 801
Comet Bowell (1980b)						
/1980b	1982 03 22.47951		17 53 29.64	-22 14 16.8		707

Comet Ellas (1981c)

/1981c	1982 01 28.48611	12 30 47.12	-33 20 49.7						707
/1981c	1982 03 24.27083	11 42 29.35	-24 21 55.5						707

Periodic Comet Kearns-Kwee

/1981h	1981 11 27.9934	06 54 11.68	+34 06 59.1			15 T			489
/1981h	1981 11 28.0024	06 54 11.60	+34 06 58.5						489
/1981h	1982 02 26.09896	06 25 59.24	+27 06 55.5						801

Periodic Comet Swift-Gehrels

/1981j	1981 12 22.7538	00 29 36.14	+20 53 06.1						494
/1981j	1981 12 22.7785	00 29 40.87	+20 53 21.5						494

Periodic Comet Vaisala 1

/1981i	1982 02 27.04226	06 17 29.16	+18 26 04.7						801
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Periodic Comet du Toit-Hartley

/1982b	1982 02 24.34396	13 27 20.80	-15 52 34.0						801
/1982b	1982 02 25.79913	13 32 29.5	-16 38 50			17.8T			372
/1982c	1982 02 25.78507	13 36 12.3	-16 58 14			16.2T			372

Periodic Comet Tempel 2

/1982d	1982 02 03.45836	12 03 23.31	+12 08 48.4			20.5N			675
/1982d	1982 03 04.40350	11 47 24.85	+15 30 15.4			20.2N			675
/1982d	1982 03 04.44239	11 47 23.04	+15 30 33.0						675

Note 1: faint, very diffuse coma, ~7' in diameter. 2: very weak image. 3: weak image. 4: very weak, superimposed on a star.

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OBSERVATIONS MADE AT TAUTENBURG BY F. BORNGEN AND M. LIEMEN. REDUCTIONS
BY BORNGEN AND K. KIRSCH. COMMUNICATED BY S. MARX.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
110	1982 01 18.89965	06 36 05.25	+29 50 31.7		13.4	033
110	1982 01 18.92882	06 36 03.61	+29 50 33.1			033
131	1981 12 28.96354	07 31 45.47	+27 00 43.3		14.3	033
131	1981 12 28.98368	07 31 44.23	+27 00 48.5			033
200	1967 04 12.83854	06 13 19.16	+26 40 24.1			033
200	1967 04 12.85208	06 13 20.44	+26 40 21.8			033
200	1967 04 15.81771	06 17 54.42	+26 31 49.1			033
200	1967 04 15.83160	06 17 55.73	+26 31 46.4			033
200	1967 04 28.84097	06 38 41.51	+25 49 57.0			033
200	1967 04 28.85729	06 38 43.14	+25 49 54.0			033
200	1967 04 30.84236	06 41 58.45	+25 42 48.9		16.6	033
200	1967 04 30.85694	06 41 59.90	+25 42 46.0			033
200	1967 05 05.84618	06 50 16.03	+25 24 04.7			033
200	1967 05 05.86146	06 50 17.54	+25 24 00.6			033
311	1962 10 28.04028	05 33 48.14	+22 22 37.2		16.6	033
311	1962 10 30.03819	05 33 22.84	+22 23 36.9			033
311	1962 10 30.12431	05 33 21.45	+22 23 39.4			033
382	1981 12 28.96354	07 36 41.56	+26 13 39.9		14.5	033
382	1981 12 28.98368	07 36 40.51	+26 13 40.8			033
382	1982 01 18.91146	07 17 21.37	+26 21 34.7		14.1	033
382	1982 01 18.93993	07 17 19.79	+26 21 34.9			033
390	1967 04 10.81215	06 15 49.01	+24 51 33.8		17.5	033
390	1967 04 10.82431	06 15 50.21	+24 51 29.8			033
390	1967 04 12.83854	06 19 04.21	+24 42 02.8			033
390	1967 04 12.85208	06 19 05.55	+24 41 59.3			033

554	1982	01	20.03958	10	10	58.51	+09	13	59.2	11.8	033		
554	1982	01	20.06667	10	10	57.39	+09	14	01.9		033		
554	1982	01	21.16389	10	10	13.02	+09	15	54.1		033		
554	1982	01	21.18507	10	10	12.12	+09	15	56.3		033		
696	1967	04	28.84097	06	35	50.45	+23	45	57.3		033		
696	1967	04	28.85729	06	35	51.93	+23	45	53.4		033		
696	1967	04	30.84236	06	38	49.03	+23	37	47.8	17.9	033		
696	1967	04	30.85694	06	38	50.33	+23	37	44.1		033		
882	1962	12	03.97708	05	33	09.98	+23	18	24.8		033		
882	1962	12	04.06476	05	33	04.97	+23	18	08.0		033		
882	1962	12	04.95920	05	32	15.78	+23	15	21.2	13.8	033		
882	1962	12	05.04515	05	32	10.82	+23	15	05.6		033		
882	1962	12	05.07500	05	32	09.21	+23	14	59.9		033		
925	1982	01	18.89965	06	43	52.98	+30	50	54.6	13.2	033		
925	1982	01	18.92882	06	43	50.99	+30	50	39.4		033		
1122	1962	10	11.11076	05	32	19.87	+22	24	48.3	13.9	033		
1142	1962	12	03.97708	05	31	42.31	+20	46	49.1		033		
1142	1962	12	04.06476	05	31	37.96	+20	46	46.3		033		
1142	1962	12	04.95920	05	30	54.27	+20	46	18.2	16.2	033		
1142	1962	12	05.04515	05	30	49.89	+20	46	15.6		033		
1142	1962	12	05.07500	05	30	48.46	+20	46	14.8		033		
1216	1982	01	20.02257	10	11	53.60	+14	50	23.2	16.4	033		
1216	1982	01	20.05278	10	11	52.52	+14	50	36.0		033		
1223	1982	01	20.02257	10	12	59.15	+14	58	31.9	14.9	033		
1223	1982	01	20.05278	10	12	58.11	+14	58	38.9		033		
1396	1981	12	28.95243	07	09	56.01	+29	33	06.0	16.4	033		
1396	1981	12	28.97326	07	09	54.44	+29	33	08.6		033		
1396	1982	01	18.89965	06	44	22.54	+29	52	25.3	16.4	033		
1396	1982	01	18.92882	06	44	20.72	+29	52	23.2		033		
1517	1981	12	28.96354	07	39	47.76	+27	00	54.9	16	033		
1517	1981	12	28.98368	07	39	46.68	+27	00	59.7		033		
1517	1982	01	18.91146	07	18	54.66	+28	10	59.5	15.2	033		
1517	1982	01	18.93993	07	18	52.93	+28	11	03.7		033		
1937	1962	12	03.97708	05	31	10.29	+23	15	04.0		033		
1937	1962	12	04.06476	05	31	04.26	+23	15	22.9		033		
1937	1962	12	04.95920	05	30	02.61	+23	18	45.0	16.5	033		
1937	1962	12	05.04515	05	29	56.37	+23	19	05.0		033		
1937	1962	12	05.07500	05	29	54.38	+23	19	10.9		033		
2588	1962	12	03.97708	05	37	20.55	+22	17	28.0		033		
2588	1962	12	04.95920	05	36	16.56	+22	15	52.0	18.0	033		
1962	XP1	*	1962	12	04.95920	05	27	55.53	+23	19	11.5	033	
1962	XQ1	*	1962	12	04.95920	05	28	02.04	+22	42	14.3	033	
1962	XR1		1962	12	03.97708	05	30	10.15	+21	03	27.1	033	
1962	XR1	*	1962	12	04.95920	05	29	11.11	+21	05	01.5	18.3	033
1962	XS1	*	1962	12	04.95920	05	31	27.83	+22	41	39.6	18.8	033
1962	XT1		1962	12	03.97708	05	34	23.40	+21	14	12.2		033
1962	XT1	*	1962	12	04.95920	05	33	24.68	+21	14	52.1	18.5	033
1962	XU1	*	1962	12	04.95920	05	34	37.27	+23	08	53.8	19.0	033
1962	XV1	*	1962	12	04.95920	05	36	51.39	+22	15	58.1	18.5	033
1962	XV1		1962	12	05.07500	05	36	45.02	+22	16	00.5		033
1962	XW1		1962	12	03.97708	05	38	26.49	+20	52	28.9		033
1962	XW1	*	1962	12	04.95920	05	37	21.88	+20	53	55.4	17.5	033
1962	XW1		1962	12	05.07500	05	37	14.14	+20	54	05.3		033
1979	MS8		1982	01	20.03958	10	19	28.98	+08	43	20.3	18.5	033
1979	MS8		1982	01	20.06667	10	19	28.04	+08	43	24.2		033
1981	YK1	*	1981	12	28.95243	07	03	22.76	+27	46	27.5	16.8	033
1981	YK1		1981	12	28.97326	07	03	21.62	+27	46	36.3		033
1981	YL1	*	1981	12	28.95243	07	05	16.60	+27	15	56.8	17.7	033
1981	YL1		1981	12	28.97326	07	05	15.19	+27	16	01.6		033

1981	YM1	*	1981	12	28.96354	07	42	52.18	+25	28	27.9	17.0	033
1981	YM1		1981	12	28.98368	07	42	50.86	+25	28	28.0		033
1982	BP3	*	1982	01	18.85972	01	30	15.15	+31	22	32.7		033
1982	BP3		1982	01	18.87326	01	30	16.39	+31	22	34.8	18.1	033
1982	BE3		1982	01	18.88438	01	30	17.14	+31	22	36.5		033
1982	BE3		1982	01	19.82500	01	31	36.88	+31	25	34.5		033
1982	BF3		1982	01	19.84028	01	31	38.18	+31	25	37.0		033
1982	BG3	*	1982	01	18.89965	06	35	56.72	+29	52	20.0	17.8	033
1982	BG3		1982	01	18.92882	06	35	55.09	+29	52	18.0		033
1982	BH3	*	1982	01	18.89965	06	37	10.90	+29	42	28.3	18.0	033
1982	BH3		1982	01	18.92882	06	37	09.12	+29	42	20.3		033
1982	BJ3	*	1982	01	18.89965	06	42	51.53	+30	41	30.1	16.0	033
1982	BJ3		1982	01	18.92882	06	42	49.70	+30	41	21.0		033
1982	BK3	*	1982	01	18.91146	07	11	03.80	+27	44	53.9		033
1982	BK3		1982	01	18.93993	07	11	01.68	+27	44	55.8	18.3	033
1982	BL3	*	1982	01	18.91146	07	12	35.39	+25	47	41.0		033
1982	BL3		1982	01	18.93993	07	12	33.62	+25	47	46.5	17.7	033
1982	BM3	*	1982	01	18.91146	07	16	48.19	+27	05	00.2		033
1982	BM3		1982	01	18.93993	07	16	46.54	+27	04	59.1	17.5	033
1982	BN3	*	1982	01	20.02257	10	03	17.22	+16	37	38.1	15.7	033
1982	BN3		1982	01	20.05278	10	03	16.90	+16	37	47.2		033
1982	BO3	*	1982	01	20.02257	10	04	16.73	+15	06	41.1	17.4	033
1982	BO3		1982	01	20.05278	10	04	14.60	+15	06	26.5		033
1982	BP3	*	1982	01	20.02257	10	05	12.22	+14	53	40.1	17.9	033
1982	BP3		1982	01	20.05278	10	05	11.23	+14	53	47.0		033
1982	BQ3	*	1982	01	20.02257	10	06	15.38	+14	54	28.3	17.8	033
1982	BQ3		1982	01	20.05278	10	06	14.47	+14	54	40.2		033
1982	BR3	*	1982	01	20.02257	10	06	24.19	+15	34	33.3	15.8	033
1982	BR3		1982	01	20.05278	10	06	23.08	+15	34	46.1		033
1982	BS3	*	1982	01	20.02257	10	07	08.71	+14	44	44.5	18.0	033
1982	BS3		1982	01	20.05278	10	07	07.80	+14	44	53.9		033
1982	BT3	*	1982	01	20.02257	10	08	40.95	+16	47	30.1	18.5	033
1982	BT3		1982	01	20.05278	10	08	39.67	+16	47	39.0		033
1982	BU3	*	1982	01	20.03958	10	11	54.81	+08	35	07.4	17.6	033
1982	BU3		1982	01	20.06667	10	11	54.17	+08	35	20.6		033
1982	BU3		1982	01	21.16389	10	11	29.08	+08	44	21.2		033
1982	BU3		1982	01	21.18507	10	11	28.58	+08	44	30.6		033
1982	BV3	*	1982	01	20.03958	10	13	50.87	+07	47	52.4	18.6	033
1982	BV3		1982	01	20.06667	10	13	49.87	+07	47	59.2		033
1982	BW3	*	1982	01	20.03958	10	16	53.77	+08	16	12.0	19.3	033
1982	BW3		1982	01	20.06667	10	16	53.03	+08	16	18.7		033
1982	BX3	*	1982	01	20.03958	10	17	09.04	+07	32	46.9	18.5	033
1982	BX3		1982	01	20.06667	10	17	08.24	+07	32	53.0		033
1982	BY3	*	1982	01	20.03958	10	17	51.09	+08	18	20.6	17.9	033
1982	BY3		1982	01	20.06667	10	17	49.98	+08	18	19.4		033
1982	BY3		1982	01	21.16389	10	17	03.43	+08	18	05.9		033
1982	BY3		1982	01	21.18507	10	17	02.55	+08	18	05.4		033
1982	BZ3	*	1982	01	20.03958	10	18	35.48	+08	01	09.9	18.6	033
1982	BZ3		1982	01	20.06667	10	18	34.55	+08	01	14.3		033

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

Object	Date	UT	R. A. (1950)		Decl.	Mag.	N	Obs.
282	1982	02	13.80725	09 02	40.93	+15 01	34.9	046
282	1982	02	13.82137	09 02	40.07	+15 01	44.0	046
336	1982	02	13.87484	10 02	17.21	+01 40	28.8	046
336	1982	02	13.88907	10 02	16.27	+01 40	32.2	046
427	1982	02	13.80725	09 06	18.96	+13 59	00.2	046
427	1982	02	13.82137	09 06	18.30	+13 59	03.3	046
431	1982	02	12.78838	08 47	16.08	+18 37	03.0	046

431	1982	02	12.80262	08	47	15.43	+18	37	06.7	046
727	1982	02	12.78838	08	44	53.83	+18	45	21.6	046
727	1982	02	12.80262	08	44	53.09	+18	45	29.6	046
767	1982	02	16.94735	10	33	48.26	+12	27	34.4	046
767	1982	02	16.96153	10	33	47.57	+12	27	37.8	046
825	1982	01	18.94205	08	05	01.05	+22	12	30.5	046
825	1982	01	19.88846	08	03	56.22	+22	17	27.2	046
884	1982	02	12.82160	08	55	44.50	+14	46	42.1	046
884	1982	02	12.83572	08	55	44.01	+14	46	42.6	046
884	1982	02	13.77403	08	55	14.79	+14	48	06.5	046
884	1982	02	13.78821	08	55	14.30	+14	48	05.2	046
884	1982	02	14.77160	08	54	43.96	+14	49	31.9	046
884	1982	02	14.78572	08	54	43.44	+14	49	32.8	046
1049	1982	02	16.87796	10	00	27.40	+19	04	29.6	046
1049	1982	02	16.89214	10	00	26.70	+19	04	30.4	046
1073	1982	01	19.87405	08	07	10.21	+22	27	31.5	046
1073	1982	01	19.88846	08	07	09.44	+22	27	32.0	046
1423	1982	02	16.94735	10	36	07.30	+13	27	31.8	046
1423	1982	02	16.96153	10	36	06.63	+13	27	36.1	046
1428	1982	01	20.93794	08	53	59.40	+22	40	37.8	046
1428	1982	01	20.95218	08	53	58.65	+22	40	45.1	046
1493	1982	02	14.94058	10	18	30.96	+10	32	50.1	046
1493	1982	02	14.95481	10	18	30.22	+10	32	52.7	046
1493	1982	02	16.98317	10	16	34.22	+10	42	16.4	046
1493	1982	02	16.99741	10	16	33.18	+10	42	21.4	046
1627	1982	02	14.90644	10	15	36.81	+14	57	32.0	046
1627	1982	02	14.92061	10	15	35.70	+14	57	41.0	046
1627	1982	02	16.91315	10	13	08.52	+15	18	31.1	046
1627	1982	02	16.92733	10	13	07.49	+15	18	40.1	046
1629	1982	01	21.86115	08	05	50.34	+16	44	57.7	046
1768	1982	01	19.99801	08	54	10.78	+22	43	15.0	046
1768	1982	02	12.75256	08	29	00.30	+23	52	03.1	046
1768	1982	02	12.76674	08	28	59.53	+23	52	03.8	046
1780	1982	01	21.98453	08	42	52.16	+14	32	09.9	046
1850	1982	01	16.82955	07	51	00.82	+25	59	46.0	046
1850	1982	01	16.84367	07	51	00.00	+25	59	47.3	046
1937	1982	02	13.84052	10	01	33.01	+30	44	58.9	046
1937	1982	02	13.85464	10	01	32.06	+30	45	05.8	046
1937	1982	02	14.83850	10	00	29.43	+30	51	56.5	046
1937	1982	02	14.85262	10	00	28.40	+30	52	02.5	046
2244	1982	02	12.75256	08	26	51.74	+24	14	02.5	046
2244	1982	02	12.76674	08	26	51.10	+24	14	06.7	046
2345	1982	01	27.99499	08	12	38.60	+20	09	45.1	046
2395	1982	01	19.87405	08	03	28.55	+20	34	18.8	046
2491	1982	02	13.84052	09	58	36.60	+30	02	00.7	046
2491	1982	02	13.85464	09	58	35.67	+30	02	22.9	046
2491	1982	02	14.83850	09	57	35.22	+30	27	55.8	046
2491	1982	02	14.85262	09	57	34.34	+30	28	16.5	046
2563	1982	02	12.78838	08	44	06.71	+19	09	54.2	046
2563	1982	02	12.80262	08	44	06.12	+19	09	56.4	046
2567	1982	02	13.80725	09	04	17.11	+15	30	01.2	046
2567	1982	02	13.82137	09	04	16.33	+15	30	05.6	046
2567	1982	02	14.80534	09	03	27.53	+15	36	04.0	046
2567	1982	02	14.81951	09	03	26.72	+15	36	06.2	046
2580	1982	01	18.94205	08	06	54.91	+20	15	05.2	046
2580	1982	01	18.95640	08	06	53.80	+20	15	08.7	046
2580	1982	01	19.88846	08	05	47.86	+20	19	06.0	046
1975 WO1	1982	02	10.76189	09	12	09.40	+34	05	19.6	046
1975 WO1	1982	02	10.77323	09	12	08.79	+34	05	22.3	046

17.0

1976 JQ2	1982 02	16.94735	10 30	27.68	+12 34	25.5	16.6	046
1976 JQ2	1982 02	16.96153	10 30	26.81	+12 34	31.4		046
1976 JQ2	1982 02	20.94282	10 26	28.03	+13 05	52.0		046
1976 JQ2	1982 02	20.95700	10 26	26.74	+13 06	00.2		046
1976 JQ2	1982 02	21.93584	10 25	27.00	+13 13	39.9		046
1976 JQ2	1982 02	21.95000	10 25	26.03	+13 13	47.7		046
1979 KL	1982 02	12.82160	08 55	24.47	+13 55	35.3	16.5	046
1979 KL	1982 02	12.83572	08 55	23.75	+13 55	42.8		046
1979 KL	1982 02	13.77403	08 54	39.10	+14 02	54.9		046
1979 KL	1982 02	13.78821	08 54	38.42	+14 02	59.8		046
1979 KL	1982 02	14.77160	08 53	52.17	+14 10	31.5		046
1979 KL	1982 02	14.78572	08 53	51.68	+14 10	34.4		046
1980 TN	1982 01	20.93794	08 57	12.65	+21 11	32.3		046
1980 VW	1982 02	13.84052	10 03	05.77	+29 25	29.0	17.0	046
1980 VW	1982 02	13.85464	10 03	05.22	+29 25	33.8		046
1980 VW	1982 02	14.83850	10 02	11.22	+29 29	43.9		046
1980 VW	1982 02	14.85262	10 02	10.57	+29 29	48.0		046
1980 XA	1982 02	13.87484	10 00	57.49	+02 09	51.5	17.0	046
1980 XA	1982 02	13.88907	10 00	56.89	+02 09	51.9		046
1982 BO	1982 01	18.94205	08 09	02.82	+22 06	45.7		046
1982 BO	1982 01	18.95640	08 09	02.06	+22 06	48.1		046
1982 BR	1982 02	13.77403	08 47	20.87	+14 15	40.8	16.8	046
1982 BR	1982 02	14.77160	08 46	25.93	+14 22	25.2		046
1982 BR	1982 02	14.78572	08 46	24.95	+14 22	30.5		046
1982 BR	1982 02	16.80453	08 44	36.48	+14 35	54.1		046
1982 BR	1982 02	16.82212	08 44	35.48	+14 36	03.1		046
1982 BR	1982 02	21.84606	08 40	24.65	+15 08	21.0		046
1982 BR	1982 02	21.86024	08 40	23.92	+15 08	25.5		046
1982 BJ1	1982 02	14.87252	10 04	18.32	+17 19	27.5	15.8	046
1982 BJ1	1982 02	14.88664	10 04	17.69	+17 19	37.3		046
1982 BJ1	1982 02	16.87796	10 02	47.33	+17 45	40.9		046
1982 BJ1	1982 02	16.89214	10 02	46.64	+17 45	50.6		046
1982 BJ1	1982 02	19.85926	10 00	31.38	+18 23	49.6		046
1982 BJ1	1982 02	19.87355	10 00	30.63	+18 24	01.3		046
1982 BL1	1982 02	14.90644	10 13	38.99	+14 38	12.8	17.2	046
1982 BL1	1982 02	14.92061	10 13	38.20	+14 38	19.9		046
1982 BL1	1982 02	16.91315	10 11	42.80	+14 56	19.9		046
1982 BL1	1982 02	16.92733	10 11	42.04	+14 56	29.5		046
1982 BL1	1982 02	19.90596	10 08	47.23	+15 23	02.2		046
1982 BL1	1982 02	19.92054	10 08	46.08	+15 23	12.1		046
1982 BM1	1982 02	14.90644	10 15	48.18	+14 37	45.1	16.8	046
1982 BM1	1982 02	14.92061	10 15	47.49	+14 37	50.0		046
1982 BM1	1982 02	16.91315	10 14	07.26	+14 46	56.4		046
1982 BM1	1982 02	16.92733	10 14	06.47	+14 47	01.7		046
1982 BM1	1982 02	19.90596	10 11	35.22	+15 00	27.5		046
1982 BM1	1982 02	19.92054	10 11	34.56	+15 00	34.7		046
1982 BQ1	1982 02	12.82160	08 50	38.10	+13 18	39.2	16.6	046
1982 BQ1	1982 02	12.83572	08 50	37.29	+13 18	39.4		046
1982 BQ1	1982 02	13.77403	08 49	42.35	+13 17	52.2		046
1982 BQ1	1982 02	13.78821	08 49	41.66	+13 17	51.1		046
1982 BQ1	1982 02	14.77160	08 48	44.97	+13 17	04.4		046
1982 BQ1	1982 02	14.78572	08 48	44.20	+13 17	04.2		046
1982 BQ1	1982 02	16.80453	08 46	51.23	+13 15	21.5		046
1982 BQ1	1982 02	16.82212	08 46	50.04	+13 15	20.0		046
1982 BQ1	1982 02	21.84606	08 42	30.16	+13 10	57.7		046
1982 BQ1	1982 02	21.86024	08 42	29.57	+13 10	54.7		046
1982 BW1	1982 02	14.87252	09 59	09.34	+17 00	21.1	16.8	046
1982 BW1	1982 02	14.88664	09 59	08.52	+17 00	24.1		046
1982 BW1	1982 02	16.87796	09 57	21.85	+17 09	07.7		046

1982	BW1	1982	02	16.89214	09	57	21.10	+17	09	13.0		046
1982	BW1	1982	02	19.85926	09	54	42.10	+17	21	44.7		046
1982	BW1	1982	02	19.87355	09	54	41.34	+17	21	50.4		046
1982	BX1	1982	02	14.87252	09	58	55.01	+18	31	23.0	1	046
1982	BX1	1982	02	14.88664	09	58	54.03	+18	31	27.2	1	046
1982	BX1	1982	02	16.87796	09	56	38.81	+18	41	50.6		046
1982	BX1	1982	02	16.89214	09	56	38.04	+18	41	53.9		046
1982	BX1	1982	02	19.85926	09	53	16.12	+18	56	36.3		046
1982	BX1	1982	02	19.87355	09	53	14.98	+18	56	41.9		046
1982	BY1	1982	02	14.90644	10	17	11.45	+16	48	58.5	16.6	046
1982	BY1	1982	02	14.92061	10	17	10.42	+16	49	03.0		046
1982	BY1	1982	02	16.91315	10	15	19.68	+16	59	42.7		046
1982	BY1	1982	02	16.92733	10	15	18.84	+16	59	46.8		046
1982	BY1	1982	02	19.90596	10	12	30.18	+17	15	07.1		046
1982	BY1	1982	02	19.92054	10	12	29.39	+17	15	11.5		046
1982	BJ2	1982	01	18.94205	08	02	21.87	+20	37	45.8		046
1982	BJ2	1982	01	18.95640	08	02	20.88	+20	37	47.8		046
1982	BO2	1982	01	19.99801	09	02	32.95	+19	57	27.9		046
1982	BO2	1982	01	20.93794	09	01	32.09	+20	03	46.8		046
1982	BO2	1982	01	20.95218	09	01	30.82	+20	03	56.7		046
1982	BP2	1982	01	21.86115	07	57	46.42	+17	06	44.9		046
1982	BQ2	1982	01	20.91769	08	07	36.94	+17	11	13.7	1	046
1982	BQ2	1982	01	21.84691	08	06	39.74	+17	16	54.8		046
1982	BQ2	1982	01	27.95905	08	00	29.20	+17	54	17.3		046
1982	BW2	1982	01	21.02289	08	42	30.87	+13	57	33.7		046
1982	BC3	1982	02	12.85597	09	10	43.99	+14	39	46.3	17.5	046
1982	BC3	1982	02	12.87009	09	10	43.50	+14	39	50.3		046
1982	BC3	1982	02	13.80725	09	10	14.15	+14	42	12.5		046
1982	BC3	1982	02	13.82137	09	10	13.69	+14	42	15.3		046
1982	BC3	1982	02	14.80534	09	09	42.77	+14	44	45.1		046
1982	BC3	1982	02	14.81951	09	09	42.31	+14	44	47.8		046
1982	BD3	1982	02	13.80725	09	06	36.66	+15	26	57.1	17.0	046
1982	BD3	1982	02	13.82137	09	06	35.87	+15	27	01.1		046
1982	BD3	1982	02	14.80534	09	05	51.33	+15	32	15.7		046
1982	BD3	1982	02	14.81951	09	05	50.49	+15	32	22.5		046
1982	BD3	1982	02	16.84197	09	04	20.11	+15	42	56.5		046
1982	BD3	1982	02	16.85620	09	04	19.69	+15	43	02.0		046
1982	BE3	* 1982	01	20.90345	08	16	02.82	+17	09	11.9	17.0	046
1982	BE3	1982	01	20.91769	08	16	02.06	+17	09	15.1		046
1982	CB	* 1982	02	13.80725	09	08	00.06	+15	40	28.0	16.8	046
1982	CB	1982	02	13.82137	09	07	59.39	+15	40	31.2		046
1982	CB	1982	02	14.80534	09	07	09.86	+15	44	32.8		046
1982	CB	1982	02	14.81951	09	07	09.21	+15	44	35.6		046
1982	CB	1982	02	16.84197	09	05	29.02	+15	52	42.8		046
1982	CB	1982	02	16.85620	09	05	28.39	+15	52	46.3		046
1982	CC	* 1982	02	14.87252	10	06	33.58	+15	04	40.0	17.3	046
1982	CC	1982	02	14.88664	10	06	32.34	+15	04	47.4		046
1982	CD	* 1982	02	14.94058	10	15	36.89	+10	43	45.4	17.0	046
1982	CD	1982	02	14.95481	10	15	36.15	+10	43	52.2		046
1982	CD	1982	02	16.98317	10	13	50.53	+10	59	21.7		046
1982	CD	1982	02	16.99741	10	13	49.80	+10	59	27.3		046
1982	CD	1982	02	20.97703	10	10	20.28	+11	29	54.8		046
1982	CD	1982	02	20.99115	10	10	19.60	+11	30	02.6		046
1982	CD	1982	02	21.90168	10	09	31.75	+11	36	59.0		046
1982	CD	1982	02	21.91591	10	09	30.88	+11	37	06.2		046
1982	CE	* 1982	02	14.94058	10	18	28.30	+09	28	04.2	17.0	046
1982	CE	1982	02	14.95481	10	18	27.15	+09	28	11.8		046
1982	CE	1982	02	16.98317	10	16	40.10	+09	43	22.6		046
1982	CE	1982	02	16.99741	10	16	39.28	+09	43	27.3		046

1982 CE	1982 02	20.97703	10 13	03.57	+10 13	47.2		046
1982 CE	1982 02	20.99115	10 13	02.52	+10 13	54.8		046
1982 CE	1982 02	21.90168	10 12	13.27	+10 20	54.2		046
1982 CE	1982 02	21.91591	10 12	12.35	+10 21	01.0		046
1982 DE	1982 02	16.87796	09 57	32.97	+18 07	46.4	16.8	046
1982 DE	1982 02	16.89214	09 57	32.08	+18 07	51.9		046
1982 DS	1982 02	21.97407	11 53	14.69	-07 02	13.7	15.8	046
1982 DS	1982 02	21.98860	11 53	14.20	-07 02	11.9		046
1982 DE1	1982 02	16.94735	10 33	26.52	+14 28	22.9	16.6	046
1982 DE1	1982 02	16.96153	10 33	25.67	+14 28	29.1		046
1982 DE1	1982 02	20.94282	10 29	37.40	+14 57	08.7		046
1982 DE1	1982 02	20.95700	10 29	36.61	+14 57	14.2		046
1982 DE1	1982 02	21.93584	10 28	39.23	+15 04	09.6		046
1982 DE1	1982 02	21.95000	10 28	38.31	+15 04	15.3		046
1982 DY1 *	1982 02	16.94735	10 30	05.74	+14 39	13.8	17.0	046
1982 DY1	1982 02	16.96153	10 30	05.01	+14 39	18.4		046
1982 DY1	1982 02	20.94282	10 27	00.30	+14 57	49.0		046
1982 DY1	1982 02	20.95700	10 26	59.74	+14 57	52.8		046
1982 DY1	1982 02	21.93584	10 26	13.74	+15 02	19.9		046
1982 DY1	1982 02	21.95000	10 26	13.12	+15 02	23.8		046
1982 DZ1 *	1982 02	16.94735	10 33	01.63	+11 39	22.2	17.0	1 046
1982 DZ1	1982 02	16.96153	10 33	00.96	+11 39	28.6		1 046
1982 DZ1	1982 02	21.93584	10 29	20.78	+12 04	05.4		046
1982 DZ1	1982 02	21.95000	10 29	20.02	+12 04	09.4		046
1982 DA2 *	1982 02	16.94735	10 33	35.17	+11 38	39.2	17.6	046
1982 DA2	1982 02	16.96153	10 33	34.50	+11 38	46.0		046
1982 DA2	1982 02	21.93584	10 28	53.15	+12 11	30.9		046
1982 DA2	1982 02	21.95000	10 28	52.31	+12 11	37.5		046
1982 DB2 *	1982 02	16.94735	10 35	27.47	+13 17	18.1	17.4	046
1982 DB2	1982 02	16.96153	10 35	26.87	+13 17	26.7		046
1982 DC2 *	1982 02	16.98317	10 16	08.63	+08 17	23.1	17.2	046
1982 DC2	1982 02	16.99741	10 16	07.58	+08 17	33.7		046
1982 DC2	1982 02	20.97703	10 12	41.13	+08 53	06.0		046
1982 DC2	1982 02	20.99115	10 12	40.41	+08 53	15.5		046
1982 DC2	1982 02	21.90168	10 11	53.11	+09 01	28.6		046
1982 DC2	1982 02	21.91591	10 11	52.27	+09 01	36.4		046
1982 DD2 *	1982 02	16.98317	10 17	33.49	+07 27	28.9	16.6	046
1982 DD2	1982 02	16.99741	10 17	32.63	+07 27	36.7		046
1982 DD2	1982 02	20.97703	10 13	55.82	+08 01	32.3		046
1982 DD2	1982 02	20.99115	10 13	54.94	+08 01	40.7		046
1982 DD2	1982 02	21.90168	10 13	05.34	+08 09	30.9		046
1982 DD2	1982 02	21.91591	10 13	04.30	+08 09	42.8		046
1982 DE2 *	1982 02	20.94282	10 24	10.27	+12 50	39.8	17.4	046
1982 DE2	1982 02	20.95700	10 24	09.44	+12 50	42.6		046
1982 DE2	1982 02	21.93584	10 23	17.49	+12 52	58.9		046
1982 DE2	1982 02	21.95000	10 23	16.84	+12 52	58.8		046
1982 DF2 *	1982 02	20.94282	10 24	34.81	+13 33	32.2	17.2	046
1982 DF2	1982 02	20.95700	10 24	34.40	+13 33	35.7		046
1982 DF2	1982 02	21.93584	10 23	40.16	+13 42	34.1		046
1982 DF2	1982 02	21.95000	10 23	39.61	+13 42	40.0		046
1982 DG2 *	1982 02	20.94282	10 33	43.76	+14 54	38.6	17.5	046
1982 DG2	1982 02	20.95700	10 33	43.13	+14 54	41.0		046
1982 DG2	1982 02	21.93584	10 32	46.84	+14 59	40.2		046
1982 DG2	1982 02	21.95000	10 32	45.78	+14 59	45.8		046
1982 DH2 *	1982 02	21.84606	08 35	59.14	+13 04	11.8	17.8	046
1982 DH2	1982 02	21.86024	08 35	58.53	+13 04	16.5		046
1982 DJ2 *	1982 02	21.84606	08 44	03.95	+13 21	11.6	17.8	046
1982 DJ2	1982 02	21.86024	08 44	03.56	+13 21	11.7		046
1982 DK2 *	1982 02	21.90168	10 12	55.94	+09 21	06.6	16.8	046

1982 DK2	1982 02	21.91591	10 12	55.29	+09 21	10.7			046
1982 DL2	1982 02	21.93584	10 20	46.95	+14 54	34.4		17.0	046
1982 DL2	1982 02	21.95000	10 20	46.15	+14 54	39.9			046
1982 DM2	1982 02	21.93584	10 21	37.95	+15 49	55.3		17.6	046
1982 DM2	1982 02	21.95000	10 21	37.21	+15 49	59.0			046
1982 DN2	1982 02	21.93584	10 27	51.78	+12 38	07.4		17.6	046
1982 DN2	1982 02	21.95000	10 27	50.96	+12 38	08.4			046

Note 1 : near edge of plate.

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY N. S.
 CHERNYKH, L. I. CHERNYKH, L. G. KARACHKINA, T. M. SMIRNOVA AND L. V.
 ZHURAVLEVA (46TH REPORT).

Object	Date	UT	R. A. (1950)		Decl.		O - C		Mag.	N	Obs.
2359	1979 03	31.91664	12 25	28.94	-05 06	17.4			17.7	1	095
1979 FG4 *	1979 03	31.99303	14 31	19.86	-12 49	14.5			16.5	1	095
2525	1979 03	31.99303	14 37	20.20	-12 15	34.4			16.5		095
1630	1979 03	31.99303	14 40	03.32	-12 39	17.8	0.2+	1-		1	095
1676	1979 03	31.99303	14 44	15.15	-10 06	15.3	0.4+	1-			095
1979 FH4 *	1979 03	31.99303	14 47	49.38	-10 10	31.1			16.5		095
201	1979 03	31.99303	14 49	20.04	-09 07	26.0	0.2+	1-			095
688	1979 03	31.99303	14 49	27.85	-05 56	50.4	0.3+	1-			095
1286	1979 03	31.99303	14 50	01.78	-13 07	15.9	0.2+	3-		1	095
1663	1979 03	31.99303	14 52	15.07	-09 42	09.5	0.4+	1-			095
131	1979 03	31.99303	14 53	10.38	-11 36	53.4	0.4+	1-			095
1979 FJ4 *	1979 03	31.99303	14 54	16.35	-09 32	01.9			16.5		095
106	1979 03	31.99303	14 54	32.03	-13 56	33.1	0.2+	2-		1	095
1078	1979 03	31.99303	14 55	02.67	-04 28	55.8	0.0	2+		1	095
314	1979 03	31.99303	14 59	26.52	-04 44	18.9	0.2+	0		1	095
1180	1979 03	31.99303	15 03	01.26	-09 45	28.2	0.2+	0		1	095
1276	1979 04	20.86466	13 37	29.32	+25 04	57.4	4.6-	29+			095
1979 HH4 *	1979 04	24.92668	14 20	37.46	-09 11	10.1			16.5		095
2525	1979 04	24.92668	14 21	35.46	-10 58	16.4			16.5		095
1630	1979 04	24.92668	14 22	32.00	-11 43	55.4	0.1+	0		1	095
1979 HJ4 *	1979 04	24.92668	14 25	50.66	-09 17	24.7			16.8		095
1979 HK4 *	1979 04	24.92668	14 26	00.19	-10 01	59.2			16.4		095
1676	1979 04	24.92668	14 26	08.21	-10 03	19.2	0.0	1+			095
1979 HL4 *	1979 04	24.92668	14 26	10.96	-10 04	02.7			16.6		095
1979 HM4 *	1979 04	24.92668	14 27	58.27	-08 08	13.8			16.6		095
1979 HH	1979 04	24.92668	14 28	25.48	-10 16	11.1			16.6		095
1660	1979 04	24.92668	14 30	07.50	-11 52	14.8	0.1-	0	15.0	3	095
495	1979 04	24.92668	14 32	12.30	-13 01	01.0	0.0	0		1	095
1663	1979 04	24.92668	14 32	16.40	-08 10	05.0	0.1+	0	16.0		095
201	1979 04	24.92668	14 33	02.60	-06 57	11.8	0.0	1+			095
131	1979 04	24.92668	14 35	17.39	-10 48	05.6	0.1+	0			095
1979 HP	1979 04	24.92668	14 35	42.82	-11 27	50.2			16.5	1	095
1286	1979 04	24.92668	14 35	52.72	-10 39	08.4	0.1+	0			095
106	1979 04	24.92668	14 39	25.56	-12 58	28.4	0.0	0		1	095
1979 HN4 *	1979 04	24.92668	14 41	02.25	-07 35	51.0			16.8		095
2188	1979 04	24.92668	14 41	05.48	-11 33	49.4					095
1979 HO4 *	1979 04	24.92668	14 45	31.83	-08 20	14.7			16.8		095
1979 HP4 *	1979 04	24.92668	14 47	37.22	-08 49	30.4			16.5	1	095
1979 HQ4 *	1979 04	24.92668	14 48	34.91	-07 07	52.0			16.7	1	095
1180	1979 04	24.92668	14 50	45.36	-08 49	26.0	0.0	0		1	095
1812	1979 04	24.92668	14 53	16.48	-06 15	15.9	0.4+	1-		1	095
1540	1979 04	24.92668	14 53	22.68	-12 25	58.3	0.1+	0		1	095
1276	1979 04	25.83775	13 33	47.22	+25 10	56.1	4.7-	27+			095
1979 HR4 *	1979 04	25.97873	14 55	53.98	-10 36	12.7			16.5	1	095
1979 HS4 *	1979 04	25.97873	14 56	58.99	-11 32	54.0			17.1	1	095
1979 HT4 *	1979 04	25.97873	14 57	15.26	-09 58	56.1			16.8	1	095

1979	HU4	*	1979	04	25.97873	14	57	47.77	-06	22	44.6			16.7	1	095
1979	HV4	*	1979	04	25.97873	14	58	40.96	-11	02	32.7			17.3	1	095
1979	HW4	*	1979	04	25.97873	14	58	54.54	-06	29	40.0			16.6	1	095
1979	HX4	*	1979	04	25.97873	14	59	57.39	-06	44	16.8			16.7	1	095
1979	HY4	*	1979	04	25.97873	15	00	27.78	-12	09	33.5			16.5	1	095
1979	HZ4	*	1979	04	25.97873	15	01	45.22	-06	49	19.8			16.7		095
	439		1979	04	25.97873	15	02	49.97	-07	00	28.0	0.0	0			095
	866		1979	04	25.97873	15	03	45.05	-07	32	19.0	0.0	0			095
	137		1979	04	25.97873	15	04	02.16	-09	50	05.4	0.1+	0			095
1979	HA5	*	1979	04	25.97873	15	06	01,42	-06	48	12.8			17.0		095
1979	HB5	*	1979	04	25.97873	15	07	49.30	-08	44	32.0			16.5		095
1979	HC5	*	1979	04	25.97873	15	08	53.62	-11	28	49.5			17.0		095
1076			1979	04	25.97873	15	09	03.94	-12	20	26.4	0.1+	0		1	095
1979	HD5	*	1979	04	25.97873	15	09	25.82	-12	42	44.0			16.5	1	095
1979	HE5	*	1979	04	25.97873	15	09	30.17	-09	01	49.3			16.6		095
1979	HF5	*	1979	04	25.97873	15	10	12.65	-11	25	30.9			16.3		095
1979	HG5	*	1979	04	25.97873	15	12	01,84	-09	19	31.8			16.6		095
1979	HH5	*	1979	04	25.97873	15	13	00.80	-04	15	34.9			16.5	1	095
1979	HJ5	*	1979	04	25.97873	15	17	36.14	-13	36	31.9			16.0	1	095
	289		1979	04	25.97873	15	17	36.78	-11	26	25.1	0.0	1+			095
1979	HK5	*	1979	04	25.97873	15	18	45.36	-10	05	04.9			16.7		095
1979	HL5	*	1979	04	25.97873	15	21	18.93	-09	49	29.4			16.8		095
1979	HM5	*	1979	04	25.97873	15	21	24.94	-11	26	14.6			17.0		095
1979	HN5	*	1979	04	25.97873	15	21	55.14	-08	27	36.2			16.6		095
1979	H05	*	1979	04	25.97873	15	22	09.19	-12	55	15.3			17.0	1	095
	235		1979	04	25.97873	15	25	32.52	-13	47	45.5	0.4+	3-		1	095
1271			1979	04	25.97873	15	25	43.97	-09	22	44.0	0.0	1-			095
1979	HP5	*	1979	04	25.97873	15	25	59.10	-08	57	02.2			16.8		095
1600			1979	04	25.97873	15	29	41.39	-04	22	57.7	0.2+	1+		1	095
1030			1979	04	25.97873	15	30	17.37	-04	49	29.5	0.0	0		1	095
1270			1979	04	25.97873	15	32	00.00	-11	06	36.3	0.1+	1-		1	095
	471		1979	04	25.97873	15	32	39.95	-06	20	26.7	0.1+	1+		1	095
1979	HQ5	*	1979	04	25.97873	15	33	15.49	-08	39	17.9			16.9	1	095
1017			1979	04	28.84308	13	29	03.84	+04	53	43.0	0.1-	2+		1	095
1979	HR5	*	1979	04	28.84308	13	31	12.90	+07	05	33.8			16.6	1	095
1979	HS5	*	1979	04	28.84308	13	32	26.50	+09	50	02.6			16.5	1	095
1979	HT5	*	1979	04	28.84308	13	33	19.84	+06	06	04.2			16.7	1	095
1979	HU5		1979	04	28.84308	13	33	34.71	+03	09	20.8			15.8	1	095
1665			1979	04	28.84308	13	34	59.48	+07	18	35.2	0.1-	2+			095
1979	HV5	*	1979	04	28.84308	13	36	25.00	+05	52	49.4			16.0		095
1979	HW5	*	1979	04	28.84308	13	36	51.71	+04	54	10.0			17.0		095
1979	HX5	*	1979	04	28.84308	13	41	38.34	+10	53	16.1			16.6	1	095
1979	HY5	*	1979	04	28.84308	13	42	14.23	+02	54	47.2			17.5		095
1603			1979	04	28.84308	13	42	24.99	+02	39	21.8	0.1-	1+			095
1979	HZ5	*	1979	04	28.84308	13	45	45.44	+09	30	31.8			17.3	1	095
1979	HA6	*	1979	04	28.84308	13	46	52.24	+02	11	38.0			17.5	1	095
1979	HB6	*	1979	04	28.84308	13	49	52.65	+01	49	19.7			16.1	1	095
1979	HC6	*	1979	04	28.84308	13	50	37.53	+01	27	25.3			15.8	1	095
2136			1979	04	28.84308	13	56	01.82	+03	09	13.4					095
1979	HD6	*	1979	04	28.84308	13	56	57.05	+03	50	49.0			16.0		095
1979	HE6	*	1979	04	28.84308	13	57	33.48	+07	43	53,2			15.5		095
1979	HF6	*	1979	04	28.84308	13	58	59.20	+06	23	54.2			16.2		095
1758			1979	04	28.84308	14	03	46.54	+04	43	00.4	0.0	2+		1	095
1979	HG6	*	1979	04	28.84308	14	04	23.64	+03	53	16.3			16.0	1	095
1999			1979	04	28.84308	14	08	07.22	+04	48	22.9	0.1-	1+		1	095
1979	HW4		1979	04	28.92632	14	56	51.12	-06	14	23.5			16.8	1	095
1979	HX4		1979	04	28.92632	14	57	14.75	-06	28	44.5			16.6	2	095
1979	HY4		1979	04	28.92632	14	58	22.12	-11	51	31.0			16.6	1	095
1979	HZ4		1979	04	28.92632	14	59	21.87	-06	37	14.8			16.8	1	095

439		1979	04	28.92632	15	00	48.87	-06	37	03.7	0.0	0		1	095
866		1979	04	28.92632	15	01	31.88	-07	24	54.4	0.0	0		1	095
137		1979	04	28.92632	15	01	59.10	-09	26	59.1	0.1+	0			095
1979	HB5	1979	04	28.92632	15	05	17.05	-08	48	34.3			16.5		095
1076		1979	04	28.92632	15	06	25.89	-12	07	28.1	0.0	1+			095
1979	HD5	1979	04	28.92632	15	06	37.65	-12	33	04.7			16.7		095
1979	HE5	1979	04	28.92632	15	06	44.04	-08	50	47.9			16.7		095
1979	HF5	1979	04	28.92632	15	07	46.42	-11	04	06.1			16.3		095
1979	HG5	1979	04	28.92632	15	09	45.04	-09	06	01.2			16.6		095
1979	HJ5	1979	04	28.92632	15	14	37.64	-13	43	18.3			16.0	1	095
289		1979	04	28.92632	15	15	26.91	-11	12	25.0	0.0	1+			095
1979	HK5	1979	04	28.92632	15	16	17.30	-09	51	19.8			16.8		095
1979	HM5	1979	04	28.92632	15	18	57.70	-11	09	29.4			16.7		095
1979	HL5	1979	04	28.92632	15	19	01.84	-09	45	46.4			16.7		095
1979	HJ6 *	1979	04	28.92632	15	19	38.31	-08	16	05.9			16.8		095
1979	HN5	1979	04	28.92632	15	19	45.75	-08	19	23.4			16.6		095
235		1979	04	28.92632	15	23	10.82	-13	46	05.2	0.5+	2-		1	095
1271		1979	04	28.92632	15	23	43.26	-09	12	58.1	0.0	0			095
1979	HP5	1979	04	28.92632	15	23	45.52	-08	57	09.2			16.8		095
1600		1979	04	28.92632	15	25	19.77	-04	48	24.0	0.1+	2+		1	095
1030		1979	04	28.92632	15	28	25.54	-04	25	55.0	0.0	0		1	095
1270		1979	04	28.92632	15	29	19.84	-10	56	55.0	0.1+	0			095
471		1979	04	28.92632	15	30	26.53	-06	14	53.6	0.0	1+		1	095
1812		1979	04	30.94326	14	48	51.64	-05	40	15.5	0.2+	1+		1	095
346		1979	04	30.94326	14	49	17.48	-05	39	54.6	0.0	1+		1	095
1979	HK6 *	1979	04	30.94326	14	51	26.86	-06	36	53.7			16.7	1	095
1979	HR4	1979	04	30.94326	14	51	45.12	-10	17	29.4			16.5	1	095
1979	HT4	1979	04	30.94326	14	52	30.84	-09	27	26.5			16.8	1	095
1979	HS4	1979	04	30.94326	14	52	57.96	-11	10	48.8			17.0	1	095
1979	HU4	1979	04	30.94326	14	53	24.98	-06	01	01.2			16.6	1	095
1979	HV4	1979	04	30.94326	14	54	13.80	-10	40	47.1			17.0	1	095
1979	HX4	1979	04	30.94326	14	55	20.49	-06	18	18.6			16.7	1	095
1979	HW4	1979	04	30.94326	14	55	25.22	-06	04	08.2			16.6	1	095
1979	HL6 *	1979	04	30.94326	14	56	16.89	-09	47	02.1			17.0	2	095
1979	HY4	1979	04	30.94326	14	56	54.40	-11	39	09.1			16.5	1	095
1979	HZ4	1979	04	30.94326	14	57	39.85	-06	29	18.0			16.7		095
1979	HM6 *	1979	04	30.94326	14	57	54.49	-06	23	41.9			16.8		095
1979	HN6 *	1979	04	30.94326	14	57	57.97	-04	37	35.4			16.8		095
439		1979	04	30.94326	14	59	24.41	-06	21	14.2	0.0	1+			095
866		1979	04	30.94326	14	59	58.88	-07	20	02.0	0.0	0			095
1141		1979	04	30.94326	14	59	59.76	-10	39	22.5	0.1-	1+			095
137		1979	04	30.94326	15	00	32.35	-09	11	10.2	0.0	0			095
1979	H06 *	1979	04	30.94326	15	01	02.46	-09	44	02.6			16.7		095
1979	HP6 *	1979	04	30.94326	15	01	52.14	-12	37	05.1			16.6		095
1979	HB5	1979	04	30.94326	15	03	29.68	-08	51	31.3			16.5		095
1076		1979	04	30.94326	15	04	35.21	-11	58	35.0	0.0	0		1	095
1979	HQ6 *	1979	04	30.94326	15	04	36.46	-13	37	46.6			17.0	3	095
1979	HD5	1979	04	30.94326	15	04	38.70	-12	26	29.0			16.5	1	095
1979	HE5	1979	04	30.94326	15	04	46.16	-08	43	31.6			16.7		095
1979	HR6 *	1979	04	30.94326	15	05	30.39	-13	07	03.0			16.7	1	095
1979	HF5	1979	04	30.94326	15	06	01.87	-10	49	28.4			16.5		095
1979	HG5	1979	04	30.94326	15	08	08.35	-08	56	54.4			16.8		095
1979	HS6 *	1979	04	30.94326	15	08	41.55	-03	55	52.1			16.7	1	095
1979	HJ5	1979	04	30.94326	15	12	31.34	-13	48	00.2			16.0	1	095
1979	HT6 *	1979	04	30.94326	15	12	44.12	-05	17	55.4			16.7		095
289		1979	04	30.94326	15	13	55.42	-11	02	47.3	0.0	0			095
1979	HK5	1979	04	30.94326	15	14	31.14	-09	42	06.2			16.6		095
1979	HU6 *	1979	04	30.94326	15	16	55.10	-06	41	37.1			16.6		095
1979	HM5	1979	04	30.94326	15	17	11.81	-10	58	00.5			16.9	2	095

1979	HL5	1979	04	30.94326	15	17	25.48	-09	43	16.8			16.7	095
1979	HJ6	1979	04	30.94326	15	17	58.46	-08	04	15.1			16.8	095
1979	HN5	1979	04	30.94326	15	18	13.23	-08	13	55.2			16.6	095
1600		1979	04	30.94326	15	22	12.67	-05	06	51.8	0.0	2+		2 095
1271		1979	04	30.94326	15	22	17.97	-09	06	24.0	0.0	1+		095
1979	HV6 *	1979	04	30.94326	15	23	04.70	-13	00	26.6			16.6	1 095
1030		1979	04	30.94326	15	27	05.92	-04	10	08.8	0.1+	1+		1 095
1270		1979	04	30.94326	15	27	24.20	-10	50	17.2	0.1+	1+		1 095
1979	HQ5	1979	04	30.94326	15	28	47.79	-08	20	42.9			16.8	1 095
866		1979	05	26.83670	14	40	23.08	-06	42	03.4	0.2+	0		095
1600		1979	05	26.83670	14	40	38.35	-09	58	34.4	0.2+	2+		2 095
1076		1979	05	26.83670	14	41	37.91	-10	21	56.5	0.1+	1-		1 095
137		1979	05	26.83670	14	41	56.55	-06	09	31.2	0.1+	1-		095
439		1979	05	26.83670	14	41	56.75	-03	29	57.9	0.0	1-		095
1979	HF5	1979	05	26.83670	14	43	39.24	-08	13	29.1			16.3	095
1979	KD1 *	1979	05	26.83670	14	50	12.18	-07	38	27.9			17.0	095
289		1979	05	26.83670	14	53	44.02	-09	12	07.9	0.1+	1-		095
1979	KE1 *	1979	05	26.83670	14	53	51.35	-09	12	24.3			16.7	095
1979	KF1 *	1979	05	26.83670	14	57	53.93	-11	21	18.1			16.8	3 095
1270		1979	05	26.83670	15	00	07.58	-09	43	08.0	0.1+	0		095
1271		1979	05	26.83670	15	03	15.76	-07	58	57.3	0.1+	0		095
2038		1979	05	26.83670	15	03	40.12	-08	15	28.0	0.2+	1+		095
471		1979	05	26.83670	15	07	31.38	-05	49	29.5	0.1+	0		095
1979	OR16*	1979	07	30.91505	21	17	10.07	-12	37	13.9			17.3	095
2395		1979	07	30.99005	22	12	20.53	-11	26	34.8			17.0	095
1979	OS16*	1979	07	31.98597	23	04	22.60	-09	29	16.3			16.8	1 095
1979	QL8 *	1979	08	20.01803	23	40	08.40	+02	00	47.2			17.5	1 095
1979	QM8 *	1979	08	20.01803	23	40	23.44	+05	27	20.9			17.5	1 095
248		1979	08	20.01803	23	41	10.82	+04	53	57.6	0.4+	3+		1 095
2116		1979	08	20.01803	23	43	12.07	-00	00	33.5				1 095
865		1979	08	20.01803	23	44	12.72	+02	29	14.6	0.2+	3+		1 095
1002		1979	08	20.01803	23	44	49.75	-01	44	33.0	0.3+	1+		1 095
382		1979	08	20.01803	23	46	09.94	+05	01	19.6	0.2+	1+		095
2365		1979	08	20.01803	23	47	25.91	+06	26	21.4				1 095
1979	QN8 *	1979	08	20.01803	23	47	37.72	-01	34	52.8			17.5	1 095
10		1979	08	20.01803	23	51	20.97	+04	21	48.2	0.1+	2+		095
1793		1979	08	20.01803	23	51	27.88	+01	21	36.8	0.3+	2+		095
329		1979	08	20.01803	23	53	01.44	+04	32	07.6	0.4+	2+		095
1979	QO8 *	1979	08	20.01803	23	53	38.59	+00	39	21.9			16.0	095
2403		1979	08	20.01803	23	54	07.38	+04	19	37.2			16.0	095
1979	QP8 *	1979	08	20.01803	23	54	14.16	+02	28	44.8			17.0	095
295		1979	08	20.01803	23	56	59.66	+03	55	16.0	0.1+	0		095
1979	QQ8 *	1979	08	20.01803	23	57	24.00	+00	23	56.0			17.0	095
835		1979	08	20.01803	23	58	32.16	+03	31	43.9	0.2+	2+		095
1979	QR8 *	1979	08	20.01803	23	59	01.50	-02	05	56.7			17.0	1 095
111		1979	08	20.01803	00	00	28.32	+05	33	13.3	0.3+	1+		095
1979	QS8 *	1979	08	20.01803	00	01	06.28	+01	58	51.8			17.8	095
1979	QT8 *	1979	08	20.01803	00	01	38.48	+00	40	12.3			17.0	095
313		1979	08	20.01803	00	02	00.67	+02	43	17.2	0.3+	2+		095
1979	QU8 *	1979	08	20.01803	00	02	12.93	+06	53	46.3			17.5	3 095
1979	QV8 *	1979	08	20.01803	00	05	04.97	+05	44	24.3			16.5	1 095
1352		1979	08	20.01803	00	07	19.44	+02	32	10.0	0.2+	2+		095
1979	QW8 *	1979	08	20.01803	00	08	40.57	+02	03	18.0			17.5	095
1979	QX8 *	1979	08	20.01803	00	08	59.20	+00	54	36.3			17.5	095
832		1979	08	20.01803	00	09	55.82	+02	41	33.5	0.2+	2+		095
2204		1979	08	20.01803	00	10	08.23	-02	47	01.0			17.0	1 095
993		1979	08	20.01803	00	10	31.56	+01	47	10.5	0.2+	1+		095
1979	QY8 *	1979	08	20.01803	00	12	45.16	-00	49	29.9			17.8	095
1979	QZ8 *	1979	08	28.00746	23	30	21.69	+03	46	56.3			17.5	1 095

1979	QA9	*	1979	08	28.00746	23	32	11.38	-00	12	44.2			17.5	1	095
20			1979	08	28.00746	23	33	44.28	-02	01	35.2	0.1+	1+			1 095
1979	QM8		1979	08	28.00746	23	33	51.56	+05	57	50.7			17.0		095
1979	QB9	*	1979	08	28.00746	23	34	10.75	+04	32	26.6			17.0	1	095
1979	QL8		1979	08	28.00746	23	35	13.32	+01	34	08.6			17.5	1	095
248			1979	08	28.00746	23	35	52.97	+04	28	35.1	0.3+	3+			1 095
1979	QC9	*	1979	08	28.00746	23	37	48.16	+02	37	09.5			17.5		095
2116			1979	08	28.00746	23	39	01.13	-01	00	55.2					095
1002			1979	08	28.00746	23	39	01.85	-01	34	03.9	0.1+	1+			095
865			1979	08	28.00746	23	39	33.94	+01	27	27.7	0.2+	1+			095
382			1979	08	28.00746	23	41	12.10	+04	48	34.5	0.1+	1+			095
1979	QD9	*	1979	08	28.00746	23	41	49.94	+02	03	25.8			17.5		095
2365			1979	08	28.00746	23	42	16.38	+06	12	15.6				1	095
2342			1979	08	28.00746	23	43	46.69	-01	31	40.9					095
1979	QE9	*	1979	08	28.00746	23	45	05.12	+01	50	06.0			17.5		095
1793			1979	08	28.00746	23	45	55.97	+00	46	55.4	0.1+	2+			095
1979	QF9	*	1979	08	28.00746	23	46	45.63	+00	16	32.3			17.5		095
10			1979	08	28.00746	23	46	51.00	+04	02	54.1	0.0	1+			095
1979	QG9	*	1979	08	28.00746	23	48	44.68	+02	30	24.0			17.5		095
1979	QH9	*	1979	08	28.00746	23	49	00.31	+03	44	24.0			17.5		095
329			1979	08	28.00746	23	49	05.13	+03	20	14.7	0.2+	2+			095
2403			1979	08	28.00746	23	49	43.10	+04	10	04.8			16.5		095
1979	QP8		1979	08	28.00746	23	50	30.28	+02	06	36.3			17.0		095
1979	QO8		1979	08	28.00746	23	51	41.81	-00	22	10.1			16.0		095
1979	QJ9	*	1979	08	28.00746	23	51	44.81	+00	56	47.7			17.0	2	095
295			1979	08	28.00746	23	52	59.41	+03	40	26.9	0.0	1-			095
835			1979	08	28.00746	23	54	35.91	+03	20	27.3	0.2+	1+			095
1979	QK9	*	1979	08	28.00746	23	54	49.00	+03	02	24.8			16.8		095
1979	QL9	*	1979	08	28.00746	23	54	52.34	+07	00	07.3			17.0	1	095
1979	QM9	*	1979	08	28.00746	23	54	53.78	+00	06	01.3			17.5		095
111			1979	08	28.00746	23	55	50.25	+05	24	00.6	0.2+	11+			095
1979	QN9	*	1979	08	28.00746	23	57	20.53	+00	34	22.8			17.0		095
1979	QO9	*	1979	08	28.00746	23	57	49.91	+00	35	40.3			17.5		095
313			1979	08	28.00746	23	57	51.85	+01	47	39.2	0.2+	2+			095
1979	QP9	*	1979	08	28.00746	23	58	33.56	+04	35	35.3			17.5		095
1979	QQ9		1979	08	28.00746	23	58	59.62	+02	19	49.9			17.5		095
1979	QR9	*	1979	08	28.00746	00	00	28.34	+06	01	50.8			17.0	1	095
1979	QV8		1979	08	28.00746	00	02	46.22	+06	31	05.3			16.5	1	095
1352			1979	08	28.00746	00	03	50.15	+02	00	57.0	0.1+	1+			095
832			1979	08	28.00746	00	06	24.28	+02	21	23.9	0.2+	1+			1 095
1979	QS9	*	1979	08	28.00746	00	06	52.53	+05	16	22.6			17.0	3	095
993			1979	08	28.00746	00	06	54.49	+01	19	58.4	0.2+	1+			1 095
1979	QT9	*	1979	08	28.00746	00	08	25.46	+01	43	48.5			17.5	1	095
2116			1979	09	23.90274	23	19	43.50	-05	07	56.1					1 095
1793			1979	09	23.90274	23	21	16.47	-02	00	17.9	0.0	0			1 095
1979	SU4	*	1979	09	23.90274	23	24	11.10	+00	20	40.6			17.5	1	095
1979	SV4	*	1979	09	23.90274	23	24	44.84	+00	47	34.8			17.6	1	095
2342			1979	09	23.90274	23	25	17.66	-03	33	33.8					1 095
1979	SW4	*	1979	09	23.90274	23	25	32.44	-01	10	54.1			17.0	1	095
1979	SX4	*	1979	09	23.90274	23	26	24.22	+01	32	06.9			17.8	1	095
1979	SY4	*	1979	09	23.90274	23	26	34.06	+01	01	37.0			17.5	1	095
1979	SZ4		1979	09	23.90274	23	27	15.37	+01	44	29.7			17.8	1	095
1979	SA5	*	1979	09	23.90274	23	27	19.59	-06	11	52.4			17.8	1	095
10			1979	09	23.90274	23	27	46.75	+02	15	28.9	0.0	0			1 095
2403			1979	09	23.90274	23	27	56.25	+02	25	33.7			16.0	1	095
1979	SB5	*	1979	09	23.90274	23	29	07.81	-02	39	01.0			17.8		095
1979	SC5	*	1979	09	23.90274	23	29	16.00	-00	06	27.2			17.5		095
329			1979	09	23.90274	23	29	53.78	-01	52	08.8	0,0	0			095
1979	SD5	*	1979	09	23.90274	23	30	57.72	-04	17	23.9			17.5		095

1979	SE5	*	1979	09	23.90274	23	30	59.50	+00	44	32.6			17.2	095
1979	SF5	*	1979	09	23.90274	23	32	03.00	-05	22	23.2			17.5	095
1979	SG5	*	1979	09	23.90274	23	32	05.54	-04	39	54.3			17.5	095
1979	QP8		1979	09	23.90274	23	32	17.44	+00	00	41.9			17.0	095
	295		1979	09	23.90274	23	32	43.50	+01	48	45.7	0.3-	1-		095
1979	SH5	*	1979	09	23.90274	23	33	02.75	-03	44	48.2			17.5	095
1979	SS		1979	09	23.90274	23	33	10.78	+02	33	46.7			17.5	1 095
1979	TA		1979	09	23.90274	23	35	14.88	+01	46	57.3			17.0	095
1979	SJ5	*	1979	09	23.90274	23	35	17.72	-00	43	56.6			17.0	095
1966			1979	09	23.90274	23	35	42.54	-05	55	44.7	0.1-	1-	17.5	095
	835		1979	09	23.90274	23	35	48.28	+01	53	23.4	0.0	0		095
1979	SK5	*	1979	09	23.90274	23	36	01.19	-03	23	59.2			17.0	095
1979	SL5	*	1979	09	23.90274	23	36	36.16	-02	43	56.1			17.4	095
1979	QO8		1979	09	23.90274	23	37	00.47	-05	05	08.8			15.5	095
	313		1979	09	23.90274	23	37	02.88	-02	22	55.8	0.1-	0		095
1979	SM5	*	1979	09	23.90274	23	38	29.97	-00	53	01.4			17.0	095
1979	SN5	*	1979	09	23.90274	23	38	37.44	+01	26	43.8			17.0	095
1979	S05	*	1979	09	23.90274	23	38	56.44	-00	25	35.0			17.5	095
1979	SP5	*	1979	09	23.90274	23	39	28.66	-01	15	28.9			17.6	095
1979	SQ5	*	1979	09	23.90274	23	41	08.31	-00	48	07.4			17.3	095
1979	SR5	*	1979	09	23.90274	23	41	22.56	-00	46	56.3			17.4	095
1979	SS5	*	1979	09	23.90274	23	42	31.50	-05	16	13.9				5 095
1979	ST5	*	1979	09	23.90274	23	42	31.63	-05	16	16.7			17.8	095
1979	SU5	*	1979	09	23.90274	23	42	49.56	-00	43	57.8			17.5	095
1979	SV5	*	1979	09	23.90274	23	42	55.32	+00	07	50.2			17.5	095
1979	SW5	*	1979	09	23.90274	23	43	20.28	-03	17	10.2			17.3	095
1979	SX5	*	1979	09	23.90274	23	45	34.81	-05	10	41.3			17.8	095
1979	SY5	*	1979	09	23.90274	23	46	08.75	+00	55	54.8			17.8	095
1979	SZ5	*	1979	09	23.90274	23	46	28.81	-00	04	55.0			17.0	095
1979	SA6	*	1979	09	23.90274	23	47	03.94	+01	15	10.0			17.7	095
	767		1979	09	23.90274	23	47	03.94	-05	43	47.5	0.0	0		1 095
	832		1979	09	23.90274	23	47	27.62	+00	20	39.8	0.0	1+		095
1979	SB6	*	1979	09	23.90274	23	47	30.37	-01	32	39.1			17.5	2 095
	993		1979	09	23.90274	23	48	09.82	-00	57	47.2	0.0	0		095
1979	SC6	*	1979	09	23.90274	23	48	18.09	+01	29	33.2			17.8	095
1979	SD6	*	1979	09	23.90274	23	49	35.34	-00	55	27.2			17.5	095
1125			1979	09	23.90274	23	50	08.10	-05	45	50.8	0.0	0		1 095
1979	SE6	*	1979	09	23.90274	23	51	58.44	-05	03	38.9			17.5	095
1979	SF6	*	1979	09	23.90274	23	54	08.75	-02	22	51.3			17.3	095
1979	SG6	*	1979	09	23.90274	23	56	46.63	-05	43	12.1			17.8	1 095
1979	SH6	*	1979	09	23.90274	23	56	59.16	-00	46	42.0			17.0	1 095
1979	SJ6	*	1979	09	23.90274	23	57	47.16	-00	55	03.9			17.0	1 095
1979	UK2	*	1979	10	16.82340	23	09	49.40	-01	27	14.0			17.0	1 095
1979	UL2	*	1979	10	16.82340	23	09	58.62	-01	54	24.8			17.5	1 095
1979	UM2	*	1979	10	16.82340	23	12	58.75	-02	59	44.3			17.5	3 095
2403			1979	10	16.82340	23	13	32.22	+00	41	34.5			16.0	1 095
	10		1979	10	16.82340	23	14	10.16	+00	36	35.5	0.2-	0		1 095
1979	UN2	*	1979	10	16.82340	23	14	51.16	-06	01	09.0			17.5	1 095
1979	UO2	*	1979	10	16.82340	23	14	57.81	-07	06	55.4			17.0	1 095
1979	UP2		1979	10	16.82340	23	15	26.22	-05	03	25.0			17.5	095
	329		1979	10	16.82340	23	16	38.66	-05	57	54.4	0.3-	2-		095
	295		1979	10	16.82340	23	17	15.94	-00	02	36.5	0.4-	3-		1 095
1979	UQ2	*	1979	10	16.82340	23	18	34.41	+00	07	56.0			16.5	3 095
1979	QP8		1979	10	16.82340	23	19	45.50	-01	43	27.4			17.0	095
1979	UR2	*	1979	10	16.82340	23	19	57.78	-02	50	30.8			17.5	095
1979	US2	*	1979	10	16.82340	23	20	37.78	-04	06	47.8			17.5	095
	313		1979	10	16.82340	23	20	41.34	-05	47	50.8	0.2-	3-		095
	835		1979	10	16.82340	23	21	38.35	+00	28	10.5	0.3-	1-		1 095
1979	TA		1979	10	16.82340	23	22	07.75	+00	25	07.1				1 095

1979	UT2	*	1979	10	16.82340	23	23	36.00	-01	32	13.5	17.5	095	
1979	UU2	*	1979	10	16.82340	23	24	42.59	-02	21	37.0	17.0	095	
1979	QO8		1979	10	16.82340	23	26	35.06	-08	32	30.4	16.5	1 095	
1979	UV2	*	1979	10	16.82340	23	28	03.50	-02	36	01.5	17.0	095	
1352			1979	10	16.82340	23	30	12.63	-02	53	56.7	0.2-	2-	095
1979	UW2	*	1979	10	16.82340	23	30	40.40	-00	46	24.9	17.0	095	
832			1979	10	16.82340	23	32	04.75	-01	26	44.7	0.3-	2-	095
1979	UX2	*	1979	10	16.82340	23	32	27.19	-00	57	42.1	17.5	095	
993			1979	10	16.82340	23	32	44.34	-02	52	51.1	0.3-	2-	095
767			1979	10	16.82340	23	33	01.53	-06	53	50.2	0.3-	2-	095
1125			1979	10	16.82340	23	34	43.50	-07	16	36.9	0.3-	2-	095
1979	UY2	*	1979	10	16.82340	23	34	50.25	-00	21	20.2	17.0	1 095	
1979	UZ2	*	1979	10	16.82340	23	36	01.66	-00	19	50.4	17.5	1 095	
1979	UA3	*	1979	10	16.82340	23	37	31.78	-06	32	32.4	17.0	095	
494			1979	10	16.82340	23	38	13.38	-08	59	11.7	0.2-	1-	1 095
1979	UB3		1979	10	16.82340	23	42	07.16	-02	15	45.7	17.0	095	
1979	UC3	*	1979	10	16.82340	23	43	09.31	-01	14	53.1	17.0	095	
1979	UD3	*	1979	10	16.82340	23	44	03.25	-06	49	55.5	17.5	1 095	
1979	UE3	*	1979	10	16.82340	23	44	29.53	-05	04	03.7	17.5	1 095	
1979	UF3	*	1979	10	16.82340	23	46	06.00	-05	08	05.2	17.5	1 095	
1302			1979	10	16.82340	23	48	02.06	-05	22	59.7	0.2-	1-	1 095
1979	UG3	*	1979	10	16.82340	23	48	41.60	-03	29	04.9	16.0	1 095	
770			1979	10	16.82340	23	49	14.06	-06	29	30.5	0.3-	2-	1 095

Note 1: near edge of plate. 2: measurement uncertain. 3 = 1 + 2.

OBSERVATIONS MADE AT GEISEI BY T. SEKI. IN PART FROM NIHONDAIRA OBS. CIRC.
NO. 1282.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.			
754	1982	02	02.76007	15 14 30.03	-05 03 54.4	16	372		
754	1982	02	02.76910	15 14 30.47	-05 03 51.8		372		
1975	WO1	1982	02	02.66562	09 19 41.41	+33 25 15.5	15.5	372	
1975	WO1	1982	02	02.67534	09 19 40.87	+33 25 21.0		372	
1979	FT2	1982	02	17.65278	11 25 54.31	+14 59 03.2	17	372	
1979	FT2	1982	02	17.66510	11 25 53.81	+14 59 09.4		372	
1980	TN	1982	02	02.70712	08 45 39.25	+22 05 07.4	17.5	372	
1980	TN	1982	02	02.71528	08 45 38.67	+22 05 08.3		372	
1980	VP	1982	02	02.68785	07 50 35.37	+28 03 12.2		372	
1980	VP	1982	02	02.69653	07 50 35.01	+28 03 13.0		372	
1980	VW	1982	02	17.63403	09 59 38.02	+29 40 37.9	17	372	
1980	VW	1982	02	17.64236	09 59 37.35	+29 40 40.4		372	
1982	DV	1982	03	28.73611	14 27 35.95	-35 09 30.6	13.5	372	
1982	DV	1982	03	28.74167	14 27 37.94	-35 09 32.0		372	
1982	DO2	*	1982	02	25.81372	15 24 18.61	-05 10 50.7	18	372
1982	DO2		1982	02	25.82917	15 24 18.92	-05 10 45.4		372
1982	DP2	*	1982	02	25.81372	15 26 00.0	-05 09 01	18	372
1982	DP2		1982	02	25.82917	15 26 00.7	-05 08 55		372
1982	FC	*	1982	03	21.61353	11 59 01.72	+10 36 17.7	17.0	372
1982	FC		1982	03	21.62188	11 59 01.07	+10 36 17.7		372
1982	FD	*	1982	03	21.66840	15 47 58.79	-00 53 59.0	17.0	372
1982	FD		1982	03	21.67604	15 47 59.35	-00 53 55.0		372
1982	FE	*	1982	03	21.72882	15 31 48.31	-02 59 44.3	17.5	372
1982	FE		1982	03	21.73993	15 31 47.98	-02 59 40.6		372

OBSERVATIONS MADE AT HEMINGFORD ABBOTS BY A. YOUNG. MEASURED BY B.
MANNING. COMMUNICATED BY G. M. HURST.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.	
2100	1981	09	18.8344	20 19 27.35	-13 00 12.4	489	
1981	QA	1981	09	18.8601	21 53 43.86	-11 21 22.7	489
1981	QA	1981	09	18.8670	21 53 45.26	-11 21 31.4	489

1982 DA	1982 02 23.02331	10 53 14.99	+19 57 34.2	15	489
1982 DA	1982 02 23.03750	10 53 14.69	+19 58 20.3		489

OBSERVATIONS MADE AT THE CENTRO ASTRONOMICO DE YEBES BY M. DE PASCUAL, J.
GARCIA AND C. CABARAS.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1	1981 03 02.99842	07 01 55.41	+32 23 38.2	491	
1	1981 03 03.00674	07 01 55.45	+32 23 37.5	491	
1	1981 03 04.91609	07 02 13.11	+32 21 58.4	491	
1	1981 03 04.92094	07 02 13.14	+32 21 58.0	491	
1	1981 03 04.92510	07 02 13.16	+32 21 58.0	491	
1	1981 04 06.90633	07 23 30.09	+31 14 42.8	491	
1	1981 04 06.90875	07 23 30.29	+31 14 41.8	491	
1	1981 04 06.91117	07 23 30.45	+31 14 42.2	491	
1	1981 04 06.98522	07 23 34.95	+31 14 28.0	491	
1	1981 04 06.98799	07 23 35.18	+31 14 27.5	491	
1	1981 04 06.99076	07 23 35.33	+31 14 26.5	491	
1	1981 05 04.84516	07 58 43.97	+29 25 53.6	491	
1	1981 05 04.85001	07 58 44.35	+29 25 52.0	491	
1	1981 05 04.85486	07 58 44.79	+29 25 50.9	491	
1	1981 05 05.86387	08 00 12.50	+29 20 58.3	491	
1	1981 05 05.86734	08 00 12.75	+29 20 57.3	491	
1	1981 05 05.87080	08 00 13.06	+29 20 55.9	491	
1	1981 05 06.94078	08 01 46.83	+29 15 40.6	491	
1	1981 05 06.94494	08 01 47.18	+29 15 39.6	491	
3	1981 03 03.03058	14 31 03.78	-05 28 56.8	491	
3	1981 03 03.03473	14 31 03.73	-05 28 55.4	491	
3	1981 03 03.03889	14 31 03.72	-05 28 54.4	491	
3	1981 04 06.94938	14 16 20.90	-01 30 41.1	491	
3	1981 04 06.95354	14 16 20.70	-01 30 39.6	491	
3	1981 04 06.95769	14 16 20.54	-01 30 37.4	491	
3	1981 04 09.90657	14 14 11.40	-01 08 39.4	491	
3	1981 04 09.91557	14 14 11.07	-01 08 35.5	491	
3	1981 05 05.05835	13 54 38.39	+01 31 47.5	491	
3	1981 05 05.06251	13 54 38.19	+01 31 49.4	491	
3	1981 05 05.06666	13 54 38.01	+01 31 51.1	491	
3	1981 05 05.97737	13 53 58.35	+01 36 13.7	491	
3	1981 05 05.98153	13 53 58.14	+01 36 14.3	491	
3	1981 05 05.98568	13 53 57.96	+01 36 15.5	491	
3	1981 05 06.95107	13 53 16.31	+01 40 45.1	491	
3	1981 05 06.95523	13 53 16.14	+01 40 46.9	491	
3	1981 05 06.95939	13 53 16.02	+01 40 47.6	491	
4	1981 03 03.01644	10 24 15.61	+20 14 00.3	491	
4	1981 03 03.02059	10 24 15.35	+20 14 01.7	491	
4	1981 03 03.02475	10 24 15.12	+20 14 02.9	491	
4	1981 03 04.93064	10 22 26.65	+20 26 35.4	491	
4	1981 03 04.93271	10 22 26.55	+20 26 36.0	491	
4	1981 03 04.93479	10 22 26.41	+20 26 36.7	491	
4	1981 04 06.91429	10 02 30.84	+21 53 20.6	491	
4	1981 04 06.91672	10 02 30.80	+21 53 20.8	491	
4	1981 04 06.91914	10 02 30.76	+21 53 20.3	491	
4	1981 04 06.99642	10 02 29.95	+21 53 14.6	491	
4	1981 04 06.99919	10 02 29.92	+21 53 14.4	491	
4	1981 04 07.00195	10 02 29.92	+21 53 14.2	491	
4	1981 05 06.88189	10 11 17.55	+20 00 29.7	491	
4	1981 05 06.88397	10 11 17.61	+20 00 28.9	491	
4	1981 05 06.88604	10 11 17.70	+20 00 28.1	491	
4	1981 05 06.97480	10 11 21.22	+19 59 55.7	491	
4	1981 05 06.97687	10 11 21.28	+19 59 54.8	491	

4	1981	05	06.97895	10	11	21.39	+19	59	54.2	491
39	1981	03	03.03058	14	32	57.43	-05	04	19.7	491
39	1981	03	03.03473	14	32	57.42	-05	04	18.4	491
39	1981	03	03.03889	14	32	57.44	-05	04	17.4	491
39	1981	04	06.94938	14	21	18.52	-01	30	42.6	491
39	1981	04	06.95354	14	21	18.39	-01	30	41.1	491
39	1981	04	06.95769	14	21	18.14	-01	30	39.1	491
39	1981	04	09.90657	14	19	18.24	-01	10	18.3	491
39	1981	04	09.91557	14	19	17.90	-01	10	14.6	491
39	1981	05	05.05835	14	00	11.84	+01	18	52.2	491
39	1981	05	05.06251	14	00	11.67	+01	18	54.1	491
39	1981	05	05.06666	14	00	11.45	+01	18	54.5	491
39	1981	05	05.97737	13	59	31.43	+01	22	54.6	491
39	1981	05	05.98153	13	59	31.22	+01	22	55.7	491
39	1981	05	05.98568	13	59	31.06	+01	22	57.1	491
39	1981	05	06.95107	13	58	48.95	+01	27	02.2	491
39	1981	05	06.95523	13	58	48.75	+01	27	03.0	491
39	1981	05	06.95939	13	58	48.55	+01	27	04.3	491
138	1981	05	06.03140	13	39	39.42	-08	18	45.5	491
138	1981	05	06.03971	13	39	39.07	-08	18	45.1	491
138	1981	05	06.89674	13	38	54.52	-08	15	54.0	491
138	1981	05	06.90862	13	38	53.90	-08	15	51.5	491
138	1981	05	07.08127	13	38	44.45	-08	15	16.5	491
138	1981	05	07.09374	13	38	43.99	-08	15	14.6	491
162	1981	05	06.03140	13	35	46.45	-09	23	36.3	491
162	1981	05	06.03971	13	35	46.09	-09	23	36.2	491
162	1981	05	06.89674	13	35	09.94	-09	22	18.3	491
162	1981	05	06.90862	13	35	09.41	-09	22	16.3	491
162	1981	05	07.08127	13	35	01.74	-09	22	01.2	491
162	1981	05	07.09374	13	35	01.37	-09	22	00.9	491
384	1981	05	06.03140	13	39	32.92	-07	58	35.6	491
384	1981	05	06.03971	13	39	32.56	-07	58	34.0	491
384	1981	05	06.89674	13	38	52.44	-07	56	30.7	491
384	1981	05	06.90862	13	38	51.88	-07	56	29.9	491
384	1981	05	07.08127	13	38	43.47	-07	56	04.3	491
384	1981	05	07.09374	13	38	43.07	-07	56	03.1	491

OBSERVATION MADE WITH THE LIEGE SCHMIDT TELESCOPE AT HAUTE PROVENCE BY
G. MATHYS. MEASURED BY F. DOSSIN.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.	
1981 YH1	1982	02	23.95684	06 10 33.74	+44 24 10.3	15.5	511
1981 YH1	1982	02	25.01458	06 11 50.59	+44 26 08.5	15.5	511
1981 YH1	1982	02	26.90625	06 14 17.83	+44 29 03.7	15.5	511
1982 DA	1982	02	27.02430	10 51 48.68	+23 00 24.0	16	511
1982 DQ2	1982	02	25.01458	06 15 53.19	+46 42 07.9	17.5	511
1982 DQ2	1982	02	26.90625	06 15 54.52	+46 27 44.6	17.5	511

OBSERVATIONS MADE AT THE OSSERVATORIO S. VITTORE.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.	
1982 FB	1982	03	19.82639	11 16 38.13	+04 59 35.2	17.0	552
1982 FB	1982	03	19.85556	11 16 36.60	+04 59 39.4		552
1982 FB	1982	03	19.89028	11 16 34.65	+04 59 43.8		552
1982 FB	1982	03	19.93958	11 16 32.62	+04 59 57.1		552

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR BY
S. J. BUS. SCANNED AND MEASURED BY C. S. SHOEMAKER.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.	
1808	1981	05	10.37361	14 10 08.33	-14 31 55.6		675
2016	1981	05	10.37361	14 16 24.78	-14 11 57.4		675

2228		1981 05 10.41250	14 36 18.63	-12 25 31.2		675
2387		1981 05 10.41250	14 35 44.34	-12 19 31.1		675
2411		1981 05 10.37361	14 28 41.19	-11 23 10.4	16	675
2425		1981 05 10.41250	14 47 42.49	-14 03 54.7		675
2454		1981 05 11.43958	14 55 19.85	-19 39 56.1		675
2458		1981 05 10.37361	14 19 55.20	-10 44 03.6		675
1977	EB2	1981 05 10.37361	14 30 15.12	-14 38 45.2	16	675
1981	JA	1981 05 10.41250	14 50 39.61	-13 51 37.0	16.5	675
1981	JG	1981 05 11.40417	14 15 02.29	-16 02 37.2	17.5	675
1981	JH	1981 05 10.37361	14 25 18.89	-14 01 54.9	16.5	675
1981	JJ	1981 05 10.37361	14 29 36.26	-14 58 30.7	17.5	675
1981	JJ	1981 05 11.40417	14 28 49.59	-14 55 12.3	17.5	675
1981	JM	1981 05 10.41250	14 44 36.34	-12 11 08.0	16.5	675
1981	JN	1981 05 10.41250	14 51 13.38	-12 14 48.9	16	675
1981	JP	1981 05 10.41250	14 52 18.55	-10 12 06.5	15.5	675
1981	JQ	1981 05 11.43958	14 56 35.76	-19 36 20.9	16.5	675
1981	JW1	1981 05 10.37361	14 12 29.75	-14 44 12.6	16.5	675
1981	JX1	1981 05 10.37361	14 16 08.32	-14 51 10.5	18	675
1981	JX1	1981 05 11.40417	14 15 09.60	-14 48 20.6	18	675
1981	JY1	1981 05 10.37361	14 18 07.07	-12 05 57.6	17	675
1981	JA2	1981 05 11.40417	14 23 00.52	-16 19 10.7	16.5	675
1981	JB2	1981 05 10.37361	14 24 48.64	-13 36 38.2	17	675
1981	JC2	1981 05 11.40417	14 26 27.04	-16 01 54.1	16.5	675
1981	JD2	1981 05 10.37361	14 26 36.31	-14 07 08.6	17	675
1981	JE2	1981 05 10.37361	14 27 57.58	-12 46 16.1	17.5	675
1981	JF2	1981 05 11.40417	14 21 43.33	-19 32 32.4	18	675
1981	JG2	1981 05 11.40417	14 31 10.06	-17 09 37.5	16.5	675
1981	JJ2	1981 05 10.37361	14 33 11.07	-09 55 08.6	18	675
1981	JJ2	1981 05 10.41250	14 33 09.39	-09 54 54.8	18	675
1981	JK2	1981 05 10.41250	14 35 18.57	-14 33 04.2	18	675
1981	JL2	1981 05 10.41250	14 47 28.44	-12 02 14.9	17.5	675
1981	JM2	1981 05 11.43958	14 49 42.91	-15 35 52.3	17.5	675
1981	JP2	1981 05 11.46042	14 41 02.10	-18 27 47.0	17.5	675
1981	JR2	1981 05 11.43958	14 46 20.35	-17 46 07.0	18	675
1981	JS2	1981 05 11.46042	14 48 51.15	-19 25 42.6	18	675
1981	JT2	1981 05 11.43958	14 50 00.03	-18 18 42.7	18	675
1981	JU2	1981 05 11.43958	14 51 32.38	-17 22 15.5	16.5	675
1981	JY2	1981 05 10.41250	14 36 57.57	-13 55 21.5	17.5	675
1981	JZ2	1981 05 10.41250	14 45 02.46	-10 50 03.2	17.5	675
1981	JB3	1981 05 10.41250	14 49 02.70	-14 54 33.1	17	675
1981	JB3	1981 05 11.43958	14 47 56.99	-14 54 14.5	17	675
1981	JD3	1981 05 10.41250	14 50 11.16	-09 24 59.3	18	675
1981	JE3	1981 05 11.43958	14 53 55.21	-15 28 08.8	17.5	675
1981	JF3	1981 05 10.41250	14 57 10.29	-12 44 12.4	17.5	675
1981	JG3	1981 05 10.41250	14 58 04.58	-12 11 10.7	17	675

OBSERVATIONS MADE AT PALOMAR.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1863	1982 03	03.48580	12 06 28.39	-01 42 59.4		1	675
1974	QA	1981 12	23.45002	+09 18 19.5		1	675
1974	QA	1982 01	04.33057	+09 38 09.0		1	675
1978	TB	1981 12	22.32041	+28 28 33.7	19.5	2	675
1978	TB	1982 02	21.15174	+28 43 29.1	19.5	2	675
1982	AO *	1982 01	04.33057	+09 32 18.6	17	1	675
1982	BJ	1982 02	18.13542	+36 01 54.7		3	675
1982	BJ	1982 02	28.30069	+38 34 16.0		4	675
1982	BJ	1982 03	04.36045	+39 19 45.2		1	675
1982	CA *	1982 02	13.24375	+30 15	18.5	4	675
1982	DA	1982 03	04.35420	+26 39 45.9		1	675

1982 DB	1982 03	03.50489	13 38	10.94	-17 49	59.8		1	675
1982 DB	1982 03	04.37711	13 36	09.10	-17 40	54.9		1	675
1982 DB	1982 03	31.38125	12 44	38.27	-12 06	06.3	16.8	4	675
1982 DB	1982 03	31.42292	12 44	34.42	-12 05	35.6		4	675
1982 EA *	1982 03	03.50489	13 38	21.50	-18 27	14.7	17	1	675
1982 EA	1982 03	04.37711	13 35	58.84	-18 29	54.6		1	675

Note 1: observer J. Gibson. 2: observer C. Kowal. 3: 0.46-m Schmidt, observers S. J. Bus and C. S. Shoemaker; measured by Shoemaker. 4: observers E. Helin and E. Shoemaker; measured by Helin and C. S. Shoemaker.

OBSERVATIONS MADE AT THE UNIVERSITY OF MINNESOTA'S INFRARED OBSERVING FACILITY, MT. LEMMON, ARIZONA, BY M. SITKO, W. STEIN, S. O'DELL AND S. NELSON.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	N	Obs.
1982 FA *	1982 03	23.23403	08 51	54.5	+20 19	01	17.5V	1	686
1982 FA	1982 03	24.23681	08 52	06.8	+20 17	13	17.6V	1	686
1982 FA	1982 03	25.20486	08 52	20.9	+20 15	25		1	686

Note 1: observatory code 686, Long. and Parallax 249.21, -360, -227 (see MPC 4766).

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION BY E. BOWELL AND B. A. SKIFF. MEASURED BY E. BOWELL.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	N	Obs.
6	1982 03	22.28611	12 02	08.26	+15 07	11.4		688	
6	1982 03	22.33333	12 02	05.74	+15 07	35.5		688	
10	1982 02	20.15139	07 50	15.05	+18 58	12.4		688	
10	1982 02	20.26389	07 50	11.20	+18 58	19.4		688	
17	1981 08	31.23056	21 23	52.01	-18 56	55.5		688	
33	1982 02	20.15139	07 44	07.26	+23 35	36.1		688	
33	1982 02	20.26389	07 44	03.40	+23 35	40.6		688	
40	1982 02	21.31458	10 35	50.26	+15 39	34.0		688	
40	1982 02	21.34861	10 35	48.26	+15 39	50.1		688	
40	1982 03	04.41875	10 24	41.35	+16 52	24.5		688	
40	1982 03	04.45278	10 24	39.36	+16 52	36.1		688	
47	1982 02	28.28819	09 57	26.92	+16 37	50.1		688	
47	1982 02	28.32222	09 57	25.20	+16 37	55.0		688	
47	1982 03	04.34514	09 54	08.68	+16 49	16.6		688	
47	1982 03	04.37847	09 54	07.07	+16 49	22.2		688	
47	1982 03	21.20417	09 42	46.39	+17 19	13.8		688	
47	1982 03	21.26319	09 42	44.39	+17 19	16.4		688	
61	1982 02	28.34167	12 00	06.45	-11 13	39.9		688	
62	1981 08	31.23056	21 12	21.30	-17 12	29.5		688	
78	1982 03	04.43611	13 43	15.07	-19 32	54.8		688	
78	1982 03	04.47014	13 43	14.39	-19 33	04.5		688	
103	1982 03	21.33681	12 44	22.96	+02 08	07.6		688	
103	1982 03	21.37083	12 44	21.37	+02 08	20.9		688	
107	1982 03	23.37639	13 55	11.69	-05 09	45.1		688	
107	1982 03	23.41667	13 55	10.48	-05 09	31.8		688	
116	1981 08	31.23056	21 16	58.38	-21 04	52.6		688	
144	1982 02	20.40625	12 21	05.67	+04 51	22.3		688	
144	1982 02	20.46528	12 21	03.67	+04 51	39.0		688	
144	1982 03	22.28611	11 58	55.42	+07 30	12.2		688	
144	1982 03	22.33333	11 58	53.00	+07 30	26.3		688	
148	1981 08	31.23056	21 12	31.61	-15 40	04.1		688	
176	1982 03	21.32014	12 38	12.52	-10 53	38.5		688	
176	1982 03	21.35417	12 38	11.19	-10 53	21.2		688	
179	1982 02	28.34167	11 55	58.48	-11 00	45.5		688	
211	1982 03	21.32014	12 15	08.58	-07 40	50.7		688	
211	1982 03	21.35417	12 15	06.96	-07 40	39.5		688	
262	1982 03	23.37639	13 43	46.77	-06 30	06.2		688	

262	1982 03	23.41667	13 43	44.68	-06 29	58.8	1	688
301	1982 02	28.27014	09 08	47.20	+16 31	23.4		688
319	1982 03	23.37639	13 51	41.25	-07 43	40.9		688
319	1982 03	23.41667	13 51	40.12	-07 43	32.3		688
322	1982 03	04.43611	13 32	31.83	-18 51	42.6		688
322	1982 03	04.47014	13 32	30.91	-18 51	41.2		688
355	1982 02	20.15139	07 44	45.31	+26 02	18.2		688
355	1982 02	20.26389	07 44	42.06	+26 02	05.0		688
364	1982 02	20.15139	07 41	53.03	+25 46	03.2		688
364	1982 02	20.26389	07 41	50.45	+25 46	20.1		688
366	1982 03	21.24236	11 41	03.18	-00 58	57.9		688
366	1982 03	21.30278	11 41	00.25	-00 58	47.8		688
375	1981 08	31.23056	21 08	16.40	-23 11	24.7		688
408	1982 02	28.34167	11 42	54.62	-09 18	48.3		688
408	1982 03	21.24236	11 27	19.87	-08 12	59.0		688
408	1982 03	21.30278	11 27	17.21	-08 12	44.5		688
414	1982 03	22.28611	11 47	34.26	+14 08	43.6		688
414	1982 03	22.33333	11 47	32.31	+14 08	57.3		688
431	1982 02	20.28819	08 41	53.11	+18 59	37.8		688
431	1982 02	20.31736	08 41	51.90	+18 59	43.4		688
467	1982 02	20.28819	08 50	48.65	+18 38	37.0		688
474	1982 02	20.40625	12 04	54.87	+01 43	40.9		688
474	1982 02	20.46528	12 04	52.83	+01 44	04.8		688
494	1982 02	21.26389	10 24	29.90	+20 24	54.6		688
494	1982 02	21.29653	10 24	28.18	+20 25	02.3		688
494	1982 02	21.31458	10 24	27.25	+20 25	06.6		688
494	1982 02	21.34861	10 24	25.27	+20 25	13.2		688
494	1982 03	04.41875	10 14	54.00	+21 02	30.7		688
494	1982 03	04.45278	10 14	52.33	+21 02	36.9		688
498	1982 02	20.35486	11 27	12.42	+16 48	37.2		688
498	1982 02	20.38819	11 27	10.87	+16 48	51.4		688
498	1982 03	21.22500	11 03	25.77	+19 38	42.0		688
498	1982 03	21.28542	11 03	22.82	+19 38	56.4		688
499	1982 02	20.28819	08 37	43.64	+16 00	15.4		688
499	1982 02	20.31736	08 37	42.65	+16 00	20.0		688
501	1982 03	04.41875	10 27	58.79	+22 19	24.8		688
501	1982 03	04.45278	10 27	56.96	+22 19	26.6		688
534	1982 02	20.40625	12 13	24.72	+03 34	41.7		688
534	1982 02	20.46528	12 13	22.91	+03 34	57.2		688
551	1982 02	20.15139	07 31	28.50	+22 18	28.9		688
551	1982 02	20.26389	07 31	25.88	+22 18	32.2		688
553	1982 02	21.26389	10 09	10.15	+21 38	43.1		688
553	1982 02	21.29653	10 09	07.98	+21 38	54.1		688
553	1982 02	28.28819	10 01	49.88	+22 13	42.4		688
553	1982 02	28.32222	10 01	47.76	+22 13	51.3		688
553	1982 03	04.37847	09 57	52.53	+22 28	55.1		688
553	1982 03	21.20417	09 45	58.61	+22 48	58.3		688
553	1982 03	21.26319	09 45	56.91	+22 48	54.8		688
567	1982 03	22.28611	11 55	43.52	+14 08	19.7		688
567	1982 03	22.33333	11 55	41.17	+14 08	28.4		688
582	1982 03	21.20417	09 46	22.29	+16 52	07.6		688
582	1982 03	21.26319	09 46	21.35	+16 53	06.7		688
585	1982 03	23.37639	13 41	24.73	-06 41	54.1		688
585	1982 03	23.41667	13 41	23.22	-06 41	33.5		688
636	1982 02	20.40625	12 06	18.42	+07 34	10.9		688
636	1982 02	20.46528	12 06	16.32	+07 34	24.6		688
636	1982 03	22.28611	11 43	57.08	+09 35	32.4		688
636	1982 03	22.33333	11 43	54.80	+09 35	43.5		688
682	1982 03	23.41667	13 50	03.31	-08 38	59.3		688

701	1982 02	28.34167	11 49	24.27	-09 36	02.8	688
701	1982 03	21.24236	11 34	13.23	-07 56	26.8	688
701	1982 03	21.30278	11 34	10.45	-07 56	05.6	688
712	1982 03	22.26250	11 16	00.80	-12 39	46.5	688
712	1982 03	22.30972	11 15	58.71	-12 39	23.4	1 688
727	1982 02	20.28819	08 39	02.61	+19 53	16.2	688
811	1982 02	28.28819	09 47	42.47	+14 49	11.1	688
811	1982 02	28.32222	09 47	40.90	+14 49	19.8	1 688
820	1982 02	21.31458	10 21	32.63	+15 14	29.0	688
820	1982 02	21.34861	10 21	31.09	+15 14	38.0	688
820	1982 03	04.41875	10 13	12.06	+16 12	44.4	688
820	1982 03	04.45278	10 13	10.77	+16 12	55.2	688
825	1982 02	20.15139	07 35	01.21	+24 13	23.8	688
825	1982 02	20.26389	07 34	57.71	+24 13	35.7	688
844	1982 03	21.32014	12 29	34.08	-07 25	14.2	688
844	1982 03	21.35417	12 29	32.51	-07 25	09.1	688
859	1982 03	22.28611	11 50	18.08	+15 02	07.5	688
859	1982 03	22.33333	11 50	15.83	+15 02	13.3	688
862	1981 09	10.45486	01 49	59.59	+31 56	11.3	688
867	1982 03	23.41667	13 57	42.12	-08 02	11.9	688
884	1982 02	20.28819	08 51	58.21	+14 57	15.5	688
884	1982 02	20.31736	08 51	57.39	+14 57	15.8	688
887	1982 03	04.40139	13 46	37.80	+10 25	49.8	688
887	1982 03	04.48750	13 46	33.43	+10 26	52.8	688
889	1981 08	31.23056	21 21	23.71	-18 52	59.4	688
934	1982 02	28.34167	11 54	13.10	-10 21	17.1	688
946	1982 02	20.40625	12 08	11.19	+01 19	48.5	688
946	1982 02	20.46528	12 08	09.30	+01 20	01.0	688
964	1982 02	20.35486	11 08	53.36	+16 43	49.5	688
964	1982 02	20.38819	11 08	51.74	+16 43	57.7	688
1003	1982 03	23.37639	13 33	43.99	-07 24	07.6	688
1003	1982 03	23.41667	13 33	42.34	-07 23	58.8	688
1004	1982 02	20.28819	08 46	40.04	+16 38	18.4	688
1004	1982 02	20.31736	08 46	38.95	+16 38	23.9	688
1029	1982 02	20.28819	08 39	52.25	+22 00	47.6	688
1029	1982 02	20.31736	08 39	50.93	+22 00	51.6	688
1049	1982 02	28.28819	09 50	07.14	+19 12	56.2	688
1049	1982 02	28.32222	09 50	05.33	+19 12	55.7	688
1049	1982 03	04.34514	09 46	41.99	+19 13	05.8	688
1049	1982 03	21.20417	09 35	13.26	+18 56	22.1	688
1049	1982 03	21.26319	09 35	11.38	+18 56	15.6	688
1061	1982 02	20.15139	07 49	49.66	+23 04	38.6	688
1061	1982 02	20.26389	07 49	46.38	+23 04	46.6	688
1081	1981 08	31.23056	21 20	51.76	-21 40	18.5	688
1097	1982 02	20.15139	07 51	59.76	+20 40	00.1	688
1163	1982 03	21.20417	09 22	33.25	+19 43	05.8	688
1163	1982 03	21.26319	09 22	31.98	+19 43	13.5	688
1192	1982 03	21.32014	12 25	27.19	-05 33	29.1	688
1192	1982 03	21.35417	12 25	23.56	-05 33	54.5	688
1214	1982 03	22.26250	11 15	40.45	-10 24	31.5	688
1215	1982 02	20.35486	11 06	45.34	+20 30	36.5	688
1215	1982 02	20.38819	11 06	43.66	+20 30	57.6	688
1223	1982 02	28.28819	09 41	53.50	+17 41	52.4	688
1223	1982 02	28.32222	09 41	51.87	+17 41	58.0	688
1223	1982 03	04.34514	09 38	47.24	+17 53	57.4	688
1223	1982 03	04.37847	09 38	45.73	+17 54	02.6	688
1223	1982 03	21.20417	09 29	07.48	+18 22	40.9	688
1223	1982 03	21.26319	09 29	06.00	+18 22	43.2	688
1233	1982 02	20.15139	07 38	37.83	+19 18	17.1	688

1233	1982	02	20.26389	07	38	33.87	+19	18	19.1	688
1241	1982	02	20.12778	07	30	26.54	+33	56	49.8	688
1241	1982	02	20.23681	07	30	22.45	+33	56	14.2	688
1265	1982	03	21.24236	11	19	04.41	-05	32	27.3	688
1265	1982	03	21.30278	11	19	01.38	-05	32	14.5	688
1285	1982	02	20.15139	07	35	32.86	+23	36	49.8	688
1285	1982	02	20.26389	07	35	29.58	+23	36	43.0	688
1352	1982	03	23.37639	13	40	34.21	-09	09	47.7	688
1352	1982	03	23.41667	13	40	32.64	-09	09	39.5	688
1363	1982	02	20.15139	07	35	22.84	+20	06	49.8	688
1363	1982	02	20.26389	07	35	19.59	+20	06	58.8	688
1392	1982	02	21.31458	10	34	28.01	+17	59	07.5	688
1392	1982	02	21.34861	10	34	25.71	+17	59	12.1	688
1392	1982	03	04.41875	10	22	36.58	+18	14	19.2	688
1392	1982	03	04.45278	10	22	34.54	+18	14	22.0	688
1423	1982	02	21.31458	10	32	30.51	+13	49	05.7	688
1423	1982	02	21.34861	10	32	28.91	+13	49	15.8	688
1445	1982	02	20.28819	08	28	59.43	+21	12	44.0	1 688
1445	1982	02	20.31736	08	28	58.38	+21	12	48.3	688
1448	1982	02	20.35486	11	27	11.55	+14	41	31.8	688
1448	1982	02	20.38819	11	27	09.75	+14	41	42.0	688
1452	1982	02	20.35486	11	21	17.50	+21	05	02.2	688
1452	1982	02	20.38819	11	21	15.73	+21	05	05.6	688
1452	1982	03	21.22500	10	54	24.46	+21	12	32.6	688
1452	1982	03	21.28542	10	54	21.19	+21	12	24.3	688
1482	1982	02	20.40625	12	26	37.23	+01	37	16.1	688
1482	1982	02	20.46528	12	26	35.59	+01	37	27.9	688
1503	1982	02	28.34167	11	42	53.38	-10	59	32.0	688
1503	1982	03	22.26250	11	21	13.58	-10	48	32.7	688
1503	1982	03	22.30972	11	21	10.93	-10	48	27.3	1 688
1513	1982	02	28.27014	09	14	38.29	+17	32	54.3	1 688
1513	1982	02	28.30556	09	14	36.63	+17	33	07.3	688
1532	1982	02	20.15139	07	46	10.00	+26	36	49.3	688
1619	1982	03	23.37639	13	42	32.72	-03	17	22.1	17.0 688
1619	1982	03	23.41667	13	42	30.63	-03	17	08.5	688
1627	1982	02	28.28819	09	58	40.27	+17	14	03.0	688
1627	1982	02	28.32222	09	58	37.72	+17	14	20.7	688
1627	1982	03	21.20417	09	35	51.29	+19	54	51.1	17.0 688
1627	1982	03	21.26319	09	35	48.24	+19	55	11.4	688
1629	1982	02	20.15139	07	38	31.62	+20	21	16.5	688
1629	1982	02	20.26389	07	38	27.49	+20	21	56.2	688
1637	1982	02	20.35486	11	06	43.92	+21	39	57.4	688
1637	1982	02	20.38819	11	06	42.16	+21	40	04.0	688
1676	1982	02	21.31458	10	32	40.90	+20	41	16.2	688
1676	1982	02	21.34861	10	32	38.23	+20	41	30.0	688
1676	1982	03	04.45278	10	20	14.22	+21	42	33.4	688
1697	1982	02	20.28819	08	49	09.29	+20	03	37.1	688
1697	1982	02	20.31736	08	49	07.64	+20	03	36.6	688
1725	1982	03	21.20417	09	23	09.20	+17	37	54.4	688
1725	1982	03	21.26319	09	23	07.33	+17	38	03.5	688
1729	1982	02	20.40625	12	03	41.19	+01	11	28.3	688
1729	1982	02	20.46528	12	03	38.92	+01	11	40.0	688
1746	1982	02	28.27014	09	04	38.56	+17	21	16.0	688
1746	1982	02	28.30556	09	04	37.04	+17	21	19.9	688
1786	1982	02	21.26389	10	12	07.74	+23	04	16.5	688
1786	1982	02	21.29653	10	12	06.02	+23	04	22.1	688
1854	1982	03	21.33681	12	27	33.42	-03	40	54.4	688
1854	1982	03	21.37083	12	27	31.54	-03	40	38.7	688
1859	1982	03	04.43611	13	29	50.14	-15	08	04.5	688

1859	1982	03	04.47014	13	29	49.45	-15	08	08.3	688	
1863	1982	02	20.40625	12	15	03.60	+03	45	33.0	688	
1863	1982	02	20.46528	12	15	02.00	+03	44	15.4	688	
1888	1982	03	21.32014	12	34	22.11	-12	51	55.1	688	
1888	1982	03	21.35417	12	34	20.31	-12	51	43.3	688	
1970	1982	03	04.43611	13	33	28.17	-19	29	31.1	17.0 688	
1970	1982	03	04.47014	13	33	27.58	-19	29	37.2	688	
1988	1982	02	20.15139	07	36	51.18	+24	04	11.9	688	
1988	1982	02	20.26389	07	36	47.55	+24	04	24.3	688	
2010	1982	02	28.28819	09	51	19.77	+15	24	10.3	688	
2010	1982	02	28.32222	09	51	18.19	+15	24	15.0	688	
2043	1982	02	28.27014	09	19	40.08	+15	27	50.7	688	
2043	1982	02	28.30556	09	19	38.70	+15	27	55.5	688	
2091	1982	02	21.31458	10	44	39.45	+19	43	02.9	688	
2091	1982	02	21.34861	10	44	37.68	+19	43	20.4	688	
2091	1982	03	04.41875	10	36	03.46	+21	00	19.7	688	
2091	1982	03	04.45278	10	36	01.90	+21	00	33.0	688	
2132	1982	02	20.40625	12	17	52.06	+07	23	20.8	688	
2132	1982	02	20.46528	12	17	50.18	+07	23	39.7	688	
2132	1982	03	22.28611	11	56	02.71	+10	09	14.2	688	
2132	1982	03	22.33333	11	56	00.12	+10	09	28.8	688	
2207	1982	02	28.27014	09	09	54.13	+13	35	08.3	688	
2207	1982	02	28.30556	09	09	53.03	+13	35	12.9	688	
2235	1982	03	21.32014	12	31	05.08	-12	45	01.1	16.2 688	
2235	1982	03	21.35417	12	31	03.77	-12	44	43.2	688	
2297	1982	03	23.37639	13	50	49.50	-09	10	57.3	688	
2297	1982	03	23.41667	13	50	48.29	-09	10	48.9	688	
2334	1982	02	20.28819	08	28	29.53	+20	54	11.8	688	
2334	1982	02	20.31736	08	28	28.09	+20	54	21.4	688	
2345	1982	02	20.15139	07	54	24.99	+19	55	10.4	688	
2345	1982	02	20.26389	07	54	21.06	+19	55	02.3	688	
2349	1982	02	28.28819	10	05	23.29	+20	07	41.5	688	
2349	1982	02	28.32222	10	05	21.53	+20	07	59.0	688	
2356	1982	03	23.37639	13	46	11.91	-06	33	02.3	688	
2356	1982	03	23.41667	13	46	10.75	-06	32	42.7	688	
2374	1982	02	28.32222	09	48	32.55	+21	12	44.8	688	
2374	1982	03	21.26319	09	33	55.22	+21	02	37.6	688	
2416	1982	02	20.28819	08	31	32.89	+14	59	51.7	688	
2416	1982	02	20.31736	08	31	31.83	+15	00	01.8	688	
2453	1982	03	21.33681	12	34	37.27	-02	07	53.0	1 688	
2453	1982	03	21.37083	12	34	35.63	-02	07	48.5	688	
2457	1982	03	23.37639	13	42	46.23	-01	43	20.4	688	
2457	1982	03	23.41667	13	42	44.72	-01	43	04.2	688	
2468	1982	03	21.24236	11	31	10.46	-03	20	38.1	688	
2468	1982	03	21.30278	11	31	07.09	-03	20	11.4	688	
2552	1981	08	31.23056	21	08	00.42	-17	03	48.3	688	
2560	1982	02	28.27014	09	25	22.91	+14	47	53.2	16.5 688	
2560	1982	02	28.30556	09	25	21.27	+14	48	04.8	688	
2561	1982	02	21.24722	09	17	43.08	+14	01	24.8	16.8 688	
2561	1982	02	21.28056	09	17	41.07	+14	01	37.1	688	
2561	1982	02	28.27014	09	12	13.07	+14	38	02.7	17.0 688	
2561	1982	02	28.30556	09	12	11.50	+14	38	14.6	688	
2563	1982	02	20.28819	08	38	44.94	+19	34	06.2	16.8 688	
2576	1982	01	31.15021	06	47	55.00	+29	20	49.9	17.2 3 688	
2576	1982	01	31.18542	06	47	52.92	+29	20	45.9	3 688	
2578	1982	02	20.12778	07	30	27.93	+35	14	34.8	17.2 688	
2578	1982	02	20.23681	07	30	24.98	+35	14	25.6	688	
1938	DW1	1982	03	04.43611	13	32	00.41	-18	10	38.4	17.0 688
1938	DW1	1982	03	04.47014	13	32	00.10	-18	10	42.3	688

1971 TZ	1982 03	21.24236	11 20	46.53	-02 02	56.0	16.5	688
1971 TZ	1982 03	21.30278	11 20	43.59	-02 02	27.9		688
1977 VM1	1982 02	20.38819	11 10	41.76	+18 50	21.8	17.0	688
1979 FT2	1982 02	20.35486	11 23	35.60	+15 15	59.7	16.8	3 688
1979 FT2	1982 02	20.38819	11 23	33.71	+15 16	11.6		688
1979 KL	1982 02	20.28819	08 49	48.63	+14 51	19.6	16.8	688
1979 KL	1982 02	20.31736	08 49	47.42	+14 51	31.2		688
1979 QK2	1982 03	21.33681	12 33	23.39	-02 58	44.6	17.0	688
1979 QK2	1982 03	21.37083	12 33	21.27	-02 58	29.8		688
1979 SF	1982 03	21.32014	12 27	50.79	-10 55	15.4	17.0	688
1979 SF	1982 03	21.35417	12 27	48.80	-10 55	09.6		688
1980 RB1	1982 02	28.34167	11 58	26.48	-06 02	17.4		3 688
1981 TO	1981 09	26.19931	22 57	03.15	-10 53	04.3	16.8	688
1981 TO	1981 09	26.26458	22 57	00.61	-10 53	12.3		3 688
1981 TP	1981 09	26.19931	23 12	05.11	-06 07	10.9	16.8	688
1981 TP	1981 09	26.26458	23 12	02.21	-06 07	23.4		688
1981 YH1	1982 02	20.16944	06 06	25.98	+44 14	55.2	16.8	688
1981 YH1	1982 02	20.18958	06 06	27.02	+44 14	57.6		688
1982 BO	1982 02	20.15139	07 43	38.27	+23 01	02.4	16.8	688
1982 BO	1982 02	20.26389	07 43	34.56	+23 01	07.0		688
1982 BR	1982 02	20.28819	08 41	39.09	+14 58	30.4	17.0	688
1982 BR	1982 02	20.31736	08 41	37.56	+14 58	44.9		688
1982 BH1	1982 02	28.27014	09 24	22.67	+13 14	15.8	17.0	688
1982 BH1	1982 02	28.30556	09 24	20.83	+13 14	25.2		1 688
1982 BJ1	1982 02	28.28819	09 54	21.68	+20 03	42.4	15.5	688
1982 BJ1	1982 02	28.32222	09 54	20.23	+20 04	04.3		688
1982 BJ1	1982 03	04.34514	09 51	43.19	+20 45	57.7		2 688
1982 BJ1	1982 03	04.37847	09 51	41.76	+20 46	22.3		688
1982 BJ1	1982 03	21.20417	09 44	50.93	+22 51	42.8	16.2	688
1982 BJ1	1982 03	21.26319	09 44	50.20	+22 51	59.0		688
1982 BK1	1982 02	28.28819	09 58	32.98	+15 43	13.1	16.5	688
1982 BK1	1982 02	28.32222	09 58	31.54	+15 43	28.9		688
1982 BK1	1982 03	21.20417	09 46	40.94	+18 09	08.8	17.0	688
1582 BK1	1982 03	21.26319	09 46	39.27	+18 09	28.9		688
1982 BL1	1982 02	28.28819	10 00	41.02	+16 33	12.4	16.8	688
1982 BL1	1982 02	28.32222	10 00	38.98	+16 33	26.6		688
1982 BL1	1982 03	21.20417	09 46	01.86	+18 30	48.4	16.8	688
1982 BL1	1982 03	21.26319	09 46	00.28	+18 30	59.4		688
1982 BM1	1982 02	28.28819	10 04	31.29	+15 35	42.7	16.8	688
1982 BM1	1982 02	28.32222	10 04	29.53	+15 35	49.2		688
1982 BO1	1982 02	28.27014	09 25	52.68	+13 54	31.7	17.0	688
1982 BO1	1982 02	28.30556	09 25	50.64	+13 54	38.3		688
1982 BS1	1982 02	28.27014	09 12	29.76	+15 00	58.7	17.0	688
1982 BS1	1982 02	28.30556	09 12	28.43	+15 01	15.4		688
1982 BT1	1982 02	28.27014	09 14	19.17	+13 46	32.0	17.0	688
1982 BT1	1982 02	28.30556	09 14	17.41	+13 46	50.1		688
1982 BU1	1982 02	28.27014	09 22	59.94	+16 24	31.7	16.5	688
1982 BU1	1982 02	28.30556	09 22	58.15	+16 24	43.2		688
1982 BV1	1982 02	28.27014	09 22	45.90	+12 21	35.2	16.5	688
1982 BV1	1982 02	28.30556	09 22	43.82	+12 21	30.5		688
1982 BW1	1982 02	28.28819	09 47	23.24	+17 53	31.4	16.8	688
1982 BW1	1982 02	28.32222	09 47	21.34	+17 53	36.7		688
1982 BX1	1982 02	28.28819	09 43	58.07	+19 32	09.8	17.2	688
1982 BX1	1982 02	28.32222	09 43	55.64	+19 32	13.8		688
1982 BX1	1982 03	21.20417	09 27	06.61	+20 05	57.8	17.2	688
1982 BX1	1982 03	21.26319	09 27	04.60	+20 05	55.7		688
1982 BY1	1982 02	28.28819	10 04	41.46	+17 52	07.9	16.5	688
1982 BY1	1982 02	28.32222	10 04	39.50	+17 52	14.4		688
1982 BB2	1982 02	21.31458	10 38	32.26	+20 26	53.0	16.5	688

1982 BB2	1982 02	21.34861	10 38	30.20	+20 27	16.2		688
1982 BB2	1982 03	04.41875	10 28	51.98	+22 09	22.8	16.5	688
1982 BB2	1982 03	04.45278	10 28	50.14	+22 09	39.8		688
1982 DB	1982 03	04.43611	13 35	58.89	-17 40	22.4	16.2	1 688
1982 DB	1982 03	04.47014	13 35	53.11	-17 40	02.2		1 688
1982 DC	1982 02	28.28819	09 45	02.09	+19 54	07.7	16.5	688
1982 DC	1982 02	28.32222	09 45	01.15	+19 54	15.7		688
1982 DD	1982 02	28.28819	09 43	38.41	+20 51	20.5	16.8	688
1982 DD	1982 02	28.32222	09 43	36.17	+20 51	27.0		688
1982 DJ	1982 01	30.39028	10 30	29.65	+17 42	09.5	16.8	688
1982 DJ	1982 01	30.45694	10 30	26.16	+17 42	25.4		688
1982 DJ	1982 02	28.28819	10 00	32.08	+19 18	41.5	16.5	688
1982 DJ	1982 02	28.32222	10 00	30.01	+19 18	43.8		688
1982 DJ	1982 03	21.20417	09 44	05.36	+19 11	04.0	17.2	688
1982 DJ	1982 03	21.26319	09 44	03.63	+19 10	54.8		688
1982 DK	1982 03	04.40139	13 59	34.65	+11 22	17.5	16.5	688
1982 DK	1982 03	04.48750	13 59	35.54	+11 22	57.7		1 688
1982 DL	1982 02	28.27014	09 08	31.19	+17 38	01.0	16.2	688
1982 DL	1982 02	28.30556	09 08	29.77	+17 38	11.3		688
1982 DN	1982 01	24.35278	09 44	13.22	+10 47	33.6	17.0	688
1982 DN	1982 01	24.41944	09 44	10.22	+10 47	48.8		688
1982 DN	1982 01	30.31875	09 39	19.15	+11 12	27.8	16.8	688
1982 DN	1982 01	30.37014	09 39	16.26	+11 12	41.7		688
1982 DN	1982 02	28.27014	09 11	44.21	+13 44	55.0	17.0	688
1982 DN	1982 02	28.30556	09 11	42.24	+13 45	03.8		688
1982 DO	1982 02	28.27014	09 12	28.80	+17 14	07.7	17.0	2 688
1982 DO	1982 02	28.30556	09 12	27.11	+17 14	08.8		688
1982 DP	1982 02	28.27014	09 12	48.51	+19 06	05.6	16.8	688
1982 DP	1982 02	28.30556	09 12	46.43	+19 06	10.5		688
1982 DR	1982 02	28.27014	09 29	09.79	+16 40	42.6	16.8	688
1982 DR	1982 02	28.30556	09 29	08.19	+16 40	59.9		688
1982 DS	1982 03	21.24236	11 29	13.00	-05 19	05.4	16.2	688
1982 DS	1982 03	21.30278	11 29	09.29	-05 18	42.9		688
1982 DU	1982 03	21.24236	11 39	03.26	-07 10	18.4	16.8	1 688
1982 DU	1982 03	21.30278	11 38	59.23	-07 10	24.4		688
1982 DW	* 1982 02	20.28819	08 48	23.31	+19 03	08.8	17.0	4 688
1982 DW	1982 02	20.31736	08 48	21.86	+19 03	05.6		688
1982 DX	* 1982 02	20.35486	11 20	07.37	+19 03	34.3	17.2	7 688
1982 DX	1982 02	20.38819	11 20	05.90	+19 03	43.3		688
1982 DY	1982 02	20.35486	11 25	02.33	+19 30	10.3	16.8	4 688
1982 DY	1982 02	20.38819	11 25	00.60	+19 30	31.6		688
1982 DZ	* 1982 02	20.35486	11 26	49.07	+18 27	21.4	16.5	4 688
1982 DZ	1982 02	20.38819	11 26	47.69	+18 27	36.7		688
1982 DZ	1982 03	21.22500	11 04	57.63	+21 20	26.6	16.8	688
1982 DZ	1982 03	21.28542	11 04	54.96	+21 20	42.1		2 688
1982 DA1	1982 02	20.40625	12 22	24.43	+04 27	59.5	17.0	4 688
1982 DA1	1982 02	20.46528	12 22	22.16	+04 28	20.0		688
1982 DB1	* 1982 02	21.26389	10 12	28.61	+22 40	13.1	16.8	4 688
1982 DB1	1982 02	21.29653	10 12	26.58	+22 40	20.5		688
1982 DC1	* 1982 02	21.31458	10 27	38.26	+20 03	02.2	16.8	4 688
1982 DC1	1982 02	21.34861	10 27	36.49	+20 03	26.5		688
1982 DD1	* 1982 02	21.31458	10 27	45.03	+21 12	07.4	17.0	4 688
1982 DD1	1982 02	21.34861	10 27	42.75	+21 12	22.7		688
1982 DE1	* 1982 02	21.31458	10 29	15.87	+14 59	45.4	16.8	4 688
1982 DE1	1982 02	21.34861	10 29	13.96	+14 59	58.7		688
1982 DE1	1982 03	04.41875	10 18	26.65	+16 11	43.0	16.8	688
1982 DE1	1982 03	04.45278	10 18	24.60	+16 11	57.4		688
1982 DF1	* 1982 02	21.31458	10 39	38.94	+18 29	12.6	17.0	4 688
1982 DF1	1982 02	21.34861	10 39	37.22	+18 29	26.2		688

1982 DF1	1982 03 04.41875	10 31 07.30	+19 25 16.5	16.8	688
1982 DF1	1982 03 04.45278	10 31 06.08	+19 25 29.1		688
1982 DG1 *	1982 02 21.31458	10 39 47.13	+14 25 37.8	17.2	4 688
1982 DG1	1982 02 21.34861	10 39 45.22	+14 25 49.3		3 688
1982 DH1 *	1982 02 21.31458	10 46 15.95	+19 10 52.0	17.0	4 688
1982 DH1	1982 02 21.34861	10 46 13.74	+19 11 07.2		688
1982 FF *	1982 03 21.24236	11 34 44.58	-01 35 21.0	16.8	4 688
1982 FF	1982 03 21.30278	11 34 40.78	-01 35 06.3		688
1982 FG *	1982 03 21.24236	11 40 47.47	-07 02 30.3	16.5	4 688
1982 FG	1982 03 21.30278	11 40 44.46	-07 01 56.7		688
1982 FH *	1982 03 21.32014	12 21 28.05	-07 09 22.5	16.5	4 688
1982 FH	1982 03 21.35417	12 21 26.08	-07 09 08.8		688
1982 FJ *	1982 03 21.32014	12 24 13.98	-05 34 21.2	16.8	4 688
1982 FJ	1982 03 21.35417	12 24 12.26	-05 34 20.9		688
1982 FK *	1982 03 21.33681	12 32 59.50	-01 42 47.9	16.8	4 688
1982 FK	1982 03 21.37083	12 32 57.98	-01 42 42.4		688
1982 FL *	1982 03 21.33681	12 37 32.29	-03 37 00.5	16.2	4 688
1982 FL	1982 03 21.37083	12 37 30.15	-03 37 02.4		688
1982 FM *	1982 03 21.33681	12 45 05.54	-01 59 59.7	16.8	4 688
1982 FM	1982 03 21.37083	12 45 03.82	-01 59 58.0		688
1982 FN *	1982 03 21.33681	12 45 35.40	+02 52 44.5	16.8	4 688
1982 FN	1982 03 21.37083	12 45 34.33	+02 53 34.6		2 688
1982 FO *	1982 03 21.33681	12 49 31.74	-01 16 12.8	17.0	4 688
1982 FO	1982 03 21.37083	12 49 30.20	-01 16 02.3		688
1982 FP *	1982 03 23.37639	13 39 30.37	-06 14 21.9	16.5	4 688
1982 FP	1982 03 23.41667	13 39 28.49	-06 14 24.6		688
1982 FQ *	1982 03 23.37639	13 59 36.60	-07 27 21.2	17.0	4 688
1982 FQ	1982 03 23.41667	13 59 35.28	-07 27 09.9		688
6561 P-L	1982 03 21.33681	12 49 18.69	-00 32 20.1	17.0	688
6561 P-L	1982 03 21.37083	12 49 16.44	-00 32 10.6		688

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

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

Object	Date	UT	R. A. (1950)	Decl.	N Obs.
234	1953 07	14.30347	20 55 17.45	-04 35 40.2	760
234	1953 07	14.33615	20 55 16.61	-04 36 01.7	760
2524	1954 11	17.16656	02 43 07.24	+16 11 31.5	760
2524	1954 11	17.21447	02 43 04.96	+16 11 21.4	760
2560	1957 10	02.35904	01 03 26.16	-00 18 02.1	760
2560	1957 10	02.40348	01 03 23.74	-00 18 21.3	760
2560	1962 11	23.23259	04 04 13.06	+11 11 18.0	760
2560	1962 11	23.28815	04 04 09.79	+11 11 08.1	760
1953 RO	1953 09	09.23473	22 43 55.57	-01 30 18.7	760
1953 RO	1953 09	09.27987	22 43 52.79	-01 30 29.2	760
1953 RP	1953 09	09.23473	22 42 07.25	-02 59 05.9	760
1953 RP	1953 09	09.27987	22 42 04.53	-02 59 07.1	760
1953 RQ	1953 09	09.23473	22 40 03.99	-05 42 26.8	760
1953 RQ	1953 09	09.27987	22 40 01.67	-05 42 47.9	760
1953 RR	1953 09	09.23473	22 36 44.74	-05 05 57.0	760
1953 RR	1953 09	09.27987	22 36 42.93	-05 06 15.1	760
1953 RS	1953 09	09.23473	22 34 28.57	-01 58 05.7	760
1953 RS	1953 09	09.27987	22 34 25.92	-01 58 19.5	760
1953 TY	1953 10	08.20934	01 11 35.56	+07 48 18.2	1 760
1953 TY	1953 10	08.25795	01 11 32.79	+07 47 58.3	1 760
1955 VE	1955 11	10.08751	00 55 08.79	+04 07 38.0	760
1955 VE	1955 11	10.12362	00 55 07.32	+04 07 23.6	760
1957 UW	1957 10	20.24877	01 40 51.91	+05 25 00.2	760

1963 FB	1963 03 22.08409	10 28 37.57	+15 13 55.0	760
1963 FB	1963 03 22.12847	10 28 35.92	+15 14 00.2	760
1963 SM	1963 09 19.33056	00 13 13.67	+09 58 06.0	760
1963 US	1963 10 23.23475	02 34 02.08	+25 41 28.3	760
1963 US	1963 10 23.27850	02 33 59.77	+25 41 05.8	760
1964 TP	1964 10 14.26754	01 09 52.93	+02 48 50.9	760
1964 TP	1964 10 14.31267	01 09 49.89	+02 48 35.8	760

Note 1: the identification 1953 TY = (1446) is invalid (see MPC 6751).

OBSERVATIONS MADE AT THE OAK RIDGE OBSERVATORY BY R. E. MC CROSKY, C.-Y.

SHAO AND G. SCHWARTZ (WITH ASSISTANCE FROM C. M. BARDWELL, D. W. E. GREEN AND B. G. MARSDEN).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
432	1978 11 01.40891	10 13 59.76	+18 39 14.8				801
1450	1978 08 27.22907	22 38 33.81	-16 45 20.4				801
1863	1982 02 26.37174	12 11 40.47	+01 09 19.3				801
1863	1982 03 03.30279	12 06 42.65	-01 36 06.4				801
1940	1976 03 30.28032	13 30 47.67	-18 29 51.6				801
1996	1976 05 01.10565	13 02 27.30	-18 18 55.7				801
2131	1975 11 02.99731	21 10 06.52	+42 17 38.7				801
2131	1975 12 30.06624	23 02 42.86	+38 49 47.8				801
2220	1979 06 20.19076	15 51 16.42	-18 30 06.7				801
2567	1982 02 27.21666	08 54 06.64	+16 45 37.0			1	801
2571	1981 11 02.24211	03 35 13.83	+17 20 16.2				801
A919 SA	1982 02 24.31804	11 54 08.44	+00 28 54.9		18		801
1940 GN	1982 03 03.32206	13 10 21.09	+10 00 20.9				801
1941 FN	1982 03 03.37792	13 33 50.12	-10 26 56.3				801
1961 RA	1982 03 01.22551	10 14 44.74	-05 23 34.2			2	801
1962 RE	1982 02 27.28453	10 33 30.09	+08 44 25.5				801
1976 GB8	1982 03 03.25291	09 13 35.49	+16 29 17.8				801
1976 JQ2	1982 02 26.31990	10 20 56.61	+13 47 34.1				801
1976 JD11*	1976 05 01.10565	13 02 01.46	-18 11 07.3		18		801
1976 QD	1982 02 27.38488	13 13 52.25	-14 17 41.4			3	801
1976 QD	1982 03 01.34251	13 12 49.20	-14 25 58.3				801
1976 QV	1982 02 27.35896	12 42 51.69	-09 16 23.8				801
1976 YX	1982 03 01.24875	10 01 35.94	+36 52 34.2				801
1976 YQ2	1982 02 26.21697	08 23 47.26	+14 47 48.6				801
1977 UP	1982 03 01.27569	10 23 13.68	+12 20 15.6				801
1978 UT2 *	1978 10 28.14080	01 48 53.38	+11 54 09.8		17.5		801
1978 UU2 *	1978 10 28.14080	01 49 11.26	+11 43 50.5		17		801
1978 UV2 *	1978 10 28.14080	01 51 09.79	+12 06 13.2		17		801
1978 VS16*	1978 11 02.21343	01 11 50.73	+14 43 11.6		17.5		801
1979 FT2	1982 02 24.29787	11 19 54.39	+15 40 27.9				801
1979 FT2	1982 02 26.35192	11 17 51.86	+15 52 49.4				801
1979 FT2	1982 02 27.26014	11 16 56.84	+15 58 16.2			4	801
1979 FT2	1982 03 01.30067	11 14 49.77	+16 09 50.8			4	801
1979 KL	1982 02 26.26866	08 46 01.43	+15 32 37.0				801
1979 KC1 *	1979 05 23.30346	18 30 21.54	-11 57 02.6		17		801
1979 MX2	1982 02 27.16672	08 28 37.00	+11 42 54.1				801
1979 MS8	1982 03 03.27890	09 48 20.95	+11 36 28.4				801
1979 MO9 *	1979 06 21.17744	18 05 58.78	-11 38 04.5		18.5		801
1979 MP9 *	1979 06 21.20714	18 19 44.02	-20 05 50.8		18		801
1979 QE	1982 02 27.33177	11 20 33.83	-15 38 00.4				801
1979 YT *	1979 12 18.31037	08 21 42.83	-13 35 56.9		18		801
1980 OE	1982 02 26.24448	08 24 40.27	+18 33 36.0				801
1980 PJ	1982 02 27.07817	08 00 37.99	+23 55 35.5				801
1980 PN	1982 02 26.06219	06 18 12.72	+23 11 37.2				801
1980 PL2 *	1980 08 07.11354	18 03 38.15	-13 45 17.2		18		801
1980 RB	1982 02 27.11493	08 15 11.16	+22 43 06.2				801

1980 RY	1982 02 27.19216	08 53 58.30	+07 08 20.9	801
1980 RB1	1982 02 24.36978	12 04 47.26	-04 48 02.8	801
1980 SO	1982 02 26.19550	08 18 10.63	+34 42 39.4	801
1980 TN	1982 02 27.14391	08 26 48.44	+23 10 34.3	801
1980 TD4	1982 02 24.27789	10 55 11.52	+10 50 08.9	801
1980 VP	1982 02 26.13213	07 36 07.08	+29 00 12.8	801
1980 VW	1982 02 26.29076	09 51 50.62	+30 04 58.6	3 801
1980 VW	1982 02 27.23672	09 51 01.67	+30 06 45.3	801
1981 WO1	1982 02 25.99877	05 16 26.99	-01 47 04.2	801
1981 WG1	1982 02 27.00916	05 17 47.65	-01 41 06.8	19 801
1981 YJ1 *	1981 12 20.25517	05 39 24.13	+21 45 58.8	17 801
1982 DJ1 *	1982 02 23.26084	11 04 44.15	+05 00 21.9	19 801
1982 DK1 *	1982 02 23.26084	11 05 56.06	+04 47 42.8	19 801
1982 DL1 *	1982 02 23.26084	11 06 17.50	+04 34 34.3	19 801
1982 DM1 *	1982 02 24.27789	10 53 13.92	+10 44 38.7	18 801
1982 DN1 *	1982 02 24.27789	10 54 32.49	+10 41 33.6	18.5 801
1982 DG1 *	1982 02 24.27789	10 56 06.21	+10 53 51.9	18 801
1982 DP1 *	1982 02 24.29767	11 19 27.09	+15 28 18.4	17 801
1982 DP1	1982 02 26.35192	11 17 22.93	+15 38 41.0	801
1982 DP1	1982 02 27.26014	11 16 27.34	+15 43 09.4	801
1982 DP1	1982 03 01.30067	11 14 20.05	+15 52 45.0	801
1982 DQ1 *	1982 02 24.31804	11 53 40.72	+00 20 52.3	19 801
1982 DR1 *	1982 02 24.31804	11 54 16.23	+00 20 51.6	18 801
1982 DS1 *	1982 02 24.31804	11 54 26.12	+00 10 07.2	20 801
1982 DT1 *	1982 02 24.31804	11 55 14.83	+00 26 39.1	18.5 801
1982 DU1 *	1982 02 26.21697	08 24 50.63	+14 39 37.1	19 801
1982 DV1 *	1982 02 27.07817	08 00 23.71	+24 03 52.0	18 3 801
1982 DW1 *	1982 02 27.28453	10 33 19.28	+08 46 59.6	19 801
1982 DX1 *	1982 02 27.28453	10 33 59.53	+08 41 54.9	20 801
1982 EB *	1982 03 03.25291	09 13 04.14	+16 24 51.2	18 801
1982 EC *	1982 03 03.27890	09 48 41.74	+11 37 37.9	19.5 801
4008 P-L	1982 02 23.26084	11 05 56.09	+04 45 25.5	801
6561 P-L	1982 02 26.39815	13 06 56.90	-01 25 16.8	801

Note 1: poor guiding. 2: time uncertain. 3: image trailed. 4: weak measurement.

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY BY H.-E. SCHUSTER.
SCANNED AND MEASURED BY R. M. WEST.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
282	1982 03 19.07639	08 45 52.39	+18 54 37.2				809
467	1982 03 19.07639	08 37 40.47	+18 33 14.3				809
778	1982 03 19.07639	08 45 31.64	+17 31 47.7				809
884	1982 03 19.07639	08 41 59.18	+15 24 10.5				809
897	1982 02 18.31470	12 31 01.12	-24 59 26.0				809
897	1982 02 24.28516	12 28 48.73	-25 20 20.1				809
897	1982 03 04.26528	12 24 27.31	-25 33 28.6				809
897	1982 03 05.20069	12 23 51.06	-25 33 48.9				809
897	1982 03 06.19722	12 23 11.09	-25 33 54.0				809
1004	1982 03 19.07639	08 35 24.71	+17 43 02.5				809
1246	1982 02 18.31470	12 32 52.45	-25 04 00.8			1	809
1246	1982 02 24.28516	12 29 42.52	-25 22 18.3				809
1246	1982 03 04.26528	12 24 22.67	-25 35 58.4				809
1246	1982 03 05.20069	12 23 40.87	-25 36 42.6				809
1246	1982 03 06.19722	12 22 55.33	-25 37 17.7				809
1441	1982 02 18.31470	12 37 54.15	-22 27 26.2		19.0	2	809
1821	1982 03 19.07639	08 30 37.16	+17 41 45.8				809
2567	1982 03 19.07639	08 44 56.51	+18 07 10.3				809
2584	1982 03 19.07639	08 52 17.29	+19 48 47.3				809
1980 RG2 *	1980 09 09.28750	00 28 49.17	-39 07 56.8		18.0		809

1982 DV	1982 02	28.25830	12 06	35.78	-25 25	23.4		14.0V	809
1982 DV	1982 03	04.26528	12 19	08.44	-27 16	58.4			809
1982 DV	1982 03	05.20069	12 22	20.84	-27 42	48.1			809
1982 DV	1982 03	06.19722	12 25	52.06	-28 10	10.8			809
1982 DV	1982 03	07.17917	12 29	27.95	-28 36	56.9		3	809
1982 DV	1982 03	09.17083	12 37	10.04	-29 30	30.9		3	809
1982 DV	1982 03	10.15000	12 41	10.19	-29 56	20.2		3	809
1982 DV	1982 03	11.14653	12 45	23.32	-30 22	14.0		3	809
1982 DV	1982 03	12.15000	12 49	47.55	-30 47	50.6		3	809
1982 DV	1982 03	13.11597	12 54	11.56	-31 11	53.3		3	809
1982 DV	1982 03	14.10833	12 58	52.21	-31 36	00.0		3	809
1982 DV	1982 03	17.18611	13 14	26.32	-32 45	53.3			809
1982 DV	1982 03	18.18472	13 19	51.57	-33 06	32.0			809
1982 DV	1982 03	19.26876	13 25	55.06	-33 27	38.6			809
1982 DR2	1982 02	18.31470	12 20	05.44	-24 44	08.7			809
1982 DR2	1982 02	24.28516	12 17	19.56	-25 00	56.8		18.0	809
1982 DR2	1982 02	28.25830	12 15	06.73	-25 07	45.3			809
1982 DR2	1982 03	04.26528	12 12	36.80	-25 10	56.5			809
1982 DR2	1982 03	05.20069	12 11	59.85	-25 11	08.6			809
1982 DS2 *	1982 02	18.31470	12 22	41.44	-23 48	56.8			809
1982 DS2	1982 02	24.28516	12 20	16.94	-24 02	22.6		18.0	809
1982 DT2 *	1982 02	18.31470	12 31	14.18	-23 27	46.8			809
1982 DT2	1982 02	24.28516	12 28	10.08	-23 55	58.7		18.5	809
1982 DU2 *	1982 02	18.31470	12 38	17.88	-25 02	11.0			809
1982 DU2	1982 02	24.28516	12 36	00.07	-25 37	46.5		18.5	809

Note 1: partly overlapping star. 2: weak image. 3: bright moonlight.

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY BY H. DEBEHOGNE AND
R. R. DE FREITAS MOURAO (ASSISTED BY G. ROMAN). MEASURED BY DEBEHOGNE,
G. HAHN AND C.-I. LAGERKVIST.

Object	Date	UT	R. A. (1950)	Decl.	O - C	Mag.	Obs.
28	1981 08	24.34085	23 15 45.06	-09 11 14.2	0.0 0		809
28	1981 08	24.34778	23 15 44.73	-09 11 17.9	0.0 0		809
28	1981 08	24.35470	23 15 44.45	-09 11 20.8	0.0 0		809
28	1981 08	26.20104	23 14 29.27	-09 24 46.5	0.1+ 0		809
28	1981 08	26.20727	23 14 28.99	-09 24 49.7	0.1+ 0		809
28	1981 08	26.21350	23 14 28.72	-09 24 52.4	0.1+ 0		809
28	1981 08	27.17891	23 13 48.43	-09 31 57.4	0.1+ 0		809
28	1981 08	27.18515	23 13 48.14	-09 32 00.1	0.1+ 0		809
28	1981 08	27.19150	23 13 47.88	-09 32 02.5	0.1+ 0		809
28	1981 08	31.36442	23 10 47.27	-10 02 55.0	0.1+ 0		809
28	1981 08	31.36962	23 10 47.02	-10 02 57.2	0.1+ 0		809
28	1981 08	31.37487	23 10 46.78	-10 02 59.6	0.1+ 0		809
28	1981 09	02.32736	23 09 19.71	-10 17 27.4	0.0 0		809
28	1981 09	02.33359	23 09 19.51	-10 17 30.7	0.0 0		809
28	1981 09	02.34002	23 09 19.21	-10 17 33.2	0.0 0		809
28	1981 09	03.32012	23 08 35.05	-10 24 48.1	0.0 0		809
28	1981 09	03.32601	23 08 34.75	-10 24 50.5	0.0 0		809
28	1981 09	03.33155	23 08 34.47	-10 24 53.3	0.0 0		809
28	1981 09	04.32294	23 07 49.49	-10 32 13.6	0.0 1-		809
28	1981 09	04.32779	23 07 49.33	-10 32 16.0	0.0 1-		809
28	1981 09	04.33263	23 07 49.12	-10 32 18.4	0.0 1-		809
28	1981 09	05.33232	23 07 03.44	-10 39 39.6	0.0 1-		809
28	1981 09	05.33786	23 07 03.17	-10 39 42.0	0.0 1-		809
28	1981 09	05.34340	23 07 02.95	-10 39 44.9	0.0 1-		809
28	1981 09	06.27904	23 06 20.19	-10 46 35.2	0.0 1-		809
28	1981 09	06.28463	23 06 19.91	-10 46 37.7	0.0 1-		809
28	1981 09	06.29012	23 06 19.66	-10 46 40.2	0.0 1-		809
28	1981 09	07.36842	23 05 30.05	-10 54 32.2	0.0 1-		809

28	1981	09	07.37396	23	05	29.77	-10	54	34.2	0.0	1-	809
28	1981	09	07.37950	23	05	29.50	-10	54	36.6	0.0	1-	809
58	1981	08	23.21207	20	47	23.80	-14	38	17.8			809
58	1981	08	23.21899	20	47	23.49	-14	38	19.4			809
58	1981	08	23.22592	20	47	23.18	-14	38	21.9			809
58	1981	08	24.11300	20	46	46.23	-14	42	45.2			809
58	1981	08	24.11992	20	46	45.89	-14	42	47.1			809
58	1981	08	24.12685	20	46	45.61	-14	42	49.5			809
58	1981	08	26.08953	20	45	26.03	-14	52	22.0			809
58	1981	08	26.09576	20	45	25.76	-14	52	23.1			809
58	1981	08	26.10200	20	45	25.51	-14	52	24.7			809
58	1981	08	28.27106	20	44	01.88	-15	02	43.0			809
58	1981	08	28.27729	20	44	01.65	-15	02	44.4			809
58	1981	08	28.28283	20	44	01.44	-15	02	46.3			809
58	1981	09	02.02546	20	41	18.87	-15	23	59.7			809
58	1981	09	02.03129	20	41	18.73	-15	24	01.0			809
58	1981	09	02.03787	20	41	18.52	-15	24	02.9			809
58	1981	09	03.05729	20	40	47.08	-15	28	23.0			809
58	1981	09	03.06324	20	40	46.90	-15	28	23.8			809
58	1981	09	03.06976	20	40	46.71	-15	28	25.5			809
58	1981	09	04.06184	20	40	17.61	-15	32	32.5			809
58	1981	09	04.06669	20	40	17.49	-15	32	34.0			809
58	1981	09	04.07154	20	40	17.30	-15	32	35.0			809
58	1981	09	05.07931	20	39	49.13	-15	36	39.8			809
58	1981	09	05.08485	20	39	48.99	-15	36	41.2			809
58	1981	09	05.09039	20	39	48.81	-15	36	42.8			809
135	1981	08	25.12966	20	25	16.69	-21	17	35.4			809
135	1981	08	25.13663	20	25	16.47	-21	17	34.6			809
135	1981	08	25.14351	20	25	16.26	-21	17	34.5			809
172	1981	08	24.14076	20	45	00.51	-22	32	02.1	0.1-	0	809
172	1981	08	24.14763	20	45	00.13	-22	32	00.3	0.1-	0	809
172	1981	08	24.15456	20	44	59.76	-22	31	58.9	0.1-	0	809
172	1981	08	26.22285	20	43	13.52	-22	22	58.2	0.3-	1-	809
172	1981	08	26.22978	20	43	13.17	-22	22	56.5	0.3-	1-	809
172	1981	08	26.23670	20	43	12.82	-22	22	55.2	0.3-	1-	809
175	1981	08	24.14076	20	51	46.07	-22	28	06.1	0.1-	0	809
175	1981	08	24.14763	20	51	45.76	-22	28	06.5	0.1-	0	809
175	1981	08	24.15456	20	51	45.46	-22	28	06.4	0.1-	0	809
175	1981	08	26.22285	20	50	24.42	-22	30	12.1	0.2-	1-	809
175	1981	08	26.22978	20	50	24.12	-22	30	12.1	0.2-	1-	809
175	1981	08	26.23670	20	50	23.85	-22	30	12.4	0.2-	1-	809
175	1981	09	01.18536	20	47	00.02	-22	33	22.4	0.2-	1-	809
175	1981	09	01.19125	20	46	59.83	-22	33	22.4	0.2-	1-	809
175	1981	09	01.19711	20	46	59.66	-22	33	22.4	0.2-	1-	809
175	1981	09	02.04826	20	46	34.66	-22	33	28.2	0.2-	1-	809
175	1981	09	02.05415	20	46	34.47	-22	33	28.1	0.2-	1-	809
175	1981	09	02.06023	20	46	34.28	-22	33	28.2	0.2-	1-	809
182	1981	08	24.05690	19	47	28.69	-22	19	49.3			809
182	1981	08	24.06383	19	47	28.36	-22	19	49.4			809
182	1981	08	24.07076	19	47	28.07	-22	19	50.2			809
182	1981	08	26.06530	19	46	20.49	-22	23	32.8			809
182	1981	08	26.07153	19	46	20.23	-22	23	33.2			809
182	1981	08	26.07811	19	46	19.95	-22	23	33.9			809
202	1981	08	24.28199	22	19	52.89	-13	48	16.4	0.0	0	809
202	1981	08	24.28891	22	19	52.57	-13	48	18.9	0.0	0	809
202	1981	08	24.29584	22	19	52.27	-13	48	21.8	0.0	0	809
202	1981	08	27.13182	22	17	49.82	-14	05	41.1			809
202	1981	08	27.13805	22	17	49.57	-14	05	43.3			809
202	1981	08	27.14428	22	17	49.31	-14	05	45.8			809

202	1981	08	28.30154	22	16	59.00	-14	12	45.8	0.0	0	809
202	1981	08	28.30777	22	16	58.74	-14	12	48.0	0.0	0	809
202	1981	08	28.31400	22	16	58.44	-14	12	50.3	0.0	0	809
202	1981	09	01.08042	22	14	16.55	-14	35	07.6			809
202	1981	09	01.08630	22	14	16.28	-14	35	10.6			809
202	1981	09	01.09219	22	14	16.02	-14	35	12.8			809
202	1981	09	01.14171	22	14	13.83	-14	35	30.0	0.0	0	809
202	1981	09	01.14759	22	14	13.55	-14	35	32.2	0.0	0	809
202	1981	09	01.15348	22	14	13.30	-14	35	34.2	0.0	0	809
202	1981	09	01.23036	22	14	09.94	-14	36	00.6	0.0	0	809
202	1981	09	01.23624	22	14	09.70	-14	36	02.8	0.0	0	809
202	1981	09	01.24213	22	14	09.41	-14	36	04.6	0.0	0	809
202	1981	09	02.09120	22	13	33.42	-14	40	59.3	0.0	0	809
202	1981	09	02.09708	22	13	33.18	-14	41	01.4	0.0	0	809
202	1981	09	02.10297	22	13	32.90	-14	41	03.4	0.0	0	809
202	1981	09	02.23871	22	13	27.02	-14	41	50.1	0.0	0	809
202	1981	09	02.24529	22	13	26.77	-14	41	52.1	0.0	0	809
202	1981	09	02.25152	22	13	26.47	-14	41	54.5	0.0	0	809
202	1981	09	03.13521	22	12	49.27	-14	46	57.1	0.0	0	809
202	1981	09	03.14110	22	12	49.03	-14	46	59.5	0.0	0	809
202	1981	09	03.14698	22	12	48.77	-14	47	01.9	0.0	0	809
202	1981	09	03.15633	22	12	48.21	-14	47	05.3	0.0	0	809
202	1981	09	03.16222	22	12	47.93	-14	47	07.1	0.0	0	809
202	1981	09	03.16811	22	12	47.66	-14	47	09.2	0.0	0	809
202	1981	09	05.15226	22	11	24.63	-14	58	15.7	0.0	1-	809
202	1981	09	05.15780	22	11	24.41	-14	58	18.7	0.0	1-	809
202	1981	09	05.16334	22	11	24.16	-14	58	20.9	0.0	1-	809
202	1981	09	05.17581	22	11	23.40	-14	58	25.0	0.1-	1-	809
202	1981	09	05.18135	22	11	23.15	-14	58	26.9	0.1-	1-	809
202	1981	09	05.18689	22	11	22.92	-14	58	28.9	0.1-	1-	809
202	1981	09	05.22013	22	11	21.51	-14	58	39.8	0.1-	1-	809
202	1981	09	05.22636	22	11	21.26	-14	58	41.9	0.1-	1-	809
202	1981	09	05.23260	22	11	20.98	-14	58	44.1	0.1-	1-	809
202	1981	09	05.31016	22	11	17.74	-14	59	09.6			809
202	1981	09	05.31570	22	11	17.48	-14	59	11.2			809
202	1981	09	05.32124	22	11	17.30	-14	59	12.7			809
202	1981	09	06.12252	22	10	44.36	-15	03	37.4	0.1-	1-	809
202	1981	09	06.12806	22	10	44.09	-15	03	39.6	0.1-	1-	809
202	1981	09	06.13361	22	10	43.87	-15	03	41.3	0.1-	1-	809
202	1981	09	06.14261	22	10	43.47	-15	03	44.1	0.1-	1-	809
202	1981	09	06.14815	22	10	43.22	-15	03	45.9	0.1-	1-	809
202	1981	09	06.15376	22	10	43.02	-15	03	47.8	0.1-	1-	809
202	1981	09	07.20290	22	10	00.02	-15	09	28.1	0.1-	1-	809
202	1981	09	07.20913	22	09	59.72	-15	09	30.5	0.1-	1-	809
202	1981	09	07.21571	22	09	59.46	-15	09	32.6	0.1-	1-	809
202	1981	09	07.23755	22	09	58.59	-15	09	39.6	0.1-	1-	809
202	1981	09	07.24318	22	09	58.37	-15	09	41.5	0.1-	1-	809
202	1981	09	07.24883	22	09	58.12	-15	09	43.0	0.1-	1-	809
202	1981	09	07.25709	22	09	57.77	-15	09	46.5	0.1-	1-	809
202	1981	09	07.26246	22	09	57.58	-15	09	48.4	0.1-	1-	809
202	1981	09	07.26800	22	09	57.30	-15	09	50.5	0.1-	1-	809
202	1981	09	18.05829	22	03	14.27	-16	02	07.5	0.2-	1-	809
202	1981	09	18.06392	22	03	14.09	-16	02	09.1	0.2-	1-	809
202	1981	09	18.06955	22	03	13.93	-16	02	10.4	0.2-	1-	809
202	1981	09	20.19025	22	02	04.78	-16	10	59.0	0.2-	1-	809
202	1981	09	20.19649	22	02	04.56	-16	11	00.9	0.2-	1-	809
202	1981	09	20.20272	22	02	04.36	-16	11	02.0	0.2-	1-	809
202	1981	09	22.13701	22	01	05.04	-16	18	35.8	0.1-	0	809
202	1981	09	22.14255	22	01	04.88	-16	18	37.0	0.1-	0	809

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254	1981	08	23.39067	00	19	38.24	-03	23	37.8			809
254	1981	08	23.39759	00	19	37.97	-03	23	39.1			809
254	1981	08	25.34296	00	18	26.15	-03	30	03.4			809
254	1981	08	25.34920	00	18	25.91	-03	30	04.6			809
254	1981	08	25.35543	00	18	25.63	-03	30	05.9			809
254	1981	08	27.34720	00	17	05.03	-03	37	07.3			809
254	1981	08	27.35364	00	17	04.76	-03	37	08.3			809
254	1981	08	27.35967	00	17	04.50	-03	37	09.4			809
373	1981	08	24.36855	00	01	29.77	-07	11	41.1	0.1+	0	809
373	1981	08	24.37571	00	01	29.45	-07	11	40.8	0.1+	0	809
373	1981	08	24.38287	00	01	29.17	-07	11	40.7	0.1+	0	809
555	1981	08	24.28199	22	13	53.08	-12	19	37.2	0.0	0	809
555	1981	08	24.28891	22	13	52.81	-12	19	38.5	0.0	0	809
555	1981	08	24.29584	22	13	52.48	-12	19	40.5	0.0	0	809
555	1981	08	25.15944	22	13	15.23	-12	23	35.0	0.0	0	809
555	1981	08	25.16636	22	13	14.88	-12	23	36.7	0.0	0	809
555	1981	08	25.17334	22	13	14.55	-12	23	38.5	0.0	0	809
555	1981	08	26.13319	22	12	33.11	-12	28	00.1	0.0	0	809
555	1981	08	26.13940	22	12	32.84	-12	28	01.4	0.0	0	809
555	1981	08	26.14565	22	12	32.56	-12	28	03.9	0.0	0	809
555	1981	08	27.08888	22	11	51.80	-12	32	18.4	0.0	0	809
555	1981	08	27.09511	22	11	51.57	-12	32	19.5	0.0	0	809
555	1981	08	27.10134	22	11	51.29	-12	32	20.4	0.0	0	809
555	1981	08	27.11035	22	11	50.79	-12	32	23.2	0.0	0	809
555	1981	08	27.11589	22	11	50.57	-12	32	24.9	0.0	0	809
555	1981	08	27.12281	22	11	50.31	-12	32	27.1	0.0	0	809
555	1981	08	28.07317	22	11	09.27	-12	36	41.4	0.0	0	809
555	1981	08	28.07923	22	11	08.99	-12	36	43.4	0.0	0	809
555	1981	08	28.08529	22	11	08.77	-12	36	45.3	0.0	0	809
555	1981	08	28.09585	22	11	08.19	-12	36	47.6	0.0	0	809
555	1981	08	28.10208	22	11	07.92	-12	36	49.5	0.0	0	809
555	1981	08	28.10843	22	11	07.63	-12	36	51.2	0.0	0	809
555	1981	08	31.30729	22	08	49.67	-12	50	59.6			809
555	1981	08	31.31354	22	08	49.36	-12	51	01.3			809
555	1981	08	31.31943	22	08	49.13	-12	51	02.5			809
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555	1981	09	01.11124	22	08	15.75	-12	54	30.2			809
555	1981	09	03.11253	22	06	50.98	-13	03	04.1	0.0	0	809
555	1981	09	03.11969	22	06	50.63	-13	03	05.9	0.0	0	809
555	1981	09	03.12563	22	06	50.42	-13	03	07.8	0.0	0	809
555	1981	09	05.12767	22	05	26.78	-13	11	31.1	0.0	0	809
555	1981	09	05.13529	22	05	26.47	-13	11	33.0	0.0	0	809
555	1981	09	05.14291	22	05	26.14	-13	11	34.4	0.0	0	809
555	1981	09	06.10175	22	04	46.97	-13	15	30.7	0.1-	0	809
555	1981	09	06.10781	22	04	46.65	-13	15	32.1	0.1-	0	809
555	1981	09	06.11387	22	04	46.34	-13	15	34.3	0.1-	0	809
555	1981	09	07.18420	22	04	02.62	-13	19	54.7	0.1-	1-	809
555	1981	09	07.18974	22	04	02.43	-13	19	55.1	0.1-	1-	809
555	1981	09	07.19528	22	04	02.21	-13	19	56.7	0.1-	1-	809
555	1981	09	18.07729	21	57	16.50	-13	59	31.5	0.2-	1-	809
555	1981	09	18.08283	21	57	16.29	-13	59	33.2	0.2-	1-	809
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684	1981	08	25.10404	20	11	34.06	-23	41	03.5			809
684	1981	08	25.11166	20	11	33.77	-23	41	02.2			809
684	1981	08	25.11862	20	11	33.46	-23	41	00.9			809
684	1981	08	27.27864	20	10	17.23	-23	37	22.8			809

684	1981	08	27.28487	20	10	17.11	-23	37	22.9	809
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725	1981	08	26.32777	00	39	20.16	-02	50	38.6	809
725	1981	08	26.33401	00	39	20.07	-02	50	38.9	809
725	1981	08	26.34024	00	39	19.98	-02	50	39.7	809
728	1981	08	27.32435	22	46	08.14	-15	20	01.5	809
728	1981	08	27.33072	22	46	07.71	-15	20	04.1	809
728	1981	08	27.33681	22	46	07.37	-15	20	06.6	809
728	1981	08	28.34275	22	45	08.53	-15	26	41.5	809
728	1981	08	28.34795	22	45	08.08	-15	26	43.0	809
728	1981	08	28.35313	22	45	07.82	-15	26	45.2	809
728	1981	09	01.06068	22	41	29.34	-15	50	17.9	809
728	1981	09	01.07245	22	41	28.69	-15	50	22.4	809
728	1981	09	02.07083	22	40	29.30	-15	56	29.3	809
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728	1981	09	03.27614	22	39	17.26	-16	03	42.2	809
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728	1981	09	04.27983	22	38	17.92	-16	09	35.3	809
728	1981	09	04.28571	22	38	17.60	-16	09	36.8	809
728	1981	09	04.29246	22	38	17.25	-16	09	39.3	809
728	1981	09	04.29870	22	38	16.78	-16	09	40.9	809
728	1981	09	05.26653	22	37	19.85	-16	15	15.4	809
728	1981	09	05.27138	22	37	19.57	-16	15	16.5	809
728	1981	09	05.27622	22	37	19.20	-16	15	18.9	809
728	1981	09	06.25965	22	36	21.55	-16	20	52.0	809
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749	1981	08	25.36581	00	43	30.72	-03	45	54.5	809
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749	1981	08	26.32777	00	43	03.21	-03	52	04.7	809
749	1981	08	26.33401	00	43	03.04	-03	52	07.2	809
749	1981	08	26.34024	00	43	02.87	-03	52	09.3	809
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817	1981	08	27.22466	00	04	02.67	-13	29	15.1	809
817	1981	08	27.23085	00	04	02.52	-13	29	18.9	809
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827	1981	08	23.21207	20	43	07.52	-14	23	33.9	809
827	1981	08	23.21899	20	43	07.25	-14	23	36.0	809
827	1981	08	23.22592	20	43	06.89	-14	23	38.4	809
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827	1981	08	24.11992	20	42	27.98	-14	28	48.9	809
827	1981	08	24.12685	20	42	27.68	-14	28	51.1	809
827	1981	08	26.08953	20	41	05.57	-14	40	01.7	809
827	1981	08	26.09576	20	41	05.26	-14	40	04.1	809
827	1981	08	26.10200	20	41	05.00	-14	40	06.9	809
827	1981	08	27.06536	20	40	26.98	-14	45	28.3	809
827	1981	08	27.07156	20	40	26.72	-14	45	30.6	809
827	1981	08	27.07782	20	40	26.42	-14	45	32.7	809
827	1981	08	28.27106	20	39	40.82	-14	52	04.3	809

827	1981	08	28.27729	20	39	40.58	-14	52	06.3			809
827	1981	08	28.28283	20	39	40.34	-14	52	08.7			809
827	1981	09	01.16322	20	37	31.76	-15	12	26.8			809
827	1981	09	01.16917	20	37	31.57	-15	12	28.4			809
827	1981	09	01.17495	20	37	31.37	-15	12	30.2			809
827	1981	09	02.02546	20	37	07.51	-15	16	43.5			809
827	1981	09	02.03129	20	37	07.28	-15	16	45.3			809
827	1981	09	02.03787	20	37	07.06	-15	16	46.9			809
827	1981	09	03.05729	20	36	39.56	-15	21	45.2			809
827	1981	09	03.06324	20	36	39.42	-15	21	47.1			809
827	1981	09	03.06976	20	36	39.22	-15	21	48.9			809
827	1981	09	04.06184	20	36	14.62	-15	26	31.8			809
827	1981	09	04.06669	20	36	14.50	-15	26	33.1			809
827	1981	09	04.07154	20	36	14.38	-15	26	34.9			809
827	1981	09	05.07931	20	35	51.35	-15	31	13.7			809
827	1981	09	05.08485	20	35	51.27	-15	31	14.9			809
827	1981	09	05.09039	20	35	51.12	-15	31	16.5			809
910	1981	08	24.40043	00	03	37.35	-13	00	42.1			809
910	1981	08	24.40742	00	03	37.06	-13	00	43.0			809
910	1981	08	24.41440	00	03	36.80	-13	00	45.2			809
910	1981	08	25.32011	00	03	02.50	-13	05	00.8			809
910	1981	08	25.32634	00	03	02.32	-13	05	02.3			809
910	1981	08	25.33257	00	03	02.08	-13	05	03.9			809
910	1981	08	27.22466	00	01	47.40	-13	13	57.9			809
910	1981	08	27.23085	00	01	47.15	-13	13	59.8			809
910	1981	08	27.23711	00	01	46.88	-13	14	01.3			809
975	1981	08	23.33388	23	13	53.32	-08	33	25.6	0.1+	1+	809
975	1981	08	23.34081	23	13	53.01	-08	33	27.4	0.1+	1+	809
975	1981	08	23.34773	23	13	52.73	-08	33	28.9	0.1+	1+	809
975	1981	08	24.19957	23	13	16.12	-08	37	17.6	0.1+	1+	809
975	1981	08	24.20650	23	13	15.80	-08	37	19.5	0.1+	1+	809
975	1981	08	24.21351	23	13	15.50	-08	37	21.3	0.1+	1+	809
975	1981	09	05.35241	23	03	45.84	-09	33	08.4	0.2+	0	809
975	1981	09	05.35829	23	03	45.56	-09	33	09.7	0.2+	0	809
975	1981	09	05.36418	23	03	45.20	-09	33	11.7	0.2+	0	809
975	1981	09	06.33133	23	02	57.86	-09	37	34.6	0.2+	0	809
975	1981	09	06.33692	23	02	57.61	-09	37	36.0	0.2+	0	809
975	1981	09	06.34246	23	02	57.31	-09	37	37.6	0.2+	0	809
975	1981	09	07.38815	23	02	05.93	-09	42	21.2	0.2+	0	809
975	1981	09	07.39439	23	02	05.59	-09	42	22.5	0.2+	0	809
975	1981	09	07.40062	23	02	05.41	-09	42	24.3	0.2+	0	809
975	1981	09	21.07256	22	51	17.48	-10	37	46.5	0.0	0	809
975	1981	09	21.07844	22	51	17.21	-10	37	48.1	0.0	0	809
975	1981	09	21.08433	22	51	16.94	-10	37	48.9	0.0	0	809
1111	1981	08	23.38374	00	15	56.88	-02	15	24.9			809
1111	1981	08	23.39067	00	15	56.75	-02	15	26.0			809
1111	1981	08	23.39759	00	15	56.56	-02	15	28.3			809
1111	1981	08	27.34720	00	14	19.63	-02	34	19.2			809
1111	1981	08	27.35364	00	14	19.44	-02	34	20.0			809
1111	1981	08	27.35967	00	14	19.21	-02	34	21.4			809
1123	1981	08	24.40043	00	03	48.68	-13	03	28.5			809
1123	1981	08	24.40742	00	03	48.47	-13	03	31.4			809
1123	1981	08	24.41440	00	03	48.29	-13	03	33.9			809
1123	1981	08	25.32011	00	03	22.95	-13	10	16.8			809
1123	1981	08	25.32634	00	03	22.78	-13	10	19.5			809
1123	1981	08	25.33257	00	03	22.57	-13	10	22.6			809
1123	1981	08	27.22466	00	02	24.29	-13	24	32.3			809
1123	1981	08	27.23085	00	02	24.06	-13	24	34.8			809
1123	1981	08	27.23711	00	02	23.81	-13	24	38.0			809

1135	1981	08	23.33388	23	10	13.15	-07	02	46.2	0.2+	1+	809
1135	1981	08	23.34081	23	10	12.82	-07	02	47.3	0.2+	1+	809
1135	1981	08	23.34773	23	10	12.48	-07	02	48.5	0.2+	1+	809
1135	1981	08	24.19957	23	09	32.67	-07	05	05.2	0.2+	1+	809
1135	1981	08	24.20650	23	09	32.33	-07	05	06.1	0.2+	1+	809
1135	1981	08	24.21351	23	09	31.98	-07	05	07.0	0.2+	2+	809
1218	1981	08	27.32435	22	40	27.26	-14	07	41.7			809
1218	1981	08	27.33072	22	40	26.97	-14	07	43.9			809
1218	1981	08	27.33681	22	40	26.56	-14	07	45.8			809
1225	1981	08	24.28199	22	19	01.91	-14	16	13.4	0.0	0	809
1225	1981	08	24.28891	22	19	01.43	-14	16	15.6	0.0	0	809
1225	1981	08	24.29584	22	19	01.01	-14	16	17.5	0.0	0	809
1225	1981	08	27.13182	22	16	04.87	-14	29	13.4			809
1225	1981	08	27.13805	22	16	04.46	-14	29	14.7			809
1225	1981	08	27.14428	22	16	04.10	-14	29	16.4			809
1225	1981	09	01.14171	22	10	55.02	-14	50	35.8	0.1-	1-	809
1225	1981	09	01.14759	22	10	54.67	-14	50	37.3	0.1-	1-	809
1225	1981	09	01.15348	22	10	54.31	-14	50	39.2	0.1-	1-	809
1225	1981	09	01.27295	22	10	46.72	-14	51	06.5	0.1-	1-	809
1225	1981	09	01.27883	22	10	46.36	-14	51	09.0	0.1-	1-	809
1225	1981	09	01.28472	22	10	46.00	-14	51	10.1	0.1-	1-	809
1225	1981	09	05.19762	22	06	51.88	-15	06	08.2	0.2-	1-	809
1225	1981	09	05.20351	22	06	51.56	-15	06	09.2	0.2-	1-	809
1225	1981	09	05.21009	22	06	51.14	-15	06	10.4	0.2-	1-	809
1225	1981	09	05.22013	22	06	50.42	-15	06	12.7	0.2-	1-	809
1225	1981	09	05.22636	22	06	50.11	-15	06	14.1	0.2-	1-	809
1225	1981	09	05.23260	22	06	49.74	-15	06	15.3	0.2-	1-	809
1225	1981	09	06.16200	22	05	55.93	-15	09	32.3	0.2-	1-	809
1225	1981	09	06.16754	22	05	55.57	-15	09	33.3	0.2-	1-	809
1225	1981	09	06.17447	22	05	55.16	-15	09	34.6	0.2-	1-	809
1225	1981	09	07.25709	22	04	52.97	-15	13	15.6	0.3-	2-	809
1225	1981	09	07.26246	22	04	52.58	-15	13	17.0	0.3-	2-	809
1225	1981	09	07.26800	22	04	52.27	-15	13	18.4	0.3-	2-	809
1294	1981	08	23.28540	21	27	02.94	-28	42	42.1			809
1294	1981	08	23.29233	21	27	02.50	-28	42	44.0			809
1294	1981	08	23.29925	21	27	02.17	-28	42	45.6			809
1294	1981	08	26.29869	21	24	21.99	-28	56	41.2			809
1294	1981	08	26.30492	21	24	21.69	-28	56	42.1			809
1294	1981	08	26.31115	21	24	21.32	-28	56	44.0			809
1295	1981	08	23.21207	20	41	19.80	-15	12	09.2			809
1295	1981	08	23.21899	20	41	19.51	-15	12	10.5			809
1295	1981	08	23.22592	20	41	19.26	-15	12	12.1			809
1295	1981	08	24.11300	20	40	47.36	-15	14	53.4			809
1295	1981	08	24.11992	20	40	47.07	-15	14	54.9			809
1295	1981	08	24.12685	20	40	46.79	-15	14	56.0			809
1295	1981	08	26.08953	20	39	37.82	-15	20	47.4			809
1295	1981	08	26.09576	20	39	37.57	-15	20	48.9			809
1295	1981	08	26.10200	20	39	37.37	-15	20	50.6			809
1295	1981	08	27.06536	20	39	04.54	-15	23	38.4			809
1295	1981	08	27.07156	20	39	04.31	-15	23	39.8			809
1295	1981	08	27.07782	20	39	04.12	-15	23	41.3			809
1295	1981	08	28.27106	20	38	24.14	-15	27	06.9			809
1295	1981	08	28.27729	20	38	23.92	-15	27	07.7			809
1295	1981	08	28.28283	20	38	23.67	-15	27	09.6			809
1295	1981	09	01.16322	20	36	22.64	-15	37	53.9			809
1295	1981	09	01.16917	20	36	22.46	-15	37	54.6			809
1295	1981	09	01.17495	20	36	22.24	-15	37	55.5			809
1295	1981	09	02.02546	20	35	57.61	-15	40	09.8			809
1295	1981	09	02.03129	20	35	57.45	-15	40	10.7			809

1295	1981	09	02.03787	20	35	57.22	-15	40	12.3			809
1295	1981	09	03.05729	20	35	28.15	-15	42	50.6			809
1295	1981	09	03.06324	20	35	27.93	-15	42	52.2			809
1295	1981	09	03.06976	20	35	27.79	-15	42	53.3			809
1295	1981	09	04.06184	20	35	00.45	-15	45	25.1			809
1295	1981	09	04.06669	20	35	00.33	-15	45	25.5			809
1295	1981	09	04.07154	20	35	00.22	-15	45	26.6			809
1295	1981	09	05.07931	20	34	33.44	-15	47	58.9			809
1295	1981	09	05.08485	20	34	33.36	-15	47	59.4			809
1295	1981	09	05.09039	20	34	33.11	-15	47	59.8			809
1295	1981	09	06.05915	20	34	08.37	-15	50	24.1			809
1295	1981	09	06.06538	20	34	08.26	-15	50	25.8			809
1295	1981	09	06.07162	20	34	08.12	-15	50	26.3			809
1381	1981	08	23.30826	22	23	59.48	-13	17	57.4	0.1-	1+	809
1381	1981	08	23.31518	22	23	59.04	-13	17	58.3	0.1-	1+	809
1381	1981	08	23.32211	22	23	58.68	-13	17	59.2	0.1-	1+	809
1381	1981	08	24.16841	22	23	10.52	-13	20	07.6	0.1-	0	809
1381	1981	08	24.17533	22	23	10.15	-13	20	08.7	0.1-	0	809
1381	1981	08	24.18226	22	23	09.72	-13	20	09.6	0.1-	0	809
1381	1981	08	25.20445	22	22	10.90	-13	22	44.2	0.0	0	809
1381	1981	08	25.21079	22	22	10.46	-13	22	45.0	0.1-	0	809
1381	1981	08	25.21692	22	22	10.09	-13	22	45.5	0.1-	0	809
1381	1981	08	27.11035	22	20	20.59	-13	27	24.1	0.0	1-	809
1381	1981	08	27.11589	22	20	20.29	-13	27	25.7	0.0	1-	809
1381	1981	08	27.12281	22	20	19.93	-13	27	26.1	0.0	1-	809
1381	1981	08	27.13182	22	20	19.34	-13	27	25.4			809
1381	1981	08	27.13805	22	20	18.99	-13	27	26.0			809
1381	1981	08	27.14428	22	20	18.61	-13	27	27.3			809
1381	1981	08	28.11940	22	19	21.88	-13	29	47.4			809
1381	1981	08	28.12609	22	19	21.52	-13	29	48.3			809
1381	1981	08	28.13278	22	19	21.07	-13	29	48.9			809
1381	1981	08	28.30154	22	19	10.85	-13	30	11.8	0.0	1-	809
1381	1981	08	28.30777	22	19	10.47	-13	30	12.6	0.0	1-	809
1381	1981	08	28.31400	22	19	10.06	-13	30	13.5	0.0	1-	809
1381	1981	08	28.32237	22	19	09.63	-13	30	13.8	0.0	1-	809
1381	1981	08	28.32855	22	19	09.22	-13	30	15.3	0.0	1-	809
1381	1981	08	28.33478	22	19	08.85	-13	30	17.1	0.0	1-	809
1381	1981	09	01.09946	22	15	31.21	-13	38	33.6			809
1381	1981	09	01.10604	22	15	30.83	-13	38	35.0			809
1381	1981	09	01.11124	22	15	30.54	-13	38	35.2			809
1381	1981	09	01.14171	22	15	28.19	-13	38	41.8	0.0	1-	809
1381	1981	09	01.14759	22	15	27.81	-13	38	42.2	0.0	1-	809
1381	1981	09	01.15348	22	15	27.51	-13	38	42.0	0.0	1-	809
1381	1981	09	01.23036	22	15	23.16	-13	38	49.4	0.0	1-	809
1381	1981	09	01.23624	22	15	22.83	-13	38	50.3	0.0	1-	809
1381	1981	09	01.24213	22	15	22.46	-13	38	50.9	0.0	1-	809
1381	1981	09	02.09120	22	14	34.23	-13	40	33.8	0.0	1-	809
1381	1981	09	02.09708	22	14	33.85	-13	40	34.8	0.0	1-	809
1381	1981	09	02.10297	22	14	33.55	-13	40	35.9	0.0	1-	809
1381	1981	09	02.23871	22	14	25.29	-13	40	50.4	0.0	1-	809
1381	1981	09	02.24529	22	14	24.92	-13	40	51.4	0.0	1-	809
1381	1981	09	02.25152	22	14	24.53	-13	40	51.9	0.0	1-	809
1381	1981	09	03.11253	22	13	35.89	-13	42	30.4	0.0	0	809
1381	1981	09	03.11969	22	13	35.44	-13	42	31.4	0.0	0	809
1381	1981	09	03.12563	22	13	35.14	-13	42	31.8	0.0	0	809
1381	1981	09	03.13521	22	13	34.55	-13	42	33.7	0.0	0	809
1381	1981	09	03.14110	22	13	34.17	-13	42	34.3	0.0	0	809
1381	1981	09	03.14698	22	13	33.84	-13	42	35.0	0.0	0	809
1381	1981	09	03.15633	22	13	33.33	-13	42	37.4	0.0	0	809

1381	1981	09	03.16222	22	13	33.01	-13	42	37.6	0.0	0	809
1381	1981	09	03.16811	22	13	32.68	-13	42	38.3	0.0	0	809
1381	1981	09	03.20100	22	13	30.65	-13	42	41.5	0.0	0	809
1381	1981	09	03.20585	22	13	30.39	-13	42	42.3	0.0	0	809
1381	1981	09	03.21070	22	13	30.09	-13	42	42.4	0.0	0	809
1381	1981	09	05.12767	22	11	42.62	-13	46	06.6	0.1-	1-	809
1381	1981	09	05.13529	22	11	42.19	-13	46	07.8	0.1-	1-	809
1381	1981	09	05.14291	22	11	41.75	-13	46	07.6	0.1-	1-	809
1381	1981	09	05.15226	22	11	41.21	-13	46	08.3	0.1-	1-	809
1381	1981	09	05.15780	22	11	40.86	-13	46	08.5	0.1-	1-	809
1381	1981	09	05.16334	22	11	40.58	-13	46	10.2	0.1-	1-	809
1381	1981	09	05.31016	22	11	32.14	-13	46	23.4			809
1381	1981	09	05.31570	22	11	31.86	-13	46	24.1			809
1381	1981	09	05.32124	22	11	31.54	-13	46	24.6			809
1381	1981	09	06.10175	22	10	48.90	-13	47	41.3	0.2-	2-	809
1381	1981	09	06.10781	22	10	48.59	-13	47	42.2	0.2-	2-	809
1381	1981	09	06.11387	22	10	48.18	-13	47	42.7	0.2-	2-	809
1381	1981	09	06.12252	22	10	47.74	-13	47	42.3	0.2-	2-	809
1381	1981	09	06.12806	22	10	47.40	-13	47	43.3	0.2-	2-	809
1381	1981	09	06.13361	22	10	47.16	-13	47	43.3	0.2-	2-	809
1381	1981	09	07.18420	22	09	49.81	-13	49	19.2	0.2-	2-	809
1381	1981	09	07.18974	22	09	49.49	-13	49	19.8	0.2-	2-	809
1381	1981	09	07.19528	22	09	49.17	-13	49	20.0	0.2-	2-	809
1381	1981	09	07.20290	22	09	48.74	-13	49	20.6	0.2-	2-	809
1381	1981	09	07.20913	22	09	48.37	-13	49	21.8	0.2-	2-	809
1381	1981	09	07.21571	22	09	48.00	-13	49	21.9	0.2-	2-	809
1381	1981	09	18.07729	22	01	10.94	-13	57	22.8	0.3-	2-	809
1381	1981	09	18.08283	22	01	10.70	-13	57	23.3	0.3-	2-	809
1381	1981	09	18.08837	22	01	10.46	-13	57	23.1	0.3-	2-	809
1385	1981	08	24.14076	20	52	10.90	-22	05	21.4	0.0	0	809
1385	1981	08	24.14763	20	52	10.60	-22	05	23.6	0.0	0	809
1385	1981	08	24.15456	20	52	10.26	-22	05	25.2	0.0	0	809
1385	1981	08	26.22285	20	50	43.05	-22	15	06.1	0.2-	1-	809
1385	1981	08	26.22978	20	50	42.77	-22	15	08.7	0.2-	1-	809
1385	1981	08	26.23670	20	50	42.47	-22	15	10.3	0.2-	1-	809
1385	1981	09	01.18536	20	47	00.01	-22	39	50.1	0.3+	1+	809
1385	1981	09	01.19125	20	46	59.79	-22	39	51.3	0.3+	1+	809
1385	1981	09	01.19711	20	46	59.60	-22	39	52.6	0.3+	1+	809
1385	1981	09	02.04826	20	46	31.88	-22	42	58.5	0.2+	0	809
1385	1981	09	02.05415	20	46	31.66	-22	42	59.8	0.2+	0	809
1385	1981	09	02.06023	20	46	31.45	-22	43	01.3	0.2+	0	809
1414	1981	08	24.34085	23	21	07.62	-08	40	36.3	0.2-	1-	809
1414	1981	08	24.34778	23	21	07.29	-08	40	39.4	0.2-	1-	809
1414	1981	08	24.35470	23	21	06.97	-08	40	41.6	0.2-	1-	809
1414	1981	08	25.27648	23	20	30.36	-08	47	02.6	0.2-	1-	809
1414	1981	08	25.28271	23	20	30.13	-08	47	05.4	0.2-	1-	809
1414	1981	08	25.28895	23	20	29.87	-08	47	07.9	0.2-	1-	809
1414	1981	08	26.20104	23	19	52.98	-08	53	25.6	0.2-	1-	809
1414	1981	08	26.20727	23	19	52.76	-08	53	29.0	0.2-	1-	809
1414	1981	08	26.21350	23	19	52.47	-08	53	31.5	0.2-	1-	809
1414	1981	08	27.17891	23	19	12.87	-09	00	14.4	0.1-	1-	809
1414	1981	08	27.18515	23	19	12.60	-09	00	17.5	0.1-	1-	809
1414	1981	08	27.19150	23	19	12.33	-09	00	20.5	0.1-	1-	809
1421	1981	08	23.28540	21	24	56.38	-29	57	36.0			809
1421	1981	08	23.29233	21	24	56.17	-29	57	36.1			809
1421	1981	08	23.29925	21	24	55.90	-29	57	38.3			809
1421	1981	08	26.29869	21	22	31.20	-30	01	56.6			809
1421	1981	08	26.30492	21	22	30.87	-30	01	56.6			809
1421	1981	08	26.31115	21	22	30.62	-30	01	57.1			809

1487	1981	08	23.33388	23	12	42.75	-08	26	21.0	0.0	1-	809
1487	1981	08	23.34081	23	12	42.52	-08	26	22.2	0.0	1-	809
1487	1981	08	23.34773	23	12	42.27	-08	26	24.2	0.0	1-	809
1487	1981	08	24.19957	23	12	08.91	-08	30	22.4	0.0	0	809
1487	1981	08	24.20650	23	12	08.62	-08	30	24.5	0.0	0	809
1487	1981	08	24.21351	23	12	08.34	-08	30	26.7	0.0	0	809
1487	1981	09	05.35241	23	03	38.83	-09	28	06.6	0.1-	0	809
1487	1981	09	05.35829	23	03	38.58	-09	28	07.8	0.1-	0	809
1487	1981	09	05.36418	23	03	38.38	-09	28	09.1	0.1-	0	809
1487	1981	09	06.33133	23	02	56.42	-09	32	41.4	0.1-	0	809
1487	1981	09	06.33692	23	02	56.23	-09	32	43.2	0.1-	0	809
1487	1981	09	06.34246	23	02	55.96	-09	32	44.8	0.1-	0	809
1487	1981	09	07.38815	23	02	10.50	-09	37	37.7	0.1-	0	809
1487	1981	09	07.39439	23	02	10.23	-09	37	39.3	0.1-	0	809
1487	1981	09	07.40062	23	02	09.94	-09	37	40.8	0.1-	0	809
1521	1981	08	25.36581	00	45	06.79	-02	16	33.5			809
1521	1981	08	25.37205	00	45	06.62	-02	16	32.7			809
1521	1981	08	25.37828	00	45	06.47	-02	16	32.6			809
1521	1981	08	26.32777	00	44	39.86	-02	15	46.3			809
1521	1981	08	26.33401	00	44	39.72	-02	15	45.2			809
1521	1981	08	26.34024	00	44	39.52	-02	15	45.5			809
1544	1981	08	25.34296	00	23	05.48	-03	15	52.7			809
1544	1981	08	25.34920	00	23	05.29	-03	15	53.9			809
1544	1981	08	25.35543	00	23	05.10	-03	15	55.0			809
1544	1981	08	27.34720	00	22	10.59	-03	23	45.1			809
1544	1981	08	27.35364	00	22	10.41	-03	23	46.0			809
1544	1981	08	27.35967	00	22	10.27	-03	23	48.6			809
1625	1981	08	25.10404	20	11	37.43	-25	27	25.7			809
1625	1981	08	25.11166	20	11	37.24	-25	27	23.5			809
1625	1981	08	25.11862	20	11	36.94	-25	27	21.7			809
1625	1981	08	27.27864	20	10	23.04	-25	16	55.9			809
1625	1981	08	27.28487	20	10	22.82	-25	16	53.7			809
1625	1981	08	27.29110	20	10	22.59	-25	16	51.6			809
1633	1981	08	24.05690	19	47	42.82	-21	45	58.8			809
1633	1981	08	24.06383	19	47	42.58	-21	45	58.3			809
1633	1981	08	24.07076	19	47	42.27	-21	45	58.5			809
1633	1981	08	26.06530	19	46	49.83	-21	49	02.0			809
1633	1981	08	26.07153	19	46	49.73	-21	49	02.6			809
1633	1981	08	26.07811	19	46	49.41	-21	49	03.0			809
1713	1981	08	23.36020	00	00	14.35	-08	17	33.0	0.1-	1-	809
1713	1981	08	23.36712	00	00	14.11	-08	17	35.4	0.1-	1-	809
1713	1981	08	23.37405	00	00	13.86	-08	17	37.7	0.1-	1-	809
1713	1981	08	24.36855	23	59	42.97	-08	22	13.0	0.1+	0	809
1713	1981	08	24.37571	23	59	42.73	-08	22	15.0	0.1+	0	809
1713	1981	08	24.38287	23	59	42.46	-08	22	16.9	0.1+	0	809
1877	1981	08	24.34085	23	21	33.74	-09	08	10.2	0.0	0	809
1877	1981	08	24.34778	23	21	33.45	-09	08	10.4	0.0	0	809
1877	1981	08	24.35470	23	21	33.15	-09	08	10.2	0.0	0	809
1877	1981	08	25.27648	23	20	51.97	-09	08	18.7	0.0	0	809
1877	1981	08	25.28271	23	20	51.68	-09	08	18.9	0.0	0	809
1877	1981	08	25.28895	23	20	51.45	-09	08	19.1	0.0	0	809
1877	1981	08	26.20104	23	20	10.17	-09	08	27.3	0.1+	0	809
1877	1981	08	26.20727	23	20	09.92	-09	08	27.7	0.1+	0	809
1877	1981	08	26.21350	23	20	09.64	-09	08	27.3	0.1+	0	809
1877	1981	08	27.17891	23	19	25.44	-09	08	35.8	0.1+	0	809
1877	1981	08	27.18515	23	19	25.14	-09	08	36.8	0.1+	0	809
1877	1981	08	27.19150	23	19	24.88	-09	08	36.8	0.1+	0	809
1877	1981	08	28.37980	23	18	29.53	-09	08	47.8	0.1+	0	809
1877	1981	08	28.38499	23	18	29.31	-09	08	47.7	0.1+	0	809

1877	1981	08	28.39019	23	18	29.02	-09	08	48.1	0.1+	0	809
1877	1981	08	31.36442	23	16	08.48	-09	09	16.0	0.0	1-	809
1877	1981	08	31.36962	23	16	08.22	-09	09	15.8	0.0	1-	809
1877	1981	08	31.37487	23	16	07.97	-09	09	15.8	0.0	1-	809
1877	1981	09	02.32736	23	14	34.09	-09	09	31.3	0.0	1-	809
1877	1981	09	02.33359	23	14	33.76	-09	09	30.9	0.1-	1-	809
1877	1981	09	02.34002	23	14	33.43	-09	09	30.6	0.1-	1-	809
1877	1981	09	03.32012	23	13	45.93	-09	09	37.7	0.1-	1-	809
1877	1981	09	03.32601	23	13	45.65	-09	09	37.3	0.1-	1-	809
1877	1981	09	03.33155	23	13	45.37	-09	09	38.4	0.1-	1-	809
1877	1981	09	04.32294	23	12	57.07	-09	09	45.7	0.1-	1-	809
1877	1981	09	04.32779	23	12	56.83	-09	09	45.1	0.1-	1-	809
1877	1981	09	04.33263	23	12	56.61	-09	09	44.5	0.1-	1-	809
1877	1981	09	05.33232	23	12	07.80	-09	09	50.5	0.1-	1-	809
1877	1981	09	05.33786	23	12	07.55	-09	09	50.1	0.1-	1-	809
1877	1981	09	05.34340	23	12	07.29	-09	09	51.2	0.1-	1-	809
1877	1981	09	06.27904	23	11	21.62	-09	09	54.0	0.1-	1-	809
1877	1981	09	06.28463	23	11	21.33	-09	09	54.1	0.1-	1-	809
1877	1981	09	06.29012	23	11	21.10	-09	09	54.8	0.1-	1-	809
1877	1981	09	07.36842	23	10	28.24	-09	09	56.0	0.0	1-	809
1877	1981	09	07.37396	23	10	27.95	-09	09	56.0	0.0	1-	809
1877	1981	09	07.37950	23	10	27.67	-09	09	55.9	0.0	1-	809
1877	1981	09	18.09703	23	01	52.40	-09	07	53.0	0.1-	1-	809
1877	1981	09	18.10257	23	01	52.12	-09	07	53.5	0.1-	1-	809
1877	1981	09	18.10811	23	01	51.84	-09	07	53.5	0.1-	1-	809
1887	1981	08	24.19957	23	16	09.41	-06	53	42.8	0.0	0	809
1887	1981	08	24.20650	23	16	09.05	-06	53	43.0	0.0	0	809
1887	1981	08	24.21351	23	16	08.74	-06	53	44.1	0.0	0	809
1887	1981	08	25.25432	23	15	19.93	-06	55	02.6	0.1+	0	809
1887	1981	08	25.26055	23	15	19.64	-06	55	03.5	0.1+	0	809
1887	1981	08	25.26678	23	15	19.35	-06	55	03.8	0.1+	0	809
1887	1981	08	26.37887	23	14	35.98	-06	56	18.0	0.1+	0	809
1887	1981	08	26.18523	23	14	35.71	-06	56	18.6	0.1+	0	809
1887	1981	08	26.19134	23	14	35.39	-06	56	19.1	0.1+	0	809
1887	1981	08	26.24934	23	14	32.53	-06	56	22.8	0.1+	0	809
1887	1981	08	26.25575	23	14	32.18	-06	56	23.6	0.1+	0	809
1887	1981	08	26.26319	23	14	31.85	-06	56	24.0	0.1+	0	809
1887	1981	08	27.15559	23	13	48.83	-06	57	37.2	0.1+	0	809
1887	1981	08	27.16160	23	13	48.51	-06	57	37.6	0.1+	0	809
1887	1981	08	27.16783	23	13	48.22	-06	57	38.1	0.1+	0	809
1887	1981	08	28.36041	23	12	49.22	-06	59	20.9	0.1+	0	809
1887	1981	08	28.36560	23	12	48.99	-06	59	21.2	0.1+	0	809
1887	1981	08	28.37114	23	12	48.71	-06	59	21.3	0.1+	0	809
1887	1981	08	31.34711	23	10	18.63	-07	03	42.0	0.1+	0	809
1887	1981	08	31.35230	23	10	18.37	-07	03	42.8	0.1+	0	809
1887	1981	08	31.35750	23	10	18.09	-07	03	43.0	0.1+	0	809
1887	1981	09	01.29511	23	09	29.89	-07	05	07.3	0.1+	0	809
1887	1981	09	01.30100	23	09	29.63	-07	05	08.1	0.1+	0	809
1887	1981	09	01.30688	23	09	29.32	-07	05	08.9	0.1+	0	809
1887	1981	09	02.15006	23	08	45.96	-07	06	24.1	0.1+	0	809
1887	1981	09	02.15595	23	08	45.64	-07	06	25.5	0.1+	0	809
1887	1981	09	02.16270	23	08	45.24	-07	06	25.6	0.1+	0	809
1887	1981	09	02.34744	23	08	35.30	-07	06	43.2	0.0	0	809
1887	1981	09	02.35333	23	08	35.00	-07	06	43.8	0.0	0	809
1887	1981	09	02.35922	23	08	34.73	-07	06	44.6	0.0	0	809
1887	1981	09	03.30108	23	07	45.62	-07	08	10.0	0.0	0	809
1887	1981	09	03.30662	23	07	45.30	-07	08	10.8	0.0	0	809
1887	1981	09	03.31216	23	07	44.99	-07	08	11.3	0.0	0	809
1887	1981	09	04.30565	23	06	52.82	-07	09	41.2	0.0	0	809

1887	1981	09	04.31047	23	06	52.60	-07	09	42.5	0.0	0	809
1887	1981	09	04.31532	23	06	52.34	-07	09	42.8	0.0	0	809
1887	1981	09	05.28731	23	06	01.16	-07	11	11.6	0.0	0	809
1887	1981	09	05.29215	23	06	00.91	-07	11	12.3	0.0	0	809
1887	1981	09	05.29700	23	06	00.65	-07	11	12.8	0.0	0	809
1887	1981	09	06.23830	23	05	11.00	-07	12	38.5	0.0	0	809
1887	1981	09	06.24384	23	05	10.70	-07	12	39.3	0.0	0	809
1887	1981	09	06.24938	23	05	10.44	-07	12	39.6	0.0	0	809
1887	1981	09	06.30674	23	05	07.20	-07	12	44.2	0.0	0	809
1887	1981	09	06.31367	23	05	06.77	-07	12	44.6	0.0	0	809
1887	1981	09	06.31921	23	05	06.52	-07	12	45.5	0.0	0	809
1887	1981	09	07.32946	23	04	12.99	-07	14	16.4	0.0	0	809
1887	1981	09	07.33535	23	04	12.62	-07	14	16.9	0.0	0	809
1887	1981	09	07.34123	23	04	12.34	-07	14	17.2	0.0	0	809
1887	1981	09	07.34920	23	04	11.90	-07	14	18.0	0.0	0	809
1887	1981	09	07.35439	23	04	11.61	-07	14	18.9	0.0	0	809
1887	1981	09	07.36028	23	04	11.30	-07	14	19.0	0.0	0	809
1958	1981	08	23.30826	22	28	11.85	-13	40	31.6	0.0	0	809
1958	1981	08	23.31518	22	28	11.42	-13	40	31.3	0.0	0	809
1958	1981	08	23.32211	22	28	11.07	-13	40	31.1	0.0	0	809
1958	1981	08	28.30154	22	23	42.76	-13	43	11.3	0.1-	0	809
1958	1981	08	28.30777	22	23	42.40	-13	43	11.4	0.1-	0	809
1958	1981	08	28.31400	22	23	42.08	-13	43	11.7	0.1-	0	809
1958	1981	08	28.32237	22	23	41.57	-13	43	11.1	0.1-	0	809
1958	1981	08	28.32855	22	23	41.25	-13	43	12.0	0.1-	0	809
1958	1981	08	28.33478	22	23	40.92	-13	43	13.2	0.1-	0	809
1958	1981	09	01.23036	22	20	12.47	-13	44	26.2	0.1-	0	809
1958	1981	09	01.23624	22	20	12.16	-13	44	26.1	0.1-	0	809
1958	1981	09	01.24213	22	20	11.79	-13	44	26.2	0.1-	0	809
1958	1981	09	02.23871	22	19	19.17	-13	44	34.4	0.1-	0	809
1958	1981	09	02.24529	22	19	18.84	-13	44	34.2	0.1-	0	809
1958	1981	09	02.25152	22	19	18.48	-13	44	34.3	0.1-	0	809
1958	1981	09	03.13521	22	18	32.32	-13	44	39.2	0.1-	0	809
1958	1981	09	03.14110	22	18	32.00	-13	44	39.8	0.1-	0	809
1958	1981	09	03.14698	22	18	31.72	-13	44	40.6	0.1-	0	809
2003	1981	08	24.28199	22	13	32.86	-13	50	54.8	0.0	0	809
2003	1981	08	24.28891	22	13	32.48	-13	50	56.4	0.0	0	809
2003	1981	08	24.29584	22	13	32.15	-13	50	58.0	0.0	0	809
2003	1981	09	01.09946	22	07	38.64	-14	22	50.9			809
2003	1981	09	01.10604	22	07	38.40	-14	22	52.9			809
2003	1981	09	01.11124	22	07	38.20	-14	22	54.7			809
2003	1981	09	01.27295	22	07	30.69	-14	23	32.1	0.0	0	809
2003	1981	09	01.27883	22	07	30.41	-14	23	33.0	0.0	0	809
2003	1981	09	01.28472	22	07	30.13	-14	23	33.8	0.0	0	809
2003	1981	09	05.19762	22	04	38.48	-14	38	21.4	0.0	1-	809
2003	1981	09	05.20351	22	04	38.22	-14	38	22.7	0.0	1-	809
2003	1981	09	05.21009	22	04	37.92	-14	38	24.0	0.0	1-	809
2003	1981	09	06.16200	22	03	57.09	-14	41	50.5	0.1-	1-	809
2003	1981	09	06.16754	22	03	56.85	-14	41	51.8	0.1-	1-	809
2003	1981	09	06.17447	22	03	56.61	-14	41	53.1	0.1-	1-	809
2032	1981	08	24.19957	23	15	35.54	-06	45	02.7	0.0	0	809
2032	1981	08	24.20650	23	15	35.19	-06	45	03.6	0.0	0	809
2032	1981	08	24.21351	23	15	34.94	-06	45	05.9	0.0	0	809
2032	1981	08	25.25432	23	14	52.67	-06	49	16.1	0.1+	0	809
2032	1981	08	25.26055	23	14	52.42	-06	49	18.1	0.1+	0	809
2032	1981	08	25.26678	23	14	52.19	-06	49	19.4	0.1+	0	809
2032	1981	08	26.17887	23	14	14.62	-06	53	06.2	0.1+	0	809
2032	1981	08	26.18523	23	14	14.35	-06	53	08.0	0.1+	0	809
2032	1981	08	26.19134	23	14	14.07	-06	53	09.4	0.1+	0	809

2032	1981	08	26.24934	23	14	11.53	-06	53	22.9	0.1+	0	809
2032	1981	08	26.25575	23	14	11.28	-06	53	24.7	0.1+	0	809
2032	1981	08	26.26319	23	14	10.98	-06	53	26.3	0.1+	0	809
2032	1981	08	27.15559	23	13	33.68	-06	57	09.1	0.1+	0	809
2032	1981	08	27.16160	23	13	33.41	-06	57	10.6	0.1+	0	809
2032	1981	08	27.16783	23	13	33.13	-06	57	12.2	0.1+	0	809
2032	1981	08	28.36041	23	12	41.85	-07	02	14.8	0.1+	0	809
2032	1981	08	28.36560	23	12	41.63	-07	02	16.7	0.1+	0	809
2032	1981	08	28.37114	23	12	41.39	-07	02	17.5	0.1+	0	809
2032	1981	08	31.34711	23	10	30.87	-07	15	01.2	0.1+	0	809
2032	1981	08	31.35230	23	10	30.63	-07	15	02.5	0.1+	0	809
2032	1981	08	31.35750	23	10	30.38	-07	15	04.0	0.1+	0	809
2032	1981	09	02.15006	23	09	10.30	-07	22	49.0	0.1+	0	809
2032	1981	09	02.15595	23	09	09.99	-07	22	50.8	0.1+	0	809
2032	1981	09	02.16270	23	09	09.65	-07	22	52.6	0.1+	0	809
2032	1981	09	02.34744	23	09	01.00	-07	23	40.3	0.0	0	809
2032	1981	09	02.35333	23	09	00.69	-07	23	41.9	0.0	0	809
2032	1981	09	02.35922	23	09	00.45	-07	23	43.4	0.0	0	809
2032	1981	09	03.30108	23	08	17.69	-07	27	48.8	0.0	1-	809
2032	1981	09	03.30662	23	08	17.43	-07	27	50.7	0.0	1-	809
2032	1981	09	03.31216	23	08	17.17	-07	27	52.2	0.0	1-	809
2032	1981	09	04.30565	23	07	31.76	-07	32	10.6	0.0	1-	809
2032	1981	09	04.31047	23	07	31.62	-07	32	11.8	0.0	1-	809
2032	1981	09	04.31532	23	07	31.38	-07	32	13.1	0.0	1-	809
2032	1981	09	05.28731	23	06	46.84	-07	36	26.6	0.0	1-	809
2032	1981	09	05.29215	23	06	46.61	-07	36	27.7	0.0	1-	809
2032	1981	09	05.29700	23	06	46.43	-07	36	28.9	0.0	1-	809
2032	1981	09	06.19663	23	06	03.23	-07	40	33.2	0.0	1-	809
2032	1981	09	06.20217	23	06	02.96	-07	40	34.6	0.0	1-	809
2032	1981	09	06.20771	23	06	02.68	-07	40	36.2	0.0	1-	809
2032	1981	09	07.32946	23	05	12.79	-07	45	14.5	0.0	1-	809
2032	1981	09	07.33535	23	05	12.55	-07	45	15.6	0.0	1-	809
2032	1981	09	07.34123	23	05	12.24	-07	45	17.1	0.0	1-	809
2032	1981	09	20.23804	22	55	37.83	-08	36	40.6	0.1-	1-	809
2032	1981	09	20.24358	22	55	37.65	-08	36	41.7	0.1-	1-	809
2032	1981	09	20.24947	22	55	37.43	-08	36	42.4	0.1-	1-	809
2032	1981	09	21.13211	22	55	01.14	-08	39	49.4	0.1-	1-	809
2032	1981	09	21.13766	22	55	00.91	-08	39	50.4	0.1-	1-	809
2032	1981	09	21.14320	22	55	00.69	-08	39	51.7	0.1-	1-	809
2034	1981	08	23.28540	21	22	27.36	-28	23	06.4			809
2034	1981	08	23.29233	21	22	26.83	-28	23	07.7			809
2034	1981	08	23.29925	21	22	26.23	-28	23	07.7			809
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2034	1981	08	26.30492	21	19	04.96	-28	26	07.6			809
2034	1981	08	26.31115	21	19	04.70	-28	26	08.7			809
2065	1981	08	25.13663	20	27	47.32	-21	35	53.1			809
2065	1981	08	25.14351	20	27	47.02	-21	35	52.7			809
2081	1981	08	23.36020	23	57	12.77	-07	47	15.7	0.1-	0	809
2081	1981	08	23.36712	23	57	12.48	-07	47	17.6	0.1-	0	809
2081	1981	08	23.37405	23	57	12.18	-07	47	19.7	0.1-	0	809
2081	1981	08	24.36855	23	56	35.01	-07	52	30.4	0.1+	0	809
2081	1981	08	24.37571	23	56	34.75	-07	52	32.1	0.1+	0	809
2081	1981	08	24.38287	23	56	34.43	-07	52	34.6	0.1+	0	809
2087	1981	08	24.34085	23	22	14.10	-07	22	41.6	0.0	0	809
2087	1981	08	24.34778	23	22	13.76	-07	22	43.9	0.0	0	809
2087	1981	08	24.35470	23	22	13.42	-07	22	46.2	0.0	1+	809
2087	1981	08	25.27648	23	21	29.58	-07	28	27.4	0.1+	1+	809
2087	1981	08	25.28271	23	21	29.29	-07	28	29.3	0.1+	1+	809
2087	1981	08	25.28895	23	21	28.98	-07	28	31.1	0.1+	1+	809

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2087	1981	09	20.17536	22	57	36.16	-10	09	45.6	0.2-	1-	809
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2095	1981	08	25.13663	20	30	47.84	-20	40	45.7			809
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2154	1981	08	27.32435	22	40	57.64	-13	49	25.8			809
2154	1981	08	27.33072	22	40	57.29	-13	49	27.7			809
2154	1981	08	27.33681	22	40	57.07	-13	49	28.5			809
2154	1981	09	01.25113	22	36	22.85	-14	05	00.2	0.0	1-	809
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2154	1981	09	02.31143	22	35	23.37	-14	08	09.9	0.0	0	809
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2154	1981	09	03.26033	22	34	30.30	-14	10	56.6			809
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2154	1981	09	05.24610	22	32	39.83	-14	16	31.9			809
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2154	1981	09	07.28877	22	30	47.12	-14	21	55.1			809
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1981	QL2		1981	09	03.26033	22	31	57.59	-13	59	04.7	809
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1981	QL2		1981	09	05.25164	22	29	56.96	-13	59	07.8	809
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1981	QL2		1981	09	06.20978	22	28	59.76	-13	58	58.0	809
1981	QL2		1981	09	06.21602	22	28	59.30	-13	58	57.8	809
1981	QL2		1981	09	06.22225	22	28	58.91	-13	58	57.9	809
1981	QL2		1981	09	07.27630	22	27	56.47	-13	58	37.6	809
1981	QL2		1981	09	07.28254	22	27	56.04	-13	58	38.8	809
1981	QL2		1981	09	07.28877	22	27	55.75	-13	58	33.9	809
1981	QM2	*	1981	08	27.32435	22	45	56.57	-15	22	50.4	809

17.8

1981 QM2	1981 08 27.33072	22 45 56.11	-15 22 52.7	809
1981 QM2	1981 08 27.33681	22 45 55.72	-15 22 53.6	809
1981 QM2	1981 09 04.27983	22 37 50.38	-15 58 46.3	809
1981 QM2	1981 09 04.28571	22 37 50.12	-15 58 47.5	809
1981 QM2	1981 09 04.29246	22 37 49.52	-15 58 49.6	809
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1981 QM2	1981 09 05.26653	22 36 49.70	-16 02 43.6	809
1981 QM2	1981 09 05.27138	22 36 49.56	-16 02 44.9	809
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1981 QN2 *	1981 08 23.30826	22 21 43.82	-11 49 55.8	17.0 809
1981 QN2	1981 08 23.31518	22 21 43.52	-11 49 59.2	809
1981 QN2	1981 08 23.32211	22 21 43.23	-11 50 02.4	809
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1981 QN2	1981 08 25.20445	22 20 25.30	-12 02 32.8	809
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1981 QN2	1981 08 25.21692	22 20 24.81	-12 02 37.6	809
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1981 QN2	1981 08 28.07317	22 18 25.78	-12 21 33.5	809
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1981 QN2	1981 09 01.09946	22 15 39.41	-12 47 34.4	809
1981 QN2	1981 09 01.10604	22 15 39.16	-12 47 36.7	809
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1981 QO2	1981 08 23.32211	22 21 48.98	-11 54 49.3	809
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1981 QO2	1981 08 24.17533	22 21 10.59	-11 58 15.0	809
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1981 QO2	1981 08 25.20445	22 20 23.44	-12 02 27.3	809
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1981 QO2	1981 08 26.16943	22 19 39.40	-12 06 24.2	809
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1981 QO2	1981 09 06.10175	22 11 30.82	-12 48 25.2	809
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1981 QO2	1981 09 06.11387	22 11 30.18	-12 48 27.6	809
1981 QP2 *	1981 08 23.30826	22 22 31.18	-12 19 34.8	17.8 809
1981 QP2	1981 08 23.31518	22 22 30.82	-12 19 39.7	809
1981 QP2	1981 08 23.32211	22 22 30.50	-12 19 43.6	809
1981 QP2	1981 08 24.16841	22 21 53.06	-12 28 43.9	809

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1981	QP2	1981	08	24.18226	22	21	52.44	-12	28	52.1	809
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1981	QP2	1981	08	26.15556	22	20	22.34	-12	49	55.6	809
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1981	QP2	1981	09	05.17581	22	12	48.65	-14	32	43.2	809
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1981	QP2	1981	09	05.18689	22	12	48.23	-14	32	49.7	809
1981	QP2	1981	09	05.22013	22	12	46.61	-14	33	09.4	809
1981	QP2	1981	09	05.22636	22	12	46.30	-14	33	13.1	809
1981	QP2	1981	09	05.23260	22	12	46.01	-14	33	16.8	809
1981	QP2	1981	09	05.31016	22	12	42.61	-14	34	01.1	809
1981	QP2	1981	09	05.31570	22	12	42.32	-14	34	04.0	809
1981	QP2	1981	09	05.32124	22	12	42.06	-14	34	08.3	809
1981	QP2	1981	09	06.12252	22	12	08.71	-14	41	47.4	809
1981	QP2	1981	09	06.12806	22	12	08.48	-14	41	50.2	809
1981	QP2	1981	09	06.13361	22	12	08.25	-14	41	53.2	809
1981	QP2	1981	09	06.14261	22	12	07.73	-14	41	58.7	809
1981	QP2	1981	09	06.14815	22	12	07.50	-14	42	01.9	809
1981	QP2	1981	09	06.15376	22	12	07.27	-14	42	04.6	809
1981	QP2	1981	09	07.23755	22	11	21.98	-14	52	14.2	809
1981	QP2	1981	09	07.24318	22	11	21.74	-14	52	17.6	809
1981	QP2	1981	09	07.24883	22	11	21.51	-14	52	20.9	809
1981	QP2	1981	09	07.25709	22	11	21.16	-14	52	26.6	809
1981	QP2	1981	09	07.26246	22	11	20.93	-14	52	29.4	809
1981	QP2	1981	09	07.26800	22	11	20.68	-14	52	32.4	809

1981	QQ2	*	1981	08	23.30826	22	22	35.82	-12	31	47.4	17.9	809
1981	QQ2		1981	08	23.31518	22	22	35.48	-12	31	51.1		809
1981	QQ2		1981	08	23.32211	22	22	35.13	-12	31	54.7		809
1981	QQ2		1981	08	24.16841	22	21	53.37	-12	39	34.6		809
1981	QQ2		1981	08	24.17533	22	21	53.04	-12	39	38.5		809
1981	QQ2		1981	08	24.18226	22	21	52.74	-12	39	41.8		809
1981	QQ2		1981	08	25.20445	22	21	01.36	-12	48	52.7		809
1981	QQ2		1981	08	25.21079	22	21	01.04	-12	48	55.9		809
1981	QQ2		1981	08	25.21692	22	21	00.72	-12	48	59.0		809
1981	QQ2		1981	08	26.15556	22	20	13.64	-12	57	24.4		809
1981	QQ2		1981	08	26.16250	22	20	13.30	-12	57	28.0		809
1981	QQ2		1981	08	26.16943	22	20	12.97	-12	57	31.3		809
1981	QQ2		1981	08	27.11035	22	19	25.52	-13	05	55.7		809
1981	QQ2		1981	08	27.11589	22	19	25.28	-13	05	58.3		809
1981	QQ2		1981	08	27.12281	22	19	25.00	-13	06	02.1		809
1981	QQ2		1981	08	27.13182	22	19	24.30	-13	06	05.8		809
1981	QQ2		1981	08	27.13805	22	19	24.03	-13	06	08.4		809
1981	QQ2		1981	08	27.14428	22	19	23.83	-13	06	11.1		809
1981	QQ2		1981	08	28.11940	22	18	34.68	-13	14	52.6		809
1981	QQ2		1981	08	28.12609	22	18	34.35	-13	14	56.0		809
1981	QQ2		1981	08	28.13278	22	18	34.02	-13	14	59.7		809
1981	QQ2		1981	08	28.30154	22	18	24.86	-13	16	28.2		809
1981	QQ2		1981	08	28.30777	22	18	24.54	-13	16	31.8		809
1981	QQ2		1981	08	28.31400	22	18	24.22	-13	16	35.4		809
1981	QQ2		1981	09	01.08630	22	15	16.35	-13	49	13.8		809
1981	QQ2		1981	09	01.09219	22	15	16.10	-13	49	16.6		809
1981	QQ2		1981	09	01.23036	22	15	08.86	-13	50	26.5		809
1981	QQ2		1981	09	01.23624	22	15	08.56	-13	50	29.3		809
1981	QQ2		1981	09	01.24213	22	15	08.26	-13	50	32.3		809
1981	QQ2		1981	09	02.09120	22	14	27.08	-13	57	40.6		809
1981	QQ2		1981	09	02.09708	22	14	26.82	-13	57	44.0		809
1981	QQ2		1981	09	02.10297	22	14	26.54	-13	57	47.5		809
1981	QQ2		1981	09	02.23871	22	14	19.36	-13	58	54.7		809
1981	QQ2		1981	09	02.24529	22	14	19.00	-13	58	58.2		809
1981	QQ2		1981	09	02.25152	22	14	18.64	-13	59	01.4		809
1981	QQ2		1981	09	05.15226	22	12	00.22	-14	22	38.1		809
1981	QQ2		1981	09	05.15780	22	12	00.03	-14	22	39.9		809
1981	QQ2		1981	09	05.16334	22	11	59.83	-14	22	41.6		809
1981	QQ2		1981	09	05.17581	22	11	59.12	-14	22	47.7		809
1981	QQ2		1981	09	05.18135	22	11	58.80	-14	22	50.7		809
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1981	QQ2		1981	09	06.12806	22	11	15.06	-14	30	16.6		809
1981	QQ2		1981	09	06.13361	22	11	14.79	-14	30	18.7		809
1981	QQ2		1981	09	06.14261	22	11	14.29	-14	30	23.9		809
1981	QQ2		1981	09	06.14815	22	11	14.05	-14	30	26.6		809
1981	QQ2		1981	09	06.15376	22	11	13.80	-14	30	29.0		809
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1981	QQ2		1981	09	07.24883	22	10	23.90	-14	38	52.3		809
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1981	QR2	*	1981	08	23.30826	22	23	14.87	-12	23	02.5	17.3	809
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1981	QR2		1981	08	23.32211	22	23	14.12	-12	23	03.5		809

1981 QR2	1981 08 24.16841	22 22 28.87	-12 23 56.6	809
1981 QR2	1981 08 24.17533	22 22 28.44	-12 23 57.0	809
1981 QR2	1981 08 24.18226	22 22 28.05	-12 23 57.4	809
1981 QR2	1981 08 25.20445	22 21 32.47	-12 24 59.0	809
1981 QR2	1981 08 25.21079	22 21 32.11	-12 24 59.3	809
1981 QR2	1981 08 25.21692	22 21 31.78	-12 24 59.7	809
1981 QR2	1981 08 26.15556	22 20 41.06	-12 25 54.4	809
1981 QR2	1981 08 26.16943	22 20 40.35	-12 25 55.5	809
1981 QR2	1981 08 27.11035	22 19 49.46	-12 26 47.0	809
1981 QR2	1981 08 27.11589	22 19 49.07	-12 26 47.2	809
1981 QR2	1981 08 27.12281	22 19 48.72	-12 26 46.9	809
1981 QR2	1981 08 27.13182	22 19 48.24	-12 26 47.5	809
1981 QR2	1981 08 27.13805	22 19 47.83	-12 26 47.8	809
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1981 QR2	1981 08 28.11940	22 18 54.91	-12 27 41.3	809
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1981 QR2	1981 09 01.10604	22 15 24.05	-12 30 29.9	809
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1981 QR2	1981 09 05.14291	22 12 02.36	-12 32 02.7	809
1981 QR2	1981 09 06.10175	22 11 17.27	-12 32 08.7	809
1981 QR2	1981 09 06.10781	22 11 17.01	-12 32 09.3	809
1981 QR2	1981 09 06.11387	22 11 16.65	-12 32 09.9	809
1981 QR2	1981 09 07.18420	22 10 27.09	-12 32 10.8	809
1981 QR2	1981 09 07.18974	22 10 26.82	-12 32 10.5	809
1981 QR2	1981 09 07.19528	22 10 26.60	-12 32 11.3	809
1981 QS2 *	1981 08 23.30826	22 23 37.89	-12 07 26.8	17.8 809
1981 QS2	1981 08 23.31518	22 23 37.55	-12 07 28.9	809
1981 QS2	1981 08 23.32211	22 23 37.19	-12 07 30.9	809
1981 QS2	1981 08 24.16841	22 22 53.06	-12 13 23.4	809
1981 QS2	1981 08 24.17533	22 22 52.70	-12 13 26.5	809
1981 QS2	1981 08 24.18226	22 22 52.27	-12 13 28.6	809
1981 QS2	1981 08 25.20445	22 21 58.10	-12 20 32.8	809
1981 QS2	1981 08 25.21079	22 21 57.80	-12 20 35.1	809
1981 QS2	1981 08 25.21692	22 21 57.49	-12 20 37.7	809
1981 QS2	1981 08 26.15556	22 21 07.44	-12 27 09.4	809
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1981 QS2	1981 08 27.11035	22 20 16.22	-12 33 44.9	809
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1981 QS2	1981 08 27.12281	22 20 15.53	-12 33 50.8	809
1981 QS2	1981 08 27.13182	22 20 15.00	-12 33 53.0	809
1981 QS2	1981 08 27.13805	22 20 14.62	-12 33 56.4	809
1981 QS2	1981 08 27.14428	22 20 14.30	-12 33 58.4	809
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1981 QS2	1981 08 28.30777	22 19 11.05	-12 42 02.8	809
1981 QS2	1981 08 28.31400	22 19 10.75	-12 42 05.3	809
1981 QS2	1981 09 01.23036	22 15 39.69	-13 08 38.4	809
1981 QS2	1981 09 01.23624	22 15 39.34	-13 08 40.6	809
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1981	QT2	*	1981	08	23.30826	22	25	58.07	-13	03	56.8	16.8	809
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1981	QT2		1981	08	24.17533	22	25	19.00	-13	10	48.3		809
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1981	QT2		1981	08	25.20445	22	24	31.90	-13	18	54.7		809
1981	QT2		1981	08	25.21079	22	24	31.67	-13	18	57.8		809
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1981	QT2		1981	08	27.13805	22	23	02.62	-13	34	09.4		809
1981	QT2		1981	08	27.14428	22	23	02.35	-13	34	12.6		809
1981	QT2		1981	08	28.30154	22	22	08.29	-13	43	15.6		809
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1981	QT2		1981	09	01.09219	22	19	12.51	-14	12	30.8		809
1981	QT2		1981	09	01.23036	22	19	05.75	-14	13	33.8		809
1981	QT2		1981	09	01.23624	22	19	05.47	-14	13	36.0		809
1981	QT2		1981	09	01.24213	22	19	05.18	-14	13	39.1		809
1981	QT2		1981	09	02.09120	22	18	26.21	-14	20	04.4		809
1981	QT2		1981	09	02.09708	22	18	25.95	-14	20	07.3		809
1981	QT2		1981	09	02.10297	22	18	25.68	-14	20	10.1		809
1981	QT2		1981	09	02.23871	22	18	19.17	-14	21	11.2		809
1981	QT2		1981	09	02.24529	22	18	18.81	-14	21	14.4		809
1981	QT2		1981	09	02.25152	22	18	18.55	-14	21	17.2		809
1981	QT2		1981	09	03.13521	22	17	38.11	-14	27	53.5		809
1981	QT2		1981	09	03.14110	22	17	37.86	-14	27	56.4		809
1981	QT2		1981	09	03.14698	22	17	37.55	-14	27	58.3		809
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1981	QT2		1981	09	05.15226	22	16	06.34	-14	42	42.2		809
1981	QT2		1981	09	05.15780	22	16	06.08	-14	42	45.2		809
1981	QT2		1981	09	05.16334	22	16	05.83	-14	42	48.3		809
1981	QT2		1981	09	05.17581	22	16	05.28	-14	42	52.0		809
1981	QT2		1981	09	05.18135	22	16	04.99	-14	42	55.1		809
1981	QT2		1981	09	05.18689	22	16	04.72	-14	42	57.6		809
1981	QT2		1981	09	06.12252	22	15	23.01	-14	49	40.5		809
1981	QT2		1981	09	06.12806	22	15	22.77	-14	49	42.8		809
1981	QT2		1981	09	06.13361	22	15	22.56	-14	49	44.6		809
1981	QT2		1981	09	06.14261	22	15	22.09	-14	49	50.0		809
1981	QT2		1981	09	06.14815	22	15	21.87	-14	49	52.1		809
1981	QT2		1981	09	06.15376	22	15	21.68	-14	49	54.6		809
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1981	QT2		1981	09	07.20913	22	14	34.71	-14	57	22.8		809
1981	QT2		1981	09	07.21571	22	14	34.40	-14	57	25.8		809
1981	QT2		1981	09	07.23755	22	14	33.35	-14	57	35.3		809
1981	QT2		1981	09	07.24318	22	14	33.11	-14	57	37.3		809
1981	QT2		1981	09	07.24883	22	14	32.84	-14	57	40.2		809
1981	QT2		1981	09	18.05829	22	07	22.70	-16	05	49.0		809
1981	QT2		1981	09	18.06392	22	07	22.48	-16	05	50.5		809
1981	QT2		1981	09	18.06955	22	07	22.27	-16	05	52.8		809
1981	QT2		1981	09	20.19025	22	06	11.04	-16	17	05.8		809
1981	QT2		1981	09	20.19649	22	06	10.82	-16	17	07.7		809

1981	QT2	1981	09	20.20272	22	06	10.63	-16	17	09.7	809
1981	QT2	1981	09	22.13701	22	05	11.07	-16	26	44.0	809
1981	QT2	1981	09	22.14255	22	05	10.91	-16	26	45.1	809
1981	QT2	1981	09	22.14809	22	05	10.67	-16	26	47.3	809
1981	QU2	1981	08	23.33388	23	14	22.57	-07	12	42.5	809
1981	QU2	1981	08	23.34081	23	14	22.31	-07	12	44.5	809
1981	QU2	1981	08	23.34773	23	14	22.08	-07	12	46.8	809
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1981	QU2	1981	08	25.25432	23	13	02.70	-07	22	39.9	809
1981	QU2	1981	08	25.26055	23	13	02.45	-07	22	42.0	809
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1981	QU2	1981	08	26.18523	23	12	22.95	-07	27	33.0	809
1981	QU2	1981	08	26.19134	23	12	22.67	-07	27	34.9	809
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1981	QU2	1981	08	27.15559	23	11	40.66	-07	32	43.7	809
1981	QU2	1981	08	27.16160	23	11	40.43	-07	32	45.3	809
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1981	QU2	1981	08	28.36041	23	10	46.91	-07	39	10.8	809
1981	QU2	1981	08	28.36560	23	10	46.69	-07	39	12.4	809
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1981	QU2	1981	08	31.34711	23	08	30.71	-07	55	23.9	809
1981	QU2	1981	08	31.35230	23	08	30.47	-07	55	25.8	809
1981	QU2	1981	08	31.35750	23	08	30.20	-07	55	27.0	809
1981	QU2	1981	09	01.29511	23	07	46.75	-08	00	35.0	809
1981	QU2	1981	09	01.30100	23	07	46.40	-08	00	36.8	809
1981	QU2	1981	09	01.30688	23	07	46.07	-08	00	39.1	809
1981	QU2	1981	09	02.15006	23	07	06.84	-08	05	16.6	809
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1981	QU2	1981	09	02.34744	23	06	57.11	-08	06	21.0	809
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1981	QU2	1981	09	02.35922	23	06	56.58	-08	06	24.8	809
1981	QU2	1981	09	03.30108	23	06	12.02	-08	11	35.3	809
1981	QU2	1981	09	03.30662	23	06	11.78	-08	11	36.9	809
1981	QU2	1981	09	03.31216	23	06	11.54	-08	11	38.5	809
1981	QU2	1981	09	04.30565	23	05	24.30	-08	17	06.0	809
1981	QU2	1981	09	04.31047	23	05	24.02	-08	17	07.4	809
1981	QU2	1981	09	04.31532	23	05	23.71	-08	17	09.0	809
1981	QU2	1981	09	05.28731	23	04	37.23	-08	22	27.8	809
1981	QU2	1981	09	05.29215	23	04	37.00	-08	22	29.4	809
1981	QU2	1981	09	05.29700	23	04	36.75	-08	22	31.3	809
1981	QU2	1981	09	05.35241	23	04	34.05	-08	22	49.4	809
1981	QU2	1981	09	05.35829	23	04	33.78	-08	22	51.2	809
1981	QU2	1981	09	05.36418	23	04	33.48	-08	22	52.9	809
1981	QU2	1981	09	06.23830	23	03	51.75	-08	27	38.9	809
1981	QU2	1981	09	06.24384	23	03	51.46	-08	27	40.6	809
1981	QU2	1981	09	06.24938	23	03	51.16	-08	27	42.8	809
1981	QU2	1981	09	06.33133	23	03	47.04	-08	28	09.5	809
1981	QU2	1981	09	06.33692	23	03	46.77	-08	28	11.2	809
1981	QU2	1981	09	06.34246	23	03	46.48	-08	28	13.1	809
1981	QU2	1981	09	07.32946	23	02	59.11	-08	33	34.5	809
1981	QU2	1981	09	07.33535	23	02	58.79	-08	33	36.0	809
1981	QU2	1981	09	07.34123	23	02	58.48	-08	33	37.6	809
1981	QU2	1981	09	07.38815	23	02	56.13	-08	33	53.3	809

16.8

1981	QU2	1981	09	07.39439	23	02	55.88	-08	33	55.3	809		
1981	QU2	1981	09	07.40062	23	02	55.60	-08	33	57.4	809		
1981	QU2	1981	09	20.23804	22	52	58.79	-09	38	27.9	809		
1981	QU2	1981	09	20.24358	22	52	58.58	-09	38	30.0	809		
1981	QU2	1981	09	20.24947	22	52	58.35	-09	38	31.3	809		
1981	QU2	1981	09	21.07256	22	52	23.32	-09	42	09.9	809		
1981	QU2	1981	09	21.07844	22	52	23.04	-09	42	11.7	809		
1981	QU2	1981	09	21.08433	22	52	22.86	-09	42	12.9	809		
1981	QU2	1981	09	21.13211	22	52	20.60	-09	42	26.3	809		
1981	QU2	1981	09	21.13766	22	52	20.41	-09	42	27.7	809		
1981	QU2	1981	09	21.14320	22	52	20.15	-09	42	29.3	809		
1981	QV2	*	1981	08	23.36020	00	01	36.25	-08	26	29.3	18.0	809
1981	QV2		1981	08	23.36712	00	01	36.07	-08	26	33.0	809	
1981	QV2		1981	08	23.37405	00	01	35.90	-08	26	36.2	809	
1981	QV2		1981	08	24.36855	00	01	12.43	-08	35	34.3	809	
1981	QV2		1981	08	24.37571	00	01	12.26	-08	35	38.5	809	
1981	QV2		1981	08	24.38287	00	01	12.09	-08	35	42.4	809	
1981	QW2	*	1981	08	23.36020	23	58	19.76	-07	16	39.6	17.8	809
1981	QW2		1981	08	23.36712	23	58	19.50	-07	16	41.3	809	
1981	QW2		1981	08	23.37405	23	58	19.23	-07	16	42.7	809	
1981	QW2		1981	08	24.36855	23	57	44.36	-07	20	13.5	809	
1981	QW2		1981	08	24.37571	23	57	44.08	-07	20	15.0	809	
1981	QW2		1981	08	24.38287	23	57	43.81	-07	20	16.7	809	
1981	QX2	*	1981	08	24.14076	20	50	06.26	-22	02	57.6	18.0	809
1981	QX2		1981	08	24.14763	20	50	05.93	-22	02	59.0	809	
1981	QX2		1981	08	24.15456	20	50	05.57	-22	02	59.7	809	
1981	QX2		1981	08	26.22285	20	48	36.28	-22	08	29.0	809	
1981	QX2		1981	08	26.22978	20	48	35.91	-22	08	30.3	809	
1981	QX2		1981	08	26.23670	20	48	35.58	-22	08	30.8	809	
1981	QY2	*	1981	08	24.16841	22	19	57.01	-11	53	20.2	18.2	809
1981	QY2		1981	08	24.17533	22	19	56.72	-11	53	22.7	809	
1981	QY2		1981	08	24.18226	22	19	56.41	-11	53	25.2	809	
1981	QY2		1981	08	25.15944	22	19	10.21	-11	58	44.8	809	
1981	QY2		1981	08	25.16636	22	19	09.84	-11	58	47.3	809	
1981	QY2		1981	08	25.17334	22	19	09.50	-11	58	49.9	809	
1981	QY2		1981	08	25.20445	22	19	08.08	-11	58	55.4	809	
1981	QY2		1981	08	25.21079	22	19	07.77	-11	58	57.9	809	
1981	QY2		1981	08	25.21692	22	19	07.49	-11	58	59.8	809	
1981	QY2		1981	08	26.13319	22	18	24.37	-12	03	57.2	809	
1981	QY2		1981	08	26.13940	22	18	24.08	-12	04	00.0	809	
1981	QY2		1981	08	26.14565	22	18	23.80	-12	04	01.8	809	
1981	QY2		1981	08	26.15556	22	18	23.27	-12	04	05.2	809	
1981	QY2		1981	08	26.16250	22	18	22.95	-12	04	07.5	809	
1981	QY2		1981	08	26.16943	22	18	22.63	-12	04	09.6	809	
1981	QY2		1981	08	27.08888	22	17	39.30	-12	09	04.2	809	
1981	QY2		1981	08	27.09511	22	17	39.03	-12	09	06.2	809	
1981	QY2		1981	08	27.10134	22	17	38.74	-12	09	08.3	809	
1981	QY2		1981	08	27.11035	22	17	38.29	-12	09	10.5	809	
1981	QY2		1981	08	27.11589	22	17	38.05	-12	09	12.2	809	
1981	QY2		1981	08	27.12281	22	17	37.70	-12	09	14.6	809	
1981	QY2		1981	08	28.07317	22	16	52.91	-12	14	19.6	809	
1981	QY2		1981	08	28.07923	22	16	52.62	-12	14	22.0	809	
1981	QY2		1981	08	28.08529	22	16	52.33	-12	14	24.3	809	
1981	QY2		1981	08	28.11940	22	16	50.74	-12	14	34.4	809	
1981	QY2		1981	08	28.12609	22	16	50.42	-12	14	36.5	809	
1981	QY2		1981	08	28.13278	22	16	50.09	-12	14	38.9	809	
1981	QY2		1981	09	01.09946	22	13	44.40	-12	35	24.7	809	
1981	QY2		1981	09	01.10604	22	13	44.13	-12	35	26.8	809	
1981	QY2		1981	09	01.11124	22	13	43.83	-12	35	28.5	809	

1981 QY2	1981 09 05.12767	22 10 40.63	-12 55 38.9	809
1981 QY2	1981 09 05.13529	22 10 40.30	-12 55 41.3	809
1981 QY2	1981 09 05.14291	22 10 39.97	-12 55 43.7	809
1981 QZ2 *	1981 08 24.16841	22 20 05.76	-11 32 52.3	17.7 809
1981 QZ2	1981 08 24.17533	22 20 05.45	-11 32 55.0	809
1981 QZ2	1981 08 24.18226	22 20 05.15	-11 32 56.3	809
1981 QZ2	1981 08 25.15944	22 19 21.85	-11 37 43.5	809
1981 QZ2	1981 08 25.16636	22 19 21.54	-11 37 45.9	809
1981 QZ2	1981 08 25.17334	22 19 21.22	-11 37 48.0	809
1981 QZ2	1981 08 25.20445	22 19 19.77	-11 37 55.7	809
1981 QZ2	1981 08 25.21079	22 19 19.51	-11 37 57.7	809
1981 QZ2	1981 08 25.21692	22 19 19.28	-11 37 59.4	809
1981 QZ2	1981 08 26.15556	22 18 37.86	-11 42 34.8	809
1981 QZ2	1981 08 26.16250	22 18 37.60	-11 42 36.3	809
1981 QZ2	1981 08 26.16943	22 18 37.32	-11 42 38.1	809
1981 QZ2	1981 08 27.08888	22 17 56.81	-11 47 04.6	809
1981 QZ2	1981 08 27.09511	22 17 56.50	-11 47 06.7	809
1981 QZ2	1981 08 27.10134	22 17 56.22	-11 47 08.8	809
1981 QZ2	1981 08 27.11035	22 17 55.80	-11 47 10.3	809
1981 QZ2	1981 08 27.11589	22 17 55.52	-11 47 12.8	809
1981 QZ2	1981 08 27.12281	22 17 55.21	-11 47 14.4	809
1981 QZ2	1981 08 28.07317	22 17 13.35	-11 51 49.6	809
1981 QZ2	1981 08 28.07923	22 17 13.17	-11 51 51.8	809
1981 QZ2	1981 08 28.08529	22 17 12.88	-11 51 52.9	809
1981 QZ2	1981 08 28.09585	22 17 12.31	-11 51 55.6	809
1981 QZ2	1981 08 28.10208	22 17 12.00	-11 51 58.2	809
1981 QZ2	1981 08 28.10843	22 17 11.68	-11 52 00.6	809
1981 QZ2	1981 08 28.11940	22 17 11.18	-11 52 03.1	809
1981 QZ2	1981 08 28.12609	22 17 10.91	-11 52 05.2	809
1981 QZ2	1981 08 28.13278	22 17 10.66	-11 52 07.4	809
1981 QZ2	1981 08 31.30729	22 14 51.38	-12 07 07.1	809
1981 QZ2	1981 08 31.31354	22 14 51.14	-12 07 10.6	809
1981 QZ2	1981 08 31.31943	22 14 50.88	-12 07 13.7	809
1981 QZ2	1981 09 03.11253	22 12 51.38	-12 20 03.6	809
1981 QZ2	1981 09 03.11969	22 12 51.06	-12 20 05.4	809
1981 QZ2	1981 09 03.12563	22 12 50.82	-12 20 07.6	809
1981 QZ2	1981 09 03.20100	22 12 47.42	-12 20 26.8	809
1981 QZ2	1981 09 03.20585	22 12 47.23	-12 20 28.0	809
1981 QZ2	1981 09 03.21070	22 12 47.04	-12 20 29.6	809
1981 QZ2	1981 09 05.12767	22 11 26.94	-12 29 00.1	809
1981 QZ2	1981 09 05.13529	22 11 26.63	-12 29 02.4	809
1981 QZ2	1981 09 05.14291	22 11 26.29	-12 29 05.0	809
1981 QZ2	1981 09 06.10175	22 10 46.99	-12 33 14.0	809
1981 QZ2	1981 09 06.10781	22 10 46.76	-12 33 15.8	809
1981 QZ2	1981 09 06.11387	22 10 46.50	-12 33 17.8	809
1981 QZ2	1981 09 07.18420	22 10 03.09	-12 37 50.6	809
1981 QZ2	1981 09 07.18974	22 10 02.88	-12 37 51.9	809
1981 QZ2	1981 09 07.19528	22 10 02.62	-12 37 53.6	809
1981 QA3 *	1981 08 24.19957	23 15 50.67	-06 52 49.8	17.9 809
1981 QA3	1981 08 24.20650	23 15 50.42	-06 52 51.3	809
1981 QA3	1981 08 24.21351	23 15 50.12	-06 52 52.8	809
1981 QA3	1981 08 25.25432	23 15 09.53	-06 57 00.9	809
1981 QA3	1981 08 25.26055	23 15 09.25	-06 57 02.4	809
1981 QA3	1981 08 25.26678	23 15 09.01	-06 57 03.9	809
1981 QA3	1981 08 26.17887	23 14 33.01	-07 00 46.3	809
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1981 QA3	1981 08 26.19134	23 14 32.54	-07 00 49.7	809
1981 QA3	1981 08 26.24934	23 14 30.10	-07 01 03.2	809
1981 QA3	1981 08 26.25575	23 14 29.89	-07 01 04.6	809

1981 QA3	1981 08	26.26319	23 14	29.63	-07 01	06.0	809
1981 QA3	1981 08	27.15559	23 13	53.97	-07 04	44.2	809
1981 QA3	1981 08	27.16160	23 13	53.75	-07 04	45.8	809
1981 QA3	1981 08	27.16783	23 13	53.50	-07 04	47.5	809
1981 QA3	1981 08	28.36041	23 13	04.62	-07 09	43.7	809
1981 QA3	1981 08	28.36560	23 13	04.41	-07 09	45.0	809
1981 QA3	1981 08	28.37114	23 13	04.15	-07 09	46.5	809
1981 QA3	1981 08	31.34711	23 11	00.35	-07 22	11.7	809
1981 QA3	1981 08	31.35230	23 11	00.15	-07 22	13.1	809
1981 QA3	1981 08	31.35750	23 10	59.94	-07 22	14.5	809
1981 QA3	1981 09	01.29511	23 10	19.98	-07 26	09.2	809
1981 QA3	1981 09	01.30100	23 10	19.95	-07 26	11.0	809
1981 QA3	1981 09	01.30688	23 10	19.69	-07 26	12.7	809
1981 QA3	1981 09	02.34744	23 09	35.26	-07 30	37.4	809
1981 QA3	1981 09	02.35333	23 09	35.01	-07 30	39.3	809
1981 QA3	1981 09	02.35922	23 09	34.73	-07 30	40.9	809
1981 QA3	1981 09	04.30565	23 08	10.78	-07 38	55.4	809
1981 QA3	1981 09	04.31047	23 08	10.58	-07 38	56.9	809
1981 QA3	1981 09	04.31532	23 08	10.40	-07 38	58.4	809
1981 QA3	1981 09	05.28731	23 07	28.19	-07 43	05.6	809
1981 QA3	1981 09	05.29215	23 07	27.99	-07 43	06.9	809
1981 QA3	1981 09	05.29700	23 07	27.79	-07 43	08.0	809
1981 QA3	1981 09	06.23830	23 06	46.85	-07 47	07.2	809
1981 QA3	1981 09	06.24384	23 06	46.63	-07 47	08.6	809
1981 QA3	1981 09	06.24938	23 06	46.31	-07 47	10.6	809
1981 QB3 *	1981 08	24.28199	22 13	42.45	-12 26	30.1	17.6 809
1981 QB3	1981 08	24.28891	22 13	42.20	-12 26	32.2	809
1981 QB3	1981 08	24.29584	22 13	41.92	-12 26	34.0	809
1981 QB3	1981 08	28.09585	22 11	06.63	-12 49	50.8	809
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1981 QB3	1981 08	28.10843	22 11	06.10	-12 49	55.6	809
1981 QB3	1981 09	01.09946	22 08	25.22	-13 13	38.5	809
1981 QB3	1981 09	01.10604	22 08	24.96	-13 13	40.8	809
1981 QB3	1981 09	01.11124	22 08	24.77	-13 13	43.7	809
1981 QB3	1981 09	01.27295	22 08	17.89	-13 14	39.9	809
1981 QB3	1981 09	01.27883	22 08	17.56	-13 14	41.1	809
1981 QB3	1981 09	01.28472	22 08	17.24	-13 14	42.4	809
1981 QB3	1981 09	05.12767	22 05	49.98	-13 36	19.0	809
1981 QB3	1981 09	05.13529	22 05	49.76	-13 36	21.3	809
1981 QB3	1981 09	05.14291	22 05	49.47	-13 36	24.0	809
1981 QB3	1981 09	05.19762	22 05	47.27	-13 36	41.5	809
1981 QB3	1981 09	05.20351	22 05	47.09	-13 36	43.7	809
1981 QB3	1981 09	05.21009	22 05	46.78	-13 36	45.6	809
1981 QB3	1981 09	06.10175	22 05	14.28	-13 41	33.6	809
1981 QB3	1981 09	06.10781	22 05	14.04	-13 41	35.4	809
1981 QB3	1981 09	06.11387	22 05	13.80	-13 41	37.7	809
1981 QB3	1981 09	06.16200	22 05	11.92	-13 41	52.3	809
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1981 QB3	1981 09	07.25709	22 04	32.38	-13 47	36.6	809
1981 QB3	1981 09	07.26246	22 04	32.18	-13 47	38.4	809
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1981 QC3 *	1981 08	24.28199	22 17	39.13	-12 29	54.6	17.8 809
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1981 QC3	1981 08	24.29584	22 17	38.74	-12 30	03.8	809
1981 QC3	1981 08	26.13319	22 16	46.43	-12 49	57.8	809
1981 QC3	1981 08	26.13940	22 16	46.23	-12 50	01.7	809
1981 QC3	1981 08	26.14565	22 16	46.03	-12 50	05.4	809
1981 QC3	1981 08	26.15556	22 16	45.80	-12 50	16.2	809

1981	QC3	1981	08	26.16250	22	16	45.53	-12	50	20.3	809		
1981	QC3	1981	08	26.16943	22	16	45.31	-12	50	24.5	809		
1981	QC3	1981	08	27.11035	22	16	18.12	-13	00	31.9	809		
1981	QC3	1981	08	27.11589	22	16	17.95	-13	00	35.6	809		
1981	QC3	1981	08	27.12281	22	16	17.79	-13	00	39.4	809		
1981	QC3	1981	08	27.13182	22	16	17.40	-13	00	45.6	809		
1981	QC3	1981	08	27.13805	22	16	17.20	-13	00	50.2	809		
1981	QC3	1981	08	27.14428	22	16	16.98	-13	00	54.6	809		
1981	QC3	1981	08	28.09585	22	15	49.78	-13	11	05.9	809		
1981	QC3	1981	08	28.10208	22	15	49.53	-13	11	11.0	809		
1981	QC3	1981	08	28.10843	22	15	49.27	-13	11	15.4	809		
1981	QC3	1981	08	28.11940	22	15	48.87	-13	11	23.3	809		
1981	QC3	1981	08	28.12609	22	15	48.69	-13	11	27.7	809		
1981	QC3	1981	08	28.13278	22	15	48.52	-13	11	32.4	809		
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1981	QC3	1981	09	01.23624	22	13	51.39	-13	54	50.4	809		
1981	QC3	1981	09	01.24213	22	13	51.20	-13	54	53.7	809		
1981	QC3	1981	09	02.09120	22	13	28.46	-14	03	36.9	809		
1981	QC3	1981	09	02.09708	22	13	28.30	-14	03	41.1	809		
1981	QC3	1981	09	02.10297	22	13	28.13	-14	03	45.1	809		
1981	QC3	1981	09	02.23871	22	13	23.94	-14	05	07.2	809		
1981	QC3	1981	09	02.24529	22	13	23.74	-14	05	11.3	809		
1981	QC3	1981	09	02.25152	22	13	23.57	-14	05	15.3	809		
1981	QC3	1981	09	03.13521	22	13	00.37	-14	14	12.3	809		
1981	QC3	1981	09	03.14110	22	13	00.19	-14	14	16.4	809		
1981	QC3	1981	09	03.14698	22	13	00.00	-14	14	19.8	809		
1981	QC3	1981	09	05.15226	22	12	08.44	-14	34	09.5	809		
1981	QC3	1981	09	05.15780	22	12	08.27	-14	34	13.8	809		
1981	QC3	1981	09	05.16334	22	12	08.05	-14	34	17.4	809		
1981	QC3	1981	09	05.17581	22	12	07.67	-14	34	24.0	809		
1981	QC3	1981	09	05.18135	22	12	07.50	-14	34	27.0	809		
1981	QC3	1981	09	05.18689	22	12	07.31	-14	34	31.2	809		
1981	QC3	1981	09	05.22013	22	12	06.38	-14	34	49.2	809		
1981	QC3	1981	09	05.22636	22	12	06.18	-14	34	53.0	809		
1981	QC3	1981	09	05.23260	22	12	05.98	-14	34	56.9	809		
1981	QC3	1981	09	06.12252	22	11	44.69	-14	43	30.7	809		
1981	QC3	1981	09	06.12806	22	11	44.54	-14	43	34.5	809		
1981	QC3	1981	09	06.13361	22	11	44.40	-14	43	38.6	809		
1981	QC3	1981	09	06.14261	22	11	44.16	-14	43	42.9	809		
1981	QC3	1981	09	06.14815	22	11	44.03	-14	43	46.1	809		
1981	QC3	1981	09	06.15376	22	11	43.90	-14	43	49.8	809		
1981	QC3	1981	09	07.23755	22	11	18.26	-14	54	02.7	809		
1981	QC3	1981	09	07.24318	22	11	18.12	-14	54	05.7	809		
1981	QC3	1981	09	07.24883	22	11	17.97	-14	54	08.4	809		
1981	QC3	1981	09	07.25709	22	11	17.56	-14	54	14.4	809		
1981	QC3	1981	09	07.26246	22	11	17.43	-14	54	17.5	809		
1981	QC3	1981	09	07.26800	22	11	17.30	-14	54	20.8	809		
1981	QD3	*	1981	08	24.28199	22	21	13.01	-13	51	25.1	18.0	809
1981	QD3		1981	08	24.28891	22	21	12.78	-13	51	26.3	809	
1981	QD3		1981	08	24.29584	22	21	12.58	-13	51	27.8	809	
1981	QE3	*	1981	08	24.34085	23	20	02.98	-08	36	31.4	16.7	809
1981	QE3		1981	08	24.34778	23	20	02.75	-08	36	32.9	809	
1981	QE3		1981	08	24.35470	23	20	02.50	-08	36	35.0	809	
1981	QE3		1981	08	25.27648	23	19	27.48	-08	40	46.6	809	
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1981	QE3		1981	08	25.28895	23	19	26.98	-08	40	50.2	809	
1981	QE3		1981	08	26.20104	23	18	51.58	-08	45	01.4	809	
1981	QE3		1981	08	26.20727	23	18	51.35	-08	45	03.1	809	
1981	QE3		1981	08	26.21350	23	18	51.13	-08	45	04.6	809	

1981	QE3	1981	08	27.17891	23	18	12.88	-08	49	32.5	809		
1981	QE3	1981	08	27.18515	23	18	12.61	-08	49	34.7	809		
1981	QE3	1981	08	27.19150	23	18	12.35	-08	49	36.3	809		
1981	QE3	1981	08	28.37980	23	17	23.90	-08	55	07.5	809		
1981	QE3	1981	08	28.38499	23	17	23.71	-08	55	09.5	809		
1981	QE3	1981	08	28.39019	23	17	23.51	-08	55	10.6	809		
1981	QE3	1981	08	31.36442	23	15	19.23	-09	09	06.4	809		
1981	QE3	1981	08	31.36962	23	15	19.02	-09	09	08.7	809		
1981	QE3	1981	08	31.37487	23	15	18.77	-09	09	10.6	809		
1981	QE3	1981	09	02.32736	23	13	54.72	-09	18	19.1	809		
1981	QE3	1981	09	02.33359	23	13	54.44	-09	18	20.7	809		
1981	QE3	1981	09	02.34002	23	13	54.11	-09	18	22.3	809		
1981	QE3	1981	09	03.32012	23	13	11.39	-09	22	58.0	809		
1981	QE3	1981	09	03.32601	23	13	11.12	-09	22	59.9	809		
1981	QE3	1981	09	03.33155	23	13	10.92	-09	23	01.7	809		
1981	QE3	1981	09	04.32294	23	12	27.27	-09	27	39.6	809		
1981	QE3	1981	09	04.32779	23	12	27.02	-09	27	41.4	809		
1981	QE3	1981	09	04.33263	23	12	26.79	-09	27	42.7	809		
1981	QE3	1981	09	05.33232	23	11	42.65	-09	32	19.9	809		
1981	QE3	1981	09	05.33786	23	11	42.36	-09	32	22.1	809		
1981	QE3	1981	09	05.34340	23	11	42.10	-09	32	23.6	809		
1981	QE3	1981	09	06.27904	23	11	00.69	-09	36	41.0	809		
1981	QE3	1981	09	06.28463	23	11	00.44	-09	36	43.1	809		
1981	QE3	1981	09	06.29012	23	11	00.15	-09	36	45.4	809		
1981	QE3	1981	09	07.36842	23	10	12.00	-09	41	41.6	809		
1981	QE3	1981	09	07.37396	23	10	11.74	-09	41	43.0	809		
1981	QE3	1981	09	07.37950	23	10	11.48	-09	41	44.5	809		
1981	QE3	1981	09	18.09703	23	02	21.57	-10	26	35.3	809		
1981	QE3	1981	09	18.10257	23	02	21.34	-10	26	36.7	809		
1981	QE3	1981	09	18.10811	23	02	21.09	-10	26	37.9	809		
1981	QE3	1981	09	20.16983	23	00	55.55	-10	34	05.1	809		
1981	QE3	1981	09	20.17536	23	00	55.29	-10	34	06.3	809		
1981	QE3	1981	09	20.18090	23	00	55.07	-10	34	07.4	809		
1981	QE3	1981	09	21.10788	23	00	17.58	-10	37	18.8	809		
1981	QE3	1981	09	21.11376	23	00	17.34	-10	37	20.3	809		
1981	QE3	1981	09	21.11999	23	00	17.04	-10	37	21.4	809		
1981	QF3	*	1981	08	25.15944	22	12	07.93	-10	35	28.6	809	18.3
1981	QF3		1981	08	25.16636	22	12	07.59	-10	35	32.3	809	
1981	QF3		1981	08	25.17334	22	12	07.24	-10	35	35.4	809	
1981	QG3	*	1981	08	25.15944	22	14	51.24	-10	57	07.6	809	17.6
1981	QG3		1981	08	25.16636	22	14	50.94	-10	57	13.6	809	
1981	QG3		1981	08	25.17334	22	14	50.65	-10	57	19.6	809	
1981	QG3		1981	08	27.08888	22	13	27.28	-11	27	32.2	809	
1981	QG3		1981	08	27.09511	22	13	27.08	-11	27	37.9	809	
1981	QG3		1981	08	27.10134	22	13	26.87	-11	27	43.1	809	
1981	QG3		1981	08	28.07317	22	12	44.86	-11	42	51.6	809	
1981	QG3		1981	08	28.07923	22	12	44.64	-11	42	57.3	809	
1981	QG3		1981	08	28.08529	22	12	44.42	-11	43	02.9	809	
1981	QG3		1981	08	31.30729	22	10	27.38	-12	32	20.4	809	
1981	QG3		1981	08	31.31354	22	10	27.18	-12	32	25.1	809	
1981	QG3		1981	08	31.31943	22	10	26.94	-12	32	31.4	809	
1981	QG3		1981	09	01.09946	22	09	55.36	-12	44	11.7	809	
1981	QG3		1981	09	01.10604	22	09	55.04	-12	44	17.6	809	
1981	QG3		1981	09	01.11124	22	09	54.82	-12	44	21.8	809	
1981	QG3		1981	09	03.11253	22	08	34.41	-13	13	44.0	809	
1981	QG3		1981	09	03.11969	22	08	34.11	-13	13	50.1	809	
1981	QG3		1981	09	03.12563	22	08	33.88	-13	13	55.6	809	
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1981 QG3	1981 09 05.20351	22 07 13.47	-13 43 34.4	809
1981 QG3	1981 09 05.21009	22 07 13.25	-13 43 39.7	809
1981 QG3	1981 09 06.16200	22 06 38.03	-13 56 53.5	809
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1981 QG3	1981 09 06.17447	22 06 37.55	-13 57 04.9	809
1981 QG3	1981 09 07.25709	22 05 58.21	-14 11 51.8	809
1981 QG3	1981 09 07.26246	22 05 57.99	-14 11 56.4	809
1981 QG3	1981 09 07.26800	22 05 57.80	-14 12 00.9	809
1981 QH3	1981 08 25.15944	22 17 42.03	-10 30 45.2	809
1981 QH3 *	1981 08 25.16636	22 17 41.74	-10 30 47.6	17.5 809
1981 QH3	1981 08 25.17334	22 17 41.42	-10 30 49.8	809
1981 QJ3 *	1981 08 25.25432	23 13 17.24	-06 42 24.6	17.4 809
1981 QJ3	1981 08 25.26055	23 13 16.98	-06 42 27.4	809
1981 QJ3	1981 08 25.26678	23 13 16.72	-06 42 29.7	809
1981 QJ3	1981 08 26.17887	23 12 42.39	-06 47 25.6	809
1981 QJ3	1981 08 26.18523	23 12 42.16	-06 47 27.6	809
1981 QJ3	1981 08 26.29134	23 12 41.91	-06 47 29.3	809
1981 QJ3	1981 08 26.24934	23 12 39.55	-06 47 46.7	809
1981 QJ3	1981 08 26.25575	23 12 39.32	-06 47 48.7	809
1981 QJ3	1981 08 26.26319	23 12 39.04	-06 47 50.9	809
1981 QJ3	1981 08 27.15559	23 12 04.74	-06 52 43.5	809
1981 QJ3	1981 08 27.16160	23 12 04.50	-06 52 44.9	809
1981 QJ3	1981 08 27.16783	23 12 04.25	-06 52 46.6	809
1981 QJ3	1981 08 28.36041	23 11 17.09	-06 59 20.0	809
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1981 QJ3	1981 08 28.37114	23 11 16.68	-06 59 23.3	809
1981 QJ3	1981 08 31.34711	23 09 16.17	-07 15 57.4	809
1981 QJ3	1981 08 31.35230	23 09 16.00	-07 15 59.3	809
1981 QJ3	1981 08 31.35750	23 09 15.83	-07 16 01.1	809
1981 QJ3	1981 09 01.29511	23 08 37.00	-07 21 17.7	809
1981 QJ3	1981 09 01.30100	23 08 36.78	-07 21 19.8	809
1981 QJ3	1981 09 01.30688	23 08 36.50	-07 21 21.9	809
1981 QJ3	1981 09 02.15006	23 08 01.64	-07 26 07.1	809
1981 QJ3	1981 09 02.15595	23 08 01.33	-07 26 09.4	809
1981 QJ3	1981 09 02.16270	23 08 01.07	-07 26 11.3	809
1981 QJ3	1981 09 02.34744	23 07 52.88	-07 27 14.4	809
1981 QJ3	1981 09 02.35333	23 07 52.61	-07 27 16.5	809
1981 QJ3	1981 09 02.35922	23 07 52.37	-07 27 18.7	809
1981 QJ3	1981 09 03.30108	23 07 12.69	-07 32 38.1	809
1981 QJ3	1981 09 03.30662	23 07 12.49	-07 32 40.0	809
1981 QJ3	1981 09 03.31216	23 07 12.26	-07 32 42.0	809
1981 QJ3	1981 09 04.30565	23 06 30.14	-07 38 19.0	809
1981 QJ3	1981 09 04.31047	23 06 29.98	-07 38 21.0	809
1981 QJ3	1981 09 04.31532	23 06 29.74	-07 38 22.7	809
1981 QJ3	1981 09 05.28731	23 05 48.37	-07 43 52.5	809
1981 QJ3	1981 09 05.29215	23 05 48.14	-07 43 53.9	809
1981 QJ3	1981 09 05.29700	23 05 47.95	-07 43 55.9	809
1981 QJ3	1981 09 06.23830	23 05 07.89	-07 49 13.6	809
1981 QJ3	1981 09 06.24384	23 05 07.60	-07 49 16.3	809
1981 QJ3	1981 09 06.24938	23 05 07.33	-07 49 18.7	809
1981 QJ3	1981 09 07.32946	23 04 20.91	-07 55 21.7	809
1981 QJ3	1981 09 07.33535	23 04 20.70	-07 55 23.5	809
1981 QJ3	1981 09 07.34123	23 04 20.48	-07 55 24.9	809
1981 QK3 *	1981 08 25.25432	23 13 40.80	-06 37 11.5	17.6 809
1981 QK3	1981 08 25.26055	23 13 40.43	-06 37 11.9	809
1981 QK3	1981 08 25.26678	23 13 40.06	-06 37 11.2	809
1981 QK3	1981 08 26.17887	23 12 48.38	-06 36 28.6	809

1981	QK3	1981	08	26.18523	23	12	47.98	-06	36	28.4	809	
1981	QK3	1981	08	26.19134	23	12	47.58	-06	36	28.3	809	
1981	QK3	1981	08	26.24934	23	12	44.08	-06	36	22.9	809	
1981	QK3	1981	08	26.25575	23	12	43.73	-06	36	23.1	809	
1981	QK3	1981	08	26.26319	23	12	43.36	-06	36	22.7	809	
1981	QK3	1981	08	27.15559	23	11	51.87	-06	35	41.8	809	
1981	QK3	1981	08	27.16160	23	11	51.56	-06	35	41.5	809	
1981	QK3	1981	08	27.16783	23	11	51.24	-06	35	41.2	809	
1981	QK3	1981	08	28.36041	23	10	40.63	-06	34	43.5	809	
1981	QK3	1981	08	28.36560	23	10	40.38	-06	34	42.8	809	
1981	QK3	1981	08	28.37114	23	10	40.05	-06	34	43.1	809	
1981	QK3	1981	08	31.34711	23	07	40.88	-06	32	41.7	809	
1981	QK3	1981	08	31.35230	23	07	40.59	-06	32	41.5	809	
1981	QK3	1981	08	31.35750	23	07	40.30	-06	32	41.3	809	
1981	QK3	1981	09	01.29511	23	06	42.67	-06	32	04.2	809	
1981	QK3	1981	09	01.30100	23	06	42.35	-06	32	04.1	809	
1981	QK3	1981	09	01.30688	23	06	41.94	-06	32	04.1	809	
1981	QK3	1981	09	02.15006	23	05	50.30	-06	31	32.7	809	
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1981	QK3	1981	09	02.34744	23	05	37.57	-06	31	24.2	809	
1981	QK3	1981	09	02.35333	23	05	37.25	-06	31	24.3	809	
1981	QK3	1981	09	02.35922	23	05	36.91	-06	31	23.9	809	
1981	QK3	1981	09	03.30108	23	04	38.36	-06	30	49.9	809	
1981	QK3	1981	09	03.30662	23	04	37.99	-06	30	49.5	809	
1981	QK3	1981	09	03.31216	23	04	37.65	-06	30	49.2	809	
1981	QK3	1981	09	04.30565	23	03	35.52	-06	30	13.1	809	
1981	QK3	1981	09	04.31047	23	03	35.22	-06	30	12.8	809	
1981	QK3	1981	09	04.31532	23	03	34.93	-06	30	12.8	809	
1981	QK3	1981	09	05.28731	23	02	34.22	-06	29	33.2	809	
1981	QK3	1981	09	05.29215	23	02	33.90	-06	29	33.1	809	
1981	QK3	1981	09	05.29700	23	02	33.58	-06	29	33.1	809	
1981	QK3	1981	09	06.23830	23	01	34.55	-06	28	58.1	809	
1981	QK3	1981	09	06.24384	23	01	34.24	-06	28	57.5	809	
1981	QK3	1981	09	06.24938	23	01	33.89	-06	28	57.5	809	
1981	QK3	1981	09	06.30674	23	01	30.17	-06	28	55.4	809	
1981	QK3	1981	09	06.31367	23	01	29.73	-06	28	55.0	809	
1981	QK3	1981	09	06.31921	23	01	29.36	-06	28	54.8	809	
1981	QK3	1981	09	07.34920	23	00	24.52	-06	28	15.9	809	
1981	QK3	1981	09	07.35439	23	00	24.17	-06	28	15.5	809	
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1981	QL3	*	1981	08	25.25432	23	15	32.77	-06	30	34.4	809
1981	QL3		1981	08	25.26055	23	15	32.53	-06	30	36.4	809
1981	QL3		1981	08	25.26678	23	15	32.33	-06	30	37.5	809
1981	QL3		1981	08	26.17887	23	14	54.46	-06	34	37.8	809
1981	QL3		1981	08	26.19134	23	14	53.92	-06	34	40.2	809
1981	QL3		1981	08	27.15559	23	14	13.66	-06	38	48.5	809
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1981	QL3		1981	09	04.31047	23	08	13.83	-07	15	11.8	809
1981	QL3		1981	09	04.31532	23	08	13.66	-07	15	12.4	809
1981	QL3		1981	09	05.28731	23	07	29.56	-07	19	35.6	809
1981	QL3		1981	09	05.29215	23	07	29.36	-07	19	37.1	809
1981	QL3		1981	09	05.29700	23	07	29.12	-07	19	38.6	809
1981	QL3		1981	09	06.23830	23	06	46.45	-07	23	52.9	809
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1981	QL3		1981	09	06.24938	23	06	45.84	-07	23	56.0	809
1981	QL3		1981	09	07.32946	23	05	56.53	-07	28	44.8	809

17.9

1981	QL3		1981	09	07.33535	23	05	56.27	-07	28	46.2	809	
1981	QL3		1981	09	07.34123	23	05	56.02	-07	28	48.0	809	
1981	QM3	*	1981	08	26.13319	22	12	29.57	-12	27	04.2	18.2	809
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1981	QM3		1981	08	26.14565	22	12	28.97	-12	27	09.0	809	
1981	QN3	*	1981	08	26.15556	22	19	32.94	-11	16	05.0	18.2	809
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1981	QN3		1981	08	26.16943	22	19	32.32	-11	16	08.5	809	
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1981	QN3		1981	08	27.10134	22	18	51.97	-11	20	45.8	809	
1981	QN3		1981	08	28.07317	22	18	10.00	-11	25	34.4	809	
1981	QN3		1981	08	28.07923	22	18	09.78	-11	25	36.3	809	
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1981	QN3		1981	08	31.30729	22	15	50.18	-11	41	22.6	809	
1981	QN3		1981	08	31.31354	22	15	49.88	-11	41	24.8	809	
1981	QN3		1981	08	31.31943	22	15	49.60	-11	41	26.7	809	
1981	QN3		1981	09	05.12767	22	12	28.43	-12	04	05.6	809	
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1981	QN3		1981	09	05.14291	22	12	27.76	-12	04	08.5	809	
1981	QO3	*	1981	08	26.20104	23	14	31.36	-08	34	45.9	18.1	809
1981	QO3		1981	08	26.20727	23	14	31.04	-08	34	48.7	809	
1981	QO3		1981	08	26.21350	23	14	30.71	-08	34	51.4	809	
1981	QO3		1981	09	02.32736	23	08	51.78	-09	22	30.9	809	
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1981	QO3		1981	09	02.34002	23	08	51.13	-09	22	36.1	809	
1981	QO3		1981	09	03.32012	23	08	02.13	-09	29	07.9	809	
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1981	QO3		1981	09	03.33155	23	08	01.60	-09	29	12.9	809	
1981	QO3		1981	09	04.32294	23	07	11.67	-09	35	46.9	809	
1981	QO3		1981	09	04.32779	23	07	11.40	-09	35	48.9	809	
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1981	QO3		1981	09	05.33786	23	06	20.26	-09	42	27.9	809	
1981	QO3		1981	09	05.34340	23	06	20.02	-09	42	30.1	809	
1981	QO3		1981	09	06.27904	23	05	32.70	-09	48	36.1	809	
1981	QO3		1981	09	06.28463	23	05	32.44	-09	48	37.8	809	
1981	QO3		1981	09	06.29012	23	05	32.21	-09	48	39.7	809	
1981	QP3	*	1981	08	26.20104	23	16	00.33	-10	00	51.2	17.7	809
1981	QP3		1981	08	26.20727	23	16	00.03	-10	00	53.1	809	
1981	QP3		1981	08	26.21350	23	15	59.83	-10	00	54.6	809	
1981	QP3		1981	08	27.17891	23	15	17.54	-10	05	52.1	809	
1981	QP3		1981	08	27.18515	23	15	17.34	-10	05	54.2	809	
1981	QP3		1981	08	27.19150	23	15	17.07	-10	05	56.2	809	
1981	QP3		1981	08	28.37980	23	14	23.96	-10	12	04.3	809	
1981	QP3		1981	08	28.38499	23	14	23.72	-10	12	06.2	809	
1981	QP3		1981	08	28.39019	23	14	23.51	-10	12	08.0	809	
1981	QP3		1981	08	31.36442	23	12	07.78	-10	27	29.4	809	
1981	QP3		1981	08	31.36962	23	12	07.57	-10	27	30.7	809	
1981	QP3		1981	08	31.37487	23	12	07.32	-10	27	32.2	809	
1981	QP3		1981	09	02.32736	23	10	36.08	-10	37	32.0	809	
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1981	QP3		1981	09	02.34002	23	10	35.48	-10	37	35.8	809	
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1981	QP3		1981	09	03.32601	23	09	48.95	-10	42	37.4	809	
1981	QP3		1981	09	03.33155	23	09	48.68	-10	42	39.3	809	
1981	QP3		1981	09	04.32294	23	09	01.74	-10	47	40.4	809	
1981	QP3		1981	09	04.32779	23	09	01.52	-10	47	41.6	809	
1981	QP3		1981	09	04.33263	23	09	01.29	-10	47	42.9	809	

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1981 QP3	1981 09 06.27904	23 07 28.47	-10 57 26.0	809
1981 QP3	1981 09 06.28463	23 07 28.20	-10 57 27.9	809
1981 QP3	1981 09 06.29012	23 07 27.91	-10 57 29.5	809
1981 QP3	1981 09 07.36842	23 06 36.34	-11 02 47.4	809
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1981 QP3	1981 09 07.37950	23 06 35.79	-11 02 50.3	809
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1981 QQ3	1981 08 26.21350	23 16 12.86	-09 39 20.7	809
1981 QQ3	1981 08 27.17891	23 15 08.99	-09 36 20.5	809
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1981 QR3	1981 09 20.24358	22 54 43.21	-09 40 02.9	809
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1981	RO1		1981	09	06.22225	22	29	17.37	-13	33	05.9	809	

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1981	RP1		1981	09	07.26800	22	08	04.34	-15	18	15.0	809	
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1981	RQ1		1981	09	06.24384	23	02	26.66	-06	55	18.0	809	
1981	RQ1		1981	09	06.24938	23	02	26.34	-06	55	19.9	809	
1981	RQ1		1981	09	06.30674	23	02	23.67	-06	55	39.7	809	
1981	RQ1		1981	09	06.31367	23	02	23.41	-06	55	42.1	809	
1981	RQ1		1981	09	06.31921	23	02	23.10	-06	55	43.9	809	
1981	RQ1		1981	09	07.34920	23	01	36.11	-07	01	45.8	809	
1981	RQ1		1981	09	07.35439	23	01	35.91	-07	01	47.2	809	
1981	RQ1		1981	09	07.36028	23	01	35.67	-07	01	49.5	809	
1981	RR1	*	1981	09	01.29511	23	09	39.23	-06	30	20.6	17.8	809
1981	RR1		1981	09	01.30100	23	09	39.11	-06	30	25.6	809	
1981	RR1		1981	09	01.30688	23	09	38.98	-06	30	30.7	809	
1981	RR1		1981	09	02.34744	23	09	12.66	-06	44	59.3	809	
1981	RR1		1981	09	02.35333	23	09	12.55	-06	45	04.0	809	
1981	RR1		1981	09	02.35922	23	09	12.45	-06	45	09.2	809	
1981	RR1		1981	09	03.30108	23	08	48.27	-06	58	20.7	809	
1981	RR1		1981	09	03.30662	23	08	48.13	-06	58	24.5	809	
1981	RR1		1981	09	03.31216	23	08	48.00	-06	58	28.6	809	
1981	RR1		1981	09	04.30565	23	08	22.05	-07	12	23.0	809	
1981	RR1		1981	09	04.31047	23	08	21.88	-07	12	27.4	809	
1981	RR1		1981	09	04.31532	23	08	21.74	-07	12	31.9	809	
1981	RR1		1981	09	05.28731	23	07	56.01	-07	26	13.3	809	
1981	RR1		1981	09	05.29215	23	07	55.85	-07	26	16.8	809	
1981	RR1		1981	09	05.29700	23	07	55.76	-07	26	21.1	809	
1981	RR1		1981	09	06.23830	23	07	30.69	-07	39	35.9	809	
1981	RR1		1981	09	06.24384	23	07	30.53	-07	39	40.1	809	
1981	RR1		1981	09	06.24938	23	07	30.34	-07	39	45.1	809	
1981	RR1		1981	09	07.32946	23	07	01.01	-07	54	53.0	809	
1981	RR1		1981	09	07.33535	23	07	00.87	-07	54	57.5	809	
1981	RR1		1981	09	07.34123	23	07	00.69	-07	55	02.7	809	
1981	RR1		1981	09	18.09703	23	02	20.26	-10	21	07.5	809	
1981	RR1		1981	09	18.10257	23	02	20.12	-10	21	11.9	809	

1981 RR1	1981 09 18.10811	23 02 19.98	-10 21 16.4	809
1981 RR1	1981 09 20.16983	23 01 32.49	-10 47 10.8	809
1981 RR1	1981 09 20.17536	23 01 32.38	-10 47 15.0	809
1981 RR1	1981 09 20.18090	23 01 32.25	-10 47 19.3	809
1981 RR1	1981 09 21.10788	23 01 12.29	-10 58 42.7	809
1981 RR1	1981 09 21.11376	23 01 12.17	-10 58 46.9	809
1981 RR1	1981 09 21.11999	23 01 12.04	-10 58 51.4	809
1981 RS1 *	1981 09 02.04826	20 41 39.36	-22 37 48.1	18.1 809
1981 RS1	1981 09 02.05415	20 41 39.12	-22 37 47.5	809
1981 RS1	1981 09 02.06023	20 41 38.87	-22 37 46.1	809
1981 RT1 *	1981 09 04.23741	23 09 36.62	-14 27 00.0	18.1 809
1981 RT1	1981 09 04.24364	23 09 36.37	-14 27 04.3	809
1981 RT1	1981 09 04.24987	23 09 36.09	-14 27 08.6	809
1981 RU1 *	1981 09 05.35241	23 02 16.83	-09 32 30.7	18.0 809
1981 RU1	1981 09 05.35829	23 02 16.57	-09 32 32.4	809
1981 RU1	1981 09 05.36418	23 02 16.28	-09 32 34.1	809
1981 RU1	1981 09 06.33133	23 01 25.84	-09 38 02.4	809
1981 RU1	1981 09 06.33692	23 01 25.54	-09 38 04.7	809
1981 RU1	1981 09 06.34246	23 01 25.26	-09 38 06.4	809
1981 RV1 *	1981 09 06.14261	22 15 31.18	-15 02 42.9	18.0 809
1981 RV1	1981 09 06.14815	22 15 30.87	-15 02 41.7	809
1981 RV1	1981 09 06.15376	22 15 30.53	-15 02 40.6	809
1981 RV1	1981 09 07.23755	22 14 25.68	-14 59 56.6	809
1981 RV1	1981 09 07.24318	22 14 25.31	-14 59 55.9	809
1981 RV1	1981 09 07.24883	22 14 24.96	-14 59 55.2	809
1981 RW1 *	1981 09 07.25709	22 10 21.97	-14 35 20.6	18.2 809
1981 RW1	1981 09 07.26246	22 10 21.71	-14 35 25.4	809
1981 RW1	1981 09 07.26800	22 10 21.49	-14 35 30.7	809
1981 SN2 *	1981 09 18.09703	23 01 59.41	-09 05 52.6	809
1981 SN2	1981 09 18.10257	23 01 59.12	-09 05 54.6	809
1981 SN2	1981 09 18.10811	23 01 58.87	-09 05 56.7	809
1981 SN2	1981 09 20.16983	23 00 23.73	-09 16 52.3	809
1981 SN2	1981 09 20.17536	23 00 23.48	-09 16 54.1	809
1981 SN2	1981 09 20.18090	23 00 23.25	-09 16 55.8	809
1981 SN2	1981 09 22.15709	22 58 55.62	-09 26 52.1	809
1981 SN2	1981 09 22.16264	22 58 55.40	-09 26 54.0	809
1981 SN2	1981 09 22.16818	22 58 55.18	-09 26 55.6	809
1981 SO2 *	1981 09 20.16983	22 58 46.28	-10 02 26.1	18.3 809
1981 SO2	1981 09 20.17536	22 58 45.98	-10 02 29.5	809
1981 SO2	1981 09 20.18090	22 58 45.63	-10 02 32.9	809
1981 SP2 *	1981 09 20.19025	22 01 39.73	-16 20 19.3	17.0 809
1981 SP2	1981 09 20.19649	22 01 39.48	-16 20 19.0	809
1981 SP2	1981 09 20.20272	22 01 39.27	-16 20 18.4	809
1981 SP2	1981 09 22.13701	22 00 38.88	-16 18 31.0	809
1981 SP2	1981 09 22.14255	22 00 38.66	-16 18 30.8	809
1981 SP2	1981 09 22.14809	22 00 38.50	-16 18 30.4	809
1981 SQ2 *	1981 09 20.19025	22 05 16.20	-16 56 22.8	16.8 809
1981 SQ2	1981 09 20.19649	22 05 15.96	-16 56 22.2	809
1981 SQ2	1981 09 20.20272	22 05 15.77	-16 56 21.6	809
1981 SQ2	1981 09 22.13701	22 04 18.06	-16 52 55.8	809
1981 SQ2	1981 09 22.14255	22 04 17.90	-16 52 55.6	809
1981 SQ2	1981 09 22.14809	22 04 17.73	-16 52 54.5	809
1981 SR2 *	1981 09 22.13701	22 01 14.85	-17 17 16.4	18.3 809
1981 SR2	1981 09 22.14255	22 01 14.54	-17 17 16.7	809
1981 SR2	1981 09 22.14809	22 01 14.21	-17 17 16.6	809
1981 SS2 *	1981 09 22.13701	22 06 35.11	-17 04 38.1	18.3 809
1981 SS2	1981 09 22.14255	22 06 34.88	-17 04 38.4	809
1981 SS2	1981 09 22.14809	22 06 34.63	-17 04 39.2	809

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are A = K. Reinmuth, B = C. M. Bardwell, D = S. Kanda, E = E. Bowell, G = D. W. E. Green, K = G. R. Kastel', M = B. G. Marsden, P = O. Kippes, s = C. S. Shoemaker, U = T. Urata, w = R. M. West. See also MPC 5833.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
A906	VB	11.5	61126	29.65	144.93	218.23	21.00	0.1826	3.2120	15	3	1 M
A908	AA	12.0	80120	319.73	299.59	207.20	10.78	0.0477	3.9941	30	6	1 M
1928	NA	12.0	280713	351.21	261.40	29.08	18.72	0.1933	3.1380	5	4	1 B
1931	TE1	11.5	311006	265.07	353.94	147.28	3.71	0.3386	3.1610	10	3	1 M
1934	CC	13.0	340212	50.45	136.03	281.82	12.47	0.1698	2.5937	9	3	1 M
1935	FF	12.5	350319	314.74	24.04	195.80	10.02	0.0695	3.0185	10	5	M
1935	UZ		351025	343.44	280.73	134.07	4.80	0.2513	2.1666	4	3	1 M
1936	QV	14.0	360820	336.73	170.20	190.98	2.98	0.1110	2.2775	25	5	H
1937	QB	14.0	370815	38.43	232.03	44.36	0.67	0.1989	2.3623	10	3	1 M
1937	TO	11.5	371103	64.80	292.17	24.97	23.47	0.1287	3.2407	28	3	1 B
1937	UD	16.0	371103	24.47	310.11	33.23	9.20	0.3542	2.2168	12	5	M
1939	TN	11.0	391024	352.70	148.02	254.74	2.12	0.2481	4.5189	15	4	M
1940	AB	11.0	400112	185.07	167.84	128.63	17.20	0.0534	3.1220	24	4	1 M
1940	GD	14.5	400401	10.12	3.62	177.50	6.63	0.1405	2.1804	9	3	1 M
1941	HP	12.0	410416	2.88	154.54	60.89	16.04	0.0922	3.1793	7	3	B
1948	OF	11.5	480728	296.16	231.38	159.32	18.53	0.1735	3.2446	8	3	1 M
1949	PN	13.5	490812	355.23	6.77	325.89	12.28	0.1723	2.6973	24	7	2 B
1949	QJ2	15.5	490901	341.48	213.05	153.76	10.98	0.2706	2.7781	7	7	2 M
1951	WF	14.0	511130	24.83	356.35	29.99	7.79	0.1863	2.3421	9	3	M
1953	GG	13.5	530413	152.84	292.56	114.46	2.30	0.0141	2.3754	11	3	2 B
1955	RC	14.0	550910	313.08	138.69	249.12	7.05	0.0971	2.3346	27	6	2 M
1955	UN1	14.5	551019	25.94	326.02	21.03	11.06	0.2671	2.3759	21	4	2 B
1958	GQ		580413	335.80	229.79	9.07	12.98	0.2810	2.6305	18	3	B
1959	VF	12.5	591108	19.48	61.50	338.51	0.92	0.1837	3.1632	22	5	1 B
1964	TC1		641101	31.73	309.36	25.57	1.03	0.2212	3.1965	32	3	1 B
1966	DH	13.0	660224	35.41	124.85	344.69	6.89	0.0360	2.7889	28	5	M
1968	OZ		680723	69.35	103.42	67.59	27.50	0.1678	2.6760	4	0	M
1969	TK4	13.5	691006	359.34	178.96	200.94	4.45	0.1614	2.1803	4	3	1 M
1970	QV	15.5	700822	349.77	201.53	146.28	1.43	0.0771	2.1588	32	4	1 M
1971	OH	14.0	710728	322.50	215.24	155.24	12.10	0.2832	2.6514	54	4	B
1971	TF	16.5	711016	357.50	40.75	343.30	1.57	0.1917	2.1595	11	3	1 M
1971	TD2	13.5	711016	26.67	310.36	10.09	1.90	0.2829	3.1616	7	4	1 B
1973	QQ	15.5	730826	16.98	327.71	341.66	1.79	0.2283	2.1840	9	4	1 M
1973	SF	17.0	731005	327.89	59.04	1.02	16.85	0.2779	1.9704	9	4	3 M
1973	SP	13.5	731005	343.31	23.22	3.58	8.73	0.0702	5.2565	16	8	1 M
1973	SX	13.0	731005	290.50	85.36	352.52	7.57	0.0436	5.3081	16	8	1 M
1973	SM1	12.5	731005	280.61	259.41	194.75	13.93	0.0445	5.0513	16	8	1 M
1973	SQ1	11.5	731005	87.77	56.41	211.91	6.40	0.0814	5.1100	6	4	1 M
1973	SY1	12.5	731005	347.79	20.54	358.20	5.76	0.0424	5.2622	16	8	1 M
1973	SP2	13.0	731005	17.48	240.56	86.84	2.29	0.1723	3.1657	6	4	B
1974	ED	14.5	740314	324.10	49.49	166.18	3.85	0.1210	2.1652	6	3	1 M
1974	ER	13.5	740314	316.26	142.94	87.64	3.11	0.1695	3.1961	6	3	1 B
1974	PD	16.0	740821	327.76	59.75	319.52	19.49	0.2487	1.9352	4	4	1 M
1974	SD3	12.0	740930	323.17	182.83	242.75	10.35	0.1152	3.3313	5	3	1 B
1975	BP1	13.0	750128	290.13	92.38	149.26	2.87	0.2567	3.1178	27	3	1 B
1975	VC	16.5	751104	6.45	140.03	247.65	5.86	0.1492	2.2491	3	4	M
1976	SW3	13.5	761009	343.90	218.24	173.81	5.47	0.1600	3.1372	32	4	B
1976	UG	15.5	761029	334.12	359.01	134.35	11.08	0.1969	2.3220	9	9	M
1976	YV	13.0	761208	296.51	71.46	86.30	3.27	0.1966	3.1055	2	3	1 B
1976	YZ1	15.5	761208	33.72	313.81	81.84	3.85	0.1628	2.1769	4	3	1 M
1977	QG2	13.0	770914	62.79	275.30	10.90	10.54	0.0558	3.0071	34	5	B

1978	NX	16.0	780711	327.34	50.66	280.18	12.96	0.3167	2.1677	2	3	1	M
1978	SZ2	12.0	780929	143.39	320.93	246.21	1.59	0.0962	3.4202	12	3	1	B
1978	VU	15.5	781019	29.63	30.65	334.32	1.92	0.1551	2.6336	2	3	1	M
1978	VN1	18.0	781108	24.45	330.60	30.85	4.24	0.3258	2.1729	2	3	1	M
1979	HH	13.5	790417	27.36	39.14	139.84	2.60	0.1311	2.8703	7	4		B
1979	HP	13.0	790417	50.58	35.94	120.35	2.39	0.0997	3.1154	7	4		B
1979	HX3	16.0	790417	338.80	51.88	190.57	8.22	0.2226	2.1886	6	3	1	M
1979	HW4	11.9	790427	184.69	219.74	179.12	10.76	0.1874	3.0696	5	3		K
1979	HX4	13.1	790427	250.64	222.93	134.75	6.38	0.2919	2.3966	5	3		K
1979	HY4	12.1	790427	198.40	181.34	206.86	11.98	0.1034	3.0543	5	3		K
1979	HZ4	14.5	790427	319.54	166.35	115.43	5.79	0.2239	2.6476	5	3		K
1979	HB5	13.0	790417	328.67	200.63	60.80	17.37	0.1451	3.2341	5	3	1	B
1979	HE5	14.9	790427	24.26	85.36	108.96	4.75	0.0606	2.2106	5	3		K
1979	HF5	14.9	790427	332.02	73.94	182.18	4.93	0.0998	2.2325	30	4		K
1979	HG5	13.2	790427	279.63	161.31	147.16	5.44	0.0400	2.7636	5	3		K
1979	HJ5	13.0	790417	175.33	353.35	53.37	17.91	0.0135	2.6089	5	3	1	M
1979	HK5	15.0	790427	18.40	64.21	136.08	4.21	0.1057	2.4032	5	3		K
1979	HL5	12.0	790417	168.79	341.07	71.06	14.05	0.1777	2.9998	5	3	1	M
1979	HM5	14.4	790427	290.25	139.83	163.30	4.41	0.0830	2.3049	5	3		K
1979	HNS	12.9	790427	301.95	213.93	99.59	7.85	0.2718	3.1340	5	3		K
1979	KW	16.0	790507	57.90	283.45	203.99	1.57	0.1590	2.1787	5	5	1	M
1979	OS4	13.0	790726	177.30	187.22	294.56	3.36	0.1093	3.4091	3	4	1	M
1979	QO8	13.8	790924	343.40	216.48	168.25	8.82	0.2548	2.6928	58	4		K
1979	QP8	14.0	790924	18.16	95.05	233.78	1.99	0.1966	3.1340	58	4		K
1979	TA	16.0	791014	10.36	46.40	302.97	2.39	0.2187	2.4355	26	0		B
1980	FB	13.5	800322	310.71	210.24	30.01	1.61	0.1434	3.2458	32	0	1	M
1980	FG4		800322	51.52	97.53	354.51	23.63	0.3109	2.3993	7	9	1	M
1980	MD	12.0	800610	180.72	323.40	109.86	10.67	0.1503	3.2371	10	7	1	M
1980	UL	16.0	801028	4.41	214.82	150.13	22.80	0.2148	2.4059	3	3	1	M
1981	JG	12.5	810516	184.53	171.32	226.03	17.76	0.0733	3.1531	8	5		B
1981	JH	15.5	810516	313.62	244.11	47.04	3.39	0.1910	2.1746	7	7		B
1981	JJ	16.5	810516	350.02	211.73	33.79	0.47	0.2747	2.5177	8	8	2	B
1981	JM	13.5	810516	49.24	28.85	136.65	2.33	0.1179	3.1078	32	8		B
1981	JN	13.0	810516	72.68	286.25	215.03	12.23	0.1218	2.5729	32	9		B
1981	JQ	14.0	810516	69.46	107.89	33.54	6.05	0.1667	2.5385	32	7		B
1981	JW1	13.0	810516	34.81	313.08	226.84	7.89	0.0994	2.9851	5	4		B
1981	JX1	16.0	810516	336.96	221.24	31.61	3.04	0.1000	2.2729	5	4	1	B
1981	JY1	14.0	810516	134.19	264.55	175.16	1.32	0.1230	2.2363	5	3	1	B
1981	JA2	14.0	810516	236.88	111.35	246.07	3.06	0.1093	2.2900	6	5		B
1981	JB2	14.0	810516	338.37	214.04	45.68	8.24	0.2409	3.1703	5	5		B
1981	JC2	12.5	810516	103.81	242.64	225.03	23.74	0.1099	3.2117	6	5	1	B
1981	JD2	15.5	810516	307.94	247.88	48.19	2.63	0.1761	2.2216	5	5		B
1981	JE2	14.5	810516	257.57	288.88	57.58	4.22	0.1907	2.3727	5	3		B
1981	JF2	14.0	810516	264.37	347.12	350.91	4.30	0.1665	2.8312	6	3		B
1981	JG2	15.0	810516	287.15	46.59	272.59	1.55	0.1707	2.1576	6	5		B
1981	JM2	16.5	810516	341.29	43.51	212.30	1.19	0.1658	2.2042	6	4	1	M
1981	JP2	16.5	810516	325.00	22.62	259.40	2.33	0.2180	2.2254	6	3		B
1981	JR2	16.0	810516	55.96	130.19	34.78	4.02	0.0775	2.2432	6	3		B
1981	JS2	16.0	810516	307.02	300.31	2.82	2.36	0.2002	2.4435	6	3		B
1981	JT2	15.5	810516	349.15	209.35	35.51	5.26	0.1850	2.9238	6	3		B
1981	JU2	14.0	810516	295.79	64.11	232.94	5.45	0.0390	2.4471	6	3		B
1981	JY2	16.0	810516	341.05	45.28	205.90	2.06	0.1162	2.2676	5	4	1	B
1981	JZ2	15.0	810516	181.76	302.62	102.05	3.60	0.1325	2.3241	5	3	1	B
1981	JB3	15.5	810516	359.87	175.76	53.00	6.06	0.0872	2.2729	6	5		B
1981	JD3	15.0	810516	247.04	193.41	167.88	4.65	0.2311	2.1774	5	3		B
1981	JE3	15.0	810516	355.18	30.21	204.43	1.66	0.0997	2.7382	6	4		B
1981	JF3	14.5	810516	10.46	102.53	110.58	2.64	0.1851	3.0696	5	3		B
1981	JG3	15.0	810516	2.38	97.22	128.23	2.50	0.2011	2.7660	5	3		B
1981	QL2	17.0	810824	339.45	5.13	358.34	5.70	0.1895	2.2539	11	0		M

1981	QM2	15.5	810824	287.87	30.21	32.46	4.58	0.1417	2.3030	9 0	G
1981	QN2	14.0	810824	9.34	175.30	142.29	5.55	0.2002	3.1454	15 0	M
1981	QO2	13.5	810824	69.09	225.97	27.18	1.29	0.0877	3.1494	14 0	M
1981	QP2	17.0	810824	338.78	219.77	142.48	6.13	0.1826	2.2212	15 0	M
1981	QQ2	16.0	810824	353.17	200.63	139.49	5.51	0.1092	2.2934	15 0	M
1981	QR2	16.5	810824	14.01	322.30	345.96	3.74	0.2378	2.3505	15 0	M
1981	QS2	16.0	810824	315.30	267.21	128.67	2.58	0.2021	2.3692	9 0	M
1981	QU2	13.5	810824	339.11	255.40	109.70	1.70	0.0874	2.7842	29 0	M
1981	QY2	14.0	810824	139.95	49.06	135.96	3.43	0.1026	2.8544	12 0	M
1981	QZ2	14.0	810824	38.17	149.78	132.09	2.09	0.1445	3.2104	14 0	M
1981	QA3	13.5	810824	297.44	15.37	33.25	1.74	0.0400	3.2472	13 0 1	M
1981	QB3	15.5	810824	350.90	208.66	138.57	3.54	0.2753	3.0504	14 0	M
1981	QC3	17.0	810824	353.63	199.54	144.56	6.70	0.3229	2.6240	14 0	M
1981	QE3	13.5	810824	3.05	265.12	71.30	2.45	0.1783	3.1450	28 0	M
1981	QG3	15.5	810824	39.00	113.78	151.43	17.09	0.2833	2.6014	13 0	M
1981	QJ3	14.5	810824	359.99	201.08	139.26	2.59	0.1896	3.1133	13 0	M
1981	QK3	15.0	810824	347.16	11.79	344.22	12.48	0.1138	2.6381	13 0	M
1981	QL3	14.0	810824	44.45	249.95	39.73	1.25	0.0861	3.0915	13 0	M
1981	QN3	15.0	810824	355.78	199.47	138.67	2.02	0.1767	3.2134	10 0	M
1981	QO3	16.5	810824	14.99	202.86	113.89	2.32	0.1729	2.3083	11 0	M
1981	QP3	14.0	810824	33.47	227.41	75.58	3.12	0.0605	2.8868	12 0	M
1981	QQ3	14.5	810824	14.68	326.69	349.99	11.04	0.1749	2.2667	11 0	M
1981	QR3	14.5	810824	21.38	316.00	354.00	13.53	0.1578	2.5993	26 0	M
1981	QS3	12.5	810824	283.85	345.39	79.40	2.68	0.1489	3.1836	26 0	M
1981	QT3	13.0	810824	86.03	237.68	0.22	5.95	0.0701	3.1579	22 0	M
1981	QU3	15.5	810824	13.35	149.43	151.10	10.33	0.1776	2.4004	14 0	G
1981	RO1	16.0	810824	263.57	317.05	126.76	4.01	0.1173	2.1975	6 0	M
1981	RQ1	14.5	810824	337.68	212.41	154.32	2.73	0.0781	2.9087	6 0	M
1981	RR1	16.5	810824	353.16	192.65	159.27	10.49	0.3117	2.7170	20 0	M
1981	SN2		810824	46.18	148.85	128.85	2.46	0.1772	2.5870	4 9	M
1981	WO1	15.5	811222	327.67	248.90	234.85	19.22	0.0842	1.7946	98 9	M
1981	YH1	14.5	811222	342.20	39.96	83.22	17.98	0.2376	2.1807	87 0	M
1982	BJ	15.0	820131	344.78	37.13	116.84	24.10	0.1950	2.3191	39 9	M
1982	BL1	14.5	820131	346.83	29.68	127.90	5.24	0.0528	2.1924	56 0	M
1982	BO1	15.0	820131	308.56	243.81	314.11	2.42	0.0778	2.1666	35 8	M
1982	BQ1	14.0	820131	355.13	196.84	302.35	10.00	0.1257	2.6673	34 0	M
1982	BS1	14.5	820131	39.31	294.16	150.97	7.06	0.1504	2.4506	35 7	M
1982	BT1	14.9	820131	304.48	50.08	164.05	3.95	0.1957	2.2891	29 6	E
1982	BU1	14.5	820131	7.72	351.05	137.24	3.22	0.1187	2.4468	29 6	E
1982	BB2	15.0	820131	0.11	34.59	109.68	7.82	0.1521	2.2561	33 6	E
1982	BJ2	15.0	820131	3.15	23.16	95.49	0.21	0.0450	2.2642	3 5 1	M
1982	BC3	11.0	820131	335.97	340.94	181.21	1.79	0.0425	5.2272	19 7 1	M
1982	BD3	13.5	820131	17.54	328.67	145.15	5.61	0.0922	3.1497	21 7	M
1982	CB	13.0	820220	111.32	211.68	160.82	1.34	0.1530	2.8537	3 6 1	M
1982	CD	13.5	820220	155.05	200.43	149.97	8.17	0.1230	2.5256	7 8 1	M
1982	CE	16.0	820220	0.92	350.29	159.56	2.49	0.1560	2.1632	7 8 1	M
1982	DA	16.0	820220	20.56	326.45	146.53	27.46	0.3270	2.1358	14 0	M
1982	DN	14.5	820131	306.18	15.23	193.37	1.78	0.1672	2.3604	35 8	M
1982	DP1	15.0	820220	40.80	58.71	44.73	5.87	0.1605	2.2821	5 4	M
1982	DY1	13.5	820220	25.60	54.30	65.24	3.22	0.1246	3.2423	5 6	M
1982	DC2	16.5	820220	9.33	332.81	165.25	3.96	0.1662	2.1626	5 6 1	M
1982	DD2	15.5	820220	13.43	322.92	171.12	4.03	0.1304	2.1844	5 6	M
1982	DR2	13.5	820819	84.26	206.40	273.77	15.55	0.0798	3.2081	15 5	w
1982	FA	16.0	820312	356.26	82.57	71.05	1.64	0.1545	2.4027	2 3 1	M

Note 1: e assumed. 2: double designations 1949 PN = 1949 QR (A, MPC 383);
 1949 QJ2 = 1949 QA1 = 1949 QO1 (P, MPC 777; MPC 5126); 1953 GG = 1953 HB
 (MPC 4772); 1955 RC = 1955 QN (D, P, MPC 1453); 1955 UN1 = 1955 UP1 (D,
 MPC 1453); 1973 SF = 1973 SR5 (U, NOC 957); 1981 JJ = 1981 JW2 (E, s).
 3 = 1 + 2.

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

The following orbital elements are from NOC 1283-1286 (with some of the figures on NOC 1285 here corrected). The identifications are by Urata.

(2589)* 1979 QU2 = 1955 VA1 = 1975 VJ1 = 1975 XZ6 = 1978 JZ1

Discovered 1979 Aug. 22 by C.-I. Lagerkvist at the European Southern Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	199.20147	(1950.0)	P	Q
n	0.20165090	Peri. 204.64282	+0.99314461	+0.11446872
a	2.8800671	Node 148.75585	-0.09823610	+0.92712084
e	0.0830030	Incl. 2.61657	-0.06335180	+0.35685273
P	4.89	B(1,0) 12.7		

Residuals in seconds of arc

551114	839	0.3-	0.9+	790822	809	1.0+	0.1+	790826	809	0.1+	0.3-
751102	095	2.4-	3.6-	790822	809	0.4+	0.4+	790826	809	0.4-	0.2-
751202	330	(17.4+	3.3+)	790822	809	0.0	0.4+	790826	095	0.2-	0.7-
751222	330	2.6+	1.4+	790823	809	0.3+	0.1-	790830	809	0.3+	0.3-
780506	095	0.5-	1.6-	790823	809	0.2+	0.5+	790830	809	0.1+	0.8-
790730	095	0.9-	0.2-	790826	809	0.8-	0.4+				

(2590)* 1980 KJ = 1963 SM = 1974 UN = 1974 VG2 = 1974 XK

Discovered 1980 May 22 by H. Debehogne at the European Southern Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	77.77135	(1950.0)	P	Q
n	0.27496979	Peri. 165.00977	+0.87906943	-0.47102550
a	2.3421393	Node 223.33766	+0.42561086	+0.84478183
e	0.1185005	Incl. 6.13063	+0.21469126	+0.25392644
P	3.58	B(1,0) 13.8		

Residuals in seconds of arc

630919	760	1.2-	3.4+	800526	809	1.2+	0.4+	800604	809	1.1+	0.9-
741023	330	0.2-	1.2+	800526	809	0.7-	1.0+	800611	809	0.6+	1.3+
741115	095	(2.0+	12.1+)	800531	809	0.0	0.5-	800611	809	0.4+	0.9+
741117	095	4.3+	1.9-	800531	809	0.0	1.1-	800611	809	0.6+	0.7+
741118	095	2.5-	3.6-	800531	809	0.3-	0.8-	800612	809	0.8+	1.4-
741214	095	0.2-	5.3-	800601	809	1.3-	0.8-	800612	809	0.0	1.8-
800522	809	1.1-	0.2+	800601	809	0.2-	0.6-	800612	809	1.4-	1.6-
800522	809	0.7-	0.5-	800602	809	0.4+	0.6-	810907	688	5.5+	3.0-
800522	809	1.0-	0.2+	800603	809	0.1+	0.5-	810926	372	1.5+	0.1-
800523	809	0.8-	0.5+	800603	809	0.7+	0.5-	810926	372	0.8+	2.0-
800523	809	0.3-	0.2+	800603	809	0.7+	0.6-	811004	801	1.9-	0.6+
800523	809	0.6-	0.4+	800603	809	0.7-	0.6-	811023	879	1.3-	0.2+
800524	809	0.6-	0.6-	800603	809	0.6-	0.5-	811024	879	2.0+	0.4+
800524	809	0.7-	0.0	800603	809	0.2-	0.6-	811101	801	5.0-	0.1-
800525	809	0.6+	0.3-	800604	809	0.5+	1.1-				
800525	809	1.0+	0.2+	800604	809	0.6+	1.1-				

1981 WV1 = 1976 UL3 = 1976 WZ

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	112.46276	(1950.0)	P	Q
n	0.20127803	Peri. 15.34455	+0.96462746	+0.26337194
a	2.8836287	Node 329.37795	-0.24413964	+0.87626807
e	0.0514767	Incl. 1.27806	-0.09944694	+0.40347179
P	4.90	B(1,0) 13.5		

Residuals in seconds of arc

761026	095	1.5-	2.9+	811117	046	0.4-	0.6-	811123	046	1.2+	0.4-
761118	381	1.3+	2.0-	811117	046	0.8-	1.3-	811128	046	0.5-	1.2+
761118	381	0.7+	2.2-	811123	046	1.0+	1.7+	811128	046	0.9-	0.7+

1981 YE = A909 BL = 1968 HR = 1979 HO1

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	336.35784		(1950.0)		P		Q
n	0.26897047	Peri.	144.82167		-0.98354761		+0.17395044
a	2.3768431	Node	45.27552		-0.17744389		-0.87967611
e	0.1284714	Incl.	3.93337		-0.03387881		-0.44261856
P	3.66	B(1,0)	14.0				

Residuals in seconds of arc

090124	024(95.4+	24.3-)	790430	808	0.7+	2.3+	811230	688	0.5+	0.8-	
680422	095	2.3-	4.8-	811220	688	0.0	0.7-	820116	688	1.6-	0.8+
790424	095	0.3-	1.1+	811220	688	1.0+	0.5+	820116	688	0.1-	0.1+
790430	808	2.0+	1.5+	811230	688	0.0	0.3+				

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

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

(2591)* 1949 PS = 1949 QU = 1929 RH1 = 1934 RD = 1952 DC1 = 1962 BD
 = 1969 OC = 1973 GQ = 1975 TU4 = 1978 GX3 = 1979 OD14
 = 1982 BO

Discovered 1949 Aug. 2 by K. Reinmuth at Heidelberg. The double
 designation 1949 PS = 1949 QU was also found by Reinmuth (MPC 383).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	253.36713		(1950.0)		P		Q
n	0.19576229	Peri.	273.31546		-0.00517343		+0.99998516
a	2.9375371	Node	356.38680		-0.90634300		-0.00540938
e	0.0417257	Incl.	1.55037		-0.42251105		-0.00064044
P	5.03	B(1,0)	12.5				

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

290907	690(12.3-	15.8-)X	520217	711	2.2-	2.4-Y	820118	688	1.3+	2.7-	
340902	012	1.9-	5.1+	620128	760(0.06-	0.00+)X	820118	688	0.7-	2.7-	
340905	012	0.1+	0.5-	690716	095	2.6+	1.3+	820118	046	1.6-	0.8+
340914	012(32.0+	91.1-)	730401	095	0.7+	0.3-	820118	046	0.9-	1.0+	
490802	024	0.1-	1.2-	751014	095	1.7+	0.3+	820119	046	0.1-	0.5+
490818	690	4.8+	2.1-	751102	095	(1.3+	9.2+)	820119	046	2.0-	0.4+
490820	690	2.4-	5.0-	751106	095	0.6-	0.5+	820131	688	2.5-	0.9-
490821	024	4.4-	2.2-	780411	095	1.5-	0.2-	820131	688	1.8+	0.0
490822	024	2.6+	0.1-	780505	095	1.9-	0.6-	820220	688	1.9+	2.3-
490824	690	0.7-	3.7-	790719	095	2.0+	0.3+	820220	688	1.2+	1.8-
490826	690	1.5+	1.5-	820116	046	1.5-	0.0				
520217	711	5.3+	2.5-	820116	046	1.3-	0.0				

(2592)* 1966 BW = 1969 TV6 = 1975 XN2 = 1978 AH = 1978 GD3 = 1979 OL15

Discovered 1966 Jan. 30 at the Purple Mountain Observatory. The key
 identification 1966 BW = 1978 GD3 is by T. Urata (MPC 6467). The identi-
 fication 1966 BW = 1979 OL15 is by E. Bowell.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	283.63494		(1950.0)		P		Q
n	0.17873739	Peri.	12.72037		-0.79789522		+0.60271999
a	3.1212300	Node	204.35238		-0.55504361		-0.74079562
e	0.1199901	Incl.	1.33167		-0.23513785		-0.29656442
P	5.51	B(1,0)	12.0				

Residuals in seconds of arc

660130	330	1.1+	0.4-	751202	095	0.3+	0.8-	780119	809	0.6+	0.5-
660216	330	2.6-	1.3+	780115	809	0.0	0.7-	780408	095	0.6+	0.5+
660224	330	1.6+	1.5-	780116	809	0.9-	0.1-	780509	095	1.3-	1.0-
691008	095	0.8-	0.4+	780117	809	0.2+	0.8-	790721	095	0.1+	0.0
691016	095	0.9+	2.1-	780118	809	0.2-	0.3-	790730	095	0.7+	0.7-

(2593)* 1976 GB8 = 1976 JP1 = 1979 FB2

Discovered 1976 Apr. 2 by N. S. Chernykh at the Crimean Astrophysical Observatory. The double designation 1976 GB8 = 1976 JP1 is by B. G. Marsden (MPC 4927).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	60.01070		(1950.0)		P		Q
n	0.30831839	Peri.	75.57935		-0.75489953		-0.65583179
a	2.1700501	Node	63.43778		+0.60023019		-0.69295266
e	0.0792749	Incl.	0.21601		+0.26429230		-0.29950172
P	3.20	B(1,0)	15.0				

Residuals in seconds of arc

760402	095	0.3+	0.6-	760502	095	1.8-	0.5+	820126	801	1.7+	4.3+
760423	808	4.1+	0.1+	760503	808	0.3+	0.6+	820130	688	2.0-	1.0+
760423	808	0.8+	0.3+	760503	808	0.1-	0.9+	820130	688	1.4+	1.6-
760427	808	0.1-	1.1+	790323	095	0.3+	0.7-	820221	688	2.7+	2.2-
760427	808	1.3-	1.4+	790329	095	0.5-	0.3-	820221	688	1.3-	2.1-
760430	808	1.0-	0.8+	820124	688	2.0-	1.7-	820303	801	1.4+	1.0+
760430	808	0.3-	0.3+	820124	688	2.0-	1.9-				

(2594)* 1978 TB = 1977 RR

Discovered 1978 Oct. 4 by C. Kowal at Palomar. The identification is by J. G. Williams (MPC 4664).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	212.60267		(1950.0)				
n	0.08391930	Peri.	277.86423		+0.07104580		+0.99745278
a	5.1668772	Node	356.19245		-0.87321785		+0.05911230
e	0.0863264	Incl.	5.49632		-0.48212349		+0.03992113
P	11.74	B(1,0)	12.5				

Residuals in seconds of arc

770908	675	0.7+	0.4+	781004	675	0.3+	0.3-	781129	675	0.2-	0.4-
770908	675	1.0+	0.7+	781005	675	0.6-	1.3-	791122	675	0.3+	0.3-
770909	675	0.2+	1.5+	781027	675	0.1+	0.3-	791124	675	0.5+	0.6-
770909	675	0.0	0.1+	781028	675	0.5+	0.5+	800121	801	0.3+	0.7-
771016	675	1.7-	0.4-	781029	675	0.2+	0.8+	811222	675	0.4-	0.5+
771017	675	0.7-	1.0-	781128	675	0.9-	0.8+	820221	675	0.5+	0.7+

(2595)* 1979 KL = 1952 SE = 1959 ET

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

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	96.68995		(1950.0)			P		Q	
n	0.21197186	Peri.	275.59394	+0.42925971	-0.89874317				
a	2.7858042	Node	148.49777	+0.88151270	+0.39534483				
e	0.1443500	Incl.	9.85398	+0.19665061	+0.18963960				
P	4.65	B(1,0)	13.5						

Residuals in seconds of arc

520916	760	0.4-	0.1-	801005	809	0.6+	0.9-	820130	688	0.7+	0.8-
590306	690	0.0	0.4+	801005	809	0.6+	1.0-	820212	046	0.2-	0.2-
590307	690	0.6+	0.3-	820118	688	0.1-	1.6-	820212	046	0.6-	0.7+
790519	809	0.2+	0.2-	820118	688	0.2+	2.2-	820213	046	1.3-	2.0+
790520	809	0.1+	0.4-	820124	688	0.7+	1.6-	820213	046	1.2-	0.4+
790524	809	0.4-	0.4-	820124	688	0.9+	0.8-	820214	046	3.1-	3.3+
790616	809	0.6-	0.9-	820125	801	1.6-	1.6+	820214	046	0.5-	0.3-
790617	809	0.0	0.6-	820130	688	1.2+	1.3-	820220	688	0.2+	0.6+
790618	809	0.2+	0.9-	820130	688	0.5+	1.9-	820220	688	0.9+	0.4-
790721	809	0.1+	0.2-	820130	688	1.9+	1.0-	820226	801	0.2+	0.5+

(2596)* 1979 KN

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

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	106.45217		(1950.0)			P		Q	
n	0.18684229	Peri.	245.78087	+0.89925885	-0.42152473				
a	3.0303021	Node	138.87916	+0.43722308	+0.85825344				
e	0.0709996	Incl.	10.23323	+0.01301892	+0.29277623				
P	5.28	B(1,0)	13.5						

Residuals in seconds of arc

790519	809	0.5+	0.1+	790618	809	1.3+	0.2-	811220	801	0.4+	0.4+
790520	809	0.4+	0.4+	790721	809	0.5+	0.5-	820123	801	0.5-	0.1+
790524	809	0.5+	0.3+	801005	809	0.3-	0.1-	820126	801	0.6+	0.8-
790616	809	0.4+	0.0	801005	809	0.1+	0.0				
790617	809	3.2-	0.4+	811126	801	0.6-	1.5+				

(2597)* 1980 PN = 1939 XF = 1975 SA

Discovered 1980 Aug. 8 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	95.56436		(1950.0)			P		Q	
n	0.18943681	Peri.	272.46532	+0.84443260	-0.53540760				
a	3.0025700	Node	119.90669	+0.49869302	+0.77453541				
e	0.1558146	Incl.	1.09073	+0.19554756	+0.33679903				
P	5.20	B(1,0)	13.0						

Residuals in seconds of arc

391208	020(63.3+ 69.7+)X			800717	688	1.1-	0.9+	811124	688	0.8+	1.4-
750928	688	2.1+	1.0+	800719	688	0.0	0.8-	811124	688	0.4-	1.9-
751004	688	1.3+	1.4+	800808	688	0.9+	1.2-	820122	801	0.9-	1.6+
751010	688	1.0-	1.1-	800907	688	0.7+	0.3+	820226	801	0.2+	1.9+
751011	688	2.8-	0.6-	801008	688	0.7-	0.8+				

(2598)* 1980 RY = 1948 WH = 1971 TD3

Discovered 1980 Sept. 7 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1982 Aug, 19.0 ET = JDE 2445200.5

M 101.45280	(1950.0)		P	Q
n 0.21253356	Peri. 214.98709		+0.60438634	-0.79559182
a 2.7808936	Node 197.94583		+0.75839644	+0.59062839
e 0.2183218	Incl. 7.80492		+0.24403277	+0.13487682
P 4.64	B(1,0) 13.5			

Residuals in seconds of arc

481125 012(10.0+ 3.3+)	711021 095	2.0+	3.0+	820127 801	4.2+	2.4-
481127 012 1.3- 0.2-	800806 688	0.9+	1.9-	820131 688	6.3-	4.6-
481130 012 0.6+ 1.2+	800907 688	0.6-	2.4-	820227 801	0.9+	1.3+
711010 095 1.3- 0.4+	800917 688	0.2-	0.7-			
711011 095 0.3- 1.4-	801002 688	1.3+	1.9-			

(2599)* 1980 SO = A918 FC = 1934 GE = 1964 TG = 1964 VA

Discovered 1980 Sept. 29 by Z. Vavrova at the Klet Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 190.35978	(1950.0)		P	Q
n 0.24425940	Peri. 340.59680		+0.89948505	+0.43586667
a 2.5345558	Node 353.31389		-0.35776420	+0.69421440
e 0.1634963	Incl. 15.32496		-0.25086137	+0.57278845
P 4.04	B(1,0) 12.5			

Residuals in seconds of arc

180317 024(15.5- 71.3-)X	800907 095	1.8+	0.2+	801003 046	0.1+	1.3+
340403 024 0.4+ 0.9+	800908 095	1.3+	2.0-	801207 046	0.7+	0.5-
641004 760 1.8- 0.2-	800929 046	0.5+	1.6-	801207 046	0.8-	1.7-
641004 760 1.7+ 0.7-	800929 046	0.3-	1.5-	820119 046	0.8+	0.8-
641101 760 0.4- 1.9+	801001 046	1.4-	0.3+	820119 046	0.7+	0.9-
641101 760 0.1- 0.1+	801001 046	0.0	0.3-	820127 801	0.0	1.0+
800906 095 1.4- 3.7+	801003 046	0.3-	0.9+	820226 801	1.8-	0.0

(2600)* 1980 VP = 1951 EC1 = 1975 VH5

Discovered 1980 Nov. 9 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The identifications were independently found by T. Urata (NOC 1177).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 209.48007	(1950.0)		P	Q
n 0.18871530	Peri. 211.45160		+0.58842277	+0.78282573
a 3.0102182	Node 95.36563		-0.69319709	+0.61724229
e 0.0937932	Incl. 11.72609		-0.41621680	+0.07871358
P 5.22	B(1,0) 12.5			

Residuals in seconds of arc

510309 760 0.9+ 0.6+	801204 688	0.8-	0.0	820118 688	2.2+	0.1+
510309 760 0.9- 0.5-	801204 688	0.8-	0.7-	820123 801	0.8-	0.2+
751102 095 0.7- 2.6+	801230 688	0.4-	0.1+	820202 372	1.6-	1.5+
801109 688 0.8+ 0.6-	801230 688	0.1+	0.1+	820202 372	0.6-	0.4+
801109 688 0.2+ 0.2-	820102 879	0.5+	1.0-	820226 801	1.2-	0.2-
801129 688 0.5+ 0.6-	820102 879	0.2-	0.6-			
801129 688 1.0+ 0.3-	820118 688	1.5+	1.2-			

(2601)* 1980 XA = 1965 AC1 = 1971 DD1

Discovered 1980 Dec. 8 at the Osservatorio S. Vittore.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 55.40985	(1950.0)		P	Q
n 0.17776267	Peri. 196.72450		-0.56904155	-0.80703022
a 3.1326294	Node 288.22393		+0.77216002	-0.45842992
e 0.0498146	Incl. 9.56172		+0.28277307	-0.37221531
P 5.54	B(1,0) 12.0			

Residuals in seconds of arc

650111	330	0.2+	0.2-	801213	552	0.7-	0.8-	810109	688	1.2+	1.9-
650126	330	0.2+	1.0+	801224	552	1.3-	1.3-	810109	688	0.3-	1.0-
710218	095	2.1-	3.2-	801224	552	1.4-	1.0-	810109	552	2.5+	0.0
801201	046	0.8-	1.0-	801224	552	0.9-	0.7-	810109	552	1.3+	2.4+
801201	046	1.5-	0.5-	801225	552	4.0-	1.6-	810123	552	0.9+	0.4-
801206	879	1.3+	1.8-	801225	552	2.2-	1.7-	810126	552	1.0-	0.2-
801206	879	1.2-	0.7+	801228	552	0.2+	0.8-	810126	552	0.3-	0.4-
801208	046	1.1-	0.5+	801228	552	1.2+	1.1+	810130	552	1.0+	0.1+
801208	046	0.5-	0.0	801228	552	2.1+	0.1+	810130	552	0.0	0.5+
801208	552	1.5+	0.9-	801228	552	1.2+	0.6-	810131	552	0.1-	1.2+
801208	552	1.0+	0.7-	801229	552	0.3+	2.5+	810131	552	0.3-	0.0
801209	552	0.9+	0.3+	801229	552	0.2+	2.4+	810131	552	0.2+	0.3+
801209	552	0.2-	0.1-	801230	552	0.9+	0.8+	810131	552	0.9-	0.3+
801209	552	0.6+	0.8+	801230	552	1.9+	1.4+	810203	801	1.0+	0.1-
801210	552	1.1+	2.2-	801231	688	0.5+	2.6-	810206	552	0.7-	0.9-
801212	552	1.2-	1.9-	801231	688	1.4+	2.3-	810206	552	1.1+	1.3-
801212	552	0.2-	0.5+	810102	552	0.5-	1.1+	820123	552	1.4-	0.6+
801212	552	0.5-	0.6+	810102	552	0.1+	0.8+	820126	801	2.2+	1.9+
801212	552	1.3-	1.2+	810107	552	0.2+	0.3+	820129	552	0.3+	1.7+
801213	552	0.6-	0.4-	810108	552	2.4+	1.6+	820213	046	0.9-	0.3-
801213	552	0.9-	1.3-	810108	552	0.7+	0.9+	820213	046	0.9+	1.4-

(2602)* 1982 BR = 1931 JJ = 1942 HD = 1950 PE = 1969 TZ1 = 1971 BA3
 = 1971 DD = 1975 FD = 1975 GM = 1976 SX6

Discovered 1982 Jan. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The declination of the Apr. 15 observation of 1975 GM was changed by -1 arcmin. The identification 1950 PE = 1949 HD1 (MPC 1113) is invalid.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 335.90764	(1950.0)	P	Q
n 0.26761715	Peri. 64.15500	-0.74086199	+0.67067197
a 2.3848446	Node 157.90464	-0.64563153	-0.69618319
e 0.1059859	Incl. 5.54829	-0.18515785	-0.25598450
P 3.68	B(1,0) 14.0		

Residuals in seconds of arc

310507	690(55.9+ 60.3-)X	750316	095	2.8-	0.9+	820130	688	0.6+	0.8-
420415	062(42.0- 15.3+)X	750412	330	0.2-	0.5+	820130	688	0.7+	0.2-
420417	062(20.4- 63.6+)X	750415	805	0.2+	1.5-	820213	046	0.3+	2.2-
500806	760 0.8- 1.1-	750418	805	0.6-	2.0-	820214	046	1.1+	0.9+
500806	760 0.1+ 0.4+	760925	095 (1.3- 1.4+)			820214	046	1.7-	0.5+
500812	760 0.8+ 0.7-	820118	688	0.4-	0.2-	820216	046	0.1+	0.3-
500812	760 3.5+ 0.1-	820118	688	0.8+	2.9-	820216	046	0.6-	1.6+
691008	095 2.7- 3.6-	820124	688	1.5-	0.2+	820220	688	2.4+	1.2-
710127	805 0.5- 1.2+	820124	688	0.8-	1.1-	820220	688	1.8+	2.2+
710129	805 1.0- 1.8+	820130	688	1.2+	0.8-	820221	046	1.0+	1.0+
710218	095 1.5- 3.6-	820130	688	0.9+	0.7+	820221	046	0.4+	0.2+

(2603)* 1982 BW1 = 1927 HC = 1936 FS = 1952 UX = 1970 QU = 1978 GD2
 = 1978 JT2 = 1980 XS

Discovered 1982 Jan. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 231.59154	(1950.0)	P	Q
n 0.21263362	Peri. 276.83800	+0.70077523	+0.71263456
a 2.7800211	Node 37.72080	-0.63159265	+0.64106001
e 0.0446208	Incl. 3.05915	-0.33166971	+0.28494568
P 4.64	B(1,0) 13.0		

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

270430	029(0.04- 0.01+)Y	780407	095	1.3-	0.1+	820216	046	2.0-	0.6-
360321	012(55.2+ 23.6+)	780509	095	1.5-	1.6+	820216	046	1.6-	1.0+
360323	012 5.4+ 0.1+	801212	046	2.1-	1.2+	820219	046	1.6-	0.9-
360328	012 4.4- 0.3+	801212	046(11.4- 17.7+)			820219	046	1.3-	1.2+
521023	760 3.3- 3.4+	820130	688	0.0	1.9-	820220	688	3.0+	1.8-
521023	760 1.2+ 2.7-	820130	688	2.6+	2.6-	820220	688	2.6+	1.8-
700828	095 6.7+ 4.4-	820214	046	1.2-	0.3+	820228	688	1.2+	1.4-
700830	095 0.3- 3.7-	820214	046	1.9-	0.5-	820228	688	0.8-	2.9-

1972 UA = 1981 QT2

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	26.28224	(1950.0)	P	Q
n	0.20880605	Peri 260.64907	+0.77510344	-0.62567939
a	2.8138970	Node 138.01369	+0.61894264	+0.72390811
e	0.1767960	Incl 7.55712	+0.12698288	+0.29065847
P	4.72	B(1,0) 14.5		

Residuals in seconds of arc

721030	026	0.1-	0.1-	810901	809	0.5+	1.5+	810905	809	0.8-	0.0
721102	026	0.3+	1.1+	810901	809	0.7+	0.5+	810906	809	0.7+	1.3+
721103	026	0.0	0.7-	810901	809	1.1+	0.0	810906	809	1.0+	1.4+
721107	026	1.1+	0.6-	810901	809	0.0	0.1+	810906	809	1.7+	2.0+
721126	026	1.3-	0.4+	810901	809	0.1+	0.6+	810906	809	1.0+	0.4+
810823	809	1.6-	0.4-	810901	809	0.0	0.2+	810906	809	1.5+	0.7+
810823	809	1.0-	0.5-	810902	809	0.7-	0.2-	810906	809	2.6+	0.6+
610823	809	1.0-	0.4-	810902	809	0.3-	0.4-	810907	809	1.3+	1.3+
810824	809	1.0-	0.6-	810902	809	0.2-	0.5-	810907	809	1.4+	1.3+
810824	809	0.4-	0.4-	810902	809	0.3+	0.3-	810907	809	1.3+	1.1+
810824	809	0.7-	0.4-	810902	809	0.3-	0.6-	810907	809	0.7+	0.7+
810825	809	0.9+	1.0+	810902	809	0.3+	0.6-	810907	809	1.0+	1.1+
810825	809	2.0+	0.9+	810903	809	0.8-	0.3-	810907	809	0.8+	0.6+
810825	809	1.9+	1.0+	810903	809	0.3-	0.6-	810918	809	0.6+	1.6-
810827	809	0.7-	0.2-	810903	809	0.7-	0.1+	810918	809	0.4+	1.3-
810827	809	0.8-	0.0	810903	809	0.7-	0.3-	810918	809	0.3+	1.7-
810827	809	0.3-	0.3-	810903	809	1.1-	0.3-	810920	809	1.6-	0.3-
810828	809	0.0	0.4+	810903	809	0.2-	0.5-	810920	809	1.7-	0.3-
810828	809	0.6-	0.1-	810905	809	1.0-	0.3+	810920	809	1.4-	0.4-
810828	809	0.0	0.1+	810905	809	1.0-	0.3-	810922	809	0.2+	0.4-
810828	809	0.0	0.1-	810905	809	0.8-	0.9-	810922	809	0.4+	0.1+
810828	809	0.2-	0.7-	810905	809	0.2-	0.8+	810922	809	0.5-	0.5-
810828	809	0.1-	1.0-	810905	809	0.7-	0.1+				

1979 HD5 = 1982 DE1

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	36.59027	(1950.0)	P	Q
n	0.29117045	Peri. 75.41626	-0.98619045	-0.15607239
a	2.2544402	Node 95.58220	+0.12224073	-0.91168032
e	0.0825852	Incl. 3.19130	+0.11173899	-0.38010576
P	3.38	B(1,0) 15.0		

Residuals in seconds of arc

790425	095	0.5-	1.9-	820220	046	1.8-	1.9+	820221	046	2.8-	1.6+
790428	095	0.4-	0.6+	820220	046	0.8-	1.4+	820304	688	1.8+	3.9-
790430	095	1.4+	1.8+	820221	688	1.8+	1.1-	820304	688	0.6+	0.8-
820216	046	0.0	0.1-	820221	688	4.4+	2.3-				
820216	046	0.4-	0.1-	820221	046	2.0-	1.9+				

1982 BX1 = 1976 JG3 = 1979 FZ1

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	308.36112		(1950.0)		P		Q
n	0.30613430	Peri.	233.54795	-0.07704484			+0.99647121
a	2.1803636	Node	32.08164	-0.89347037			-0.05417967
e	0.1157583	Incl.	3.59517	-0.44246444			-0.06410694
P	3.22	B(1,0)	14.5				

Residuals in seconds of arc

760502	095	0.9-	0.5-	820214	046	1.0-	1.6+	820220	688	0.3+	1.5-
790323	095	2.1-	0.4-	820216	046	4.1-	0.3+	820228	688	4.4+	0.8-
790329	095	4.2+	2.6+	820216	046	1.0-	0.8-	820228	688	1.6+	4.0-
820130	688	0.6+	1.5-	820219	046	0.4-	3.8-	820321	688	0.2+	0.3+
820130	688	1.9+	1.3-	820219	046	2.4-	2.4-	820321	688	1.6-	0.5-
820214	046	0.9-	2.0+	820220	688	2.8+	1.5-				

1982 BY1 = 1975 JN

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	50.39841		(1950.0)		P		Q
n	0.26894806	Peri.	90.37665	-0.83640295			-0.54651259
a	2.3769751	Node	56.49573	+0.48076117			-0.76817695
e	0.1705704	Incl.	2.87903	+0.26324667			-0.33350885
P	3.66	B(1,0)	14.5				

Residuals in seconds of arc

750507	808	1.2-	0.5+	820214	046	2.2-	1.2+	820220	688	0.9+	1.3-
750511	808	1.5+	0.6-	820216	046	0.1-	0.0	820220	688	0.9+	1.0-
820130	688	0.4-	1.5-	820216	046	0.2-	0.4-	820228	688	0.7+	0.2+
820130	688	1.1-	2.4-	820219	046	2.0-	0.2+	820228	688	0.3+	0.8-
820214	046	0.9+	1.4+	820219	046	1.0-	0.2+				

1982 DJ = 1977 VQ2 = 1979 JA

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	102.31295		(1950.0)		P		Q
n	0.28325445	Peri.	75.80732	+0.04825779			-0.99863688
a	2.2962496	Node	11.48203	+0.87350896			+0.03253765
e	0.1052567	Incl.	5.73415	+0.48441023			+0.04081269
P	3.48	B(1,0)	14.5				

Residuals in seconds of arc

771110	069	2.0+	0.2+	790502	801	0.3+	0.3+	820228	688	1.0+	0.2-
771110	069	2.3-	1.1-	820130	688	0.4-	1.1+	820321	688	0.1-	0.5-
771119	069	0.3+	1.0+	820130	688	1.0-	0.9+	820321	688	1.2 +	1.7-
771119	069(26.8+	4.4+)		820220	688	0.3+	0.7-				
790501	801	0.2-	0.2+	820228	688	0.9-	0.7+				

* * * * *

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

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

(2604)* 1972 LD1 = 1950 NW = 1979 FD

Discovered 1972 June 13 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	279.18993		(1950.0)		P		Q
n	0.26703041	Peri.	134.05803	-0.20754120			+0.95426430
a	2.3883368	Node	122.78221	-0.95463813			-0.14955919
e	0.2310675	Incl.	14.83009	-0.21352442			-0.25886618
P	3.69	B(1,0)	14.0				

Residuals in seconds of arc

510525	760	1.5+	1.2-	660812	074	1.0+	0.3-	811118	879	0.2+	3.0+
510525	760	1.4-	2.2+	770714	095	0.9+	1.5+	811118	879	2.3+	2.0+
660807	074	0.1-	1.3+	770719	095	0.3-	0.4+	811123	801	2.1-	0.3+
660807	074	0.8-	1.1+	770722	095	0.8-	0.6+	811124	688	2.1-	2.3-
660808	074	0.7+	0.9-	770818	095	0.1-	1.6-	811124	688	1.3+	0.8-
660808	074	2.1-	1.0-	810929	801	1.0-	1.4+	811202	688	0.8-	2.9-
660809	074	0.6+	0.1-	811029	879	0.9+	0.3+	811202	688	1.2+	0.5-
660810	074	0.9-	1.1-	811029	879	0.0	0.9+				
660812	074	2.1+	0.4-	811101	801	0.2-	0.2-				

(2608)* 1978 DA

Discovered 1978 Feb. 17 by H.-E. Schuster at the European Southern Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	43.15367		(1950.0)		P		Q
n	0.25279303	Peri.	32.43304		-0.92175943		+0.38484349
a	2.4771900	Node	169.85953		-0.38762182		-0.91119432
e	0.5871628	Incl.	15.64757		-0.01043473		-0.14703878
P	3.90	B(1,0)	18.8				

Residuals in seconds of arc

780217	809	0.6+	0.3+	780309	805	0.9-	0.3+	780311	485	1.9+	1.9-
780218	809	0.4+	0.1-	780309	805	1.3-	0.1-	780311	485	2.4+	2.6+
780219	809	0.0	0.0	780310	026	1.0+	0.4+	780312	026	1.4-	0.1-
780220	809	0.2+	0.1-	780310	026	0.6-	0.3-	780312	026	2.2+	1.5-
780301	809	4.0+	2.4+	780310	026	0.7-	1.3-	780312	026	0.8+	1.8+
780302	809	2.3+	1.2+	780310	026	0.7-	0.9-	780312	026	2.3+	2.5+
780304	485	2.6-	0.0	780310	805	1.5-	1.0+	780312	885	0.2-	1.3-
780304	485	2.3-	1.3-	780310	805	(10.7-	5.2-)	780312	885	0.2+	0.6-
780304	485	0.4+	0.3-	780310	809	3.2-	1.1-	780313	809	2.2+	2.0+
780304	485	0.1-	0.0	780310	485	0.1+	1.1+	780409	801	0.9+	1.2-
780308	809	2.0+	1.0+	780310	885	1.0-	1.4-	780629	801	1.1+	0.2+
780308	688	0.3+	1.7-	780310	885	1.6-	0.4-	780731	801	3.1-	2.3+
780308	688	0.0	1.3-	780310	885	1.6-	0.7-	820202	675	0.3+	0.5-
780308	801	1.1+	1.8+	780311	485	1.4-	0.4-	820203	675	0.2-	0.4-
780309	805	1.5-	0.2-	780311	485	(4.8-	3.6-)				

(2609)* 1978 PB4 = 1934 EG = 1947 BJ

Discovered 1978 Aug. 9 by L. I. Chernykh and N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	210.87878		(1950.0)		P		Q
n	0.29763345	Peri.	244.59293		-0.98624804		+0.14291828
a	2.2216802	Node	303.52096		-0.09143283		-0.89017721
e	0.0874948	Incl.	5.71379		-0.13767656		-0.43261865
P	3.31	B(1,0)	14.0				

Residuals in seconds of arc

340312	078	(82.6+ 49.0-)X		780831	095	3.2-	0.3-	810703	688	2.1+	0.6+
470126	754	6.3+	2.9+	780905	095	1.3+	0.1-	810703	688	0.6-	0.4-
470128	754	4.6-	4.6+	810604	688	0.1-	1.4-	810803	474	1.6-	2.5+
780809	095	1.2+	1.0+	810604	688	0.6+	0.8-	810803	474	1.0-	2.6+

(2610)* 1978 RO1 = 1978 RQ = 1939 EG = 1955 FV = 1977 FS1

Discovered 1978 Sept. 5 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 188.29274	(1950.0)		P	Q
n 0.31061358	Peri. 39.46109		-0.43247078	+0.90163443
a 2.1593469	Node 204.91561		-0.83013994	-0.40030311
e 0.0987473	Incl. 0.67137		-0.35190438	-0.16374604
P 3.17	B(1,0) 15.0			

Residuals in seconds of arc

390314 062	0.8-	2.8+	780912 095	1.8+	1.5+	810828 046	1.7-	2.1-
390317 062	0.7-	0.5-	780928 095	0.6-	0.6+	810902 704	2.2-	3.3+
550329 760	1.6+	1.7+	781004 095	2.1-	0.3-	810903 704	0.9-	1.6+
550329 760	1.1+	0.5-	781009 095	1.6-	0.3+	810903 704	1.8-	0.6+
770326 095	0.5-	0.4-	810824 046	0.4-	0.2-	810905 046	1.8+	1.7-
780901 095	3.5+	1.8+	810824 046	2.5+	0.6+	810905 046	0.9+	1.9-
780905 095	0.3+	0.4+	810826 801	0.2-	1.0-	810929 801	2.9+	2.8+
780907 095	0.3-	0.1-	810828 046	2.3-	1.2-			

(2611)* 1978 VQ5 = 1972 TD9 = 1977 RB3

Discovered 1978 Nov. 7 by E. Helin and S. J. Bus at Palomar. The key identification 1978 VQ5 = 1977 RB3 is by E. Bowell (MPC 5318).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 122.45756	(1950.0)		P	Q
n 0.18593795	Peri. 131.97408		-0.91203793	+0.40635892
a 3.0401197	Node 72.06973		-0.39134734	-0.82204584
e 0.0547041	Incl. 3.33271		-0.12261354	-0.39888979
P 5.30	B(1,0) 12.5			

Residuals in seconds of arc

721009 033	0.3+	0.4-	781105 675	1.3-	2.4-	810505 688	0.9-	0.5-
721009 033	0.5+	1.3-	781106 675	0.1+	2.1-	810505 688	1.6+	0.1-
721009 033	0.4-	0.8-	781107 675	0.2-	1.2-	810603 801	1.3-	1.8+
721009 033	0.4-	1.1-	781108 675	1.1-	2.5-	810605 801	0.7+	4.0+
770910 095	0.8+	0.3+	781129 675	1.2-	2.6-			
770922 095	1.2-	1.5+	781130 675	0.8-	3.3-			

(2612)* 1979 DE = 1969 BD = 1971 QC

Discovered 1979 Feb. 28 by N. G. Thomas at the Anderson Mesa station of the Lowell Observatory. The key identification 1979 DE = 1971 QC is by E. Bowell (MPC 6197).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 277.85010	(1950.0)		P	Q
n 0.20019327	Peri. 358.34528		-0.65739272	-0.70936866
a 2.8940303	Node 132.65658		+0.69524393	-0.70109053
e 0.1657388	Incl. 20.22358		+0.29063840	+0.07258212
P 4.92	B(1,0) 12.0			

Residuals in seconds of arc

690120 095	1.2-	6.8-	790502 688	0.2+	1.9-	810830 474	0.1+	1.4-
710816 095	2.5+	0.4-	790502 801	1.1-	0.4-	810830 474	0.7+	1.1-
790228 688	2.3+	0.5+	790523 801	1.3-	0.7+	810930 801	2.5-	0.8-
790304 688	0.8-	0.4-	790615 801	0.8-	0.5+	811030 474	0.6+	1.3-
790323 688	0.9+	1.9-	810826 688	1.0-	4.0-	811030 474	0.6+	1.3+
790401 688	1.3+	2.3-	810826 688	0.3+	2.6-			
790501 801	1.1-	0.9+	810827 801	1.0-	1.4-			

(2613)* 1979 QE = 1969 XA

Discovered 1979 Aug. 30 by L. Brozek at the Klet Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	80.74239		(1950.0)		P		Q
n	0.18569839	Peri.	201.19265		-0.47107399		-0.85352007
a	3.0427338	Node	277.50794		+0.83813760		-0.35439910
e	0.0429936	Incl.	12.98054		+0.27498120		-0.38197483
P	5.31	B(1,0)	12.0				

Residuals in seconds of arc

691201	095	0.3-	1.4+	790919	046	0.5-	1.1-	801229	046	0.4-	0.5+
790830	046	0.4+	0.1-	801201	046	0.4-	0.5-	801230	046	0.0	1.3+
790830	046	1.2-	0.3-	801201	046	0.3+	1.4-	801230	046	0.8-	0.0
790831	046	1.4+	1.1+	801204	688	1.2+	1.0-	810109	801	0.6-	1.6+
790831	046	0.7+	0.7-	801204	688	1.5+	1.9-	820124	688	1.8-	0.3-
790912	046	1.5+	0.6+	801208	046	0.1+	0.3+	820130	688	1.6+	0.4-
790912	046	1.8-	0.5+	801208	046	0.5+	0.3+	820130	688	0.4+	1.8-
790916	046	0.6-	0.6-	801212	046	0.6-	1.4+	820227	801	1.0-	0.3+
790916	046	2.0+	0.7+	801212	046	1.5-	0.1-				
790919	046	0.8-	1.7-	801229	046	0.4+	0.2+				

(2614)* 1980 LP = 1976 JC11 = 1977 SR2

Discovered 1980 June 11 by C. S. Shoemaker on plates taken at Palomar by E. Helin and S. J. Bus.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	161.26034		(1950.0)		P		Q
n	0.27573826	Peri.	227.53119		+0.88391060		+0.45298020
a	2.3377857	Node	105.22843		-0.38587170		+0.84686551
e	0.1683075	Incl.	6.91904		-0.26420649		+0.27861756
P	3.57	B(1,0)	14.5				

Residuals in seconds of arc

760423	095	0.9-	0.3+	800611	675	(1.2+	3.7-)	811102	801	4.1-	4.0-
760503	095	0.8+	0.5-	800612	675	3.4-	1.3+	811103	801	0.2+	1.0+
770919	095	0.0	0.2+	800612	675	(7.3+	12.6+)	811123	801	0.3+	1.9+
800516	675	1.8+	0.8+	800618	675	3.2+	2.1+	811230	801	0.1+	0.8+
800516	675	0.4-	0.8-	800618	675	1.0-	0.3+	811231	801	1.0+	0.0
800610	675	0.1+	0.9-	800619	675	0.3-	2.4-	811231	801	1.8+	0.3-
800611	675	0.9+	0.1-	800620	675	0.8-	0.5-				

1977 VM1 = 1937 WE = 1947 XA

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	144.58766		(1950.0)		P		Q
n	0.29400851	Peri.	345.46120		+0.70666928		-0.69902441
a	2.2399087	Node	59.43202		+0.66116506		+0.59730303
e	0.1806257	Incl.	7.30421		+0.25195095		+0.39318439
P	3.35	B(1,0)	14.5				

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

371205	057(0.08-	0.00+)X	471211	020	8.4-	4.9+	771104	330	0.6-	1.2-	
371208	057(19.3-	10.0+)X	770923	095	0.6+	1.9+	771108	330	0.9+	2.1-	
371209	057(0.1+	67.3+)X	771008	095	1.7-	1.0+	771111	330	0.9+	1.7-	
471206	020	6.9+	1.8-	771103	330	0.1-	0.7-	820220	688	0.6-	1.3-

1979 QK2

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	349.95746		(1950.0)		P		Q
n	0.27027648	Peri.	77.13694		-0.27039775		+0.96274656
a	2.3691801	Node	177.17270		-0.89845077		-0.25158119
e	0.1845967	Incl.	2.35753		-0.34593534		-0.09912601
P	3.65	B(1,0)	15.0				

Residuals in seconds of arc

790719	095	0.0	0.4-	790823	809	1.1+	0.4+	790830	809	0.5-	0.5-
790822	809	0.9+	0.2+	790826	809	0.8+	1.5-	820321	688	2.5+	0.2-
790822	809	0.8-	0.4+	790826	809	1.0-	0.6+	820321	688	2.4-	0.2+
790822	809	0.2+	0.3-	790826	809	1.3-	0.2+				
790823	809	0.3+	1.4+	790830	809	0.3+	0.6-				

1979 SF = 1966 UL

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	296.07271		(1950.0)		P		Q
n	0.22465842	Peri.	319.56496	+0.39754465		+0.91526083	
a	2.6799197	Node	333.66463	-0.79931544		+0.31051402	
e	0.0750928	Incl.	8.45627	-0.45061411		+0.25666839	
P	4.39	B(1,0)	13.5				

Residuals in seconds of arc

661018	095	0.0	0.0	790925	046	0.5-	0.2-	791015	046	0.4-	0.2+
790917	046	1.1-	0.3-	790926	046	0.7+	0.9-	791015	046	0.2+	0.6-
790917	046	1.2-	0.8-	790926	046	0.4+	0.5-	791019	046	0.2-	0.1-
790918	046	0.3-	0.0	790927	330	1.0+	0.9+	791019	046	1.3+	0.2+
790918	046	3.8-	0.8-	790927	046	0.2+	1.3-	820321	688	0.3+	1.1-
790919	046	0.0	0.9+	790927	046	0.4-	1.2-	820321	688	0.9-	0.1+
790919	046	0.5+	1.3+	791011	046	3.1+	0.9+				
790925	046	0.1+	0.3-	791011	046	1.1+	2.0+				

1981 QC

Epoch 1981 Dec. 22.0 ET = JDE 2444960.5

M	359.60314		(1950.0)		P		Q
n	0.27545990	Peri.	332.01138	+0.75016780		-0.53167811	
a	2.3393603	Node	65.61196	+0.65808512		+0.54221180	
e	0.2174917	Incl.	25.57342	+0.06459281		+0.65063411	
P	3.58	B(1,0)	14.5				

From 12 observations 1981 Aug. 31-1982 Jan. 22, mean residual 0".8.

1982 BJ1 = 1965 AP = 1971 QS2

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	54.88417		(1950.0)		P		Q
n	0.23443615	Peri.	355.11023	-0.63316534		-0.75767885	
a	2.6048768	Node	134.06267	+0.71736888		-0.65118760	
e	0.1973537	Incl.	12.71750	+0.29066053		-0.04332980	
P	4.20	B(1,0)	13.5				

Residuals in seconds of arc

650101	330	0.0	0.6-	820214	046	1.5-	3.2+	820220	688	1.5+	0.5-
710819	808	0.1+	0.4-	820214	046	1.0-	1.8+	820228	688	0.2+	0.6+
820118	688	0.7-	0.2-	820216	046	1.5-	2.2+	820228	688	0.8+	0.3+
820124	688	0.0	0.1+	820216	046	1.7-	0.8+	820304	688	2.9+	2.8-
820124	688	0.8+	1.4-	820219	046	1.2-	0.4-	820304	688	1.2+	2.3+
820130	688	0.4+	0.8-	820219	046	2.3-	0.4+	820321	688	0.4-	1.3-
820130	688	2.4+	1.4-	820220	688	0.9+	1.2-	820321	688	0.2-	2.5-

1982 BK1 = 1938 DH1 = 1965 AU

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5 (J-P)

M	6.71424		(1950.0)		P		Q
n	0.17859532	Peri.	35.42080	-0.98754899		-0.01871504	
a	3.1228912	Node	142.55375	-0.01264737		-0.98023847	
e	0.0644636	Incl.	14.88571	+0.15680252		-0.19693215	
P	5.52	B(1,0)	12.5				

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

380219	062(0.03- 0.01+)X	820130	688	1.9-	0.1+	820228	688	0.1-	0.4+
380224	062(0.03- 0.01+)X	820130	688	0.5-	0.1-	820321	688	5.5+	2.9-
650108	330 0.3- 0.6-	820220	688	1.4-	0.4+	820321	688	2.6+	1.8-
820124	688 1.2- 1.0-	820220	688	1.2-	0.5+				
820124	688 0.5- 0.4-	820228	688	0.8-	1.5+				

1982 DB

Epoch 1982 Mar. 12.0 ET = JDE 2445040.5

M	30.92481	(1950.0)	P	Q
n	0.54664387	Peri. 157.80607	-0.37404405	-0.92724341
a	1.4813797	Node 314.15412	+0.84710595	-0.33385721
e	0.3563914	Incl. 1.40779	+0.37749510	-0.16958484
P	1.80	B(1,0) 19.5		

From 8 observations 1982 Feb. 28-Mar. 31.

1982 DV

Epoch 1982 Mar. 12.0 ET = JDE 2445040.5

M	349.11711	(1950.0)	P	Q
n	0.34003479	Peri. 349.15289	-0.88730706	+0.45673241
a	2.0329209	Node 218.23292	-0.41499726	-0.85117895
e	0.4571497	Incl. 5.92550	-0.20115531	-0.25863079
P	2.90	B(1,0) 16.5		

From 16 observations 1982 Feb. 28-Mar. 28.

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NEW NAMES OF MINOR PLANETS.

(1426) Riviera = 1937 GF

Discovered 1937 Apr. 1 by M. Laugier at Nice.

Named for the southeast Mediterranean coast of France, noted for its mild weather, which favors the observatory at which this planet was discovered. Name proposed by F. Pilcher.

(1547) Nele = 1929 CZ

Discovered 1929 Feb. 12 by P. Bourgeois at Uccle.

Named for the wife of Till Eulenspiegel, the roguish fourteenth-century German folk-hero. The earliest extant edition of the stories about him was published in Antwerp in 1515. Name proposed by the wife of J. Meeus.

(1640) Nemo = 1951 QA

Discovered 1951 Aug. 31 by S. Arend at Uccle.

Named for the fictional builder of advanced technology in the novel by Jules Verne, 'Twenty Thousand Leagues under the Sea'. Name proposed by J. Meeus.

(1652) Herge = 1953 PA

Discovered 1953 Aug. 9 by S. Arend at Uccle.

Named in honor of Georges Remi, better known under his pseudonym Herge, on the occasion of his seventy-fifth birthday. Considered by many as the father of the comic strip, he created his hero Tintin in 1929. Name proposed by J. Meeus.

(1664) Felix = 1929 CD

Discovered 1929 Feb. 4 by E. Delporte at Uccle.

Named in memory of Felix Timmermans (1886-1947), popular Belgian writer. Name proposed by J. Meeus.

- (1672) Gezelle = 1935 BD
Discovered 1935 Jan. 29 by E. Delporte at Uccle.
Named in memory of Guido Gezelle (1830-1899), famous Flemish poet, who wrote extensively on religion and nature. Name proposed by J. Meeus.
- (1683) Castafiore = 1950 SL
Discovered 1950 Sept. 19 by S. A r e n d at Uccle.
Named for Bianca Castafiore, a comic-strip character created by Herge. Name proposed by J. Meeus.
- (1684) Iguassu = 1951 QE
Discovered 1951 Aug. 23 by M. Itzigsohn at La Plata.
Named for the large waterfall 60 meters high and more than 1 km wide on a river of the same name. The Iguassu river forms part of the boundary between Argentina and Brazil. Name proposed by F. Pilcher.
- (1698) Christophe = 1934 CS
Discovered 1934 Feb. 10 by E. Delporte at Uccle.
Named in honor of a grand-nephew of G. Roland, administrator of the Royal Observatory, Uccle, co-discoverer of Comet Arend-Roland (1957 III).
- (1707) Chantal = 1932 RL
Discovered 1932 Sept. 8 by E. Delporte at Uccle.
Named in honor of a niece of Uccle astronomer G. Roland.
- (1711) Sandrine = 1935 BB
Discovered 1935 Jan. 29 by E. Delporte at Uccle.
Named in honor of a grand-niece of Uccle astronomer G. Roland.
- (1722) Goffin = 1938 EG
Discovered 1938 Feb. 23 by E. Delporte at Uccle.
Named in honor of the Belgian amateur astronomer Edwin Goffin, who has made extensive computations involving minor-planet orbits, and whose initials are indicated by this object's provisional designation. Name proposed by J. Meeus.
- (1730) Marceline = 1936 UA
Discovered 1936 Oct. 17 by M. Laugier at Nice.
Named for the heroine of Andre Gide's novel "L'Immoraliste". As a beautiful and devoted young wife Marceline nursed her husband from the brink of death to robust health. When soon afterward Marceline became ill her husband benignly neglected her. Marceline suffered much physical and mental anguish and finally died needlessly. Name proposed by F. Pilcher.
- (1779) Parana = 1950 LZ
Discovered 1950 J u n e 15 by M. Itzigsohn at La Plata.
Named for a large river in northern Argentina, a major tributary to the La Plata river, near which this minor planet was discovered. Name proposed by F. Pilcher.
- (1801) Titicaca = 1952 SP1
Discovered 1952 Sept. 23 by M. Itzigsohn at La Plata.
Named for the large lake, at 3800 meters the highest in the world, that forms part of the border between Peru and Bolivia. Name proposed by F. Pilcher.
- (1848) Delvaux = 1933 QD
Discovered 1933 Aug. 18 by E. Delporte at Uccle.
Named in honor of the sister-in-law of Uccle astronomer G. Roland.

(1879) Broederstroom = 1935 UN

Discovered 1935 Oct. 16 by H. van Gent at Johannesburg.

Named for the village in South Africa near which the Leiden Southern Observatory was located from 1957 to 1982.

(1916) Boreas = 1953 RA

Discovered 1953 Sept. 1 by S. Arend at Uccle.

Named for the god of the north wind, this Amor-type object was discovered as it moved rapidly northward after passing the ascending node of its orbit. Name proposed by J. Meeus.

(1990) Pilcher = 1956 EE

Discovered 1956 Mar. 9 by K. Reinmuth at Heidelberg.

Named in honor of Frederick Pilcher, associate professor of physics at Illinois College, Jacksonville, who has done much to promote interest in minor planets among amateur astronomers. He has himself made visual observations of almost 1100 different minor planets, an all-time record. Name proposed by J. U. Gunter and J. Meeus, endorsed by C. M. Bardwell and B. G. Marsden.

(2106) Hugo = 1936 UF

Discovered 1936 Oct. 21 by M. Laugier at Nice.

Named for the celebrated French writer Victor Hugo (1802-1885). Name proposed by J. Meeus.

(2214) Carol = 1953 GF

Discovered 1953 Apr. 7 by K. Reinmuth at Heidelberg.

Named by the Minor Planet Center for Carol D. Valenti, in honor of her service as secretarial assistant to the Central Bureau for Astronomical Telegrams since 1974 and to the Minor Planet Center since 1978.

(2298) Cindijon = A915 TA

Discovered 1915 Oct. 2 by M. Wolf at Heidelberg.

Named by B. G. Marsden, who found the identification for this planet, in honor of his children, Cynthia Louise and Jonathan Brian.

(2316) Jo-Ann = 1980 RH

Discovered 1980 Sept. 2 by E. Bowell at the Anderson Mesa station of the Lowell Observatory.

Named in honor of Jo-Ann Bowell, wife of the discoverer, on the occasion of her nth birthday, 1982 May 13.

(2395) Aho = 1977 FA

Discovered 1977 Mar. 17 at the Harvard College Observatory's Agassiz Station.

Named in honor of Arne J. Aho by his coworkers in appreciation of his hard work that made their work easier.

(2443) Tomeileen = A906 B J

Discovered 1906 Jan. 24 by M. Wolf at Heidelberg.

Named by B. G. Marsden, who found the identifications for this planet, in memory of his parents, Thomas Marsden (1905-1980) and Eileen (nee West) Marsden (1905-1981).

(2444) Lederle = 1934 CD

Discovered 1934 Feb. 5 by K. Reinmuth at Heidelberg.

Named in honor of Trudpert Lederle, astronomer at the Astronomisches Rechen-Institut since 1942. Mainly involved with the program of fundamental

star catalogues, he has also worked on the motion of (1036) Ganymed. Name proposed by B. G. Marsden and J. Schubart.

(2445) Blazhko = 1935 TC

Discovered 1935 Oct. 3 by P. Shajn at Simeis.

Named in memory of Sergej Nikolaevich Blazhko (1870-1956), director of the Moscow Observatory during 1920-1931, a professor at Moscow University during 1931-1953 and a corresponding member of the U.S.S.R. Academy of Sciences. The founder of the Moscow school of variable-star research, he constructed the first general theory of eclipsing variables of the Algol type. He also proposed a new method of photographing minor planets and constructed a number of original instruments, including the blink microscope and slitless stellar spectrograph. Name proposed by the Institute for Theoretical Astronomy.

(2494) Inge = 1981 LF

Discovered 1981 June 4 by E. Bowell at the Anderson Mesa station of the Lowell Observatory.

Named in honor of Jay L. Inge, friend of the discoverer and cartographer at the U.S. Geological Survey's Branch of Astrogeologic Studies, Flagstaff. Inge has been responsible for producing many topographic and geologic maps of planets and satellites.

(2525) O'Steen = 1981 VG

Discovered 1981 Nov. 2 by B. A. Skiff at the Anderson Mesa station of the Lowell Observatory.

Named in honor of the discoverer's mother, Mary Elizabeth O'Steen Skiff.

(2526) Alisary = 1979 KX

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

Named by the discoverer in honor of his parents, Alice Benedicta (nee Loethman) West and Harry Richard West, as an expression of sincere filial gratitude and in thankful recognition of their many sacrifices and unremitting efforts to give their children a good start in life.

(2527) Gregory = 1981 RE

Discovered 1981 Sept. 3 by N. G. Thomas at the Anderson Mesa station of the Lowell Observatory.

Named in honor of Bruce Gregory Thomas, youngest son of the discoverer, whose name was taken from that of James Gregory, the Scottish astronomer.

(2531) Cambridge = 1980 LD

Discovered 1980 June 11 by E. Bowell at the Anderson Meas station of the Lowell Observatory.

Named for the centers of learning in England and in Massachusetts, U.S.A. The Minor Planet Center is located at the Smithsonian Astrophysical Observatory in the latter city.

(2542) Calpurnia = 1980 CF

Discovered 1981 Feb. 11 by E. Bowell at the Anderson Meas station of the Lowell Observatory.

Named for the last wife of Julius Caesar. She bade him stay home from the Senate on the Ides of March, but he ignored her advice and was assassinated there. Name suggested by F. Pilcher.

(2554) Skiff = 1980 OB

Discovered 1980 July 17 by E. Bowell at the Anderson Mesa station of the Lowell Observatory.

Named in honor of Brian A. Skiff, who has recently made valuable contributions to the asteroid astrometry program at Lowell Observatory.

(2555) Thomas = 1980 OC

Discovered 1980 July 17 by E. Bowell at the Anderson Mesa station of the Lowell Observatory.

Named in honor of Norman G. Thomas, for many years an observer on the Lowell proper motion and asteroid astrometry programs.

(2556) Louise = 1981 CS

Discovered 1981 Feb. 8 by N. G. Thomas at the Anderson Mesa station of the Lowell Observatory.

Named in honor of Carol Louise Thomas-Baltutis, youngest daughter of the discoverer.

(2557) Putnam = 1981 SL1

Discovered 1981 Sept. 26 by B. A. Skiff and N. G. Thomas at the Anderson Mesa station of the Lowell Observatory.

Named in appreciation of the long and continuing support of the Lowell Observatory by members of the Putnam family, in particular Roger Lowell Putnam (1893-1972) and Michael C. J. Putnam, father and son, successive trustees of the Lowell Observatory.

(2558) Viv = 1981 SP1

Discovered 1981 Sept. 26 by N. G. Thomas at the Anderson Mesa station of the Lowell Observatory.

Named in memory of the discoverer's father, Vivian Russell Thomas.

(2567) Elba = 1979 KA

Discovered 1979 May 19 by O. Pizarro and G. Pizarro at the European Southern Observatory.

Named by the discoverers in memory of their mother, Elba Aguilera de Pizarro (1926-1965).

(2595) Gudiachvili = 1979 KL

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

Named in memory of Lado Gudiachvili (1896-1980), a great painter and a dear friend of the discoverer. Born in Ducheti, Georgia, he studied in Tbilisi, and after a period in Paris (1919-1927), he returned to his native country, where he remained the rest of his life. He early developed a very personal style, to some extent influenced by early church frescoes. His persistent affection for beauty in all its aspects and his uncompromising pursuit of poetic and sometimes fantastic expressions was only fully recognized at a later time. His drawings and paintings are frequently of a philosophical or allegorical nature, and many are connected with the turbulent history of Georgia. He is one of the founders of twentieth-century Georgian art and became a national legend during his lifetime.

(2601) Bologna = 1980 XA

Discovered 1980 Dec. 8 at the Osservatorio San Vittore.

Named for the famous Italian city, home of one of the oldest universities in the world, in which the Osservatorio San Vittore is located.

(2608) Seneca = 1978 DA

Discovered 1978 Feb. 17 by H.-E. Schuster at the European Southern Observatory.

Named for the great Roman philosopher and statesman Lucius Annaeus Seneca.

EPHEMERIDES.

1979 SF		Elements MPC 6830								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.		
1982 04 01		12 17.91	-10 25.4	1.721	2.714	171.9	3.0	16.8		
1982 04 11		12 08.95	-09 49.9							
1982 04 21		12 01.28	-09 13.2	1.766	2.698	152.7	9.9	17.1		
1982 05 01		11 55.63	-08 41.0							
1982 05 11		11 52.43	-08 17.8	1.904	2.682	131.5	16.4	17.4		
1982 05 21		11 51.79	-08 06.4							
1982 05 31		11 53.63	-08 08.1	2.105	2.667	112.8	20.5	17.7		
1982 06 10		11 57.74	-08 23.0							
1982 06 20		12 03.86	-08 50.3	2.337	2.651	96.5	22.4	18.0		
1982 06 30		12 11.76	-09 29.1							
1982 07 10		12 21.17	-10 17.9	2.576	2.635	82.0	22.5	18.2		
1982 07 20		12 31.92	-11 15.5							
1982 07 30		12 43.83	-12 20.5	2.806	2.619	69.0	21.2	18.3		

1979 QK2		Elements MPC 6829								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.		
1982 04 01		12 23.98	-01 40.2	1.132	2.129	175.6	2.1	16.8		
1982 04 11		12 15.30	-00 28.2							
1982 04 21		12 08.11	+00 32.3	1.153	2.092	151.5	13.3	17.2		
1982 05 01		12 03.44	+01 14.0							
1982 05 11		12 01.87	+01 33.1	1.255	2.057	130.3	22.0	17.6		
1982 05 21		12 03.50	+01 29.2							
1982 05 31		12 08.18	+01 03.7	1.406	2.026	112.7	27.5	17.9		
1982 06 10		12 15.59	+00 19.1							
1982 06 20		12 25.35	-00 41.7	1.581	1.998	98.2	30.2	18.2		
1982 06 30		12 37.17	-01 56.1							
1982 07 10		12 50.73	-03 21.4	1.765	1.974	86.0	30.9	18.4		
1982 07 20		13 05.80	-04 55.1							
1982 07 30		13 22.21	-06 34.9	1.947	1.955	75.4	30.2	18.6		
1982 08 09		13 39.80	-08 18.5							
1982 08 19		13 58.46	-10 03.7	2.122	1.942	65.8	28.4	18.7		

1982 DB		Elements MPC 6831								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.		
1982 04 01		12 43.85	-11 58.2	0.215	1.213	172.1	6.5	16.7		
1982 04 11		12 33.88	-10 12.4							
1982 04 21		12 29.29	-08 57.5	0.331	1.320	159.5	15.5	18.1		
1982 05 01		12 29.51	-08 15.5							
1982 05 11		12 33.72	-08 03.7	0.491	1.426	141.2	26.3	19.3		
1982 05 21		12 40.99	-08 16.5							
1982 05 31		12 50.68	-08 48.8	0.691	1.527	126.2	32.4	20.4		
1982 06 10		13 02.24	-09 36.3							
1982 06 20		13 15.24	-10 34.6	0.921	1.621	113.4	35.1	21.2		

1982 DV		Elements MPC 6831								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.		
1982 04 01		14 51.59	-34 57.5	0.148	1.112	136.5	38.2	13.5		
1982 04 06		15 29.08	-33 45.8							
1982 04 11		16 05.09	-31 31.4	0.140	1.104	134.0	40.8	13.4		
1982 04 16		16 37.36	-28 28.8							
1982 04 21		17 04.58	-24 59.0	0.143	1.107	132.6	41.9	13.5		
1982 04 26		17 26.44	-21 22.7							
1982 05 01		17 43.34	-17 55.8	0.157	1.121	133.6	40.6	13.7		
1982 05 06		17 55.91	-14 48.0							
1982 05 11		18 04.83	-12 04.0	0.177	1.146	137.1	36.9	13.9		

1982 05 16	18 10.67	-09 45.5							
1982 05 21	18 13.93	-07 52.2	0.202	1.179	142.7	31.4	14.1		
1982 05 31	18 14.81	-05 18.0	0.233	1.220	149.4	25.0	14.3		
1982 06 10	18 11.26	-04 08.8							
1982 06 20	18 06.19	-04 06.4	0.318	1.320	160.3	15.0	15.0		
1982 06 30	18 01.96	-04 51.8							
1982 07 10	18 00.06	-06 05.7	0.446	1.435	155.9	16.8	15.9		
1982 07 20	18 01.03	-07 32.2							
1982 07 30	18 04.98	-09 00.7	0.623	1.557	142.7	23.3	17.0		
1982 08 09	18 11.67	-10 23.7							
1982 08 19	18 20.65	-11 37.2	0.850	1.681	128.9	27.9	17.9		
1982 08 29	18 31.60	-12 39.0							
1982 09 08	18 44.12	-13 27.9	1.119	1.803	115.9	30.2	18.7		
1982 09 18	18 57.86	-14 03.7							
1982 09 28	19 12.60	-14 26.5	1.422	1.922	103.5	30.5	19.4		
1982 10 08	19 28.08	-14 36.5							
1982 10 18	19 44.09	-14 34.3	1.749	2.035	91.5	29.3	19.9		
1982 10 28	20 00.51	-14 20.6							
1982 11 07	20 17.16	-13 55.9	2.086	2.142	79.6	27.1	20.4		
1982 11 17	20 33.96	-13 21.2							
1982 11 27	20 50.82	-12 37.1	2.422	2.243	67.8	24.0	20.7		
1982 12 07	21 07.65	-11 44.5							
1982 12 17	21 24.40	-10 44.4	2.742	2.337	55.9	20.4	21.0		

(2608) Seneca

Elements MPC 6827

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1982 04 01	19 51.32	-01 59.8	0.855	1.097	72.0	60.1	20.0	
1982 04 11	20 18.19	+00 40.2						
1982 04 21	20 40.79	+03 03.0	0.923	1.208	77.5	54.3	20.3	
1982 05 01	20 59.34	+05 08.2						
1982 05 11	21 13.97	+06 54.6	0.955	1.348	86.6	48.4	20.5	
1982 05 21	21 24.64	+08 20.4						
1982 05 31	21 31.19	+09 22.3	0.953	1.502	99.5	41.7	20.5	
1982 06 10	21 33.47	+09 55.5						
1982 06 20	21 31.41	+09 54.8	0.934	1.660	116.6	33.2	20.5	
1982 06 30	21 25.15	+09 14.4						
1982 07 10	21 15.38	+07 51.4	0.933	1.817	137.6	22.2	20.5	
1982 07 20	21 03.26	+05 48.3						
1982 07 30	20 50.42	+03 14.5	0.994	1.971	157.6	11.3	20.5	
1982 08 09	20 38.59	+00 25.6						
1982 08 19	20 29.06	-02 21.9	1.150	2.119	157.3	10.6	21.0	

Periodic Comet Encke

Elements MPC 5129

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1982 06 20	23 30.86	-02 12.0	3.859	4.083	95.5	14.3	20.9	
1982 06 30	23 30.68	-02 03.9						
1982 07 10	23 28.87	-02 05.4	3.559	4.093	114.9	13.0	20.7	
1982 07 20	23 25.35	-02 17.4						
1982 07 30	23 20.10	-02 40.1	3.303	4.097	136.3	9.9	20.5	
1982 08 09	23 13.22	-03 12.9						
1982 08 19	23 04.95	-03 54.4	3.132	4.095	159.4	5.0	20.2	
1982 08 29	22 55.69	-04 42.3						
1982 09 08	22 46.01	-05 33.3	3.081	4.087	175.7	1.1	20.0	
1982 09 18	22 36.50	-06 23.8						
1982 09 28	22 27.77	-07 10.2	3.162	4.073	151.8	6.7	20.2	
1982 10 08	22 20.33	-07 49.9						
1982 10 18	22 14.51	-08 20.8	3.355	4.053	128.7	11.1	20.5	
1982 10 28	22 10.53	-08 42.1						

1982 11 07	22 08.41	-08 53.4	3.622	4.026	107.1	13.6	20.7
1982 11 17	22 08.08	-08 55.1					
1982 11 27	22 09.42	-08 47.7	3.918	3.994	87.2	14.3	20.9

Periodic Comet Oterma

Elements AJ 75, 83, 1970

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1982 07 10		00 29.62	+04 11.9	5.367	5.608	98.5	10.3	21.1
1982 07 20		00 31.19	+04 25.5					
1982 07 30		00 31.73	+04 32.5	5.059	5.593	117.0	9.3	21.0
1982 08 09		00 31.22	+04 32.8					
1982 08 19		00 29.67	+04 26.5	4.799	5.579	136.7	7.2	20.9
1982 08 29		00 27.18	+04 13.8					
1982 09 08		00 23.89	+03 55.7	4.621	5.565	157.5	4.0	20.8
1982 09 18		00 20.01	+03 33.3					
1982 09 28		00 15.81	+03 08.3	4.551	5.553	178.5	0.3	20.7
1982 10 08		00 11.61	+02 42.7					
1982 10 18		00 07.70	+02 18.3	4.600	5.541	158.8	3.7	20.7
1982 10 28		00 04.38	+01 57.1					
1982 11 07		00 01.88	+01 40.8	4.761	5.530	137.3	7.0	20.8
1982 11 17		00 00.36	+01 30.5					
1982 11 27		23 59.95	+01 27.0	5.007	5.520	116.6	9.2	20.9
1982 12 07		00 00.66	+01 30.7					
1982 12 17		00 02.48	+01 41.5	5.304	5.511	97.0	10.2	21.0

Periodic Comet Smirnova-Chernykh

Elements MPC 4830

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1982 07 30		06 13.97	+24 12.0	4.817	4.003	32.9	7.9	19.4
1982 08 09		06 25.73	+24 14.6					
1982 08 19		06 37.07	+24 14.8	4.602	3.978	46.8	10.7	19.3
1982 08 29		06 47.85	+24 13.2					
1982 09 08		06 57.96	+24 10.6	4.336	3.954	61.4	12.9	19.2
1982 09 18		07 07.26	+24 07.7					
1982 09 28		07 15.59	+24 05.5	4.034	3.930	76.9	14.4	19.0
1982 10 08		07 22.78	+24 04.9					
1982 10 18		07 28.66	+24 07.1	3.713	3.906	93.7	14.7	18.8
1982 10 28		07 33.03	+24 12.9					
1982 11 07		07 35.72	+24 23.2	3.400	3.882	112.1	13.7	18.5
1982 11 17		07 36.56	+24 38.5					
1982 11 27		07 35.46	+24 58.7	3.125	3.859	132.3	10.9	18.3
1982 12 07		07 32.42	+25 23.1					
1982 12 17		07 27.59	+25 50.3	2.925	3.836	154.3	6.4	18.2
1982 12 27		07 21.32	+26 18.3					
1983 01 06		07 14.12	+26 44.6	2.833	3.814	175.2	1.2	18.1
1983 01 16		07 06.67	+27 07.2					
1983 01 26		06 59.70	+27 24.7	2.862	3.792	157.8	5.6	18.1
1983 02 05		06 53.86	+27 36.6					
1983 02 15		06 49.66	+27 43.2	3.002	3.771	135.5	10.6	18.2
1983 02 25		06 47.42	+27 45.2					
1983 03 07		06 47.26	+27 43.3	3.222	3.751	115.0	13.9	18.3
1983 03 17		06 49.15	+27 38.3					
1983 03 27		06 52.98	+27 30.5	3.485	3.731	96.4	15.4	18.4
1983 04 06		06 58.56	+27 19.8					
1983 04 16		07 05.68	+27 06.3	3.758	3.712	79.7	15.4	18.6
1983 04 26		07 14.14	+26 49.7					
1983 05 06		07 23.73	+26 29.7	4.017	3.694	64.3	14.2	18.7
1983 05 16		07 34.27	+26 06.1					
1983 05 26		07 45.60	+25 38.5	4.244	3.677	50.1	12.2	18.8
1983 06 05		07 57.55	+25 06.9					
1983 06 15		08 10.00	+24 31.2	4.425	3.661	36.7	9.5	18.9