

=====  
 The MINOR PLANET CIRCULARS/MINOR PLANETS AND COMETS are published, on behalf  
 of Commission 20 of the International Astronomical Union, usually in batches  
 on the date of each full moon, by:  
 Minor Planet Center  
 Smithsonian Astrophysical Observatory  
 Cambridge, MA 02138, U.S.A.  
 TWX 710-320-6842 ASTROGRAM CAM \*\* Brian G. Marsden, Director  
 Telephone 617-864-5758 \*\* Conrad M. Bardwell, Associate Director  
 =====

EDITORIAL NOTICE.

The next MPCs will be published on or about Oct. 3. No MPCs will be  
 issued in September.

\* \* \* \* \*

IDENTIFICATION CHANGES.

Continuation to MPC 6990.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	N Obs.
1933 SO1 *	1933 09	27.88262	22 16 22.74	-04 09 09.9	1933 SN		012
1936 LK *	1936 06	12.79376	18 07 39.67	-18 39 25.0	1936 MD	13.1	1 078
1936 LK	1936 06	24.87942	17 55 54.58	-18 37 52.8	1936 MD	13.1	3 078
1936 LK	1936 07	08.71826	17 43 24.54	-18 43 27.8	1936 MD	13.2	1 078
1936 LK	1936 07	12.87113	17 40.3	-18 47	1936 MD	13.1	1 078
1936 LK	1936 07	17.86233	17 37 11.22	-18 51 43.3	1936 MD	13.4	1 078
1936 LK	1936 07	22.89023	17 34.8	-18 58	1936 MD	13	1 078
1936 LK	1936 07	26.96103	17 33 21.64	-19 03 28.9	1936 MD	13.9	1 078
1936 ML *	1936 06	19.89653	17 59.6	-18 50	1936 LF	12.9	078
1939 GT *	1939 04	13.97	11 28.9	+01 59	1939 DG		020
1964 WN1 *	1964 11	30.61875	04 35 27.26	+18 45 28.4	1964 VT2		330
1969 TF8 *	1969 10	07.83333	22 55 38.51	-06 21 09.9	1969 RN		095
1972 JT1 *	1972 05	09.83704	13 37 17.64	-09 39 57.4	1972 GM	17.0	095
1972 JT1	1972 05	11.84113	13 36 00.03	-09 33 32.6	1972 GM	16.5	095
1975 VE10*	1975 11	06.87965	02 51 45.47	+14 10 37.7	1975 TX5	16.5	095
1978 RP6 *	1978 09	03.90664	22 43 56.03	-07 15 58.1	1978 PB3	17.0	095
1978 SE8 *	1978 09	28.81927	22 26 16.69	-08 41 23.6	1978 PB3	17.5	095
1981 AE4 *	1981 01	08.58625	07 50 25.39	+22 33 15.2	1981 AU	17.5	381
1981 AE4	1981 01	08.60847	07 50 23.71	+22 33 14.8	1981 AU	17.5	381
1981 AE4	1981 01	08.62930	07 50 22.81	+22 33 17.9	1981 AU	17.5	381
1981 AE4	1981 01	08.65013	07 50 21.58	+22 33 22.0	1981 AU	17.5	381

Note 1: The discovery apparition of (1394); identification of (1394) with  
 1936 MD (discovery on 1936 June 19) is erroneous. 2: the approximate ver-  
 sion of this observation was recorded as 1936 LF on RI 1415. 3 = 1 + 2.

\* \* \* \* \*

DOUBLE DESIGNATIONS.

Continuation to MPC 6840.

	Note		Note		Note
1953 RP = 1953 RP1	4	1972 JS1 = 1972 KN	4	1975 GC1 = 1975 HM	4
1982 DG1 = 1982 DG3	1	1982 HZ = 1982 HU1	3		

Note 1: double designation by F. N. Bowman. 2: by T. Furuta (JAM 1154).  
 3 = 1 + 2. 4: double designation by B. G. Marsden.

## OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

- 086 Odessa Observatory. Observers A. A. Rajkov and A. V. Yushchenko. Measured by L. Ya. Skoblikova. Reduction by G. R. Kastel'. From Kiev Komet. Tsirk. No. 285.
- 136 Engelhardt Observatory, Kazan. Observers M. I. Kibardina and L. A. Urasin. From Kiev Komet. Tsirk. No. 278.
- 210 Alma-Ata. Observers A. A. Semenikin, N. S. Gorodetskaya and D. I. Gorodetskij. From Kiev Komet. Tsirk. No. 285.
- 323 Perth Observatory. Observers M. P. Candy and V. Flynn.
- 372 Geisei. Observer T. Seki. From Orient. Astron. Assoc. Comet Bull. No. 234.
- 413 U.K. Schmidt Telescope Unit, Siding Spring. Observer M. Hartley.
- 474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin.
- 675 Palomar. 1.2-m Schmidt. Observer J. Gibson.
- 688 Lowell Observatory, Anderson Mesa station. Observer B. A. Skiff. Measured by E. Bowell.
- 707 Chamberlin Observatory field station. 0.40-m f/5.5 reflector. Observer E. Everhart.
- 801 Oak Ridge Observatory. Observers R. E. McCrosky and G. Schwartz (assisted by C. M. Bardwell and B. G. Marsden).
- 809 European Southern Observatory. Observer C.-I. Lagerkvist.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
Periodic Comet Gunn							
/1976 III	1982 06	21.09219	13 21 48.72	-02 11 13.8			801
Periodic Comet Shajn-Schaldach							
/1979 I	1978 09	02.11042	22 44 00.28	-06 30 35.1			809
/1979 I	1978 09	02.11597	22 44 00.00	-06 30 38.0			809
/1979 I	1978 09	02.31597	22 43 52.38	-06 32 02.8			809
/1979 I	1978 09	02.32639	22 43 51.90	-06 32 07.5			809
/1979 I	1978 09	06.10382	22 41 35.16	-06 59 16.9			809
/1979 I	1978 09	10.10417	22 39 10.97	-07 28 11.2			809
/1979 I	1978 09	10.12014	22 39 10.40	-07 28 19.8			809
/1979 I	1978 09	10.22222	22 39 06.52	-07 29 02.1			809
/1979 I	1978 09	10.23889	22 39 05.92	-07 29 11.1			809
Periodic Comet Stephan-Oterma							
/1980 X	1981 01	26.59326	05 49 47.69	+42 43 14.8	11.5T		210
/1980 X	1981 01	30.84609	05 54 55.69	+43 18 16.1	11.7T		210
/1980 X	1981 02	05.77031	06 03 08.23	+43 53 21.8	12 T		210
/1980 X	1981 02	25.72888	06 37 23.41	+44 16 42.4	13.5T		210
/1980 X	1981 03	25.79685	07 33 38.64	+42 03 36.3	14 T		210
Periodic Comet Encke							
/1980 XI	1982 07	30.43132	23 19 49.62	-02 41 23.3	20.5N		675
Periodic Comet Tuttle							
/1980 XIII	1981 04	02.55191	19 45 36.4	-88 32 18.2	18 N		474
/1980 XIII	1981 04	02.57928	19 44 59.1	-88 32 35.3			474
/1980 XIII	1981 04	03.63542	19 14 30.8	-88 42 31.1			474

## Comet Bowell (1980b)

/1980b	1981	09	05.32593	13	16	10.44	-06	33	15.5		1	474
/1980b	1981	09	05.34363	13	16	11.70	-06	33	26.0		1	474
/1980b	1981	09	06.31127	13	17	19.05	-06	40	30.7		1	474
/1980b	1981	09	06.32117	13	17	19.98	-06	40	37.0		1	474
/1980b	1982	04	23.74558	18	15	47.16	-22	13	16.0			474
/1980b	1982	04	24.65818	18	16	08.60	-22	13	13.2			474
/1980b	1982	06	20.26424	18	10	55.62	-22	30	57.1			688
/1980b	1982	06	25.23053	18	08	55.83	-22	33	50.7			801
/1980b	1982	06	27.23351	18	08	07.82	-22	35	01.9			801
/1980b	1982	07	12.24167	18	02	46.81	-22	43	43.4			707

## Comet Panther (1980u)

/1980u	1981	02	21.69198	19	29	00.03	+70	37	15.2			136
/1980u	1981	02	22.67794	19	30	05.97	+71	34	19.7			136
/1980u	1981	02	23.68280	19	31	16.27	+72	33	23.7			136
/1980u	1981	02	24.71108	19	32	30.90	+73	34	48.9			136
/1980u	1981	02	26.68746	19	35	07.66	+75	35	03.8			136
/1980u	1981	02	27.68046	19	36	32.37	+76	36	40.7			136
/1980u	1981	03	01.68426	19	39	48.85	+78	43	21.9			136
/1980u	1981	03	02.67905	19	41	43.69	+79	47	06.6			136
/1980u	1981	03	02.93819	19	42	18.53	+80	03	50.5			086
/1980u	1981	03	02.96424	19	42	22.49	+80	05	32.1			086
/1980u	1981	03	02.98160	19	42	24.13	+80	06	40.6			086
/1980u	1981	03	09.84966	20	27	11.30	+87	41	51.9			136
/1980u	1981	03	13.84861	06	50	57.56	+87	37	14.8			136
/1980u	1981	03	13.90053	06	52	12.70	+87	33	28.9	8.5T		210
/1980u	1981	03	13.95673	06	53	30.78	+87	29	56.2	8.5T		210
/1980u	1981	03	25.81196	07	43	11.96	+74	04	17.3	9 T		210
/1980u	1981	04	01.72603	07	51	41.00	+66	41	33.9			136
/1980u	1981	04	02.81978	07	52	53.50	+65	34	25.3			136
/1980u	1981	04	03.89617	07	54	04.11	+64	29	11.4			136

## Comet Elias (1981c)

/1981c	1982	01	28.61112	12	30	43.07	-33	20	09.7	16.5N		474
/1981c	1982	01	28.63253	12	30	42.30	-33	20	03.6			474
/1981c	1982	04	23.41120	11	17	49.54	-16	35	02.8			474
/1981c	1982	04	23.43956	11	17	48.30	-16	34	36.4			474

## Comet Gonzalez (1981g)

/1981g	1981	08	30.68309	18	10	01.10	-86	05	36.9	16.6N		474
/1981g	1981	08	30.70508	18	09	36.50	-86	05	24.7			474

## Periodic Comet Howell

/1981k	1982	01	15.10836	00	44	48.97	+00	41	36.9			675
/1981k	1982	01	16.09516	00	45	55.38	+00	50	43.2			675

## Periodic Comet Grigg-Skjellerup

/1982a	1982	06	14.58090	12	48	03.42	+38	48	04.6	14.5T		372
/1982a	1982	06	19.15278	13	26	23.83	+38	51	07.4			801
/1982a	1982	06	19.15906	13	26	26.83	+38	51	03.9	2		801
/1982a	1982	06	21.08120	13	41	30.60	+38	37	41.8			801
/1982a	1982	06	23.11584	13	56	40.18	+38	15	26.9			801
/1982a	1982	06	24.07970	14	03	34.18	+38	02	21.8			801
/1982a	1982	06	25.07668	14	10	30.94	+37	47	20.2			801
/1982a	1982	06	27.19014	14	24	34.61	+37	10	43.0			801
/1982a	1982	07	10.18889	15	33	48.05	+32	00	19.4			707

## Periodic Comet du Toit-Hartley

/1982b	1982	02	22.54595	13	21	06.64	-14	55	16.1		474
/1982c	1982	02	22.67419	13	25	06.51	-15	19	17.4		474
/1982c	1982	02	22.68750	13	25	09.25	-15	19	41.9		474
/1982c	1982	05	28.61795	17	31	11.02	-32	07	48.5	16.6N	474
/1982c	1982	05	28.63959	17	31	10.30	-32	07	37.5		474

## Periodic Comet d'Arrest

/1982e	1982	06	19.20139	15	57	36.55	+19	32	51.6		801
/1982e	1982	07	11.18125	15	48	04.83	+13	58	57.8		707
/1982e	1982	07	14.22986	15	48	20.00	+12	48	52.8		707

## Periodic Comet Churyumov-Gerasimenko

/1982f	1982	07	20.39444	01	26	03.78	+00	03	47.1		675
--------	------	----	----------	----	----	-------	-----	----	------	--	-----

## Comet Austin (1982g)

/1982g	1982	06	23.69721	04	11	18.76	-39	00	39.1		474
/1982g	1982	06	23.71170	04	11	19.90	-39	00	28.3	3	474
/1982g	1982	07	02.70985	04	24	50.27	-36	52	00.3		474
/1982g	1982	07	02.71731	04	24	50.97	-36	51	53.6		474
/1982g	1982	07	06.77205	04	31	51.09	-35	44	03.8		474
/1982g	1982	07	06.77866	04	31	51.88	-35	43	56.5		474
/1982g	1982	07	06.78490	04	31	52.55	-35	43	49.8		474
/1982g	1982	07	15.64606	04	50	54.31	-32	26	51.4		474
/1982g	1982	07	15.66396	04	50	57.18	-32	26	21.3		474
/1982g	1982	07	23.71903	05	17	00.01	-27	15	19.9		474
/1982g	1982	07	23.72076	05	17	00.42	-27	15	14.2		474
/1982g	1982	07	23.73500	05	17	03.89	-27	14	28.5		474
/1982g	1982	07	23.73674	05	17	04.35	-27	14	22.3		474
/1982g	1982	07	25.72450	05	25	51.06	-25	17	38.3		474
/1982g	1982	07	25.74725	05	25	57.47	-25	16	10.4		474
/1982g	1982	07	26.72397	05	30	46.49	-24	09	39.2		474
/1982g	1982	07	26.74503	05	30	52.95	-24	08	07.7		474
/1982g	1982	07	29.77081	05	48	24.73	-19	51	45.4		474
/1982g	1982	07	29.78782	05	48	31.28	-19	50	05.7		474
/1982g	1982	08	02.69809	06	18	58.62	-11	39	07.7		474
/1982g	1982	08	02.70492	06	19	02.33	-11	38	02.0		474
/1982g	1982	08	02.78976	06	19	49.05	-11	24	51.8		474
/1982g	1982	08	02.79288	06	19	50.81	-11	24	22.6		474

## Periodic Comet Peters-Hartley

/1982h	1982	07	11.46714	16	49	28.44	-07	02	01.2		413
/1982h	1982	07	13.46319	16	50	07.31	-06	17	34.9		323
/1982h	1982	07	14.45139	16	50	29.01	-05	56	53.8		323
/1982h	1982	07	15.17014	16	50	45.58	-05	42	20.8	16.0T	4 688
/1982h	1982	07	15.20556	16	50	46.57	-05	41	37.8		4 688
/1982h	1982	07	15.58009	16	50	54.82	-05	33	57.5	16	T 5 474
/1982h	1982	07	15.61331	16	50	55.38	-05	33	19.7		5 474
/1982h	1982	07	16.19688	16	51	10.36	-05	22	05.2		6 707
/1982h	1982	07	16.38600	16	51	15.32	-05	18	14.4	16	T 474
/1982h	1982	07	16.47269	16	51	17.39	-05	16	35.4		474
/1982h	1982	07	17.25451	16	51	37.93	-05	02	00.3		707
/1982h	1982	07	19.48403	16	52	42.70	-04	21	58.4		413
/1982h	1982	07	20.56528	16	53	16.66	-04	03	51.9		323
/1982h	1982	07	23.20035	16	54	46.78	-03	23	12.6		707

Note 1: low altitude. 2: too faint for good measurement. 3: correction to MPC 6992. 4: right ascension and declination uncertain. 5: diffuse without condensation; somewhat uncertain. 6: image somewhat elongated.

OBSERVATIONS MADE AT PINO TORINESE OBSERVATORY BY W. FERRERI. REDUCTIONS BY  
G. DE SANCTIS AND V. ZAPPALA.

Object	Date	UT	R. A. (1950)			Decl.	O - C		Obs.
1	1981 01	13.87494	07 30	05.56	+30 42	20.1	0.0	0	022
1	1981 01	13.90057	07 30	03.80	+30 42	28.1	0.0	0	022
1	1981 03	07.83480	07 02	53.31	+32 18	53.2	0.0	0	022
1	1981 03	07.87289	07 02	53.98	+32 18	50.1	0.0	0	022
1	1981 03	11.82648	07 04	13.93	+32 13	39.3	0.0	0	022
1	1981 03	11.84863	07 04	14.42	+32 13	37.6	0.0	0	022
1	1981 03	21.78670	07 09	35.78	+31 56	00.5	0.0	0	022
1	1981 03	21.79294	07 09	36.05	+31 55	59.1	0.0	0	022
1	1981 04	21.82723	07 40	55.57	+30 22	42.0	0.0	0	022
1	1981 04	21.83902	07 40	56.45	+30 22	40.0	0.0	0	022
1	1981 04	27.82645	07 48	52.38	+29 57	53.2	0.0	0	022
1	1981 04	27.84653	07 48	54.03	+29 57	48.5	0.0	0	022
1	1981 04	28.82440	07 50	14.47	+29 53	32.9	0.0	0	022
1	1981 04	28.83963	07 50	15.67	+29 53	27.9	0.0	0	022
1	1981 05	04.83919	07 58	43.29	+29 25	54.9	0.0	0	022
1	1981 05	04.85373	07 58	44.65	+29 25	50.0	0.0	0	022
1	1981 05	12.87448	08 10	38.03	+28 45	13.4	0.0	0	022
1	1981 05	12.89249	08 10	39.67	+28 45	06.4	0.0	0	022
3	1981 04	27.95699	14 00	02.77	+00 53	33.8	0.0	0	022
3	1981 04	27.97777	14 00	01.74	+00 53	40.3	0.0	0	022
3	1981 04	28.94872	13 59	16.33	+00 59	19.1	0.0	0	022
3	1981 04	28.95979	13 59	15.75	+00 59	23.2	0.0	0	022
3	1981 04	29.96434	13 58	29.09	+01 05	05.3	0.0	0	022
3	1981 04	29.98512	13 58	28.08	+01 05	11.6	0.0	0	022
3	1981 05	04.96211	13 54	42.69	+01 31	20.5	0.0	0	022
3	1981 05	04.97735	13 54	42.03	+01 31	24.1	0.0	0	022
3	1981 05	12.91361	13 49	13.54	+02 05	12.6	0.0	0	022
3	1981 05	12.93093	13 49	12.86	+02 05	16.6	0.0	0	022
3	1981 05	28.93814	13 40	59.37	+02 41	39.9	0.0	0	022
3	1981 05	28.95961	13 40	58.88	+02 41	41.8	0.0	0	022
3	1981 06	01.88428	13 39	39.40	+02 44	08.6	0.0	0	022
3	1981 06	01.91406	13 39	38.85	+02 44	09.1	0.0	0	022
3	1981 06	02.89955	13 39	21.68	+02 44	22.1	0.0	0	022
3	1981 06	02.93002	13 39	21.08	+02 44	23.1	0.0	0	022
3	1981 06	23.90419	13 37	41.30	+02 16	11.1	0.0	0	022
3	1981 06	23.92705	13 37	41.44	+02 16	06.8	0.0	0	022
3	1981 07	27.83975	13 50	58.37	-00 06	10.5	0.0	0	022
3	1981 07	27.84355	13 50	58.59	-00 06	12.1	0.0	0	022
3	1981 07	27.86019	13 50	59.37	-00 06	18.4	0.0	0	022
3	1981 07	28.84984	13 51	37.23	-00 11	36.1	0.0	0	022
3	1981 07	28.86507	13 51	37.77	-00 11	40.7	0.0	0	022
4	1981 03	07.87843	10 19	42.68	+20 44	31.7	0.0	0	022
4	1981 03	07.90613	10 19	41.07	+20 44	41.7	0.0	0	022
4	1981 03	11.85348	10 16	12.65	+21 05	47.5	0.0	0	022
4	1981 03	11.87841	10 16	11.34	+21 05	54.9	0.0	0	022
4	1981 04	21.88091	10 03	46.48	+21 15	04.3	0.0	0	022
4	1981 04	21.88992	10 03	46.64	+21 15	02.2	0.0	0	022
4	1981 04	27.90176	10 06	05.95	+20 49	00.3	0.0	0	022
4	1981 04	27.92045	10 06	06.46	+20 48	54.3	0.0	0	022
4	1981 04	28.88655	10 06	34.28	+20 44	12.7	0.0	0	022
4	1981 04	28.90041	10 06	34.60	+20 44	08.4	0.0	0	022
4	1981 05	04.93267	10 09	59.96	+20 11	54.4	0.0	0	022
4	1981 05	04.95623	10 10	00.81	+20 11	45.7	0.0	0	022
4	1981 05	12.89803	10 15	48.56	+19 22	10.1	0.0	0	022
4	1981 05	12.90841	10 15	49.07	+19 22	05.8	0.0	0	022
4	1981 05	28.84499	10 31	06.75	+17 21	38.5	0.0	0	022

4	1981	05	28.86369	10	31	08.05	+17	21	28.6	0.0	0	022
4	1981	06	01.85831	10	35	36.55	+16	47	26.0	0.0	0	022
4	1981	06	01.87839	10	35	38.00	+16	47	15.7	0.0	0	022
4	1981	06	02.86925	10	36	46.69	+16	38	36.0	0.0	0	022
4	1981	06	02.89072	10	36	48.12	+16	38	25.1	0.0	0	022
6	1981	01	11.89668	03	24	35.00	-01	17	17.5	0.0	0	022
6	1981	01	11.91330	03	24	35.45	-01	17	04.3	0.0	0	022
7	1980	07	22.97117	23	55	44.06	+08	11	37.3	0.0	0	022
7	1980	07	22.98711	23	55	44.54	+08	11	44.9	0.0	0	022
7	1980	09	01.93263	23	55	16.75	+11	06	39.0	0.0	0	022
7	1980	09	01.93610	23	55	16.62	+11	06	39.3	0.0	0	022
7	1980	09	01.94648	23	55	16.22	+11	06	38.4	0.0	0	022
7	1980	09	02.84264	23	54	43.91	+11	05	58.1	0.0	0	022
7	1980	09	02.86133	23	54	43.15	+11	05	56.7	0.0	0	022
7	1980	09	02.86411	23	54	43.03	+11	05	57.0	0.0	0	022
7	1980	09	07.82553	23	51	23.21	+10	58	04.8	0.0	0	022
7	1980	09	07.84422	23	51	22.37	+10	58	02.7	0.0	0	022
7	1980	09	07.84769	23	51	22.28	+10	58	02.3	0.0	0	022
7	1980	09	08.83249	23	50	38.98	+10	55	38.1	0.0	0	022
7	1980	09	08.85050	23	50	38.22	+10	55	34.9	0.0	0	022
7	1980	09	08.85604	23	50	37.87	+10	55	35.1	0.0	0	022
7	1980	09	15.81961	23	45	06.81	+10	31	05.3	0.0	0	022
7	1980	09	15.83554	23	45	06.00	+10	31	01.1	0.0	0	022
7	1980	09	15.84523	23	45	05.52	+10	30	59.0	0.0	0	022
7	1980	09	30.82852	23	32	37.30	+09	02	06.0	0.0	0	022
7	1980	09	30.85275	23	32	36.16	+09	01	56.3	0.0	0	022
7	1980	09	30.85830	23	32	35.88	+09	01	53.0	0.0	0	022
7	1980	10	01.84448	23	31	50.51	+08	54	52.1	0.0	0	022
7	1980	10	01.85903	23	31	49.88	+08	54	45.8	0.0	0	022
7	1980	10	01.86249	23	31	49.66	+08	54	44.5	0.0	0	022
7	1980	10	13.87059	23	24	20.03	+07	26	03.4	0.0	0	022
7	1980	10	13.87475	23	24	19.91	+07	26	02.4	0.0	0	022
7	1980	10	13.89483	23	24	19.31	+07	25	53.4	0.0	0	022
7	1980	10	19.90659	23	22	09.31	+06	43	42.1	0.0	0	022
7	1980	10	19.92389	23	22	08.96	+06	43	35.7	0.0	0	022
7	1980	10	19.92597	23	22	08.86	+06	43	34.4	0.0	0	022
7	1980	10	28.93731	23	21	17.25	+05	49	23.1	0.0	0	022
7	1980	10	28.94009	23	21	17.32	+05	49	22.4	0.0	0	022
7	1980	10	28.95117	23	21	17.28	+05	49	19.7	0.0	0	022
7	1980	11	23.71051	23	34	47.73	+04	45	30.4	0.0	0	022
7	1980	11	23.72090	23	34	48.28	+04	45	31.3	0.0	0	022
7	1980	11	23.72297	23	34	48.45	+04	45	30.8	0.0	0	022
7	1980	11	29.70244	23	40	56.06	+04	51	48.6	0.0	0	022
7	1980	11	29.71145	23	40	56.58	+04	51	49.1	0.0	0	022
7	1980	11	29.71352	23	40	56.73	+04	51	49.8	0.0	0	022
7	1980	12	06.70411	23	49	16.84	+05	08	34.4	0.0	0	022
7	1980	12	06.71034	23	49	17.23	+05	08	35.4	0.0	0	022
7	1980	12	06.71310	23	49	17.47	+05	08	34.7	0.0	0	022
11	1981	06	23.96686	20	06	09.07	-17	49	02.0	0.0	0	022
11	1981	06	23.97102	20	06	08.90	-17	49	03.4	0.0	0	022
11	1981	07	28.88828	19	37	01.81	-20	34	28.2	0.0	0	022
11	1981	07	28.91597	19	37	00.28	-20	34	36.5	0.0	0	022
11	1981	08	04.86119	19	31	20.08	-21	07	19.9	0.0	0	022
11	1981	08	04.87713	19	31	19.35	-21	07	25.3	0.0	0	022
11	1981	09	06.85870	19	22	35.23	-22	47	43.9	0.0	0	022
11	1981	09	06.87809	19	22	35.53	-22	47	45.5	0.0	0	022
11	1981	09	16.83867	19	26	54.18	-22	57	47.0	0.0	0	022
11	1981	09	16.84352	19	26	54.36	-22	57	47.1	0.0	0	022
11	1981	09	29.83919	19	36	50.93	-22	56	28.3	0.0	0	022

11	1981	09	29.85788	19	36	51.96	-22	56	26.8	0.0	0	022
11	1981	09	30.84545	19	37	48.17	-22	55	39.8	0.0	0	022
11	1981	09	30.86485	19	37	49.27	-22	55	39.5	0.0	0	022
18	1981	07	27.94536	22	16	47.93	-06	35	28.4	0.0	0	022
18	1981	07	27.96683	22	16	47.61	-06	35	39.6	0.0	0	022
18	1981	07	28.95372	22	16	31.19	-06	43	52.6	0.0	0	022
18	1981	07	28.97796	22	16	30.70	-06	44	05.5	0.0	0	022
18	1981	08	04.91660	22	13	50.08	-07	50	12.2	0.0	0	022
18	1981	08	04.93252	22	13	49.61	-07	50	22.7	0.0	0	022
18	1981	09	06.92346	21	51	41.81	-14	52	50.2	0.0	0	022
18	1981	09	06.94215	21	51	41.05	-14	53	04.0	0.0	0	022
18	1981	09	16.80785	21	46	52.71	-16	45	09.3	0.0	0	022
18	1981	09	16.81200	21	46	52.61	-16	45	12.0	0.0	0	022
18	1981	09	29.89390	21	45	11.78	-18	32	08.8	0.0	0	022
18	1981	09	29.91259	21	45	11.86	-18	32	15.3	0.0	0	022
18	1981	09	30.89947	21	45	19.43	-18	38	08.3	0.0	0	022
18	1981	09	30.92163	21	45	19.57	-18	38	16.4	0.0	0	022
18	1981	10	23.83356	21	58	10.35	-19	30	25.8	0.0	0	022
18	1981	10	23.86922	21	58	12.35	-19	30	22.7	0.0	0	022
25	1980	07	22.94936	00	08	40.54	+28	27	06.0	0.0	0	022
25	1980	07	22.96529	00	08	41.30	+28	27	13.1	0.0	0	022
25	1980	09	01.90458	00	18	18.83	+28	35	42.9	0.0	0	022
25	1980	09	01.92051	00	18	18.38	+28	35	33.7	0.0	0	022
25	1980	09	01.92536	00	18	18.25	+28	35	31.4	0.0	0	022
25	1980	09	02.87242	00	17	54.48	+28	26	50.7	0.0	0	022
25	1980	09	02.89527	00	17	53.88	+28	26	38.2	0.0	0	022
25	1980	09	02.89942	00	17	53.79	+28	26	36.5	0.0	0	022
25	1980	09	07.85392	00	15	27.65	+27	33	32.4	0.0	0	022
25	1980	09	07.87609	00	15	26.89	+27	33	16.9	0.0	0	022
25	1980	09	07.88024	00	15	26.76	+27	33	13.9	0.0	0	022
25	1980	09	08.88115	00	14	53.25	+27	20	56.3	0.0	0	022
25	1980	09	08.89568	00	14	52.79	+27	20	45.7	0.0	0	022
25	1980	09	08.90608	00	14	52.40	+27	20	37.8	0.0	0	022
25	1980	09	15.85424	00	10	33.21	+25	41	24.3	0.0	0	022
25	1980	09	15.88125	00	10	32.10	+25	40	57.2	0.0	0	022
25	1980	09	15.88748	00	10	31.88	+25	40	52.5	0.0	0	022
25	1980	09	30.92617	00	00	21.30	+20	57	00.6	0.0	0	022
25	1980	09	30.92963	00	00	21.13	+20	56	56.5	0.0	0	022
25	1980	09	30.94279	00	00	20.64	+20	56	39.8	0.0	0	022
25	1980	10	01.89747	23	59	44.66	+20	36	25.1	0.0	0	022
25	1980	10	01.90301	23	59	44.44	+20	36	17.9	0.0	0	022
25	1980	10	01.92240	23	59	43.68	+20	35	53.4	0.0	0	022
25	1980	10	12.86569	23	53	58.38	+16	37	31.1	0.0	0	022
25	1980	10	12.86847	23	53	58.27	+16	37	26.9	0.0	0	022
25	1980	10	12.88716	23	53	57.79	+16	37	02.6	0.0	0	022
25	1980	10	19.93177	23	51	44.05	+14	06	38.9	0.0	0	022
25	1980	10	19.95185	23	51	43.66	+14	06	12.4	0.0	0	022
25	1980	10	28.90858	23	50	53.94	+11	10	43.3	0.0	0	022
25	1980	10	28.91204	23	50	54.05	+11	10	40.8	0.0	0	022
25	1980	10	28.93213	23	50	54.01	+11	10	18.4	0.0	0	022
25	1980	10	30.85118	23	51	01.52	+10	35	49.8	0.0	0	022
25	1980	10	30.85464	23	51	01.52	+10	35	46.2	0.0	0	022
25	1980	10	30.87126	23	51	01.56	+10	35	28.3	0.0	0	022
25	1980	11	23.74756	00	00	54.43	+05	18	53.9	0.0	0	022
25	1980	11	23.75034	00	00	54.55	+05	18	51.7	0.0	0	022
25	1980	11	23.76626	00	00	55.15	+05	18	42.3	0.0	0	022
39	1981	04	27.95699	14	05	36.90	+00	43	33.5	0.0	0	022
39	1981	04	27.97777	14	05	35.85	+00	43	40.5	0.0	0	022
39	1981	04	28.94872	14	04	50.65	+00	48	54.7	0.0	0	022

39	1981	04	28.95979	14	04	50.07	+00	48	58.0	0.0	0	022
39	1981	04	29.96434	14	04	03.47	+00	54	15.9	0.0	0	022
39	1981	04	29.98512	14	04	02.51	+00	54	22.4	0.0	0	022
39	1981	05	04.96211	14	00	16.19	+01	18	27.7	0.0	0	022
39	1981	05	04.97735	14	00	15.52	+01	18	31.5	0.0	0	022
39	1981	05	12.91361	13	54	41.91	+01	48	55.9	0.0	0	022
39	1981	05	12.93093	13	54	41.24	+01	48	58.6	0.0	0	022
39	1981	05	28.93814	13	46	15.55	+02	17	15.2	0.0	0	022
39	1981	05	28.95961	13	46	14.98	+02	17	15.3	0.0	0	022
39	1981	06	01.88428	13	44	54.09	+02	17	19.7	0.0	0	022
39	1981	06	01.91406	13	44	53.54	+02	17	20.0	0.0	0	022
39	1981	06	02.89955	13	44	36.14	+02	16	55.9	0.0	0	022
39	1981	06	02.93002	13	44	35.56	+02	16	54.7	0.0	0	022
39	1981	06	23.90419	13	43	13.70	+01	33	04.6	0.0	0	022
39	1981	06	23.92705	13	43	13.80	+01	32	58.2	0.0	0	022
39	1981	07	28.84984	13	59	26.65	-01	28	42.1	0.0	0	022
39	1981	07	28.86507	13	59	27.25	-01	28	47.3	0.0	0	022
40	1980	09	07.91418	00	38	10.65	-04	11	37.0	0.0	0	022
40	1980	09	07.93080	00	38	09.97	-04	11	43.5	0.0	0	022
40	1980	09	07.93356	00	38	09.88	-04	11	44.2	0.0	0	022
40	1980	09	08.94953	00	37	27.84	-04	18	16.2	0.0	0	022
40	1980	09	08.96201	00	37	27.31	-04	18	21.3	0.0	0	022
40	1980	09	15.91865	00	32	03.19	-05	04	13.9	0.0	0	022
40	1980	09	15.93942	00	32	02.08	-05	04	22.7	0.0	0	022
40	1980	09	15.94634	00	32	01.72	-05	04	25.1	0.0	0	022
51	1980	12	04.96512	04	26	45.18	+05	30	43.3	0.0	0	022
51	1980	12	04.96997	04	26	44.98	+05	30	42.1	0.0	0	022
51	1980	12	04.98035	04	26	44.29	+05	30	40.7	0.0	0	022
51	1981	01	05.84934	04	03	10.65	+05	40	14.8	0.0	0	022
51	1981	01	05.87635	04	03	10.16	+05	40	19.8	0.0	0	022
51	1981	01	07.76528	04	02	35.17	+05	46	51.0	0.0	0	022
51	1981	01	07.78882	04	02	34.75	+05	46	57.1	0.0	0	022
51	1981	01	11.86966	04	01	41.43	+06	02	56.6	0.0	0	022
51	1981	01	11.89044	04	01	41.21	+06	03	01.7	0.0	0	022
51	1981	01	13.84655	04	01	26.90	+06	11	32.7	0.0	0	022
51	1981	01	13.86940	04	01	26.74	+06	11	37.3	0.0	0	022
51	1981	02	01.76869	04	05	01.95	+07	54	40.4	0.0	0	022
51	1981	02	01.79086	04	05	02.60	+07	54	48.6	0.0	0	022
51	1981	02	01.83206	04	05	03.58	+07	55	03.4	0.0	0	022
51	1981	02	01.85907	04	05	04.35	+07	55	13.4	0.0	0	022
51	1981	02	05.76331	04	07	04.75	+08	19	52.7	0.0	0	022
51	1981	02	05.77579	04	07	05.13	+08	19	57.6	0.0	0	022
51	1981	02	05.81491	04	07	06.41	+08	20	13.2	0.0	0	022
51	1981	02	05.83777	04	07	07.20	+08	20	22.0	0.0	0	022
51	1981	02	08.78975	04	08	54.31	+08	39	27.4	0.0	0	022
51	1981	02	08.81330	04	08	55.15	+08	39	36.9	0.0	0	022
78	1980	10	12.89478	02	09	27.06	+25	35	54.8	0.0	0	022
78	1980	10	12.92041	02	09	25.70	+25	35	54.5	0.0	0	022
78	1980	10	13.97863	02	08	26.81	+25	35	32.0	0.0	0	022
78	1980	10	13.99872	02	08	25.69	+25	35	31.3	0.0	0	022
78	1980	10	28.82063	01	53	21.84	+25	06	50.3	0.0	0	022
78	1980	10	28.83933	01	53	20.60	+25	06	47.0	0.0	0	022
78	1980	10	30.88027	01	51	11.92	+24	59	42.9	0.0	0	022
78	1980	10	30.90520	01	51	10.34	+24	59	37.5	0.0	0	022
90	1981	02	08.92133	10	54	30.14	+10	14	03.8	0.0	0	022
90	1981	02	08.94280	10	54	29.36	+10	14	08.4	0.0	0	022
107	1981	01	05.94560	09	16	33.69	+05	53	08.5			022
107	1981	01	05.96154	09	16	33.23	+05	53	10.4			022
107	1981	01	11.97563	09	13	34.62	+06	07	20.1	0.0	0	022



107	1981	02	01.86877	08	59	57.85	+07	31	01.7	0.0	0	022
107	1981	02	01.88955	08	59	56.91	+07	31	08.9	0.0	0	022
107	1981	02	05.84608	08	57	07.87	+07	51	33.9	0.0	0	022
107	1981	02	05.86824	08	57	06.90	+07	51	40.0	0.0	0	022
107	1981	02	08.88705	08	54	59.23	+08	07	52.5	0.0	0	022
107	1981	02	08.91406	08	54	58.10	+08	08	00.9	0.0	0	022
129	1981	06	01.92133	18	49	11.26	-07	53	16.5			022
129	1981	06	01.93772	18	49	10.78	-07	53	17.5			022
129	1981	06	02.93868	18	48	42.98	-07	54	33.6			022
129	1981	06	02.95461	18	48	42.61	-07	54	35.7			022
148	1981	07	27.91766	21	38	03.27	-07	35	28.9	0.0	0	022
148	1981	07	27.93844	21	38	02.49	-07	35	44.0	0.0	0	022
148	1981	07	28.92498	21	37	25.01	-07	47	53.2	0.0	0	022
148	1981	07	28.94784	21	37	24.12	-07	48	10.8	0.0	0	022
148	1981	08	04.88544	21	32	36.50	-09	19	00.8	0.0	0	022
148	1981	08	04.90898	21	32	35.52	-09	19	20.5	0.0	0	022
148	1981	09	06.88468	21	08	26.70	-17	10	06.9	0.0	0	022
148	1981	09	06.91861	21	08	25.63	-17	10	32.8	0.0	0	022
148	1981	09	29.86481	21	02	29.09	-21	14	31.0	0.0	0	022
148	1981	09	29.88766	21	02	29.06	-21	14	42.3	0.0	0	022
148	1981	09	30.87108	21	02	33.48	-21	22	29.7	0.0	0	022
148	1981	09	30.89324	21	02	33.62	-21	22	40.2	0.0	0	022
153	1981	01	05.94560	09	15	49.76	+05	45	57.3			022
153	1981	01	05.96154	09	15	49.47	+05	46	00.6			022
153	1981	02	01.86877	09	00	39.93	+06	28	26.4	0.0	0	022
153	1981	02	01.88955	09	00	39.05	+06	28	28.9	0.0	0	022
153	1981	02	05.84608	08	58	08.75	+06	38	56.1	0.0	0	022
153	1981	02	05.86824	08	58	07.78	+06	38	59.7	0.0	0	022
153	1981	02	08.88705	08	56	13.66	+06	47	28.2	0.0	0	022
153	1981	02	08.91406	08	56	12.68	+06	47	35.0	0.0	0	022
190	1980	09	30.89950	01	30	08.36	+05	55	03.4	0.0	0	022
190	1980	09	30.91890	01	30	07.69	+05	54	58.1	0.0	0	022
190	1980	10	01.93071	01	29	34.00	+05	50	06.1	0.0	0	022
190	1980	10	01.95148	01	29	33.36	+05	50	00.5	0.0	0	022
190	1980	10	12.92976	01	23	02.85	+04	55	42.8	0.0	0	022
190	1980	10	12.95331	01	23	02.03	+04	55	35.9	0.0	0	022
190	1980	10	13.91249	01	22	26.70	+04	50	49.6	0.0	0	022
190	1980	10	13.93535	01	22	25.75	+04	50	43.5	0.0	0	022
190	1980	10	28.84867	01	13	26.84	+03	40	32.4	0.0	0	022
190	1980	10	28.87153	01	13	26.06	+03	40	26.0	0.0	0	022
190	1980	10	30.96718	01	12	15.71	+03	31	33.6	0.0	0	022
190	1980	10	30.98657	01	12	15.02	+03	31	28.4	0.0	0	022
240	1980	10	13.91249	01	34	39.82	+05	42	05.5	0.0	0	022
240	1980	10	13.93535	01	34	38.57	+05	41	58.5	0.0	0	022
240	1980	10	28.84867	01	22	26.89	+04	32	14.7	0.0	0	022
240	1980	10	28.87153	01	22	25.76	+04	32	08.6	0.0	0	022
240	1980	10	30.96718	01	20	51.45	+04	24	07.9	0.0	0	022
240	1980	10	30.98657	01	20	50.54	+04	24	03.8	0.0	0	022
334	1981	02	08.92133	10	48	37.92	+10	14	51.1	0.1+	1+	022
334	1981	02	08.94280	10	48	37.24	+10	14	57.0	0.1+	1+	022
389	1980	09	01.87308	23	26	06.30	+09	01	36.9	0.0	0	022
389	1980	09	01.89593	23	26	05.11	+09	01	32.8	0.0	0	022
389	1980	09	02.90497	23	25	14.68	+08	58	40.0	0.0	0	022
389	1980	09	02.91743	23	25	13.99	+08	58	38.1	0.0	0	022
389	1980	09	07.88716	23	20	58.88	+08	41	57.8	0.0	0	022
389	1980	09	07.90725	23	20	57.82	+08	41	54.1	0.0	0	022
389	1980	09	08.91941	23	20	04.80	+08	38	01.7	0.0	0	022
389	1980	09	08.93810	23	20	03.85	+08	37	57.5	0.0	0	022
389	1980	09	15.89441	23	13	58.52	+08	07	37.2	0.0	0	022

389	1980	09	15.91241	23	13	57.49	+08	07	32.0	0.0	0	022
389	1980	09	30.86730	23	01	55.63	+06	47	47.9	0.0	0	022
389	1980	09	30.88947	23	01	54.69	+06	47	40.5	0.0	0	022
389	1980	10	01.86873	23	01	13.50	+06	42	08.6	0.0	0	022
389	1980	10	01.89088	23	01	12.55	+06	42	01.3	0.0	0	022
389	1980	10	12.84353	22	54	48.71	+05	41	32.0	0.0	0	022
389	1980	10	12.85947	22	54	48.29	+05	41	26.7	0.0	0	022
389	1980	10	13.95369	22	54	18.45	+05	35	42.4	0.0	0	022
389	1980	10	13.97031	22	54	17.95	+05	35	36.7	0.0	0	022
389	1980	10	28.87949	22	50	27.42	+04	28	26.6	0.0	0	022
389	1980	10	28.90235	22	50	27.26	+04	28	20.9	0.0	0	022
389	1980	10	30.82140	22	50	21.84	+04	21	31.8	0.0	0	022
478	1980	12	04.88097	02	34	02.32	+15	56	37.0	0.0	0	022
478	1980	12	04.90175	02	34	01.72	+15	56	29.1	0.0	0	022
478	1980	12	06.74497	02	33	10.17	+15	44	19.4	0.0	0	022
478	1980	12	06.75950	02	33	09.83	+15	44	14.7	0.0	0	022
478	1980	12	08.80010	02	32	17.83	+15	31	18.1			022
478	1980	12	08.82711	02	32	17.19	+15	31	07.8			022
480	1980	10	19.99052	04	57	51.34	+21	53	25.2	0.0	0	022
480	1980	10	20.01410	04	57	51.13	+21	53	13.4	0.0	0	022
480	1981	02	01.76869	04	05	05.25	+08	32	02.9	0.0	0	022
480	1981	02	01.79086	04	05	05.91	+08	32	02.2	0.0	0	022
480	1981	02	01.83206	04	05	06.89	+08	32	00.6	0.0	0	022
480	1981	02	01.85907	04	05	07.62	+08	32	00.3	0.0	0	022
480	1981	02	05.76331	04	07	02.33	+08	31	32.1	0.0	0	022
480	1981	02	05.77579	04	07	02.86	+08	31	31.8	0.0	0	022
480	1981	02	05.81491	04	07	03.83	+08	31	32.3	0.0	0	022
480	1981	02	05.83777	04	07	04.73	+08	31	32.4	0.0	0	022
480	1981	02	08.78975	04	08	45.79	+08	32	18.5	0.0	0	022
480	1981	02	08.81330	04	08	46.63	+08	32	17.8	0.0	0	022
499	1980	10	12.97440	03	10	49.02	+19	29	51.3			022
499	1980	10	12.99517	03	10	48.36	+19	29	50.1			022
499	1980	10	30.91420	03	00	27.75	+18	43	04.9	0.1+	1+	022
499	1980	10	30.93844	03	00	26.80	+18	43	01.4	0.1+	1+	022
499	1980	12	04.88097	02	38	03.24	+16	42	40.1	0.1+	0	022
499	1980	12	04.90175	02	38	02.59	+16	42	38.2	0.1+	0	022
499	1980	12	06.74497	02	37	14.41	+16	37	24.3	0.1+	0	022
499	1980	12	06.75950	02	37	14.11	+16	37	20.3	0.1+	0	022
526	1981	02	08.92133	10	50	41.30	+08	20	37.4	0.0	0	022
526	1981	02	08.94280	10	50	40.59	+08	20	42.8	0.0	0	022
693	1980	10	12.89478	02	09	16.63	+27	46	24.6	0.0	0	022
693	1980	10	12.92041	02	09	15.22	+27	46	25.5	0.0	0	022
693	1980	10	13.97863	02	08	16.86	+27	47	06.6	0.0	0	022
693	1980	10	13.99872	02	08	15.75	+27	47	08.0	0.0	0	022
693	1980	10	28.82063	01	53	47.43	+27	36	06.4	0.0	0	022
693	1980	10	28.83933	01	53	46.31	+27	36	03.0	0.0	0	022
704	1980	09	15.95293	04	52	56.52	+37	05	39.0	0.0	0	022
704	1980	09	15.97647	04	52	57.64	+37	05	41.8	0.0	0	022
704	1980	10	19.95808	05	06	10.71	+37	55	10.6	0.0	0	022
704	1980	10	19.98024	05	06	10.51	+37	55	11.4	0.0	0	022
704	1980	10	19.98370	05	06	10.51	+37	55	10.5	0.0	0	022
704	1981	01	05.91686	04	08	46.90	+30	28	01.2	0.0	0	022
704	1981	01	05.93764	04	08	46.45	+30	27	49.3	0.0	0	022
704	1981	01	11.95104	04	07	22.50	+29	38	01.3	0.0	0	022
704	1981	01	11.96731	04	07	22.31	+29	37	53.3	0.0	0	022
704	1981	01	13.90611	04	07	09.02	+29	22	35.5	0.0	0	022
704	1981	01	13.93242	04	07	08.92	+29	22	24.5	0.0	0	022
704	1981	02	08.85624	04	13	56.04	+26	40	02.0	0.0	0	022
704	1981	02	08.88047	04	13	56.80	+26	39	55.7	0.0	0	022

704	1981	03	24.82405	04	55	45.83	+24	27	20.4	0.0	0	022
704	1981	03	24.84067	04	55	47.11	+24	27	17.5	0.0	0	022
1275	1980	10	12.92976	01	31	42.97	+03	56	32.7	0.0	0	022
1275	1980	10	12.95331	01	31	41.94	+03	56	14.3	0.0	0	022
1275	1980	10	13.91249	01	31	02.14	+03	44	27.7	0.0	0	022
1275	1980	10	13.93535	01	31	01.29	+03	44	11.5	0.0	0	022
1639	1980	10	12.89478	01	59	18.84	+26	23	15.7	0.0	0	022
1639	1980	10	12.92041	01	59	17.34	+26	23	15.7	0.0	0	022
1639	1980	10	13.97863	01	58	18.05	+26	22	59.5	0.0	0	022
1639	1980	10	13.99872	01	58	16.95	+26	22	59.5	0.0	0	022
1639	1980	10	28.82063	01	43	28.05	+25	51	03.3	0.0	0	022
1639	1980	10	28.83933	01	43	26.91	+25	50	58.5	0.0	0	022
1639	1980	10	30.88027	01	41	24.68	+25	42	55.9	0.0	0	022
1639	1980	10	30.90520	01	41	23.27	+25	42	49.7	0.0	0	022

## OBSERVATIONS MADE AT ZIMMERWALD BY P. WILD.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1982 KJ	1982	05	25.98229	14 26 21.51 +05 39 21.3		1	026
1982 KJ	1982	06	09.90278	14 20 27.23 +05 20 58.8			026
1982 KJ	1982	06	17.90556	14 19 14.60 +04 52 16.2			026
1982 KJ	1982	06	24.95035	14 19 23.60 +04 17 42.2	16.5		026

Note 1: correction to MPC 6993.

## OBSERVATIONS MADE AT TAUTENBURG BY F. BORNGEN AND K. KIRSCH. COMMUNICATED BY S. MARX.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
689	1982	04	25.92986	12 50 54.50 -00 22 56.0		033
689	1982	04	25.95347	12 50 53.35 -00 22 47.4		033
689	1982	04	27.90833	12 49 23.25 -00 11 48.1	17.5	033
689	1982	04	27.94167	12 49 21.65 -00 11 37.0		033
1361	1982	04	27.96354	12 27 56.73 +11 45 20.6	16.5	033
1361	1982	04	27.98958	12 27 56.15 +11 45 35.7		033
1982 HH2 *	1982	04	25.97049	12 21 37.44 +16 32 10.1	18.1	033
1982 HH2	1982	04	27.02569	12 21 18.76 +16 35 29.8		033
1982 HJ2 *	1982	04	25.97049	12 27 52.08 +15 38 45.3	17.5	033
1982 HJ2	1982	04	27.02569	12 27 37.17 +15 53 35.0		033
1982 HK2 *	1982	04	25.97049	12 31 31.15 +14 46 13.3	18.2	033
1982 HK2	1982	04	27.02569	12 30 54.58 +14 44 38.2		033
1982 HL2 *	1982	04	27.89549	10 09 43.28 +15 00 05.0	18.1	033
1982 HL2	1982	04	27.92917	10 09 43.73 +14 59 57.7		033
1982 HM2 *	1982	04	27.89549	10 10 11.44 +14 47 17.3	18.9	033
1982 HM2	1982	04	27.92917	10 10 11.92 +14 47 12.9		033
1982 HN2 *	1982	04	27.89549	10 12 02.78 +13 35 24.5	18.0	033
1982 HN2	1982	04	27.92917	10 12 03.27 +13 35 20.4		033
1982 HO2 *	1982	04	27.89549	10 13 44.55 +15 19 01.1	17.9	033
1982 HO2	1982	04	27.92917	10 13 44.98 +15 18 49.2		033
1982 HP2 *	1982	04	27.89549	10 14 18.15 +15 57 34.0	18.2	033
1982 HP2	1982	04	27.92917	10 14 19.07 +15 57 20.5		033
1982 HQ2 *	1982	04	27.89549	10 19 30.04 +15 10 18.3	18.1	033
1982 HQ2	1982	04	27.92917	10 19 30.28 +15 10 13.1	17.5	033
1982 HR2	1982	04	25.91736	10 18 36.56 +13 28 10.9		033
1982 HR2	1982	04	25.94236	10 18 37.20 +13 28 03.3		033
1982 HR2 *	1982	04	27.89549	10 19 35.26 +13 17 41.8	16.9	033
1982 HR2	1982	04	27.92917	10 19 36.31 +13 17 30.3		033
1982 HS2 *	1982	04	27.90833	12 46 32.72 +00 09 55.3	17.7	033
1982 HS2	1982	04	27.94167	12 46 31.69 +00 10 07.7		033
1982 HT2 *	1982	04	27.90833	12 47 19.05 -00 38 05.6	18.8	033
1982 HT2	1982	04	27.94167	12 47 17.85 -00 38 00.0		033
1982 HU2	1982	04	25.92986	12 48 30.38 +00 27 10.0		033

1982 HU2		1982 04 25.95347	12 48 29.58	+00 27 16.9			033
1982 HU2 *		1982 04 27.90833	12 47 24.04	+00 35 21.4	17.8		033
1982 HU2		1982 04 27.94167	12 47 22.91	+00 35 29.3			033
1982 HV2 *		1982 04 27.90833	12 48 52.32	-02 25 32.6	18.1		033
1982 HV2		1982 04 27.94167	12 48 51.05	-02 25 24.5			033
1982 HW2		1982 04 25.92986	12 50 22.03	-02 36 59.4			033
1982 HW2		1982 04 25.95347	12 50 21.14	-02 36 55.6			033
1982 HW2 *		1982 04 27.90833	12 49 10.70	-02 31 36.9	17.6		033
1982 HW2		1982 04 27.94167	12 49 09.48	-02 31 31.8			033
1982 HX2		1982 04 25.92986	12 51 13.96	-00 56 20.0			033
1982 HX2		1982 04 25.95347	12 51 12.97	-00 56 17.0			033
1982 HX2 *		1982 04 27.90833	12 49 57.32	-00 52 17.0	17.8		033
1982 HX2		1982 04 27.94167	12 49 55.97	-00 52 13.4			033
1982 HY2 *		1982 04 27.90833	12 51 52.29	-02 13 32.5	19.0		033
1982 HY2		1982 04 27.94167	12 51 51.06	-02 13 27.0			033
1982 HZ2 *		1982 04 27.90833	12 52 41.60	-02 36 54.8	18.5		033
1982 HZ2		1982 04 27.94167	12 52 40.28	-02 36 47.0			033
1982 HA3 *		1982 04 27.90833	12 53 23.92	-00 35 29.0	18.0		033
1982 HA3		1982 04 27.94167	12 53 21.49	-00 35 45.1			033
1982 HB3 *		1982 04 27.90833	12 55 13.51	-00 24 08.2	18.1		033
1982 HB3		1982 04 27.94167	12 55 12.22	-00 24 02.2			033
1982 HC3 *		1982 04 27.90833	12 56 00.43	+00 13 47.7	18.1		033
1982 HC3		1982 04 27.94167	12 55 59.17	+00 14 01.7			033
1982 HD3		1982 04 25.92986	12 57 40.50	+00 19 56.4			033
1982 HD3		1982 04 25.95347	12 57 39.34	+00 20 00.1			033
1982 HD3 *		1982 04 27.90833	12 56 06.74	+00 25 07.7	17.8		033
1982 HD3		1982 04 27.94167	12 56 05.15	+00 25 12.8			033
1982 HE3 *		1982 04 27.90833	12 56 35.02	-00 22 34.6	19.1		033
1982 HE3		1982 04 27.94167	12 56 33.95	-00 22 22.0			033
1982 HF3		1982 04 25.92986	12 59 27.51	-02 20 11.5			033
1982 HF3		1982 04 25.95347	12 59 26.45	-02 20 09.9			033
1982 HF3 *		1982 04 27.90833	12 57 57.00	-02 18 42.8	18.2		033
1982 HF3		1982 04 27.94167	12 57 55.37	-02 18 41.5			033
1982 HG3 *		1982 04 27.90833	12 57 59.29	+00 27 32.0	18.9		033
1982 HG3		1982 04 27.94167	12 57 57.99	+00 27 37.0			033
1982 HH3 *		1982 04 27.90833	12 58 40.35	-00 24 16.8	18.8		033
1982 HH3		1982 04 27.94167	12 58 38.78	-00 24 09.1			033
1982 HJ3 *		1982 04 27.90833	12 58 50.91	-01 23 55.9	18.6		033
1982 HJ3		1982 04 27.94167	12 58 49.31	-01 23 50.5			033

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
318	1982 06	18.00325	18 08 22.13	-09 13 54.7		046
318	1982 06	18.01465	18 08 21.51	-09 13 54.0		046
729	1982 06	20.99867	20 04 27.21	-12 44 52.9		046
729	1982 06	21.01140	20 04 26.79	-12 44 57.6		046
755	1982 06	19.93502	17 46 19.74	-18 19 10.4		046
755	1982 06	19.94775	17 46 19.10	-18 19 11.2		046
755	1982 06	20.90562	17 45 31.59	-18 19 00.9		046
755	1982 06	20.91836	17 45 30.96	-18 19 01.1		046
899	1982 06	24.90817	18 01 42.98	-17 16 27.2		046
899	1982 06	24.92235	18 01 42.10	-17 16 23.5		046
2214	1982 06	24.94423	18 22 54.58	-00 23 06.1		046
2214	1982 06	24.95834	18 22 53.91	-00 23 03.5		046
2460	1982 03	27.03524	12 54 09.65	-03 55 47.7		046
1938 GC	1982 06	17.97553	17 52 40.64	-13 10 42.4		046
1938 GC	1982 06	17.98699	17 52 40.02	-13 10 45.0		046
1982 FG1	1982 03	24.02058	12 55 39.45	-05 05 51.8		046
1982 FM1	1982 03	23.89459	11 14 36.24	-04 01 12.6		046

1982 FM1	1982 03	23.90872	11 14	35.46	-04 01	04.1	16.7	046
1982 FS2 *	1982 03	27.03524	12 57	40.22	-01 54	34.8	17.0	046
1982 FS2	1982 03	27.04936	12 57	39.48	-01 54	26.4		046
1982 FS2	1982 03	27.96209	12 56	59.35	-01 44	47.9		046
1982 FS2	1982 03	27.97616	12 56	58.60	-01 44	37.4		046
1982 FS2	1982 03	28.95405	12 56	15.05	-01 34	21.0		046
1982 MC *	1982 06	20.93606	18 03	54.99	-15 45	48.6	16.4	046
1982 MC	1982 06	20.94880	18 03	54.32	-15 45	46.4		046
1982 MD *	1982 06	20.96784	20 02	13.86	-09 35	44.9	17.0	046
1982 MD	1982 06	20.98057	20 02	13.18	-09 35	41.7		046
1982 ME *	1982 06	20.96784	20 03	14.62	-11 16	29.1	17.5	046
1982 ME	1982 06	20.98057	20 03	13.79	-11 16	24.6		046
1982 MF *	1982 06	20.96784	20 03	45.71	-10 44	26.3	17.3	046
1982 MF	1982 06	20.98057	20 03	45.09	-10 44	24.2		046
1982 MG *	1982 06	24.90817	18 02	56.95	-17 13	24.2	16.6	046
1982 MG	1982 06	24.92235	18 02	57.23	-17 13	23.4		046

## OBSERVATIONS MADE AT BELGRADE BY Z. KNEZEVIC.

Object	Date	UT	R. A. (1950)			Decl.		Obs.
6	1980 11	17.85839	03 45	07.98	-09 12	01.6		057
6	1980 11	17.86726	03 45	07.46	-09 12	01.5		057
8	1980 06	16.90336	16 29	28.65	-16 01	37.6		057
8	1980 06	16.91325	16 29	28.01	-16 01	38.7		057
8	1980 06	16.92274	16 29	27.48	-16 01	37.7		057
8	1980 06	16.93967	16 29	26.27	-16 01	38.7		057
8	1980 06	16.94862	16 29	25.97	-16 01	38.9		057
11	1980 03	18.91076	11 04	42.54	+11 21	19.7		057
11	1980 03	18.91962	11 04	42.04	+11 21	21.1		057
11	1980 03	18.92992	11 04	41.45	+11 21	24.7		057
18	1980 04	15.81962	13 35	25.25	+03 30	07.3		057
18	1980 04	15.82943	13 35	24.80	+03 30	11.8		057
18	1980 04	15.84025	13 35	24.23	+03 30	14.9		057
22	1981 11	23.85394	04 29	04.54	+21 47	54.6		057
22	1981 11	23.86456	04 29	03.76	+21 47	57.8		057
22	1981 11	23.87509	04 29	03.17	+21 48	00.0		057
59	1981 11	23.81543	03 11	15.70	+04 36	32.4		057
59	1981 11	23.82917	03 11	15.08	+04 36	30.0		057
97	1981 02	03.84427	08 00	01.29	+08 47	21.0		057
97	1981 02	03.83351	08 00	00.60	+08 47	26.6		057
129	1980 03	18.87610	08 58	44.48	+20 09	42.9		057
129	1980 03	18.88686	08 58	44.21	+20 09	44.8		057
129	1981 07	23.88683	18 12	34.23	-12 32	35.7		057
129	1981 07	23.90631	18 12	33.71	-12 32	48.7		057
135	1981 07	23.97537	20 50	56.44	-20 45	58.7		057
230	1981 07	23.92859	19 49	18.58	-06 29	55.8		057
230	1981 07	23.95330	19 49	17.15	-06 29	58.1		057
451	1981 02	03.86551	08 31	55.06	+33 07	34.7		057
451	1981 02	03.87784	08 31	54.37	+33 07	37.5		057

## OBSERVATIONS MADE AT TURKU. MEASURED BY L. OTERMA AND M.-O. SNARE.

Object	Date	UT	R. A. (1950)			Decl.		N Obs.
2459	1940 11	29.98973	04 24	37.70	+14 03	01.8		062
2459	1940 12	04.80287	04 20	33.30	+13 40	16.6		062
2459	1940 12	28.74686	04 04	15.51	+12 21	31.5		062
2459	1940 12	28.78170	04 04	14.35	+12 21	27.2		062
2459	1940 12	30.77228	04 03	22.72	+12 18	03.3		062
2687	1942 04	17.96022	13 58	20.23	-05 41	33.8		062
1938 BD	1938 01	26.88558	09 13	15.16	+24 44	39.5		062
1938 BD	1938 01	27.89528	09 12	15.36	+24 52	04.6		062

1938	BD	1938	01	27.92583	09	12	13.47	+24	52	21.2	062
1938	CD	1938	02	06.91569	09	54	19.76	+13	34	51.3	062
1938	CD	1938	02	06.94231	09	54	18.38	+13	34	45.2	062
1938	CD	1938	02	07.86538	09	53	23.27	+13	33	07.4	062
1938	CE	1938	02	06.92264	09	27	38.46	+13	41	56.0	062
1938	CE	1938	02	06.94752	09	27	36.77	+13	42	04.2	062
1938	CE	1938	02	07.85890	09	26	40.27	+13	49	18.6	062
1938	DG	1938	02	17.83363	08	41	27.31	+22	58	12.6	062
1938	DG	1938	02	17.85794	08	41	25.96	+22	58	06.7	062
1938	DL	1938	02	19.82788	10	19	58.31	+17	30	47.3	062
1938	DL	1938	02	19.86330	10	19	56.39	+17	30	57.9	062
1938	DN	1938	02	20.85064	10	48	21.63	+22	36	07.2	1 062
1938	DN	1938	02	20.88414	10	48	20.17	+22	36	26.2	062
1938	DN	1938	02	22.80675	10	46	42.00	+22	55	46.1	1 062
1938	DN	1938	04	01.84090	10	19	18.77	+26	31	34.6	062
1938	DN	1938	04	04.92664	10	18	19.48	+26	33	04.3	062
1938	DQ	1938	02	19.89168	11	37	21.07	+15	33	02.6	062
1938	DQ	1938	02	22.86248	11	35	20.23	+16	08	34.9	062
1938	DQ	1938	02	22.90177	11	35	18.57	+16	09	02.3	062
1938	DQ	1938	03	07.86980	11	24	47.18	+18	34	04.6	062
1938	DK2	1938	02	22.92074	11	54	24.22	+07	21	50.6	4 062
1938	DK2	1938	02	25.03039	11	53	06.52	+07	36	44.0	4 062
1938	DK2	1938	02	25.05748	11	53	05.84	+07	36	52.9	062
1938	GF	1938	04	05.01797	13	32	21.51	+07	57	14.6	062
1938	GF	1938	04	05.05222	13	32	19.65	+07	57	16.0	062
1938	GF	1938	04	05.06311	13	32	19.00	+07	57	19.6	062
1938	GF	1938	04	06.99477	13	30	30.53	+08	00	46.2	062
1938	GG	1938	04	06.99477	13	36	07.43	+07	33	28.1	3 062
1938	GG	1938	04	08.97225	13	34	06.10	+07	30	27.3	3 062
1938	GG	1938	04	09.00002	13	34	04.51	+07	30	20.9	062
1938	GJ	1938	04	07.00126	13	47	21.02	+02	10	51.0	1 062
1938	GJ	1938	04	08.98613	13	45	55.67	+02	26	25.6	1 062
1938	GJ	1938	04	09.04852	13	45	52.75	+02	26	53.2	1 062
1938	GJ	1938	04	27.96294	13	31	53.00	+04	29	15.0	062
1938	GJ	1938	04	27.99697	13	31	51.67	+04	29	21.0	062
1938	GJ	1938	04	28.94406	13	31	12.58	+04	33	46.0	062
1938	GJ	1938	05	02.96895	13	28	33.73	+04	50	17.5	062
1938	GM	1938	04	05.84366	11	46	48.82	+03	53	28.3	4 062
1938	GM	1938	04	05.87589	11	46	47.63	+03	53	38.5	4 062
1938	GM	1938	04	05.90292	11	46	46.25	+03	53	49.6	4 062
1938	SL	1938	09	22.98346	01	38	01.97	-00	05	51.0	062
1938	SL	1938	09	24.97644	01	36	43.43	-00	04	56.5	062
1938	SL	1938	09	26.94961	01	35	18.18	-00	03	59.2	062
1938	SL	1938	10	15.85501	01	17	58.64	+00	18	47.2	062
1938	SL	1938	10	21.88789	01	12	17.31	+00	35	02.4	062
1938	SL	1938	11	15.83363	00	58	34.37	+02	45	26.5	062
1938	SD1	1938	09	16.93016	00	08	19.95	+04	39	21.7	062
1938	SD1	1938	09	21.81031	00	03	40.09	+04	24	22.4	062
1938	SD1	1938	09	26.87866	23	58	38.92	+04	06	17.9	062
1938	SD1	1938	09	26.88329	23	58	38.61	+04	06	16.3	062
1938	SD1	1938	11	15.67090	23	38	13.66	+02	36	21.8	062
1938	SD1	1938	11	15.79891	23	38	16.65	+02	36	38.9	062
1938	US	1938	10	22.02273	03	27	50.51	+14	38	28.9	062
1938	US	1938	10	22.98491	03	27	11.27	+14	32	39.9	062
1938	US	1938	11	02.98985	03	18	35.64	+13	23	27.0	062
1938	US	1938	11	15.98353	03	07	14.47	+12	02	58.0	062
1938	US	1938	11	26.07169	02	59	02.73	+11	09	28.3	062
1938	UK1	1938	10	22.87403	02	16	36.70	+04	26	16.4	062
1938	UK1	1938	10	22.90458	02	16	34.80	+04	26	15.3	062

1939 BU	1939 01	18.97455	09 03	33.05	+16 12	55.2		062
1939 BU	1939 01	20.08292	09 02	45.14	+16 19	55.3		062
1939 BU	1939 02	17.85799	08 40	22.19	+19 24	28.3		062
1939 BU	1939 03	14.87517	08 29	12.75	+21 14	27.1		062
1939 DG	1939 03	14.94983	11 47	09.23	-01 30	38.3		062
1939 DG	1939 03	14.97818	11 47	07.87	-01 30	26.7		062
1939 DG	1939 03	17.96086	11 44	39.35	-01 09	44.5		062
1940 WC	1940 11	29.97770	04 03	06.72	+15 18	26.9	1	062
1940 WC	1940 11	29.98343	04 03	06.35	+15 18	30.7	2	062
1940 WC	1940 12	04.79633	03 58	47.79	+15 41	14.0		062
1940 WC	1940 12	28.69443	03 47	09.05	+17 58	09.0		062
1940 WG	1940 11	29.91236	03 30	25.32	+20 24	14.5		062
1940 WG	1940 12	03.83652	03 27	22.67	+20 14	42.5		062
1940 WG	1940 12	28.76497	03 15	50.69	+19 34	21.4		062
1940 WG	1940 12	30.75694	03 15	38.23	+19 33	23.9		062
1940 WJ	1940 11	29.97770	03 44	50.96	+13 50	09.7		062
1940 WJ	1940 12	04.78956	03 40	01.66	+13 37	53.5		062
1940 WJ	1940 12	27.73571	03 26	05.18	+13 25	23.1		062
1940 WJ	1940 12	28.70334	03 25	52.81	+13 26	33.6		062
1940 WK	1940 11	29.96172	03 45	17.17	+15 02	23.2		062
1940 WK	1940 11	29.99367	03 45	15.70	+15 02	13.0		062
1940 WK	1940 12	04.78956	03 41	33.13	+14 41	24.4		062
1940 WL	1940 11	29.96172	03 57	32.31	+15 03	39.6		062
1940 WL	1940 11	29.99367	03 57	30.52	+15 03	37.2		062
1940 WL	1940 12	04.79633	03 53	33.13	+14 58	43.2		062
1940 WL	1940 12	27.72645	03 39	38.70	+14 58	53.8		062
1940 WM	1940 11	29.98343	04 10	24.95	+13 42	12.2		062
1940 WM	1940 11	29.98973	04 10	24.55	+13 42	12.2		062
1940 WM	1940 12	04.79633	04 05	37.13	+13 40	21.9		062
1940 WM	1940 12	27.72645	03 47	38.99	+14 04	10.1		062
1940 XE	1940 12	04.81062	04 00	37.42	+10 59	29.9		062
1940 XE	1940 12	04.81635	04 00	37.24	+10 59	23.6		062
1940 XE	1940 12	04.84650	04 00	35.68	+10 59	18.0		062
1940 XE	1940 12	04.85223	04 00	35.44	+10 59	18.0		062
1940 XF	1940 12	04.83875	04 42	45.91	+13 02	57.6		062
1940 XF	1940 12	04.86890	04 42	43.98	+13 03	00.8		062
1942 EA1	1942 03	12.89742	11 38	52.25	+04 34	27.8		062
1942 EA1	1942 03	12.92635	11 38	50.87	+04 34	35.6		062
1942 EA1	1942 03	14.92701	11 37	21.68	+04 45	43.8		062

Note 1: at or near edge of field. 2: double-point plate unsatisfactory.

3 = 1 + 2. 4: image very faint.

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY N. S.  
CHERNYKH, L. I. CHERNYKH, L. G. KARACHKINA, T. M. SMIRNOVA AND L. V.  
ZHURAVLEVA (49TH REPORT).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1979 SC9 *	1979 09	22.99328	01 18 31.28	+09 17 16.4	16.8	1	095
1979 SD9 *	1979 09	22.99328	01 19 53.39	+05 52 21.4	16.5	1	095
1979 SE9 *	1979 09	22.99328	01 19 54.42	+09 13 15.2	17.0	1	095
1979 SF9 *	1979 09	22.99328	01 21 17.68	+05 04 35.9	16.8	1	095
1941	1979 09	22.99328	01 21 42.80	+03 56 03.7		3	095
2174	1979 09	22.99328	01 23 45.89	+12 16 22.0		1	095
1979 SG9 *	1979 09	22.99328	01 24 43.61	+08 10 49.3	16.3	1	095
671	1979 09	22.99328	01 25 08.21	+12 19 58.8		1	095
1130	1979 09	22.99328	01 25 23.22	+11 00 33.4			095
1979 SH9 *	1979 09	22.99328	01 25 36.18	+09 58 28.8	17.5		095
1979 SF1	1979 09	22.99328	01 26 10.06	+07 49 45.8	16.5		095
1979 SJ9 *	1979 09	22.99328	01 26 13.81	+07 04 55.2	16.5		095
1979 SK9 *	1979 09	22.99328	01 26 17.82	+05 26 10.5	16.6		095

1979	SL9 *	1979	09	22.99328	01	26	29.54	+07	47	36.9	17.2	095
444		1979	09	22.99328	01	26	51.54	+09	52	48.0		095
1979	SM9 *	1979	09	22.99328	01	27	40.42	+10	25	23.0	16.8	095
1979	SN9 *	1979	09	22.99328	01	28	16.83	+11	44	45.4	17.5	095
1979	S09 *	1979	09	22.99328	01	29	06.17	+10	02	46.4	16.6	095
1979	SP9 *	1979	09	22.99328	01	29	46.26	+06	38	34.4	17.2	095
1979	SQ9 *	1979	09	22.99328	01	30	16.95	+12	16	07.1	17.0	1 095
2250		1979	09	22.99328	01	32	25.68	+08	07	52.6	16.4	095
1979	SR9 *	1979	09	22.99328	01	33	28.10	+06	15	13.6	17.0	095
1979	SS9 *	1979	09	22.99328	01	34	46.02	+11	11	11.3	16.2	095
1979	ST9 *	1979	09	22.99328	01	35	03.74	+10	26	22.9	16.2	095
734		1979	09	22.99328	01	37	40.58	+12	27	40.0		1 095
1979	SU9 *	1979	09	22.99328	01	38	27.06	+10	22	13.2	16.5	095
207		1979	09	22.99328	01	38	39.43	+08	35	40.0		095
1979	SV9 *	1979	09	22.99328	01	39	06.06	+10	18	16.6	16.5	095
1979	SW9 *	1979	09	22.99328	01	40	09.60	+07	32	47.0	17.0	095
569		1979	09	22.99328	01	40	19.02	+12	34	44.6		1 095
636		1979	09	22.99328	01	42	28.59	+06	07	57.8		095
1979	VG	1979	09	22.99328	01	42	39.81	+08	36	06.6	17.2	095
1979	UD1	1979	09	22.99328	01	42	45.94	+05	55	29.5	17.2	095
1979	SX9 *	1979	09	22.99328	01	45	27.01	+08	35	01.8	17.2	095
1979	UA2	1979	09	22.99328	01	46	09.93	+07	14	05.5	16.7	095
1979	SY9 *	1979	09	22.99328	01	46	39.30	+10	51	17.1	17.0	095
1856		1979	09	22.99328	01	48	45.42	+09	37	09.5		095
2031		1979	09	22.99328	01	50	30.16	+07	10	10.4		095
1979	SZ9 *	1979	09	22.99328	01	50	49.75	+11	29	00.9	17.0	095
53		1979	09	22.99328	01	51	29.33	+04	22	19.0		1 095
1979	SA10*	1979	09	22.99328	01	53	22.81	+10	10	59.6	17.0	1 095
1830		1979	09	22.99328	01	55	19.68	+06	21	09.4		1 095
214		1979	09	28.96203	01	11	33.54	+10	46	49.1		1 095
1979	SB10*	1979	09	28.96203	01	13	05.08	+07	41	55.8	17.4	1 095
1979	SC9	1979	09	28.96203	01	14	44.18	+08	37	04.4	16.8	1 095
1979	SE9	1979	09	28.96203	01	15	41.92	+08	52	25.6	17.0	1 095
1979	SC10*	1979	09	28.96203	01	15	59.78	+05	46	44.4	17.5	1 095
1979	SD9	1979	09	28.96203	01	16	12.84	+05	35	36.3	17.0	1 095
1979	SF9	1979	09	28.96203	01	17	14.26	+04	33	25.6	16.6	1 095
1979	SD10*	1979	09	28.96203	01	17	43.80	+06	45	59.8	16.0	1 095
1941		1979	09	28.96203	01	18	17.22	+03	38	18.0		095
1979	SE10*	1979	09	28.96203	01	18	24.00	+08	22	30.0	17.2	1 095
2174		1979	09	28.96203	01	19	06.68	+12	43	45.3		1 095
671		1979	09	28.96203	01	20	53.56	+12	12	01.6		1 095
1130		1979	09	28.96203	01	21	01.22	+10	25	22.5		095
1979	SG9	1979	09	28.96203	01	21	19.88	+07	11	56.4	16.5	095
1979	SJ9	1979	09	28.96203	01	21	39.78	+06	23	39.2	17.0	095
1979	SF1	1979	09	28.96203	01	22	04.90	+07	27	21.7	16.8	095
1979	SL9	1979	09	28.96203	01	22	36.44	+07	22	07.4	17.0	095
1979	SK9	1979	09	28.96203	01	22	36.84	+05	03	08.4	16.5	095
1979	SM9	1979	09	28.96203	01	22	45.39	+10	09	03.0	17.0	095
444		1979	09	28.96203	01	23	30.45	+08	58	02.1		095
1979	S09	1979	09	28.96203	01	25	02.01	+09	31	19.6	16.7	095
1979	SQ9	1979	09	28.96203	01	25	34.92	+11	51	50.6	17.0	095
1979	SP9	1979	09	28.96203	01	26	08.39	+06	18	13.9	17.2	095
1979	SR9	1979	09	28.96203	01	28	21.11	+05	44	54.0	17.3	095
2250		1979	09	28.96203	01	28	43.57	+07	41	46.2	16.4	095
1979	ST9	1979	09	28.96203	01	30	38.00	+09	52	57.0	16.5	095
1979	SS9	1979	09	28.96203	01	30	44.90	+10	51	22.9	16.5	095
1979	SF10*	1979	09	28.96203	01	31	47.91	+11	22	30.6	17.5	095
1979	SG10*	1979	09	28.96203	01	32	41.19	+11	18	04.0	17.2	095
734		1979	09	28.96203	01	33	50.12	+12	19	03.7		1 095



207		1979	09	28.96203	01	33	50.48	+08	17	14.8		095
1979	SU9	1979	09	28.96203	01	35	02.61	+10	03	35.3	17.0	095
1979	SV9	1979	09	28.96203	01	35	07.38	+09	32	58.2	16.7	095
1979	SW9	1979	09	28.96203	01	36	17.65	+07	21	51.2	17.2	095
569		1979	09	28.96203	01	36	39.29	+12	17	59.4		1 095
636		1979	09	28.96203	01	38	09.88	+05	59	58.5		095
1979	SH10*	1979	09	28.96203	01	38	13.99	+08	32	59.4	16.8	095
1979	SJ10*	1979	09	28.96203	01	38	15.45	+08	30	48.6	17.3	095
1979	SK10*	1979	09	28.96203	01	39	00.49	+10	23	55.0	17.5	095
1979	UD1	1979	09	28.96203	01	39	11.96	+05	26	26.5	17.4	095
1979	SL10*	1979	09	28.96203	01	40	06.42	+07	44	50.6	17.5	095
1979	SX9	1979	09	28.96203	01	41	37.91	+08	15	30.6	17.3	095
1979	UA2	1979	09	28.96203	01	42	22.23	+06	53	35.8	16.2	095
1979	SY9	1979	09	28.96203	01	43	26.51	+10	35	56.2	17.0	095
1979	SM10*	1979	09	28.96203	01	43	46.27	+04	08	26.2	17.3	1 095
1979	SN10*	1979	09	28.96203	01	44	05.08	+09	27	52.7	17.0	095
1856		1979	09	28.96203	01	44	33.42	+08	57	40.4		095
1979	SO10*	1979	09	28.96203	01	45	36.69	+08	06	33.4	17.0	1 095
1979	SZ9	1979	09	28.96203	01	47	30.44	+11	11	01.9	16.8	1 095
2031		1979	09	28.96203	01	48	02.20	+06	23	50.8		095
53		1979	09	28.96203	01	48	16.93	+03	44	53.0		1 095
1979	SA10	1979	09	28.96203	01	50	36.59	+09	42	48.7	17.2	1 095
1830		1979	09	28.96203	01	51	34.11	+05	42	49.4		095
1574		1979	09	29.03495	02	04	33.86	+25	14	32.6	17.0	1 095
1979	SP10*	1979	09	29.03495	02	08	34.30	+26	11	44.7	17.0	1 095
1979	SQ10*	1979	09	29.03495	02	09	32.90	+25	19	30.4	17.5	1 095
1979	SR10*	1979	09	29.03495	02	10	45.48	+25	13	19.7	17.2	2 095
1979	SS10*	1979	09	29.03495	02	11	15.38	+25	02	27.6	17.0	095
661		1979	09	29.03495	02	16	03.82	+24	38	10.6		095
1126		1979	09	29.03495	02	16	09.16	+18	08	59.2		1 095
1979	ST10*	1979	09	29.03495	02	16	26.14	+20	53	44.4	17.2	095
1433		1979	09	29.03495	02	18	49.28	+26	27	56.7		095
2453		1979	09	29.03495	02	19	39.16	+18	11	07.4		1 095
1979	SU10*	1979	09	29.03495	02	19	41.45	+25	05	28.5	16.5	095
2386		1979	09	29.03495	02	19	48.87	+19	18	22.7		1 095
1979	SV10*	1979	09	29.03495	02	21	10.20	+19	05	29.4	17.5	1 095
565		1979	09	29.03495	02	23	54.88	+19	54	06.3		095
631		1979	09	29.03495	02	24	41.78	+22	11	15.7		095
366		1979	09	29.03495	02	24	50.89	+25	09	17.5		095
1979	SW10*	1979	09	29.03495	02	27	18.76	+18	42	03.1	17.2	1 095
1979	SX10*	1979	09	29.03495	02	32	17.50	+23	46	49.4	17.5	095
1979	SY10*	1979	09	29.03495	02	36	41.46	+27	14	32.0	17.5	1 095
1979	SZ10*	1979	09	29.03495	02	38	07.63	+23	51	54.8	17.2	2 095
523		1979	09	29.03495	02	40	57.81	+20	49	43.0		095
833		1979	09	29.03495	02	43	16.78	+25	13	33.6		1 095
1031		1979	09	29.03495	02	43	43.24	+18	36	16.2		1 095
583		1979	09	29.03495	02	48	27.30	+23	53	51.2		1 095
1979	SE9	1979	10	16.88311	01	01	13.91	+07	35	46.7	16.7	1 095
1979	SC9	1979	10	16.88311	01	02	01.64	+06	24	54.0	16.8	1 095
1979	UJ3 *	1979	10	16.88311	01	02	54.41	+07	32	08.1	17.4	1 095
1979	SD9	1979	10	16.88311	01	02	58.78	+04	37	50.9	16.7	1 095
1979	SF9	1979	10	16.88311	01	03	27.79	+02	56	26.6	16.4	1 095
1130		1979	10	16.88311	01	05	15.26	+08	15	15.4		1 095
1979	SJ9	1979	10	16.88311	01	05	18.75	+04	06	12.2	17.0	1 095
1979	SM9	1979	10	16.88311	01	05	38.43	+08	58	47.4	16.5	1 095
1941		1979	10	16.88311	01	06	25.18	+02	43	52.6		1 095
1979	SF1	1979	10	16.88311	01	08	13.51	+06	11	36.4	16.8	095
1979	UK3 *	1979	10	16.88311	01	08	35.01	+06	58	46.8	17.6	095
1979	SG9	1979	10	16.88311	01	08	39.31	+03	56	23.3	16.3	095

1979	UL3	*	1979	10	16.88311	01	09	26.97	+04	14	16.2	17.5	095
1979	SK9		1979	10	16.88311	01	09	32.10	+03	48	58.4	16.8	095
1979	SL9		1979	10	16.88311	01	09	35.43	+05	58	21.5	17.2	095
1979	SO9		1979	10	16.88311	01	10	25.53	+07	38	41.4	16.5	095
1979	SR9		1979	10	16.88311	01	10	28.82	+04	06	47.8	17.3	095
	444		1979	10	16.88311	01	11	10.55	+05	56	11.7		095
1979	UM3	*	1979	10	16.88311	01	11	55.36	+07	32	39.1	17.6	095
1979	SP9		1979	10	16.88311	01	13	04.66	+05	09	04.4	16.9	095
1979	UN3	*	1979	10	16.88311	01	13	45.62	+06	10	47.8	17.2	095
1979	ST9		1979	10	16.88311	01	14	49.56	+07	53	30.0	16.5	095
2250			1979	10	16.88311	01	15	33.92	+06	13	14.8	16.6	095
	207		1979	10	16.88311	01	16	14.36	+07	06	31.4		095
1979	SS9		1979	10	16.88311	01	16	29.79	+09	35	08.1	16.4	095
1979	U03	*	1979	10	16.88311	01	16	36.91	+07	45	58.8	17.8	095
1979	UP3	*	1979	10	16.88311	01	17	43.79	+02	26	25.7	17.5	1 095
1979	UQ3	*	1979	10	16.88311	01	19	40.16	+11	01	17.1	16.8	1 095
1979	SV9		1979	10	16.88311	01	19	57.47	+06	55	55.3	16.5	095
1979	UR3	*	1979	10	16.88311	01	19	58.26	+11	05	20.1	17.0	1 095
1979	US3	*	1979	10	16.88311	01	20	27.90	+10	06	29.7	17.5	1 095
1979	VG		1979	10	16.88311	01	20	40.68	+08	06	56.9	16.5	095
1979	SW9		1979	10	16.88311	01	20	47.64	+06	34	54.3	16.8	095
1979	UT3	*	1979	10	16.88311	01	21	38.17	+07	52	48.8	17.4	095
1979	SU9		1979	10	16.88311	01	22	04.18	+08	50	15.0	16.5	095
	569		1979	10	16.88311	01	22	06.84	+11	00	57.7		095
	636		1979	10	16.88311	01	22	30.51	+05	29	20.6		095
1979	UU3	*	1979	10	16.88311	01	23	19.00	+05	41	23.3	16.7	095
1979	VN		1979	10	16.88311	01	23	34.02	+11	24	26.6	16.5	095
1979	UV3	*	1979	10	16.88311	01	24	00.19	+05	48	41.5	16.7	095
1979	UW3	*	1979	10	16.88311	01	24	09.13	+10	16	59.0	17.5	1 095
1979	UX3	*	1979	10	16.88311	01	24	30.47	+07	00	46.6	17.0	095
1979	UY3	*	1979	10	16.88311	01	25	14.82	+09	14	41.7	16.8	095
1979	UD1		1979	10	16.88311	01	25	48.24	+03	52	03.9	17.3	095
1979	UZ3	*	1979	10	16.88311	01	26	23.71	+07	54	57.3	17.8	095
1979	UA4	*	1979	10	16.88311	01	26	29.17	+06	19	30.9	17.6	095
1979	SX9		1979	10	16.88311	01	27	36.75	+07	05	26.0	17.3	095
1979	UB4	*	1979	10	16.88311	01	27	37.75	+07	27	44.3	17.5	095
1856			1979	10	16.88311	01	28	30.86	+06	40	06.6		095
1979	UC4	*	1979	10	16.88311	01	28	55.95	+10	53	13.3	17.0	1 095
1979	SY9		1979	10	16.88311	01	29	32.99	+09	25	23.0	16.8	095
1979	UD4	*	1979	10	16.88311	01	30	15.69	+06	56	49.0	17.3	095
1979	UE4	*	1979	10	16.88311	01	31	08.10	+10	24	03.6	17.2	1 095
	567		1979	10	16.88311	01	31	14.03	+01	11	44.0		095
1979	UF4	*	1979	10	16.88311	01	31	34.10	+10	36	02.9	17.4	1 095
1979	UG4	*	1979	10	16.88311	01	32	32.81	+08	35	39.4	17.2	095
1979	UH4	*	1979	10	16.88311	01	33	31.57	+10	18	53.3	17.3	1 095
1979	UJ4	*	1979	10	16.88311	01	33	48.75	+06	08	27.1	17.5	1 095
1979	UK4	*	1979	10	16.88311	01	34	09.12	+03	05	16.3	17.3	1 095
1979	SZ9		1979	10	16.88311	01	34	29.54	+09	58	32.8	16.7	1 095
	53		1979	10	16.88311	01	34	44.84	+01	42	41.7		095
2031			1979	10	16.88311	01	35	36.68	+03	45	52.2		1 095
1979	UL4	*	1979	10	16.88311	01	35	42.24	+07	56	28.0	17.2	1 095
1830			1979	10	16.88311	01	35	52.66	+03	33	40.5		1 095
1979	SA10		1979	10	16.88311	01	39	29.92	+08	02	03.0	16.8	1 095
1979	UM4	*	1979	10	16.88311	01	40	12.97	+07	35	19.9	17.0	1 095
	671		1979	11	11.83235	00	48	01.30	+10	21	10.9		1 095
1979	VE	*	1979	11	11.83235	00	48	03.43	+02	25	34.3	17.5	1 095
1130			1979	11	11.83235	00	49	59.60	+05	46	33.6		1 095
1979	VF	*	1979	11	11.83235	00	51	39.30	+05	19	24.1	17.3	1 095
1979	SF1		1979	11	11.83235	00	51	53.57	+04	46	12.5	16.7	1 095

1979	SO9	1979	11	11.83235	00	52	06.90	+05	09	04.1	17.2	1	095
1941		1979	11	11.83235	00	52	32.34	+02	02	48.8		1	095
1979	SL9	1979	11	11.83235	00	53	33.37	+04	17	54.5	17.3		095
207		1979	11	11.83235	00	54	09.20	+05	43	18.2			095
1979	SK9	1979	11	11.83235	00	54	13.32	+02	41	14.9	16.5		095
1979	ST9	1979	11	11.83235	00	56	30.62	+05	27	52.2	16.5		095
1979	SP9	1979	11	11.83235	00	56	38.08	+03	54	33.0	17.0		095
444		1979	11	11.83235	00	57	25.56	+02	19	47.3			095
1979	VG *	1979	11	11.83235	00	57	51.94	+07	38	55.4	17.0		095
1979	SS9	1979	11	11.83235	00	58	16.28	+07	47	04.9	16.5		095
2250		1979	11	11.83235	00	59	43.87	+04	32	32.8	16.5		095
734		1979	11	11.83235	01	01	21.12	+10	20	02.2		1	095
1979	VH *	1979	11	11.83235	01	02	00.80	+05	24	53.8	17.2		095
1979	SV9	1979	11	11.83235	01	01	04.86	+03	49	49.0	17.3		095
569		1979	11	11.83235	01	02	13.80	+08	55	19.4			095
1979	VJ *	1979	11	11.83235	01	02	21.80	+05	57	10.7	17.2		095
1979	VK *	1979	11	11.83235	01	02	28.10	+09	13	49.3	16.5		095
636		1979	11	11.83235	01	02	39.26	+05	10	10.8			095
1979	VL *	1979	11	11.83235	01	04	15.88	+08	21	18.9	17.5		095
1979	SU9	1979	11	11.83235	01	05	01.84	+07	09	42.2	17.0		095
1979	UY3	1979	11	11.83235	01	06	27.24	+07	35	19.4	17.2		095
1979	VM *	1979	11	11.83235	01	07	11.36	+05	07	25.7	17.5		095
1856		1979	11	11.83235	01	07	17.02	+03	48	13.8			095
1979	UC4	1979	11	11.83235	01	07	37.16	+09	45	13.7	17.1	1	095
1979	UD1	1979	11	11.83235	01	08	07.45	+02	12	46.7	17.3		095
1979	SX9	1979	11	11.83235	01	08	30.68	+05	37	16.2	17.0		095
1979	VN *	1979	11	11.83235	01	09	17.52	+07	54	38.8	16.5		095
1979	UA2	1979	11	11.83235	01	09	22.16	+04	23	45.8	16.7		095
1979	VO *	1979	11	11.83235	01	09	48.52	+09	43	27.6	17.3	1	095
1979	SY9	1979	11	11.83235	01	10	18.32	+07	43	22.8	17.0		095
1979	VP *	1979	11	11.83235	01	11	11.37	+08	18	15.2	17.0		095
567		1979	11	11.83235	01	12	42.14	+00	25	34.3		1	095
1979	VQ *	1979	11	11.83235	01	12	46.55	+08	57	12.1	16.3		095
1830		1979	11	11.83235	01	13	20.04	+01	12	15.2		1	095
1979	VR *	1979	11	11.83235	01	16	04.16	+05	40	19.7	17.3		095
1979	SZ9	1979	11	11.83235	01	16	33.86	+08	13	57.7	17.0		095
2031		1979	11	11.83235	01	18	20.00	+01	02	22.7		1	095
1979	VS *	1979	11	11.83235	01	18	28.03	+01	56	06.2	17.2		095
1979	VT *	1979	11	11.83235	01	19	43.89	+09	53	04.0	16.5	1	095
1979	VU *	1979	11	11.83235	01	22	14.87	+07	06	56.2	16.8	1	095
1979	SA10	1979	11	11.83235	01	22	49.80	+05	39	59.1	17.0	1	095
1979	VV *	1979	11	11.83235	01	24	29.76	+02	58	46.5	17.3	1	095
1979	VW *	1979	11	11.83235	01	26	11.04	+05	33	06.3	16.5	1	095
1360		1979	11	12.78468	04	28	35.28	+53	42	13.1			095
1574		1979	11	14.80045	01	34	55.36	+20	52	32.2		1	095
1979	VX *	1979	11	14.80045	01	36	14.89	+21	32	30.0	17.2	1	095
661		1979	11	14.80045	01	38	24.42	+22	54	20.5			095
1979	VY *	1979	11	14.80045	01	40	21.42	+25	53	29.8	16.8		095
1433		1979	11	14.80045	01	40	33.95	+25	05	15.8			095
1979	VZ *	1979	11	14.80045	01	40	51.82	+22	58	25.6	16.8		095
366		1979	11	14.80045	01	47	12.14	+24	00	37.0			095
1979	VA1 *	1979	11	14.80045	01	50	45.50	+28	15	02.4	16.2		095
1979	VB1 *	1979	11	14.80045	01	51	12.18	+27	11	52.1	17.0		095
1979	VC1 *	1979	11	14.80045	01	52	28.61	+21	58	21.7	17.0		095
1979	VD1 *	1979	11	14.80045	01	54	52.11	+21	37	55.2	17.5	1	095
1979	VE1 *	1979	11	14.80045	01	55	19.10	+28	18	08.8	16.8		095
1979	VF1 *	1979	11	14.80045	01	59	28.34	+24	04	16.6	16.5		095
1979	VG1 *	1979	11	14.80045	02	01	47.98	+23	24	08.8	17.2		095
2181		1979	11	14.80045	02	04	40.52	+22	21	29.1			095

833		1979	11	14.80045	02	05	02.74	+25	13	41.2			095
1979	VH1 *	1979	11	14.80045	02	08	49.58	+27	06	37.3	17.2	1	095
1979	VJ1 *	1979	11	14.80045	02	08	58.34	+26	51	58.0	17.0	1	095
793		1979	11	14.87411	04	01	57.75	+31	07	07.4			095
1979	VK1 *	1979	11	14.87411	04	03	23.48	+28	39	04.2	16.5	1	095
1979	VL1 *	1979	11	14.87411	04	03	32.78	+34	48	40.8	17.0	1	095
1979	VM1 *	1979	11	14.87411	04	05	09.12	+34	00	34.4	16.5	1	095
1979	VN1 *	1979	11	14.87411	04	06	26.16	+29	53	09.1	16.5		095
1678		1979	11	14.87411	04	07	18.51	+35	21	35.2		1	095
1979	VO1 *	1979	11	14.87411	04	07	59.29	+32	01	39.6	16.5		095
1979	VP1 *	1979	11	14.87411	04	08	56.73	+26	28	13.4	15.5	1	095
1979	VQ1 *	1979	11	14.87411	04	10	20.06	+28	34	06.2	16.2		095
1979	VR1 *	1979	11	14.87411	04	12	25.74	+30	11	05.4	16.2		095
907		1979	11	14.87411	04	14	42.28	+31	39	47.2			095
1979	VS1 *	1979	11	14.87411	04	15	31.90	+30	03	20.1	16.8		095
1979	VT1 *	1979	11	14.87411	04	15	34.72	+28	26	27.2	16.5		095
1979	VU1 *	1979	11	14.87411	04	18	16.30	+31	59	34.6	17.5	2	095
123		1979	11	14.87411	04	19	08.76	+31	25	52.8			095
1325		1979	11	14.87411	04	25	54.53	+31	38	00.6			095
2547		1979	11	14.87411	04	26	32.52	+32	22	11.0			095
1979	VV1 *	1979	11	14.87411	04	27	07.71	+31	59	54.0	16.8		095
1374		1979	11	14.87411	04	29	03.03	+31	56	53.4			095
1979	VW1 *	1979	11	14.87411	04	29	46.49	+28	40	42.2	17.0		095
1979	VX1 *	1979	11	14.87411	04	30	04.64	+31	26	31.0	17.0		095
298		1979	11	14.87411	04	30	20.42	+30	57	40.2			095
607		1979	11	14.87411	04	31	37.88	+31	34	05.6			095
1979	VY1 *	1979	11	14.87411	04	31	51.38	+31	41	45.3	16.2		095
1979	VZ1 *	1979	11	14.87411	04	34	08.94	+29	01	56.4	17.0	2	095
1979	VA2 *	1979	11	14.87411	04	35	30.98	+35	08	37.6	16.0	1	095
1979	VB2 *	1979	11	14.87411	04	38	36.84	+30	20	13.0	16.5		095
1979	VC2 *	1979	11	14.87411	04	42	59.41	+28	56	32.4	17.0	3	095
1979	VD2 *	1979	11	14.87411	04	44	37.80	+33	08	16.2	16.8	1	095
1979	VE2 *	1979	11	14.87411	04	44	42.00	+28	55	21.0	17.0	1	095
1979	VF2 *	1979	11	14.94428	03	53	01.16	+22	41	40.9	16.2	1	095
1480		1979	11	14.94428	03	53	28.26	+19	06	08.8		1	095
1972		1979	11	14.94428	03	56	38.00	+21	53	03.0		1	095
1014		1979	11	14.94428	03	58	11.06	+21	25	15.6		1	095
1979	VG2 *	1979	11	14.94428	04	00	49.50	+21	54	52.0	16.8		095
2371		1979	11	14.94428	04	01	03.36	+20	29	16.2	16.8		095
1979	VH2 *	1979	11	14.94428	04	01	17.66	+20	44	54.8	17.2	2	095
1979	VJ2 *	1979	11	14.94428	04	01	44.18	+18	13	23.2	17.0	1	095
1979	XQ	1979	11	14.94428	04	01	59.31	+23	18	57.6	16.5		095
1177		1979	11	14.94428	04	02	18.98	+25	21	48.6			095
1979	VK2 *	1979	11	14.94428	04	03	12.90	+22	26	52.5	17.2		095
1979	VL2 *	1979	11	14.94428	04	03	20.94	+18	16	52.2	17.2	3	095
1979	VM2 *	1979	11	14.94428	04	03	47.06	+22	59	18.0	17.0		095
1979	VN2 *	1979	11	14.94428	04	03	58.80	+21	26	32.4	16.5		095
742		1979	11	14.94428	04	05	36.28	+19	16	28.6			095
1979	VO2 *	1979	11	14.94428	04	06	40.19	+18	04	11.2	17.0	1	095
1979	VP2	1979	11	14.94428	04	06	42.06	+25	01	36.8	16.5		095
1670		1979	11	14.94428	04	07	53.82	+21	01	28.4			095
1979	VQ2 *	1979	11	14.94428	04	08	01.48	+20	28	28.2	17.0		095
1979	VR2 *	1979	11	14.94428	04	08	02.62	+18	30	43.7	17.2	1	095
1979	VP1	1979	11	14.94428	04	08	52.48	+26	27	03.6	15.5	1	095
1979	VS2 *	1979	11	14.94428	04	08	55.19	+24	49	27.8	17.0		095
2165		1979	11	14.94428	04	10	31.72	+22	04	28.2			095
1979	VT2 *	1979	11	14.94428	04	10	37.52	+25	35	34.2	16.5		095
1979	VU2 *	1979	11	14.94428	04	11	24.33	+18	43	02.9	16.0	1	095
2450		1979	11	14.94428	04	12	06.92	+18	09	27.6	16.8	1	095

1979	VV2	*	1979	11	14.94428	04	14	21.67	+21	56	55.4	17.2	095
1979	VW2	*	1979	11	14.94428	04	15	02.06	+19	08	57.0	17.0	095
1979	VX2	*	1979	11	14.94428	04	15	05.15	+22	54	54.9	16.5	095
1979	VY2	*	1979	11	14.94428	04	15	35.58	+22	59	58.9	17.0	095
1979	VZ2		1979	11	14.94428	04	16	52.07	+20	30	18.2	17.0	095
1979	VA3	*	1979	11	14.94428	04	17	07.72	+25	27	21.2	17.0	095
1979	VB3	*	1979	11	14.94428	04	17	19.02	+19	15	35.0	16.5	095
1979	VC3	*	1979	11	14.94428	04	18	22.32	+22	41	36.1	17.0	095
	156		1979	11	14.94428	04	18	28.58	+21	21	51.4		095
1979	VD3	*	1979	11	14.94428	04	19	06.54	+22	21	21.8	17.2	095
1979	VE3	*	1979	11	14.94428	04	22	28.31	+19	19	09.4	17.2	095
1394			1979	11	14.94428	04	22	52.48	+17	42	41.2		1 095
1979	VF3	*	1979	11	14.94428	04	23	29.27	+22	37	32.0	16.8	095
1979	VG3	*	1979	11	14.94428	04	24	21.46	+25	38	42.5	16.5	095
1979	VH3	*	1979	11	14.94428	04	24	27.74	+21	17	28.9	16.0	095
1979	VJ3	*	1979	11	14.94428	04	26	39.64	+22	06	51.2	16.8	095
1979	VK3	*	1979	11	14.94428	04	26	50.64	+23	19	08.0	16.5	095
	858		1979	11	14.94428	04	27	08.95	+20	50	15.8		095
1979	VL3	*	1979	11	14.94428	04	28	39.63	+19	19	16.8	17.5	2 095
1979	VM3	*	1979	11	14.94428	04	28	46.82	+25	42	49.5	17.5	3 095
1976			1979	11	14.94428	04	28	52.80	+19	56	34.4		095
1765			1979	11	14.94428	04	30	58.87	+17	49	00.2		1 095
1979	VN3		1979	11	14.94428	04	31	44.46	+21	52	31.4	17.5	1 095
1979	VO3	*	1979	11	14.94428	04	32	48.44	+20	32	14.8	17.5	1 095
1979	VP3	*	1979	11	14.94428	04	32	48.58	+24	01	17.6	16.8	1 095
1074			1979	11	16.7462:	00	38	15.50	+03	49	12.4		1 095
1979	SE9		1979	11	16.74629	00	42	43.53	+05	50	48.9	17.0	1 095
1979	WP	*	1979	11	16.74629	00	45	23.05	+03	01	28.0	17.5	1 095
1979	SF9		1979	11	16.74629	00	46	01.19	+01	13	10.8	17.0	095
1979	SD9		1979	11	16.74629	00	46	59.66	+03	51	59.4	16.3	095
1130			1979	11	16.74629	00	49	22.63	+05	33	47.6		095
1979	SO9		1979	11	16.74629	00	50	05.04	+04	50	06.7	17.0	095
1979	SF1		1979	11	16.74629	00	50	07.46	+04	38	16.7	16.8	095
1941			1979	11	16.74629	00	51	08.67	+02	03	59.6		095
1979	SL9		1979	11	16.74629	00	51	35.91	+04	06	06.4	17.3	095
	207		1979	11	16.74629	00	51	43.64	+05	37	10.8		095
1979	SK9		1979	11	16.74629	00	52	45.86	+02	38	52.0	16.7	095
1979	ST9		1979	11	16.74629	00	54	46.68	+05	12	01.5	17.0	095
1979	SP9		1979	11	16.74629	00	54	47.53	+03	49	11.0	17.0	095
1979	VG		1979	11	16.74629	00	55	31.54	+07	42	05.7	17.1	095
1979	SS9		1979	11	16.74629	00	56	05.14	+07	33	06.1	16.4	095
	444		1979	11	16.74629	00	56	24.67	+01	54	22.7		095
2250			1979	11	16.74629	00	58	05.38	+04	22	55.3	16.7	095
	569		1979	11	16.74629	00	59	58.08	+08	38	24.4		1 095
	636		1979	11	16.74629	01	00	22.64	+05	14	28.6		095
1979	VK		1979	11	16.74629	01	00	38.50	+08	46	53.8	16.8	1 095
1979	VL		1979	11	16.74629	01	02	11.74	+08	06	28.1	17.2	095
1979	SU9		1979	11	16.74629	01	03	07.18	+06	58	15.2	16.6	095
1979	UY3		1979	11	16.74629	01	03	58.09	+07	22	14.7	17.1	095
1979	VM		1979	11	16.74629	01	04	27.34	+05	08	54.4	17.5	095
1856			1979	11	16.74629	01	04	49.26	+03	28	15.9		095
1979	UC4		1979	11	16.74629	01	05	14.73	+09	38	54.6	17.3	1 095
1979	SX9		1979	11	16.74629	01	06	01.63	+05	27	51.2	17.0	095
1979	UA2		1979	11	16.74629	01	07	00.09	+04	17	18.3	16.8	095
1979	VO		1979	11	16.74629	01	07	14.05	+09	26	52.7	17.2	1 095
1979	VN		1979	11	16.74629	01	08	17.12	+07	28	02.3	16.5	095
1979	SY9		1979	11	16.74629	01	08	18.88	+07	33	16.7	17.0	095
	567		1979	11	16.74629	01	10	04.23	+00	24	51.6		1 095
1830			1979	11	16.74629	01	10	37.50	+01	00	36.5		1 095

1979 VQ	1979 11 16.74629	01 10 51.56	+08 26 31.5	16.5	095
1979 SZ9	1979 11 16.74629	01 14 23.49	+08 00 59.2	17.2	1 095
1979 WQ *	1979 11 16.74629	01 15 20.96	+06 26 13.0	17.0	1 095
2031	1979 11 16.74629	01 16 53.31	+00 51 40.5		1 095
1979 VU	1979 11 16.74629	01 18 30.38	+07 11 40.7	16.8	1 095
1979 XS *	1979 12 14.81014	01 59 52.29	+21 19 29.0	16.5	095
583	1979 12 14.81014	02 01 34.41	+18 07 46.3		095
1149	1979 12 14.81014	02 03 24.78	+21 28 36.6		095
568	1979 12 14.81014	02 08 05.85	+21 10 54.8		095
1979 XT *	1979 12 14.81014	02 12 15.39	+25 32 27.7	16.0	1 095
280	1979 12 14.81014	02 12 44.92	+20 58 17.9		095
855	1979 12 14.81014	02 20 09.46	+23 59 37.6		095
708	1979 12 14.81014	02 22 14.40	+18 31 17.9		095
195	1979 12 14.81014	02 23 19.29	+21 49 12.7		095
1763	1979 12 14.81014	02 30 41.42	+21 41 35.8		1 095
1979 XU *	1979 12 14.97628	06 30 52.78	+14 04 56.8	16.8	095
2298	1979 12 14.97628	06 32 10.14	+15 09 23.8	16.8	095
1979 XV	1979 12 14.97628	06 33 26.42	+13 49 09.2	16.5	095
153	1979 12 14.97628	06 33 42.22	+15 58 17.6		095
1979 XW *	1979 12 14.97628	06 34 07.85	+18 45 46.2	17.0	1 095
559	1979 12 14.97628	06 35 53.74	+18 34 19.5		1 095
856	1979 12 14.97628	06 35 57.48	+10 25 23.9		095
1979 XX *	1979 12 14.97628	06 38 54.01	+18 06 38.4	16.5	1 095
2354	1979 12 14.97628	06 39 37.62	+18 07 04.0		1 095
1144	1979 12 14.97628	06 43 41.04	+11 27 34.8		095
1979 XY *	1979 12 14.97628	06 44 33.84	+10 33 05.6	17.0	095
1979 XZ *	1979 12 14.97628	06 49 03.66	+12 06 34.0	17.0	095
793	1979 12 17.75677	03 26 41.53	+31 39 08.6		1 095
1979 YU *	1979 12 17.75677	03 28 49.41	+31 11 11.6	16.5	1 095
1979 YV *	1979 12 17.75677	03 31 10.44	+28 18 46.1	17.0	1 095
907	1979 12 17.75677	03 34 58.73	+33 47 39.7		095
1979 YW *	1979 12 17.75677	03 35 39.26	+28 10 02.0	16.5	095
1979 YX *	1979 12 17.75677	03 36 36.35	+29 06 54.1	16.8	095
1979 YY *	1979 12 17.75677	03 44 45.38	+34 31 00.8	17.0	095
123	1979 12 17.75677	03 47 51.76	+29 03 48.4		095
1979 YZ *	1979 12 17.75677	03 48 08.39	+31 39 57.0	16.8	095
1325	1979 12 17.75677	03 49 16.78	+31 00 07.6		095
1979 YA1 *	1979 12 17.75677	03 49 48.37	+29 30 00.0	16.5	095
2547	1979 12 17.75677	03 50 20.07	+30 56 29.7		095
298	1979 12 17.75677	03 51 40.08	+30 23 54.9		095
1979 YB1 *	1979 12 17.75677	03 54 05.52	+35 07 39.6	16.0	1 095
1374	1979 12 17.75677	03 54 28.20	+28 24 24.7		095
1979 YC1 *	1979 12 17.75677	03 56 03.80	+29 56 26.8	16.2	095
1979 YD1 *	1979 12 17.75677	03 58 07.60	+28 35 01.6	16.8	095
1979 YE1	1979 12 17.75677	03 59 06.14	+28 09 41.0	16.5	095
607	1979 12 17.75677	04 00 48.24	+29 08 32.9		095
1979 YF1 *	1979 12 17.75677	04 03 09.73	+32 45 33.8	16.5	095
1979 YG1 *	1979 12 17.75677	04 05 37.37	+30 58 59.0	16.2	095
1979 YH1 *	1979 12 18.13189	05 47 31.98	+51 20 17.2	17.0	095
1158	1979 12 18.13189	05 52 53.78	+47 58 21.6		095
852	1979 12 18.13189	06 02 18.56	+54 17 19.4		095
1979 YJ1 *	1979 12 18.13189	06 06 36.28	+53 26 56.8	16.5	095
795	1979 12 18.13189	06 11 00.70	+50 45 54.9		095
605	1979 12 18.13189	06 19 10.52	+50 57 09.4		095
1972	1979 12 23.79139	03 23 04.17	+21 43 06.4		1 095
1979 XQ	1979 12 23.79139	03 25 24.59	+22 22 05.6	16.8	1 095
1014	1979 12 23.79139	03 26 33.94	+19 00 43.1		095
2371	1979 12 23.79139	03 27 00.00	+18 10 49.8	16.5	095
1979 YK1 *	1979 12 23.79139	03 28 04.88	+18 46 29.5	16.8	095

1979	YL1	*	1979	12	23.79139	03	31	50.45	+17	59	12.8	17.5	095
1979	YM1	*	1979	12	23.79139	03	32	09.92	+20	18	32.6	16.5	095
742			1979	12	23.79139	03	32	33.83	+19	53	08.0		095
1670			1979	12	23.79139	03	33	09.98	+21	53	27.3		095
1177			1979	12	23.79139	03	34	35.38	+21	27	25.7		095
87			1979	12	23.79139	03	36	24.98	+17	19	12.4		095
1979	YN1	*	1979	12	23.79139	03	37	46.53	+14	49	00.1	16.5	1 095
1979	YO1		1979	12	23.79139	03	38	27.38	+22	03	31.7	17.0	2 095
1979	YP1		1979	12	23.79139	03	38	41.63	+22	07	07.6	17.2	095
1979	YQ1		1979	12	23.79139	03	39	10.71	+20	44	38.8	17.0	095
1979	YR1	*	1979	12	23.79139	03	39	54.75	+15	03	12.0	15.5	1 095
1979	YS1	*	1979	12	23.79139	03	40	17.32	+22	18	42.6	16.2	095
2165			1979	12	23.79139	03	40	37.42	+20	43	28.0		095
1979	YT1		1979	12	23.79139	03	4?	24.13	+17	00	55.6	16.5	095
156			1979	12	23.79139	03	45	26.14	+18	26	08.0		095
1979	YU1	*	1979	12	23.79139	03	45	33.82	+17	58	26.6	17.5	095
1979	YV1	*	1979	12	23.79139	03	46	03.75	+22	38	31.0	17.2	095
1394			1979	12	23.79139	03	46	58.22	+15	59	43.2		095
1979	YW1	*	1979	12	23.79139	03	47	39.30	+16	36	13.6	17.2	2 095
1979	YX1	*	1979	12	23.79139	03	48	48.56	+23	52	37.6	17.2	3 095
1979	YY1	*	1979	12	23.79139	03	49	05.34	+19	18	20.8	16.5	095
1976			1979	12	23.79139	03	50	23.33	+18	52	07.8		095
1979	YZ1	*	1979	12	23.79139	03	50	34.51	+23	41	12.8	17.5	1 095
1979	YA2	*	1979	12	23.79139	03	51	10.30	+21	16	11.6	17.0	095
858			1979	12	23.79139	03	52	10.27	+20	47	39.8		095
1979	YB2	*	1979	12	23.79139	03	52	58.64	+17	46	15.2	17.0	095
1979	YC2	*	1979	12	23.79139	03	54	32.96	+17	51	58.2	16.0	095
1979	YD2	*	1979	12	23.79139	03	55	02.44	+21	15	37.0	16.5	095
1765			1979	12	23.79139	03	55	04.70	+19	46	06.8		095
1979	YE2		1979	12	23.79139	03	55	36.83	+22	45	09.0	16.5	095
1681			1979	12	23.79139	03	58	05.42	+16	05	13.2		1 095
1979	YF2	*	1979	12	23.79139	03	58	42.46	+22	53	00.5	16.8	1 095
2478			1979	12	23.79139	03	58	59.56	+17	13	19.0	16.8	1 095
1979	YG2	*	1979	12	23.79139	03	59	16.71	+18	04	58.5	17.0	3 095
220			1979	12	23.79139	04	03	20.81	+21	28	38.8		1 095
1979	YH2		1979	12	24.01198	05	16	19.77	+39	46	00.6	17.5	095
445			1979	12	24.01198	05	17	14.70	+38	54	00.0		095
1979	YJ2	*	1979	12	24.01198	05	21	38.05	+39	06	18.3	16.8	095
1979	YK2	*	1979	12	24.01198	05	21	40.88	+41	11	39.0	16.2	095
1979	YL2	*	1979	12	24.01198	05	27	35.97	+42	22	12.9	17.0	1 095
1979	YM2	*	1979	12	24.01198	05	28	03.77	+33	39	26.4	16.8	1 095
1979	YN2	*	1979	12	24.01198	05	28	38.42	+39	13	16.4	17.0	095
1979	YO2	*	1979	12	24.01198	05	28	39.42	+37	33	41.4	17.0	095
886			1979	12	24.01198	05	30	19.05	+34	12	31.1		095
984			1979	12	24.01198	05	31	54.39	+34	09	35.0		095
1979	YR		1979	12	24.01198	05	32	42.50	+33	40	00.4	16.8	1 095
961			1979	12	24.01198	05	34	29.50	+37	50	52.6		095
591			1979	12	24.01198	05	34	55.30	+41	23	06.8		095
1124			1979	12	24.01198	05	36	34.36	+33	46	30.6		1 095
1567			1979	12	24.01198	05	41	02.04	+38	27	39.8		095
1979	YP2	*	1979	12	24.01198	05	44	51.89	+41	52	42.5	17.2	1 095
227			1979	12	24.01198	05	45	44.21	+34	15	13.5		095
99			1979	12	24.01198	05	46	45.62	+38	28	32.8		095
623			1979	12	24.01198	05	46	52.66	+39	38	02.0		095
1979	YQ2	*	1979	12	24.01198	05	48	11.98	+36	32	45.0	17.2	095
1979	YR2	*	1979	12	24.01198	05	48	50.54	+37	41	35.0	17.2	095
1979	YS2	*	1979	12	24.01198	05	53	59.90	+36	15	53.6	17.0	1 095
1979	YT2	*	1979	12	24.01198	05	54	14.07	+33	42	54.6	17.0	095
1979	YU2	*	1979	12	24.93837	05	12	25.80	+24	57	53.6	17.5	1 095

1979	YV2	*	1979	12	24.93837	05	17	33.73	+29	51	27.7	15.4	095
1979	YW2	*	1979	12	24.93837	05	17	52.35	+28	20	02.6	17.0	095
	27		1979	12	24.93837	05	21	39.42	+22	43	39.7		1 095
1979	YX2	*	1979	12	24.93837	05	21	45.38	+30	13	01.0	17.2	095
1979	YY2	*	1979	12	24.93837	05	22	20.40	+24	57	52.2	17.0	095
	384		1979	12	24.93837	05	23	38.46	+29	21	26.0		095
1940			1979	12	24.93837	05	24	31.10	+22	58	23.5		1 095
1979	YZ2	*	1979	12	24.93837	05	24	58.26	+25	40	58.6	17.5	095
1979	YA3	*	1979	12	24.93837	05	25	10.92	+26	42	16.8	17.5	095
1979	YB3	*	1979	12	24.93837	05	25	24.46	+31	05	44.2	17.5	095
1979	YC3	*	1979	12	24.93837	05	27	22.34	+22	48	37.5	17.0	1 095
	126		1979	12	24.93837	05	27	55.58	+27	35	58.2		095
1979	YD3	*	1979	12	24.93837	05	27	59.90	+25	15	38.4	17.2	095
1979	YE3	*	1979	12	24.93837	05	33	02.60	+29	09	58.4	17.2	095
1979	YF3	*	1979	12	24.93837	05	33	14.29	+23	44	54.0	17.0	1 095
1979	YG3	*	1979	12	24.93837	05	33	14.48	+24	48	23.3	17.0	095
1038			1979	12	24.93837	05	33	14.49	+29	22	11.0		095
1979	YH3	*	1979	12	24.93837	05	36	22.89	+28	35	57.0	17.0	095
2269			1979	12	24.93837	05	36	28.17	+31	45	43.6		095
1979	YQ		1979	12	24.93837	05	39	23.32	+24	42	48.4		095
1979	YJ3	*	1979	12	24.93837	05	39	48.69	+29	10	16.6	17.2	2 095
	142		1979	12	24.93837	05	40	42.20	+24	45	40.0		095
	24		1979	12	24.93837	05	42	44.44	+24	18	12.0		095
1979	YK3	*	1979	12	24.93837	05	43	07.46	+25	49	33.2	17.0	095
1979	YL3	*	1979	12	24.93837	05	43	58.28	+26	45	48.2	16.8	095
1979	YM3	*	1979	12	24.93837	05	45	40.95	+23	31	30.2	17.2	1 095
1979	YN3	*	1979	12	24.93837	05	48	58.40	+27	42	38.9	17.0	095
1979	YO3	*	1979	12	24.93837	05	49	35.70	+25	43	22.4		095
1979	YP3	*	1979	12	24.93837	05	53	04.14	+30	15	52.8	17.5	1 095
	82		1979	12	24.93837	05	54	26.73	+27	58	35.6		1 095
1980	DQ4	*	1980	02	21.02155	11	43	23.48	+03	08	01.9	18.0	1 095
	577		1980	02	21.02155	11	44	36.63	-01	04	40.2		1 095
1481			1980	02	21.02155	11	45	52.49	+02	04	04.8		1 095
1980	DR4	*	1980	02	21.02155	11	46	20.63	+03	16	24.5	17.0	1 095
1301			1980	02	21.02155	11	46	20.81	+05	42	32.3		1 095
1980	DS4	*	1980	02	21.02155	11	46	27.80	+00	10	47.4	17.5	1 095
	885		1980	02	21.02155	11	47	57.43	+03	00	20.8		095
1980	DT4	*	1980	02	21.02155	11	48	16.75	+02	59	22.4	17.5	095
1980	DU4	*	1980	02	21.02155	11	48	26.14	+03	45	35.0	16.5	095
1980	DV4	*	1980	02	21.02155	11	48	40.61	+05	16	18.5	18.0	095
	1174		1980	02	21.02155	11	49	22.56	+04	23	00.2		095
	1731		1980	02	21.02155	11	49	38.89	+03	38	00.6		095
1980	DW4	*	1980	02	21.02155	11	50	02.89	+04	56	45.8	17.5	095
1980	DX4	*	1980	02	21.02155	11	51	25.91	+06	36	06.5	18.0	1 095
1980	DY4	*	1980	02	21.02155	11	51	36.76	+02	54	51.0	18.0	095
1980	FY		1980	02	21.02155	11	52	46.16	-00	48	06.9	17.5	095
1980	DZ4	*	1980	02	21.02155	11	52	46.36	-00	01	14.2	17.5	095
1980	FU		1980	02	21.02155	11	53	00.88	+00	12	18.2	17.5	095
1980	FV1		1980	02	21.02155	11	53	03.23	+01	14	15.3	17.5	095
1980	DA5	*	1980	02	21.02155	11	53	05.45	+00	21	56.5	17.0	095
1955			1980	02	21.02155	11	53	31.86	-00	52	36.1		095
1980	DB5	*	1980	02	21.02155	11	53	38.52	+06	02	35.7	17.5	1 095
1980	DC5	*	1980	02	21.02155	11	53	53.92	+06	40	57.8	18.0	1 095
1553			1980	02	21.02155	11	54	28.17	+05	07	25.5		095
1980	DD5	*	1980	02	21.02155	11	56	51.99	+06	34	27.2	17.5	1 095
1980	DE5	*	1980	02	21.02155	11	57	06.89	+02	37	40.4	18.0	095
	1077		1980	02	21.02155	11	57	26.02	-00	20	12.0		095
1980	DF5	*	1980	02	21.02155	11	57	37.86	+06	51	04.2	17.5	1 095
1980	DG5	*	1980	02	21.02155	11	58	38.50	+05	13	29.9	17.5	095



1279		1980	02	21.02155	11	58	38.91	-02	11	55.1		1	095
1980	FO3	1980	02	21.02155	11	58	40.98	+01	15	55.7	17.5		095
1045		1980	02	21.02155	11	59	11.63	-00	22	26.1			095
1350		1980	02	21.02155	12	00	12.30	+02	19	34.3			095
1980	DH5 *	1980	02	21.02155	12	01	36.07	+06	25	37.1	17.5	1	095
1980	DJ5 *	1980	02	21.02155	12	03	01.93	+05	26	25.4	18.0	1	095
1980	DK5 *	1980	02	21.02155	12	03	35.12	+05	27	16.6	18.0	1	095
1762		1980	02	21.02155	12	03	41.92	+00	16	25.1			095
1980	FB	1980	02	21.02155	12	03	47.39	+01	09	15.8	18.0		095
1148		1980	02	21.02155	12	04	26.68	+06	30	05.4		1	095
1980	FA	1980	02	21.02155	12	04	45.58	-00	18	05.4	18.0		095
1980	DL5 *	1980	02	21.02155	12	06	11.63	+02	31	30.5	18.0		095
1980	DM5 *	1980	02	21.02155	12	06	41.49	+06	29	33.6	16.5	1	095
2240		1980	02	21.02155	12	06	58.69	+00	28	05.2			095
1980	DN5 *	1980	02	21.02155	12	07	03.57	+03	43	06.6	17.5		095
2169		1980	02	21.02155	12	08	26.33	+01	30	28.1			095
1980	DO5 *	1980	02	21.02155	12	09	53.38	+01	13	53.9	17.5		095
877		1980	02	21.02155	12	09	59.78	+04	32	44.7			095
2256		1980	02	21.02155	12	11	23.30	-00	38	42.7			095
1020		1980	02	21.02155	12	11	50.25	-02	13	07.2	17.5	1	095
1082		1980	02	21.02155	12	12	17.68	-00	07	58.4			095
1472		1980	02	21.02155	12	12	54.27	+04	44	12.0			095
1980	DP5 *	1980	02	21.02155	12	12	56.69	+01	02	38.3	17.5		095
1774		1980	02	21.02155	12	13	22.67	-01	32	27.5	18.0		095
1980	DQ5 *	1980	02	21.02155	12	13	23.84	-00	54	41.1	16.0		095
1980	DR5 *	1980	02	21.02155	12	13	35.84	+02	44	39.1	17.0		095
1730		1980	02	21.02155	12	14	50.71	-00	54	09.9			095
1980	DS5 *	1980	02	21.02155	12	15	40.43	-00	15	48.0	17.0		095
210		1980	02	21.02155	12	16	06.94	+03	38	34.2		1	095
1980	DT5 *	1980	02	21.02155	12	16	47.03	+02	19	41.9	18.0	1	095
2338		1980	02	21.02155	12	16	53.09	+02	30	01.0		1	095
1980	DU5 *	1980	02	21.02155	12	16	57.81	-01	23	11.8		1	095
1980	DV5 *	1980	02	21.02155	12	17	27.52	-01	56	14.8	17.5	1	095
2081		1980	02	21.02155	12	18	26.80	+04	20	24.5		1	095
1239		1980	02	21.02155	12	19	48.89	+00	49	26.9		1	095
1384		1980	02	21.02155	12	21	52.27	+04	04	27.0		1	095
1432		1980	03	15.89940	11	38	21.16	+12	38	34.6	17.5	1	095
1980	EX *	1980	03	15.89940	11	39	39.98	+12	45	42.4	18.0	1	095
1980	DD1	1980	03	15.89940	11	40	34.07	+12	26	09.0	17.5	1	095
1980	EY *	1980	03	15.89940	11	42	47.08	+12	29	32.8	18.0	1	095
1980	DE1	1980	03	15.89940	11	43	17.72	+12	05	41.0	17.0	1	095
2315		1980	03	15.89940	11	44	33.58	+12	01	50.0			095
1980	EZ *	1980	03	15.89940	11	45	23.81	+14	29	20.6	18.0		095
1980	EA1 *	1980	03	15.89940	11	45	47.57	+14	29	43.7	17.5	2	095
1980	EB1 *	1980	03	15.89940	11	46	37.22	+14	28	43.3	18.0		095
1980	EC1 *	1980	03	15.89940	11	48	02.76	+09	50	49.2	18.0	1	095
1980	DA1	1980	03	15.89940	11	48	44.00	+11	51	16.1	16.5		095
2321		1980	03	15.89940	11	49	14.64	+11	02	13.5			095
1980	ED1 *	1980	03	15.89940	11	49	20.67	+09	04	28.1	16.0	1	095
1148		1980	03	15.89940	11	49	27.65	+09	22	25.7		1	095
1107		1980	03	15.89940	11	51	41.73	+11	15	40.7			095
1980	EE1 *	1980	03	15.89940	11	51	56.58	+10	55	35.9	17.0		095
1980	EF1 *	1980	03	15.89940	11	52	15.15	+16	12	26.0	17.0		095
1978	TM7	1980	03	15.89940	11	54	17.45	+14	01	30.1	16.0		095
1980	EG1 *	1980	03	15.89940	11	54	58.70	+08	32	01.5	18.0	1	095
484		1980	03	15.89940	11	55	03.85	+15	55	42.3			095
1980	EH1 *	1980	03	15.89940	11	58	46.75	+11	49	30.6	18.0		095
963		1980	03	15.89940	11	59	40.22	+14	10	36.3			095
1957		1980	03	15.89940	11	59	47.35	+15	17	08.2			095

1980	EJ1 *	1980	03	15.89940	12	01	04.55	+09	04	30.1	18.0	1	095
595		1980	03	15.89940	12	01	24.08	+14	04	03.0			095
1388		1980	03	15.89940	12	04	24.20	+14	43	05.4			095
1980	EK1 *	1980	03	15.89940	12	06	26.60	+15	31	01.8	17.5		095
1980	EL1 *	1980	03	15.89940	12	07	01.91	+11	56	54.5	18.0		095
1235		1980	03	15.89940	12	07	16.70	+16	17	49.4			095
1186		1980	03	15.89940	12	07	37.64	+11	19	43.7			095
1980	EM1 *	1980	03	15.89940	12	10	48.91	+13	02	37.2	18.0		095
667		1980	03	15.89940	12	11	07.34	+15	58	15.5			095
1980	EN1 *	1980	03	15.89940	12	11	50.76	+17	55	07.8	18.0	1	095
1980	EO1 *	1980	03	15.89940	12	13	38.14	+16	58	20.0	18.0	1	095
2193		1980	03	15.89940	12	18	30.40	+09	45	27.8		1	095
1225		1980	03	15.97375	13	17	16.77	-07	53	47.3		1	095
1980	EP1 *	1980	03	15.97375	13	18	48.89	-06	16	55.5	17.5	1	095
1980	EQ1 *	1980	03	15.97375	13	19	43.50	-05	10	16.8	17.5	1	095
788		1980	03	15.97375	13	20	30.21	-03	11	41.0		1	095
1980	ER1 *	1980	03	15.97375	13	22	28.50	-04	01	43.9	17.5	1	095
1980	ES1 *	1980	03	15.97375	13	22	30.01	-07	13	45.3	17.5	3	095
940		1980	03	15.97375	13	24	32.13	-01	30	54.8			095
1980	ET1 *	1980	03	15.97375	13	27	17.78	-05	26	42.7	16.5		095
1980	EU1 *	1980	03	15.97375	13	27	29.35	-03	56	33.1	17.5		095
260		1980	03	15.97375	13	28	38.60	-04	46	24.9			095
1980	EV1 *	1980	03	15.97375	13	28	41.37	-05	20	45.8	17.5		095
1761		1980	03	15.97375	13	34	14.98	-06	16	00.6			095
1980	EW1 *	1980	03	15.97375	13	34	45.19	-00	12	51.2	17.0		095
1980	EX1 *	1980	03	15.97375	13	35	11.34	-01	32	01.8	17.0		095
1980	EY1 *	1980	03	15.97375	13	36	26.68	-06	54	54.6	17.5	2	095
597		1980	03	15.97375	13	37	15.08	-02	37	46.2			095
1980	EZ1 *	1980	03	15.97375	13	37	27.42	-04	40	40.8	17.5		095
2087		1980	03	15.97375	13	38	44.53	-07	02	09.5			095
2084		1980	03	15.97375	13	39	27.05	-04	41	30.8			095
1980	EA2 *	1980	03	15.97375	13	40	38.32	-05	14	28.8	17.5		095
609		1980	03	15.97375	13	40	40.67	-07	11	20.4			095
758		1980	03	15.97375	13	40	58.70	-02	20	49.5			095
621		1980	03	15.97375	13	43	07.40	-08	00	24.0			095
1980	EB2 *	1980	03	15.97375	13	46	05.93	-04	01	53.4	17.5		095
363		1980	03	15.97375	13	46	45.52	-04	09	10.4			095
592		1980	03	15.97375	13	46	46.48	-03	41	49.0			095
1522		1980	03	15.97375	13	47	41.85	-04	27	36.0			095
21		1980	03	15.97375	13	47	55.25	-06	40	41.6			095
558		1980	03	15.97375	13	50	52.75	-01	10	11.8			095
728		1980	03	15.97375	13	52	00.10	-04	06	07.8			095
1072		1980	03	15.97375	13	53	26.85	-08	28	02.1		1	095
58		1980	03	15.97375	13	56	13.01	-07	03	55.0		1	095
1980	EC2 *	1980	03	15.97375	13	57	16.77	-05	46	49.8	17.5	1	095
503		1980	03	15.97375	13	57	31.68	-05	38	35.8		1	095
1350		1980	03	16.92028	11	42	38.91	+04	37	09.3		1	095
1519		1980	03	16.92028	11	43	36.47	+08	48	28.9		1	095
1980	FD10*	1980	03	16.92028	11	45	27.73	+07	24	23.6	18.0	1	095
1762		1980	03	16.92028	11	46	24.24	+02	27	32.5		1	095
1980	FE10*	1980	03	16.92028	11	46	27.59	+06	58	28.7	16.5	1	095
1980	FX4	1980	03	16.92028	11	46	37.87	+04	28	08.5	18.0	1	095
1980	FW4	1980	03	16.92028	11	46	41.89	+04	46	35.2	17.5	1	095
1980	FA	1980	03	16.92028	11	47	21.89	+01	51	41.4	18.0	1	095
1980	FB	1980	03	16.92028	11	47	25.36	+02	49	37.5	17.5		095
1980	FD5	1980	03	16.92028	11	47	45.92	+04	22	18.6	17.5		095
1980	FF10*	1980	03	16.92028	11	48	25.46	+09	11	00.9	16.0	1	095
1148		1980	03	16.92028	11	48	43.65	+09	29	44.9		1	095
2085		1980	03	16.92028	11	49	53.02	+06	32	52.0			095

2240		1980	03	16.92028	11	50	04.86	+02	18	19.4		095
877		1980	03	16.92028	11	50	22.66	+07	16	13.3		095
2169		1980	03	16.92028	11	50	30.02	+03	31	23.5		095
1472		1980	03	16.92028	11	50	35.18	+07	02	48.4		095
1980	FG10*	1980	03	16.92028	11	50	45.74	+02	32	35.8	17.5	095
1980	FH10*	1980	03	16.92028	11	52	20.69	+07	13	05.4	17.5	095
1980	FJ10*	1980	03	16.92028	11	52	51.26	+07	19	03.2	18.0	095
1980	FE	1980	03	16.92028	11	54	34.02	+04	01	27.3	18.0	095
2256		1980	03	16.92028	11	55	30.21	+01	07	39.6		1 095
1020		1980	03	16.92028	11	55	37.88	+00	09	26.6		1 095
1980	FK10*	1980	03	16.92028	11	56	21.58	+04	31	01.0	17.0	095
1774		1980	03	16.92028	11	56	39.31	+00	31	23.5		1 095
1082		1980	03	16.92028	11	56	51.40	+01	43	59.0		095
210		1980	03	16.92028	11	57	07.85	+05	23	43.8		095
1980	FL10*	1980	03	16.92028	11	57	15.30	+07	55	59.2	16.5	095
1980	FM10*	1980	03	16.92028	11	57	15.78	+06	04	32.8	18.0	095
1980	FN10*	1980	03	16.92028	11	57	38.79	+02	59	26.6	17.5	095
1730		1980	03	16.92028	11	58	10.03	+01	57	23.7		095
1980	FO10*	1980	03	16.92028	11	58	11.24	+02	10	03.3	17.0	095
1980	FP10*	1980	03	16.92028	11	58	49.45	+03	34	48.3	16.0	095
1980	FQ10*	1980	03	16.92028	11	58	57.05	+06	06	16.9	18.0	095
1980	FR10*	1980	03	16.92028	11	59	09.24	+02	02	07.4	18.0	095
1980	FS10*	1980	03	16.92028	11	59	14.53	+05	40	59.2	17.0	095
2081		1980	03	16.92028	11	59	26.28	+06	38	54.8		095
1980	FT10*	1980	03	16.92028	11	59	26.29	+04	33	15.5	17.5	095
1980	DU5	1980	03	16.92028	12	00	06.38	+01	41	02.0		1 095
1980	EJ1	1980	03	16.92028	12	00	10.75	+09	11	09.5	18.0	1 095
2338		1980	03	16.92028	12	00	19.13	+04	44	17.4		095
1239		1980	03	16.92028	12	01	20.10	+02	55	06.2		095
1980	FU10*	1980	03	16.92028	12	01	43.60	+04	41	19.6	18.0	095
1980	FV10*	1980	03	16.92028	12	02	30.71	+01	49	36.4	17.5	095
1980	FW10*	1980	03	16.92028	12	04	09.97	+01	11	20.5	18.0	1 095
1980	FX10*	1980	03	16.92028	12	04	15.19	+02	05	53.8	18.0	095
1384		1980	03	16.92028	12	05	22.24	+07	54	30.6		095
1980	FY10*	1980	03	16.92028	12	06	01.99	+03	25	48.9	17.0	095
1980	FZ10*	1980	03	16.92028	12	06	30.65	+03	42	06.2	18.0	095
1980	FA11*	1980	03	16.92028	12	07	02.03	+04	07	57.9	17.5	095
1980	FB11*	1980	03	16.92028	12	09	04.71	+01	18	01.6	18.0	1 095
1980	FC11*	1980	03	16.92028	12	09	07.70	+07	22	45.8	18.0	095
1980	FD11*	1980	03	16.92028	12	09	30.85	+05	23	54.1	17.5	095
1980	FE11*	1980	03	16.92028	12	09	38.44	+07	16	48.2	18.0	095
1980	FF11*	1980	03	16.92028	12	10	59.26	+07	32	59.2	17.5	095
1980	FG11*	1980	03	16.92028	12	12	29.43	+01	39	25.1	17.0	095
1980	FH11*	1980	03	16.92028	12	13	06.10	+08	04	51.3	18.0	095
1552		1980	03	16.92028	12	13	14.03	+01	08	56.7		1 095
1980	FJ11*	1980	03	16.92028	12	13	40.56	+05	30	33.9	17.5	095
2007		1980	03	16.92028	12	13	59.96	+00	18	43.1		1 095
1980	FK11*	1980	03	16.92028	12	15	36.31	+03	50	25.3	18.0	095
2193		1980	03	16.92028	12	17	40.21	+09	48	39.8		1 095
1980	FL11*	1980	03	16.92028	12	18	57.01	+05	41	56.1	17.5	1 095
1980	FM11*	1980	03	16.92028	12	20	23.99	+06	20	02.3	16.5	1 095
667		1980	03	16.99044	12	10	22.82	+16	11	08.1		1 095
1980	FN11*	1980	03	16.99044	12	17	38.47	+20	38	09.8	17.0	095
1980	FO11*	1980	03	16.99044	12	20	00.48	+18	18	57.1	17.5	095
1980	FP11*	1980	03	16.99044	12	27	07.00	+23	57	59.2	17.5	095
1980	FQ11*	1980	03	16.99044	12	27	22.50	+20	33	01.8	17.5	095
1980	FR11*	1980	03	16.99044	12	28	18.57	+23	35	41.1	16.5	095
1980	FS11*	1980	03	16.99044	12	28	48.27	+21	05	08.4	17.0	095
1980	FT11*	1980	03	16.99044	12	31	43.44	+19	41	46.4	17.0	095

2448		1980	03	16.99044	12	31	46.12	+20	05	56.4		095
154		1980	03	16.99044	12	34	04.80	+18	25	10.0		095
1980	FU11*	1980	03	16.99044	12	34	10.12	+24	39	29.5	17.5	1 095
1980	FV11*	1980	03	16.99044	12	35	05.94	+20	28	47.1	17.5	095
1980	FW11*	1980	03	16.99044	12	37	43.58	+15	54	53.2	17.0	1 095
1980	FX11*	1980	03	16.99044	12	38	38.71	+23	28	00.4	17.0	095
1980	FY11*	1980	03	16.99044	12	40	51.31	+21	57	54.8	17.0	095
1980	FZ11*	1980	03	16.99044	12	44	07.83	+17	51	06.0	17.5	095
1980	FA12*	1980	03	16.99044	12	44	15.37	+17	29	09.9	16.0	095
1701		1980	03	16.99044	12	46	40.97	+16	08	46.6		3 095
361		1980	05	10.88852	13	53	39.04	-17	03	50.7		1 095
1129		1980	05	10.88852	13	54	08.33	-21	50	00.8		1 095
1232		1980	05	10.88852	13	54	13.14	-23	05	46.3		1 095
1696		1980	05	10.88852	13	56	19.05	-16	10	45.3		1 095
1980	JR *	1980	05	10.88852	13	56	20.41	-21	21	13.3	17.0	1 095
1980	JS *	1980	05	10.88852	13	59	30.08	-15	19	58.9	17.5	1 095
1381		1980	05	10.88852	14	02	33.84	-18	06	32.5		095
409		1980	05	10.88852	14	03	03.29	-19	44	42.0		095
1980	JT *	1980	05	10.88852	14	03	11.82	-14	39	46.5	16.5	1 095
883		1980	05	10.88852	14	04	02.61	-20	33	17.8		095
1980	JU *	1980	05	10.88852	14	05	15.11	-18	07	15.5	16.5	095
1981	QH	1980	05	10.88852	14	08	59.70	-19	59	06.6		095
1980	JV *	1980	05	10.88852	14	09	41.33	-20	19	20.6	16.5	095
1980	JW *	1980	05	10.88852	14	14	11.80	-16	50	09.3	17.0	095
2274		1980	05	10.88852	14	14	14.01	-17	26	54.8		095
1298		1980	05	10.88852	14	22	55.06	-22	09	13.3		095
1459		1980	05	10.88852	14	24	58.51	-14	39	27.8		1 095
175		1980	05	10.88852	14	25	24.20	-16	09	46.5		095
1560		1980	05	10.88852	14	25	49.94	-23	12	09.2		095
1980	JX *	1980	05	10.88852	14	29	03.74	-18	54	04.4	17.5	095
475		1980	05	10.88852	14	29	55.04	-20	39	30.1		1 095
1135		1980	05	10.88852	14	30	26.00	-20	50	59.9		1 095
1980	JY *	1980	05	10.96873	16	23	08.94	+04	26	48.6	17.0	095
791		1980	05	10.96873	16	37	58.37	+00	24	39.7		1 095
678		1980	05	16.79757	12	36	33.85	-12	39	36.8		1 095
303		1980	05	16.79757	12	37	53.60	-10	38	00.8		1 095
1980	KR *	1980	05	16.79757	12	38	27.56	-07	25	16.0	16.5	1 095
392		1980	05	16.79757	12	43	48.93	-06	30	07.1		095
1980	KS *	1980	05	16.79757	12	45	23.77	-06	53	33.2	16.5	095
3		1980	05	16.79757	12	46	00.86	-11	13	22.6		095
1908		1980	05	16.79757	13	00	12.86	-08	28	48.2		095
621		1980	05	16.79757	13	02	51.08	-04	32	15.8		1 095
774		1980	05	16.79757	13	10	01.67	-12	45	11.0		1 095
1062		1980	05	17.83669	13	21	35.33	-15	21	46.6		1 095
1980	KT *	1980	05	17.83669	13	24	33.67	-07	47	46.4	17.5	1 095
1058		1980	05	17.83669	13	25	32.92	-09	23	28.5		1 095
1980	KU *	1980	05	17.83669	13	26	01.12	-10	28	25.0	17.0	3 095
1981	OG	1980	05	17.83669	13	26	44.04	-09	31	09.4	17.5	1 095
79		1980	05	17.83669	13	26	47.25	-08	08	34.5		1 095
1857		1980	05	17.83669	13	29	06.19	-11	42	43.2		095
31		1980	05	17.83669	13	29	08.89	-11	47	55.6		095
1036		1980	05	17.83669	13	29	20.01	-10	00	42.4		095
2379		1980	05	17.83669	13	30	12.72	-08	49	45.6		095
49		1980	05	17.83669	13	32	17.26	-13	54	15.9		095
1980	KV *	1980	05	17.83669	13	35	43.84	-11	43	57.4	17.5	095
2034		1980	05	17.83669	13	36	19.75	-15	08	57.3		1 095
846		1980	05	17.83669	13	37	41.63	-10	26	37.9		095
1980	KW *	1980	05	17.83669	13	40	51.27	-10	16	32.7	17.0	095
182		1980	05	17.83669	13	40	52.81	-07	28	49.6		1 095

1980	KX	*	1980	05	17.83669	13	40	52.84	-14	59	28.2	17.5	1	095
1980	KY	*	1980	05	17.83669	13	41	21.49	-09	49	31.5	17.5		095
2300			1980	05	17.83669	13	41	48.23	-10	53	10.5			095
2697			1980	05	17.83669	13	42	07.85	-14	48	32.8	17.5	1	095
2070			1980	05	17.83669	13	43	00.35	-13	42	00.9			095
604			1980	05	17.83669	13	44	07.10	-13	22	08.0			095
1309			1980	05	17.83669	13	44	12.38	-08	10	36.0			095
1696			1980	05	17.83669	13	50	40.28	-16	01	29.9		1	095
1838			1980	05	17.83669	13	51	10.12	-07	10	21.3		1	095
1980	KZ	*	1980	05	17.83669	13	52	26.25	-09	17	51.9	17.5	2	095
965			1980	05	17.83669	13	54	13.87	-09	40	00.8			095
1913			1980	05	17.83669	13	55	02.72	-13	22	22.5			095
2572			1980	05	17.83669	13	55	34.73	-07	58	25.3	17.5		095
715			1980	05	17.83669	13	58	39.53	-09	41	43.8		1	095
1616			1980	05	17.83669	13	59	01.86	-10	10	54.9		1	095
1296			1980	05	17.83669	14	00	18.70	-12	52	03.7		1	095
1980	KA1	*	1980	05	17.90938	15	24	04.68	-01	51	45.0	17.5	1	095
1980	KB1	*	1980	05	17.90938	15	25	48.73	-03	43	40.5	16.5	1	095
1980	KC1	*	1980	05	17.90938	15	29	35.97	-04	29	02.3	16.0		095
256			1980	05	17.90938	15	30	24.23	-02	32	25.3			095
1980	KD1	*	1980	05	17.90938	15	32	28.04	-00	36	23.4	17.0		095
1980	KE1	*	1980	05	17.90938	15	32	37.65	+01	29	31.4	17.5		095
1980	JH		1980	05	17.90938	15	32	47.55	-05	54	55.0	17.0	1	095
1980	JG		1980	05	17.90938	15	33	06.10	-06	12	27.9	15.5	1	095
1980	KF1	*	1980	05	17.90938	15	37	35.73	-02	26	15.8	17.5		095
1980	KG1	*	1980	05	17.90938	15	40	18.25	-04	17	51.4	17.0		095
1980	KH1	*	1980	05	17.90938	15	40	51.25	-04	44	22.7	17.0		095
1980	KJ1	*	1980	05	17.90938	15	41	20.91	-00	14	15.8	17.5		095
1980	KK1	*	1980	05	17.90938	15	47	21.42	+02	16	46.4	17.0	1	095
1980	KL1	*	1980	05	17.90938	15	52	30.63	+01	40	23.1	17.0		095
2443			1980	05	17.90938	15	55	16.49	-04	35	34.4	15.5		095
1980	KM1	*	1980	05	17.90938	15	55	36.05	-03	29	35.8	17.5		095
1220			1980	05	17.90938	15	56	17.71	-06	23	55.0		1	095
1980	KN1	*	1980	05	17.90938	15	58	40.66	-03	32	23.7	17.5	1	095
374			1980	05	17.97766	16	51	28.23	-15	34	50.1		1	095
1980	KOI	*	1980	05	17.97766	16	53	38.55	-17	54	04.0	17.5	1	095
168			1980	05	17.97766	16	54	40.74	-18	13	47.4		1	095
1980	KP1	*	1980	05	17.97766	16	57	23.08	-19	54	22.8	17.5		095
714			1980	05	17.97766	17	00	12.93	-16	49	59.6			095
8			1980	05	17.97766	17	01	22.61	-16	09	26.1			095
2586			1980	05	17.97766	17	02	18.60	-15	15	34.2			095
1980	MD		1980	05	17.97766	17	05	48.06	-13	50	32.2	17.5		095
1980	KQ1	*	1980	05	17.97766	17	09	28.49	-13	44	49.5	17.5		095
1980	KR1	*	1980	05	17.97766	17	09	49.09	-13	30	54.2	17.5	1	095
2614			1980	05	17.97766	17	10	03.84	-15	35	01.8			095
429			1980	05	17.97766	17	11	08.86	-15	30	03.1			095
1980	KS1	*	1980	05	17.97766	17	11	35.18	-13	58	20.8	17.5		095
2287			1980	05	17.97766	17	13	31.58	-18	39	13.5			095
1646			1980	05	17.97766	17	14	14.41	-12	50	23.9		1	095
2279			1980	05	17.97766	17	15	22.67	-17	56	27.9			095
798			1980	05	17.97766	17	17	22.89	-14	40	09.6			095
1980	KT1	*	1980	05	17.97766	17	18	37.29	-20	45	27.4	17.0		095
1295			1980	05	17.97766	17	24	38.53	-19	34	48.1			095
848			1980	05	17.97766	17	27	25.79	-22	07	33.3		3	095
2195			1980	05	17.97766	17	27	37.33	-19	35	04.4		1	095
1111			1980	05	17.97766	17	30	53.74	-18	32	36.8		1	095
403			1980	05	17.97766	17	31	05.71	-20	59	46.4		1	095
868			1980	05	17.97766	17	32	15.93	-17	44	13.4		1	095
239			1980	05	18.87610	14	54	43.26	-10	07	32.8		1	095

889		1980 05 18.87610	14 59 05.30	-04 24 46.8		1 095
1011		1980 05 18.87610	14 59 20.80	-07 09 18.4		1 095
1980	KU1 *	1980 05 18.87610	15 01 44.44	-10 30 36.4	16.5	095
871		1980 05 18.87610	15 03 50.27	-08 37 03.0		095
1980	KV1 *	1980 05 18.87610	15 04 19.06	-08 43 32.4	17.5	095
1413		1980 05 18.87610	15 04 53.35	-05 15 46.2		1 095
1120		1980 05 18.87610	15 07 41.18	-10 49 15.4		095
1980	KW1 *	1980 05 18.87610	15 07 57.76	-09 32 30.4	17.0	095
125		1980 05 18.87610	15 09 04.26	-10 39 08.6		095
1980	KX1 *	1980 05 18.87610	15 10 29.26	-04 30 01.8	17.0	1 095
1980	KYI *	1980 05 18.87610	15 13 41.32	-09 09 23.8	17.0	095
1980	KZ1 *	1980 05 18.87610	15 13 52.14	-04 13 33.6	17.0	095
1294		1980 05 18.87610	15 15 45.73	-11 46 59.4		095
2162		1980 05 18.87610	15 16 34.69	-13 03 52.2		1 095
1165		1980 05 18.87610	15 19 46.70	-08 12 21.9		095
14		1980 05 18.87610	15 21 02.88	-09 17 34.0		095
771		1980 05 18.87610	15 22 18.54	-12 20 31.6		095
2419		1980 05 18.87610	15 23 31.54	-08 30 58.2		095
1980	KA2 *	1980 05 18.87610	15 25 37.83	-09 41 39.4	17.5	095
1063		1980 05 18.87610	15 26 23.39	-11 29 48.9		095
1868		1980 05 18.87610	15 27 29.16	-06 24 39.4		095
1980	KB2 *	1980 05 18.87610	15 28 41.33	-04 29 16.5	16.5	1 095
2109		1980 05 18.87610	15 28 45.46	-06 45 52.6		095
1980	JG	1980 05 18.87610	15 32 23.26	-06 03 12.4	15.5	1 095
1980	KC2 *	1980 05 18.87610	15 32 40.04	-10 52 17.4	16.0	1 095
922		1980 05 18.87610	15 34 37.75	-13 02 21.9		1 095
1980	KR1	1980 05 18.95087	17 09 08.54	-13 27 36.8	17.5	1 095
429		1980 05 18.95087	17 10 24.70	-15 25 27.1		095
1646		1980 05 18.95087	17 13 26.47	-12 49 33.4		095
798		1980 05 18.95087	17 16 44.72	-14 35 58.6		095
1980	LCI	1980 05 18.95087	17 19 36.62	-11 43 19.3	17.5	095
1980	KD2 *	1980 05 18.95087	17 25 46.53	-12 53 13.6	17.5	095
1043		1980 05 18.95087	17 33 19.90	-10 28 32.1		095
1562		1980 05 18.95087	17 33 21.62	-15 40 10.5		095
1980	MG *	1980 06 16.83918	15 11 12.33	-11 04 55.7	16.5	1 095
1980	MH *	1980 06 16.83918	15 12 06.26	-08 10 42.2	16.5	1 095
1980	MJ *	1980 06 16.83918	15 12 23.58	-09 59 53.4	16.5	1 095
922		1980 06 16.83918	15 13 01.02	-10 54 29.2		095
1712		1980 06 16.83918	15 15 44.52	-15 28 50.8		095
1980	MK *	1980 06 16.83918	15 16 23.74	-12 39 39.8	16.5	2 095
1419		1980 06 16.83918	15 33 30.25	-14 13 38.8		095
629		1980 06 16.83918	15 35 13.12	-13 59 06.4		095
2284		1980 06 16.83918	15 42 05.89	-10 33 55.6		095
1980	ML *	1980 06 16.83918	15 44 08.24	-12 53 33.9	16.5	1 095
691		1980 06 16.83918	15 47 54.08	-12 52 25.7		1 095
803		1980 07 17.95095	19 50 18.53	-11 37 15.6		1 095
2175		1980 07 17.95095	19 51 51.68	-13 29 39.0		1 095
2136		1980 07 17.95095	20 04 59.60	-12 09 46.3		095
2283		1980 07 17.95095	20 05 25.10	-08 26 41.8		1 095
1980	OJ *	1980 07 17.95095	20 05 26.66	-10 36 23.8	16.5	095
460		1980 07 17.95095	20 06 13.16	-12 31 27.9		095
1980	OK *	1980 07 17.95095	20 06 48.34	-14 30 21.8	17.0	095
743		1980 07 17.95095	20 07 01.06	-13 03 08.6		095
876		1980 07 17.95095	20 11 55.22	-10 34 56.2		095
1306		1980 07 17.95095	20 28 33.66	-07 55 57.6		1 095
600		1980 07 21.93079	19 40 15.03	-14 42 22.5		1 095
286		1980 07 21.93079	19 43 27.16	-07 02 14.2		095
803		1980 07 21.93079	19 47 07.53	-11 38 46.0		095
2283		1980 07 21.93079	20 01 26.87	-08 41 19.1		095

1980 OJ	1980 07 21.93079	20 01 37.69	-10 42 00.6	16.5	095
2136	1980 07 21.93079	20 01 53.72	-12 29 47.0		095
460	1980 07 21.93079	20 02 45.12	-12 41 29.7		095
743	1980 07 21.93079	20 03 35.00	-13 10 43.5		095
1980 OL *	1980 07 21.93079	20 08 04.41	-11 46 30.1	17.0	095
876	1980 07 21.93079	20 08 51.81	-10 56 56.2		095
1980 RH2 *	1980 09 07.95889	00 25 53.82	+04 09 33.9	16.5	1 095
1980 RJ2 *	1980 09 07.95889	00 27 42.76	+06 11 22.2	15.5	1 095
1980 RK2 *	1980 09 07.95889	00 30 19.80	+03 58 15.4	16.0	095
1980 RL2 *	1980 09 07.95889	00 30 44.60	+05 59 18.5	17.0	1 095
1980 RM2 *	1980 09 07.95889	00 31 23.60	+04 10 18.3	16.0	095
1980 RN2 *	1980 09 08.99333	00 07 13.69	+04 47 40.2	17.0	1 095
1980 RO2 *	1980 09 08.99333	00 07 53.62	+05 59 53.8	15.2	1 095
1980 RP2 *	1980 09 08.99333	00 08 53.82	+07 08 55.1	16.5	095
650	1980 09 08.99333	00 10 39.76	+04 31 25.6		095
1538	1980 09 08.99333	00 14 43.22	+06 17 42.0	16.5	095
2317	1980 09 08.99333	00 15 58.80	+03 18 39.7		095
1980 RQ2 *	1980 09 08.99333	00 15 58.91	+06 48 29.7	17.0	095
2052	1980 09 08.99333	00 16 31.48	+10 27 04.0		095
1980 SM	1980 09 08.99333	00 16 36.32	+07 08 13.0	16.6	095
2351	1980 09 08.99333	00 16 42.03	+04 48 32.6		095
34	1980 09 08.99333	00 17 31.34	+02 46 04.2		1 095
1980 SQ	1980 09 08.99333	00 18 26.33	+09 26 47.8	16.5	095
2647	1980 09 08.99333	00 18 50.29	+09 32 41.3	15.2	095
1980 RR2 *	1980 09 08.99333	00 19 29.79	+02 06 55.6	17.0	1 095
551	1980 09 08.99333	00 21 36.88	+02 14 42.2		1 095
1980 RS2 *	1980 09 08.99333	00 24 46.64	+10 48 38.4	15.5	1 095
1980 RH2	1980 09 08.99333	00 25 19.62	+04 04 34.6	16.5	095
1980 RT2 *	1980 09 08.99333	00 26 05.58	+07 02 42.8	17.0	095
1686	1980 09 08.99333	00 26 16.40	+02 43 07.0		1 095
1980 RJ2	1980 09 08.99333	00 26 59.16	+06 12 03.6	15.5	095
1980 RU2 *	1980 09 08.99333	00 27 59.41	+06 50 35.8	15.5	095
1980 RV2 *	1980 09 08.99333	00 28 56.34	+05 01 10.7	17.0	095
1980 RK2	1980 09 08.99333	00 29 45.82	+03 49 30.8	16.0	095
1980 RL2	1980 09 08.99333	00 30 01.52	+05 56 20.0	17.0	095
1980 RM2	1980 09 08.99333	00 30 27.25	+04 11 24.0	16.0	095
1980 RW2 *	1980 09 08.99333	00 30 40.64	+06 32 11.6	17.0	095
996	1980 09 08.99333	00 32 44.02	+03 46 25.2		095
1980 TU6	1980 09 08.99333	00 33 35.44	+07 46 02.1	17.0	095
1835	1980 09 08.99333	00 35 48.68	+05 23 33.8		095
1980 RX2 *	1980 09 08.99333	00 35 59.18	+07 41 35.2	17.0	095
1700	1980 09 08.99333	00 39 08.54	+04 21 33.4		1 095
1590	1980 09 08.99333	00 42 12.52	+10 32 37.3		1 095
1980 RO2	1980 10 08.90207	23 44 22.72	+03 05 02.5	15.2	1 095
1538	1980 10 08.90207	23 44 40.62	+07 40 42.4	16.6	1 095
1980 TB6 *	1980 10 08.90207	23 46 20.56	+03 33 17.5	17.5	1 095
1980 SJ	1980 10 08.90207	23 46 23.97	+06 12 35.8	17.0	1 095
650	1980 10 08.90207	23 48 02.84	+01 16 21.1		1 095
1980 SM	1980 10 08.90207	23 48 51.91	+07 18 09.0	16.8	1 095
2599	1980 10 08.90207	23 49 36.69	+06 16 08.2	14.5	095
1980 TH	1980 10 08.90207	23 50 15.16	+07 15 34.9	17.0	095
2351	1980 10 08.90207	23 51 21.72	+03 20 31.2		095
2647	1980 10 08.90207	23 51 47.34	+07 19 30.2	15.2	095
1980 TJ	1980 10 08.90207	23 52 56.13	+07 49 14.8	17.5	2 095
1980 TC6 *	1980 10 08.90207	23 53 27.38	+03 27 24.6	17.2	095
1980 SQ	1980 10 08.90207	23 55 07.13	+05 29 08.3	16.2	095
2052	1980 10 08.90207	23 56 16.69	+06 54 25.6		095
1980 TD6 *	1980 10 08.90207	23 56 25.25	+02 08 31.8	17.2	095
1980 RU2	1980 10 08.90207	23 57 03.91	+07 32 46.0	15.5	095

1980	TE6	*	1980	10	08.90207	23	58	18.56	+02	17	51.6	17.2	095
1980	TF6	*	1980	10	08.90207	23	58	59.60	+08	41	11.4	17.0	095
551			1980	10	08.90207	23	59	17.94	-00	05	35.9		1 095
1980	RJ2		1980	10	08.90207	23	59	18.10	+05	38	49.8	15.2	095
1980	TG6	*	1980	10	08.90207	23	59	38.84	+02	44	37.2	17.2	095
1980	RM2		1980	10	08.90207	23	59	51.94	+04	10	59.8	16.0	095
1980	TH6	*	1980	10	08.90207	00	01	05.74	+06	21	31.8	16.5	095
1980	TJ6	*	1980	10	08.90207	00	01	13.96	+05	42	01.9	17.0	095
1980	RS2		1980	10	08.90207	00	01	36.10	+07	55	59.0	15.2	095
1980	TK6	*	1980	10	08.90207	00	01	53.61	+07	43	55.0	17.0	095
1980	TL6	*	1980	10	08.90207	00	02	26.58	+08	42	26.4	17.0	095
1980	RV2		1980	10	08.90207	00	03	31.60	+03	39	36.6	17.0	095
1980	TM6	*	1980	10	08.90207	00	03	38.84	+01	46	59.6	17.0	095
1980	TN6	*	1980	10	08.90207	00	04	29.62	+00	39	03.9	17.0	1 095
1980	TO6	*	1980	10	08.90207	00	04	30.42	+08	08	41.2	17.0	095
1686			1980	10	08.90207	00	04	39.28	+00	30	05.3		1 095
1980	RL2		1980	10	08.90207	00	04	52.24	+03	39	32.8	16.8	095
1980	RT2		1980	10	08.90207	00	06	20.94	+05	07	02.7	16.8	095
1980	TP6	*	1980	10	08.90207	00	06	24.82	+01	23	41.8	16.5	095
368			1980	10	08.90207	00	07	05.18	+09	15	35.4		1 095
1980	TQ6	*	1980	10	08.90207	00	08	08.22	+05	28	09.2	17.0	095
1980	TR6	*	1980	10	08.90207	00	09	52.80	+03	03	14.4	16.5	095
1980	TS6	*	1980	10	08.90207	00	11	30.14	+01	44	17.6	17.2	095
996			1980	10	08.90207	00	11	35.31	+01	35	03.2		095
1835			1980	10	08.90207	00	13	13.98	+03	05	28.8		095
1700			1980	10	08.90207	00	14	20.71	+04	09	11.6		095
1980	TT6	*	1980	10	08.90207	00	14	42.29	+06	30	08.6	17.0	095
1980	TU6	*	1980	10	08.90207	00	14	49.92	+06	48	08.3	16.8	095
1980	TV6	*	1980	10	08.90207	00	14	52.90	+02	14	22.3	16.5	095
1590			1980	10	08.90207	00	15	40.31	+06	46	20.0		095
1462			1980	10	08.90207	00	20	40.64	+01	48	50.2		1 095
496			1980	10	08.90207	00	21	35.08	+04	29	17.2		1 095
1980	TW6	*	1980	10	08.90207	00	22	32.39	+05	48	08.1	16.8	1 095
1538			1980	10	12.85765	23	41	32.41	+07	45	27.0	16.5	1 095
1980	RO2		1980	10	12.85765	23	42	01.82	+02	41	12.7	15.2	1 095
1980	TX6	*	1980	10	12.85765	23	45	01.10	+09	23	51.0	16.8	095
1980	SM		1980	10	12.85765	23	45	45.38	+07	14	51.8	16.6	095
2599			1980	10	12.85765	23	45	48.13	+06	24	03.9	14.5	095
1980	TH		1980	10	12.85765	23	47	18.56	+07	03	22.0	17.0	095
2351			1980	10	12.85765	23	48	27.88	+03	07	49.7		095
2647			1980	10	12.85765	23	48	38.38	+06	56	03.8	15.5	095
1980	SQ		1980	10	12.85765	23	52	31.28	+04	53	52.8	16.5	095
1980	RU2		1980	10	12.85765	23	53	27.06	+07	33	45.4	15.5	095
2052			1980	10	12.85765	23	53	52.53	+06	23	03.3		095
1980	Ty6	*	1980	10	12.85765	23	54	48.16	+10	01	08.0	17.5	095
1980	RJ2		1980	10	12.85765	23	55	44.50	+05	30	49.0	15.2	095
1980	TF6		1980	10	12.85765	23	56	02.53	+08	12	37.4	17.0	095
1980	RM2		1980	10	12.85765	23	56	17.28	+04	09	33.6	16.0	095
1980	RS2		1980	10	12.85765	23	58	53.81	+07	26	09.0	15.2	095
1980	TK6		1980	10	12.85765	23	59	12.94	+07	07	29.3	17.0	095
1980	TZ6	*	1980	10	12.85765	00	00	06.30	+08	39	58.4	16.6	095
1980	RV2		1980	10	12.85765	00	00	37.87	+03	27	35.2	16.8	095
1980	TA7	*	1980	10	12.85765	00	01	56.85	+10	14	54.4	16.5	095
1980	RL2		1980	10	12.85765	00	02	02.13	+03	21	09.5	16.8	095
1980	RT2		1980	10	12.85765	00	03	51.60	+04	50	09.3	16.8	095
1980	TQ6		1980	10	12.85765	00	04	38.39	+05	19	30.8	17.0	095
368			1980	10	12.85765	00	04	41.10	+08	44	08.2		095
541			1980	10	12.85765	00	05	00.52	+10	15	54.6		095
1835			1980	10	12.85765	00	10	20.30	+02	46	28.0		1 095



1700	1980 10 12.85765	00 11 09.12	+04 05 34.0			095
1980 TT6	1980 10 12.85765	00 11 45.10	+06 03 43.1	17.0	2	095
1980 TU6	1980 10 12.85765	00 12 22.26	+06 38 45.4	16.8	1	095
1590	1980 10 12.85765	00 12 23.82	+06 12 57.6		1	095

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

OBSERVATIONS MADE AT GEISEI BY T. SEKI. FROM NIHONDAIRA OBS. CIRC. NOS. 1334 AND 1338.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2396	1982 06 27.59549	18 46 27.83	-05 48 36.1	17	372	
2396	1982 06 27.60660	18 46 27.34	-05 48 36.3		372	
1978 QB2	1982 05 23.64931	15 38 32.24	-04 23 52.8	18	372	
1978 QB2	1982 05 23.66458	15 38 31.69	-04 23 50.0		372	
1981 CN	1982 06 27.73055	20 46 29.47	-17 16 39.2	17	372	
1981 CN	1982 06 27.74583	20 46 28.93	-17 16 40.8		372	
1981 CN	1982 06 29.70312	20 45 15.80	-17 19 13.7	17	372	
1981 CN	1982 06 29.71771	20 45 15.17	-17 19 14.6		372	
1982 KA	1982 05 28.70694	15 51 59.89	+00 23 05.0	18	372	
1982 KA	1982 05 28.72535	15 51 58.29	+00 22 46.3		372	
1982 KA	1982 06 14.59479	15 31 54.49	-05 18 34.5	18	372	
1982 KA	1982 06 14.62465	15 31 52.78	-05 19 13.5		372	
1982 KA	1982 06 27.63958	15 22 18.45	-10 06 33.9	18	372	

OBSERVATIONS MADE WITH THE 1.2-M U.K. SCHMIDT TELESCOPE AT SIDING SPRING BY J. DAWE, J. BARROW, M. HARTLEY, D. MORGAN, K. RUSSELL AND A. SAVAGE IN THE COURSE OF THE U. K.-CALTECH ASTEROID SURVEY UNDER THE DIRECTION OF E. HELIN AND E. SHOEMAKER. SCANNED AND MEASURED BY S. J. BUS (WITH ASSISTANCE FROM R. S. DUNBAR).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1981 EG2 *	1981 03 02.56588	11 39 50.64	-13 28 36.8	19.0V	413	
1981 EG2	1981 03 07.59447	11 36 01.26	-13 02 08.2		413	
1981 EG2	1981 03 12.52945	11 32 08.03	-12 30 28.2		413	
1981 EG2	1981 04 09.60259	11 13 45.82	-08 34 40.7	20.0V	413	
1981 EG2	1981 04 09.63731	11 13 45.07	-08 34 25.6		413	
1981 EH2 *	1981 03 02.52074	11 40 46.08	-10 34 16.6	19.0V	413	
1981 EH2	1981 03 02.56588	11 40 44.04	-10 34 02.5		413	
1981 EH2	1981 03 07.55280	11 37 17.68	-10 05 31.5		413	
1981 EH2	1981 03 07.59447	11 37 16.10	-10 05 19.3		413	
1981 EH2	1981 03 10.53941	11 35 09.71	-09 46 24.3		413	
1981 EH2	1981 03 10.58108	11 35 07.97	-09 46 10.0		413	
1981 EH2	1981 03 12.52945	11 33 43.39	-09 32 54.0		413	
1981 EH2	1981 03 12.56765	11 33 41.94	-09 32 41.7		413	
1981 EH2	1981 04 09.60259	11 16 15.49	-05 53 07.6	19.5V	413	
1981 EJ2 *	1981 03 02.52074	11 40 48.50	-12 05 58.9	19.0V	413	
1981 EJ2	1981 03 02.56588	11 40 46.71	-12 05 51.3		413	
1981 EJ2	1981 03 07.55280	11 37 03.99	-11 47 04.1		413	
1981 EJ2	1981 03 07.59447	11 37 02.19	-11 46 54.2		413	
1981 EJ2	1981 03 10.53941	11 34 46.51	-11 34 03.7		413	
1981 EJ2	1981 03 10.58108	11 34 44.54	-11 33 53.0		413	
1981 EJ2	1981 04 09.60259	11 13 21.18	-08 37 28.6	19.5V	413	
1981 EJ2	1981 04 09.63731	11 13 20.13	-08 37 17.0		413	
1981 EK2 *	1981 03 02.52074	11 41 50.36	-10 52 08.6	19.0V	413	
1981 EK2	1981 03 02.56588	11 41 48.21	-10 52 02.6		413	
1981 EK2	1981 03 07.55280	11 37 53.65	-10 34 33.0		413	
1981 EK2	1981 03 07.59447	11 37 51.68	-10 34 24.4		413	
1981 EK2	1981 03 10.53941	11 35 27.38	-10 22 03.6		413	
1981 EK2	1981 03 10.58108	11 35 25.16	-10 21 52.6		413	
1981 EK2	1981 03 12.52945	11 33 48.16	-10 12 55.7		413	
1981 EK2	1981 04 09.60259	11 12 35.90	-07 25 07.5	19.0V	413	

1981	EK2		1981	04	09.63731	11	12	34.90	-07	24	56.7		413
1981	EL2	*	1981	03	02.52074	11	42	33.64	-11	56	57.4	19.0V	413
1981	EL2		1981	03	07.55280	11	38	39.37	-11	31	02.4		413
1981	EL2		1981	03	07.59447	11	38	37.57	-11	30	49.9		413
1981	EL2		1981	03	10.53941	11	36	15.09	-11	13	31.8		413
1981	EL2		1981	04	09.60259	11	13	42.66	-07	25	35.3	19.5V	413
1981	EL2		1981	04	09.63731	11	13	41.50	-07	25	18.9		413
1981	EM2	*	1981	03	02.52074	11	42	44.82	-12	04	45.2	19.0V	413
1981	EM2		1981	03	02.56588	11	42	42.83	-12	04	35.5		413
1981	EM2		1981	03	07.55280	11	38	50.76	-11	38	14.2		413
1981	EM2		1981	03	07.59447	11	38	48.70	-11	38	00.4		413
1981	EM2		1981	03	10.53941	11	36	23.46	-11	18	56.8		413
1981	EM2		1981	03	10.58108	11	36	21.45	-11	18	41.6		413
1981	EM2		1981	03	12.56765	11	34	41.34	-11	04	29.9		413
1981	EM2		1981	04	09.60259	11	15	11.95	-06	45	42.0	19.0V	413
1981	EM2		1981	04	09.63731	11	15	11.18	-06	45	25.3		413
1981	EN2	*	1981	03	02.52074	11	43	21.35	-12	38	29.4	19.0V	413
1981	EN2		1981	03	02.56588	11	43	19.43	-12	38	23.0		413
1981	EN2		1981	03	07.55280	11	39	41.06	-12	21	06.3		413
1981	EN2		1981	03	07.59447	11	39	39.01	-12	20	57.2		413
1981	EN2		1981	03	12.56765	11	35	52.67	-11	59	28.3		413
1981	EN2		1981	04	09.60259	11	17	00.88	-09	12	33.4	19.5V	413
1981	EN2		1981	04	09.63731	11	16	59.95	-09	12	21.3		413
1981	EO2	*	1981	03	02.52074	11	43	47.18	-10	17	59.2	18.0V	413
1981	EO2		1981	03	02.56588	11	43	45.40	-10	17	49.6		413
1981	EO2		1981	03	07.55280	11	40	13.60	-09	55	58.0		413
1981	EO2		1981	03	07.59447	11	40	11.82	-09	55	47.6		413
1981	EO2		1981	03	10.53941	11	38	01.65	-09	41	00.7		413
1981	EO2		1981	03	10.58108	11	37	59.82	-09	40	48.7		413
1981	EO2		1981	03	12.52945	11	36	32.45	-09	30	19.6		413
1981	EO2		1981	03	12.56765	11	36	30.78	-09	30	08.3		413
1981	EO2		1981	04	07.41760	11	18	43.54	-06	41	57.8		413
1981	EO2		1981	04	07.45232	11	18	42.52	-06	41	46.0		413
1981	EO2		1981	04	08.45642	11	18	10.48	-06	34	58.2		413
1981	EO2		1981	04	08.49114	11	18	09.45	-06	34	44.6		413
1981	EO2		1981	04	09.60259	11	17	35.10	-06	27	16.1	19.0V	413
1981	EO2		1981	04	09.63731	11	17	34.21	-06	27	04.3		413
1981	EP2	*	1981	03	02.52074	11	43	51.91	-13	01	34.3	18.0V	413
1981	EP2		1981	03	02.56588	11	43	50.37	-13	01	24.1		413
1981	EP2		1981	03	07.55280	11	40	30.31	-12	33	57.1		413
1981	EP2		1981	03	07.59447	11	40	28.68	-12	33	44.4		413
1981	EP2		1981	03	10.53941	11	38	26.23	-12	15	39.0		413
1981	EP2		1981	03	10.58108	11	38	24.59	-12	15	24.2		413
1981	EP2		1981	03	12.52945	11	37	02.44	-12	02	44.4		413
1981	EP2		1981	03	12.56765	11	37	01.00	-12	02	32.2		413
1981	EP2		1981	04	07.41760	11	20	07.86	-08	42	41.0		413
1981	EP2		1981	04	07.45232	11	20	06.78	-08	42	27.0		413
1981	EP2		1981	04	08.45642	11	19	35.33	-08	34	14.1		413
1981	EP2		1981	04	08.49114	11	19	34.15	-08	33	58.5		413
1981	EP2		1981	04	09.63731	11	18	59.37	-08	24	40.7	18.5V	413
1981	EQ2	*	1981	03	02.52074	11	44	08.97	-09	13	41.2	18.0V	413
1981	EQ2		1981	03	02.56588	11	44	06.85	-09	13	36.5		413
1981	EQ2		1981	03	07.55280	11	39	43.52	-08	58	44.9		413
1981	EQ2		1981	03	07.59447	11	39	41.29	-08	58	37.7		413
1981	EQ2		1981	03	10.53941	11	36	57.75	-08	47	20.0		413
1981	EQ2		1981	03	12.52945	11	35	05.41	-08	38	46.4		413
1981	EQ2		1981	03	12.56765	11	35	03.38	-08	38	37.3		413
1981	EQ2		1981	04	08.45642	11	12	38.17	-06	02	01.8		413
1981	EQ2		1981	04	08.49114	11	12	36.79	-06	01	49.1		413

1981	EQ2	1981	04	09.60259	11	11	58.73	-05	55	07.5	18.5V	413	
1981	EQ2	1981	04	09.63731	11	11	57.72	-05	54	57.0		413	
1981	ER2	*	1981	03	02.52074	11	44	12.23	-10	49	25.8	17.5V	413
1981	ER2		1981	03	02.56588	11	44	10.83	-10	48	56.7		413
1981	ER2		1981	03	07.55280	11	41	30.83	-09	44	10.1		413
1981	ER2		1981	03	07.59447	11	41	29.44	-09	43	40.0		413
1981	ER2		1981	03	10.53941	11	39	49.03	-09	02	30.7		413
1981	ER2		1981	03	10.58108	11	39	47.60	-09	01	58.8		413
1981	ER2		1981	03	12.52945	11	38	39.72	-08	33	43.5		413
1981	ER2		1981	03	12.56765	11	38	38.51	-08	33	14.9		413
1981	ER2		1981	04	05.49137	11	26	15.44	-02	22	40.9		413
1981	ER2		1981	04	06.46361	11	25	54.73	-02	08	06.1		413
1981	ER2		1981	04	06.49834	11	25	54.00	-02	07	38.4		413
1981	ER2		1981	04	07.46608	11	25	34.47	-01	53	16.4		413
1981	ER2		1981	04	07.50080	11	25	33.83	-01	52	51.5		413
1981	ER2		1981	04	12.62048	11	24	10.60	-00	39	53.3		413
1981	ER2		1981	04	12.65521	11	24	10.18	-00	39	28.4		413
1981	ES2	*	1981	03	02.52074	11	44	23.67	-11	52	09.4	18.5V	413
1981	ES2		1981	03	07.55280	11	39	48.26	-11	39	24.7		413
1981	ES2		1981	03	07.59447	11	39	46.00	-11	39	18.4		413
1981	ES2		1981	03	10.53941	11	36	56.45	-11	28	49.0		413
1981	ES2		1981	04	09.60259	11	11	15.17	-08	26	10.7	19.0V	413
1981	ES2		1981	04	09.63731	11	11	14.11	-08	25	58.8		413
1981	ET2	*	1981	03	02.52074	11	44	24.86	-12	43	14.1	19.0V	413
1981	ET2		1981	03	02.56588	11	44	23.07	-12	43	07.0		413
1981	ET2		1981	03	07.55280	11	40	54.53	-12	24	41.8		413
1981	ET2		1981	03	07.59447	11	40	52.93	-12	24	33.7		413
1981	ET2		1981	03	10.53941	11	38	44.39	-12	11	17.2		413
1981	ET2		1981	03	12.52945	11	37	16.29	-12	01	26.1		413
1981	ET2		1981	04	09.60259	11	19	15.00	-08	57	22.5	19.5V	413
1981	ET2		1981	04	09.63731	11	19	14.22	-08	57	10.9		413
1981	EU2	*	1981	03	02.56588	11	44	30.70	-09	06	33.4	19.0V	413
1981	EU2		1981	03	07.55280	11	40	38.35	-08	58	33.7		413
1981	EU2		1981	03	07.59447	11	40	36.63	-08	58	30.8		413
1981	EU2		1981	03	10.53941	11	38	14.40	-08	52	20.0		413
1981	EU2		1981	03	10.58108	11	38	12.15	-08	52	15.1		413
1981	EU2		1981	03	12.52945	11	36	37.34	-08	47	38.9		413
1981	EU2		1981	03	12.56765	11	36	35.35	-08	47	32.8		413
1981	EU2		1981	04	09.63731	11	15	29.13	-07	13	00.7	20.0V	413
1981	EV2	*	1981	03	02.56588	11	45	07.03	-12	31	06.1	18.5V	413
1981	EV2		1981	03	07.55280	11	41	32.47	-12	12	54.9		413
1981	EV2		1981	03	07.59447	11	41	30.72	-12	12	46.6		413
1981	EV2		1981	03	10.53941	11	39	18.99	-12	00	02.9		413
1981	EV2		1981	03	12.52945	11	37	48.58	-11	50	43.4		413
1981	EV2		1981	03	12.56765	11	37	46.87	-11	50	33.7		413
1981	EV2		1981	04	08.45642	11	19	03.17	-09	06	35.5		413
1981	EV2		1981	04	09.60259	11	18	26.07	-08	59	02.6	18.0V	413
1981	EV2		1981	04	09.63731	11	18	25.04	-08	58	49.8		413
1981	EW2	*	1981	03	02.52074	11	45	56.94	-11	19	41.6	18.0V	413
1981	EW2		1981	03	02.56588	11	45	54.60	-11	19	46.0		413
1981	EW2		1981	03	07.55280	11	41	13.80	-11	23	15.2		413
1981	EW2		1981	03	07.59447	11	41	11.40	-11	23	17.3		413
1981	EW2		1981	03	10.53941	11	38	17.60	-11	23	08.9		413
1981	EW2		1981	03	10.58108	11	38	15.06	-11	23	09.6		413
1981	EW2		1981	03	12.52945	11	36	17.90	-11	22	12.8		413
1981	EW2		1981	03	12.56765	11	36	15.76	-11	22	12.1		413
1981	EW2		1981	04	09.60259	11	10	18.85	-10	15	51.0	19.0V	413
1981	EW2		1981	04	09.63731	11	10	17.65	-10	15	45.5		413
1981	EX2	*	1981	03	02.52074	11	46	34.06	-09	13	19.6	14.5V	413

1981 EX2	1981 03 02.56588	11 46 32.04	-09 13 16.6	413
1981 EX2	1981 03 07.55280	11 42 33.30	-09 05 14.5	413
1981 EX2	1981 03 07.59447	11 42 31.25	-09 05 10.4	413
1981 EX2	1981 03 10.53941	11 40 05.04	-08 58 46.1	413
1981 EX2	1981 03 10.58108	11 40 02.96	-08 58 41.0	413
1981 EX2	1981 03 12.52945	11 38 24.93	-08 53 51.2	413
1981 EX2	1981 03 12.56765	11 38 23.06	-08 53 45.6	413
1981 EX2	1981 04 07.41760	11 18 25.18	-07 21 32.7	413
1981 EX2	1981 04 07.45232	11 18 23.92	-07 21 25.0	413
1981 EX2	1981 04 08.45642	11 17 47.40	-07 17 29.0	413
1981 EX2	1981 04 08.49114	11 17 46.19	-07 17 21.4	413
1981 EX2	1981 04 09.60259	11 17 06.93	-07 13 01.8	15.5V 413
1981 EX2	1981 04 09.63731	11 17 05.79	-07 12 54.8	413
1981 EY2 *	1981 03 02.52074	11 46 53.18	-09 03 43.9	19.0V 413
1981 EY2	1981 03 02.56588	11 46 51.55	-09 03 33.8	413
1981 EY2	1981 03 07.55280	11 43 30.50	-08 39 55.4	413
1981 EY2	1981 03 07.59447	11 43 28.91	-08 39 44.6	413
1981 EY2	1981 03 10.53941	11 41 25.56	-08 24 17.9	413
1981 EY2	1981 03 10.58108	11 41 23.89	-08 24 05.6	413
1981 EY2	1981 04 09.60259	11 21 38.95	-05 15 01.7	19.5V 413
1981 EY2	1981 04 09.63731	11 21 37.97	-05 14 49.1	413
1981 EZ2 *	1981 03 02.52074	11 47 13.19	-10 11 11.8	16.0V 413
1981 EZ2	1981 03 02.56588	11 47 11.29	-10 10 57.5	413
1981 EZ2	1981 03 07.55280	11 43 33.97	-09 40 13.4	413
1981 EZ2	1981 03 07.59447	11 43 32.06	-09 39 57.6	413
1981 EZ2	1981 03 10.53941	11 41 15.72	-09 19 03.7	413
1981 EZ2	1981 03 10.58108	11 41 13.78	-09 18 47.1	413
1981 EZ2	1981 03 12.52945	11 39 41.50	-09 03 56.9	413
1981 EZ2	1981 03 12.56765	11 39 39.68	-09 03 40.3	413
1981 EZ2	1981 04 05.45665	11 22 07.60	-05 26 08.3	413
1981 EZ2	1981 04 05.49137	11 22 06.40	-05 25 50.8	413
1981 EZ2	1981 04 06.46361	11 21 34.04	-05 16 42.0	413
1981 EZ2	1981 04 06.49834	11 21 32.86	-05 16 23.7	413
1981 EZ2	1981 04 07.46608	11 21 02.08	-05 07 23.4	413
1981 EZ2	1981 04 07.50080	11 21 00.93	-05 07 05.3	413
1981 EZ2	1981 04 10.57562	11 19 31.62	-04 39 02.0	413
1981 EZ2	1981 04 10.60479	11 19 30.95	-04 38 50.1	413
1981 EZ2	1981 04 12.62048	11 18 40.27	-04 20 57.2	413
1981 EZ2	1981 04 12.65521	11 18 39.45	-04 20 40.8	413
1981 EA3 *	1981 03 02.52074	11 47 15.65	-09 20 10.1	18.5V 413
1981 EA3	1981 03 02.56588	11 47 13.15	-09 20 03.5	413
1981 EA3	1981 03 07.55280	11 42 38.50	-09 04 18.4	413
1981 EA3	1981 03 07.59447	11 42 36.18	-09 04 10.9	413
1981 EA3	1981 03 10.53941	11 39 44.46	-08 52 15.5	413
1981 EA3	1981 03 10.58108	11 39 41.97	-08 52 05.6	413
1981 EA3	1981 03 12.52945	11 37 45.84	-08 43 14.6	413
1981 EA3	1981 03 12.56765	11 37 43.43	-08 43 03.9	413
1981 EA3	1981 04 09.60259	11 12 31.18	-05 48 16.5	19.5V 413
1981 EA3	1981 04 09.63731	11 12 30.02	-05 48 05.8	413
1981 EB3 *	1981 03 02.52074	11 47 17.27	-10 48 16.3	19.0V 413
1981 EB3	1981 03 02.56588	11 47 15.73	-10 48 06.8	413
1981 EB3	1981 03 07.55280	11 44 00.71	-10 23 57.4	413
1981 EB3	1981 03 07.59447	11 43 59.09	-10 23 46.3	413
1981 EB3	1981 03 10.53941	11 41 57.83	-10 07 14.9	413
1981 EB3	1981 03 10.58108	11 41 56.03	-10 07 00.6	413
1981 EB3	1981 03 12.52945	11 40 34.25	-09 55 15.2	413
1981 EB3	1981 04 09.60259	11 23 09.44	-06 28 19.7	19.0V 413
1981 EB3	1981 04 09.63731	11 23 08.53	-06 28 05.4	413
1981 EC3 *	1981 03 02.52074	11 47 33.63	-11 03 14.9	19.0V 413

1981 EC3	1981 03 02.56588	11 47 31.44	-11 03 04.2	413
1981 EC3	1981 03 07.59447	11 43 19.01	-10 39 04.0	413
1981 EC3	1981 03 10.58108	11 40 38.49	-10 21 45.4	413
1981 EC3	1981 03 12.52945	11 38 50.74	-10 09 21.4	413
1981 EC3	1981 04 09.60259	11 14 20.32	-06 08 04.3	19.0V 413
1981 EC3	1981 04 09.63731	11 14 19.29	-06 07 49.8	413
1981 ED3 *	1981 03 02.52074	11 47 34.66	-10 13 01.0	19.5V 413
1981 ED3	1981 03 07.55280	11 44 17.31	-09 41 19.6	413
1981 ED3	1981 03 07.59447	11 44 15.71	-09 41 06.3	413
1981 ED3	1981 03 10.53941	11 42 15.42	-09 20 41.8	413
1981 ED3	1981 03 10.58108	11 42 13.62	-09 20 25.7	413
1981 ED3	1981 03 12.52945	11 40 53.14	-09 06 17.7	413
1981 ED3	1981 04 09.60259	11 23 43.01	-05 19 16.3	20.0V 413
1981 ED3	1981 04 09.63731	11 23 42.22	-05 19 01.7	413
1981 EE3 *	1981 03 02.52074	11 47 39.24	-09 52 09.7	20.0V 413
1981 EE3	1981 03 02.56588	11 47 37.01	-09 52 07.1	413
1981 EE3	1981 03 07.55280	11 42 58.57	-09 44 08.5	413
1981 EE3	1981 03 07.59447	11 42 56.01	-09 44 03.4	413
1981 EE3	1981 03 10.53941	11 40 05.65	-09 37 08.8	413
1981 EE3	1981 04 09.60259	11 14 27.49	-07 34 24.5	19.5V 413
1981 EE3	1981 04 09.63731	11 14 26.00	-07 34 11.2	413
1981 EF3 *	1981 03 02.52074	11 47 57.79	-10 36 42.8	18.5V 413
1981 EF3	1981 03 02.56588	11 47 55.70	-10 36 33.1	413
1981 EF3	1981 03 07.55280	11 43 41.67	-10 12 50.6	413
1981 EF3	1981 03 07.59447	11 43 39.43	-10 12 37.7	413
1981 EF3	1981 03 10.53941	11 41 01.07	-09 55 46.0	413
1981 EF3	1981 03 10.58108	11 40 58.78	-09 55 31.7	413
1981 EF3	1981 03 12.52945	11 39 11.64	-09 43 16.8	413
1981 EF3	1981 03 12.56765	11 39 09.66	-09 43 03.6	413
1981 EF3	1981 04 08.45642	11 17 13.84	-06 08 54.5	413
1981 EF3	1981 04 08.49114	11 17 12.84	-06 08 41.4	413
1981 EF3	1981 04 09.60259	11 16 35.78	-05 59 40.6	19.5V 413
1981 EF3	1981 04 09.63731	11 16 34.75	-05 59 25.7	413
1981 EG3 *	1981 03 02.52074	11 48 25.08	-12 24 14.8	18.5V 413
1981 EG3	1981 03 07.55280	11 44 48.05	-12 10 49.3	413
1981 EG3	1981 03 07.59447	11 44 46.16	-12 10 42.3	413
1981 EG3	1981 03 10.53941	11 42 33.59	-12 00 55.3	413
1981 EG3	1981 03 10.58108	11 42 31.73	-12 00 46.9	413
1981 EG3	1981 03 12.52945	11 41 02.35	-11 53 35.3	413
1981 EG3	1981 03 12.56765	11 41 00.65	-11 53 27.8	413
1981 EG3	1981 04 09.60259	11 21 06.09	-09 29 37.5	19.0V 413
1981 EG3	1981 04 09.63731	11 21 05.02	-09 29 27.5	413
1981 EH3 *	1981 03 02.56588	11 48 51.41	-10 31 08.2	19.0V 413
1981 EH3	1981 03 07.55280	11 44 34.47	-10 11 21.6	413
1981 EH3	1981 03 07.59447	11 44 32.36	-10 11 12.2	413
1981 EH3	1981 03 10.53941	11 41 54.18	-09 57 25.2	413
1981 EH3	1981 03 10.58108	11 41 51.93	-09 57 14.4	413
1981 EH3	1981 03 12.56765	11 40 03.54	-09 47 09.4	413
1981 EH3	1981 04 09.60259	11 16 48.15	-06 47 38.7	19.5V 413
1981 EJ3 *	1981 03 02.56588	11 49 06.18	-12 01 25.3	18.0V 413
1981 EJ3	1981 03 07.55280	11 44 32.43	-11 55 17.9	413
1981 EJ3	1981 03 07.59447	11 44 30.11	-11 55 14.9	413
1981 EJ3	1981 03 10.53941	11 41 42.69	-11 49 25.4	413
1981 EJ3	1981 03 10.58108	11 41 40.38	-11 49 20.2	413
1981 EJ3	1981 03 12.52945	11 39 48.11	-11 44 38.7	413
1981 EJ3	1981 03 12.56765	11 39 46.06	-11 44 33.2	413
1981 EJ3	1981 04 08.45642	11 16 37.25	-09 56 22.0	413
1981 EJ3	1981 04 09.60259	11 15 53.21	-09 51 01.7	19.0V 413
1981 EJ3	1981 04 09.63731	11 15 51.95	-09 50 53.1	413

1981	EK3	*	1981	03	02.52074	11	49	11.28	-08	41	22.3	19.0V	413
1981	EK3		1981	03	02.56588	11	49	09.52	-08	41	12.7		413
1981	EK3		1981	03	07.55280	11	45	25.13	-08	19	25.1		413
1981	EK3		1981	03	07.59447	11	45	23.21	-08	19	14.6		413
1981	EK3		1981	03	10.53941	11	43	02.43	-08	04	02.2		413
1981	EK3		1981	03	12.52945	11	41	25.02	-07	52	54.6		413
1981	EK3		1981	03	12.56765	11	41	23.07	-07	52	42.0		413
1981	EK3		1981	04	06.46361	11	22	18.19	-05	00	39.1		413
1981	EK3		1981	04	06.49834	11	22	16.92	-05	00	25.2		413
1981	EK3		1981	04	12.62048	11	19	03.04	-04	17	58.5		413
1981	EK3		1981	04	12.65521	11	19	02.04	-04	17	45.0		413
1981	EL3	*	1981	03	02.56588	11	49	44.71	-11	53	24.1	19.0V	413
1981	EL3		1981	03	07.55280	11	45	46.81	-11	44	32.6		413
1981	EL3		1981	03	07.59447	11	45	44.76	-11	44	29.2		413
1981	EL3		1981	03	10.53941	11	43	16.49	-11	36	52.2		413
1981	EL3		1981	03	10.58108	11	43	14.55	-11	36	46.2		413
1981	EL3		1981	03	12.52945	11	41	34.49	-11	30	51.6		413
1981	EL3		1981	03	12.56765	11	41	32.39	-11	30	44.9		413
1981	EL3		1981	04	09.60259	11	19	23.43	-09	13	57.0	19.0V	413
1981	EL3		1981	04	09.63731	11	19	22.24	-09	13	46.8		413
1981	EM3	*	1981	03	02.52074	11	50	09.20	-09	32	29.5	18.5V	413
1981	EM3		1981	03	07.55280	11	45	39.40	-09	08	24.1		413
1981	EM3		1981	03	10.53941	11	42	51.16	-08	51	36.5		413
1981	EM3		1981	03	12.52945	11	40	57.21	-08	39	31.1		413
1981	EM3		1981	03	12.56765	11	40	55.11	-08	39	18.6		413
1981	EM3		1981	04	09.60259	11	17	13.93	-05	12	27.2	19.0V	413
1981	EN3	*	1981	03	02.52074	11	50	16.14	-13	46	31.4	18.0V	413
1981	EN3		1981	03	02.56588	11	50	14.51	-13	46	10.0		413
1981	EN3		1981	03	07.55280	11	47	17.57	-12	59	41.3		413
1981	EN3		1981	03	07.59447	11	47	15.95	-12	59	18.2		413
1981	EN3		1981	03	10.53941	11	45	22.49	-12	27	52.4		413
1981	EN3		1981	03	10.58108	11	45	20.67	-12	27	23.3		413
1981	EN3		1981	03	12.52945	11	44	03.34	-12	05	10.1		413
1981	EN3		1981	03	12.56765	11	44	01.89	-12	04	46.4		413
1981	EN3		1981	04	09.60259	11	28	19.22	-05	45	23.4	19.0V	413
1981	EN3		1981	04	09.63731	11	28	18.52	-05	44	57.3		413
1981	EO3	*	1981	03	02.52074	11	50	28.59	-11	54	01.6	18.5V	413
1981	EO3		1981	03	02.56588	11	50	26.28	-11	54	03.8		413
1981	EO3		1981	03	07.55280	11	45	45.77	-11	54	38.7		413
1981	EO3		1981	03	07.59447	11	45	43.41	-11	54	39.0		413
1981	EO3		1981	03	10.53941	11	42	49.82	-11	53	00.1		413
1981	EO3		1981	03	10.58108	11	42	47.54	-11	52	59.4		413
1981	EO3		1981	03	12.52945	11	40	49.98	-11	51	07.3		413
1981	EO3		1981	04	09.63731	11	13	55.34	-10	34	53.3	19.0V	413
1981	EP3	*	1981	03	02.52074	11	50	33.11	-11	36	48.1	19.5V	413
1981	EP3		1981	03	02.56588	11	50	31.67	-11	36	39.4		413
1981	EP3		1981	03	07.55280	11	47	21.82	-11	13	15.4		413
1981	EP3		1981	03	07.59447	11	47	20.38	-11	13	04.2		413
1981	EP3		1981	03	10.53941	11	45	21.66	-10	56	52.3		413
1981	EP3		1981	03	10.58108	11	45	19.74	-10	56	38.0		413
1981	EP3		1981	03	12.52945	11	43	59.42	-10	45	02.7		413
1981	EP3		1981	04	09.60259	11	26	29.45	-07	14	49.1	19.5V	413
1981	EQ3	*	1981	03	02.52074	11	50	42.09	-12	37	11.2	19.0V	413
1981	EQ3		1981	03	02.56588	11	50	40.46	-12	37	08.7		413
1981	EQ3		1981	03	07.55280	11	46	59.44	-12	30	43.4		413
1981	EQ3		1981	03	07.59447	11	46	57.64	-12	30	40.7		413
1981	EQ3		1981	03	10.53941	11	44	41.81	-12	25	19.2		413
1981	EQ3		1981	03	10.58108	11	44	39.98	-12	25	15.4		413
1981	EQ3		1981	03	12.52945	11	43	08.43	-12	21	05.0		413

1981 EQ3	1981 03	12.56765	11 43	06.80	-12 21	00.9		413
1981 EQ3	1981 04	09.60259	11 22	06.88	-10 43	53.8	19.5V	413
1981 ER3 *	1981 03	02.56588	11 50	50.46	-08 44	21.6	18.5V	413
1981 ER3	1981 03	07.55280	11 46	58.33	-08 25	29.8		413
1981 ER3	1981 03	07.59447	11 46	56.45	-08 25	20.8		413
1981 ER3	1981 03	10.53941	11 44	34.64	-08 12	46.0		413
1981 ER3	1981 03	10.58108	11 44	32.72	-08 12	36.1		413
1981 ER3	1981 03	12.52945	11 42	58.08	-08 03	47.1		413
1981 ER3	1981 03	12.56765	11 42	56.29	-08 03	37.8		413
1981 ER3	1981 04	09.60259	11 22	01.89	-05 35	09.0	19.5V	413
1981 ER3	1981 04	09.63731	11 22	00.79	-05 34	58.9		413
1981 ES3 *	1981 03	02.52074	11 50	55.32	-12 46	31.9	18.5V	413
1981 ES3	1981 03	02.56588	11 50	53.01	-12 46	29.0		413
1981 ES3	1981 03	07.55280	11 46	32.80	-12 38	05.0		413
1981 ES3	1981 03	07.59447	11 46	30.70	-12 38	01.8		413
1981 ES3	1981 03	10.53941	11 43	51.47	-12 31	05.3		413
1981 ES3	1981 03	10.58108	11 43	49.14	-12 31	00.2		413
1981 ES3	1981 03	12.52945	11 42	02.30	-12 25	39.2		413
1981 ES3	1981 03	12.56765	11 42	00.17	-12 25	33.3		413
1981 ES3	1981 04	09.60259	11 18	27.95	-10 25	49.6	19.0V	413
1981 ES3	1981 04	09.63731	11 18	26.69	-10 25	40.5		413
1981 ET3	1981 02	09.59014	12 14	41.09	-11 09	48.3	18.5V	413
1981 ET3	1981 02	14.66000	12 10	08.31	-11 32	19.5		413
1981 ET3	1981 02	14.69125	12 10	06.62	-11 32	26.2		413
1981 ET3 *	1981 03	02.52074	11 50	58.36	-12 08	41.4	17.5V	413
1981 ET3	1981 03	02.56588	11 50	54.65	-12 08	43.8		413
1981 ET3	1981 03	07.55280	11 43	42.13	-12 08	32.8		413
1981 ET3	1981 03	07.59447	11 43	38.54	-12 08	32.5		413
1981 ET3	1981 03	10.53941	11 39	14.32	-12 05	49.2		413
1981 ET3	1981 03	10.58108	11 39	10.56	-12 05	47.6		413
1981 ET3	1981 03	12.52945	11 36	13.56	-12 02	58.4		413
1981 EU3 *	1981 03	02.52074	11 51	37.01	-13 33	30.1	18.0V	413
1981 EU3	1981 03	02.56588	11 51	35.08	-13 33	18.3		413
1981 EU3	1981 03	07.55280	11 48	03.11	-13 06	53.0		413
1981 EU3	1981 03	10.53941	11 45	46.90	-12 47	42.4		413
1981 EU3	1981 03	10.58108	11 45	45.12	-12 47	27.2		413
1981 EU3	1981 03	12.52945	11 44	13.62	-12 33	38.2		413
1981 EU3	1981 03	12.56765	11 44	11.80	-12 33	22.6		413
1981 EU3	1981 04	07.41760	11 25	38.56	-08 32	18.2		413
1981 EU3	1981 04	07.45232	11 25	37.56	-08 32	00.3		413
1981 EU3	1981 04	08.45642	11 25	07.05	-08 21	56.5		413
1981 EU3	1981 04	08.49114	11 25	06.09	-08 21	39.4		413
1981 EU3	1981 04	09.60259	11 24	33.85	-08 10	34.7	18.5V	413
1981 EU3	1981 04	09.63731	11 24	32.85	-08 10	13.3		413
1981 EV3 *	1981 03	02.56588	11 51	58.38	-08 34	58.0	19.0V	413
1981 EV3	1981 03	07.59447	11 47	47.38	-08 13	06.2		413
1981 EV3	1981 03	10.58108	11 45	10.81	-07 58	05.0		413
1981 EV3	1981 03	12.52945	11 43	25.87	-07 47	27.7		413
1981 EV3	1981 04	06.46361	11 22	16.20	-05 03	48.8		413
1981 EV3	1981 04	06.49834	11 22	14.64	-05 03	35.0		413
1981 EW3 *	1981 03	02.52074	11 52	52.23	-11 16	34.3	17.0V	413
1981 EW3	1981 03	02.56588	11 52	50.12	-11 16	28.6		413
1981 EW3	1981 03	07.55280	11 48	42.58	-11 01	59.8		413
1981 EW3	1981 03	07.59447	11 48	40.50	-11 01	52.7		413
1981 EW3	1981 03	10.53941	11 46	06.41	-10 51	10.0		413
1981 EW3	1981 03	10.58108	11 46	04.18	-10 51	00.8		413
1981 EW3	1981 03	12.52945	11 44	19.90	-10 43	08.3		413
1981 EW3	1981 03	12.56765	11 44	17.82	-10 42	58.1		413
1981 EW3	1981 04	07.41760	11 22	03.91	-08 17	32.8		413

1981	EW3	1981	04	07.45232	11	22	02.46	-08	17	21.0		413	
1981	EW3	1981	04	08.45642	11	21	19.88	-08	11	01.1		413	
1981	EW3	1981	04	08.49114	11	21	18.46	-08	10	49.5		413	
1981	EW3	1981	04	09.60259	11	20	32.55	-08	03	51.1	17.5V	413	
1981	EW3	1981	04	09.63731	11	20	31.21	-08	03	39.0		413	
1981	EX3	*	1981	03	02.52074	11	52	58.80	-10	49	34.4	18.0V	413
1981	EX3		1981	03	02.56588	11	52	57.24	-10	49	24.5		413
1981	EX3		1981	03	07.55280	11	49	17.30	-10	25	04.3		413
1981	EX3		1981	03	07.59447	11	49	15.44	-10	24	53.3		413
1981	EX3		1981	03	10.53941	11	46	58.82	-10	08	16.7		413
1981	EX3		1981	03	10.58108	11	46	57.00	-10	08	04.6		413
1981	EX3		1981	03	12.52945	11	45	24.81	-09	56	16.2		413
1981	EX3		1981	03	12.56765	11	45	22.94	-09	56	03.9		413
1981	EX3		1981	04	08.45642	11	25	57.58	-06	38	35.2		413
1981	EX3		1981	04	08.49114	11	25	56.53	-06	38	21.0		413
1981	EX3		1981	04	09.60259	11	25	20.73	-06	30	01.5	18.5V	413
1981	EX3		1981	04	09.63731	11	25	19.61	-06	29	46.0		413
1981	EY3	*	1981	03	02.52074	11	53	31.08	-10	50	21.3	17.5V	413
1981	EY3		1981	03	02.56588	11	53	29.30	-10	50	10.6		413
1981	EY3		1981	03	07.55280	11	50	00.46	-10	26	53.9		413
1981	EY3		1981	03	07.59447	11	49	58.70	-10	26	42.4		413
1981	EY3		1981	03	10.53941	11	47	49.97	-10	11	01.9		413
1981	EY3		1981	03	10.58108	11	47	48.19	-10	10	49.3		413
1981	EY3		1981	03	12.52945	11	46	21.66	-09	59	45.7		413
1981	EY3		1981	03	12.56765	11	46	20.10	-09	59	34.3		413
1981	EY3		1981	04	07.41760	11	28	47.28	-07	05	33.7		413
1981	EY3		1981	04	07.45232	11	28	46.27	-07	05	21.0		413
1981	EY3		1981	04	08.45642	11	28	14.93	-06	58	27.2		413
1981	EY3		1981	04	08.49114	11	28	13.93	-06	58	13.8		413
1981	EY3		1981	04	09.60259	11	27	40.34	-06	50	39.0	18.5V	413
1981	EY3		1981	04	09.63731	11	27	39.35	-06	50	26.0		413
1981	EZ3	*	1981	03	02.52074	11	53	41.45	-14	29	48.4	18.5V	413
1981	EZ3		1981	03	02.56588	11	53	39.10	-14	29	46.2		413
1981	EZ3		1981	03	07.55280	11	49	09.55	-14	17	58.1		413
1981	EZ3		1981	03	10.53941	11	46	17.91	-14	08	12.0		413
1981	EZ3		1981	03	10.58108	11	46	15.62	-14	08	03.5		413
1981	EZ3		1981	04	09.60259	11	17	15.00	-11	04	43.2	19.0V	413
1981	EZ3		1981	04	09.63731	11	17	13.40	-11	04	28.5		413
1981	EA4	*	1981	03	02.52074	11	53	44.06	-09	08	49.5	19.0V	413
1981	EA4		1981	03	02.56588	11	53	42.00	-09	08	36.7		413
1981	EA4		1981	03	07.55280	11	49	35.90	-08	39	35.1		413
1981	EA4		1981	03	07.59447	11	49	33.81	-08	39	20.4		413
1981	EA4		1981	03	10.58108	11	46	56.59	-08	19	10.5		413
1981	EA4		1981	03	12.52945	11	45	11.30	-08	04	59.0		413
1981	EA4		1981	03	12.56765	11	45	09.37	-08	04	44.5		413
1981	EA4		1981	04	12.62048	11	20	54.74	-03	37	48.0		413
1981	EA4		1981	04	12.65521	11	20	53.52	-03	37	32.1		413
1981	EB4	*	1981	03	02.52074	11	53	51.53	-09	50	44.6	19.5V	413
1981	EB4		1981	03	02.56588	11	53	49.47	-09	50	43.7		413
1981	EB4		1981	03	07.55280	11	50	07.26	-09	44	33.8		413
1981	EB4		1981	03	07.59447	11	50	05.47	-09	44	30.8		413
1981	EB4		1981	03	10.53941	11	47	47.17	-09	39	04.1		413
1981	EB4		1981	03	12.52945	11	46	11.85	-09	34	42.9		413
1981	EB4		1981	03	12.56765	11	46	10.02	-09	34	38.6		413
1981	EB4		1981	04	09.60259	11	25	01.65	-07	55	25.9	19.5V	413
1981	EB4		1981	04	09.63731	11	25	00.57	-07	55	18.4		413
1981	EC4	*	1981	03	02.56588	11	53	51.70	-13	38	43.8	18.5V	413
1981	EC4		1981	03	07.55280	11	50	01.15	-13	12	15.9		413
1981	EC4		1981	03	07.59447	11	49	59.22	-13	12	02.5		413



1981	EC4	1981	03	10.53941	11	47	36.15	-12	53	45.7		413	
1981	EC4	1981	03	10.58108	11	47	34.30	-12	53	31.6		413	
1981	EC4	1981	03	12.52945	11	45	57.64	-12	40	28.6		413	
1981	EC4	1981	03	12.56765	11	45	55.81	-12	40	13.8		413	
1981	EC4	1981	04	07.41760	11	26	12.95	-09	03	33.7		413	
1981	EC4	1981	04	07.45232	11	26	11.70	-09	03	18.8		413	
1981	EC4	1981	04	09.60259	11	24	57.94	-08	44	14.8	19.0V	413	
1981	EC4	1981	04	09.63731	11	24	56.81	-08	43	57.5		413	
1981	ED4	*	1981	03	02.52074	11	53	54.02	-11	12	56.1	19.0V	413
1981	ED4		1981	03	02.56588	11	53	52.66	-11	13	01.0		413
1981	ED4		1981	03	07.55280	11	50	45.16	-11	16	47.9		413
1981	ED4		1981	03	07.59447	11	50	43.65	-11	16	48.9		413
1981	ED4		1981	03	10.53941	11	48	40.59	-11	15	51.4		413
1981	ED4		1981	03	12.52945	11	47	13.75	-11	13	56.9		413
1981	ED4		1981	03	12.56765	11	47	12.11	-11	13	55.1		413
1981	ED4		1981	04	09.60259	11	28	22.80	-09	29	34.2	19.0V	413
1981	ED4		1981	04	09.63731	11	28	21.88	-09	29	24.2		413
1981	EE4	*	1981	03	02.52074	11	54	11.96	-12	08	50.4	19.0V	413
1981	EE4		1981	03	02.56588	11	54	10.17	-12	08	43.7		413
1981	EE4		1981	03	07.55280	11	50	47.56	-11	54	00.4		413
1981	EE4		1981	03	07.59447	11	50	45.63	-11	53	51.2		413
1981	EE4		1981	03	10.53941	11	48	40.07	-11	43	14.1		413
1981	EE4		1981	03	12.52945	11	47	13.20	-11	35	18.2		413
1981	EE4		1981	03	12.56765	11	47	11.71	-11	35	10.8		413
1981	EE4		1981	04	09.60259	11	28	00.21	-09	02	55.5	19.0V	413
1981	EE4		1981	04	09.63731	11	27	59.10	-09	02	43.0		413
1981	EF4	*	1981	03	02.52074	11	54	15.80	-12	09	03.0	17.5V	413
1981	EF4		1981	03	02.56588	11	54	14.01	-12	08	56.6		413
1981	EF4		1981	03	07.55280	11	50	27.71	-11	52	44.7		413
1981	EF4		1981	03	07.59447	11	50	25.71	-11	52	36.0		413
1981	EF4		1981	03	10.53941	11	47	59.90	-11	39	38.5		413
1981	EF4		1981	03	10.58108	11	47	57.77	-11	39	27.9		413
1981	EF4		1981	03	12.52945	11	46	17.56	-11	29	33.6		413
1981	EF4		1981	03	12.56765	11	46	15.69	-11	29	22.9		413
1981	EF4		1981	04	07.41760	11	24	48.76	-08	11	12.6		413
1981	EF4		1981	04	07.45232	11	24	47.51	-08	10	55.7		413
1981	EF4		1981	04	08.45642	11	24	10.11	-08	02	07.0		413
1981	EF4		1981	04	08.49114	11	24	08.87	-08	01	50.4		413
1981	EF4		1981	04	09.60259	11	23	29.08	-07	52	07.7	18.0V	413
1981	EF4		1981	04	09.63731	11	23	27.89	-07	51	50.9		413
1981	EG4	*	1981	03	02.56588	11	54	24.03	-09	13	14.7	19.0V	413
1981	EG4		1981	03	07.55280	11	50	02.29	-08	56	03.1		413
1981	EG4		1981	03	07.59447	11	50	00.06	-08	55	54.1		413
1981	EG4		1981	03	10.53941	11	47	16.65	-08	43	35.4		413
1981	EG4		1981	03	10.58108	11	47	14.50	-08	43	26.2		413
1981	EG4		1981	03	12.52945	11	45	23.65	-08	34	30.2		413
1981	EG4		1981	03	12.56765	11	45	21.75	-08	34	20.0		413
1981	EG4		1981	04	09.60259	11	20	21.43	-05	47	11.1	19.5V	413
1981	EG4		1981	04	09.63731	11	20	20.11	-05	46	58.9		413
1981	EH4	*	1981	03	02.52074	11	54	47.02	-09	30	49.9	18.5V	413
1981	EH4		1981	03	02.56588	11	54	45.47	-09	30	41.1		413
1981	EH4		1981	03	07.55280	11	50	57.87	-09	06	12.9		413
1981	EH4		1981	03	07.59447	11	50	55.98	-09	06	00.9		413
1981	EH4		1981	03	10.53941	11	48	36.07	-08	49	58.4		413
1981	EH4		1981	03	10.58108	11	48	34.17	-08	49	45.2		413
1981	EH4		1981	03	12.52945	11	46	59.96	-08	38	32.7		413
1981	EH4		1981	03	12.56765	11	46	58.25	-08	38	22.0		413
1981	EH4		1981	04	09.60259	11	25	46.64	-05	31	37.7	19.0V	413
1981	EH4		1981	04	09.63731	11	25	45.48	-05	31	25.2		413

1981	EJ4	*	1981	03	02.52074	11	54	48.90	-09	16	04.7	18.5V	413
1981	EJ4		1981	03	02.56588	11	54	47.46	-09	15	53.1		413
1981	EJ4		1981	03	07.55280	11	51	34.82	-08	50	22.0		413
1981	EJ4		1981	03	07.59447	11	51	33.19	-08	50	10.2		413
1981	EJ4		1981	03	10.53941	11	49	33.81	-08	33	29.6		413
1981	EJ4		1981	03	10.58108	11	49	32.30	-08	33	16.9		413
1981	EJ4		1981	03	12.52945	11	48	11.69	-08	21	40.8		413
1981	EJ4		1981	03	12.56765	11	48	10.16	-08	21	27.3		413
1981	EJ4		1981	04	09.60259	11	29	58.50	-05	09	18.7	19.0V	413
1981	EJ4		1981	04	09.63731	11	29	57.50	-05	09	05.7		413
1981	EK4	*	1981	03	02.52074	11	54	50.15	-10	20	39.9	18.0V	413
1981	EK4		1981	03	02.56588	11	54	48.16	-10	20	37.2		413
1981	EK4		1981	03	07.55280	11	50	26.57	-10	12	52.7		413
1981	EK4		1981	03	07.59447	11	50	24.44	-10	12	48.7		413
1981	EK4		1981	03	10.53941	11	47	43.95	-10	06	33.2		413
1981	EK4		1981	03	10.58108	11	47	41.82	-10	06	28.6		413
1981	EK4		1981	03	12.52945	11	45	54.19	-10	01	42.3		413
1981	EK4		1981	04	09.60259	11	21	48.85	-08	18	45.9	19.0V	413
1981	EK4		1981	04	09.63731	11	21	47.48	-08	18	37.9		413
1981	EL4	*	1981	03	02.52074	11	55	14.07	-09	40	16.2	16.5V	413
1981	EL4		1981	03	02.56588	11	55	12.15	-09	40	13.4		413
1981	EL4		1981	03	07.55280	11	51	24.39	-09	32	14.4		413
1981	EL4		1981	03	07.59447	11	51	22.48	-09	32	09.8		413
1981	EL4		1981	03	10.53941	11	49	01.23	-09	25	44.2		413
1981	EL4		1981	03	10.58108	11	48	59.24	-09	25	39.3		413
1981	EL4		1981	03	12.52945	11	47	23.83	-09	20	45.2		413
1981	EL4		1981	03	12.56765	11	47	22.12	-09	20	40.1		413
1981	EL4		1981	04	07.41760	11	27	09.47	-07	44	44.4		413
1981	EL4		1981	04	07.45232	11	27	08.16	-07	44	36.8		413
1981	EL4		1981	04	08.45642	11	26	29.47	-07	40	24.4		413
1981	EL4		1981	04	08.49114	11	26	28.20	-07	40	16.1		413
1981	EL4		1981	04	09.60259	11	25	46.56	-07	35	38.0	17.0V	413
1981	EL4		1981	04	09.63731	11	25	45.33	-07	35	29.4		413
1981	EM4	*	1981	03	02.52074	11	55	33.54	-10	09	58.1	13.5V	413
1981	EM4		1981	03	02.56588	11	55	31.10	-10	10	02.2		413
1981	EM4		1981	03	07.55280	11	50	48.50	-10	15	18.2		413
1981	EM4		1981	03	07.59447	11	50	46.03	-10	15	20.3		413
1981	EM4		1981	03	10.53941	11	47	50.85	-10	16	17.0		413
1981	EM4		1981	03	10.58108	11	47	48.35	-10	16	17.7		413
1981	EM4		1981	03	12.52945	11	45	50.20	-10	16	05.6		413
1981	EM4		1981	03	12.56765	11	45	47.88	-10	16	05.5		413
1981	EM4		1981	04	07.41760	11	21	28.56	-09	29	29.0		413
1981	EM4		1981	04	07.45232	11	21	27.04	-09	29	24.6		413
1981	EM4		1981	04	08.45642	11	20	42.95	-09	26	44.4		413
1981	EM4		1981	04	08.49114	11	20	41.49	-09	26	39.6		413
1981	EM4		1981	04	09.60259	11	19	54.22	-09	23	43.3	14.0V	413
1981	EM4		1981	04	09.63731	11	19	52.79	-09	23	37.8		413
1981	EN4	*	1981	03	02.52074	11	55	55.88	-14	34	33.7	18.0V	413
1981	EN4		1981	03	02.56588	11	55	54.19	-14	34	27.2		413
1981	EN4		1981	03	07.55280	11	52	28.36	-14	18	42.1		413
1981	EN4		1981	03	07.59447	11	52	26.63	-14	18	34.1		413
1981	EN4		1981	03	10.53941	11	50	18.79	-14	07	05.3		413
1981	EN4		1981	03	10.58108	11	50	17.00	-14	06	55.8		413
1981	EN4		1981	03	12.52945	11	48	50.71	-13	58	29.9		413
1981	EN4		1981	03	12.56765	11	48	49.11	-13	58	20.3		413
1981	EN4		1981	04	07.41760	11	30	35.25	-11	23	37.6		413
1981	EN4		1981	04	07.45232	11	30	34.00	-11	23	23.8		413
1981	EN4		1981	04	08.49114	11	29	58.25	-11	16	20.6		413
1981	EN4		1981	04	09.60259	11	29	20.88	-11	08	46.8	18.5V	413

1981	EN4		1981	04	09.63731	11	29	19.71	-11	08	32.5		413
1981	EO4	*	1981	03	02.56588	11	55	58.61	-12	32	44.8	19.5V	413
1981	EO4		1981	03	07.55280	11	52	20.24	-12	22	29.2		413
1981	EO4		1981	03	07.59447	11	52	18.48	-12	22	23.9		413
1981	EO4		1981	03	10.53941	11	50	03.49	-12	14	36.8		413
1981	EO4		1981	03	10.58108	11	50	01.83	-12	14	30.6		413
1981	EO4		1981	03	12.52945	11	48	30.72	-12	08	42.1		413
1981	EO4		1981	03	12.56765	11	48	28.99	-12	08	35.9		413
1981	EO4		1981	04	09.60259	11	27	36.93	-10	06	05.5	20.0V	413
1981	EP4	*	1981	03	02.52074	11	56	06.73	-10	47	51.1	19.0V	413
1981	EP4		1981	03	02.56588	11	56	05.15	-10	47	37.4		413
1981	EP4		1981	03	07.55280	11	52	45.33	-10	14	54.0		413
1981	EP4		1981	03	07.59447	11	52	43.65	-10	14	37.6		413
1981	EP4		1981	03	10.53941	11	50	38.19	-09	52	59.5		413
1981	EP4		1981	03	12.52945	11	49	11.29	-09	37	30.6		413
1981	EP4		1981	03	12.56765	11	49	09.69	-09	37	12.8		413
1981	EP4		1981	04	09.60259	11	30	08.27	-05	21	41.0	19.0V	413
1981	EP4		1981	04	09.63731	11	30	07.32	-05	21	24.1		413
1981	EQ4	*	1981	03	02.52074	11	56	14.97	-10	55	13.3	18.0V	413
1981	EQ4		1981	03	02.56588	11	56	13.31	-10	55	02.1		413
1981	EQ4		1981	03	07.55280	11	52	59.77	-10	31	33.3		413
1981	EQ4		1981	03	07.59447	11	52	58.13	-10	31	21.6		413
1981	EQ4		1981	03	10.53941	11	50	56.95	-10	15	21.7		413
1981	EQ4		1981	03	10.58108	11	50	55.13	-10	15	07.1		413
1981	EQ4		1981	03	12.52945	11	49	32.95	-10	03	46.1		413
1981	EQ4		1981	03	12.56765	11	49	31.61	-10	03	34.2		413
1981	EQ4		1981	04	07.41760	11	32	25.11	-06	59	27.8		413
1981	EQ4		1981	04	07.45232	11	32	24.21	-06	59	13.9		413
1981	EQ4		1981	04	08.45642	11	31	53.17	-06	51	46.6		413
1981	EQ4		1981	04	08.49114	11	31	52.15	-06	51	31.9		413
1981	EQ4		1981	04	09.60259	11	31	19.08	-06	43	23.2	18.5V	413
1981	EQ4		1981	04	09.63731	11	31	18.07	-06	43	08.8		413
1981	ER4	*	1981	03	02.52074	11	56	23.84	-09	16	42.1	18.5V	413
1981	ER4		1981	03	02.56588	11	56	22.31	-09	16	28.7		413
1981	ER4		1981	03	07.55280	11	53	00.40	-08	46	33.7		413
1981	ER4		1981	03	07.59447	11	52	58.74	-08	46	19.4		413
1981	ER4		1981	03	10.53941	11	50	53.35	-08	26	49.2		413
1981	ER4		1981	03	10.58108	11	50	51.66	-08	26	35.1		413
1981	ER4		1981	03	12.52945	11	49	26.99	-08	13	02.8		413
1981	ER4		1981	03	12.56765	11	49	25.43	-08	12	47.9		413
1981	ER4		1981	04	12.62048	11	29	13.59	-04	10	57.0		413
1981	ER4		1981	04	12.65521	11	29	12.57	-04	10	41.3		413
1981	ES4	*	1981	03	02.52074	11	56	47.00	-12	24	27.5	18.5V	413
1981	ES4		1981	03	02.56588	11	56	44.98	-12	24	26.4		413
1981	ES4		1981	03	07.55280	11	52	14.82	-12	22	31.3		413
1981	ES4		1981	03	07.59447	11	52	12.60	-12	22	30.0		413
1981	ES4		1981	03	10.58108	11	49	23.83	-12	19	27.5		413
1981	ES4		1981	03	12.52945	11	47	31.64	-12	16	46.5		413
1981	ES4		1981	03	12.56765	11	47	29.62	-12	16	43.1		413
1981	ES4		1981	04	09.60259	11	21	53.73	-10	53	14.8	18.5V	413
1981	ES4		1981	04	09.63731	11	21	52.18	-10	53	07.0		413
1981	ET4	*	1981	03	02.52074	11	57	11.48	-08	26	55.4	18.0V	413
1981	ET4		1981	03	02.56588	11	57	09.47	-08	26	48.0		413
1981	ET4		1981	03	07.55280	11	52	54.19	-08	10	33.4		413
1981	ET4		1981	03	07.59447	11	52	52.00	-08	10	25.1		413
1981	ET4		1981	03	10.53941	11	50	11.62	-07	58	44.0		413
1981	ET4		1981	03	10.58108	11	50	09.42	-07	58	33.8		413
1981	ET4		1981	03	12.52945	11	48	20.55	-07	50	04.7		413
1981	ET4		1981	03	12.56765	11	48	18.56	-07	49	55.4		413

1981	ET4	1981	04	07.41760	11	24	54.32	-05	23	28.5		413
1981	ET4	1981	04	08.45642	11	24	08.13	-05	17	16.6		413
1981	ET4	1981	04	08.49114	11	24	06.66	-05	17	05.4		413
1981	ET4	1981	04	09.60259	11	23	18.73	-05	10	29.7	18.5V	413
1981	ET4	1981	04	09.63731	11	23	17.37	-05	10	18.5		413
1981	EU4 *	1981	03	02.52074	11	57	23.22	-13	46	58.4	17.0V	413
1981	EU4	1981	03	02.56588	11	57	21.52	-13	46	53.6		413
1981	EU4	1981	03	07.55280	11	53	52.16	-13	33	24.4		413
1981	EU4	1981	03	07.59447	11	53	50.38	-13	33	17.6		413
1981	EU4	1981	03	10.53941	11	51	39.80	-13	23	13.6		413
1981	EU4	1981	03	10.58108	11	51	37.93	-13	23	05.2		413
1981	EU4	1981	03	12.52945	11	50	09.46	-13	15	35.9		413
1981	EU4	1981	03	12.56765	11	50	07.83	-13	15	27.8		413
1981	EU4	1981	04	07.41760	11	31	02.92	-10	53	12.4		413
1981	EU4	1981	04	07.45232	11	31	01.71	-10	53	00.7		413
1981	EU4	1981	04	08.45642	11	30	24.35	-10	46	36.1		413
1981	EU4	1981	04	08.49114	11	30	23.26	-10	46	25.1		413
1981	EU4	1981	04	09.60259	11	29	42.97	-10	39	19.2	17.5V	413
1981	EU4	1981	04	09.63731	11	29	41.72	-10	39	05.4		413
1981	EV4	1981	03	02.56588	11	57	42.71	-09	00	00.2	19.5V	413
1981	EV4	1981	03	07.55280	11	53	28.62	-08	53	02.0		413
1981	EV4	1981	03	07.59447	11	53	26.55	-08	52	58.0		413
1981	EV4	1981	03	10.53941	11	50	43.65	-08	46	03.0		413
1981	EV4	1981	03	10.58108	11	50	41.58	-08	45	58.4		413
1981	EV4	1981	03	12.52945	11	48	49.83	-08	40	17.8		413
1981	EV4	1981	03	12.56765	11	48	47.72	-08	40	13.9		413
1981	EV4	1981	04	09.60259	11	23	44.61	-06	22	51.2	19.5V	413
1981	EV4	1981	04	09.63731	11	23	43.28	-06	22	40.4		413
1981	EW4 *	1981	03	02.52074	11	57	44.52	-10	50	06.6	17.0V	413
1981	EW4	1981	03	07.55280	11	54	22.08	-10	16	52.7		413
1981	EW4	1981	03	07.59447	11	54	20.32	-10	16	35.9		413
1981	EW4	1981	03	10.53941	11	52	15.17	-09	55	02.2		413
1981	EW4	1981	03	10.58108	11	52	13.40	-09	54	44.3		413
1981	EW4	1981	03	12.52945	11	50	48.74	-09	39	43.2		413
1981	EW4	1981	03	12.56765	11	50	47.28	-09	39	26.5		413
1981	EW4	1981	04	07.41760	11	33	06.29	-05	51	18.9		413
1981	EW4	1981	04	07.45232	11	33	05.24	-05	51	01.6		413
1981	EW4	1981	04	08.45642	11	32	32.60	-05	42	05.5		413
1981	EW4	1981	04	08.49114	11	32	31.59	-05	41	48.6		413
1981	EW4	1981	04	09.60259	11	31	56.76	-05	32	01.2	18.0V	413
1981	EW4	1981	04	09.63731	11	31	55.63	-05	31	43.4		413
1981	EX4	1981	03	02.52074	11	58	20.55	-14	48	35.5	18.0V	413
1981	EX4	1981	03	02.56588	11	58	19.17	-14	48	22.9		413
1981	EX4	1981	03	07.55280	11	55	13.88	-14	18	48.4		413
1981	EX4	1981	03	07.59447	11	55	12.31	-14	18	34.0		413
1981	EX4	1981	03	10.53941	11	53	17.13	-13	59	02.7		413
1981	EX4	1981	03	10.58108	11	53	15.59	-13	58	47.2		413
1981	EX4	1981	03	12.52945	11	51	57.68	-13	45	05.1		413
1981	EX4	1981	03	12.56765	11	51	56.24	-13	44	48.8		413
1981	EX4	1981	04	07.41760	11	35	04.21	-10	04	00.2		413
1981	EX4	1981	04	07.45232	11	35	03.05	-10	03	41.5		413
1981	EX4	1981	04	08.45642	11	34	29.56	-09	54	22.1		413
1981	EX4	1981	04	08.49114	11	34	28.42	-09	54	04.7		413
1981	EX4	1981	04	09.60259	11	33	52.25	-09	43	51.0	18.5V	413
1981	EX4	1981	04	09.63731	11	33	51.11	-09	43	31.8		413
1981	EY4 *	1981	03	02.52074	11	58	40.07	-10	18	46.9	19.0V	413
1981	EY4	1981	03	02.56588	11	58	38.23	-10	18	43.9		413
1981	EY4	1981	03	07.55280	11	54	28.32	-10	10	03.8		413
1981	EY4	1981	03	07.59447	11	54	26.29	-10	09	59.3		413

1981 EY4	1981 03	10.53941	11 51	51.01	-10 03	02.4	413
1981 EY4	1981 03	10.58108	11 51	48.96	-10 02	56.4	413
1981 EY4	1981 03	12.52945	11 50	04.12	-09 57	40.1	413
1981 EY4	1981 04	09.60259	11 25	55.06	-08 02	34.3	19.0V 413
1981 EY4	1981 04	09.63731	11 25	53.78	-08 02	26.4	413
1981 EZ4 *	1981 03	02.52074	11 58	41.71	-10 54	48.3	19.0V 413
1981 EZ4	1981 03	02.56588	11 58	39.68	-10 54	50.6	413
1981 EZ4	1981 03	07.55280	11 54	20.69	-10 53	08.1	413
1981 EZ4	1981 03	07.59447	11 54	18.57	-10 53	06.6	413
1981 EZ4	1981 03	10.53941	11 51	35.92	-10 49	50.8	413
1981 EZ4	1981 03	10.58108	11 51	33.37	-10 49	48.7	413
1981 EZ4	1981 03	12.52945	11 49	42.98	-10 46	47.3	413
1981 EZ4	1981 03	12.56765	11 49	40.60	-10 46	43.4	413
1981 EZ4	1981 04	09.60259	11 24	21.21	-09 11	15.4	19.5V 413
1981 EZ4	1981 04	09.63731	11 24	19.90	-09 11	07.3	413
1981 EA5 *	1981 03	02.52074	11 59	07.64	-13 41	44.1	19.0V 413
1981 EA5	1981 03	02.56588	11 59	05.83	-13 41	36.5	413
1981 EA5	1981 03	07.55280	11 55	15.45	-13 23	57.6	413
1981 EA5	1981 03	07.59447	11 55	13.58	-13 23	48.5	413
1981 EA5	1981 03	10.53941	11 52	51.03	-13 11	09.5	413
1981 EA5	1981 03	10.58108	11 52	49.40	-13 11	00.9	413
1981 EA5	1981 04	09.60259	11 29	40.69	-10 03	06.8	19.5V 413
1981 EA5	1981 04	09.63731	11 29	39.65	-10 02	54.9	413
1981 EB5	1981 03	02.52074	11 59	46.84	-09 50	49.6	18.5V 413
1981 EB5	1981 03	02.56588	11 59	44.95	-09 50	47.4	413
1981 EB5	1981 03	07.55280	11 55	45.75	-09 44	39.8	413
1981 EB5	1981 03	07.59447	11 55	43.71	-09 44	35.8	413
1981 EB5	1981 03	10.53941	11 53	14.18	-09 38	59.1	413
1981 EB5	1981 03	10.58108	11 53	12.14	-09 38	54.0	413
1981 EB5	1981 03	12.52945	11 51	30.66	-09 34	26.2	413
1981 EB5	1981 03	12.56765	11 51	28.81	-09 34	20.8	413
1981 EB5	1981 04	08.45642	11 29	20.85	-07 54	00.5	413
1981 EB5	1981 04	08.49114	11 29	19.40	-07 53	50.0	413
1981 EB5	1981 04	09.60259	11 28	36.59	-07 49	09.8	19.0V 413
1981 EB5	1981 04	09.63731	11 28	35.13	-07 49	00.1	413
1981 EC5 *	1981 03	02.52074	12 00	01.31	-11 11	13.4	19.0V 413
1981 EC5	1981 03	07.55280	11 55	28.69	-10 55	10.9	413
1981 EC5	1981 03	07.59447	11 55	26.40	-10 55	02.3	413
1981 EC5	1981 03	10.53941	11 52	35.70	-10 42	53.0	413
1981 EC5	1981 03	10.58108	11 52	33.64	-10 42	44.3	413
1981 EC5	1981 03	12.52945	11 50	37.61	-10 33	40.1	413
1981 EC5	1981 03	12.56765	11 50	35.41	-10 33	29.6	413
1981 EC5	1981 04	09.60259	11 24	21.54	-07 28	38.4	19.5V 413
1981 EC5	1981 04	09.63731	11 24	20.17	-07 28	24.0	413
1981 ED5	1981 03	02.56588	12 00	14.00	-13 46	57.5	18.5V 413
1981 ED5	1981 03	07.55280	11 56	18.93	-13 37	06.0	413
1981 ED5	1981 03	07.59447	11 56	16.82	-13 37	00.5	413
1981 ED5	1981 03	10.53941	11 53	45.75	-13 28	00.5	413
1981 ED5	1981 03	10.58108	11 53	43.56	-13 27	51.7	413
1981 ED5	1981 03	12.52945	11 51	59.68	-13 20	39.5	413
1981 ED5	1981 03	12.56765	11 51	57.74	-13 20	30.7	413
1981 ED5	1981 04	08.45642	11 28	21.17	-10 27	18.9	413
1981 ED5	1981 04	09.60259	11 27	33.61	-10 18	19.5	19.0V 413
1981 ED5	1981 04	09.63731	11 27	32.26	-10 18	04.1	413
1981 EE5 *	1981 03	02.52074	12 00	19.07	-09 36	30.0	17.0V 413
1981 EE5	1981 03	02.56588	12 00	16.98	-09 36	28.7	413
1981 EE5	1981 03	07.55280	11 55	46.43	-09 31	05.4	413
1981 EE5	1981 03	07.59447	11 55	44.15	-09 31	01.8	413
1981 EE5	1981 03	10.53941	11 52	57.67	-09 26	12.7	413

1981	EE5	1981	03	10.58108	11	52	55.37	-09	26	08.4	413	
1981	EE5	1981	03	12.52945	11	51	03.16	-09	22	20.1	413	
1981	EE5	1981	03	12.56765	11	51	01.14	-09	22	15.9	413	
1981	EE5	1981	04	07.41760	11	27	16.97	-08	01	48.0	413	
1981	EE5	1981	04	07.45232	11	27	15.47	-08	01	41.4	413	
1981	EE5	1981	04	08.45642	11	26	29.04	-07	58	04.8	413	
1981	EE5	1981	04	08.49114	11	26	27.54	-07	57	58.0	413	
1981	EE5	1981	04	09.60259	11	25	37.35	-07	54	00.0	17.0V 413	
1981	EE5	1981	04	09.63731	11	25	35.85	-07	53	52.6	413	
1981	EF5	*	1981	03	02.52074	12	01	19.48	-13	51	45.6	18.0V 413
1981	EF5		1981	03	02.56588	12	01	17.56	-13	51	30.4	413
1981	EF5		1981	03	07.55280	11	57	29.20	-13	21	04.4	413
1981	EF5		1981	03	07.59447	11	57	27.23	-13	20	49.3	413
1981	EF5		1981	03	10.53941	11	55	04.75	-13	00	06.3	413
1981	EF5		1981	03	10.58108	11	55	02.75	-12	59	49.7	413
1981	EF5		1981	03	12.52945	11	53	26.39	-12	45	05.5	413
1981	EF5		1981	03	12.56765	11	53	24.55	-12	44	49.1	413
1981	EF5		1981	04	09.60259	11	32	21.35	-08	25	55.8	18.5V 413
1981	EF5		1981	04	09.63731	11	32	20.22	-08	25	37.1	413
1981	EG5	*	1981	03	02.52074	12	01	46.48	-08	38	08.1	18.0V 413
1981	EG5		1981	03	02.56588	12	01	44.44	-08	38	05.0	413
1981	EG5		1981	03	07.55280	11	57	17.25	-08	29	31.8	413
1981	EG5		1981	03	07.59447	11	57	15.01	-08	29	26.7	413
1981	EG5		1981	03	10.53941	11	54	28.01	-08	22	35.2	413
1981	EG5		1981	03	10.58108	11	54	25.68	-08	22	28.7	413
1981	EG5		1981	03	12.52945	11	52	32.21	-08	17	14.0	413
1981	EG5		1981	03	12.56765	11	52	29.83	-08	17	06.2	413
1981	EG5		1981	04	07.41760	11	27	54.92	-06	34	41.3	413
1981	EG5		1981	04	07.45232	11	27	53.42	-06	34	32.7	413
1981	EG5		1981	04	08.45642	11	27	05.47	-06	30	09.3	413
1981	EG5		1981	04	08.49114	11	27	03.67	-06	30	00.1	413
1981	EG5		1981	04	09.60259	11	26	11.59	-06	25	09.6	18.5V 413
1981	EG5		1981	04	09.63731	11	26	09.99	-06	24	59.7	413
1981	EH5	*	1981	03	02.56588	12	02	24.28	-12	13	10.0	19.5V 413
1981	EH5		1981	03	07.55280	11	59	08.84	-11	54	38.4	413
1981	EH5		1981	03	10.58108	11	57	03.59	-11	41	31.6	413
1981	EH5		1981	03	12.52945	11	55	41.42	-11	32	24.7	413
1981	EH5		1981	04	09.55619	11	36	26.22	-08	43	23.6	413
1981	EH5		1981	04	09.59091	11	36	25.21	-08	43	12.8	413
1981	EJ5	*	1981	03	02.52074	12	02	27.64	-08	35	29.9	18.0V 413
1981	EJ5		1981	03	07.55280	11	57	55.30	-08	20	19.3	413
1981	EJ5		1981	03	07.59447	11	57	53.05	-08	20	11.1	413
1981	EJ5		1981	03	10.53941	11	55	00.58	-08	08	54.8	413
1981	EJ5		1981	03	10.58108	11	54	58.16	-08	08	44.7	413
1981	EJ5		1981	03	12.52945	11	52	59.91	-08	00	21.0	413
1981	EJ5		1981	03	12.56765	11	52	57.67	-08	00	11.5	413
1981	EJ5		1981	04	07.41760	11	26	26.53	-05	25	31.0	413
1981	EJ5		1981	04	07.45232	11	26	24.71	-05	25	17.5	413
1981	EJ5		1981	04	08.45642	11	25	32.37	-05	18	44.4	413
1981	EJ5		1981	04	08.49114	11	25	30.54	-05	18	30.6	413
1981	EJ5		1981	04	09.60259	11	24	34.25	-05	11	19.6	18.5V 413
1981	EJ5		1981	04	09.63731	11	24	32.59	-05	11	06.9	413
1981	EK5	*	1981	03	02.52074	12	02	33.75	-09	42	14.5	18.5V 413
1981	EK5		1981	03	02.56588	12	02	32.15	-09	42	09.9	413
1981	EK5		1981	03	07.55280	11	59	06.34	-09	32	35.8	413
1981	EK5		1981	03	07.59447	11	59	04.69	-09	32	31.4	413
1981	EK5		1981	03	10.53941	11	56	55.14	-09	25	09.2	413
1981	EK5		1981	03	10.58108	11	56	53.58	-09	25	03.4	413
1981	EK5		1981	03	12.52945	11	55	25.16	-09	19	30.8	413

1981	EK5	1981	03	12.56765	11	55	23.64	-09	19	24.9		413	
1981	EK5	1981	04	07.41760	11	35	53.79	-07	33	37.7		413	
1981	EK5	1981	04	07.45232	11	35	52.61	-07	33	29.1		413	
1981	EK5	1981	04	08.45642	11	35	13.61	-07	28	49.6		413	
1981	EK5	1981	04	08.49114	11	35	12.35	-07	28	39.8		413	
1981	EK5	1981	04	09.60259	11	34	30.08	-07	23	33.3	18.5V	413	
1981	EK5	1981	04	09.63731	11	34	28.88	-07	23	23.7		413	
1981	EL5	*	1981	03	02.56588	12	02	55.27	-14	25	15.2	19.0V	413
1981	EL5		1981	03	07.55280	11	59	33.67	-14	08	13.9		413
1981	EL5		1981	03	07.59447	11	59	31.99	-14	08	05.5		413
1981	EL5		1981	03	10.53941	11	57	26.16	-13	55	55.2		413
1981	EL5		1981	03	10.58108	11	57	24.41	-13	55	45.5		413
1981	EL5		1981	03	12.56765	11	55	57.63	-13	46	42.3		413
1981	EL5		1981	04	07.61151	11	37	29.99	-11	05	49.1		413
1981	EL5		1981	04	07.64623	11	37	28.94	-11	05	36.6		413
1981	EL5		1981	04	08.60186	11	36	55.06	-10	58	56.1		413
1981	EL5		1981	04	08.63658	11	36	53.96	-10	58	42.8		413
1981	EL5		1981	04	09.55619	11	36	22.29	-10	52	19.2	19.5V	413
1981	EL5		1981	04	09.59091	11	36	21.16	-10	52	05.8		413
1981	EM5	*	1981	03	02.52074	12	03	45.61	-13	10	53.9	18.5V	413
1981	EM5		1981	03	02.56588	12	03	44.18	-13	10	49.5		413
1981	EM5		1981	03	07.55280	12	00	19.21	-12	59	03.1		413
1981	EM5		1981	03	07.59447	12	00	17.52	-12	58	57.3		413
1981	EM5		1981	03	10.53941	11	58	09.30	-12	50	00.5		413
1981	EM5		1981	03	10.58108	11	58	07.58	-12	49	53.3		413
1981	EM5		1981	03	12.52945	11	56	40.49	-12	43	10.8		413
1981	EM5		1981	04	08.60186	11	37	02.73	-10	27	49.8		413
1981	EM5		1981	04	08.63658	11	37	01.47	-10	27	38.3		413
1981	EM5		1981	04	09.55619	11	36	28.44	-10	22	21.5	19.5V	413
1981	EM5		1981	04	09.59091	11	36	27.32	-10	22	10.4		413
1981	EN5	*	1981	03	02.52074	12	03	51.20	-09	13	40.0	19.0V	413
1981	EN5		1981	03	07.55280	11	59	58.23	-08	51	22.1		413
1981	EN5		1981	03	07.59447	11	59	56.32	-08	51	10.5		413
1981	EN5		1981	03	10.53941	11	57	30.11	-08	35	46.5		413
1981	EN5		1981	03	12.52945	11	55	48.61	-08	24	31.4		413
1981	EN5		1981	03	12.56765	11	55	46.82	-08	24	17.9		413
1981	EN5		1981	04	09.60259	11	33	22.06	-05	08	53.4	19.0V	413
1981	EN5		1981	04	09.63731	11	33	20.71	-05	08	38.3		413
1981	EO5	*	1981	03	02.52074	12	03	58.01	-10	07	10.4	19.5V	413
1981	EO5		1981	03	07.55280	12	00	00.17	-09	44	13.2		413
1981	EO5		1981	03	07.59447	11	59	58.28	-09	44	02.1		413
1981	EO5		1981	03	10.53941	11	57	26.85	-09	27	47.7		413
1981	EO5		1981	03	10.58108	11	57	25.14	-09	27	36.3		413
1981	EO5		1981	03	12.52945	11	55	41.28	-09	15	48.9		413
1981	EO5		1981	04	09.63731	11	31	29.93	-05	35	32.4	20.0V	413
1981	EP5	*	1981	03	02.52074	12	04	37.18	-10	39	13.6	18.5V	413
1981	EP5		1981	03	07.55280	12	00	20.28	-10	33	23.1		413
1981	EP5		1981	03	07.59447	12	00	18.22	-10	33	19.6		413
1981	EP5		1981	03	10.53941	11	57	39.47	-10	28	09.8		413
1981	EP5		1981	03	10.58108	11	57	37.34	-10	28	04.7		413
1981	EP5		1981	03	12.52945	11	55	49.73	-10	23	59.4		413
1981	EP5		1981	03	12.56765	11	55	47.78	-10	23	55.9		413
1981	EP5		1981	04	07.41760	11	32	11.74	-08	54	46.1		413
1981	EP5		1981	04	07.45232	11	32	10.34	-08	54	40.0		413
1981	EP5		1981	04	08.45642	11	31	22.18	-08	50	30.3		413
1981	EP5		1981	04	08.49114	11	31	20.70	-08	50	21.8		413
1981	EP5		1981	04	09.60259	11	30	28.63	-08	45	48.4	18.5V	413
1981	EP5		1981	04	09.63731	11	30	27.07	-08	45	39.6		413
1981	EQ5	*	1981	03	02.52074	12	04	37.91	-09	16	38.6	17.5V	413

1981	EQ5	1981	03	02.56588	12	04	36.20	-09	16	30.0		413	
1981	EQ5	1981	03	07.55280	12	00	30.22	-08	57	06.7		413	
1981	EQ5	1981	03	07.59447	12	00	28.11	-08	56	56.6		413	
1981	EQ5	1981	03	10.53941	11	57	52.40	-08	42	52.3		413	
1981	EQ5	1981	03	10.58108	11	57	50.20	-08	42	39.6		413	
1981	EQ5	1981	03	12.52945	11	56	04.18	-08	32	24.0		413	
1981	EQ5	1981	03	12.56765	11	56	02.33	-08	32	12.0		413	
1981	EQ5	1981	04	07.41760	11	34	13.77	-05	40	04.2		413	
1981	EQ5	1981	04	07.45232	11	34	12.50	-05	39	50.5		413	
1981	EQ5	1981	04	09.60259	11	32	54.35	-05	25	34.8	18.5V	413	
1981	EQ5	1981	04	09.63731	11	32	53.16	-05	25	22.0		413	
1981	ER5	*	1981	03	02.52074	12	05	20.85	-12	18	15.7	18.5V	413
1981	ER5		1981	03	02.56588	12	05	19.12	-12	18	09.4		413
1981	ER5		1981	03	07.55280	12	01	10.09	-12	03	14.1		413
1981	ER5		1981	03	07.59447	12	01	08.04	-12	03	06.6		413
1981	ER5		1981	03	10.53941	11	58	31.35	-11	52	06.9		413
1981	ER5		1981	03	10.58108	11	58	29.27	-11	51	57.2		413
1981	ER5		1981	03	12.56765	11	56	40.42	-11	43	38.7		413
1981	ER5		1981	04	07.41760	11	32	49.64	-09	10	19.8		413
1981	ER5		1981	04	07.45232	11	32	47.97	-09	10	06.2		413
1981	ER5		1981	04	09.60259	11	31	05.04	-08	55	31.0	18.5V	413
1981	ER5		1981	04	09.63731	11	31	03.32	-08	55	15.7		413
1981	ES5	*	1981	03	07.55280	11	37	23.07	-10	45	27.0	19.0V	413
1981	ES5		1981	03	07.59447	11	37	20.92	-10	45	21.2		413
1981	ES5		1981	03	10.53941	11	34	45.12	-10	35	52.5		413
1981	ES5		1981	03	12.56765	11	32	57.05	-10	28	42.8		413
1981	ES5		1981	04	09.60259	11	10	34.13	-08	16	06.8	19.5V	413
1981	ES5		1981	04	09.63731	11	10	32.95	-08	15	56.6		413
1981	ET5	*	1981	03	07.55280	11	38	30.64	-09	08	38.6	19.0V	413
1981	ET5		1981	03	07.59447	11	38	28.72	-09	08	22.7		413
1981	ET5		1981	03	10.53941	11	36	07.83	-08	46	42.9		413
1981	ET5		1981	03	12.52945	11	34	31.53	-08	31	20.1		413
1981	ET5		1981	03	12.56765	11	34	29.65	-08	31	03.9		413
1981	ET5		1981	04	12.62048	11	13	01.66	-04	00	35.0		413
1981	ET5		1981	04	12.65521	11	13	00.90	-04	00	22.8		413
1981	EU5	*	1981	03	07.55280	11	42	00.43	-10	09	45.9	19.5V	413
1981	EU5		1981	03	07.59447	11	41	58.43	-10	09	36.1		413
1981	EU5		1981	03	10.53941	11	39	24.82	-09	54	21.3		413
1981	EU5		1981	03	12.52945	11	37	39.12	-09	42	55.7		413
1981	EU5		1981	03	12.56765	11	37	37.28	-09	42	44.7		413
1981	EU5		1981	04	09.60259	11	16	39.26	-06	14	55.7	20.0V	413
1981	EU5		1981	04	09.63731	11	16	38.32	-06	14	41.9		413
1981	EV5	*	1981	03	07.55280	11	43	20.50	-10	22	43.6	19.0V	413
1981	EV5		1981	03	07.59447	11	43	19.12	-10	22	35.0		413
1981	EV5		1981	03	10.53941	11	41	12.85	-10	07	38.0		413
1981	EV5		1981	03	12.52945	11	39	46.37	-09	56	52.4		413
1981	EV5		1981	03	12.56765	11	39	44.87	-09	56	42.8		413
1981	EV5		1981	04	09.60259	11	21	19.34	-06	54	04.8	19.5V	413
1981	EV5		1981	04	09.63731	11	21	18.44	-06	53	53.0		413
1981	EW5	*	1981	03	07.55280	11	44	05.18	-13	54	56.5	18.0V	413
1981	EW5		1981	03	07.59447	11	44	03.18	-13	54	41.7		413
1981	EW5		1981	03	10.53941	11	41	38.13	-13	34	10.8		413
1981	EW5		1981	03	10.58108	11	41	36.03	-13	33	53.2		413
1981	EW5		1981	03	12.52945	11	39	58.89	-13	19	23.4		413
1981	EW5		1981	03	12.56765	11	39	57.04	-13	19	07.9		413
1981	EW5		1981	04	07.41760	11	20	28.05	-09	25	15.8		413
1981	EW5		1981	04	07.45232	11	20	26.85	-09	24	58.0		413
1981	EW5		1981	04	09.60259	11	19	14.87	-09	04	39.5	18.0V	413
1981	EW5		1981	04	09.63731	11	19	13.83	-09	04	22.1		413



1981	EX5	*	1981	03	07.55280	11	44	40.81	-10	10	50.9	19.0V	413
1981	EX5		1981	03	07.59447	11	44	39.08	-10	10	39.9		413
1981	EX5		1981	03	10.58108	11	42	33.86	-09	55	12.4		413
1981	EX5		1981	03	12.52945	11	41	11.00	-09	44	33.8		413
1981	EX5		1981	03	12.56765	11	41	09.32	-09	44	20.3		413
1981	EX5		1981	04	09.60259	11	22	47.09	-06	42	50.9	20.0V	413
1981	EX5		1981	04	09.63731	11	22	46.22	-06	42	39.6		413
1981	EY5	*	1981	03	07.55280	11	45	22.91	-09	34	55.1	19.5V	413
1981	EY5		1981	03	10.53941	11	43	07.15	-09	28	00.8		413
1981	EY5		1981	03	12.56765	11	41	33.78	-09	22	48.4		413
1981	EY5		1981	04	09.60259	11	21	27.66	-07	45	41.1	19.5V	413
1981	EY5		1981	04	09.63731	11	21	26.37	-07	45	32.4		413
1981	EZ5	*	1981	03	07.59447	11	46	18.05	-10	08	17.5	19.5V	413
1981	EZ5		1981	03	10.53941	11	44	29.52	-09	57	13.9		413
1981	EZ5		1981	03	10.58108	11	44	28.00	-09	57	03.6		413
1981	EZ5		1981	03	12.52945	11	43	14.94	-09	49	11.2		413
1981	EZ5		1981	03	12.56765	11	43	13.59	-09	49	03.4		413
1981	EZ5		1981	04	09.60259	11	27	04.32	-07	27	45.7	19.5V	413
1981	EZ5		1981	04	09.63731	11	27	03.44	-07	27	36.5		413
1981	EA6	*	1981	03	07.55280	11	47	35.55	-08	14	38.9	18.5V	413
1981	EA6		1981	03	07.59447	11	47	33.83	-08	14	30.5		413
1981	EA6		1981	03	10.53941	11	45	26.04	-08	02	27.3		413
1981	EA6		1981	03	10.58108	11	45	24.22	-08	02	17.7		413
1981	EA6		1981	03	12.52945	11	43	58.26	-07	53	47.2		413
1981	EA6		1981	03	12.56765	11	43	56.64	-07	53	39.0		413
1981	EA6		1981	04	09.60259	11	24	41.42	-05	27	17.7	19.5V	413
1981	EA6		1981	04	09.63731	11	24	40.38	-05	27	06.6		413
1981	EB6	*	1981	03	07.55280	11	49	00.96	-08	34	38.7	19.0V	413
1981	EB6		1981	03	10.53941	11	46	43.58	-08	27	52.4		413
1981	EB6		1981	03	12.52945	11	45	10.79	-08	22	55.1		413
1981	EB6		1981	03	12.56765	11	45	09.31	-08	22	51.1		413
1981	EB6		1981	04	09.60259	11	24	40.16	-06	50	34.3	19.5V	413
1981	EB6		1981	04	09.63731	11	24	39.11	-06	50	28.5		413
1981	EC6	*	1981	03	07.59447	11	49	51.34	-10	42	46.7	19.0V	413
1981	EC6		1981	03	10.53941	11	47	03.02	-10	34	30.3		413
1981	EC6		1981	03	12.52945	11	45	07.13	-10	28	08.5		413
1981	EC6		1981	04	09.60259	11	18	54.80	-08	12	48.6	19.5V	413
1981	EC6		1981	04	09.63731	11	18	53.15	-08	12	37.2		413
1981	ED6	*	1981	03	07.55280	11	50	17.70	-12	35	32.7	19.5V	413
1981	ED6		1981	03	07.59447	11	50	15.48	-12	35	18.7		413
1981	ED6		1981	03	10.53941	11	47	51.37	-12	16	15.5		413
1981	ED6		1981	03	12.52945	11	46	10.75	-12	02	15.9		413
1981	ED6		1981	03	12.56765	11	46	09.08	-12	02	01.1		413
1981	ED6		1981	04	09.60259	11	22	55.61	-07	37	60.0	19.5V	413
1981	ED6		1981	04	09.63731	11	22	54.37	-07	37	41.5		413
1981	EE6	*	1981	03	07.55280	11	51	58.07	-11	23	07.7	19.0V	413
1981	EE6		1981	03	07.59447	11	51	56.29	-11	23	00.4		413
1981	EE6		1981	03	10.53941	11	49	37.41	-11	12	41.8		413
1981	EE6		1981	03	10.58108	11	49	35.49	-11	12	33.3		413
1981	EE6		1981	03	12.56765	11	47	58.79	-11	04	35.6		413
1981	EE6		1981	04	09.60259	11	26	25.98	-08	16	13.1	19.5V	413
1981	EF6	*	1981	03	07.55280	11	53	28.76	-11	59	25.0	19.5V	413
1981	EF6		1981	03	07.59447	11	53	26.76	-11	59	21.7		413
1981	EF6		1981	03	10.53941	11	51	02.73	-11	52	55.4		413
1981	EF6		1981	03	10.58108	11	51	00.71	-11	52	51.3		413
1981	EF6		1981	03	12.56765	11	49	21.86	-11	47	43.3		413
1981	EF6		1981	04	09.60259	11	27	38.52	-09	52	15.0	19.5V	413
1981	EF6		1981	04	09.63731	11	27	37.32	-09	52	04.9		413
1981	EG6	*	1981	03	07.55280	11	54	19.73	-10	29	57.8	20.0V	413

1981 EG6	1981 03 07.59447	11 54 17.33	-10 29 52.1	413
1981 EG6	1981 03 10.53941	11 51 51.06	-10 23 46.5	413
1981 EG6	1981 03 12.56765	11 50 07.69	-10 18 41.8	413
1981 EG6	1981 04 09.60259	11 29 12.66	-08 17 23.7	19.5V 413
1981 EG6	1981 04 09.63731	11 29 11.56	-08 17 10.0	413

OBSERVATIONS MADE AT MT. JOHN UNIVERSITY OBSERVATORY BY A. C. GILMORE.  
 MEASURED BY P. M. KILMARTIN. ASSISTANCE FROM R. MC INTOSH.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
935	1982 04 23.59141	15 39 25.40	-25 20 55.8				474
935	1982 04 23.61282	15 39 24.17	-25 20 53.7				474
935	1982 04 24.56281	15 38 33.92	-25 20 08.5				474
935	1982 04 24.58434	15 38 32.81	-25 20 06.7				474
935	1982 04 25.42299	15 37 47.44	-25 19 18.6				474
935	1982 04 25.44521	15 37 46.17	-25 19 17.4				474
1383	1982 06 23.56538	18 06 12.62	-23 22 01.5			1	474
1383	1982 06 23.58703	18 06 11.47	-23 22 01.3			1	474
2629	1982 04 25.46940	10 09 59.78	-19 25 22.4				474
2629	1982 04 25.48954	10 09 58.83	-19 25 32.6				474
1952 UZ1	1982 05 28.67119	18 26 10.75	-23 28 45.0				474
1952 UZ1	1982 05 28.69307	18 26 09.89	-23 28 44.6				474
1952 UZ1	1982 06 23.56538	18 04 44.98	-23 18 19.5				474
1952 UZ1	1982 06 23.58703	18 04 43.67	-23 18 19.2				474
1976 GJ3	1982 04 23.59141	15 39 32.33	-25 19 04.7				474
1976 GJ3	1982 04 23.61282	15 39 31.27	-25 19 08.9				474
1976 GJ3	1982 04 24.56281	15 38 47.45	-25 22 04.5				474
1976 GJ3	1982 04 24.58434	15 38 46.44	-25 22 07.2				474
1976 GJ3	1982 04 25.42299	15 38 06.94	-25 24 38.0				474
1976 GJ3	1982 04 25.44521	15 38 05.99	-25 24 42.3				474
1979 OC	1982 03 27.65313	16 11 34.23	-26 43 22.7				474
1979 OC	1982 03 27.70417	16 11 35.23	-26 43 24.0				474
1979 OC	1982 04 25.64058	16 08 08.81	-26 02 04.7				474
1979 OC	1982 04 25.66222	16 08 07.98	-26 01 58.7				474
1979 OC	1982 05 28.54017	15 38 12.15	-22 45 17.2	16.0			474
1979 OC	1982 05 28.55476	15 38 11.23	-22 45 10.2				474
1980 LA	1982 01 28.55632	08 26 51.79	-04 46 17.3				474
1980 LA	1982 01 28.57976	08 26 50.08	-04 46 17.8				474
1981 EL	1982 06 26.63932	19 12 17.17	-26 34 08.9				474
1981 EL	1982 06 26.66108	19 12 16.07	-26 34 09.9				474
1981 EY	1982 04 23.64755	15 55 15.17	-38 42 30.7				474
1981 EY	1982 04 23.66907	15 55 14.22	-38 42 34.9				474
1981 EY	1982 05 28.49191	15 23 15.52	-38 43 58.0	17.8			474
1981 EY	1982 05 28.51413	15 23 14.22	-38 43 54.3				474
1981 LK	1982 05 27.67838	17 52 39.44	-30 37 55.7	16.3			474
1981 LK	1982 05 27.70188	17 52 38.70	-30 37 58.8				474
1981 QB	1981 12 26.47049	04 37 19.23	-65 56 08.2				474
1981 QB	1981 12 26.49965	04 37 22.47	-65 55 03.9				474
1982 DV	1982 03 27.56157	14 19 14.63	-35 05 58.6	13.8			474
1982 DV	1982 03 27.57442	14 19 19.87	-35 06 01.7				474
1982 DV	1982 04 23.72440	17 17 09.71	-23 00 11.1				474
1982 DV	1982 04 23.72984	17 17 11.04	-22 59 56.4				474
1982 DV	1982 04 24.63689	17 21 02.97	-22 20 38.6				474
1982 DV	1982 04 24.64163	17 21 04.05	-22 20 26.5				474
1982 FT	1982 05 27.36426	10 45 51.99	-60 12 41.5	16.1			474
1982 FT	1982 05 27.38961	10 45 53.61	-60 12 50.7				474
1982 MA *	1982 06 23.56538	18 04 36.54	-22 57 21.5			1	474
1982 MA	1982 06 23.58703	18 04 35.29	-22 57 22.0			1	474
1982 MA	1982 06 26.39823	18 01 52.13	-22 57 39.9	18.2			474
1982 MA	1982 06 26.42520	18 01 50.46	-22 57 41.0				474

1982 MA	1982 06	27.38630	18 00	55.03	-22 57	44.5	474
1982 MA	1982 06	27.41361	18 00	53.33	-22 57	44.7	474
1982 MA	1982 06	28.39034	17 59	57.27	-22 57	48.8	474
1982 MA	1982 06	28.41302	17 59	55.87	-22 57	49.3	474
1982 MA	1982 07	02.48884	17 56	06.22	-22 57	59.3	474
1982 MA	1982 07	02.51118	17 56	04.97	-22 57	59.5	474
1982 MH *	1982 06	26.63932	19 11	29.85	-26 56	39.1	474
1982 MH	1982 06	26.66108	19 11	28.42	-26 56	43.2	474
1982 MH	1982 06	27.44382	19 10	39.12	-26 59	30.3	474
1982 MH	1982 06	27.46569	19 10	37.76	-26 59	34.8	474
1982 MH	1982 06	28.44022	19 09	35.16	-27 02	58.3	474
1982 MH	1982 06	28.46233	19 09	33.77	-27 03	02.5	474
1982 MH	1982 07	02.54324	19 05	04.23	-27 16	35.1	2 474
1982 MH	1982 07	02.56477	19 05	02.72	-27 16	39.0	474

Note 1: out-of-focus image close to plate edge. 2: on star trail.

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

Object	Date	UT	R. A. (1950)		Decl.		Obs.
3	1981 06	04.07235	13 39	02.60	+02 44	26.0	491
3	1981 06	04.07581	13 39	02.46	+02 44	26.4	491
3	1981 06	04.07927	13 39	02.38	+02 44	25.4	491
3	1981 06	05.02462	13 38	48.33	+02 44	19.7	491
3	1981 06	05.03016	13 38	48.21	+02 44	19.8	491
3	1981 06	05.03569	13 38	48.15	+02 44	20.2	491
3	1981 06	29.95498	13 38	42.97	+01 57	58.7	491
3	1981 06	29.95844	13 38	43.03	+01 57	57.6	491
3	1981 06	29.96190	13 38	43.07	+01 57	56.8	491
4	1981 06	03.95575	10 38	02.90	+16 28	59.5	491
4	1981 06	03.95921	10 38	03.15	+16 28	58.3	491
4	1981 06	03.96267	10 38	03.40	+16 28	56.5	491
4	1981 06	04.95994	10 39	14.25	+16 20	02.2	491
4	1981 06	04.96479	10 39	14.57	+16 19	59.4	491
4	1981 06	04.96964	10 39	14.97	+16 19	56.7	491
11	1981 06	04.08880	20 11	09.83	-17 04	52.6	491
11	1981 06	04.09226	20 11	09.82	-17 04	52.7	491
11	1981 06	04.09572	20 11	09.84	-17 04	52.8	491
11	1981 06	05.08747	20 11	11.93	-17 05	49.3	491
11	1981 06	05.09439	20 11	11.95	-17 05	49.9	491
11	1981 06	29.96900	20 02	24.22	-18 12	12.8	491
11	1981 06	29.97258	20 02	24.11	-18 12	13.6	491
11	1981 06	29.97616	20 02	23.93	-18 12	14.5	491
11	1981 08	07.97948	19 29	06.57	-21 20	58.3	491
11	1981 08	07.98225	19 29	06.47	-21 20	59.6	491
11	1981 08	07.98502	19 29	06.34	-21 21	00.2	491
18	1981 06	30.00824	22 12	53.08	-04 44	32.0	491
18	1981 06	30.01240	22 12	53.21	-04 44	31.8	491
18	1981 06	30.01655	22 12	53.33	-04 44	31.9	491
18	1981 08	08.02305	22 12	14.45	-08 24	07.9	491
18	1981 08	08.02721	22 12	14.32	-08 24	10.6	491
18	1981 08	08.03165	22 12	14.19	-08 24	13.7	491
39	1981 06	04.07581	13 44	16.87	+02 16	15.3	491
39	1981 06	04.07927	13 44	16.79	+02 16	15.1	491
39	1981 06	05.02462	13 44	02.73	+02 15	31.9	491
39	1981 06	05.03016	13 44	02.62	+02 15	31.3	491
39	1981 06	05.03569	13 44	02.45	+02 15	30.6	491
39	1981 06	29.95498	13 44	29.40	+01 09	34.8	491
39	1981 06	29.95844	13 44	29.44	+01 09	33.3	491
39	1981 06	29.96190	13 44	29.48	+01 09	32.7	491

148	1981	06	29.99001	21	47	29.04	-03	29	09.9	491
148	1981	06	29.99417	21	47	29.02	-03	29	11.3	491
148	1981	06	29.99832	21	47	29.03	-03	29	12.4	491
148	1981	08	08.00309	21	30	16.15	-10	02	22.2	491
148	1981	08	08.00725	21	30	15.93	-10	02	25.8	491
148	1981	08	08.01140	21	30	15.76	-10	02	29.3	491

## OBSERVATIONS MADE AT FALKENSEE BY M. GRESSMANN.

Object	Date	UT	R. A. (1950)			Decl.			N	Obs.
51	1982	05	12.88948	14	32	51.03	-01	13	40.9	542
51	1982	05	12.89413	14	32	50.76	-01	13	40.7	542
51	1982	05	12.89841	14	32	50.49	-01	13	36.8	542
97	1982	04	26.95570	14	54	02.27	-01	13	02.5	542
97	1982	04	26.98419	14	54	01.02	-01	12	53.0	542
97	1982	04	26.98841	14	54	00.69	-01	12	51.2	542
97	1982	05	12.88948	14	41	06.31	+00	02	47.3	1 542
97	1982	05	12.89413	14	41	05.92	+00	02	48.3	542
97	1982	05	12.89841	14	41	05.78	+00	02	48.5	542
221	1982	04	15.89795	12	45	49.12	+08	13	31.0	1 542
221	1982	04	15.90636	12	45	48.71	+08	13	34.3	1 542
221	1982	04	15.92254	12	45	48.08	+08	13	35.2	1 542
221	1982	04	18.89101	12	43	49.60	+08	27	15.0	542
221	1982	04	18.89571	12	43	49.28	+08	27	17.5	542
221	1982	04	18.90039	12	43	49.09	+08	27	18.6	542
221	1982	04	22.88391	12	41	17.99	+08	43	22.8	1 542
221	1982	04	22.88866	12	41	17.83	+08	43	25.3	542
221	1982	04	22.89330	12	41	17.63	+08	43	26.6	542
234	1982	05	12.90511	14	52	51.68	+09	31	23.7	542
234	1982	05	12.90937	14	52	51.45	+09	31	25.0	542
234	1982	05	12.91967	14	52	50.91	+09	31	27.7	542
329	1982	04	26.99661	16	18	17.67	-00	08	31.5	542
329	1982	04	27.01631	16	18	17.05	-00	08	18.9	542
329	1982	04	27.02133	16	18	16.84	-00	08	15.6	542
329	1982	05	12.95663	16	07	20.89	+02	22	01.7	542
329	1982	05	12.96288	16	07	20.78	+02	22	03.5	542
329	1982	05	12.96918	16	07	20.46	+02	22	05.4	542
442	1982	04	15.95253	14	00	34.33	-00	55	39.5	542
442	1982	04	15.96475	14	00	33.59	-00	55	34.1	542
442	1982	04	15.96943	14	00	33.32	-00	55	32.6	542
442	1982	04	22.92018	13	54	21.72	-00	12	16.6	542
442	1982	04	22.92457	13	54	21.54	-00	12	16.0	542
442	1982	04	22.92786	13	54	21.38	-00	12	15.5	542
451	1982	04	18.94870	14	09	54.33	+07	30	10.2	542
451	1982	04	18.95211	14	09	54.21	+07	30	10.7	542
451	1982	04	18.95653	14	09	54.05	+07	30	12.5	542
451	1982	04	22.93380	14	06	42.69	+07	39	20.3	542
451	1982	04	22.93651	14	06	42.65	+07	39	21.3	542
451	1982	04	22.94039	14	06	42.36	+07	39	22.1	542
451	1982	04	26.91082	14	03	31.29	+07	46	01.2	542
451	1982	04	26.91393	14	03	31.17	+07	46	03.4	542
451	1982	04	26.91677	14	03	30.96	+07	46	04.5	542
535	1982	04	15.93274	13	09	42.94	+03	35	06.0	542
535	1982	04	15.93789	13	09	42.63	+03	35	07.0	542
535	1982	04	15.94389	13	09	42.38	+03	35	08.0	542
535	1982	04	18.91180	13	07	07.97	+03	44	14.3	542
535	1982	04	18.91641	13	07	07.75	+03	44	15.2	542
535	1982	04	18.92109	13	07	07.51	+03	44	16.3	542
535	1982	04	22.90254	13	03	48.34	+03	54	07.4	542
535	1982	04	22.90702	13	03	48.16	+03	54	07.5	542

535	1982 04 22.91239	13 03 47.85	+03 54 06.7	542
747	1982 04 26.99661	16 22 12.96	+01 16 38.3	542
747	1982 04 27.01631	16 22 12.27	+01 16 39.5	542
747	1982 04 27.02133	16 22 12.17	+01 16 41.6	542
747	1982 05 12.95663	16 11 56.31	+02 09 31.3	542
747	1982 05 12.96288	16 11 55.78	+02 09 31.7	542
747	1982 05 12.96918	16 11 55.76	+02 09 33.6	542
1021	1981 11 19.89926	03 15 08.47	-10 58 07.7	542
1021	1981 11 19.90334	03 15 08.36	-10 58 05.1	542
1021	1981 11 19.90667	03 15 08.15	-10 58 07.1	542
1252	1982 04 26.97209	15 10 28.76	+40 15 44.1	542
1252	1982 04 26.97758	15 10 28.50	+40 15 45.5	542
1555	1981 11 19.94199	03 48 33.75	+31 14 05.8	542
1555	1981 11 19.94950	03 48 33.36	+31 14 05.3	542
1555	1981 11 19.95657	03 48 32.85	+31 14 01.7	542
1567	1981 04 06.90887	12 09 32.38	+20 18 36.3	542
1567	1981 04 06.91874	12 09 31.96	+20 18 32.1	542
1665	1981 11 19.91601	03 38 31.25	+06 42 05.6	542
1665	1981 11 19.92613	03 38 30.60	+06 42 07.4	542
1665	1981 11 19.93153	03 38 30.24	+06 42 07.8	542
1862	1982 04 26.92647	14 08 30.42	-13 12 30.4	542
1862	1982 04 26.93192	14 08 29.01	-13 12 33.4	542
1862	1982 04 26.93767	14 08 27.33	-13 12 34.8	542

Note 1: measurement uncertain. 2: trail disturbed. 3 = 1 + 2, 4: image disturbed near plate edge.

OBSERVATIONS MADE AT PISZKESTETO BY Z. VIZI. SCANNED AND MEASURED BY Z. KNEZEVIC.

Object	Date	UT	R. A. (1950)	Decl.	N Obs.
1980 VO1 *	1980 11 13.89090	03 08 18.07	+17 07 47.3	561	
1980 VO1 *	1980 11 13.97271	03 08 12.28	+17 07 47.1	561	
1980 VP1	1980 11 13.89090	03 12 16.43	+17 24 57.1	561	
1980 VP1	1980 11 13.97271	03 12 10.92	+17 25 06.9	561	
1980 VQ1 *	1980 11 13.89090	03 15 05.13	+17 24 58.6	561	
1980 VQ1	1980 11 13.97271	03 14 59.62	+17 24 53.2	561	
1980 VR1 *	1980 11 13.89090	03 17 19.25	+17 21 39.9	561	
1980 VR1	1980 11 13.97271	03 17 14.13	+17 21 50.5	561	
1980 VS1 *	1980 11 13.89090	03 20 01.06	+17 19 50.8	1 561	
1980 VS1	1980 11 13.97271	03 19 56.62	+17 19 30.5	1 561	

Note 1: near edge of plate.

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
1009	1982 07 14.30702	18 25 40.20	-04 28 32.6	20	1 675	
1009	1982 07 15.28896	18 24 42.86	-04 28 10.2		1 675	
1952 UZ1	1982 06 29.37506	17 58 58.67	-23 14 27.2		1 675	
1952 UZ1	1982 06 30.29695	17 58 05.03	-23 13 45.8		1 675	
1977 RB	1982 07 15.43619	23 59 00.25	-14 45 21.2		1 675	
1977 RB	1982 07 15.47438	23 59 00.64	-14 44 58.7		1 675	
1977 RB	1982 07 29.47715	23 57 49.50	-12 28 20.3		1 675	
1977 RB	1982 07 30.45771	23 57 24.63	-12 18 42.6		1 675	
1981 AA	1982 06 12.30702	15 21 21.73	+09 55 52.0		1 675	
1981 AA	1982 06 13.26951	15 20 38.60	+09 49 59.9		1 675	
1981 JR	1982 06 13.28826	17 14 12.13	-10 11 12.3		1 675	
1981 JR	1982 06 13.31951	17 14 11.16	-10 11 08.0		1 675	
1982 NA *	1982 07 14.30702	18 24 58.85	-05 17 39.8	16	1 675	
1982 NA	1982 07 15.28896	18 24 11.14	-05 19 52.8		1 675	
3042 P-L *	1960 09 24.27708	00 19 53.39	+15 00 51.0	17.4	2 675	
3042 P-L	1960 09 24.36250	00 19 49.17	+15 00 32.0		2 675	

3042	P-L	1960	09	24.47431	00	19	43.80	+15	00	04.9	2	675	
3042	P-L	1960	09	25.22986	00	19	09.04	+14	57	06.8	2	675	
3042	P-L	1960	09	25.36042	00	19	02.60	+14	56	35.5	2	675	
3042	P-L	1960	09	26.24514	00	18	21.46	+14	52	57.3	2	675	
3042	P-L	1960	09	26.29514	00	18	18.95	+14	52	43.6	2	675	
3042	P-L	1960	09	26.40208	00	18	13.62	+14	52	16.6	2	675	
3042	P-L	1960	09	27.27569	00	17	32.71	+14	48	28.7	2	675	
3042	P-L	1960	09	27.44444	00	17	24.34	+14	47	43.7	2	675	
3042	P-L	1960	09	28.34722	00	16	41.93	+14	43	36.6	2	675	
3042	P-L	1960	09	28.40764	00	16	38.87	+14	43	20.2	2	675	
3042	P-L	1960	09	28.46181	00	16	36.23	+14	43	04.2	2	675	
3042	P-L	1960	09	29.34722	00	15	54.61	+14	38	53.4	2	675	
3042	P-L	1960	09	29.47153	00	15	48.38	+14	38	16.1	2	675	
3042	P-L	1960	10	17.33750	00	03	03.36	+12	50	58.4	2	675	
3042	P-L	1960	10	24.21256	23	59	40.78	+12	05	36.2	2	675	
3042	P-L	1960	10	26.28264	23	58	54.38	+11	52	20.7	2	675	
3071	P-L *	1960	09	25.22986	00	23	09.42	+12	50	45.6	17.9	2	675
3071	P-L	1960	09	27.27569	00	21	13.65	+12	39	45.9	2	675	
3071	P-L	1960	09	28.34722	00	20	12.87	+12	33	44.8	2	675	
3071	P-L	1960	09	29.34722	00	19	16.38	+12	27	59.2	2	675	
3071	P-L	1960	09	29.47153	00	19	09.11	+12	27	15.5	2	675	

Note 1: observer J. Gibson. 2: observer T. Gehrels; plates scanned and measured by C. J. van Houten and I. van Houten-Groeneveld.

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR BY P. D. USHER. SCANNED AND MEASURED BY E. BOWELL AND A. WARNOCK III.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.	
189	1978	12	03.18481	03 07 00.59	+12 37 41.3	675	
189	1978	12	03.39896	03 06 50.44	+12 36 47.2	675	
189	1978	12	05.18976	03 05 32.80	+12 29 37.5	675	
189	1978	12	06.33819	03 04 44.66	+12 25 15.1	675	
189	1978	12	06.36319	03 04 43.81	+12 25 11.9	675	
503	1978	12	03.18481	03 21 08.63	+17 03 03.8	675	
503	1978	12	03.39896	03 20 56.84	+17 02 56.6	675	
503	1978	12	05.18976	03 19 24.63	+17 02 05.6	675	
503	1978	12	06.33819	03 18 26.71	+17 01 37.9	675	
503	1978	12	06.36319	03 18 25.53	+17 01 37.7	675	
1857	1978	12	03.18481	03 12 48.73	+17 12 06.6	675	
1857	1978	12	03.39896	03 12 38.56	+17 10 44.7	675	
1857	1978	12	05.18976	03 11 23.08	+16 59 40.9	675	
1857	1978	12	06.33819	03 10 36.77	+16 52 46.5	675	
1857	1978	12	06.36319	03 10 35.74	+16 52 38.2	675	
1897	1978	12	03.18481	03 18 24.47	+17 51 29.1	675	
1897	1978	12	03.39896	03 18 11.95	+17 51 13.0	675	
1897	1978	12	05.18976	03 16 35.07	+17 49 13.8	675	
1897	1978	12	06.33819	03 15 34.46	+17 48 02.9	675	
1897	1978	12	06.36319	03 15 33.55	+17 48 02.7	675	
2144	1978	12	03.18481	03 25 43.66	+14 18 13.1	675	
2144	1978	12	03.39896	03 25 33.23	+14 17 46.5	675	
2144	1978	12	05.18976	03 24 10.94	+14 14 10.9	675	
2144	1978	12	06.33819	03 23 19.40	+14 12 03.1	675	
2144	1978	12	06.36319	03 23 18.35	+14 12 00.0	675	
2357	1978	12	03.18481	03 15 09.76	+15 18 34.0	675	
2357	1978	12	03.39896	03 15 03.64	+15 18 09.9	675	
2357	1978	12	05.18976	03 14 14.29	+15 15 01.6	675	
2357	1978	12	06.33819	03 13 42.47	+15 13 02.7	675	
2357	1978	12	06.36319	03 13 41.87	+15 13 00.0	675	
1973	SJ4	1978	12	03.18481	03 06 53.49	+16 45 55.3	675
1973	SJ4	1978	12	03.39896	03 06 45.45	+16 44 51.2	675

1973	SJ4	1978	12	05.18976	03	05	45.76	+16	36	14.2	675	
1973	SJ4	1978	12	06.33819	03	05	09.24	+16	30	52.8	675	
1973	SJ4	1978	12	06.36319	03	05	08.45	+16	30	46.3	675	
1978	WM14	1978	12	03.18481	03	14	38.12	+13	00	56.3	675	
1978	WM14	1978	12	03.39896	03	14	29.60	+13	00	05.7	675	
1978	WM14	1978	12	05.18976	03	13	23.62	+12	53	12.2	675	
1978	WM14	1978	12	06.33819	03	12	42.67	+12	49	01.4	675	
1978	WM14	1978	12	06.36319	03	12	41.80	+12	48	56.1	675	
1978	WN14	1978	12	03.18481	03	26	16.84	+15	43	15.9	675	
1978	WN14	1978	12	03.39896	03	26	06.96	+15	42	54.1	675	
1978	WN14	1978	12	05.18976	03	24	49.71	+15	40	01.5	675	
1978	WN14	1978	12	06.33819	03	24	01.12	+15	38	16.7	675	
1978	WN14	1978	12	06.36319	03	24	00.13	+15	38	14.9	675	
1978	XG	1978	12	03.18481	03	06	19.20	+17	41	12.5	675	
1978	XG	1978	12	03.39896	03	06	10.55	+17	40	42.0	675	
1978	XG	1978	12	05.18976	03	05	04.24	+17	36	42.3	675	
1978	XG	*	1978	12	06.33819	03	04	22.96	+17	34	14.1	675
1978	XG		1978	12	06.36319	03	04	22.18	+17	34	11.3	675
1978	XH	1978	12	03.18481	03	08	21.81	+13	03	44.0	675	
1978	XH	1978	12	03.39896	03	08	13.12	+13	03	03.6	675	
1978	XH	1978	12	05.18976	03	07	06.01	+12	57	27.1	675	
1978	XH	*	1978	12	06.33819	03	06	24.24	+12	54	01.5	675
1978	XH		1978	12	06.36319	03	06	23.51	+12	53	58.0	675
1978	XJ	1978	12	03.18481	03	09	26.72	+14	45	45.8	675	
1978	XJ	1978	12	03.39896	03	09	15.13	+14	46	29.0	675	
1978	XJ	1978	12	05.18976	03	07	47.60	+14	52	47.8	675	
1978	XJ	*	1978	12	06.33819	03	06	51.64	+14	56	57.5	675
1978	XJ		1978	12	06.36319	03	06	50.58	+14	57	03.7	675
1978	XK	1978	12	03.18481	03	09	23.36	+13	42	40.0	675	
1978	XK	1978	12	03.39896	03	09	13.93	+13	42	14.4	675	
1978	XK	1978	12	05.18976	03	08	00.09	+13	38	49.9	675	
1978	XK	*	1978	12	06.33819	03	07	14.47	+13	36	50.4	675
1978	XK		1978	12	06.36319	03	07	13.43	+13	36	44.7	675
1978	XL	1978	12	03.18481	03	10	07.60	+14	30	00.3	675	
1978	XL	1978	12	03.39896	03	09	56.54	+14	30	22.0	675	
1978	XL	1978	12	05.18976	03	08	29.07	+14	33	35.9	675	
1978	XL	*	1978	12	06.33819	03	07	33.97	+14	35	47.0	675
1978	XL		1978	12	06.36319	03	07	32.92	+14	35	50.0	675
1978	XM	1978	12	03.18481	03	10	51.41	+16	44	47.3	675	
1978	XM	1978	12	03.39896	03	10	38.67	+16	44	53.8	675	
1978	XM	1978	12	05.18976	03	09	00.83	+16	46	02.0	2 675	
1978	XM	*	1978	12	06.33819	03	08	00.37	+16	46	53.2	675
1978	XM		1978	12	06.36319	03	07	59.07	+16	46	54.3	675
1978	XN	1978	12	03.18481	03	10	41.62	+13	42	27.9	675	
1978	XN	1978	12	03.39896	03	10	31.69	+13	42	06.5	675	
1978	XN	1978	12	05.18976	03	09	12.91	+13	39	17.8	675	
1978	XN	*	1978	12	06.33819	03	08	23.98	+13	37	39.7	675
1978	XN		1978	12	06.36319	03	08	22.93	+13	37	37.4	675
1978	XO	1978	12	03.18481	03	11	39.15	+14	38	12.8	675	
1978	XO	1978	12	03.39896	03	11	26.08	+14	38	40.7	675	
1978	XO	1978	12	05.18976	03	09	43.28	+14	42	47.4	1 675	
1978	XO	*	1978	12	06.33819	03	08	38.81	+14	45	31.5	675
1978	XO		1978	12	06.36319	03	08	37.55	+14	45	35.6	675
1978	XP	1978	12	03.18481	03	11	21.76	+15	54	34.0	675	
1978	XP	1978	12	05.18976	03	10	00.26	+15	49	29.4	675	
1978	XP	*	1978	12	06.33819	03	09	14.88	+15	46	39.8	675
1978	XP		1978	12	06.36319	03	09	13.91	+15	46	36.2	675
1978	XQ	1978	12	03.18481	03	12	00.38	+16	48	47.5	675	
1978	XQ	1978	12	03.39896	03	11	50.87	+16	48	10.7	675	

1978 XQ		1978 12 05.18976	03 10 35.76	+16 43 10.1	675
1978 XQ	*	1978 12 06.33819	03 09 48.48	+16 40 00.3	675
1978 XQ		1978 12 06.36319	03 09 47.39	+16 39 56.2	675
1978 XR		1978 12 03.18481	03 12 12.64	+16 38 57.9	675
1978 XR		1978 12 03.39896	03 12 02.86	+16 38 17.6	675
1978 XR		1978 12 05.18976	03 10 46.67	+16 32 50.1	675
1978 XR	*	1978 12 06.33819	03 09 59.03	+16 29 24.1	675
1978 XR		1978 12 06.36319	03 09 57.97	+16 29 20.0	675
1978 XS		1978 12 03.18481	03 13 00.94	+16 02 03.2	675
1978 XS		1978 12 03.39896	03 12 49.85	+16 01 12.6	675
1978 XS		1978 12 05.18976	03 11 25.56	+15 54 25.4	675
1978 XS	*	1978 12 06.33819	03 10 33.43	+15 50 15.2	675
1978 XS		1978 12 06.36319	03 10 32.23	+15 50 10.7	675
1978 XT		1978 12 03.18481	03 11 27.80	+17 12 30.6	675
1978 XT		1978 12 03.39896	03 11 23.18	+17 11 14.6	675
1978 XT		1978 12 05.18976	03 10 55.91	+17 01 06.1	675
1978 XT	*	1978 12 06.33819	03 10 40.54	+16 54 53.2	675
1978 XT		1978 12 06.36319	03 10 40.13	+16 54 46.2	675
1978 XU		1978 12 03.18481	03 12 58.74	+12 55 35.9	675
1978 XU		1978 12 03.39896	03 12 49.06	+12 54 24.7	675
1978 XU		1978 12 05.18976	03 11 35.54	+12 44 51.5	675
1978 XU	*	1978 12 06.33819	03 10 50.22	+12 39 01.9	675
1978 XU		1978 12 06.36319	03 10 49.31	+12 38 55.3	675
1978 XV		1978 12 03.18481	03 13 21.42	+15 46 32.3	675
1978 XV		1978 12 03.39896	03 13 12.01	+15 46 16.9	675
1978 XV		1978 12 05.18976	03 11 59.04	+15 44 20.7	675
1978 XV	*	1978 12 06.33819	03 11 13.46	+15 43 11.9	675
1978 XV		1978 12 06.36319	03 11 12.49	+15 43 10.5	675
1978 xw		1978 12 03.18481	03 13 45.45	+15 44 20.7	675
1978 xw		1978 12 03.39896	03 13 35.45	+15 43 53.0	675
1978 xw		1978 12 05.18976	03 12 16.50	+15 40 13.5	675
1978 xw	*	1978 12 06.33819	03 11 27.14	+15 37 58.4	675
1978 xw		1978 12 06.36319	03 11 26.17	+15 37 56.5	675
1978 XX		1978 12 03.18481	03 16 27.40	+16 14 58.1	675
1978 XX		1978 12 03.39896	03 16 14.81	+16 15 13.4	675
1978 XX		1978 12 05.18976	03 14 35.22	+16 17 28.2	3 675
1978 XX	*	1978 12 06.33819	03 13 32.27	+16 18 58.3	675
1978 XX		1978 12 06.36319	03 13 30.90	+16 19 00.7	675
1978 XY		1978 12 05.18976	03 15 48.81	+15 09 30.8	1 675
1978 XY	*	1978 12 06.33819	03 14 59.33	+15 06 54.7	675
1978 XY		1978 12 06.36319	03 14 58.39	+15 06 51.1	675
1978 XZ		1978 12 03.18481	03 18 00.22	+16 48 49.1	675
1978 XZ		1978 12 03.39896	03 17 47.45	+16 48 03.3	675
1978 XZ		1978 12 05.18976	03 16 08.40	+16 41 53.3	675
1978 XZ	*	1978 12 06.33819	03 15 06.35	+16 38 02.6	675
1978 XZ		1978 12 06.36319	03 15 05.02	+16 37 58.0	675
1978 XA1		1978 12 03.39896	03 18 17.93	+13 21 20.3	675
1978 XA1		1978 12 05.18976	03 16 37.52	+13 20 21.7	675
1978 XA1		1978 12 06.33819	03 15 33.90	+13 19 55.5	675
1978 XA1		1978 12 06.36319	03 15 32.81	+13 19 54.1	675
1978 XB1		1978 12 03.18481	03 18 45.82	+14 15 10.9	675
1978 XB1		1978 12 03.39896	03 18 33.02	+14 14 44.3	675
1978 XB1		1978 12 05.18976	03 16 52.74	+14 11 11.1	675
1978 XB1	*	1978 12 06.33819	03 15 50.26	+14 09 07.1	675
1978 XB1		1978 12 06.36319	03 15 48.93	+14 09 04.5	675
1978 XC1		1978 12 03.18481	03 18 31.10	+15 20 49.6	675
1978 XC1		1978 12 03.39896	03 18 21.07	+15 20 14.2	675
1978 XC1		1978 12 05.18976	03 17 01.27	+15 15 30.4	675
1978 XC1		1978 12 06.33819	03 16 11.21	+15 12 35.5	675



1978	XC1	1978	12	06.36319	03	16	10.28	+15	12	30.2	675
1978	XD1	1978	12	03.18481	03	23	14.40	+14	05	46.7	675
1978	XD1	1978	12	03.39896	03	23	04.29	+14	05	26.0	675
1978	XD1	1978	12	05.18976	03	21	45.17	+14	02	38.2	675
1978	XD1	* 1978	12	06.33819	03	20	55.90	+14	01	02.1	675
1978	XD1	1978	12	06.36319	03	20	54.75	+14	00	59.5	675
1978	XE1	1978	12	03.39896	03	24	58.75	+14	05	18.0	675
1978	XE1	1978	12	05.18976	03	23	25.49	+13	58	04.3	2 675
1978	XE1	* 1978	12	06.33819	03	22	26.91	+13	53	34.6	675
1978	XE1	1978	12	06.36319	03	22	25.91	+13	53	28.0	675
1978	XF1	1978	12	03.18481	03	26	14.39	+15	17	58.8	675
1978	XF1	1978	12	03.39896	03	26	04.06	+15	17	39.7	1 675
1978	XF1	1978	12	05.18976	03	24	44.14	+15	15	18.4	675
1978	XF1	* 1978	12	06.33819	03	23	53.73	+15	13	53.2	675
1978	XF1	1978	12	06.36319	03	23	52.70	+15	13	51.2	675
1978	XG1	1978	12	03.18481	03	26	14.37	+13	23	15.7	675
1978	XG1	1978	12	03.39896	03	26	04.28	+13	22	03.2	675
1978	XG1	1978	12	05.18976	03	24	49.12	+13	12	26.7	2 675
1978	XG1	* 1978	12	06.33819	03	24	02.67	+13	06	35.5	675
1978	XG1	1978	12	06.36319	03	24	01.74	+13	06	27.8	675
1978	XH1	1978	12	05.18976	03	27	11.52	+15	25	53.5	675
1978	XH1	* 1978	12	06.33819	03	26	11.98	+15	11	44.8	675
1978	XH1	1978	12	06.36319	03	26	10.83	+15	11	26.8	675
1978	XJ1	1978	12	05.18976	03	27	31.88	+17	30	56.9	675
1978	XJ1	* 1978	12	06.33819	03	26	29.77	+17	25	53.4	675
1978	XJ1	1978	12	06.36319	03	26	28.25	+17	25	45.3	675
1978	XK1	* 1978	12	06.33819	03	27	54.98	+14	58	10.6	675
1978	XK1	1978	12	06.36319	03	27	53.80	+14	58	12.6	675

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2.

## OBSERVATIONS MADE WITH THE 0.46-M SCHMIDT TELESCOPE AT PALOMAR BY S. J.

BUS, Q. PASSEY, E. SHOEMAKER AND C. S. SHOEMAKER. SCANNED AND MEASURED BY C. S. SHOEMAKER.

Object	Date	UT	R. A. (1950)		Decl.	Mag.	Obs.	
2310	1982	03	23.26597	11 38 06.00	+05 40 48.8	17.5	675	
2310	1982	03	23.29028	11 38 04.88	+05 40 53.7		675	
2310	1982	03	23.30347	11 38 04.35	+05 40 58.9		675	
2310	1982	03	24.25625	11 37 23.38	+05 45 39.0		675	
1982	FT2	* 1982	03	23.26597	11 40 21.18	+04 13 06.6	18.5	675
1982	FT2	1982	03	23.29028	11 40 20.02	+04 13 10.6		675
1982	FT2	1982	03	24.25625	11 39 32.44	+04 15 39.4		675
1982	FU2	1982	03	23.26597	11 50 05.78	+01 56 10.3	18	675
1982	FU2	1982	03	24.25625	11 49 04.01	+01 59 15.0		675
1982	FV2	* 1982	03	23.26597	11 54 43.58	+04 59 59.6	18	675
1982	FV2	1982	03	24.25625	11 53 57.44	+05 04 47.5		675
1982	HS	1982	05	25.26111	13 41 11.92	-16 12 36.5		675
1982	HS	1982	05	25.26806	13 41 10.86	-16 12 51.0		675
1982	HS	1982	05	26.21458	13 39 54.63	-16 30 39.6		675
1982	HS	1982	05	26.26458	13 39 51.31	-16 31 25.4		675
1982	MJ	* 1982	06	24.28611	18 18 01.03	-11 59 35.4	16.5	675
1982	MJ	1982	06	24.31042	18 17 59.67	-11 59 49.4		675
1982	MJ	1982	06	26.29653	18 16 09.29	-12 18 38.0		675
1982	MJ	1982	06	26.31389	18 16 08.28	-12 18 48.6		675

## OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION BY

B. A. SKIFF. MEASURED BY E. BOWELL.

Object	Date	UT	R. A. (1950)		Decl.	Mag.	N	Obs.
1	1982	06	18.17708	14 48 09.99	-10 02 47.9			688
1	1982	06	18.24097	14 48 08.57	-10 03 01.8			688

56	1982 06 17.18056	14 04 56.78	-04 26 27.6	688
56	1982 06 17.25139	14 04 56.95	-04 26 27.3	688
60	1982 07 17.38819	22 21 25.93	-05 52 34.8	688
60	1982 07 17.43681	22 21 24.77	-05 52 39.8	688
60	1982 07 24.31875	22 18 17.21	-06 07 50.5	688
60	1982 07 24.35694	22 18 15.90	-06 07 57.0	688
65	1982 06 17.18056	13 57 20.24	-07 26 25.9	688
65	1982 06 17.25139	13 57 20.03	-07 26 29.3	688
65	1982 06 19.17708	13 57 18.70	-07 28 06.4	688
65	1982 06 19.23681	13 57 18.65	-07 28 09.6	688
67	1982 07 17.38819	22 19 24.61	+00 06 14.6	688
67	1982 07 17.43681	22 19 24.28	+00 06 18.8	688
68	1982 06 17.22778	15 46 23.62	-25 12 19.3	688
68	1982 06 17.29931	15 46 20.19	-25 12 15.3	688
82	1982 07 24.29861	21 19 57.05	-19 37 50.2	688
82	1982 07 24.33819	21 19 55.15	-19 37 59.2	688
124	1982 06 17.18056	13 56 20.15	-08 52 19.5	688
124	1982 06 17.25139	13 56 20.50	-08 52 22.6	688
124	1982 06 19.17708	13 56 36.42	-08 54 04.8	688
124	1982 06 19.23681	13 56 36.92	-08 54 08.3	688
143	1982 07 24.29861	21 31 08.88	-21 37 14.8	688
143	1982 07 24.33819	21 31 06.73	-21 37 17.1	688
159	1982 06 18.20069	15 27 47.36	-10 38 04.9	688
159	1982 06 18.26528	15 27 45.35	-10 38 05.9	688
176	1982 05 21.15833	12 10 06.09	-03 19 11.0	688
176	1982 05 21.20764	12 10 05.93	-03 18 55.8	688
176	1982 05 26.15972	12 10 01.41	-02 57 11.0	688
176	1982 05 26.23125	12 10 01.52	-02 56 53.8	688
177	1982 05 26.36804	17 12 07.47	-25 02 32.3	3 688
177	1982 05 26.40139	17 12 05.75	-25 02 36.3	3 688
177	1982 06 19.21667	16 49 43.13	-24 33 04.4	688
177	1982 06 19.25625	16 49 40.87	-24 33 01.1	688
203	1982 06 19.21667	16 34 49.55	-26 54 19.1	688
203	1982 06 19.25625	16 34 47.41	-26 54 15.5	688
206	1982 06 18.20069	15 50 03.95	-14 28 47.7	688
206	1982 06 18.26528	15 50 01.37	-14 28 45.6	688
211	1982 05 26.15972	11 49 11.03	-03 32 52.7	688
211	1982 05 26.23125	11 49 11.83	-03 32 50.8	688
215	1982 06 21.32500	19 11 36.01	-25 01 00.6	688
215	1982 06 21.36042	19 11 34.22	-25 01 03.3	688
232	1982 07 17.32153	21 27 13.16	-11 16 21.9	688
232	1982 07 17.35278	21 27 11.83	-11 16 30.8	688
288	1982 06 19.17708	13 35 32.43	-03 42 10.8	688
288	1982 06 19.23681	13 35 34.28	-03 42 32.6	688
293	1982 06 17.22778	15 54 54.20	-23 57 29.3	688
293	1982 06 17.29931	15 54 50.74	-23 57 35.6	688
307	1982 06 20.26424	18 17 23.34	-22 03 05.7	688
331	1982 06 19.21667	16 41 47.13	-29 43 08.7	688
331	1982 06 19.25625	16 41 45.02	-29 43 06.8	688
334	1982 06 19.17708	13 41 39.83	-04 39 01.1	688
334	1982 06 19.23681	13 41 39.86	-04 39 06.6	688
352	1982 06 20.26424	18 16 12.85	-20 54 44.5	688
420	1982 05 26.15972	11 49 01.69	-05 23 35.4	688
420	1982 05 26.23125	11 49 02.40	-05 23 28.1	688
440	1982 05 26.15972	11 50 15.04	-01 22 00.8	688
440	1982 05 26.23125	11 50 17.28	-01 22 10.3	688
496	1982 05 21.15833	12 18 21.22	-02 02 36.6	688
496	1982 05 21.20764	12 18 21.65	-02 02 34.0	688
522	1982 06 17.18056	13 57 32.43	-06 29 38.3	688

522	1982 06 17.25139	13 57 31.78	-06 29 40.4	688
522	1982 06 19.17708	13 57 18.86	-06 31 16.4	688
522	1982 06 19.23681	13 57 18.43	-06 31 19.4	688
523	1982 06 17.22778	15 44 29.39	-21 20 04.5	688
523	1982 06 17.29931	15 44 26.87	-21 19 51.0	688
548	1982 06 18.17708	14 47 36.65	-11 39 25.2	688
548	1982 06 18.24097	14 47 34.97	-11 39 25.7	688
572	1982 06 17.18056	14 05 04.43	-04 05 54.4	688
572	1982 06 17.25139	14 05 03.85	-04 05 50.8	688
576	1982 06 21.32500	19 16 38.62	-27 59 27.0	688
576	1982 06 21.36042	19 16 36.86	-27 59 23.1	688
579	1982 06 21.32500	19 09 16.53	-27 33 45.7	688
579	1982 06 21.36042	19 09 14.86	-27 33 57.0	688
654	1982 06 19.34444	18 40 49.58	-24 54 28.5	688
654	1982 06 19.38750	18 40 46.48	-24 54 13.8	688
656	1982 06 19.17708	13 43 45.73	-10 16 39.5	688
656	1982 06 19.23681	13 43 46.19	-10 16 42.3	688
662	1982 07 17.32153	21 20 36.06	-14 27 58.4	688
662	1982 07 17.35278	21 20 35.04	-14 28 08.2	688
662	1982 07 24.29861	21 16 38.98	-15 08 11.4	688
662	1982 07 24.33819	21 16 37.33	-15 08 26.0	688
666	1982 06 19.17708	13 39 39.79	-09 02 34.3	688
666	1982 06 19.23681	13 39 39.72	-09 02 29.5	688
696	1982 07 17.32153	21 14 44.36	-12 14 08.6	688
696	1982 07 17.35278	21 14 43.01	-12 14 07.0	688
699	1982 06 21.30833	19 51 39.27	+01 13 03.2	688
699	1982 06 21.34306	19 51 38.86	+01 13 44.5	688
723	1982 06 19.31042	17 36 19.89	-16 07 53.5	688
734	1982 05 21.15833	12 25 33.56	-05 19 20.4	688
734	1982 05 21.20764	12 25 33.00	-05 19 19.4	688
737	1982 07 15.17014	16 38 38.01	-01 30 06.0	688
737	1982 07 15.20556	16 38 37.47	-01 30 16.6	688
755	1982 06 19.27500	17 46 52.57	-18 19 16.9	688
755	1982 06 19.31042	17 46 50.77	-18 19 16.6	688
782	1982 06 19.21667	16 59 15.33	-22 54 04.2	688
782	1982 06 19.25625	16 59 12.67	-22 54 08.7	688
875	1982 05 21.15833	12 21 41.54	+00 27 25.6	688
875	1982 05 21.20764	12 21 41.45	+00 27 38.5	688
903	1982 07 17.38819	22 16 53.42	-05 37 39.2	688
903	1982 07 17.43681	22 16 52.45	-05 37 49.7	688
903	1982 07 24.31875	22 14 23.23	-06 04 56.0	688
923	1982 07 15.23889	20 05 27.78	+03 03 50.7	688
923	1982 07 15.28125	20 05 25.64	+03 03 46.3	688
933	1982 06 17.18056	14 03 35.78	-03 44 09.8	688
933	1982 06 17.25139	14 03 36.39	-03 44 25.9	688
954	1982 07 17.32153	21 16 09.63	-14 47 02.2	688
954	1982 07 17.35278	21 16 08.43	-14 47 07.8	688
954	1982 07 24.29861	21 11 41.96	-15 08 54.4	688
954	1982 07 24.33819	21 11 40.24	-15 09 02.3	688
966	1982 06 18.20069	15 27 41.11	-16 38 07.9	688
966	1982 06 18.26528	15 27 38.51	-16 38 28.8	688
970	1982 07 17.32153	21 14 10.13	-16 40 55.8	688
970	1982 07 17.35278	21 14 08.64	-16 40 58.5	688
970	1982 07 24.29861	21 08 21.20	-16 51 14.8	688
970	1982 07 24.33819	21 08 19.02	-16 51 18.3	688
995	1982 06 18.20069	15 39 02.55	-10 29 14.3	688
995	1982 06 18.26528	15 39 00.06	-10 28 55.6	688
1027	1982 06 19.17708	13 37 34.43	-10 36 30.8	688
1027	1982 06 19.23681	13 37 35.08	-10 36 35.2	688

1031	1982 06 17.18056	14 01 46.84	-08 29 27.9	688
1031	1982 06 17.25139	14 01 46.86	-08 29 10.3	688
1079	1982 06 17.22778	15 43 46.99	-21 30 54.7	688
1079	1982 06 17.29931	15 43 44.18	-21 30 42.3	688
1099	1982 05 21.15833	12 18 20.10	-00 03 14.9	17.0 688
1099	1982 05 21.20764	12 18 19.49	-00 03 15.3	688
1109	1982 07 17.32153	21 09 56.94	-12 08 22.4	688
1109	1982 07 17.35278	21 09 55.67	-12 08 25.9	688
1212	1982 06 19.31042	17 37 13.15	-14 23 37.6	15.5 688
1245	1982 07 24.31875	22 28 06.78	-08 55 16.6	688
1245	1982 07 24.35694	22 28 05.82	-08 55 24.4	688
1255	1982 06 19.27500	17 30 52.88	-17 40 10.4	688
1255	1982 06 19.31042	17 30 51.11	-17 40 05.5	688
1269	1982 06 18.24097	14 52 34.56	-12 54 19.6	688
1333	1982 06 18.28542	17 01 03.83	-09 39 09.8	688
1370	1982 06 21.36042	19 10 37.22	-27 19 15.8	688
1389	1982 06 18.20069	15 27 33.58	-15 57 43.2	688
1394	1982 07 17.32153	21 23 51.78	-11 32 46.5	688
1394	1982 07 17.35278	21 23 50.48	-11 32 52.3	688
1430	1982 06 21.32500	19 06 15.78	-27 17 50.5	1 688
1430	1982 06 21.36042	19 06 14.29	-27 17 53.2	688
1450	1982 07 24.29861	21 25 15.05	-21 39 22.2	1 688
1450	1982 07 24.33819	21 25 13.50	-21 39 40.8	3 688
1478	1982 07 24.29861	21 11 20.25	-18 13 34.3	688
1478	1982 07 24.33819	21 11 18.11	-18 13 40.2	688
1528	1982 06 19.27500	17 49 02.22	-11 15 54.0	688
1528	1982 06 19.31042	17 49 00.09	-11 16 00.0	688
1556	1982 06 18.20069	15 38 12.61	-08 57 25.9	688
1556	1982 06 18.26528	15 38 10.23	-08 57 34.8	688
1585	1982 07 17.38819	22 33 00.04	-03 49 34.3	688
1585	1982 07 17.43681	22 32 59.75	-03 49 58.4	688
1601	1982 06 17.18056	14 06 12.12	-10 09 25.9	688
1601	1982 06 17.25139	14 06 12.36	-10 09 46.2	688
1644	1982 06 19.21667	16 37 25.29	-24 39 14.2	688
1644	1982 06 19.25625	16 37 23.11	-24 39 03.9	688
1731	1982 07 17.32153	21 29 08.85	-11 35 55.5	688
1731	1982 07 17.35278	21 29 07.88	-11 36 02.5	688
1743	1982 06 19.17708	13 43 37.50	-04 20 41.8	688
1743	1982 06 19.23681	13 43 39.25	-04 20 51.3	688
1786	1982 04 13.20417	09 43 26.67	+22 26 00.6	688
1786	1982 04 13.22014	09 43 26.65	+22 26 59.3	688
1789	1982 06 18.17708	14 45 32.08	-13 44 59.8	688
1789	1982 06 18.24097	14 45 30.68	-13 45 00.7	688
1793	1982 07 17.32153	21 12 24.07	-13 28 02.3	688
1793	1982 07 17.35278	21 12 22.49	-13 28 08.8	1 688
1795	1982 05 21.20764	12 12 08.60	+00 38 15.8	688
1800	1982 06 18.20069	15 48 04.34	-11 52 02.9	688
1800	1982 06 18.26528	15 48 01.10	-11 52 06.7	688
1801	1982 06 17.22778	15 55 50.09	-17 45 34.9	688
1801	1982 06 17.29931	15 55 47.23	-17 45 38.5	688
1822	1982 07 24.31875	22 21 36.96	-08 20 45.0	688
1822	1982 07 24.35694	22 21 35.42	-08 20 52.2	688
1843	1982 06 17.22778	16 03 23.36	-24 18 42.7	688
1843	1982 06 17.29931	16 03 20.13	-24 18 11.5	688
1855	1982 07 17.38819	22 26 32.17	-05 45 49.4	688
1855	1982 07 24.31875	22 23 27.47	-06 01 51.4	688
1855	1982 07 24.35694	22 23 26.06	-06 02 00.3	688
1888	1982 05 21.15833	12 06 00.55	-06 32 16.3	688
1888	1982 05 21.20764	12 06 01.11	-06 32 07.3	688

1891		1982 07 24.29861	21 14 11.09	-20 23 48.5		688
1891		1982 07 24.33819	21 14 08.85	-20 23 46.6		688
1984		1982 06 18.17708	14 59 15.30	-11 23 27.5		688
1984		1982 06 18.24097	14 59 13.93	-11 23 23.4		688
2008		1982 05 21.15833	12 17 06.17	-05 48 29.9		688
2008		1982 05 21.20764	12 17 05.42	-05 48 41.3		688
2066		1982 06 18.17708	14 51 11.20	-11 01 00.5		688
2066		1982 06 18.24097	14 51 10.45	-11 01 10.4		688
2164		1982 06 18.20069	15 28 15.31	-15 48 58.3		688
2164		1982 06 18.26528	15 28 13.41	-15 48 55.3		688
2209		1982 07 17.32153	21 17 18.55	-14 17 11.1		688
2209		1982 07 17.35278	21 17 17.36	-14 17 17.5		688
2209		1982 07 24.29861	21 12 28.64	-14 43 20.0		688
2209		1982 07 24.33819	21 12 26.84	-14 43 28.9		688
2235		1982 05 21.15833	12 08 14.16	-03 34 23.3		688
2235		1982 05 21.20764	12 08 14.55	-03 34 08.7		688
2235		1982 05 26.15972	12 09 13.84	-03 11 31.4		688
2235		1982 05 26.23125	12 09 14.94	-03 11 13.0		688
2249		1982 06 17.25139	14 11 24.77	-07 28 13.5		688
2269		1982 05 26.36804	17 08 28.37	-25 56 47.4		688
2269		1982 05 26.40139	17 08 27.06	-25 56 52.6		688
2269		1982 06 19.21667	16 46 55.91	-26 49 26.3		6aH
2288		1982 06 19.25625	16 34 26.99	-22 14 02.3		688
2341		1982 07 24.29861	21 32 49.33	-21 50 36.8		688
2341		1982 07 24.33819	21 32 47.07	-21 50 50.1	3	688
2365		1982 05 26.36804	17 14 06.88	-27 06 02.3		688
2365		1982 05 26.40139	17 14 05.04	-27 05 57.5		688
2365		1982 06 19.21667	16 50 14.02	-25 52 53.5		688
2365		1982 06 19.25625	16 50 11.94	-25 52 46.1		688
2376		1982 06 19.38750	18 40 03.93	-26 15 49.8		688
2408		1982 07 15.23889	19 47 27.96	+05 11 56.2		688
2408		1982 07 15.28125	19 47 26.04	+05 11 32.2		688
2460		1982 05 21.15833	12 24 37.54	+00 32 18.0		688
2460		1982 05 21.20764	12 24 38.01	+00 32 15.7		688
2480		1982 07 24.33819	21 26 18.64	-20 35 44.9		688
2492		1982 06 17.22778	15 44 11.96	-20 45 24.0		688
2492		1982 06 17.29931	15 44 09.38	-20 45 15.8		688
2640		1982 05 21.18333	12 38 18.31	-09 35 32.3		688
2640		1982 05 21.24792	12 38 17.84	-09 35 34.1		688
2688		1982 06 18.17708	14 56 11.44	-13 42 15.2	16.8	688
2688		1982 06 18.24097	14 56 09.98	-13 42 18.0		688
2692		1982 06 18.20069	15 35 15.39	-15 55 54.7	16.5	688
2692		1982 06 18.26528	15 35 13.55	-15 55 36.4		688
2697		1982 07 17.38819	22 21 07.03	-06 19 23.1	16.8	688
2697		1982 07 17.43681	22 21 05.95	-06 19 24.4		688
2697		1982 07 24.31875	22 18 30.53	-06 25 08.3	16.8	688
2697		1982 07 24.35694	22 18 29.48	-06 25 11.0		688
2710		1982 05 20.18333	13 20 07.63	-03 02 15.8	17.2	688
2710		1982 05 20.25833	13 20 06.36	-03 02 14.0		688
1926	FG	1982 05 28.37153	17 33 32.38	-14 06 40.3	17.2	688
1926	FG	1982 05 28.40764	17 33 30.55	-14 06 41.3	3	688
1938	GC	1982 06 19.27500	17 51 33.25	-13 15 47.6	14.8	688
1938	GC	1982 06 19.31042	17 51 31.24	-13 15 55.4		688
1953	EE	1982 05 26.15972	11 57 46.88	-05 44 38.0	16.5	688
1953	EE	1982 05 26.23125	11 57 47.56	-05 44 59.1		688
1976	GM2	1982 06 18.17708	15 04 41.04	-14 55 39.0	17.2	688
1976	GM2	1982 06 18.24097	15 04 39.78	-14 55 36.5		688
1978	RZ5	1982 06 19.27500	17 35 02.69	-17 17 24.7	16.5	688
1978	RZ5	1982 06 19.31042	17 35 00.83	-17 17 24.8		688

1979 UC	1982 06 21.32500	19 18 01.25	-30 10 37.2	16.5	688
1979 UC	1982 06 21.36042	19 17 59.33	-30 10 52.4		688
1981 JR	1982 06 18.22083	17 11 39.02	-10 00 20.5	16.8	688
1981 JR	1982 06 18.28542	17 11 36.95	-10 00 14.1		688
1981 JR	1982 07 15.17014	16 59 46.59	-09 24 06.3	17.2	688
1981 JR	1982 07 15.20556	16 59 45.78	-09 24 06.2		688
1982 FR	1982 05 26.18403	12 14 43.17	+07 31 54.4	17.2	688
1982 FR	1982 05 26.25486	12 14 44.42	+07 31 22.9		688
1982 KM	1982 06 18.20069	15 43 28.61	-16 09 49.8	16.5	688
1982 KY *	1982 05 26.36804	17 19 05.40	-27 23 30.2	17.2	8 688
1982 KY *	1982 05 26.40139	17 19 03.86	-27 23 23.5		688
1982 MB *	1982 06 18.22083	16 58 21.28	-06 10 54.5	17.2	8 688
1982 MB *	1982 06 18.28542	16 58 18.26	-06 10 52.4		688
1982 NB *	1982 07 15.23889	19 50 17.00	+05 30 11.2	16.5	4 688
1982 NB *	1982 07 15.28125	19 50 14.83	+05 30 13.5		688
1982 NC *	1982 07 15.23889	20 03 43.21	+03 31 59.8	16.8	4 688
1982 NC *	1982 07 15.28125	20 03 41.24	+03 31 55.7		688
1982 OA *	1982 07 17.38819	22 16 46.89	-05 20 45.2	17.0	7 688
1982 OA *	1982 07 17.43681	22 16 43.72	-05 21 45.3		3 688
1982 OB *	1982 07 17.38819	22 29 57.50	-02 43 09.9	17.2	4 688
1982 OB *	1982 07 17.43681	22 29 56.50	-02 43 03.9		688
1982 OB *	1982 07 24.31875	22 27 04.35	-02 34 23.3	17.0	688
1982 OB *	1982 07 24.35694	22 27 03.08	-02 34 23.5		688
1982 OC *	1982 07 17.32153	21 15 36.99	-15 31 38.8	16.2	4 688
1982 OC *	1982 07 17.35278	21 15 35.57	-15 31 37.3		688
1982 OC *	1982 07 24.29861	21 10 12.90	-15 28 49.5	16.0	688
1982 OC *	1982 07 24.33819	21 10 10.71	-15 28 50.0		688
1982 OD *	1982 07 17.32153	21 34 54.15	-18 11 21.8	16.5	4 688
1982 OD *	1982 07 17.35278	21 34 53.94	-18 11 54.7		688
1982 OD *	1982 07 24.29861	21 33 47.11	-20 08 33.5	16.5	688
1982 OD *	1982 07 24.33819	21 33 46.35	-20 09 19.3		688
1982 OE *	1982 07 24.31875	22 05 33.14	-02 50 20.9	16.5	4 688
1982 OE *	1982 07 24.35694	22 05 31.76	-02 50 23.8		688
1982 OF *	1982 07 24.31875	22 14 55.64	-09 01 38.1	16.8	4 688
1982 OF *	1982 07 24.35694	22 14 54.77	-09 01 33.9		688
1982 OG *	1982 07 24.31875	22 15 08.93	-09 51 02.1	15.2	4 688
1982 OG *	1982 07 24.35694	22 15 08.05	-09 50 59.0		688

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: discoverer E. Bowell. 7 = 3 + 4. 8: discoverer M. Watt.

OBSERVATIONS MADE AT THE LINCOLN LABORATORY ETS, NEW MEXICO, UNDER THE DIRECTION OF L. G. TAFF.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1	1982 05 20.19463	15 07 13.93	-09 03 29.0	704	
23	1982 05 25.35520	16 30 43.53	-22 00 49.0	704	
48	1982 05 24.24577	16 24 32.13	-13 13 30.3	704	
68	1982 05 24.33478	16 09 02.75	-25 22 58.0	704	
90	1982 05 24.29108	14 51 45.77	-15 16 56.0	704	
159	1982 05 21.36688	15 46 42.67	-11 06 20.0	704	
163	1982 05 26.30374	16 57 15.60	-15 04 40.0	704	
180	1982 05 18.34114	14 33 03.47	-16 27 55.0	704	
206	1982 05 24.23956	16 10 14.27	-15 08 48.3	704	
229	1982 05 25.36064	16 25 50.25	-23 37 05.5	704	
248	1982 05 18.38225	14 41 03.80	-17 53 36.0	704	
293	1982 05 24.33299	16 17 47.57	-23 04 36.0	704	
348	1982 05 24.24388	16 23 57.03	-15 30 26.7	704	
358	1982 05 24.24185	16 14 22.33	-16 17 43.3	704	
443	1982 05 25.30864	16 33 01.00	-14 27 58.3	704	
508	1982 05 20.30866	15 09 39.47	-20 59 04.7	704	

526	1982 05 26.34427	16 43 26.43	-19 19 28.7	704
538	1982 05 25.31093	16 37 18.20	-13 06 39.0	704
548	1982 05 20.19745	15 09 15.27	-12 21 57.7	704
557	1982 05 20.30637	15 04 28.47	-21 07 22.3	704
593	1982 05 21.36911	15 47 07.40	-11 45 02.0	704
631	1982 05 26.25241	16 54 59.43	-09 27 53.0	704
810	1982 05 18.29819	14 51 19.03	-11 44 14.3	704
947	1982 05 25.36641	16 38 29.43	-25 41 35.0	704
966	1982 05 22.20550	15 51 55.50	-14 26 08.0	704
968	1982 05 21.21939	15 35 20.07	-10 43 15.3	704
986	1982 05 26.30139	16 59 43.17	-14 53 07.7	704
995	1982 05 22.21029	16 00 50.23	-13 25 01.7	704
1044	1982 05 18.33584	14 52 14.37	-15 12 10.3	704
1044	1982 05 20.15779	14 50 34.23	-15 09 10.7	704
1199	1982 05 20.30298	15 06 12.47	-18 17 10.0	704
1219	1982 05 22.32863	15 47 39.37	-22 18 20.7	704
1269	1982 05 20.26082	15 06 54.73	-13 38 56.7	704
1277	1982 05 25.35788	16 28 52.10	-21 57 34.7	704
1409	1982 05 26.25812	16 56 42.67	-12 33 30.7	704
1742	1982 05 26.34632	16 27 10.63	-17 56 30.0	704
1789	1982 05 20.24018	15 07 30.80	-14 36 27.0	704
1800	1982 05 22.36079	16 13 22.63	-12 06 28.3	704
1990	1982 05 21.28301	15 28 32.83	-14 36 42.3	704
2066	1982 05 20.19141	15 07 46.60	-10 51 20.0	704
2692	1982 05 22.29396	15 54 53.95	-18 58 30.0	704
2692	1982 05 24.16488	15 53 12.00	-18 43 52.5	704
2692	1982 05 25.28067	15 52 11.83	-18 35 12.7	704
2692	1982 05 26.27417	15 51 18.60	-18 27 30.0	704
1982 KM	1982 05 24.29703	16 04 19.70	-18 26 56.0	704
1982 KM	1982 05 25.28314	16 03 23.07	-18 20 50.7	704
1982 KM	1982 05 26.27619	16 02 26.07	-18 14 46.3	704
1982 KW *	1982 05 22.20804	15 52 10.00	-14 08 02.7	704
1982 KX *	1982 05 25.35288	16 30 17.37	-22 50 36.7	704
1982 KX	1982 05 26.27826	16 29 28.83	-22 47 54.0	704

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

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2707	1950 03 15.13332		10 52 04.55	+11 24 20.6	760
2707	1950 03 15.17569		10 52 02.68	+11 24 34.7	760

## 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.	Obs.
2704	1982 05 19.16005		14 41 31.03	-12 53 37.9		801
1926 FG	1982 05 19.21351		17 40 00.09	-14 17 33.1		801
1926 FG	1982 06 21.23385		17 12 57.94	-14 02 29.0		801
1938 GC	1982 05 26.29953		18 07 40.56	-12 32 37.7		801
1938 GC	1982 06 19.25753		17 51 33.99	-13 15 41.6		801
1939 TM	1982 05 27.30751		18 03 18.92	-16 54 56.1		801
1939 TM	1982 06 25.20907		17 36 06.31	-15 36 46.4		801
1978 RZ5	1982 05 27.28369		17 53 16.45	-17 25 32.2		801
1978 RZ5	1982 06 25.18458		17 30 00.85	-17 19 13.2		801
1978 WM14	1982 06 19.17882		17 42 18.86	-16 04 29.9		801
1980 GC	1982 06 25.25494		19 23 53.88	+02 01 09.1		801
1980 SH	1982 06 24.17017		15 50 30.24	+17 21 59.1		801
1981 CN	1982 06 21.29494		20 49 41.57	-17 11 14.7		801
1982 DA	1982 06 21.16738		12 18 24.55	+27 25 48.0		801

## OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY BY C.-I. LAGERKVIST.

Object	Date	UT	R. A. (1950)		Decl.	Obs.
273	1978 09	06.08576	22 58	06.39	-09 25 16.0	809
605	1978 09	06.08576	22 49	59.52	-08 10 45.7	809
1358	1978 09	02.10486	22 47	25.11	-10 44 13.4	809
1358	1978 09	02.11042	22 47	24.70	-10 44 14.7	809
1358	1978 09	02.11597	22 47	24.48	-10 44 17.5	809
1358	1978 09	02.31597	22 47	13.25	-10 45 05.0	809
1358	1978 09	02.32639	22 47	12.55	-10 45 08.8	809
1742	1978 09	02.10486	22 46	48.42	-08 19 27.0	809
1742	1978 09	02.11042	22 46	48.14	-08 19 29.1	809
1742	1978 09	02.11597	22 46	47.86	-08 19 30.6	809
1742	1978 09	02.31597	22 46	38.31	-08 20 39.9	809
1742	1978 09	02.32639	22 46	37.76	-08 20 43.6	809
1742	1978 09	06.10382	22 43	44.11	-08 42 17.2	809
1742	1978 09	10.10417	22 40	42.14	-09 04 34.4	809
1742	1978 09	10.12014	22 40	41.47	-09 04 42.6	809
1742	1978 09	10.22222	22 40	36.82	-09 05 13.5	809
1742	1978 09	10.23889	22 40	35.92	-09 05 20.7	809
1802	1978 09	02.10486	22 31	54.14	-10 21 16.5	809
1802	1978 09	02.11042	22 31	53.87	-10 21 18.5	809
1802	1978 09	02.11597	22 31	53.60	-10 21 21.3	809
1802	1978 09	02.31597	22 31	43.85	-10 22 26.3	809
1802	1978 09	02.32639	22 31	43.29	-10 22 30.3	809
1824	1978 09	02.10486	22 52	37.63	-08 59 29.1	809
1824	1978 09	02.11042	22 52	37.35	-08 59 30.7	809
1824	1978 09	02.11597	22 52	37.09	-08 59 31.6	809
1824	1978 09	02.31597	22 52	27.09	-09 00 23.9	809
1824	1978 09	02.32639	22 52	26.57	-09 00 27.4	809
1824	1978 09	06.08576	22 49	25.11	-09 16 46.8	809
1962	1978 09	06.08576	22 55	35.77	-08 28 11.9	809
2431	1978 09	02.11042	22 47	38.16	-06 25 09.3	809
2431	1978 09	02.11597	22 47	37.84	-06 25 10.0	809
2431	1978 09	02.31597	22 47	27.24	-06 25 39.9	809
2431	1978 09	02.32639	22 47	26.67	-06 25 41.0	809
2431	1978 09	10.10417	22 41	08.78	-06 44 33.2	809
2431	1978 09	10.12014	22 41	08.05	-06 44 37.1	809
2431	1978 09	10.22222	22 41	03.00	-06 44 49.9	809
2626	1978 09	02.10486	22 34	04.29	-09 48 44.8	809
2626	1978 09	02.11042	22 34	04.04	-09 48 47.1	809
2626	1978 09	02.11597	22 34	03.75	-09 48 47.8	809
2626	1978 09	02.31597	22 33	53.66	-09 49 38.7	809
2626	1978 09	02.32639	22 33	53.13	-09 49 42.1	809
2626	1978 09	06.10382	22 30	50.27	-10 05 37.9	809
2626	1978 09	10.23889	22 27	34.68	-10 22 24.2	809
2684	1978 09	02.10486	22 36	29.82	-10 38 03.3	809
2684	1978 09	02.11042	22 36	29.63	-10 38 06.8	809
2684	1978 09	02.11597	22 36	29.38	-10 38 09.8	809
2684	1978 09	02.31597	22 36	20.62	-10 39 35.1	809
2684	1978 09	02.32639	22 36	20.10	-10 39 39.6	809
1978 PQ2	1978 09	02.11042	22 38	56.37	-06 10 31.4	809
1978 PQ2	1978 09	02.11597	22 38	56.06	-06 10 33.3	809
1978 PQ2	1978 09	02.31597	22 38	46.61	-06 11 41.5	809
1978 PQ2	1978 09	02.32639	22 38	46.08	-06 11 45.6	809
1978 PQ2	1978 09	06.10382	22 35	58.16	-06 33 33.5	809
1978 PQ2	1978 09	10.10417	22 33	05.18	-06 56 28.3	809
1978 PQ2	1978 09	10.12014	22 33	04.53	-06 56 36.3	809
1978 PQ2	1978 09	10.22222	22 32	59.94	-06 57 09.0	809
1978 PQ2	1978 09	10.23889	22 32	59.26	-06 57 15.9	809



1978	PS2	1978	09	02.11042	22	35	45.05	-05	43	44.5	809
1978	PS2	1978	09	02.11597	22	35	44.71	-05	43	45.5	809
1978	PS2	1978	09	02.31597	22	35	33.55	-05	44	58.8	809
1978	PS2	1978	09	02.32639	22	35	32.97	-05	45	02.9	809
1978	PS2	1978	09	06.10382	22	32	11.80	-06	08	18.1	809
1978	PS2	1978	09	10.10417	22	28	44.88	-06	32	40.4	809
1978	PS2	1978	09	10.12014	22	28	44.13	-06	32	48.9	809
1978	PS2	1978	09	10.22222	22	28	38.71	-06	33	23.4	809
1978	PS2	1978	09	10.23889	22	28	37.88	-06	33	30.9	809
1978	PT2	1978	09	02.11042	22	38	07.97	-07	18	34.6	809
1978	PT2	1978	09	02.11597	22	38	07.63	-07	18	36.2	809
1978	PT2	1978	09	02.31597	22	37	57.89	-07	19	30.6	809
1978	PT2	1978	09	02.32639	22	37	57.35	-07	19	33.4	809
1978	PT2	1978	09	06.10382	22	34	59.49	-07	36	49.0	809
1978	PT2	1978	09	10.10417	22	31	55.21	-07	54	42.5	809
1978	PT2	1978	09	10.12014	22	31	54.47	-07	54	50.4	809
1978	PT2	1978	09	10.22222	22	31	49.73	-07	55	15.8	809
1978	PT2	1978	09	10.23889	22	31	48.96	-07	55	21.1	809
1978	PW2	1978	09	02.11042	22	34	49.75	-05	50	38.4	809
1978	PW2	1978	09	02.11597	22	34	49.43	-05	50	39.5	809
1978	PW2	1978	09	02.31597	22	34	36.82	-05	51	33.7	809
1978	PW2	1978	09	02.32639	22	34	36.20	-05	51	37.4	809
1978	PW2	1978	09	06.10382	22	30	48.09	-06	08	59.8	809
1978	PW2	1978	09	10.10417	22	26	53.42	-06	27	08.1	809
1978	PW2	1978	09	10.12014	22	26	52.56	-06	27	14.7	809
1978	PW2	1978	09	10.22222	22	26	46.45	-06	27	40.1	809
1978	PW2	1978	09	10.23889	22	26	45.47	-06	27	45.9	809
1978	PX2	1978	09	02.10486	22	40	03.89	-08	52	42.1	809
1978	PX2	1978	09	02.11042	22	40	03.59	-08	52	43.5	809
1978	PX2	1978	09	02.11597	22	40	03.32	-08	52	44.1	809
1978	PX2	1978	09	02.31597	22	39	52.02	-08	53	22.4	809
1978	PX2	1978	09	02.32639	22	39	51.47	-08	53	24.5	809
1978	PX2	1978	09	06.10382	22	36	33.18	-09	05	20.9	809
1978	PX2	1978	09	10.10417	22	33	08.48	-09	17	10.5	809
1978	PX2	1978	09	10.12014	22	33	07.64	-09	17	16.4	809
1978	PX2	1978	09	10.22222	22	33	02.33	-09	17	31.2	809
1978	PX2	1978	09	10.23889	22	33	01.37	-09	17	35.0	809
1978	PY2	1978	09	02.10486	22	41	44.60	-06	04	23.3	809
1978	PY2	1978	09	02.11042	22	41	44.30	-06	04	25.6	809
1978	PY2	1978	09	02.11597	22	41	44.00	-06	04	27.5	809
1978	PY2	1978	09	02.31597	22	41	33.84	-06	05	37.0	809
1978	PY2	1978	09	02.32639	22	41	33.33	-06	05	41.1	809
1978	PY2	1978	09	06.10382	22	38	29.13	-06	27	55.3	809
1978	PY2	1978	09	10.10417	22	35	16.79	-06	51	21.4	809
1978	PY2	1978	09	10.12014	22	35	16.07	-06	51	30.5	809
1978	PY2	1978	09	10.22222	22	35	11.03	-06	52	03.0	809
1978	PY2	1978	09	10.23889	22	35	10.25	-06	52	11.1	809
1978	PA3	1978	09	02.11042	22	45	19.04	-07	02	54.3	809
1978	PA3	1978	09	02.11597	22	45	18.74	-07	02	57.2	809
1978	PA3	1978	09	02.31597	22	45	08.80	-07	04	23.0	809
1978	PA3	1978	09	02.32639	22	45	08.32	-07	04	27.7	809
1978	PA3	1978	09	06.10382	22	42	16.19	-07	31	28.6	809
1978	PA3	1978	09	10.10417	22	39	18.64	-07	59	27.4	809
1978	PA3	1978	09	10.12014	22	39	17.96	-07	59	36.4	809
1978	PA3	1978	09	10.22222	22	39	13.18	-08	00	16.2	809
1978	PA3	1978	09	10.23889	22	39	12.38	-08	00	25.0	809
1978	PB3	1978	09	02.11042	22	45	49.13	-07	40	56.9	809
1978	PB3	1978	09	02.11597	22	45	48.92	-07	40	57.4	809
1978	PB3	1978	09	02.31597	22	45	39.94	-07	41	56.4	809

1978	PB3	1978	09	02.32639	22	45	39.42	-07	41	59.9	809
1978	PB3	1978	09	06.10382	22	42	55.97	-08	00	03.3	809
1978	PB3	1978	09	10.10417	22	40	05.11	-08	18	46.4	809
1978	PB3	1978	09	10.12014	22	40	04.49	-08	18	53.6	809
1978	PB3	1978	09	10.22222	22	40	00.07	-08	19	19.5	809
1978	PB3	1978	09	10.23889	22	39	59.32	-08	19	25.8	809
1978	PC3	1978	09	06.10382	22	38	59.20	-05	07	31.3	809
1978	PC3	1978	09	10.10417	22	35	14.47	-05	11	24.5	809
1978	PC3	1978	09	10.22222	22	35	07.86	-05	11	29.1	809
1978	PD3	1978	09	06.10382	22	38	08.95	-05	28	44.5	809
1978	PD3	1978	09	10.10417	22	34	11.05	-05	35	44.3	809
1978	PD3	1978	09	10.12014	22	34	10.16	-05	35	48.3	809
1978	PD3	1978	09	10.22222	22	34	03.95	-05	35	55.2	809
1978	PD3	1978	09	10.23889	22	34	02.85	-05	35	59.2	809
1978	PH3	1978	09	02.10486	22	51	20.01	-06	44	34.9	809
1978	PH3	1978	09	02.11042	22	51	19.75	-06	44	36.7	809
1978	PH3	1978	09	02.11597	22	51	19.48	-06	44	38.4	809
1978	PH3	1978	09	02.31597	22	51	10.15	-06	45	32.8	809
1978	PH3	1978	09	02.32639	22	51	09.59	-06	45	35.4	809
1978	PO3	1978	09	06.08576	22	51	32.74	-08	35	09.2	809
1978	QC	1978	09	02.11042	22	44	37.65	-06	30	31.5	809
1978	QC	1978	09	02.11597	22	44	37.34	-06	30	33.4	809
1978	QC	1978	09	02.31597	22	44	27.73	-06	31	36.1	809
1978	QC	1978	09	02.32639	22	44	27.17	-06	31	40.6	809
1978	QC	1978	09	06.10382	22	41	32.01	-06	51	47.7	809
1978	QC	1978	09	10.10417	22	38	27.16	-07	13	06.7	809
1978	QC	1978	09	10.12014	22	38	26.47	-07	13	14.3	809
1978	QC	1978	09	10.22222	22	38	21.58	-07	13	45.6	809
1978	QC	1978	09	10.23889	22	38	20.82	-07	13	52.1	809
1978	RB3	1978	09	02.10486	22	43	24.99	-07	50	06.5	809
1978	RB3	1978	09	02.11042	22	43	24.69	-07	50	08.1	809
1978	RB3	1978	09	02.11597	22	43	24.34	-07	50	08.9	809
1978	RB3	1978	09	02.31597	22	43	13.02	-07	50	41.0	809
1978	RB3	1978	09	02.32639	22	43	12.41	-07	50	42.6	809
1978	RB3	1978	09	06.10382	22	39	51.69	-08	00	49.6	809
1978	RB3	1978	09	10.10417	22	36	23.77	-08	10	58.9	809
1978	RB3	1978	09	10.12014	22	36	23.03	-08	11	04.8	809
1978	RB3	1978	09	10.22222	22	36	17.50	-08	11	17.0	809
1978	RB3	1978	09	10.23889	22	36	16.61	-08	11	21.5	809
1978	RE3	1978	09	02.10486	22	45	39.20	-05	51	19.4	809
1978	RE3	1978	09	02.11042	22	45	38.88	-05	51	21.1	809
1978	RE3	1978	09	02.11597	22	45	38.55	-05	51	22.7	809
1978	RE3	1978	09	02.31597	22	45	27.33	-05	52	15.0	809
1978	RE3	1978	09	02.32639	22	45	26.75	-05	52	17.0	809
1978	RE3	1978	09	06.10382	22	42	05.41	-06	08	58.2	809
1978	RE3	1978	09	10.10417	22	38	33.92	-06	26	43.5	809
1978	RE3	1978	09	10.12014	22	38	33.10	-06	26	49.5	809
1978	RE3	1978	09	10.22222	22	38	27.48	-06	27	15.2	809
1978	RE3	1978	09	10.23889	22	38	26.54	-06	27	21.5	809
1978	RF3	1978	09	06.10382	22	44	50.72	-06	14	30.4	809
1978	RH3	1978	09	02.11042	22	51	15.73	-07	10	37.5	809
1978	RH3	1978	09	02.11597	22	51	15.41	-07	10	38.6	809
1978	RH3	1978	09	02.31597	22	51	04.75	-07	11	15.6	809
1978	RH3	1978	09	02.32639	22	51	04.17	-07	11	17.3	809
1978	RJ3	1978	09	06.08576	22	49	25.42	-04	18	14.1	809
1978	RL3	1978	09	06.08576	22	50	02.41	-07	40	57.2	809
1978	RM3	1978	09	06.08576	22	50	20.56	-08	00	53.5	809
1978	RN3	1978	09	06.08576	22	51	02.84	-07	58	55.4	809
1978	RO3	1978	09	06.08576	22	51	59.47	-05	22	13.3	809

1978 RP3	1978 09 06.08576	22 52 21.05	-06 01 33.1	809
1978 RZ3	1978 09 06.08576	23 03 49.55	-07 32 03.8	809
1978 RA4	1978 09 06.08576	23 04 44.99	-06 47 54.8	809
1978 RQ6 *	1978 09 02.10486	22 31 24.40	-07 35 06.3	809
1978 RQ6	1978 09 02.11042	22 31 24.15	-07 35 07.1	809
1978 RQ6	1978 09 02.11597	22 31 23.85	-07 35 09.6	809
1978 RQ6	1978 09 02.31597	22 31 14.80	-07 36 16.3	809
1978 RQ6	1978 09 02.32639	22 31 14.24	-07 36 20.9	809
1978 RQ6	1978 09 10.10417	22 25 52.74	-08 19 54.5	809
1978 RQ6	1978 09 10.12014	22 25 52.04	-08 20 03.0	809
1978 RQ6	1978 09 10.22222	22 25 47.86	-08 20 36.1	809
1978 RQ6	1978 09 10.23889	22 25 46.96	-08 20 41.2	809
1978 RR6 *	1978 09 02.10486	22 31 37.83	-06 50 44.2	809
1978 RR6	1978 09 02.11042	22 31 37.46	-06 50 44.8	809
1978 RR6	1978 09 02.11597	22 31 37.07	-06 50 47.9	809
1978 RR6	1978 09 02.31597	22 31 24.82	-06 51 49.8	809
1978 RR6	1978 09 02.32639	22 31 24.16	-06 51 55.3	809
1978 RR6	1978 09 06.10382	22 27 42.10	-07 12 04.7	809
1978 RS6 *	1978 09 02.10486	22 31 39.23	-10 39 40.8	809
1978 RS6	1978 09 02.11042	22 31 38.93	-10 39 44.3	809
1978 RS6	1978 09 02.11597	22 31 38.66	-10 39 47.5	809
1978 RS6	1978 09 02.32639	22 31 26.79	-10 41 23.5	809
1978 RT6 *	1978 09 02.10486	22 31 48.66	-07 38 02.7	809
1978 RT6	1978 09 02.11042	22 31 48.28	-07 38 05.1	809
1978 RT6	1978 09 02.11597	22 31 48.02	-07 38 08.6	809
1978 RT6	1978 09 02.31597	22 31 37.47	-07 40 02.8	809
1978 RT6	1978 09 02.32639	22 31 36.82	-07 40 09.9	809
1978 RT6	1978 09 10.10417	22 25 24.66	-08 52 47.2	809
1978 RT6	1978 09 10.12014	22 25 23.91	-08 52 57.6	809
1978 RT6	1978 09 10.22222	22 25 19.10	-08 53 50.7	809
1978 RT6	1978 09 10.23889	22 25 18.22	-08 54 00.6	809
1978 RU6 *	1978 09 02.10486	22 32 05.36	-09 25 41.9	809
1978 RU6	1978 09 02.11042	22 32 05.02	-09 25 43.5	809
1978 RU6	1978 09 02.11597	22 32 04.70	-09 25 44.2	809
1978 RU6	1978 09 02.31597	22 31 52.18	-09 26 27.4	809
1978 RU6	1978 09 02.32639	22 31 51.56	-09 26 30.3	809
1978 RU6	1978 09 06.10382	22 28 08.14	-09 39 57.2	809
1978 RV6 *	1978 09 02.10486	22 32 12.91	-07 29 57.8	809
1978 RV6	1978 09 02.11042	22 32 12.64	-07 29 57.9	809
1978 RV6	1978 09 02.11597	22 32 12.36	-07 30 00.0	809
1978 RV6	1978 09 02.31597	22 32 01.25	-07 30 41.5	809
1978 RV6	1978 09 02.32639	22 32 00.58	-07 30 44.5	809
1978 RV6	1978 09 06.10382	22 28 43.43	-07 44 07.6	809
1978 RW6 *	1978 09 02.10486	22 32 27.40	-07 39 06.6	809
1978 RW6	1978 09 02.11042	22 32 27.06	-07 39 06.3	809
1978 RW6	1978 09 02.11597	22 32 26.67	-07 39 06.9	809
1978 RW6	1978 09 02.31597	22 32 13.60	-07 39 20.5	809
1978 RW6	1978 09 02.32639	22 32 12.86	-07 39 21.8	809
1978 RW6	1978 09 06.10382	22 28 16.97	-07 43 49.9	809
1978 RW6	1978 09 10.23889	22 24 06.78	-07 48 17.7	809
1978 RX6 *	1978 09 02.10486	22 32 27.71	-09 28 06.0	809
1978 RX6	1978 09 02.11042	22 32 27.41	-09 28 09.1	809
1978 RX6	1978 09 02.11597	22 32 27.17	-09 28 13.1	809
1978 RX6	1978 09 02.31597	22 32 17.46	-09 30 16.8	809
1978 RX6	1978 09 02.32639	22 32 17.01	-09 30 23.3	809
1978 RX6	1978 09 06.10382	22 29 29.52	-10 08 50.6	809
1978 RY6 *	1978 09 02.11042	22 32 57.93	-07 42 45.7	809
1978 RY6	1978 09 02.11597	22 32 57.63	-07 42 46.4	809
1978 RY6	1978 09 02.31597	22 32 47.96	-07 43 11.3	809

1978 RY6	1978 09 02.32639	22 32 47.39	-07 43 13.9	809
1978 RY6	1978 09 06.10382	22 29 49.42	-07 51 25.9	809
1978 RY6	1978 09 10.10417	22 26 44.46	-07 59 49.9	809
1978 RY6	1978 09 10.12014	22 26 43.72	-07 59 55.1	809
1978 RY6	1978 09 10.22222	22 26 38.96	-08 00 06.5	809
1978 RY6	1978 09 10.23889	22 26 38.14	-08 00 09.4	809
1978 RZ6 *	1978 09 02.10486	22 33 06.49	-06 52 01.9	809
1978 RZ6	1978 09 02.11042	22 33 06.17	-06 52 04.2	809
1978 RZ6	1978 09 02.11597	22 33 05.89	-06 52 06.5	809
1978 RA7 *	1978 09 02.11042	22 33 45.47	-09 22 52.9	809
1978 RA7	1978 09 02.11597	22 33 45.03	-09 22 54.9	809
1978 RA7	1978 09 02.31597	22 33 33.54	-09 24 06.1	809
1978 RA7	1978 09 02.32639	22 33 32.98	-09 24 08.7	809
1978 RA7	1978 09 06.10382	22 30 08.54	-09 46 14.7	809
1978 RB7 *	1978 09 02.11042	22 34 16.15	-08 16 09.1	809
1978 RB7	1978 09 02.11597	22 34 15.79	-08 16 10.7	809
1978 RB7	1978 09 02.31597	22 34 04.25	-08 17 07.6	809
1978 RB7	1978 09 02.32639	22 34 03.72	-08 17 10.4	809
1978 RB7	1978 09 06.10382	22 30 33.11	-08 35 14.2	809
1978 RC7 *	1978 09 02.10486	22 34 22.32	-07 01 23.8	809
1978 RC7	1978 09 02.11042	22 34 22.02	-07 01 23.9	809
1978 RC7	1978 09 02.11597	22 34 21.67	-07 01 24.2	809
1978 RC7	1978 09 02.31597	22 34 10.93	-07 01 42.5	809
1978 RC7	1978 09 02.32639	22 34 10.34	-07 01 44.2	809
1978 RC7	1978 09 06.10382	22 30 54.10	-07 07 45.3	809
1978 RC7	1978 09 10.10417	22 27 31.80	-07 13 52.7	809
1978 RC7	1978 09 10.22222	22 27 25.70	-07 14 04.6	801
1978 RD7 *	1978 09 02.10486	22 34 26.08	-07 23 49.1	809
1978 RD7	1978 09 02.11042	22 34 25.73	-07 23 50.5	809
1978 RD7	1978 09 02.11597	22 34 25.32	-07 23 52.1	809
1978 RD7	1978 09 02.31597	22 34 12.73	-07 24 41.7	809
1978 RD7	1978 09 02.32639	22 34 12.10	-07 24 44.8	809
1978 RD7	1978 09 06.10382	22 30 23.30	-07 40 40.4	809
1978 RE7 *	1978 09 02.10486	22 34 37.35	-06 34 11.1	809
1978 RE7	1978 09 02.11042	22 34 37.19	-06 34 12.8	809
1978 RE7	1978 09 02.11597	22 34 36.87	-06 34 15.1	809
1978 RF7 *	1978 09 02.11042	22 34 42.62	-05 55 37.8	809
1978 RF7	1978 09 02.11597	22 34 42.29	-05 55 37.5	809
1978 RF7	1978 09 02.31597	22 34 29.14	-05 55 46.7	809
1978 RF7	1978 09 02.32639	22 34 28.39	-05 55 48.4	809
1978 RF7	1978 09 06.10382	22 30 33.67	-05 58 53.1	809
1978 RF7	1978 09 10.10417	22 26 34.55	-06 02 06.9	809
1978 RF7	1978 09 10.12014	22 26 33.70	-06 02 10.6	809
1978 RF7	1978 09 10.22222	22 26 27.42	-06 02 12.4	809
1978 RF7	1978 09 10.23889	22 26 26.43	-06 02 14.5	809
1978 RG7 *	1978 09 02.10486	22 35 11.55	-06 01 54.3	809
1978 RG7	1978 09 02.11042	22 35 11.19	-06 01 55.6	809
1978 RG7	1978 09 02.11597	22 35 10.86	-06 01 56.7	809
1978 RH7 *	1978 09 02.10486	22 35 12.28	-09 09 32.8	809
1978 RH7	1978 09 02.11042	22 35 12.02	-09 09 35.7	809
1978 RH7	1978 09 02.11597	22 35 11.73	-09 09 36.6	809
1978 RH7	1978 09 02.31597	22 35 01.67	-09 10 48.4	809
1978 RH7	1978 09 02.32639	22 35 01.19	-09 10 52.8	809
1978 RH7	1978 09 06.10382	22 31 59.97	-09 33 20.1	809
1978 RJ7 *	1978 09 02.11042	22 35 31.57	-06 35 17.0	809
1978 RJ7	1978 09 02.11597	22 35 31.19	-06 35 19.3	809
1978 RJ7	1978 09 02.31597	22 35 19.25	-06 36 50.1	809
1978 RJ7	1978 09 02.32639	22 35 18.56	-06 36 55.8	809
1978 RJ7	1978 09 06.10382	22 31 42.00	-07 05 51.1	809

1978	RJ7	1978	09	10.10417	22	27	58.88	-07	35	57.7	809
1978	RJ7	1978	09	10.12014	22	27	57.98	-07	36	08.6	809
1978	RJ7	1978	09	10.22222	22	27	52.17	-07	36	51.8	809
1978	RJ7	1978	09	10.23889	22	27	51.30	-07	37	00.6	809
1978	RK7	* 1978	09	02.11042	22	35	39.48	-06	45	08.6	809
1978	RK7	1978	09	02.11597	22	35	39.16	-06	45	11.9	809
1978	RK7	1978	09	02.31597	22	35	29.75	-06	47	04.7	809
1978	RK7	1978	09	02.32639	22	35	29.19	-06	47	10.9	809
1978	RK7	1978	09	06.10382	22	32	42.63	-07	22	40.2	809
1978	RL7	* 1978	09	02.10486	22	35	51.44	-07	15	55.7	809
1978	RL7	1978	09	02.11042	22	35	51.16	-07	15	57.6	809
1978	RL7	1978	09	02.11597	22	35	50.86	-07	15	58.4	809
1978	RL7	1978	09	02.31597	22	35	41.16	-07	16	56.1	809
1978	RL7	1978	09	02.32639	22	35	40.63	-07	17	00.5	809
1978	RL7	1978	09	06.10382	22	32	44.37	-07	35	25.0	809
1978	RL7	1978	09	10.10417	22	29	41.58	-07	54	35.3	809
1978	RL7	1978	09	10.12014	22	29	40.87	-07	54	43.0	809
1978	RL7	1978	09	10.23889	22	29	35.41	-07	55	15.2	809
1978	RM7	* 1978	09	02.11042	22	35	58.61	-06	03	06.3	809
1978	RM7	1978	09	02.11597	22	35	58.27	-06	03	07.7	809
1978	RM7	1978	09	02.31597	22	35	46.54	-06	04	18.8	809
1978	RM7	1978	09	02.32639	22	35	45.87	-06	04	23.3	809
1978	RM7	1978	09	06.10382	22	32	15.91	-06	26	50.9	809
1978	RM7	1978	09	10.10417	22	28	42.49	-06	50	03.0	809
1978	RM7	1978	09	10.22222	22	28	36.15	-06	50	44.5	809
1978	RM7	1978	09	10.23889	22	28	35.35	-06	50	50.8	809
1978	RN7	* 1978	09	02.10486	22	36	12.64	-10	35	00.4	809
1978	RN7	1978	09	02.11042	22	36	12.36	-10	35	03.0	809
1978	RN7	1978	09	02.11597	22	36	12.13	-10	35	05.1	809
1978	RN7	1978	09	02.31597	22	36	03.13	-10	35	54.3	809
1978	RN7	1978	09	02.32639	22	36	02.62	-10	35	56.6	809
1978	RO7	* 1978	09	02.10486	22	36	32.91	-08	21	40.6	809
1978	RO7	1978	09	02.11042	22	36	32.72	-08	21	43.0	809
1978	RO7	1978	09	02.11597	22	36	32.41	-08	21	44.0	809
1978	RO7	1978	09	02.31597	22	36	21.03	-08	22	54.3	809
1978	RO7	1978	09	02.32639	22	36	20.36	-08	22	57.0	809
1978	RP7	* 1978	09	02.10486	22	36	51.10	-06	32	22.8	809
1978	RP7	1978	09	02.11042	22	36	50.73	-06	32	22.3	809
1978	RP7	1978	09	02.11597	22	36	50.41	-06	32	22.6	809
1978	RP7	1978	09	02.31597	22	36	38.12	-06	32	23.3	809
1978	RP7	1978	09	02.32639	22	36	37.77	-06	32	20.0	809
1978	RQ7	* 1978	09	02.11042	22	36	53.32	-07	56	31.8	809
1978	RQ7	1978	09	02.11597	22	36	53.03	-07	56	34.4	809
1978	RQ7	1978	09	02.31597	22	36	43.04	-07	58	02.7	809
1978	RQ7	1978	09	02.32639	22	36	42.54	-07	58	08.6	809
1978	RQ7	1978	09	06.10382	22	33	46.01	-08	26	06.9	809
1978	RR7	* 1978	09	02.10486	22	36	57.14	-06	14	53.9	809
1978	RS7	* 1978	09	02.11042	22	37	36.69	-10	39	27.0	809
1978	RS7	1978	09	02.11597	22	37	36.46	-10	39	29.4	809
1978	RS7	1978	09	02.31597	22	37	25.59	-10	40	58.6	809
1978	RS7	1978	09	02.32639	22	37	24.99	-10	41	03.9	809
1978	RT7	* 1978	09	02.10486	22	38	01.10	-06	17	09.7	809
1978	RT7	1978	09	02.11042	22	38	00.85	-06	17	13.1	809
1978	RT7	1978	09	02.11597	22	38	00.54	-06	17	14.5	809
1978	RT7	1978	09	02.31597	22	37	51.26	-06	18	42.5	809
1978	RT7	1978	09	02.32639	22	37	50.72	-06	18	47.9	809
1978	RT7	1978	09	06.10382	22	35	09.73	-06	46	58.1	809
1978	RU7	* 1978	09	02.11042	22	38	08.17	-09	32	37.3	809
1978	RU7	1978	09	02.11597	22	38	07.83	-09	32	36.6	809

1978	RU7	1978	09	02.31597	22	37	55.70	-09	32	46.7	809
1978	RU7	1978	09	02.32639	22	37	55.15	-09	32	48.1	809
1978	RU7	1978	09	06.10382	22	34	25.17	-09	35	51.0	809
1978	RV7	* 1978	09	02.11042	22	38	14.24	-05	52	33.4	809
1978	RV7	1978	09	02.11597	22	38	13.97	-05	52	35.0	809
1978	RV7	1978	09	02.31597	22	38	03.87	-05	53	46.2	809
1978	RV7	1978	09	02.32639	22	38	03.37	-05	53	50.8	809
1978	RV7	1978	09	06.10382	22	35	02.13	-06	16	29.5	809
1978	RV7	1978	09	10.10417	22	31	54.87	-06	40	13.1	809
1978	RV7	1978	09	10.12014	22	31	54.12	-06	40	21.9	809
1978	RV7	1978	09	10.22222	22	31	49.24	-06	40	55.7	809
1978	RV7	1978	09	10.23889	22	31	48.55	-06	41	02.9	809
1978	RW7	* 1978	09	02.11042	22	38	16.80	-07	33	25.5	809
1978	RW7	1978	09	02.11597	22	38	16.37	-07	33	26.4	809
1978	RW7	1978	09	02.31597	22	38	06.63	-07	34	19.7	809
1978	RW7	1978	09	02.32639	22	38	06.14	-07	34	23.2	809
1978	RX7	* 1978	09	02.11042	22	38	35.74	-05	28	28.0	809
1978	RX7	1978	09	02.11597	22	38	35.43	-05	28	28.5	809
1978	RX7	1978	09	02.31597	22	38	23.69	-05	29	07.7	809
1978	RX7	1978	09	02.32639	22	38	23.11	-05	29	10.9	809
1978	RX7	1978	09	06.10382	22	34	51.69	-05	41	52.0	809
1978	RX7	1978	09	10.10417	22	31	14.69	-05	55	08.1	809
1978	RX7	1978	09	10.12014	22	31	13.90	-05	55	13.9	809
1978	RX7	1978	09	10.22222	22	31	08.32	-05	55	30.3	809
1978	RX7	1978	09	10.23889	22	31	07.38	-05	55	35.3	809
1978	RY7	* 1978	09	02.11042	22	38	45.53	-07	45	52.3	809
1978	RY7	1978	09	02.11597	22	38	45.30	-07	45	54.9	809
1978	RY7	1978	09	02.31597	22	38	34.38	-07	47	47.1	809
1978	RY7	1978	09	02.32639	22	38	33.79	-07	47	53.0	809
1978	RY7	1978	09	06.10382	22	35	20.35	-08	22	45.6	809
1978	RZ7	* 1978	09	02.10486	22	38	45.94	-07	24	23.6	809
1978	RZ7	1978	09	02.11042	22	38	45.69	-07	24	24.9	809
1978	RZ7	1978	09	02.11597	22	38	45.41	-07	24	26.1	809
1978	RZ7	1978	09	02.31597	22	38	36.23	-07	25	19.7	809
1978	RZ7	1978	09	02.32639	22	38	35.71	-07	25	23.6	809
1978	RZ7	1978	09	06.10382	22	35	48.47	-07	42	32.1	809
1978	RA8	* 1978	09	02.11042	22	39	05.55	-09	01	50.4	809
1978	RA8	1978	09	02.11597	22	39	05.25	-09	01	51.0	809
1978	RA8	1978	09	02.31597	22	38	56.08	-09	02	50.1	809
1978	RA8	1978	09	02.32639	22	38	55.62	-09	02	54.1	809
1978	RA8	1978	09	06.10382	22	36	09.59	-09	21	19.7	809
1978	RA8	1978	09	10.10417	22	33	16.30	-09	40	19.7	809
1978	RA8	1978	09	10.12014	22	33	15.61	-09	40	26.6	809
1978	RA8	1978	09	10.22222	22	33	11.15	-09	40	53.1	809
1978	RA8	1978	09	10.23889	22	33	10.35	-09	40	58.9	809
1978	RB8	* 1978	09	02.10486	22	39	20.91	-08	58	45.1	809
1978	RB8	1978	09	02.11042	22	39	20.68	-08	58	46.7	809
1978	RB8	1978	09	02.11597	22	39	20.47	-08	58	47.9	809
1978	RB8	1978	09	02.31597	22	39	10.85	-08	59	44.5	809
1978	RB8	1978	09	02.32639	22	39	10.43	-08	59	47.2	809
1978	RC8	* 1978	09	02.10486	22	39	22.00	-09	16	42.0	809
1978	RC8	1978	09	02.11042	22	39	21.71	-09	16	42.8	809
1978	RC8	1978	09	02.11597	22	39	21.30	-09	16	42.5	809
1978	RC8	1978	09	02.31597	22	39	09.55	-09	16	46.9	809
1978	RC8	1978	09	02.32639	22	39	08.98	-09	16	47.4	809
1978	RC8	1978	09	10.10417	22	32	06.02	-09	19	00.3	809
1978	RC8	1978	09	10.12014	22	32	05.19	-09	19	03.1	809
1978	RC8	1978	09	10.22222	22	31	59.67	-09	19	02.2	809
1978	RC8	1978	09	10.23889	22	31	58.74	-09	19	03.0	809

1978	RD8	*	1978	09	02.10486	22	39	24.43	-10	37	00.6	809
1978	RD8		1978	09	02.11042	22	39	24.14	-10	37	02.0	809
1978	RD8		1978	09	02.11597	22	39	23.82	-10	37	02.9	809
1978	RD8		1978	09	02.31597	22	39	10.68	-10	37	20.3	809
1978	RD8		1978	09	02.32639	22	39	10.00	-10	37	21.8	809
1978	RE8	*	1978	09	02.10486	22	39	26.73	-09	02	05.7	809
1978	RE8		1978	09	02.11042	22	39	26.45	-09	02	07.9	809
1978	RE8		1978	09	02.11597	22	39	26.11	-09	02	09.8	809
1978	RE8		1978	09	02.31597	22	39	15.92	-09	03	26.9	809
1978	RE8		1978	09	02.32639	22	39	15.41	-09	03	31.6	809
1978	RF8	*	1978	09	02.11042	22	39	42.55	-05	43	32.4	809
1978	RF8		1978	09	02.11597	22	39	42.36	-05	43	34.4	809
1978	RF8		1978	09	02.31597	22	39	33.98	-05	45	12.5	809
1978	RF8		1978	09	02.32639	22	39	33.58	-05	45	18.2	809
1978	RF8		1978	09	06.10382	22	37	02.44	-06	16	20.6	809
1978	RF8		1978	09	10.10417	22	34	25.04	-06	49	01.8	809
1978	RF8		1978	09	10.12014	22	34	24.47	-06	49	12.5	809
1978	RF8		1978	09	10.22222	22	34	20.34	-06	50	01.5	809
1978	RF8		1978	09	10.23889	22	34	19.76	-06	50	09.9	809
1978	RG8	*	1978	09	02.10486	22	39	44.58	-08	03	27.2	809
1978	RG8		1978	09	02.11042	22	39	44.24	-08	03	27.9	809
1978	RG8		1978	09	02.11597	22	39	43.91	-08	03	28.2	809
1978	RG8		1978	09	02.31597	22	39	31.17	-08	03	46.2	809
1978	RG8		1978	09	02.32639	22	39	30.52	-08	03	47.3	809
1978	RG8		1978	09	10.10417	22	31	47.41	-08	15	14.6	809
1978	RG8		1978	09	10.12014	22	31	46.48	-08	15	19.1	809
1978	RG8		1978	09	10.22222	22	31	40.33	-08	15	25.2	809
1978	RG8		1978	09	10.23889	22	31	39.32	-08	15	27.0	809
1978	RH8	*	1978	09	02.11042	22	39	49.40	-09	03	46.2	809
1978	RH8		1978	09	02.11597	22	39	49.14	-09	03	47.4	809
1978	RH8		1978	09	02.31597	22	39	40.43	-09	05	04.0	809
1978	RH8		1978	09	02.32639	22	39	40.03	-09	05	08.6	809
1978	RJ8	*	1978	09	02.10486	22	39	53.26	-10	00	27.4	809
1978	RJ8		1978	09	02.11042	22	39	53.07	-10	00	27.2	809
1978	RJ8		1978	09	02.11597	22	39	52.66	-10	00	26.9	809
1978	RJ8		1978	09	02.31597	22	39	40.07	-10	00	22.2	809
1978	RJ8		1978	09	02.32639	22	39	39.41	-10	00	23.1	809
1978	RJ8		1978	09	06.10382	22	35	53.61	-09	58	40.5	809
1978	RK8	*	1978	09	02.10486	22	40	08.89	-07	33	45.0	809
1978	RK8		1978	09	02.11042	22	40	08.66	-07	33	47.5	809
1978	RK8		1978	09	02.11597	22	40	08.41	-07	33	48.4	809
1978	RK8		1978	09	02.31597	22	39	56.49	-07	35	11.8	809
1978	RK8		1978	09	02.32639	22	39	55.84	-07	35	16.3	809
1978	RL8	*	1978	09	02.10486	22	40	09.90	-06	30	30.6	809
1978	RL8		1978	09	02.11042	22	40	09.60	-06	30	32.5	809
1978	RL8		1978	09	02.11597	22	40	09.14	-06	30	33.5	809
1978	RL8		1978	09	02.31597	22	39	56.67	-06	31	23.8	809
1978	RL8		1978	09	02.32639	22	39	56.00	-06	31	27.4	809
1978	RL8		1978	09	06.10382	22	36	11.09	-06	47	32.8	809
1978	RM8	*	1978	09	02.10486	22	40	14.72	-05	54	56.4	809
1978	RM8		1978	09	02.11042	22	40	14.42	-05	54	58.6	809
1978	RM8		1978	09	02.11597	22	40	14.19	-05	54	59.8	809
1978	RM8		1978	09	02.31597	22	40	03.33	-05	56	03.6	809
1978	RM8		1978	09	02.32639	22	40	02.73	-05	56	07.3	809
1978	RM8		1978	09	06.10382	22	36	49.32	-06	16	25.9	809
1978	RN8	*	1978	09	02.11042	22	40	25.45	-06	48	49.2	809
1978	RN8		1978	09	02.11597	22	40	25.20	-06	48	55.4	809
1978	RN8		1978	09	02.31597	22	40	13.90	-06	50	33.8	809
1978	RN8		1978	09	02.32639	22	40	13.38	-06	50	36.8	809

1978	RO8	*	1978	09	02.10486	22	40	28.61	-06	09	18.8	809
1978	RO8		1978	09	02.11042	22	40	28.41	-06	09	19.6	809
1978	RO8		1978	09	02.11597	22	40	28.10	-06	09	21.6	809
1978	RO8		1978	09	02.31597	22	40	16.34	-06	10	27.2	809
1978	RO8		1978	09	02.32639	22	40	15.68	-06	10	30.1	809
1978	RO8		1978	09	06.10382	22	36	45.67	-06	31	17.6	809
1978	RP8	*	1978	09	02.10486	22	40	56.28	-10	41	15.7	809
1978	RP8		1978	09	02.11042	22	40	56.01	-10	41	19.2	809
1978	RP8		1978	09	02.11597	22	40	55.76	-10	41	23.8	809
1978	RP8		1978	09	02.31597	22	40	45.76	-10	43	16.6	809
1978	RP8		1978	09	02.32639	22	40	45.18	-10	43	23.6	809
1978	RQ8	*	1978	09	02.11042	22	41	24.16	-05	58	15.2	809
1978	RQ8		1978	09	02.11597	22	41	23.84	-05	58	18.8	809
1978	RQ8		1978	09	02.31597	22	41	13.43	-06	00	30.4	809
1978	RQ8		1978	09	02.32639	22	41	12.89	-06	00	37.6	809
1978	RQ8		1978	09	06.10382	22	38	06.73	-06	42	32.3	809
1978	RQ8		1978	09	10.10417	22	34	52.53	-07	26	51.2	809
1978	RQ8		1978	09	10.12014	22	34	51.80	-07	27	04.4	809
1978	RQ8		1978	09	10.22222	22	34	46.59	-07	28	09.9	809
1978	RQ8		1978	09	10.23889	22	34	45.86	-07	28	22.4	809
1978	RR8	*	1978	09	02.10486	22	41	25.91	-06	41	38.4	809
1978	RR8		1978	09	02.11042	22	41	25.62	-06	41	41.1	809
1978	RR8		1978	09	02.11597	22	41	25.26	-06	41	44.5	809
1978	RR8		1978	09	02.31597	22	41	14.82	-06	43	25.7	809
1978	RR8		1978	09	02.32639	22	41	14.16	-06	43	31.7	809
1978	RR8		1978	09	06.10382	22	38	01.34	-07	15	50.0	809
1978	RR8		1978	09	10.10417	22	34	38.70	-07	49	50.9	809
1978	RR8		1978	09	10.12014	22	34	37.93	-07	50	02.4	809
1978	RR8		1978	09	10.22222	22	34	32.71	-07	50	52.4	809
1978	RR8		1978	09	10.23889	22	34	31.84	-07	51	01.4	809
1978	RS8	*	1978	09	02.10486	22	41	50.08	-05	38	21.9	809
1978	RS8		1978	09	02.11042	22	41	49.58	-05	38	26.3	809
1978	RS8		1978	09	02.11597	22	41	49.40	-05	38	30.2	809
1978	RT8	*	1978	09	02.10486	22	41	52.81	-10	42	37.3	809
1978	RT8		1978	09	02.11042	22	41	52.53	-10	42	40.1	809
1978	RT8		1978	09	02.11597	22	41	52.29	-10	42	42.4	809
1978	RT8		1978	09	02.31597	22	41	42.94	-10	43	34.3	809
1978	RT8		1978	09	02.32639	22	41	42.44	-10	43	38.4	809
1978	RU8	*	1978	09	02.11042	22	41	59.81	-06	38	17.5	809
1978	RU8		1978	09	02.11597	22	41	59.59	-06	38	20.0	809
1978	RU8		1978	09	02.31597	22	41	51.17	-06	40	03.0	809
1978	RU8		1978	09	02.32639	22	41	50.84	-06	40	08.5	809
1978	RU8		1978	09	06.10382	22	39	18.95	-07	12	47.6	809
1978	RU8		1978	09	10.10417	22	36	39.98	-07	47	11.6	809
1978	RU8		1978	09	10.12014	22	36	39.38	-07	47	23.6	809
1978	RU8		1978	09	10.22222	22	36	35.22	-07	48	13.7	809
1978	RU8		1978	09	10.23889	22	36	34.54	-07	48	23.7	809
1978	RV8	*	1978	09	02.10486	22	42	30.55	-06	58	40.0	809
1978	RV8		1978	09	02.11042	22	42	30.22	-06	58	41.2	809
1978	RW8	*	1978	09	02.10486	22	42	30.85	-07	16	40.6	809
1978	RW8		1978	09	02.11042	22	42	30.60	-07	16	42.4	809
1978	RW8		1978	09	02.11597	22	42	30.38	-07	16	45.1	809
1978	RW8		1978	09	02.31597	22	42	21.97	-07	18	02.3	809
1978	RW8		1978	09	02.32639	22	42	21.51	-07	18	05.0	809
1978	RX8	*	1978	09	02.10486	22	43	02.66	-10	24	19.2	809
1978	RX8		1978	09	02.11042	22	43	02.37	-10	24	21.2	809
1978	RX8		1978	09	02.11597	22	43	02.14	-10	24	24.5	809
1978	RX8		1978	09	02.32639	22	42	52.36	-10	25	31.9	809
1978	RY8	*	1978	09	02.11042	22	43	04.53	-05	51	21.1	809



1978 RY8	1978 09 02.11597	22 43 04.24	-05 51 23.5	809
1978 RY8	1978 09 02.31597	22 42 53.55	-05 52 57.7	809
1978 RY8	1978 09 02.32639	22 42 53.01	-05 53 02.0	809
1978 RY8	1978 09 06.10382	22 39 41.82	-06 22 54.8	809
1978 RY8	1978 09 10.10417	22 36 22.28	-06 54 28.0	809
1978 RY8	1978 09 10.12014	22 36 21.53	-06 54 37.8	809
1978 RY8	1978 09 10.22222	22 36 16.24	-06 55 23.8	809
1978 RY8	1978 09 10.23889	22 36 15.45	-06 55 32.9	809
1978 RZ8 *	1978 09 02.11042	22 43 07.59	-08 14 02.9	809
1978 RZ8	1978 09 02.11597	22 43 07.33	-08 14 05.6	809
1978 RZ8	1978 09 02.31597	22 42 58.51	-08 16 13.7	809
1978 RZ8	1978 09 02.32639	22 42 57.99	-08 16 20.5	809
1978 RZ8	1978 09 06.10382	22 40 22.73	-08 56 58.3	809
1978 RZ8	1978 09 10.10417	22 37 38.43	-09 40 02.1	809
1978 RZ8	1978 09 10.12014	22 37 37.87	-09 40 14.4	809
1978 RZ8	1978 09 10.22222	22 37 33.38	-09 41 17.9	809
1978 RZ8	1978 09 10.23889	22 37 32.53	-09 41 29.9	809
1978 RA9 *	1978 09 02.10486	22 43 23.17	-10 24 46.7	809
1978 RA9	1978 09 02.11042	22 43 22.83	-10 24 47.9	809
1978 RA9	1978 09 02.11597	22 43 22.54	-10 24 49.8	809
1978 RA9	1978 09 02.31597	22 43 10.49	-10 25 12.7	809
1978 RA9	1978 09 02.32639	22 43 09.91	-10 25 14.8	809
1978 RB9 *	1978 09 02.10486	22 43 25.79	-08 44 09.4	809
1978 RB9	1978 09 02.11042	22 43 25.50	-08 44 11.1	809
1978 RB9	1978 09 02.11597	22 43 25.25	-08 44 12.2	809
1978 RB9	1978 09 02.31597	22 43 15.97	-08 45 14.3	809
1978 RB9	1978 09 02.32639	22 43 15.52	-08 45 18.1	809
1978 RB9	1978 09 06.10382	22 40 27.26	-09 04 45.9	809
1978 RC9 *	1978 09 02.11042	22 43 30.13	-07 55 12.1	809
1978 RC9	1978 09 02.11597	22 43 29.78	-07 55 13.0	809
1978 RC9	1978 09 02.31597	22 43 17.16	-07 55 38.4	809
1978 RC9	1978 09 02.32639	22 43 16.49	-07 55 40.7	809
1978 RD9 *	1978 09 02.10486	22 43 55.79	-07 52 32.9	809
1978 RD9	1978 09 02.11042	22 43 55.56	-07 52 35.4	809
1978 RD9	1978 09 02.11597	22 43 55.16	-07 52 39.8	809
1978 RE9 *	1978 09 02.10486	22 44 20.93	-06 38 43.7	809
1978 RE9	1978 09 02.11042	22 44 20.57	-06 38 43.9	809
1978 RE9	1978 09 02.11597	22 44 20.32	-06 38 44.3	809
1978 RE9	1978 09 02.31597	22 44 08.98	-06 38 51.2	809
1978 RE9	1978 09 02.32639	22 44 08.33	-06 38 51.8	809
1978 RF9 *	1978 09 02.10486	22 44 24.75	-08 26 08.4	809
1978 RF9	1978 09 02.11042	22 44 24.44	-08 26 11.8	809
1978 RF9	1978 09 02.11597	22 44 24.19	-08 26 14.0	809
1978 RF9	1978 09 02.31597	22 44 14.14	-08 28 12.6	809
1978 RF9	1978 09 02.32639	22 44 13.39	-08 28 13.4	809
1978 RG9 *	1978 09 02.11042	22 44 27.43	-08 28 08.4	809
1978 RG9	1978 09 02.11597	22 44 27.08	-08 28 08.5	809
1978 RG9	1978 09 06.10382	22 40 18.82	-08 29 25.7	809
1978 RG9	1978 09 10.10417	22 36 16.71	-08 30 10.3	809
1978 RG9	1978 09 10.12014	22 36 15.79	-08 30 13.4	809
1978 RG9	1978 09 10.22222	22 36 09.56	-08 30 10.5	809
1978 RG9	1978 09 10.23889	22 36 08.52	-08 30 12.8	809
1978 RH9 *	1978 09 02.10486	22 44 39.57	-09 36 13.4	809
1978 RH9	1978 09 02.11042	22 44 39.29	-09 36 16.5	809
1978 RH9	1978 09 02.11597	22 44 39.02	-09 36 19.2	809
1978 RH9	1978 09 02.31597	22 44 28.05	-09 38 03.3	809
1978 RH9	1978 09 02.32639	22 44 27.51	-09 38 09.4	809
1978 RH9	1978 09 06.10382	22 41 15.65	-10 10 28.9	809
1978 RJ9 *	1978 09 02.11042	22 44 52.01	-06 57 52.4	809

1978	RJ9	1978	09	02.11597	22	44	51.72	-06	57	53.4	809
1978	RJ9	1978	09	02.31597	22	44	41.03	-06	58	32.0	809
1978	RJ9	1978	09	02.32639	22	44	40.48	-06	58	33.7	809
1978	RK9	* 1978	09	02.10486	22	44	52.58	-09	10	25.6	809
1978	RK9	1978	09	02.11042	22	44	52.25	-09	10	26.7	809
1978	RK9	1978	09	02.11597	22	44	51.91	-09	10	27.8	809
1978	RK9	1978	09	02.31597	22	44	38.96	-09	11	17.2	809
1978	RK9	1978	09	02.32639	22	44	38.29	-09	11	20.1	809
1978	RK9	1978	09	06.10382	22	40	41.95	-09	26	35.7	809
1978	RK9	1978	09	10.10417	22	36	33.52	-09	42	04.0	809
1978	RK9	1978	09	10.12014	22	36	32.60	-09	42	10.1	809
1978	RK9	1978	09	10.22222	22	36	26.20	-09	42	30.4	809
1978	RK9	1978	09	10.23889	22	36	25.04	-09	42	35.5	809
1978	RL9	* 1978	09	02.10486	22	44	53.15	-10	40	50.4	809
1978	RL9	1978	09	02.11042	22	44	52.82	-10	40	50.5	809
1978	RL9	1978	09	02.11597	22	44	52.52	-10	40	52.1	809
1978	RL9	1978	09	02.31597	22	44	43.61	-10	40	45.8	809
1978	RL9	1978	09	02.32639	22	44	42.92	-10	40	48.1	809
1978	RM9	* 1978	09	02.10486	22	44	55.77	-10	40	14.1	809
1978	RM9	1978	09	02.11042	22	44	55.43	-10	40	15.4	809
1978	RM9	1978	09	02.11597	22	44	55.14	-10	40	17.2	809
1978	RM9	1978	09	02.31597	22	44	43.62	-10	40	45.8	809
1978	RM9	1978	09	02.32639	22	44	42.95	-10	40	47.7	809
1978	RN9	* 1978	09	02.10486	22	45	15.93	-08	52	16.7	809
1978	RN9	1978	09	02.11042	22	45	15.47	-08	52	15.6	809
1978	RN9	1978	09	02.11597	22	45	15.24	-08	52	15.6	809
1978	RN9	1978	09	02.31597	22	45	01.90	-08	51	45.2	809
1978	RN9	1978	09	02.32639	22	45	01.19	-08	51	43.7	809
1978	RN9	1978	09	06.10382	22	41	01.65	-08	42	08.7	809
1978	RO9	* 1978	09	02.10486	22	45	46.68	-08	30	14.8	809
1978	RO9	1978	09	02.11042	22	45	46.44	-08	30	16.4	809
1978	RO9	1978	09	02.11597	22	45	46.08	-08	30	18.5	809
1978	RO9	1978	09	02.31597	22	45	37.14	-08	31	17.7	809
1978	RO9	1978	09	02.32639	22	45	36.65	-08	31	21.2	809
1978	RP9	* 1978	09	02.10486	22	45	52.62	-05	57	49.8	809
1978	RP9	1978	09	02.11042	22	45	52.29	-05	57	51.4	809
1978	RP9	1978	09	02.11597	22	45	52.07	-05	57	52.7	809
1978	RP9	1978	09	02.31597	22	45	42.58	-05	58	32.6	809
1978	RP9	1978	09	02.32639	22	45	42.01	-05	58	33.4	809
1978	RP9	1978	09	06.10382	22	42	49.03	-06	11	14.9	809
1978	RQ9	* 1978	09	02.10486	22	46	11.20	-10	08	05.1	809
1978	RQ9	1978	09	02.11042	22	46	10.81	-10	08	05.6	809
1978	RQ9	1978	09	02.11597	22	46	10.49	-10	08	07.4	809
1978	RQ9	1978	09	02.31597	22	45	57.44	-10	08	40.3	809
1978	RQ9	1978	09	02.32639	22	45	56.73	-10	08	43.3	809
1978	RQ9	1978	09	06.10382	22	41	59.73	-10	18	54.4	809
1978	RR9	* 1978	09	02.10486	22	46	27.57	-07	35	00.3	809
1978	RR9	1978	09	02.11042	22	46	27.25	-07	35	02.5	809
1978	RR9	1978	09	02.11597	22	46	26.95	-07	35	05.3	809
1978	RR9	1978	09	02.31597	22	46	17.55	-07	36	09.7	809
1978	RR9	1978	09	02.32639	22	46	17.10	-07	36	13.8	809
1978	RR9	1978	09	06.10382	22	43	25.01	-07	56	45.9	809
1978	RS9	* 1978	09	02.10486	22	46	27.87	-07	29	22.3	809
1978	RS9	1978	09	02.11042	22	46	27.62	-07	29	22.9	809
1978	RS9	1978	09	02.11597	22	46	27.23	-07	29	26.1	809
1978	RS9	1978	09	02.31597	22	46	16.74	-07	30	45.5	809
1978	RS9	1978	09	02.32639	22	46	16.06	-07	30	50.4	809
1978	RS9	1978	09	06.10382	22	43	05.59	-07	55	43.7	809

1978	RT9	*	1978	09	02.10486	22	46	30.66	-05	30	46.0	809
1978	RT9		1978	09	02.11042	22	46	30.29	-05	30	47.8	809
1978	RT9		1978	09	02.11597	22	46	30.04	-05	30	48.4	809
1978	RU9	*	1978	09	02.10486	22	46	43.93	-10	20	28.7	809
1978	RU9		1978	09	02.11597	22	46	43.13	-10	20	35.7	809
1978	RU9		1978	09	02.31597	22	46	30.97	-10	22	03.7	809
1978	RU9		1978	09	02.32639	22	46	30.38	-10	22	08.7	809
1978	RV9	*	1978	09	02.11042	22	47	16.19	-08	03	10.7	809
1978	RV9		1978	09	02.11597	22	47	15.92	-08	03	13.7	809
1978	RV9		1978	09	02.31597	22	47	06.14	-08	04	58.4	809
1978	RV9		1978	09	02.32639	22	47	05.61	-08	05	04.3	809
1978	RV9		1978	09	06.10382	22	44	13.14	-08	37	35.3	809
1978	RW9	*	1978	09	02.10486	22	47	23.58	-07	21	41.3	809
1978	RW9		1978	09	02.11042	22	47	23.27	-07	21	42.3	809
1978	RW9		1978	09	02.11597	22	47	23.04	-07	21	44.7	809
1978	RX9	*	1978	09	02.10486	22	47	40.51	-06	01	33.8	809
1978	RX9		1978	09	02.11042	22	47	40.25	-06	01	36.5	809
1978	RX9		1978	09	02.11597	22	47	39.99	-06	01	39.7	809
1978	RX9		1978	09	02.31597	22	47	30.61	-06	03	10.7	809
1978	RX9		1978	09	02.32639	22	47	30.12	-06	03	15.1	809
1978	RX9		1978	09	06.10382	22	44	43.48	-06	31	59.4	809
1978	RX9		1978	09	10.10417	22	41	49.94	-07	02	07.7	809
1978	RX9		1978	09	10.12014	22	41	49.22	-07	02	17.3	809
1978	RX9		1978	09	10.22222	22	41	44.65	-07	03	02.1	809
1978	RX9		1978	09	10.23889	22	41	43.90	-07	03	10.4	809
1978	RY9	*	1978	09	02.10486	22	47	44.14	-07	27	54.1	809
1978	RY9		1978	09	02.11042	22	47	43.90	-07	27	55.0	809
1978	RY9		1978	09	02.11597	22	47	43.65	-07	27	56.9	809
1978	RZ9	*	1978	09	02.11042	22	48	01.56	-05	34	22.8	809
1978	RZ9		1978	09	02.11597	22	48	01.43	-05	34	28.6	809
1978	RZ9		1978	09	02.3159-^	22	47	51.83	-05	38	46.1	809
1978	RZ9		1978	09	02.32639	22	47	51.35	-05	38	58.7	809
1978	RZ9		1978	09	06.10382	22	45	06.61	-06	58	34.6	809
1978	RA10*		1978	09	02.10486	22	48	08.63	-08	36	21.4	809
1978	RA10		1978	09	02.11042	22	48	08.22	-08	36	22.3	809
1978	RA10		1978	09	02.11597	22	48	07.85	-08	36	23.8	809
1978	RA10		1978	09	02.31597	22	47	55.28	-08	37	27.1	809
1978	RA10		1978	09	02.32639	22	47	54.68	-08	37	30.0	809
1978	RA10		1978	09	06.10382	22	44	06.00	-08	57	15.1	809
1978	RA10		1978	09	10.10417	22	40	03.37	-09	17	39.4	809
1978	RA10		1978	09	10.12014	22	40	02.39	-09	17	47.4	809
1978	RA10		1978	09	10.22222	22	39	56.06	-09	18	15.6	809
1978	RA10		1978	09	10.23889	22	39	54.87	-09	18	22.6	809
1978	RB10*		1978	09	02.10486	22	48	44.76	-07	54	09.3	809
1978	RB10		1978	09	02.11042	22	48	44.40	-07	54	09.5	809
1978	RB10		1978	09	02.11597	22	48	44.01	-07	54	09.5	809
1978	RB10		1978	09	02.31597	22	48	31.48	-07	54	16.4	809
1978	RB10		1978	09	02.32639	22	48	30.76	-07	54	16.7	809
1978	RB10		1978	09	06.10382	22	44	48.83	-07	56	15.0	809
1978	RB10		1978	09	10.10417	22	40	58.69	-07	57	49.1	809
1978	RB10		1978	09	10.12014	22	40	57.75	-07	57	51.4	809
1978	RB10		1978	09	10.22222	22	40	51.59	-07	57	51.7	809
1978	RB10		1978	09	10.23889	22	40	50.61	-07	57	53.2	809
1978	RC10*		1978	09	02.11042	22	48	54.58	-06	06	44.5	809
1978	RC10		1978	09	02.11597	22	48	54.32	-06	06	46.9	809
1978	RC10		1978	09	02.31597	22	48	44.77	-06	08	18.3	809
1978	RC10		1978	09	02.32639	22	48	44.23	-06	08	21.7	809
1978	RC10		1978	09	06.10382	22	45	52.08	-06	36	53.6	809

1978	RC10	1978	09	10.12014	22	42	50.55	-07	07	07.0	809
1978	RC10	1978	09	10.23889	22	42	45.04	-07	07	59.4	809
1978	RD10*	1978	09	02.11042	22	49	05.33	-07	01	45.5	809
1978	RD10	1978	09	02.11597	22	49	05.09	-07	01	47.1	809
1978	RD10	1978	09	02.31597	22	48	55.56	-07	02	53.3	809
1978	RD10	1978	09	02.32639	22	48	55.00	-07	02	56.8	809
1978	RD10	1978	09	06.10382	22	46	01.85	-07	23	42.3	809
1978	RD10	1978	09	10.10417	22	42	59.65	-07	45	28.5	809
1978	RD10	1978	09	10.22222	22	42	54.12	-07	46	07.8	809
1978	RE10*	1978	09	02.10486	22	49	11.86	-09	45	33.2	809
1978	RE10	1978	09	02.11042	22	49	11.39	-09	45	29.2	809
1978	RE10	1978	09	02.11597	22	49	11.05	-09	45	26.4	809
1978	RE10	1978	09	02.31597	22	48	56.78	-09	43	28.6	809
1978	RE10	1978	09	02.32639	22	48	56.05	-09	43	23.0	809
1978	RE10	1978	09	06.10382	22	44	45.46	-09	05	57.2	809
1978	RF10*	1978	09	02.10486	22	49	15.40	-09	18	23.6	809
1978	RF10	1978	09	02.11042	22	49	15.06	-09	18	22.3	809
1978	RF10	1978	09	02.11597	22	49	14.70	-09	18	22.9	809
1978	RF10	1978	09	02.31597	22	49	00.55	-09	18	17.3	809
1978	RF10	1978	09	02.32639	22	48	59.81	-09	18	17.4	809
1978	RG10*	1978	09	02.10486	22	49	38.26	-07	31	15.1	809
1978	RG10	1978	09	02.11042	22	49	37.86	-07	31	14.3	809
1978	RG10	1978	09	02.11597	22	49	37.60	-07	31	16.1	809
1978	RG10	1978	09	02.31597	22	49	26.43	-07	31	47.2	809
1978	RG10	1978	09	02.32639	22	49	25.92	-07	31	47.9	809
1978	RG10	1978	09	06.10382	22	46	03.12	-07	41	14.4	809
1978	RH10*	1978	09	02.10486	22	49	39.26	-10	38	48.5	809
1978	RH10	1978	09	02.11042	22	49	38.92	-10	38	49.8	809
1978	RH10	1978	09	02.11597	22	49	38.67	-10	38	53.3	809
1978	RH10	1978	09	02.31597	22	49	25.98	-10	40	01.6	809
1978	RH10	1978	09	02.32639	22	49	25.24	-10	40	06.4	809
1978	RJ10*	1978	09	02.10486	22	49	48.05	-08	16	13.3	809
1978	RJ10	1978	09	02.11042	22	49	47.75	-08	16	15.1	809
1978	RJ10	1978	09	02.11597	22	49	47.49	-08	16	17.6	809
1978	RJ10	1978	09	02.31597	22	49	36.30	-08	17	48.2	809
1978	RJ10	1978	09	02.32639	22	49	35.80	-08	17	52.2	809
1978	RK10*	1978	09	02.10486	22	49	51.40	-10	15	46.3	809
1978	RK10	1978	09	02.11042	22	49	51.11	-10	15	48.5	809
1978	RK10	1978	09	02.11597	22	49	50.93	-10	15	53.0	809
1978	RK10	1978	09	02.31597	22	49	42.77	-10	17	46.9	809
1978	RK10	1978	09	02.32639	22	49	42.27	-10	17	53.6	809
1978	RL10*	1978	09	02.10486	22	50	04.30	-09	50	27.3	809
1978	RL10	1978	09	02.11042	22	50	04.02	-09	50	28.0	809
1978	RL10	1978	09	02.11597	22	50	03.75	-09	50	31.1	809
1978	RL10	1978	09	02.31597	22	49	54.31	-09	51	40.3	809
1978	RL10	1978	09	02.32639	22	49	53.77	-09	51	44.6	809
1978	RL10	1978	09	06.10382	22	47	01.63	-10	13	13.5	809
1978	RL10	1978	09	10.12014	22	44	00.20	-10	35	16.4	809
1978	RL10	1978	09	10.23889	22	43	54.74	-10	35	53.4	809
1978	RM10*	1978	09	02.10486	22	50	14.54	-05	48	11.6	809
1978	RM10	1978	09	02.11042	22	50	14.17	-05	48	14.0	809
1978	RM10	1978	09	02.11597	22	50	13.84	-05	48	15.0	809
1978	RM10	1978	09	02.31597	22	50	02.57	-05	48	55.9	809
1978	RM10	1978	09	02.32639	22	50	01.99	-05	48	57.0	809
1978	RM10	1978	09	06.10382	22	46	37.64	-06	01	53.5	809
1978	RM10	1978	09	10.10417	22	43	03.70	-06	15	34.5	809
1978	RM10	1978	09	10.12014	22	43	02.76	-06	15	39.9	809
1978	RM10	1978	09	10.22222	22	42	57.21	-06	15	59.8	809

1978	RM10	1978	09	10.23889	22	42	56.28	-06	16	04.4	809
1978	RN10*	1978	09	02.10486	22	50	40.67	-09	18	08.0	809
1978	RN10	1978	09	02.11042	22	50	40.38	-09	18	08.3	809
1978	RN10	1978	09	02.11597	22	50	40.15	-09	18	10.1	809
1978	RN10	1978	09	02.31597	22	50	30.93	-09	19	01.4	809
1978	RN10	1978	09	02.32639	22	50	30.49	-09	19	03.3	809
1978	RN10	1978	09	06.10382	22	47	42.09	-09	35	04.1	809
1978	RO10*	1978	09	02.11042	22	51	00.65	-08	30	31.9	809
1978	RO10	1978	09	02.11597	22	51	00.41	-08	30	34.2	809
1978	RO10	1978	09	02.31597	22	50	50.57	-08	32	15.6	809
1978	RO10	1978	09	02.32639	22	50	50.04	-08	32	20.9	809
1978	RP10*	1978	09	06.10382	22	26	54.90	-05	26	38.8	809
1978	RP10	1978	09	10.10417	22	24	24.24	-06	17	04.8	809
1978	RP10	1978	09	10.22222	22	24	19.67	-06	18	32.4	809
1978	RQ10*	1978	09	06.10382	22	27	02.70	-07	32	30.4	809
1978	RQ10	1978	09	10.12014	22	23	57.37	-07	55	36.4	809
1978	RQ10	1978	09	10.23889	22	23	51.77	-07	56	17.2	809
1978	RR10*	1978	09	06.10382	22	27	25.99	-08	56	21.7	809
1978	RS10*	1978	09	06.10382	22	27	32.81	-06	22	14.6	809
1978	RS10	1978	09	10.10417	22	24	11.54	-06	39	40.7	809
1978	RS10	1978	09	10.12014	22	24	10.81	-06	39	46.3	809
1978	RS10	1978	09	10.22222	22	24	05.63	-06	40	11.1	809
1978	RS10	1978	09	10.23889	22	24	04.70	-06	40	16.8	809
1978	RT10*	1978	09	06.10382	22	27	36.68	-05	49	21.5	809
1978	RT10	1978	09	10.10417	22	24	31.96	-06	29	19.7	809
1978	RT10	1978	09	10.12014	22	24	31.34	-06	29	30.9	809
1978	RT10	1978	09	10.22222	22	24	26.48	-06	30	28.8	809
1978	RT10	1978	09	10.23889	22	24	25.72	-06	30	40.6	809
1978	RU10*	1978	09	06.10382	22	27	48.93	-06	53	06.6	809
1978	RU10	1978	09	10.10417	22	24	55.36	-07	07	00.8	809
1978	RU10	1978	09	10.22222	22	24	50.24	-07	07	25.4	809
1978	RV10*	1978	09	06.10382	22	27	57.32	-08	54	57.0	809
1978	RW10*	1978	09	06.10382	22	28	09.59	-08	58	01.2	809
1978	RW10	1978	09	10.10417	22	25	21.85	-09	34	49.6	809
1978	RW10	1978	09	10.22222	22	25	16.71	-09	35	54.0	809
1978	RW10	1978	09	10.23889	22	25	15.95	-09	36	04.7	809
1978	RX10*	1978	09	06.10382	22	28	29.71	-07	39	19.1	809
1978	RY10*	1978	09	06.10382	22	28	56.29	-06	13	51.7	809
1978	RZ10*	1978	09	06.10382	22	28	58.39	-05	22	59.4	809
1978	RZ10	1978	09	10.10417	22	26	09.72	-05	46	06.6	809
1978	RZ10	1978	09	10.12014	22	26	09.10	-05	46	14.2	809
1978	RZ10	1978	09	10.22222	22	26	04.78	-05	46	45.7	809
1978	RZ10	1978	09	10.23889	22	26	04.04	-05	46	53.2	809
1978	RA11*	1978	09	06.10382	22	29	00.97	-08	15	16.4	809
1978	RB11*	1978	09	06.10382	22	29	03.44	-08	42	15.0	809
1978	RC11*	1978	09	06.10382	22	29	07.70	-08	42	03.6	809
1978	RD11*	1978	09	06.10382	22	29	25.05	-09	28	24.9	809
1978	RE11*	1978	09	06.10382	22	30	10.66	-09	46	18.6	809
1978	RF11*	1978	09	06.10382	22	30	56.59	-06	15	20.1	809
1978	RG11*	1978	09	06.10382	22	31	14.34	-07	15	35.5	809
1978	RH11*	1978	09	06.10382	22	31	25.60	-06	17	35.7	809
1978	RJ11*	1978	09	06.10382	22	31	32.33	-05	02	32.8	809
1978	RK11*	1978	09	06.10382	22	31	41.13	-05	41	58.4	809
1978	RL11*	1978	09	06.10382	22	32	03.72	-08	19	40.2	809
1978	RM11*	1978	09	06.10382	22	32	08.91	-05	56	14.4	809
1978	RM11	1978	09	10.10417	22	29	30.51	-06	28	19.3	809
1978	RM11	1978	09	10.12014	22	29	29.91	-06	28	30.0	809
1978	RM11	1978	09	10.22222	22	29	25.74	-06	29	16.7	809

1978	RM11	1978	09	10.23889	22	29	25.12	-06	29	25.2	809
1978	RN11*	1978	09	06.10382	22	32	30.77	-06	53	31.8	809
1978	RO11*	1978	09	06.10382	22	32	35.52	-05	16	21.7	809
1978	RP11*	1978	09	06.10382	22	33	27.55	-06	47	34.2	809
1978	RP11	1978	09	10.10417	22	30	02.95	-07	19	54.8	809
1978	RP11	1978	09	10.22222	22	29	56.80	-07	20	52.7	809
1978	RQ11*	1978	09	06.10382	22	33	36.72	-05	05	49.0	809
1978	RR11*	1978	09	06.10382	22	34	46.15	-08	41	29.6	809
1978	RS11*	1978	09	06.10382	22	34	51.31	-06	50	05.0	809
1978	RT11*	1978	09	06.10382	22	36	00.82	-05	11	13.6	809
1978	RU11*	1978	09	06.10382	22	36	43.96	-06	31	58.3	809
1978	RV11*	1978	09	06.10382	22	37	04.32	-09	28	58.7	809
1978	RW11*	1978	09	06.10382	22	37	58.00	-05	17	07.1	809
1978	RX11*	1978	09	06.10382	22	38	12.86	-06	17	30.4	809
1978	RY11*	1978	09	06.10382	22	38	24.03	-09	48	39.5	809
1978	RZ11*	1978	09	06.10382	22	38	33.66	-09	54	26.3	809
1978	RA12*	1978	09	06.10382	22	38	45.78	-08	59	35.8	809
1978	RB12*	1978	09	06.10382	22	39	20.61	-06	23	50.5	809
1978	RC12*	1978	09	06.10382	22	39	28.48	-09	52	26.2	809
1978	RD12*	1978	09	06.10382	22	39	33.06	-08	03	37.5	809
1978	RD12	1978	09	10.10417	22	35	44.41	-08	11	22.2	809
1978	RD12	1978	09	10.12014	22	35	43.53	-08	11	27.7	809
1978	RD12	1978	09	10.22222	22	35	37.56	-08	11	36.3	809
1978	RD12	1978	09	10.23889	22	35	36.57	-08	11	39.7	809
1978	RE12*	1978	09	06.10382	22	39	37.76	-05	10	05.3	809
1978	RF12*	1978	09	06.10382	22	39	56.89	-05	23	41.4	809
1978	RG12*	1978	09	06.10382	22	40	07.86	-08	40	53.9	809
1978	RH12*	1978	09	06.10382	22	41	18.92	-09	00	02.9	809
1978	RJ12*	1978	09	06.10382	22	41	44.09	-07	53	25.1	809
1978	RK12*	1978	09	06.10382	22	41	45.08	-08	51	42.5	809
1978	RL12*	1978	09	06.10382	22	42	49.06	-06	18	22.2	809
1978	RM12*	1978	09	06.10382	22	42	54.04	-06	22	14.6	809
1978	RN12*	1978	09	06.10382	22	43	08.53	-09	08	41.0	809
1978	RO12*	1978	09	06.10382	22	43	26.66	-05	52	04.1	809
1978	RP12*	1978	09	06.10382	22	44	56.74	-05	07	24.8	809
1978	RQ12*	1978	09	06.10382	22	45	29.96	-06	42	51.4	809
1978	RR12*	1978	09	06.10382	22	45	56.63	-06	13	21.8	809
1978	RS12*	1978	09	06.10382	22	46	14.26	-08	46	10.0	809
1978	RT12*	1978	09	06.10382	22	46	23.56	-08	21	08.5	809
1978	RU12*	1978	09	06.10382	22	46	43.85	-06	09	18.6	809
1978	RV12*	1978	09	06.10382	22	47	39.64	-09	32	58.2	809
1978	RW12*	1978	09	06.10382	22	47	51.16	-06	23	50.1	809
1978	RX12*	1978	09	06.10382	22	48	00.61	-06	25	26.5	809
1978	RY12*	1978	09	06.10382	22	48	04.65	-05	09	57.0	809
1978	RZ12*	1978	09	06.10382	22	48	06.44	-09	42	23.1	809
1978	RA13*	1978	09	06.08576	22	48	29.58	-07	21	18.6	809
1978	RB13*	1978	09	06.08576	22	48	30.71	-07	30	52.9	809
1978	RC13*	1978	09	06.08576	22	48	50.90	-07	53	38.7	809
1978	RD13*	1978	09	06.08576	22	49	34.39	-07	55	16.0	809
1978	RE13*	1978	09	06.08576	22	49	45.96	-08	27	32.1	809
1978	RF13*	1978	09	06.08576	22	50	03.90	-06	39	46.0	809
1978	RG13*	1978	09	06.08576	22	50	28.74	-04	08	04.9	809
1978	RH13*	1978	09	06.08576	22	50	53.68	-06	24	46.4	809
1978	RJ13*	1978	09	06.08576	22	51	05.78	-06	41	52.9	809
1978	RK13*	1978	09	06.08576	22	51	12.53	-08	09	00.0	809
1978	RL13*	1978	09	06.08576	22	51	13.48	-07	31	05.1	809
1978	RM13*	1978	09	06.08576	22	51	25.52	-06	39	04.7	809
1978	RN13*	1978	09	06.08576	22	51	55.66	-07	38	04.7	809

1978	RO13*	1978	09	06.08576	22	52	17.58	-06	37	48.6	809
1978	RP13*	1978	09	06.08576	22	52	35.72	-08	22	08.0	809
1978	RQ13*	1978	09	06.08576	22	52	38.06	-08	04	14.2	809
1978	RR13*	1978	09	06.08576	22	52	48.74	-06	47	23.2	809
1978	RS13*	1978	09	06.08576	22	53	16.20	-06	30	02.7	809
1978	RT13*	1978	09	06.08576	22	53	20.70	-07	01	04.4	809
1978	RU13*	1978	09	06.08576	22	53	59.89	-06	03	43.5	809
1978	RV13*	1978	09	06.08576	22	54	04.31	-07	29	34.6	809
1978	RW13*	1978	09	06.08576	22	54	36.15	-07	02	55.6	809
1978	RX13*	1978	09	06.08576	22	54	48.97	-06	42	56.4	809
1978	RY13*	1978	09	06.08576	22	55	44.28	-07	22	13.3	809
1978	RZ13*	1978	09	06.08576	22	55	54.58	-05	28	10.0	809
1978	RA14*	1978	09	06.08576	22	56	06.98	-05	48	02.0	809
1978	RB14*	1978	09	06.08576	22	56	09.82	-08	49	24.0	809
1978	RC14*	1978	09	06.08576	22	56	15.43	-08	49	03.5	809
1978	RD14*	1978	09	06.08576	22	56	50.20	-05	41	05.9	809
1978	RE14*	1978	09	06.08576	22	56	51.74	-07	46	20.4	809
1978	RF14*	1978	09	06.08576	22	56	59.06	-07	08	43.7	809
1978	RG14*	1978	09	06.08576	22	57	11.08	-06	20	45.6	809
1978	RH14*	1978	09	06.08576	22	57	20.54	-07	49	31.3	809
1978	RJ14*	1978	09	06.08576	22	57	55.98	-08	18	37.9	809
1978	RK14*	1978	09	06.08576	22	57	58.97	-06	32	36.3	809
1978	RL14*	1978	09	06.08576	22	58	02.90	-09	08	47.5	809
1978	RM14*	1978	09	06.08576	22	58	09.86	-07	35	19.0	809
1978	RN14*	1978	09	06.08576	22	58	16.61	-08	46	49.3	809
1978	RO14*	1978	09	06.08576	22	58	28.84	-05	34	34.1	809
1978	RP14*	1978	09	06.08576	22	59	18.55	-07	21	37.5	809
1978	RQ14*	1978	09	06.08576	22	59	51.86	-05	53	27.4	809
1978	RR14*	1978	09	06.08576	23	00	37.21	-07	45	46.8	809
1978	RS14*	1978	09	06.08576	23	01	34.15	-05	16	02.7	809
1978	RT14*	1978	09	06.08576	23	01	57.26	-04	48	39.5	809
1978	RU14*	1978	09	06.08576	23	02	04.77	-07	01	52.8	809
1978	RV14*	1978	09	06.08576	23	02	16.54	-08	05	32.2	809
1978	RW14*	1978	09	06.08576	23	02	20.09	-04	26	43.5	809
1978	RX14*	1978	09	06.08576	23	02	24.55	-04	26	57.3	809
1978	RY14*	1978	09	06.08576	23	02	48.10	-05	25	17.0	809
1978	RZ14*	1978	09	06.08576	23	02	48.41	-05	54	41.8	809
1978	RA15*	1978	09	06.08576	23	02	59.02	-04	25	24.5	809
1978	RB15*	1978	09	06.08576	23	03	08.02	-04	50	41.4	809
1978	RC15*	1978	09	06.08576	23	03	24.94	-06	06	15.4	809
1978	RD15*	1978	09	06.08576	23	03	34.97	-04	36	06.2	809
1978	RE15*	1978	09	06.08576	23	05	04.63	-07	25	19.1	809
1978	RF15*	1978	09	06.08576	23	05	13.40	-05	52	18.0	809
1978	RG15*	1978	09	06.08576	23	05	15.31	-06	04	00.9	809
1978	RH15*	1978	09	06.08576	23	05	18.03	-06	54	22.7	809
1978	RJ15*	1978	09	06.08576	23	05	35.50	-05	22	04.2	809
1978	RK15*	1978	09	06.08576	23	06	11.51	-06	58	22.6	809
1978	RL15*	1978	09	06.08576	23	06	30.35	-04	49	53.7	809
1978	RM15*	1978	09	06.08576	23	06	47.33	-04	50	42.5	809
1978	RN15*	1978	09	06.08576	23	06	49.23	-04	40	06.1	809
1978	RO15*	1978	09	06.08576	23	06	52.33	-06	58	30.1	809
1978	RP15*	1978	09	06.08576	23	06	59.96	-04	27	04.1	809
1978	RQ15*	1978	09	06.08576	23	07	05.90	-07	05	45.2	809
1978	RR15*	1978	09	06.08576	23	07	06.53	-09	04	39.1	809
1978	RS15*	1978	09	06.08576	23	07	08.82	-05	54	45.5	809
1978	RT15*	1978	09	06.08576	23	07	32.82	-04	23	42.6	809
1978	RU15*	1978	09	06.08576	23	08	08.06	-07	17	05.8	809
1978	RV15*	1978	09	06.08576	23	08	11.99	-05	30	31.8	809

1978	RW15*	1978	09	06.08576	23	08	12.55	-07	51	23.0	809
1978	RX15*	1978	09	06.08576	23	08	28.11	-06	04	23.7	809
1978	RY15*	1978	09	06.08576	23	09	08.46	-09	06	57.9	809
1978	RZ15*	1978	09	10.10417	22	22	44.26	-09	25	26.9	809
1978	RZ15	1978	09	10.22222	22	22	38.08	-09	25	53.3	809
1978	RZ15	1978	09	10.23889	22	22	37.01	-09	25	59.3	809
1978	RA16*	1978	09	10.10417	22	26	06.74	-09	03	12.6	809
1978	RA16	1978	09	10.12014	22	26	06.00	-09	03	20.8	809
1978	RA16	1978	09	10.22222	22	26	01.02	-09	03	45.4	809
1978	RA16	1978	09	10.23889	22	26	00.69	-09	03	56.2	809
1978	RB16*	1978	09	10.10417	22	29	01.41	-06	42	09.3	809
1978	RB16	1978	09	10.22222	22	28	54.76	-06	42	14.6	809
1978	RC16*	1978	09	10.10417	22	30	45.62	-08	54	49.1	809
1978	RC16	1978	09	10.12014	22	30	44.91	-08	54	58.9	809
1978	RC16	1978	09	10.22222	22	30	40.26	-08	55	40.0	809
1978	RC16	1978	09	10.23889	22	30	39.42	-08	55	48.1	809
1978	RD16*	1978	09	10.10417	22	30	52.65	-09	38	04.1	809
1978	RD16	1978	09	10.12014	22	30	51.77	-09	38	07.7	809
1978	RD16	1978	09	10.22222	22	30	46.18	-09	38	07.7	809
1978	RD16	1978	09	10.23889	22	30	45.27	-09	38	09.1	809
1978	RE16*	1978	09	10.10417	22	33	39.72	-06	18	43.9	809
1978	RE16	1978	09	10.12014	22	33	39.15	-06	18	55.0	809
1978	RE16	1978	09	10.22222	22	33	35.15	-06	19	42.5	809
1978	RE16	1978	09	10.23889	22	33	34.54	-06	19	52.6	809
1978	RF16*	1978	09	10.23889	22	35	38.89	-10	39	22.8	809
1978	RG16*	1978	09	10.23889	22	37	52.02	-10	44	11.7	809
1978	RH16*	1978	09	10.12014	22	37	52.41	-10	28	47.5	809
1978	RH16	1978	09	10.23889	22	37	45.06	-10	29	04.0	809
1978	RJ16*	1978	09	10.10417	22	39	07.32	-05	30	22.3	809
1978	RJ16	1978	09	10.12014	22	39	06.49	-05	30	29.8	809
1978	RJ16	1978	09	10.22222	22	39	01.00	-05	31	09.0	809
1978	RK16*	1978	09	10.10417	22	40	23.88	-08	25	14.9	809
1978	RK16	1978	09	10.12014	22	40	22.83	-08	25	06.8	809
1978	RK16	1978	09	10.22222	22	40	15.84	-08	24	02.2	809
1978	RK16	1978	09	10.23889	22	40	14.69	-08	23	53.3	809
1978	RL16*	1978	09	10.10417	22	41	16.26	-09	10	42.5	809
1978	RL16	1978	09	10.22222	22	41	10.97	-09	11	39.6	809
1978	RL16	1978	09	10.23889	22	41	10.10	-09	11	49.2	809
1978	RM16*	1978	09	10.10417	22	42	17.11	-08	20	51.9	809
1978	RM16	1978	09	10.12014	22	42	16.48	-08	21	13.9	809
1978	RM16	1978	09	10.22222	22	42	11.99	-08	23	15.9	809
1978	RM16	1978	09	10.23889	22	42	11.22	-08	23	37.1	809

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY BY H. DEBEHOGNE AND  
R. R. DE FREITAS MOURAO (ASSISTED BY G. ROMAN). MEASURED BY DEBEHOGNE.  
REDUCTIONS BY G. DE SANCTIS AND V. ZAPPALA.

Object	Date	UT	R. A. (1950)			Decl.	Obs.	
1981	QV2	1981	08	25.29933	00 00	49.30	-08 44 04.0	809
1981	QV2	1981	08	25.30557	00 00	49.07	-08 44 08.7	809
1981	QV2	1981	08	25.31179	00 00	48.96	-08 44 11.1	809
1981	QV2	1981	08	27.19984	23 59	58.09	-09 01 42.3	809
1981	QV2	1981	08	27.20596	23 59	57.79	-09 01 46.5	809
1981	QV2	1981	08	27.21219	23 59	57.63	-09 01 50.1	809
1981	QV2	1981	08	28.39745	23 59	22.79	-09 12 56.7	809
1981	QV2	1981	08	28.40265	23 59	22.61	-09 12 59.5	809
1981	QV2	1981	08	28.40785	23 59	22.45	-09 13 03.1	809
1981	QV2	1981	08	31.40138	23 57	47.33	-09 41 36.5	809
1981	QV2	1981	08	31.40731	23 57	47.02	-09 41 41.4	809



1981 QV2	1981 08	31.41315	23 57	46.74	-09 41	44.3	809
1981 QV2	1981 09	02.38899	23 56	38.21	-10 00	49.9	809
1981 QV2	1981 09	02.39488	23 56	38.01	-10 00	53.9	809
1981 QV2	1981 09	02.40076	23 56	37.79	-10 00	56.7	809
1981 QV2	1981 09	03.35936	23 56	02.99	-10 10	15.7	809
1981 QV2	1981 09	03.36468	23 56	02.79	-10 10	18.0	809
1981 QV2	1981 09	03.37009	23 56	02.58	-10 10	23.0	809
1981 QV2	1981 09	04.35825	23 55	25.63	-10 19	58.9	809
1981 QV2	1981 09	04.36380	23 55	25.51	-10 20	01.7	809
1981 QV2	1981 09	04.36934	23 55	25.31	-10 20	05.0	809
1981 QV2	1981 09	05.39927	23 54	45.78	-10 30	05.4	809
1981 QV2	1981 09	05.40492	23 54	45.54	-10 30	08.7	809
1981 QV2	1981 09	05.40977	23 54	45.39	-10 30	12.1	809
1981 QV2	1981 09	06.37080	23 54	07.78	-10 39	30.9	809
1981 QV2	1981 09	06.37640	23 54	07.51	-10 39	35.5	809
1981 QV2	1981 09	06.38194	23 54	07.38	-10 39	38.3	809
1981 QV2	1981 09	09.36473	23 52	05.43	-11 08	28.7	809
1981 QV2	1981 09	09.37027	23 52	05.20	-11 08	32.0	809
1981 QV2	1981 09	09.37576	23 52	04.98	-11 08	35.1	809
1981 QW2	1981 08	25.29933	23 57	10.17	-07 23	36.7	809
1981 QW2	1981 08	25.30557	23 57	09.92	-07 23	37.8	809
1981 QW2	1981 08	25.31179	23 57	09.76	-07 23	40.1	809
1981 QW2	1981 08	27.19984	23 55	55.15	-07 30	45.8	809
1981 QW2	1981 08	27.20596	23 55	54.91	-07 30	46.5	809
1981 QW2	1981 08	27.21219	23 55	54.63	-07 30	48.5	809
1981 QW2	1981 09	01.33735	23 52	01.20	-07 51	11.0	809
1981 QW2	1981 09	01.34326	23 52	00.87	-07 51	12.7	809
1981 QW2	1981 09	01.34912	23 52	00.58	-07 51	14.3	809
1981 QW2	1981 09	02.36856	23 51	09.57	-07 55	24.9	809
1981 QW2	1981 09	02.37444	23 51	09.23	-07 55	26.4	809
1981 QW2	1981 09	02.38034	23 51	08.95	-07 55	28.0	809
1981 QW2	1981 09	03.33986	23 50	19.77	-07 59	24.2	809
1981 QW2	1981 09	03.34549	23 50	19.47	-07 59	25.4	809
1981 QW2	1981 09	03.35102	23 50	19.24	-07 59	26.1	809
1981 QW2	1981 09	04.34008	23 49	27.53	-08 03	29.4	809
1981 QW2	1981 09	04.34509	23 49	27.32	-08 03	30.9	809
1981 QW2	1981 09	04.34994	23 49	27.06	-08 03	32.3	809
1981 QW2	1981 09	05.37664	23 48	32.04	-08 07	44.8	809
1981 QW2	1981 09	05.38322	23 48	31.59	-08 07	45.7	809
1981 QW2	1981 09	05.39015	23 48	31.18	-08 07	47.7	809
1981 QW2	1981 09	06.35176	23 47	39.12	-08 11	42.7	809
1981 QW2	1981 09	06.35729	23 47	38.65	-08 11	44.8	809
1981 QW2	1981 09	06.36284	23 47	38.30	-08 11	46.1	809
1981 QW2	1981 09	09.38527	23 44	48.71	-08 23	51.2	809
1981 QW2	1981 09	09.39115	23 44	48.44	-08 23	53.4	809
1981 QW2	1981 09	09.39723	23 44	48.25	-08 23	52.8	809
1981 RS1	1981 09	03.07603	20 41	10.24	-22 36	55.0	809
1981 RS1	1981 09	03.08201	20 41	10.06	-22 36	53.6	809
1981 RS1	1981 09	03.08884	20 41	09.84	-22 36	53.8	809
1981 RS1	1981 09	04.07539	20 40	44.51	-22 35	54.8	809
1981 RS1	1981 09	04.08023	20 40	44.44	-22 35	54.5	809
1981 RS1	1981 09	04.08508	20 40	44.27	-22 35	54.2	809
1981 RS1	1981 09	05.09828	20 40	20.28	-22 34	43.1	809
1981 RS1	1981 09	05.10451	20 40	20.14	-22 34	42.4	809
1981 RS1	1981 09	05.11074	20 40	20.00	-22 34	41.7	809
1981 RS1	1981 09	06.07894	20 39	59.21	-22 33	25.4	809
1981 RS1	1981 09	06.08447	20 39	59.09	-22 33	23.7	809
1981 RS1	1981 09	06.09001	20 39	59.12	-22 33	23.7	809

## ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, K = G. R. Kastel', M = B. G. Marsden, O = L. Oterma. For further information see MPC 5833.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1938 DN	12.5	380303	205.68	195.38	116.71	14.21	0.0193	2.5570	44	5		M
1938 GJ	13.1	380428	358.22	59.41	149.70	9.59	0.0963	2.7898	26	7		O
1939 BU	11.8	390218	318.89	55.74	130.55	9.62	0.1241	3.1141	55	4		O
1940 WC	13.9	401205	13.49	315.00	87.42	6.20	0.2845	2.4312	29	4		O
1940 WG	12.9	401204	0.57	37.73	22.53	1.38	0.1840	3.1465	31	4		O
1940 WL	12.2	401205	42.70	255.32	113.56	4.49	0.1396	3.1482	28	4		O
1940 WM	12.9	401205	312.31	21.72	111.00	5.92	0.1892	2.6551	28	4		O
1978 PS2	15.0	780909	42.68	82.91	211.50	2.05	0.0431	2.3800	32	0		M
1978 PT2	13.5	780909	9.81	53.09	275.89	0.87	0.0619	2.9127	51	0		M
1978 PW2	14.5	780909	140.20	242.48	310.88	3.62	0.1001	2.2359	32	0		M
1978 PX2	15.5	780909	349.68	13.18	343.75	2.20	0.1971	2.3953	51	0		M
1978 PY2	14.0	780909	309.85	209.51	189.77	2.43	0.0861	2.6901	32	0		M
1978 PA3	16.5	780909	2.86	169.61	168.59	2.15	0.1948	2.2094	32	0		M
1978 PB3	13.0	780909	104.89	59.18	163.55	1.62	0.1243	3.1681	32	0		M
1978 PC3	15.5	780909	10.00	1.43	326.44	6.32	0.1721	2.4499	55	6		M
1978 PD3	15.5	780909	337.75	43.42	326.66	6.20	0.1185	2.3573	32	7		M
1978 PH3	13.5	780909	36.01	30.99	259.17	0.33	0.1941	3.1893	51	8		M
1978 PO3	14.5	780909	34.35	272.60	25.83	0.94	0.1332	2.4455	51	4		M
1978 QC	14.5	780909	325.75	206.13	191.42	1.52	0.2562	3.0017	32	0		M
1978 RB3	16.0	780909	0.68	3.72	336.97	3.22	0.1818	2.4794	8	0		M
1978 RE3	15.5	780909	331.50	80.62	302.27	1.59	0.1805	2.4467	8	0		M
1978 RP3	15.0	780909	347.87	173.90	183.84	1.65	0.0874	2.4956	25	3		M
1978 RQ6		780909	345.04	186.35	182.88	1.86	0.3024	2.7779	8	9		M
1978 RT6		780909	44.85	116.29	165.18	5.91	0.1503	2.2670	8	9		M
1978 RW6		780909	17.01	348.78	332.54	8.59	0.0437	2.3721	8	7		M
1978 RY6		780909	194.08	174.44	332.87	11.39	0.1131	3.1661	8	9		M
1978 RC7		780909	79.23	273.42	332.02	11.43	0.1289	3.0191	8	8		M
1978 RF7		780909	40.51	320.46	328.05	8.18	0.1388	2.3724	8	9		M
1978 RJ7		780909	164.50	356.21	177.52	3.66	0.0710	2.1667	8	9		M
1978 RL7		780909	319.24	166.30	218.25	1.09	0.0522	2.9092	8	9		M
1978 RM7		780909	68.10	11.79	237.27	1.47	0.2047	2.3774	8	8		M
1978 RV7		780909	53.42	89.23	190.96	2.92	0.0713	2.7066	8	9		M
1978 RX7		780909	75.42	278.07	322.08	6.01	0.2182	2.6312	8	9		M
1978 RA8		780909	326.07	242.37	145.67	1.36	0.1831	3.2139	8	9		M
1978 RC8		780909	32.99	299.19	341.08	8.41	0.3087	2.9597	8	9		M
1978 RF8		780909	7.95	165.79	166.20	13.71	0.0177	3.1372	8	9		M
1978 RG8		780909	2.40	1.14	336.86	6.31	0.1029	2.3727	8	9		M
1978 RQ8		780909	316.24	229.43	166.80	8.45	0.1238	2.2683	8	9		M
1978 RR8		780909	222.09	331.56	163.61	12.60	0.2853	2.4275	8	0		M
1978 RU8		780909	315.69	233.73	163.52	12.83	0.1364	3.1519	8	9		M
1978 RY8		780909	324.94	209.66	174.50	4.40	0.1019	2.3794	8	9		M
1978 RZ8		780909	334.54	234.25	158.62	6.91	0.3376	2.6142	8	9		M
1978 RG9		780909	48.71	297.60	340.52	10.53	0.1473	2.5647	8	7		M
1978 RK9		780909	252.36	116.36	347.31	4.61	0.1494	2.2669	8	0		M
1978 RX9		780909	9.64	158.30	170.09	4.77	0.1727	2.6907	8	0		M
1978 RA10		780909	301.13	63.21	359.88	1.38	0.2039	2.2597	8	0		M
1978 RB10		780909	3.95	355.58	341.32	4.67	0.1826	2.1871	8	0		M
1978 RC10		780909	344.45	193.53	168.43	5.39	0.1185	2.6998	8	7		M
1978 RD10		780909	332.95	207.79	168.73	1.89	0.1259	2.9242	8	7		M
1978 RL10		780909	354.06	219.94	129.38	2.66	0.1345	2.9078	8	8		M
1978 RM10		780909	1.81	13.66	326.65	3.42	0.1145	2.5374	8	0		M
1978 XG		781128	359.23	6.96	48.69	1.12	0.1267	3.5775	3	5		M

1978	XH		781128	357.90	220.08	197.50	4.66	0.1207	3.1450	3	5	3	M
1978	XK		781128	348.50	291.36	139.77	2.39	0.1413	2.8690	3	5	3	M
1978	XL		781128	178.82	173.64	61.48	19.93	0.0706	3.0784	3	5	3	M
1978	XM		781128	37.54	311.18	64.23	6.32	0.0613	2.2125	3	5	3	M
1978	XN		781128	77.94	215.41	111.10	3.16	0.0955	2.7615	3	5		M
1978	XO		781128	288.45	74.85	66.36	12.41	0.1193	2.5099	3	5		M
1978	XP		781128	178.93	75.05	160.66	1.38	0.0796	3.1642	3	4	3	M
1978	XQ		781128	176.50	46.56	190.91	1.06	0.1731	3.0119	3	5	3	M
1978	XR		781128	7.38	202.62	205.63	1.54	0.0124	2.9463	3	5	3	M
1978	XS		781128	329.55	259.84	204.06	1.62	0.2088	2.3924	3	5		M
1978	XT		781128	1.21	178.61	237.75	3.66	0.3523	2.5901	3	5		M
1978	XU		781128	10.58	189.46	214.22	6.45	0.1203	2.4305	3	5		M
1978	XV		781128	1.58	340.31	73.22	5.07	0.0529	3.3738	3	5	3	M
1978	XW		781128	91.74	204.79	95.40	2.39	0.2149	2.9138	3	5		M
1978	XX		781128	275.62	104.39	61.86	15.57	0.2260	2.8626	3	5	3	M
1978	XA1		781128	179.25	160.34	76.11	9.90	0.2764	2.3374	3	5	3	M
1978	XB1		781128	281.68	26.60	116.72	2.60	0.0610	2.1795	3	5		H
1978	XC1		781128	351.59	258.65	166.96	1.98	0.0249	2.8708	3	5	3	M
1978	XD1		781128	28.90	248.97	129.92	2.85	0.1510	2.8623	3	5		M
1978	XE1		781128	181.87	33.71	202.89	4.59	0.0517	2.3637	3	4	3	M
1978	XF1		781128	73.93	228.19	93.17	4.06	0.1933	3.1142	3	5		M
1978	XG1		781128	357.73	211.63	211.44	5.04	0.1876	2.3178	3	5	3	M
1979	SC9	13.0	790924	68.51	98.52	197.93	9.19	0.0838	3.0117	24	4		M
1979	SD9	14.2	791014	353.13	346.61	43.55	2.67	0.2627	3.1905	55	4		K
1979	SF9	13.0	791014	47.85	179.77	142.85	2.75	0.0784	2.9045	55	4		K
1979	SL9	12.7	791014	108.90	98.13	156.63	1.35	0.1533	3.1437	55	5		K
1979	SP9	13.4	791014	342.51	341.75	61.56	2.33	0.1518	3.2462	55	5		K
1979	SR9	14.5	791014	79.47	204.36	77.93	2.04	0.1504	2.2416	24	3		M
1979	SU9	13.5	790924	349.18	30.40	1.54	0.31	0.1694	3.1134	55	5		M
1979	SV9	14.6	791014	48.14	125.77	193.84	5.36	0.1371	2.3042	50	4		K
1979	SW9	15.5	790924	358.26	338.93	36.91	3.50	0.1761	2.4646	24	3		K
1979	SZ9	13.5	791014	25.04	346.78	0.83	0.17	0.1820	3.0954	55	5		M
1979	SA10	12.9	791014	320.65	247.92	190.98	5.98	0.1763	3.4123	50	4		K
1979	UD1	13.5	791014	20.76	222.96	133.19	3.21	0.0919	2.9001	50	7		M
1979	UY3	13.5	791103	310.42	85.07	16.72	1.62	0.2452	3.2109	31	3		K
1979	UC4	15.4	791103	335.01	61.61	10.65	3.38	0.2602	2.6118	31	3		K
1979	VG	15.0	791014	341.66	20.15	23.86	5.97	0.1112	2.3095	55	4		M
1979	VN	14.5	791103	30.34	114.79	214.24	6.65	0.3409	2.8987	31	3		M
1979	XQ	14.5	791213	54.44	322.73	35.77	3.67	0.1375	2.2686	39	4		M
1979	YR	15.0	791213	33.03	3.31	34.82	6.61	0.1678	2.2707	2	7		M
1980	DA1	12.0	800322	26.77	98.87	38.35	9.79	0.1594	3.9994	30	0		H
1980	DD1	14.0	800322	310.32	202.71	30.61	9.44	0.1080	2.7779	24	7		M
1980	DE1	13.0	800322	29.81	102.12	33.54	9.43	0.1229	3.2296	24	7		M
1980	FA	14.0	800322	132.41	230.57	167.89	2.08	0.0800	2.8505	31	0		M
1980	FB	13.5	800322	308.59	209.55	29.58	1.63	0.1103	3.2055	56	0		M
1980	FU	15.5	800322	320.08	241.67	343.74	6.88	0.1152	2.2951	31	0		M
1980	FY	15.5	800322	300.28	278.88	320.67	1.90	0.0389	2.1632	31	0		M
1980	FV1	14.5	800322	122.40	50.69	351.84	9.50	0.1106	3.0325	31	0		M
1980	FO3	12.5	800322	99.72	65.53	357.04	8.45	0.1250	3.5350	31	0	3	M
1980	JG	12.5	800521	323.09	88.89	209.13	18.04	0.2753	3.2313	7	8		M
1980	JH	14.0	800521	299.24	117.20	198.69	13.03	0.1774	2.6246	6	7		M
1980	LC1	15.0	800610	313.43	232.05	98.80	13.62	0.2715	2.5809	32	6		M
1980	HD	12.5	800610	261.56	249.96	114.70	9.36	0.1106	3.3715	33	8		M
1980	RJ2	13.5	801008	326.87	80.15	343.44	6.47	0.2644	2.5567	35	4		K
1980	RL2	15.0	801008	33.64	6.45	311.12	1.75	0.2155	2.4141	35	4		M
1980	RM2	13.2	801008	54.62	296.89	357.10	12.85	0.1772	2.6355	35	4		K
1980	RO2	14.2	801008	351.14	128.16	251.44	2.27	0.1762	2.2148	34	3		K
1980	RS2	14.1	801008	355.13	123.39	252.94	3.77	0.1681	2.2458	34	3		K
1980	RU2	13.1	801008	29.99	335.31	350.69	13.61	0.1744	2.6662	34	3		K

1980	RV2	16.2	801008	11.89	13.01	338.55	2.62	0.1870	2.1858	34	3	K
1980	SJ	15.0	801008	356.83	138.53	232.05	5.34	0.1310	2.4315	9	7	M
1980	SM	14.5	801008	359.95	27.27	340.19	9.10	0.1989	2.6370	34	9	M
1980	SQ	14.5	801008	349.37	158.82	223.04	4.79	0.1314	2.2304	34	9	M
1980	TH	13.5	801008	312.19	101.88	331.54	8.75	0.1970	3.1278	9	4	M
1980	TU6	11.0	801008	222.07	163.73	353.34	14.19	0.1593	3.9347	34	3	M
1981	EG2	17.5	810317	38.81	243.54	236.89	9.54	0.1980	2.7675	38	5	M
1981	EH2	16.5	810317	37.38	266.40	221.64	10.04	0.1334	3.0412	38	9	M
1981	EJ2	15.5	810317	206.98	84.50	252.29	9.49	0.1577	2.8736	38	8	M
1981	EK2	16.0	810317	261.64	27.96	260.65	7.87	0.1243	2.7571	38	9	M
1981	EL2	16.0	810317	222.73	97.11	227.57	10.75	0.1624	2.6211	38	6	M
1981	EM2	18.0	810317	8.83	290.26	234.61	7.50	0.1341	2.3180	38	9	M
1981	EN2	16.0	810317	55.57	209.96	257.80	8.97	0.1360	3.1016	38	7	M
1981	EO2	15.5	810317	300.46	2.60	237.11	8.38	0.0346	2.9854	38	0	M
1981	EP2	14.5	810317	206.09	121.16	214.66	15.26	0.1137	3.0350	38	0	M
1981	EQ2	16.5	810317	342.45	279.28	276.93	5.95	0.0620	2.3745	38	0	M
1981	ER2	15.5	810317	6.51	334.39	190.72	21.41	0.2320	3.0966	41	0	M
1981	ES2	17.0	810317	13.92	245.59	276.08	7.23	0.0463	2.2951	38	6	M
1981	ET2	16.5	810317	23.91	253.60	248.88	8.71	0.1883	3.1377	38	8	M
1981	EU2	15.5	810317	223.95	3.62	315.86	11.15	0.0821	3.0716	38	8	M
1981	EV2	15.0	810317	222.02	67.76	249.82	9.28	0.0268	2.9907	38	9	M
1981	EW2	16.0	810317	292.20	298.33	319.75	13.16	0.1108	2.6481	38	0	M
1981	EY2	15.5	810317	204.41	113.15	223.19	9.20	0.0906	3.0815	38	8	M
1981	EZ2	14.0	810317	339.17	343.41	218.84	8.61	0.1021	2.5355	41	0	M
1981	EA3	17.5	810317	279.36	351.82	275.41	5.77	0.0868	2.2306	38	0	M
1981	EB3	16.5	810317	10.10	293.83	228.84	8.60	0.1755	3.1219	38	9	M
1981	EC3	17.0	810317	291.06	40.65	233.18	7.74	0.2435	2.3565	38	7	K
1981	ED3	16.5	810317	53.84	254.31	210.67	12.06	0.1736	3.2063	38	8	M
1981	EE3	17.5	810317	62.35	147.88	307.64	8.71	0.1754	2.5902	38	7	M
1981	EF3	17.5	810317	14.17	277.73	243.83	6.52	0.0394	2.2811	38	0	M
1981	EG3	15.5	810317	253.56	19.40	271.19	8.79	0.0534	3.0603	38	9	M
1981	EH3	16.5	810317	175.29	97.52	263.56	7.01	0.1213	2.4302	38	7	M
1981	EJ3	15.5	810317	81.19	128.69	309.09	10.85	0.1690	2.6673	38	0	M
1981	EK3	17.0	810317	326.06	338.74	240.67	5.88	0.1179	2.6232	41	0	M
1981	EL3	16.5	810317	325.09	294.28	285.03	8.04	0.0864	2.7455	38	9	M
1981	EM3	17.0	810317	108.81	169.31	251.52	5.84	0.0696	2.2637	38	6	M
1981	EN3	17.5	810317	14.12	308.08	207.83	12.26	0.2023	2.4885	38	0	M
1981	EO3	15.5	810317	251.98	342.75	324.30	15.18	0.2019	2.6034	38	8	M
1981	EP3	17.0	810317	3.24	304.75	228.46	9.07	0.1756	3.1376	38	8	M
1981	EQ3	15.0	810317	239.96	5.36	311.89	12.91	0.2014	3.1634	38	9	M
1981	ES3	15.5	810317	134.74	84.18	307.83	11.58	0.1772	2.6593	38	0	M
1981	ET3	15.5	810317	170.15	27.35	335.64	22.19	0.4223	1.7688	31	0	M
1981	EU3	16.5	810317	1.26	308.29	228.08	9.32	0.1196	2.5097	38	0	M
1981	EV3	16.5	810317	218.77	70.14	253.61	5.58	0.0792	2.4318	35	6	M
1981	EW3	14.5	810317	244.03	32.47	276.71	7.45	0.1584	2.5368	38	0	M
1981	EX3	15.5	810317	57.07	237.67	233.50	7.92	0.0949	2.7487	38	0	M
1981	EY3	15.0	810317	52.65	226.55	235.16	8.14	0.2246	3.1578	38	0	M
1981	EA4	17.5	810317	24.10	283.47	227.90	6.14	0.0360	2.2368	41	9	M
1981	EB4	16.5	810317	337.06	260.85	306.12	8.48	0.1051	3.1237	38	9	M
1981	EC4	16.0	810317	89.13	206.42	230.33	10.21	0.1107	2.5792	38	0	M
1981	ED4	18.0	810317	351.21	273.41	282.14	5.89	0.3058	2.7363	38	9	M
1981	EE4	15.5	810317	351.13	289.33	259.53	8.15	0.0471	3.1744	38	9	M
1981	EF4	16.5	810317	319.23	348.81	245.50	6.74	0.1748	2.3475	38	0	M
1981	EG4	16.5	810317	227.50	41.91	278.15	5.87	0.1286	2.3470	38	9	M
1981	EH4	15.0	810317	166.43	137.52	229.29	8.15	0.2305	2.6249	38	0	<M
1981	EJ4	15.0	810317	170.32	152.11	215.19	10.03	0.0268	3.1208	38	0	M
1981	EK4	15.0	810317	139.10	66.56	321.47	12.07	0.1902	2.6576	38	9	M
1981	EL4	13.5	810317	333.26	258.86	308.01	8.55	0.0240	2.9942	38	0	M
1981	EM4	11.5	810317	44.33	157.78	326.68	12.72	0.1136	2.6646	38	0	M

1981	EN4	15.0	810317	72.29	210.33	251.94	9.88	0.0476	3.0644	38 0	M
1981	EO4	16.0	810317	197.08	53.13	293.15	9.49	0.1134	2.9994	38 8	M
1981	EP4	16.5	810317	9.81	317.53	209.80	11.59	0.0487	2.7767	38 9	M
1981	EQ4	15.5	810317	24.91	277.10	228.12	8.49	0.1476	3.1104	38 0	M
1981	ER4	15.5	810317	69.86	243.90	211.46	10.05	0.1148	2.9478	41 0	M
1981	ES4	15.0	810317	178.26	34.86	326.76	15.88	0.1809	2.6146	38 9	M
1981	EU4	14.0	810317	262.96	23.81	261.21	9.00	0.0713	2.9874	38 0	M
1981	EV4	18.5	810317	336.44	276.00	291.69	5.11	0.1174	2.2349	38 9	M
1981	EW4	14.5	810317	71.85	246.19	208.68	12.34	0.1041	2.8651	38 0	M
1981	EX4	14.0	810317	228.19	113.42	207.80	19.98	0.1320	3.1055	38 0	M
1981	Ey4	16.0	810317	202.48	29.62	311.61	9.18	0.1111	2.6201	38 9	M
1981	EZ4	17.0	810317	301.63	290.33	313.28	9.41	0.0588	2.5646	38 0	M
1981	EA5	16.0	810317	99.60	166.82	256.64	8.67	0.1559	2.7419	38 8	M
1981	EB5	16.0	810317	33.96	190.20	309.17	7.97	0.0847	2.7990	38 0	M
1981	EC5	17.5	810317	194.05	73.52	272.72	6.14	0.0591	2.1830	38 9	M
1981	ED5	17.0	810317	304.32	347.02	263.17	7.38	0.1444	2.3871	38 0	M
1981	EF5	16.0	810317	67.03	224.22	224.11	10.48	0.2107	2.6001	38 0	M
1981	EG5	15.5	810317	214.76	11.21	320.52	8.69	0.1283	2.4139	38 0	M
1981	EH5	15.5	810317	184.52	117.31	238.95	8.96	0.0529	3.0765	38 6	M
1981	EJ5	16.0	810317	267.53	9.17	286.61	4.94	0.2261	2.1997	38 0	M
1981	EK5	15.5	810317	303.62	315.78	295.14	6.72	0.1397	3.1558	38 0	M
1981	EL5	16.0	810317	84.06	199.85	246.24	9.71	0.0932	3.0505	38 0	M
1981	EM5	15.5	810317	66.69	196.65	272.03	8.16	0.0521	3.0936	38 0	M
1981	EN5	17.0	810317	54.53	229.98	244.63	5.15	0.0981	2.4819	38 8	M
1981	EO5	18.0	810317	277.83	30.33	237.30	5.88	0.0569	2.2755	38 7	M
1981	EP5	15.0	810317	203.10	19.48	325.13	11.89	0.1907	2.5773	38 0	M
1981	EQ5	16.5	810317	46.41	211.57	262.68	4.43	0.1868	2.3851	38 0	M
1981	ER5	15.5	810317	233.90	52.89	273.84	7.32	0.2663	2.3876	38 0	M
1981	ES5	16.0	810317	153.38	76.45	299.31	10.04	0.1863	2.6514	33 6	M
1981	ET5	16.5	810317	181.69	141.64	212.62	10.80	0.0534	2.5779	36 7	M
1981	EU5	18.5	810317	25.74	251.11	252.10	6.04	0.1337	2.3676	33 7	M
1981	EV5	16.0	810317	72.28	226.55	233.86	8.97	0.0413	3.0849	33 7	M
1981	EW5	15.0	810317	110.29	189.23	223.30	12.58	0.1480	2.5553	33 0	M
1981	EX5	15.5	810317	174.96	135.33	226.37	10.02	0.0828	3.0759	33 7	M
1981	EY5	15.0	810317	159.51	56.01	317.31	11.78	0.1705	3.1570	33 5	M
1981	EZ5	15.5	810317	13.99	270.33	248.34	7.99	0.1596	3.9648	33 7	M
1981	EA6	15.5	810317	194.75	85.29	258.85	6.20	0.0429	3.0921	33 8	M
1981	EB6	15.0	810317	146.69	57.62	324.36	12.09	0.1950	3.1298	33 6	M
1981	EC6	16.5	810317	232.84	18.43	304.37	8.94	0.2204	2.3937	33 5	M
1981	ED6	17.0	810317	287.52	65.81	218.79	11.59	0.2940	2.5605	33 7	M
1981	EE6	17.0	810317	326.79	320.96	261.49	6.76	0.1440	2.7063	33 6	M
1981	EF6	16.5	810317	67.37	158.77	300.71	9.23	0.1165	2.9737	33 7	M
1981	EG6	18.0	810317	26.34	194.92	295.12	6.52	0.3024	2.9081	33 6	M
1981	QV2	15.0	810824	346.12	228.82	134.94	9.18	0.1223	2.6297	17 0	M
1981	QW2	16.0	810824	21.44	271.90	40.13	3.74	0.1753	2.2135	17 0	M
1981	RS1	16.0	810824	21.37	273.55	19.96	2.66	0.0930	2.1660	4 0	M
1982	FT	17.0	820401	344.92	234.48	348.33	20.37	0.2837	1.7732	59 9	M
1982	FM1	14.0	820312	172.46	96.46	262.84	4.81	0.0765	2.2089	2 6	M
1982	FS2	16.0	820312	23.80	321.33	172.08	6.09	0.3516	2.5347	2 5 3	M
1982	KA	16.5	820531	349.30	175.00	82.74	24.94	0.2219	2.3964	43 0	B
1982	KM	14.5	820531	320.50	71.32	228.48	4.90	0.1780	2.3802	28 8	B
1982	MA	16.0	820620	338.52	132.21	167.43	0.26	0.1596	2.4964	9 0	M
1982	MH	16.5	820620	123.49	97.46	55.50	3.52	0.0261	2.2418	6 8	M

Note 1: double designations 1978 PS2 = 1978 RX2 (M); 1978 PW2 = 1978 RW2

(M); 1978 PX2 = 1978 SF4 (M); 1978 PA3 = 1978 RP6 (M); 1978 PC3 =

1978 RA3 = 1978 TX (M); 1978 PD3 = 1978 RZ2 (M). 2: the previously published orbit for this object (MPC 5834) is based on observations that do not belong together and it should therefore be discarded. 3: e assumed.

## ORBITAL ELEMENTS BY T. URATA, SHIMIZU, JAPAN.

The following orbital elements are from NOC 1336-1337, 1339-1342 and 1344. The identifications are by T. Urata unless otherwise stated.

(2711)\* 1978 QB2 = 1953 XM1 = 1970 AE1 = 1971 FV

Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory,

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	258.44531		(1950.0)		P		Q
n	0.18878878	Peri.	205.62498	+0.99578146		-0.06183229	
a	3.0094370	Node	157.60535	+0.07646273		+0.96761032	
e	0.0933624	Incl.	10.25007	-0.05072204		+0.24475915	
P	5.22	B(1,0)	12.7				

Residuals in seconds of arc

531204	031	1.9+	0.9-	710319	095	1.5-	3.3+	820428	688	1.6+	2.5-
531206	031	(0.9-	62.4+)	780831	095	0.7-	1.1+	820519	801	0.0	3.3+
531209	031	0.1-	0.6-	780905	095	0.8-	0.8+	820523	372	1.4-	0.5-
531209	031	0.8-	1.0+	780927	095	0.4+	0.7-	820523	372	1.2+	0.2-
700107	805	0.1+	0.1+	820428	688	0.2+	2.4-				

1975 VS5 = 1975 XM4 = 1978 QG1 = 1978 RG4

The double designation 1975 VS5 = 1975 XM4 is by B. G. Marsden (MPC 6880). The identifications 1975 VS5 = 1978 QG1 = 1978 RG4 were found independently by L. D. Schmadel.

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

M	8.73800		(1950.0)		P		Q
n	0.29099137	Peri.	244.73958	+0.62048612		-0.78381348	
a	2.2553650	Node	166.81668	+0.75332870		+0.58682108	
e	0.1570871	Incl.	6.33559	+0.21792854		+0.20316854	
P	3.39	B(1,0)	15.5				

Residuals in seconds of arc

751103	095	0.7-	0.4+	751203	095	0.5-	0.4+	780905	095	1.0-	0.1+
751112	095	1.1+	0.8-	780831	095	1.0+	0.1-				

1978 VB5 = 1980 JM

The identification is by H. Oishi (JAM 1168).

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

M	232.43694		(1950.0)		P		Q
n	0.26865812	Peri.	137.57153	-0.87098474		+0.47628078	
a	2.3786850	Node	71.24274	-0.47798650		-0.76467076	
e	0.1043548	Incl.	7.31677	-0.11364196		-0.43409129	
P	3.67	B(1,0)	15.0				

Residuals in seconds of arc

781105	675	0.5-	0.1-	781130	675	1.9+	0.2+	800512	046	3.7+	0.1+
781106	675	1.8+	0.8-	781130	675	0.9-	0.1+	800513	046	1.4-	0.3+
781107	675	0.2-	0.3+	800511	046	1.2-	0.2+	800513	046	0.4-	0.3-
781108	675	1.3-	0.3+	800511	046	1.9+	2.0 +	800514	046	0.5+	2.8-
781129	675	0.8-	0.2-	800512	046	2.3-	0.7-	800514	046	0.9-	1.0+

1979 QU9 = 1973 SN2

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

M	119.22341		(1950.0)		P		Q
n	0.17004140	Peri.	72.98926	+0.36481986		-0.93073315	
a	3.2267634	Node	355.37366	+0.68895677		+0.28815976	
e	0.0579819	Incl.	18.31311	+0.62629469		+0.22516608	
P	5.80	B(1,0)	12.0				

## Residuals in seconds of arc

730922 095	1.0-	0.5+	730928 095	2.8+	1.2-	790924 095	0.0	0.3+
730923 095	0.0	0.1+	790827 095	0.4+	1.1-			
730925 095	0.8-	1.4+	790902 095	0.1+	1.4+			

1979 SD7 = 1981 GS

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

M 212.60899		(1950.0)		P		Q
n 0.27227061	Peri.	93.64948	-0.18264023			-0.98314998
a 2.3575979	Node	6.88834	+0.87474942			-0.16604928
e 0.1416143	Incl.	3.66164	+0.44883850			-0.07644448
P 3.62	B(1,0)	14.5				

## Residuals in seconds of arc

790923 095	0.4+	0.8-	810405 688	0.4+	0.5+	810409 688	0.2+	1.1-
791014 095	0.5-	0.2+	810405 688	0.9-	0.3-	810409 688	0.3+	0.7-
791110 095	0.5-	0.5-	810407 688	0.8+	0.0			
791111 095	1.3+	0.1+	810407 688	1.3-	0.7+			

1980 TB4 = 1950 LK = 1958 HG = 1964 UH = 1966 FD = 1972 TY

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

M 65.74431		(1950.0)		P		Q
n 0.24284669	Peri.	279.53686	-0.61042977			-0.79027589
a 2.5443809	Node	208.29836	+0.76362869			-0.56931081
e 0.1537182	Incl.	6.45397	+0.21034905			-0.22660366
P 4.06	B(1,0)	13.0				

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

500606 760	0.8+	0.6-	660328 760	(21.7+ 16.6+)X	801010 675	0.5-	1.0-	
500606 760	1.0-	0.0	721007 095	0.7+	2.6-	801014 330	0.9+	0.6+
580426 839	0.2+	0.7-	801007 675	1.0-	3.9+	801027 330	1.1+	0.2+
580426 839	0.2-	0.6+	801008 675	0.9-	1.7-	801031 330	0.5-	0.3+
641031 760	(0.03-	0.01-)X	801009 675	0.2+	0.3-			

1982 FE1 = 1941 BK = 1948 XH = 1980 TR5

The key identification 1982 FE1 = 1980 TR5 was found independently by T. Furuta (JAM 1168).

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

M 82.35909		(1950.0)		P		Q
n 0.24189120	Peri.	146.29365	-0.45003964			-0.89124459
a 2.5510768	Node	330.33904	+0.79221212			-0.36945925
e 0.1763323	Incl.	6.50946	+0.41214594			-0.26302651
P 4.07	B(1,0)	13.5				

## Residuals in seconds of arc

410122 062	(0.7-	5.7+)X	820323 046	2.8+	1.4+	820414 046	0.2+	0.9-
410130 062	(75.9+	20.6-)X	820323 046	1.0+	0.1-	820414 046	0.6-	0.1+
481210 012	0.0	0.0	820326 046	1.7-	0.5-	820415 046	2.2-	1.4+
801007 675	1.6+	0.7-	820326 046	0.6+	0.5-	820415 046	0.3-	0.9-
801008 675	1.7-	0.4+	820327 046	0.5+	0.4-	820416 046	0.4-	0.7+
801009 675	0.5+	0.5-	820327 046	0.4+	1.1-	820416 046	1.2-	0.1+

\* \* \* \* \*

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

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

(2712)\* 1937 YD = 1951 EA = 1971 QO2 = 1978 XZ = 1980 KF

Discovered 1937 Dec. 29 by G. Kulin at Budapest. The key identification 1937 YD = 1980 KF is by F. Bowman. The identification 1980 KF = 1978 XZ is by E. Bowell.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 340.84105	(1950.0)	P	Q
n 0.31008440	Peri. 333.97977	-0.80225991	-0.59696906
a 2.1618030	Node 169.36589	+0.55015378	-0.74104782
e 0.0363151	Incl. 0.81976	+0.23175385	-0.30736957
P 3.18	B(1,0) 15.0		

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

371229 053	1.5- 0.7-	781206 675	0.7- 0.9-	800524 809	0.8+ 0.2-
371229 024	(0.05+ 0.03+)	800522 809	0.3+ 0.3+	800602 809	0.7- 0.0
380104 053	4.2+ 2.4-	800522 809	0.9+ 0.4+	800602 809	1.1- 0.1-
380105 053	1.0- 6.1+	800522 809	0.5+ 0.6+	800603 809	0.0 0.4+
380105 053	1.7- 1.4+	800523 809	0.2+ 0.0	800603 809	0.5+ 0.0
510306 024	1.4+ 2.1-	800523 809	0.4+ 0.4-	800603 809	0.6+ 0.2+
510313 024	1.5- 0.7-	800523 809	0.8+ 0.3-	800604 809	0.3- 0.0
710819 808	0.0 1.2+	800524 809	1.4- 0.3+	800604 809	1.2- 0.4+
781203 675	0.2- 0.1+	800524 809	0.3- 0.3+	800604 809	0.4- 0.4+
781203 675	0.2- 0.3+	800524 809	0.0 0.2+	800612 809	0.3- 0.5+
781205 675	2.7+ 1.2+	800524 809	0.6+ 0.3+	800612 809	0.1+ 0.0
781206 675	1.3- 1.3-	800524 809	0.8+ 0.0	800612 809	0.3- 0.4+

(2713)\* 1938 EA = 1935 QZ = 1958 HE = 1969 RX1 = 1969 TF8 = 1977 EA1  
 = 1977 FB3 = 1979 SS9 = 1982 HG2

Discovered 1938 Feb. 19 by E. Delporte at Uccle.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 319.04021	(1950.0)	P	Q
n 0.20415508	Peri. 291.92941	+0.02845910	+0.99956129
a 2.8564673	Node 339.69624	-0.90811849	+0.02242399
e 0.0263526	Incl. 1.35472	-0.41774500	+0.01934907
P 4.83	B(1,0) 12.5		

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

350820 078	(0.09- 0.05+)X	380307 012	0.4+ 0.2-	790928 095	1.6- 0.7+
350824 078	(40.7+ 41.4-)X	580424 024	0.5- 0.3+	791016 095	0.8- 1.4+
380219 012	(14.5- 5.8+)	580426 024	0.7+ 0.6-	791111 095	0.2+ 0.6-
380219 012	4.9- 3.3+	690913 095	1.4+ 0.7-	791116 095	0.1+ 0.4-
380221 012	(10.4- 3.9+)	691007 095	0.9- 2.5+	820420 704	0.6- 1.5+
380222 012	0.3+ 1.2+	770313 095	2.5+ 1.4-	820426 704	1.2- 1.0+
380225 012	1.9+ 2.3-	770326 095	2.8+ 0.4-	820427 704	0.1+ 2.7+
380303 012	1.5+ 0.2-	790922 095	0.2- 1.6+	820428 704	1.5- 0.4-

(2714)\* 1938 GC = 1962 QF = 1972 ND

Discovered 1938 Apr. 5 by H. Alikoski at Turku.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 11.07422	(1950.0)	P	Q
n 0.29328803	Peri. 144.00954	+0.13787425	+0.98748000
a 2.2435710	Node 133.77667	-0.93168985	+0.15556204
e 0.2057772	Incl. 6.09318	-0.33607247	-0.02614767
P 3.36	B(1,0) 14.5		

Residuals in seconds of arc

380405 062	2.0+ 1.2+	380427 062	4.9- 2.3+	790924 095	0.9+ 1.6-
380405 062	0.4- 1.9+	380430 062	1.9+ 1.6-	820526 801	0.9- 0.1+
380406 062	0.9+ 0.4-	380502 062	3.0+ 2.1-	820617 046	0.2- 0.8-
380408 062	0.5+ 1.1-	620830 760	1.0- 0.1-	820617 046	0.1- 0.8-
380420 062	1.4- 0.9+	620830 760	1.1- 1.0+	820619 801	1.8+ 0.3-
380421 062	1.1+ 1.1-	720715 095	1.9- 1.6+	820619 688	0.8- 2.9-
380423 062	4.0- 3.1+	720718 095	3.2+ 1.6+	820619 688	1.1- 2.1-



(2715)\* 1938 US = 1933 SN = 1951 PM = 1951 RN1 = 1955 MF = 1956 TT  
 = 1978 NZ2 = 1982 KL

Discovered 1938 Oct. 22 by Y. Vaisala at Turku. The double designation  
 1951 PM = 1951 RN1 is by O. Kippes (MPC 1968).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	291.54844		(1950.0)		P		Q
n	0.21772952	Peri.	143.49851		+0.95976182		+0.27779800
a	2.7364731	Node	200.48847		-0.27731237		+0.91458542
e	0.1499818	Incl.	6.73595		-0.04421649		+0.29387375
P	4.53	B(1,0)	13.0				

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

330925	012	1.9-	0.3+	510806	711	3.2+	2.2-	Y	780711	095	0.0	0.7+
381022	062	0.2+	0.0	510904	094	(20.7-	3.1+)	X	780809	095	0.6-	0.9+
381022	062	0.2-	0.1+	510908	094	(8.3-	49.6+)	X	820521	688	1.4-	0.5+
381102	062	1.4+	0.4+	550619	760	(0.05+	0.01+)	X	820521	688	1.5+	0.6-
381115	062	0.6-	0.2+	561011	760	(44.3-	42.6+)	X				
381126	062	0.7-	0.4-	780709	095	1.0-	0.5+					

(2716)\* 1939 TM = 1968 QR = 1972 XP1 = 1974 FP

Discovered 1939 Oct. 7 by Y. Vaisala at Turku.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	272.29791		(1950.0)		P		Q
n	0.27034231	Peri.	163.77037		+0.92665279		-0.37041716
a	2.3687908	Node	218.16839		+0.33232478		+0.88687785
e	0.1061548	Incl.	5.95153		+0.17571238		+0.27611374
P	3.65	B(1,0)	14.5				

Residuals in seconds of arc

391007	062	2.3-	0.8+	680827	095	2.2+	0.6+		790928	095	0.2+	0.7-
391018	062	1.3+	0.0	721201	095	1.9-	1.6-		820527	801	0.7-	0.9-
391018	062	0.8+	3.2+	740322	805	1.8+	1.3-		820625	801	2.2-	1.1+
391020	062	0.4-	0.6+	740323	805	0.9+	2.1+					
391111	062	1.3-	0.3-	790922	095	1.3+	0.7-					

(2717)\* 1940 WJ = A909 GH = 1942 EU = 1952 DL = 1952 DY2 = 1952 FO  
 = 1953 UU = 1953 VQ = 1955 EN = 1963 UC = 1963 VM  
 = 1966 QD = 1976 SO7 = 1982 HM1

Discovered 1940 Nov. 29 by L. Oterma at Turku. The double designations  
 1952 DY2 = 1952 FO, 1953 UU = 1953 VQ and 1963 UC = 1963 VM were found by  
 O. Kippes (MPC 1084, 2324, 2808).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	305.71988		(1950.0)		P		Q
n	0.29898503	Peri.	162.81924		+0.84159825		+0.53988703
a	2.2149797	Node	164.47631		-0.50199173		+0.79235568
e	0.2175481	Incl.	3.27921		-0.19929044		+0.28406770
P	3.30	B(1,0)	13.5				

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

090407	000	(43.1-	1.3+)	520225	020	(0.02+	0.05-)	X	631017	760	(32.6-	16.9-)	X
090408	000	2.3+	1.8+	520226	711	3.2-	4.2-	Y	631022	760	0.6-	0.9+	
090409	000	5.2+	0.4+	520226	711	2.9-	3.5-	Y	631111	760	1.9+	0.1-	
090410	000	4.0+	0.8+	520318	210	(45.1+	7.0-)	X	631111	760	2.4+	0.4-	
090414	000	1.7+	1.5+	520323	210	(21.7-	13.0-)	X	660819	095	0.3-	1.4+	
090416	000	2.2+	0.9+	520329	210	(1.8-	79.6-)	X	660915	095	3.7-	3.8+	
090418	000	(2.0+	5.8-)	531031	760	0.5-	0.0		760925	095	2.1+	2.1-	
401129	062	1.5-	0.3+	531031	760	1.4-	0.4-		760928	095	4.8+	2.0-	
401204	062	1.9-	0.3+	531102	760	0.6-	2.4-		820418	688	1.4+	3.8-	
401227	062	0.3+	2.4+	531102	760	0.0	3.8-		820418	688	0.6+	1.0-	
401228	062	0.7+	1.9+	550314	760	2.4-	0.5+		820428	688	1.0-	1.0+	
420312	062	2.0-	0.9-	550314	760	0.2-	0.3+		820428	688	0.7-	0.0	

(2718)\* 1951 OM = 1935 SL = 1972 JT1 = 1974 WB1 = 1979 SF1

Discovered 1951 July 30 by E. L. Johnson at Johannesburg.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	243.88410		(1950.0)		P		Q
n	0.18002607	Peri.	259.90771		+0.56850726		+0.82246969
a	3.1063171	Node	44.75520		-0.74407555		+0.52366349
e	0.1676976	Incl.	1.50754		-0.35092887		+0.22208141
P	5.47	B(1,0)	13.0				

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

350921	094(36.4+ 28.8-)X	510902	839	0.5-	0.6-	790928	330	3.3+	1.4+
351002	094(0.03- 0.02-)X	720509	095	3.0-	0.6+	790928	095	1.1-	0.4-
510730	078 0.4- 0.1-	720511	095	2.4+	2.1-	791016	095	0.1-	0.2-
510808	078 1.2+ 1.3+	741118	095	0.2+	0.5-	791111	095	0.1+	1.1-
510901	839 0.2- 1.1-	790922	095	1.0-	0.4+	791116	095	1.1-	1.1-

(2719)\* 1965 SU = A907 VJ = 1962 XG = 1973 AH2 = 1975 WU = 1978 RQ5

= 1978 TC4 = 1980 KT = 1981 QU

Discovered 1965 Sept. 22 at the Purple Mountain Observatory. The key identification 1965 SU = 1981 QU is by O. Kippes and F. Bowman, who found it independently.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	10.33693		(1950.0)		P		Q
n	0.30453083	Peri.	320.37241		+0.07900380		-0.99683433
a	2.1880062	Node	125.09450		+0.91731617		+0.06918968
e	0.1231979	Incl.	0.62523		+0.39024279		+0.03916764
P	3.24	B(1,0)	14.5				

Residuals in seconds of arc

071107	024 0.6+ 0.4-	751128	095	1.5+	0.3-	810901	704	1.1+	0.8-
621201	760 1.2- 0.1+	780906	095	1.0-	1.3+	810902	704	2.2+	0.7+
621201	760 2.8- 1.0-	781004	095	1.0-	0.3+	810903	704	4.5+	0.5-
650922	330 1.5+ 2.7-	800517	095	1.6-	0.3+	810904	046	1.2+	0.7+
650923	330 1.9+ 0.1+	810824	046	1.6-	1.0+	810904	046	1.2+	0.6+
651017	330 1.2+ 1.2+	810824	046	0.8-	1.2+	810905	046	1.3-	1.8-
651020	330 0.6- 1.2+	810828	046	0.6+	1.1-	810905	046	1.0-	1.4-
651024	330 3.3- 1.0+	810828	046	1.4-	1.5-				
730101	095 1.5+ 1.6-	810830	704	2.2-	0.9+				

(2720)\* 1972 RV3 = 1965 UN1

Discovered 1972 Sept. 6 by L. V. Zhuravleva at the Crimean Astrophysical Observatory. The identification is by E. Bowell (MPC 5276).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	290.50199		(1950.0)		P		Q
n	0.27700247	Peri.	235.80910		+0.97999054		+0.19190575
a	2.3306673	Node	113.07707		-0.15843627		+0.91273713
e	0.2031053	Incl.	3.29187		-0.12048441		+0.36067036
P	3.56	B(1,0)	15.5				

Residuals in seconds of arc

651018	330 0.4- 0.4+	720909	095	1.1+	0.2+	790819	095	1.1-	1.3+
651021	330 2.1- 0.5-	721007	095	1.1+	0.7-	790826	095	1.2+	0.2-
720906	095 3.3+ 0.5+	790731	095	3.2-	1.3-	820526	801	0.3+	1.0-

(2721)\* 1973 SP2 = 1951 YY1 = 1956 SG = 1956 TR = 1979 SK9 = 1981 AE4

Discovered 1973 Sept. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identification 1973 SP2 = 1968 XB (NOC 975) is invalid.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	188.89800		(1950.0)		P		Q
n	0.17112836	Peri.	277.64812	+0.99835215		-0.04225645	
a	3.2130789	Node	84.77949	+0.05429710		+0.91454064	
e	0.1985772	Incl.	2.23435	-0.01856932		+0.40228074	
P	5.76	B(1,0)	13.0				

Residuals in seconds of arc

511227	711	2.5-	3.4+	Y	730925	095	1.1-	0.7+	791116	095	1.3+	1.1-
511227	711	2.1+	5.5+	Y	730928	095	2.1+	0.4+	810108	381	(5.2+	1.3+)
560930	760	(86.7+	53.8+)	X	790922	095	0.1-	0.5+	810108	381	1.7-	2.8-
561011	760	(5.7+	28.5-)	X	790928	095	0.2-	0.3+	810108	381	1.1+	3.2-
730922	095	1.4-	0.7-		791016	095	0.6-	0.2-	810108	381	0.6-	2.5-
730923	095	0.6+	0.8-		791111	095	0.7+	2.2-				

(2722)\* 1976 GM2 = 1978 TS2

Discovered 1976 Apr. 1 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	7.53184		(1950.0)		P		Q
n	0.17288965	Peri.	112.75733	-0.40771353		+0.91286143	
a	3.1912198	Node	133.16339	-0.84807058		-0.36992371	
e	0.1597868	Incl.	1.67335	-0.33844638		-0.17274389	
P	5.70	B(1,0)	13.5				

Residuals in seconds of arc

760330	552	1.2-	2.2-		760404	095	0.3+	0.5-	820522	801	1.2+	0.3+
760330	552	2.8-	0.3-		760501	095	0.8-	0.8+	820526	688	2.7-	0.2+
760401	095	1.9+	1.1+		760502	095	1.7-	0.3-	820526	688	1.3-	0.4+
760403	552	1.5+	0.8+		781003	095	0.4-	0.4+	820617	688	0.9-	0.1-
760403	552	0.8+	1.4+		781007	095	0.2+	0.1+	820617	688	1.4-	0.2-
760403	552	0.7+	1.6-		820425	688	1.8+	0.2+	820618	688	1.0+	0.4-
760403	552	1.2+	1.0+		820425	688	0.7+	0.5-	820618	688	1.8+	0.3+

(2723)\* 1978 QL2 = 1951 XA1 = 1962 WY1

Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	233.73213		(1950.0)		P		Q
n	0.17719443	Peri.	225.74704	+0.94796263		-0.31795584	
a	3.1393230	Node	152.77982	+0.30139155		+0.87951314	
e	0.1824230	Incl.	2.06222	+0.10261567		+0.35406314	
P	5.56	B(1,0)	13.5				

Residuals in seconds of arc

511205	711	0.1-	0.1+	Y	780823	414	1.4-	2.5+	780905	095	2.2-	0.6-
621130	760	1.3-	1.0-		780824	414	0.9+	0.0	780927	095	0.2-	1.4-
621130	760	1.4-	0.0		780824	414	1.6+	0.3-	820424	801	1.2-	4.1+
621203	760	0.8+	0.1-		780826	414	0.9+	0.3+	820518	801	1.1+	4.3-
621203	760	1.8+	1.1+		780826	414	0.8+	0.3-				
780823	414	0.4+	0.4+		780831	095	0.6-	0.5-				

(2724)\* 1978 RZ5 = 1948 TF1 = 1956 EF = 1972 LB = 1974 YQ = 1976 GO

Discovered 1978 Sept. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identifications 1978 RZ5 = 1948 TF1 = 1974 YQ are by P. Herget.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	348.71077		(1950.0)		P		Q
n	0.19712563	Peri.	141.18049	+0.42015695		+0.90693135	
a	2.9239772	Node	153.62193	-0.84882452		+0.40475728	
e	0.1207580	Incl.	3.96467	-0.32088170		+0.11682066	
P	5.00	B(1,0)	12.5				

## Residuals in seconds of arc

481010	012	0.4-	0.9+	760401	095	0.5+	1.6+	781102	095	0.7-	2.1+
481026	012	0.5-	0.5-	760404	095	1.2-	1.0+	820527	801	1.9-	0.5+
560309	024	1.3+	0.6-	780913	095	0.6+	0.2+	820619	688	0.5+	0.2-
720607	095	1.0-	0.7-	780927	095	0.4-	0.7-	820619	688	1.1+	0.1+
720614	095	0.9+	0.5-	781003	095	0.2+	0.3-	820625	801	0.3+	1.6+
741220	330	(1.4-	22.8-)	781007	095	0.6+	0.4+				

(2725)\* 1978 VG3 = 1941 WW = 1943 GA = 1959 FA = 1962 XB = 1969 EE1  
= 1980 FA12

Discovered 1978 Nov. 7 by E. Helin and S. J. Bus at Palomar. The key identification 1978 VG3 = 1962 XB is by E. Bowell (MPC 5418). The identification 1978 VG3 = 1980 FA12 is by B. G. Marsden.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 239.62731	(1950.0)		P	Q
n 0.18688120	Peri. 26.20677		+0.05263386	-0.97015612
a 3.0298815	Node 61.59794		+0.86237393	-0.07535838
e 0.1549569	Incl. 15.61011		+0.50352842	+0.23047391
P 5.27	B(1,0) 12.0			

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

411119	057(0.00+ 0.03+)Y	621201	760	0.7+	0.4-	781107	675	0.2-	0.3-		
430404	024	1.2-	3.0+	621202	760	1.3+	0.4+	781108	675	1.8-	0.4+
590316	760	0.4+	0.8-	621202	760	1.8+	0.3 +	781129	675	0.6+	1.4-
590316	760	1.2+	2.5+	690313	095	1.5-	4.1-	800316	095	2.4+	2.3-
590405	760	0.8+	0.3+	781105	675	1.8-	0.1-	810505	688	2.1-	3.1-
621201	760	0.9+	0.1-	781106	675	1.0-	0.5-	810505	688	0.4-	1.9-

(2726)\* 1979 SE9 = A906 QE = 1952 BR1 = 1955 UK1 = 1969 RC1 = 1972 GJ1  
= 1974 SH1 = 1974 TN

Discovered 1979 Sept. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory. Contrary to the implication on MPC 4574, the double designation 1974 SH1 = 1974 TN is valid.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 191.92075	(1950.0)		P	Q
n 0.20348615	Peri. 45.26784		+0.75355349	-0.65738361
a 2.8627240	Node 355.83135		+0.59514293	+0.68348176
e 0.0714822	Incl. 1.56224		+0.27921680	+0.31733181
P 4.84	B(1,0) 13.5			

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

060822	024	0.1-	4.0-	720410	805	0.2-	0.7-	790922	095	1.7-	0.9+
520128	711	0.9+	6.0-	Y 720410	805	1.2-	0.6-	790928	095	4.5-	0.7-
551025	760(0.05+ 0.00+)X	740919	095	0.5+	0.2-	791016	095	0.0	1.0-		
690913	095	2.4+	4.1-	740921	095	1.8+	0.3+	791116	095	2.5-	0.4+
720409	805	2.1-	0.4+	740923	095	4.5+	0.9+				
720409	805	0.1-	1.7-	741009	095	1.5+	0.4+				

(2727)\* 1979 SO9 = 1939 DG = 1943 EX = 1949 QL1 = 1952 HG3 = 1975 VE10  
= 1977 FR2

Discovered 1979 Sept. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 151.64980	(1950.0)		P	Q
n 0.23380770	Peri. 280.45851		-0.53613663	-0.84381836
a 2.6095373	Node 202.00960		+0.79645116	-0.49664604
e 0.1015074	Incl. 3.51555		+0.27968384	-0.20325670
P 4.22	B(1,0) 13.5			

## Residuals in seconds of arc

390217	020	(50.4+ 29.6+)	390320	020	(6.8+ 9.2-)	751106	095	1.8+	1.4-
390314	020	3.7- 0.2+	430307	062	0.9+ 2.1+	770326	095	1.0+	0.8+
390314	062	(0.5- 1.2+)	430307	062	0.6- 0.7-	790922	095	1.1-	1.4+
390314	062	(0.7+ 1.1+)	430307	062	1.6+ 1.2-	790928	095	2.0-	1.2-
390314	020	0.6+ 0.8-	490827	760	0.8- 1.2-	791016	095	0.7+	0.2+
390317	062	(2.5+ 0.4+)	490827	760	2.7+ 0.2+	791111	095	0.4-	2.2+
390320	020	0,0 0.6-	520427	711	0.4+ 0.4- Y	791116	095	0.8-	2.0-

(2728)\* 1979 ST9 = 1935 DA = 1936 LF = 1936 MD = 1940 NA = 1964 VT2  
 = 1966 CV = 1972 XJ2 = 1972 YM1 = 1973 AF3 = 1978 JO2  
 = 1981 BP = 1982 HJ1

Discovered 1979 Sept. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	329.49130	(1950.0)	P	Q
n	0.25586816	Peri. 97.54110	+0.47548193	+0.87957743
a	2.4573021	Node 200.87325	-0.82390734	+0.43880708
e	0.1670556	Incl. 2.59619	-0.30837253	+0.18382568
P	3.85	B(1,0) 13.5		

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

350226	012	2.5- 2.1+	400714	057	(30.1+ 6.9+)X	780509	095	1.6-	0.2+
360614	078	(75.9+ 12.6-)X	400715	057	(5.3+ 0.6+)X	790922	095	(1.2- 20.5-)	
360619	078	(52.2+ 19.5-)X	400728	119	(0.03+ 0.01+)X	790928	095	1.6-	1.5-
360624	078	(61.7+ 44.2+)X	400728	094	(26.5- 58.8-)X	791016	095	1.5-	0.1+
360708	078	(6.4+ 32.7-)X	400803	094	(92.2- 35.5-)X	791111	095	0.0	1.5-
360712	078	(30.3+ 41.9-)X	400807	094	(40.7+ 25.2+)X	791116	095	0.1+	1.4-
360717	078	(78.7+ 19.7-)X	641112	330	9.3+ 4.3+	810130	688	2.0+	0.5+
360722	078	(66.0+ 32.9+)X	660214	330	0.6+ 0.3-	810130	688	3.3-	1.1+
400709	094	(13.9+ 26.5+)X	721202	095	6.9- 1.4+	820424	688	1.5+	2.6-
400711	057	(10.2+ 3.7-)X	721230	095	4.0+ 4.8-	820424	688	0.6+	1.1-
400713	094	(0.09+ 0.03-)X	730102	095	0.4- 0.0				

(2729)\* 1979 UA2 = 1934 NN = 1952 DN1 = 1969 UR1 = 1975 XZ5 = 1981 BO

Discovered 1979 Oct. 18 at the Purple Mountain Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	258.18779	(1950.0)	P	Q
n	0.20054885	Peri. 262.08690	+0.82844114	+0.55785726
a	2.8906084	Node 63.99223	-0.48952160	+0.76441817
e	0.0691742	Incl. 3.17678	-0.27212842	+0.32320292
P	4.91	B(1,0) 13.0		

## Residuals in seconds of arc

340709	078	(0.9- 31.0-)X	790928	095	0.1- 1.0+	791116	095	0.9+	1.4+
520219	711	0.1+ 0.7- Y	791018	330	(17.6+ 6.2+)	791119	330	1.0+	0.5+
691017	095	2.0+ 6.8-	791021	330	0.8- 1.4+	810130	688	0.7-	0.8+
751204	095	1.4+ 4.2+	791027	330	1.3- 2.2+	810130	688	0.1+	2.8+
790922	095	0.8- 0.9+	791111	095	0.6- 0.1-				

(2730)\* 1981 QH = 1935 FQ = 1935 HC = 1963 SP = 1972 TJ5 = 1975 EM1

Discovered 1981 Aug. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The double designation 1935 FQ = 1935 HC is by C. Jackson (UOC 4, 213)

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	139.20361	(1950.0)	P	Q
n	0.21957407	Peri. 272.18772	+0.11789104	+0.99298562
a	2.7211261	Node 4.61191	-0.86064868	+0.10669942
e	0.1299584	Incl. 6.43702	-0.49536405	+0.05093907
P	4.49	B(1,0) 13.0		

## Residuals in seconds of arc

350331	078(30.2- 39.3-)X	750306	095	0.1+	0.3-	810922	046	0.3+	2.0+
350408	078 (2.3+ 27.0-)X	750312	095	1.8+	0.9-	810925	046	0.0	0.6-
350423	078(46.6- 17.5-)X	750315	095	0.5-	3.8+	810925	046	1.0-	1.4-
350504	078(12.1+ 30.8-)X	800510	095	0.4+	0.7+	811005	046	1.1+	0.8+
630922	760 0.4- 0.8+	810830	688	0.2-	0.7-	811005	046	0.9+	1.7+
630922	760 1.0- 1.2+	810830	688	0.1-	1.4-				
721006	095 0.8+ 0.0	810922	046	1.9-	0.7+				

(2731)\* 1982 KJ = 1937 GO = 1966 SA = 1978 TM8 = 1981 AR = 1981 FO

Discovered 1982 May 21 by P. Wild at Zimmerwald.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	338.49655	(1950.0)	P	Q
n	0.17486885	Peri. 127.45805	+0.15825583	+0.98114791
a	3.1670949	Node 151.05470	-0.96275305	+0.17827131
e	0.2099821	Incl. 13.24947	-0.21922968	-0.07461980
P	5.64	B(1,0) 13.0		

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

370408	094(0.00+ 0.03-)X	810110	688	0.6+	0.5+	820609	026	1.4-	0.6+
660918	095 0.0 0.3+	810114	688	0.8-	0.3-	820617	026	0.1-	0.1-
781008	095 0.7+ 0.1+	810328	801	1.2+	0.9+	820624	026	1.1+	0.3+
781101	095 0.4- 1.2-	820521	026	0.1+	0.1-				
810110	688 1.2- 0.8-	820525	026	0.2+	1.7-				

1938 SL = 1977 TQ3

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

M	152.99453	(1950.0)	P	Q
n	0.27856159	Peri. 304.64306	+0.98799667	+0.12799233
a	2.3219672	Node 48.16872	-0.07339868	+0.88162084
e	0.2637722	Incl. 6.66573	-0.13592352	+0.45427155
P	3.54	B(1,0) 14.5		

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

380918	031(0.11+ 0.10-)X	380926	062	0.5+	0.2-	771021	330	4.1+	4.7-
380920	031(0.02+ 0.05-)X	381015	062	1.2+	0.0	771103	330	1.8-	1.5+
380921	031(63.1- 40.9-)X	381021	062	0.5-	0.5-	771112	330	3.0-	2.4+
380922	062 2.2- 0.8+	381115	062	1.6+	1.8-				
380924	062 0.2+ 0.4+	771010	330	0.2-	2.6+				

1938 SD1 = 1948 RA = 1972 XA1

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

M	339.96116	(1950.0)	P	Q
n	0.29286261	Peri. 80.89643	+0.64033475	-0.76745356
a	2.2457477	Node 329.21571	+0.67837465	+0.58424238
e	0.1746281	Incl. 3.51823	+0.36024884	+0.26396186
P	3.37	B(1,0) 14.0		

## Residuals in seconds of arc

380916	062 1.0- 1.1+	380926	062	0.7-	1.0+	480908	690	0.9-	1.3-
380919	078 (9.6- 16.6+)X	381115	062	1.2+	1.3-	480909	690	0.5+	1.0-
380921	062 0.3+ 1.2+	381115	062	1.1-	1.7-	721202	095	0.1+	0.3-
380926	062 0.3- 1.5+	480907	690	1.4+	0.8-	721206	095	0.2+	0.8+

1979 SX9 = 1975 XQ5 = 1982 HD

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

M	353.80982	(1950.0)	P	Q
n	0.20200250	Peri. 186.79792	-0.53845706	+0.84184203
a	2.8767299	Node 50.63053	-0.77081192	-0.47435533
e	0.0157460	Incl. 2.74026	-0.34045994	-0.25746653
P	4.88	B(1,0) 13.5		

## Residuals in seconds of arc

751204 095	1.1-	2.7-	791111 095	0.7+	2.3-	820426 688	1.6+	1.8-
790922 095	3.5+	1.9-	791116 095	0.5-	0.2-	820426 688	2.9-	1.9-
790928 095	2.2+	4.1-	820418 688	0.5-	0.5-			
791016 095	1.2-	1.9-	820418 688	1.3-	2.2-			

1979 SY9 = 1975 TQ5 = 1975 VS7

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

M	235.07249		(1950.0)		P		Q
n	0.24023814	Peri.	21.58972	+0.72783342			-0.68573820
a	2.5627659	Node	21.70611	+0.62728096			+0.66301711
e	0.1848615	Incl.	0.72041	+0.27708681			+0.30028558
P	4.10	B(1,0)	15.0				

## Residuals in seconds of arc

751014 095	1.9-	2.5-	790928 095	0.4-	2.7-	791116 095	2.5+	0.3-
751106 095	0.4+	0.2-	791016 095	1.8-	0.4+			
790922 095	1.1-	0.0	791111 095	1.9+	1.3-			

1980 RT2 = 1974 VC = 1979 OS4

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

M	55.98777		(1950.0)		P		Q
n	0.15099208	Peri.	125.83605	+0.50078055			-0.86425610
a	3.4927497	Node	294.04523	+0.77629048			+0.47284379
e	0.0711333	Incl.	2.99732	+0.38287324			+0.17169785
P	6.53	B(1,0)	12.5				

## Residuals in seconds of arc

741112 095	1.3-	1.2+	790725 675	1.3-	1.4+	801008 095	1.2+	0.4-
790724 675	0.1+	1.5+	790727 675	0.6+	0.2-	801012 095	1.1+	1.3-
790724 413	0.3-	0.0	800908 095	1.0-	0.0			

1982 FR = 1935 KH = 1935 MH = 1938 GA = 1959 RA1

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

M	338.28366		(1950.0)		P		Q
n	0.29175548	Peri.	167.74441	-0.02737721			+0.99450092
a	2.2514254	Node	100.62338	-0.92556088			+0.01298068
e	0.1583202	Incl.	5.90325	-0.37760765			-0.10392022
P	3.38	B(1,0)	14.0				

## Residuals in seconds of arc

350524 078	0.5-	0.2-	590903 024	0.0	0.0	820414 688	0.2-	0.2+
350603 078	0.7+	1.1+	820328 688	0.5+	0.9+	820414 688	2.0-	0.4-
350624 078	(5.2+	41.9-)X	820328 688	1.2+	2.0+	820526 688	1.1-	0.0
380402 053	(12.8-	14.5-)X	820331 688	0.2+	0.5-	820526 688	0.4-	3.0-
380404 053	(19.9+	17.7+)X	820331 688	1.3+	0.5-			

\* \* \* \* \*

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

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

## Periodic Comet Peters-Hartley

T 1982 May 8.69094 ET

q	1.6235399		(1950.0)		P		Q
n	0.12096460	Peri.	338.28824	-0.48711618			+0.72338813
a	4.0491499	Node	259.34178	-0.70992204			-0.65430366
e	0.5990418	Incl.	29.86137	-0.50865364			+0.22044575
P	8.15						

From 11 observations 1982 July 11-23. Not linked to 1846.

Comet Austin (1982g)

T 1982 Aug. 24.72147 ET

q	0.6477905	(1950.0)		P		Q	
		Peri.	33.81438		+0.71543307		-0.41393360
		Node	325.56514		-0.61104788		+0.01993885
e	1.0	Incl.	84.49704		+0.33878608		+0.91008868

From 31 observations 1982 June 19-Aug. 2.

(2732)\* 1926 FG = 1935 DF = 1965 UP1 = 1969 RD = 1978 PQ1

Discovered 1926 Mar. 19 by M. Wolf at Heidelberg.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	207.78551	(1950.0)		P		Q	
n	0.21501793	Peri.	282.81049		+0.37588573		-0.92438189
a	2.7594314	Node	144.88796		+0.88798138		+0.33924350
e	0.0245721	Incl.	6.49112		+0.26495091		+0.17444760
P	4.58	B(1,0)	13.0				

Residuals in seconds of arc

260318	024	6.0+	4.7-	651018	330	3,7+	0.3+	820519	801	0.6-	0.7-
260322	024	2.7+	2.2+	651023	330	0.1+	0.7-	820528	688	1.1+	0.4-
260401	024	3.3-	1.6-	651125	330	3.5-	0.0	820528	688	0.1-	3.5-
260404	024	4.6-	4.1+	690908	095	0.3+	3.8-	820621	801	0.3-	3.5+
350226	024	1.9-	2.5-	780808	095	0.1-	1.5+				

(2733)\* 1938 DQ = 1951 YE2 = 1981 AQ

Discovered 1938 Feb. 22 by Y. Vaisala at Turku.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	170.39480	(1950.0)		P		Q	
n	0.27423506	Peri.	352.39842		-0.40108564		-0.90288665
a	2.3463209	Node	121.13111		+0.84963431		-0.42978776
e	0.1375202	Incl.	10.41078		+0.34242056		+0.00884163
P	3.59	B(1,0)	14.0				

Residuals in seconds of arc

380219	062	0.2+	1.6+	810110	688	1.4+	1.6-	810209	046	1.8-	0.7-
380222	062	1.0 +	1.7+	810110	688	1.9+	1.5-	810210	046	1.9-	2.0-
380222	062	1.9+	0.8+	810114	688	0.9-	0.1+	810212	046	0.6-	0.7+
380307	062	1.6-	0.5+	810114	688	0.4-	0.1-	810212	046	1.1-	1.3+
511228	711	1.3+	4.2+ Y	810202	046	0.2-	0.9+	810309	688	0.1+	1.5-
511228	711	1.8-	1.7- Y	810202	046	1.0-	0.5+	810309	688	0.3+	2.2-
810110	688	0.5+	0.4-	810208	688	1.1+	0.4-				
810110	688	0.9+	0.6-	810208	688	1.2+	0.0				

(2734)\* 1976 GJ3

Discovered 1976 Apr. 1 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	45.21370	(1950.0)		P		Q	
n	0.17529161	Peri.	167.85809		-0.90246540		+0.39529638
a	3.1620007	Node	36.95264		-0.41518743		-0.69233731
e	0.0286270	Incl.	16.54240		-0.11478503		-0.60366366
P	5.62	B(1,0)	12.5				

Residuals in seconds of arc

760401	095	0.7+	1.0-	760503	095	3.7-	0.6-	820423	474	0.0	1.6+
760402	095	2.6+	0.1+	780927	095	0.7-	0.1-	820424	474	0.5+	0.6+
760404	095	0.1-	1.3-	781007	095	0.3+	0.8+	820424	474	0.9+	1.8+
760405	095	1.1-	1.3-	810304	801	3.8+	1.8+	820425	474	0.3-	0.7+
760406	095	0.9-	1.0-	810327	801	1.5-	2.3+	820425	474	1.4+	0.5+
760423	095	2.9-	1.7-	820423	474	0.8+	1.8+				



(2735)\* 1977 RB

Discovered 1977 Sept. 13 by S. J. Bus and T. Lauer at Palomar.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	298.83194		(1950.0)		P		Q
n	0.38949362	Peri.	59.44641		+0.70607934		-0.69995146
a	1.8569597	Node	344.09080		+0.43712607		+0.55006708
e	0.0549924	Incl.	23.05136		+0.55711108		+0.45551527
P	2.53	B(1,0)	14.5				

Residuals in seconds of arc

710526	675	0.8+	0.5-	771011	675	1.7-	1.3-	780203	801	1.8-	0.8+
760226	675	0.8-	0.4+	771013	675	0.1+	0.8-	810101	688	1.6-	2.0-
770913	675	0.5-	0.8+	771016	801	0.4-	0.7+	810101	688	1.2+	0.4-
770914	675	1.6+	0.4+	771108	675	1.1+	1.8-	810304	801	0.7-	0.8+
770915	675	0.4+	0.2+	771112	801	0.3-	1.2+	820715	675	0.0	0.5-
770915	675	0.2-	1.3+	771113	801	1.0-	0.8+	820715	675	0.1+	0.3-
770919	688	2.5+	2.7-	771208	801	1.5-	0.8-	820729	675	0.4-	0.1+
770921	675	0.4+	0.1-	771208	801	1.0-	1.3+	820730	675	0.4-	0.9+

(2736)\* 1979 OC

Discovered 1979 July 23 by E. Bowell at the Lowell Observatory's Anderson Mesa Station.

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	314.80548		(1950.0)		P		Q
n	0.28431140	Peri.	64.29227		+0.75282961		+0.64614305
a	2.2905505	Node	255.18944		-0.64079524		+0.67589258
e	0.0846467	Incl.	7.45794		-0.15042952		+0.35449735
P	3.47	B(1,0)	14.5				

Residuals in seconds of arc

790723	688	0.4+	0.7+	790924	801	0.1+	1.6-	820327	474	1.2-	2.6-
790724	688	0.0	0.9-	791022	801	0.2-	0.3-	820425	474	1.1-	2.1+
790726	688	0.7+	0.9-	791116	801	0.9+	0.0	820425	474	1.2-	3.3+
790730	688	0.1-	1.1-	791210	801	1.6+	0.7+	820521	688	1.0-	1.5-
790827	688	0.9+	0.2+	810108	046	0.5-	3.7-	820521	688	0.1+	2.0-
790830	046	0.7+	0.1-	810108	046	1.6-	2.3-	820528	688	0.4+	2.8-
790830	046	0.2+	0.6-	810109	046	(8.8-	2.4-)	820528	688	2.6+	1.5-
790917	046	0.1+	0.0	810109	688	0.4-	2.0-	820528	474	0.8+	1.0+
790917	046	2.0+	0.6-	810111	801	0.2+	0.5-	820528	474	0.5+	1.3+
790921	801	4.0-	1.8-	820327	474	1.2-	2.8-				

1972 RX3 = 1934 GM = 1951 JO = 1974 FZ1 = 1979 YV2

The identifications 1972 RX3 = 1974 FZ1 (contrary to the implication on MPC 6655) = 1979 YV2 are by G. R. Kastel'. The identification 1972 RX3 = 1951 JO is by O. Kippes.

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

M	328.93609		(1950.0)		P		Q
n	0.29518479	Peri.	334.51559		+0.88546121		-0.45644019
a	2.2339542	Node	52.92087		+0.44288397		+0.77194674
e	0.1716276	Incl.	6.28199		+0.14075596		+0.44244839
P	3.34	B(1,0)	14.0				

Residuals in seconds of arc

340406	024	0.6+	1.1+	720909	095	0.7+	0.5+	791224	095	0.2+	2.4-
510502	711	2.3-	4.5-	Y 721007	095	0.1+	2.0-				
720906	095	0.8+	1.3-	740321	095	0.4-	1.4-				

1974 OA1 = 1981 EE5

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

M	260.19453	(1950.0)	P	Q	
n	0.23599009	Peri.	58.76211	+0.86015706	-0.49679683
a	2.5934292	Node	330.55675	+0.35025952	+0.73988598
e	0.1998720	Incl.	13.58051	+0.37073994	+0.45360957
P	4.18	B(1,0)	13.5		

Residuals in seconds of arc

740716	808	0.9-	0.4-	740818	809	7.5+	2.4-	810312	413	1.4+	0.2-
740716	808	0.4-	0.7-	810302	413	2.7-	1.6-	810407	413	1.0-	0.9+
740717	808	0.1-	0.3-	810302	413	2.2+	2.1-	810407	413	1.4+	0.1+
740717	808	0.5+	1.1+	810307	413	1.4-	0.6-	810408	413	0.6-	1.0+
740720	808	1.4-	0.0	810307	413	0.2+	0.5-	810408	413	1.4+	0.4+
740720	808	1.2-	0.1-	810310	413	0.9-	0.3+	810409	413	0.1-	0.7+
740726	808	1.9-	0.4+	810310	413	1.2+	0.1+	810409	413	1.0+	0.6+
740726	808	1.2-	1.2+	810312	413	2.2-	0.3+				

1976 GN8 = 1976 HU = 1968 UD = 1981 EX2

The double designation 1976 GN8 = 1976 HU is by O. Kippes (MPC 5217).

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

M	163.03435	(1950.0)	P	Q	
n	0.18910416	Peri.	155.11977	-0.27240599	-0.95388165
a	3.0060961	Node	310.42436	+0.85269080	-0.17860062
e	0.0672923	Incl.	9.53583	+0.44577277	-0.24127082
P	5.21	B(1,0)	12.5		

Residuals in seconds of arc

681022	095	0.1-	0.6+	810302	413	1.3-	0.3+	810312	413	1.0+	1.1-
760405	808	0.6-	0.3+	810302	413	0.7+	0.0	810407	413	0.8-	0.1-
760405	808	0.2+	0.4+	810307	413	0.2-	0.9+	810407	413	0.2+	0.5-
760423	808	0.7+	1.2+	810307	413	0.8+	0.1+	810408	413	0.7-	0.0
760423	808	0.6-	0.2+	810310	413	0.2-	0.9+	810408	413	0.6+	0.5-
760426	808	0.1+	1.0-	810310	413	0.8+	0.2+	810409	413	1.0-	0.2+
760426	808	0.5+	0.7-	810312	413	0.7-	0.8-	810409	413	0.4+	0.9-

1978 QJ = 1981 EZ3

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

M	44.44134	(1950.0)	P	Q	
n	0.27062863	Peri.	33.41275	+0.60087956	+0.78336329
a	2.3671244	Node	274.02533	-0.76383458	+0.50408304
e	0.3093155	Incl.	9.17254	-0.23558539	+0.36365125
P	3.64	B(1,0)	15.5		

Residuals in seconds of arc

780831	095	0.6+	1.5+	810302	413	0.2+	0.4-	810409	413	0.9-	0.3-
780903	095	0.4-	0.1-	810307	413	0.0	0.2+	810409	413	0.6+	1.4-
780907	095	0.3-	1.3-	810310	413	1.3-	0.2+				
810302	413	0.5-	2.1+	810310	413	1.9+	0.2-				

1978 RY = 1976 GY5 = 1979 YS2

The key identification 1978 RY = 1979 YS2 was made at the Crimean Astrophysical Observatory.

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

M	288.82167	(1950.0)	P	Q	
n	0.18702655	Peri.	326.49040	+0.93574806	+0.35089110
a	3.0283175	Node	13.10927	-0.27950781	+0.79904582
e	0.0193304	Incl.	8.97159	-0.21506036	+0.48826346
P	5.27	B(1,0)	14.0		

## Residuals in seconds of arc

760402	095	0.6+	1.0+	780912	095	0.7-	0.2-	781009	095	0.7-	0.4+
780901	095	0.2-	0.1+	780928	095	1.4+	1.1+	791224	095	0.0	1.0+
780905	095	0.1-	0.5+	781004	095	0.1-	0.2+				
780907	095	0.0	0.2-	781008	095	0.1+	0.5-				

1978 RW1 = 1973 AT1 = 1980 DU5

The key identification 1978 RW1 = 1980 DU5 was made at the Crimean Astrophysical Observatory.

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

M 285.99786		(1950.0)		P		Q
n	0.29420111	Peri.	340.48761	-0.82384094		-0.56659286
a	2.2389310	Node	164.96670	+0.52791542		-0.77731550
e	0.1177808	Incl.	3.55482	+0.20637689		-0.27341021
P	3.35	B(1,0)	14.0			

## Residuals in seconds of arc

730101	095	0.1-	0.2-	780907	095	2.6-	3.7-	781009	095	0.8+	0.2+
780901	095	1.7+	0.7-	780912	095	0.1+	2.3+	800221	095	0.0	1.2+
780905	095	1.4-	1.3+	780928	095	0.9+	0.4+	800316	095	0.3-	0.8-

1978 SP7 = 1943 TG = 1982 NB

The key identification 1978 SP7 = 1982 NB is by E. Bowell.

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

M 351.37024		(1950.0)		P		Q
n	0.22486956	Peri.	115.50925	+0.78512040		+0.60936704
a	2.6782419	Node	207.36694	-0.61855039		+0.76244332
e	0.2257340	Incl.	13.93660	-0.03132684		+0.21760514
P	4.38	B(1,0)	13.5			

## Residuals in seconds of arc

431005	062	0.3-	2.6+	X	781008	095	0.2+	2.1-	820715	688	1.0-	0.5+
780926	095	0.7-	1.6-		781101	095	0.3+	0.2-				
781002	095	0.5+	1.4+		820715	688	1.0+	0.3-				

1979 SJ9 = 1927 FB = 1954 GA = 1974 CE1 = 1981 GA

The identification 1979 SJ9 = 1981 GA is by G. R. Kastel'. The identifications 1981 GA = 1927 FB = 1954 GA = 1974 CE1 were found independently by C. M. Bardwell.

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

M 193.21584		(1950.0)		P		Q
n	0.29244930	Peri.	321.06688	-0.74224856		-0.67011385
a	2.2478631	Node	176.84934	+0.63082286		-0.70062311
e	0.0845627	Incl.	3.97324	+0.22611853		-0.24510136
P	3.37	B(1,0)	14.5			

## Residuals in seconds of arc

270331	754(56.4-	22.3-)Y	810405	688	2.3+	1.6-	810423	879	0.0	2.1+	
540402	760(0.05+	0.01+)X	810405	688	1.8+	2.8-	810423	879	0.7-	1.4+	
740215	095	0.2+	0.6+	810406	879	0.7+	1.1-	810423	879	0.5+	0.9-
790922	095	0.2+	1.9+	810406	879	2.2-	0.3+	810425	879	1.0-	0.9+
790928	095	1.2-	0.6-	810406	372	1.3-	3.1-	810425	879	0.9+	0.1+
791016	095	0.6+	0.3-	810406	372	3.1-	4.2-	810425	372	1.7-	0.2+
810327	046	0.5+	1.1+	810407	688	0.4+	0.6-	810425	879	1.8+	0.8-
810327	046	1.0-	2.3+	810407	688	2.7+	0.3-	810425	372	0.8+	0.1+
810329	046	2.8+	0.5-	810407	879	1.4-	0.9-	810428	879	1.1+	0.2-
810329	046	1.7+	1.1-	810407	879	0.3-	1.6+	810428	879	1.3+	0.1-
810402	879	1.8-	0.9+	810409	688	3.7+	0.8-	810428	879	0.5-	1.4-
810402	879	1.8+	3.3+	810409	688	0.5+	0.0	810504	879	1.5-	2.5+
810402	046	2.7-	1.1+	810409	046	1.6-	0.3+	810504	879	0.6+	1.0+
810403	046	3.2-	0.4+	810409	046	1.7-	2.0+				

1979 UC = 1978 GG3 = 1978 JH

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

M 343.67789		(1950.0)		P		Q
n 0.27048799	Peri.	251.79503	+0.76011935			+0.63559340
a 2.3679449	Node	68.51213	-0.52770185			+0.72510244
e 0.1324844	Incl.	8.34551	-0.37914290			+0.26504239
P 3.64	B(1,0)	14.0				

Residuals in seconds of arc

780408 095	1.1-	2.6-	791028 688	0.3+	0.1-	820621 688	0.6+	1.2-
780506 330	(52.4-	4.9-)	791122 688	1.3+	1.6-	820621 688	0.6-	0.3+
791017 688	0.1-	1.1+	791207 688	0.1-	2.6-			

1980 LA

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M 192.73436		(1950.0)		P		Q
n 0.27896603	Peri.	71.44169	+0.85222857			+0.37005993
a 2.3197179	Node	265.43566	-0.49527323			+0.79841434
e 0.3027092	Incl.	21.77670	+0.16855533			+0.47496335
P 3.53	B(1,0)	14.0				

Residuals in seconds of arc

00614 688	0.8+	0.2+	800705 688	0.0	1.3-	800902 688	1.4+	1.2-
800614 688	1.0+	2.1+	800714 688	0.2+	0.4-	800911 801	0.2-	0.6+
800617 688	0.8-	2.6+	800717 688	0.6-	0.6+	801012 801	0.9+	0.4+
800617 688	0.7-	2.3-	800804 688	0.4+	1.1-	801030 801	0.4+	0.4+
800618 688	0.1-	0.2-	800804 688	0.2-	0.5-	820128 474	0.4+	0.5-
800618 688	0.6-	1.2-	800806 688	0.7-	0.1-	820128 474	1.4-	1.3-
800705 688	0.5-	1.0-	800808 801	0.1+	2.0 +			

1981 AA

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

M 193.66919		(1950.0)		P		Q
n 0.27704097	Peri.	307.22981	+0.47442573			-0.79328486
a 2.3304560	Node	110.15686	+0.87982487			+0.41313016
e 0.2959311	Incl.	23.98503	+0.02878228			+0.44723886
P 3.56	B(1,0)	14.0				

Residuals in seconds of arc

810103 688	1.8+	2.0-	810108 381	1.2+	0.6-	810226 688	0.5-	0.5+
810103 688	1.9+	0.9-	810108 381	3.4-	2.9+	810312 688	4.1+	2.5-
810108 381	0.2-	0.3+	810128 688	0.5-	1.1-	820612 675	0.1-	0.2+
810108 381	2.1-	2.1+	810226 688	1.3-	0.5+	820613 675	0.6+	0.7+

1981 JR

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

M 198.22124		(1950.0)		P		Q
n 0.08289110	Peri.	198.22055	+0.37887053			-0.88309823
a 5.2095271	Node	230.50602	+0.88740301			+0.43153497
e 0.0287275	Incl.	21.01654	+0.26262712			-0.18416051
P 11.89	B(1,0)	10.0				

Residuals in seconds of arc

810503 688	0.1+	0.6-	810609 688	0.3+	1.2+	820618 688	0.6+	0.1+
810503 688	0.2-	0.0	810623 688	0.8+	0.6-	820618 688	0.1+	1.5-
810604 688	0.3+	2.3-	810623 688	1.2-	0.6-	820715 688	0.3+	0.6+
810604 688	1.0-	1.2-	820613 675	0.4-	0.1 +	820715 688	0.8-	0.6-
810609 688	0.3+	1.8+	820613 675	0.0	0.1+			

1981 JS = 1964 DE = 1979 YB2

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

M	154.00639		(1950.0)		P		Q
n	0.29873059	Peri.	343.95955	-0.82628816			+0.56069884
a	2.2162417	Node	230.26869	-0.50879147			-0.78378627
e	0.0848361	Incl.	3.99078	-0.24161770			-0.26701288
P	3.30	B(1,0)	14.5				

Residuals in seconds of arc

640217	760	1.3-	0.0	810505	688	1.9-	2.4-	810604	688	0.5-	1.7+
640217	760	1.8+	1.6+	810505	688	1.8+	3.2-	810609	688	0.3+	1.6+
791223	095	0.4+	2.9-	810604	688	0.0	0.4+				

3042 P-L = 1981 ER3

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

M	241.16131		(1950.0)		P		Q
n	0.21196307	Peri.	116.30593	+0.86049130			-0.49704411
a	2.7858866	Node	273.68275	+0.41826558			+0.81453499
e	0.2328082	Incl.	6.43311	+0.29087562			+0.29913190
P	4.65	B(1,0)	15.0				

Residuals in seconds of arc

600924	675	0.2-	0.1+	600927	675	0.4-	0.3+	810302	413	1.7+	0.3-
600924	675	0.6-	0.6+	600928	675	0.4+	0.6-	810307	413	1.1-	0.6+
600924	675	0.6+	0.2-	600928	675	0.4-	0.1+	810307	413	1.3+	0.6-
600925	675	0.7-	0.4-	600928	675	0.1+	0.4-	810310	413	2.9-	1.4+
600925	675	0.6-	0.4-	600929	675	0.4+	0.3+	810310	413	0.6-	0.2+
600926	675	0.7+	0.9+	600929	675	0.7-	0.2-	810312	413	0.9+	0.3+
600926	675	0.2+	0.3-	601017	675	0.5+	0.4+	810312	413	2.7+	1.0-
600926	675	0.0	0.1+	601024	675	0.3-	0.1+	810409	413	2.2-	0.1-
600927	675	0.7-	0.2-	601026	675	0.3+	0.4-	810409	413	0.2+	1.0-

3071 P-L = 1981 ET4

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

M	28.10859		(1950.0)		P		Q
n	0.26710622	Peri.	18.92942	+0.52286066			+0.84763268
a	2.3878896	Node	282.68607	-0.79348914			+0.44532260
e	0.1270222	Incl.	5.30482	-0.31143492			+0.28845557
P	3.69	B(1,0)	15.5				

Residuals in seconds of arc

600925	675	0.3+	1.0-	810302	413	2.3+	1.1-	810312	413	2.1+	0.3-
600927	675	0.1+	0.2-	810307	413	0.2-	0.3+	810407	413	0.1+	0.4-
600928	675	0.2+	0.0	810307	413	1.5+	0.6-	810408	413	1.4-	0.1+
600929	675	0.3-	0.4+	810310	413	2.6-	1.2+	810408	413	0.2+	1.0-
600929	675	0.3-	0.8+	810310	413	0.2+	1.0+	810409	413	0.8-	1.0+
810302	413	1.6-	1.1-	810312	413	1.4-	0.7+	810409	413	1.5+	0.0

\* \* \* \* \*

ORBITAL ELEMENTS BY G. R. KASTEL', INSTITUTE FOR THEORETICAL ASTRONOMY.

The identifications are by G. R. Kastel'.

1975 PA = 1979 SM9

The identification 1975 PA = 1970 EY1 (NOC 1053) is invalid.

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

M	312.36075		(1950.0)		P		Q
n	0.26218211	Peri.	320.77735	+0.75142928			+0.65981179
a	2.4176904	Node	357.93513	-0.59390256			+0.67533267
e	0.2298406	Incl.	2.48572	-0.28746093			+0.32950596
P	3.76	B(1,0)	15.4				

## Residuals in seconds of arc

750814	323	0.3+	0.4+	750902	323	0.2+	1.0+	750923	323	0.2+	0.5+
750814	323	0.1-	0.2-	750902	323	0.2+	0.1+	751005	323	1.9-	3.7+
750824	323	1.0+	2.1-	750908	323	1.2-	0.2+	790922	095	0.4+	2.4+
750828	323	2.0-	1.3-	750908	323	0.4-	0.3-	790928	095	3.1-	0.3-
750901	323	2.7+	0.8-	750912	323	0.5+	0.0	791016	095	3.1+	3.1-

1979 SG9 = 1981 EE2

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

M	192.22155		(1950.0)		P		Q
n	0.22467894	Peri.	242.64527	+0.28257129			-0.95834409
a	2.6797512	Node	191.18032	+0.93832161			+0.28515481
e	0.1599341	Incl.	12.38714	+0.19926371			+0.01622778
P	4.39	B(1,0)	13.8				

## Residuals in seconds of arc

790922	095	0.6-	1.8+	810306	809	0.0	0.2+	810310	809	0.7+	0.0
790928	095	0.6+	1.6-	810306	809	0.1+	0.1+	810312	809	0.2+	0.7+
791016	095	0.0	0.0	810309	809	0.3-	0.0	810312	809	0.0	0.5+
810305	809	1.7-	0.0	810309	809	1.3+	0.1+	810312	809	0.2+	0.1+
810305	809	1.1-	1.0-	810309	809	0.2+	0.0	810314	809	0.2-	0.8+
810305	809	1.4-	0.3-	810310	809	0.1+	0.1-	810314	809	0.8+	0.2+
810306	809	0.3+	0.6-	810310	809	0.5+	0.7-	810314	809	0.4+	0.3+

\* \* \* \* \*

## NEW NAMES OF MINOR PLANETS.

(1701) Okavango = 1953 NJ

Discovered 1953 July 6 by J. Churms at Johannesburg.

Named for a large river in southern Africa. It flows into a swamp of the same name in Botswana. The swamp is an important wildlife preserve and has no outlet to the ocean. Name proposed by F. Pilcher.

(1702) Kalahari = A924 NC

Discovered 1924 July 7 by E. Hertzsprung at Johannesburg.

Named for the great desert of Namibia and adjoining region of the Republic of South Africa. It is continuous with the steppe country that extends to the vicinity of the discovery site. Name proposed by F. Pilcher.

(1821) Aconcagua = 1950 MB

Discovered 1950 June 24 by M. Itzigsohn at La Plata.

Named for one of the highest mountains in South America. It has an elevation of 6960 meters and is situated on the Argentina-Chile border. The western slope of the mountain is the headwaters of a river of the same name whose outlet to the Pacific Ocean is at Valparaiso. Name proposed by F. Pilcher.

(2569) Madeline = 1980 MA

Discovered 1980 June 18 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the heroine in John Keats' poem 'The Eve of St. Agnes.' According to legend, virtuous young girls who perform the proper ceremonies on the evening before St. Agnes' Day (January 21) were supposed to dream that night of their future husbands. Name proposed by F. Pilcher.

(2570) Porphyro = 1980 PG

Discovered 1980 Aug. 6 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the hero in John Keats' poem 'The Eve of St. Agnes.' Porphyro was deeply in love with Madeline (planet 2569) but was thoroughly despised by all of Madeline's family. A friend helped Porphyro hide in Madeline's bedchamber before her bedtime on the Eve of St. Agnes. Porphyro stood over Madeline as she wakened from her dream of him. With Madeline's family in drunken stupor following revelry the evening before, Porphyro was able to carry her away. Name proposed by P. Pilcher.

(2587) Gardner = 1980 OH

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

Named in honor of the American mathematician Martin Gardner, well known for his column on mathematical games in 'Scientific American'. His wide interests range from recreational mathematics to philosophy to the debunking of pseudoscience. Name proposed by J. Meeus.

(2597) Arthur = 1980 PN

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

Named for the central figure of the Arthurian legends of medieval England. In his youth, Arthur pulled the sword Excalibur out of a rock where all others had failed. This feat entitled him to become king. He established a castle at Camelot wherein he placed a Round Table, around which all knights who were worthy sat as equals with Arthur, and for many years the kingdom flourished in this spirit of democracy. Name proposed by F. Pilcher.

(2598) Merlin = 1980 RY

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

Named for the sage and sorcerer of the Arthurian legends. Merlin's magic enabled Arthur to pull the sword Excalibur from the rock and thereby become king. Afterward, Arthur continued to rely heavily on Merlin for advice in running his kingdom. When Merlin withdrew from the scene, Arthur could not guide the kingdom successfully on his wisdom alone. Name proposed by F. Pilcher.

(2602) Moore = 1982 BR

Discovered 1982 Jan. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Patrick Moore, astronomer, broadcaster, and writer. For some years director of the Lunar Section of the British Astronomical Association, Moore has been most energetic and successful in popularizing astronomy. He is author of many books and has regularly presented 'The Sky at Night' on BBC television since April 1957. In 1967 he was awarded the Order of the British Empire.

(2603) Taylor = 1982 BW1

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

Named in honor of Gordon E. Taylor, astronomer at the Nautical Almanac Office, Royal Greenwich Observatory. Taylor has been director of the Computing Section of the British Astronomical Association since 1974. His research has centered on the prediction of occultations of stars by solar system objects, and in recent years he has been instrumental in the successful determination of several asteroid sizes by the occultation method.

(2628) Kopal = 1979 MS5

Discovered 1979 June 25 by E. Helin and S. J. Bus at Siding Spring.

Named in honor of Zdenek Kopal, astronomer, Czech-born chairman of the astronomy department of Victoria University, Manchester, during 1951-1981. A world authority on eclipsing variables, the moon and the terrestrial planets, Kopal played a leading role in the exploration of the moon in a NASA-sponsored program. Name proposed by E. Helin, endorsed by E. M. Shoemaker.

(2651) Karen = 1949 QD

Discovered 1949 Aug. 28 by E. L. Johnson at Johannesburg.

Named by F. N. Bowman, who found the key identification involving this planet, in honor of Karen S. Mayer, his sister-in-law, and also Karen S. Franz, a fellow physics major at the University of Cincinnati.

(2676) Aarhus = 1933 QV

Discovered 1933 Aug. 25 by K. Reinmuth at Heidelberg.

Named by L. K. Kristensen, who found the identifications involving this object, in honor of the Danish city and its university.

(2685) Masursky = 1981 JN

Discovered 1981 May 3 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Harold Masursky, planetary geologist at the Branch of Astrogeologic Studies of the U.S. Geological Survey, Flagstaff. He has been active in nearly every U.S. program of lunar and planetary exploration, including Ranger, Surveyor, Lunar Orbiter, Apollo, Mariner 9, Viking, Pioneer Venus, and Voyager. He is currently involved in planning future space missions, including the Galileo mission (Jupiter orbiter probe) and the Venus Radar Mapper.

(2695) Christabel = 1979 UE

Discovered 1979 Oct. 17 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for a lovely lady in a poem of the same name by the English poet Samuel Coleridge Taylor (1772-1834). While riding at night, Christabel rescued another lovely lady, who turned out to be the daughter of her father's estranged boyhood friend. Christabel sought to reconcile the two fathers.

(2708) Burns = 1981 WT

Discovered 1981 Nov. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Joseph A. Burns, planetary astronomer at Cornell University. Burns' wide-ranging research on solar-system dynamics includes the study of planetary rings, satellites, orbital evolution and tides, origin of the solar system, dust motions, and planetary and asteroid rotation. He is currently editor of the journal 'Icarus'.

(2709) Sagan = 1982 FH

Discovered 1982 Mar. 21 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Carl Sagan, planetary scientist at Cornell University. He has been active on a number of planetary space missions, including the Mariner 9 and Viking missions to Mars and the Voyager mission to the outer planets. Sagan's research has included studies of the greenhouse effect on Venus, windblown dust on Mars, the atmosphere and surface of Titan, and the possibility of extraterrestrial intelligent life. He has been editor of the journal 'Icarus' and won the 1978 Pulitzer prize for literature. A leading popularizer of astronomy, Sagan is founder of the Planetary Society.



(2710) Veverka = 1982 FQ

Discovered 1982 Mar. 23 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Joseph Veverka, planetary astronomer at Cornell University. One of the first to study the polarimetric and photometric properties of asteroids, Veverka has made substantial contributions to our knowledge of other small objects in the solar system, notably in his detailed work on Phobos and Deimos. He has also studied the morphology and motions of wind streaks on the Martian surface and has been a strong advocate of space missions to comets.

\* \* \* \* \*

#### EPHEMERIDES.

##### Comet Austin (1982g)

				Elements MPC 7150				
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	ml
1982 07 30		05 49.91	-19 28.9	0.489	0.841	55.5	95.9	5.7
1982 08 04		06 31.64	-08 02.4					
1982 08 09		07 35.31	+10 21.7	0.327	0.728	24.3	145.0	4.2
1982 08 14		09 00.19	+29 53.3					
1982 08 19		10 23.26	+40 47.2	0.442	0.659	28.6	132.7	4.4
1982 08 24		11 22.46	+44 21.4					
1982 08 29		11 58.27	+44 46.6	0.717	0.654	40.2	94.8	5.4
1982 09 03		12 19.11	+44 02.4					
1982 09 08		12 31.46	+42 53.0	1.003	0.715	41.6	69.5	6.5
1982 09 13		12 39.16	+41 35.6					
1982 09 18		12 44.32	+40 17.9	1.256	0.823	40.8	53.0	7.6
1982 09 23		12 48.08	+39 03.9					
1982 09 28		12 51.05	+37 55.4	1.465	0.956	40.4	42.8	8.6
1982 10 03		12 53.54	+36 53.2					
1982 10 08		12 55.72	+35 58.0	1.630	1.102	41.5	36.9	9.5
1982 10 13		12 57.68	+35 09.7					
1982 10 18		12 59.45	+34 28.6	1.755	1.252	44.3	33.7	10.2
1982 10 28		13 02.36	+33 28.1					
1982 11 07		13 04.24	+32 56.2	1.901	1.553	54.6	31.3	11.3
1982 11 17		13 04.75	+32 53.4					
1982 11 27		13 03.35	+33 20.4	1.937	1.846	69.9	30.1	12.1
1982 12 07		12 59.44	+34 17.0					
1982 12 17		12 52.26	+35 42.2	1.904	2.130	89.1	27.5	12.7
1982 12 27		12 40.92	+37 31.7					
1983 01 06		12 24.61	+39 36.4	1.862	2.403	111.4	22.4	13.2

##### Periodic Comet Peters-Hartley

				Elements MPC 7149				
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	ml
1982 07 30		16 59.44	-01 56.2	1.049	1.830	124.9	27.1	16.7
1982 08 09		17 08.07	-00 28.4					
1982 08 19		17 18.50	+00 24.4	1.313	1.928	111.4	29.3	17.4
1982 08 29		17 30.45	+00 53.6					
1982 09 08		17 43.61	+01 08.1	1.606	2.038	99.9	29.1	18.1
1982 09 18		17 57.77	+01 14.4					
1982 09 28		18 12.74	+01 17.5	1.917	2.155	89.5	27.7	18.7
1982 10 08		18 28.33	+01 21.1					
1982 10 18		18 44.41	+01 27.8	2.239	2.277	79.4	25.5	19.3
1982 10 28		19 00.86	+01 39.7					
1982 11 07		19 17.53	+01 58.1	2.563	2.403	69.5	22.7	19.9
1982 11 17		19 34.34	+02 23.8					
1982 11 27		19 51.19	+02 57.5	2.881	2.530	59.6	19.7	20.3

1979 UC						Elements MPC 7154			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 07 10		18 59.55	-32 22.1	1.091	2.099	169.5	5.1	15.9	
1982 07 20		18 49.15	-33 11.0						
1982 07 30		18 40.63	-33 40.5	1.138	2.083	150.7	13.8	16.2	
1982 08 09		18 35.33	-33 52.1						
1982 08 19		18 33.89	-33 49.5	1.261	2.071	131.0	21.6	16.6	
1982 08 29		18 36.46	-33 36.2						
1982 09 08		18 42.78	-33 14.5	1.434	2.062	114.1	26.5	17.0	
1982 09 18		18 52.37	-32 45.5						
1982 09 28		19 04.75	-32 09.1	1.636	2.056	99.6	28.7	17.3	
1982 10 08		19 19.39	-31 24.9						
1982 10 18		19 35.82	-30 32.0	1.851	2.054	86.9	29.0	17.6	

1978 SP7						Elements MPC 7153			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 07 10		19 54.15	+05 22.7	1.175	2.120	150.5	13.6	15.8	
1982 07 20		19 46.60	+05 28.9						
1982 07 30		19 39.03	+05 01.1	1.145	2.100	152.7	12.8	15.7	
1982 08 09		19 32.68	+04 03.1						
1982 08 19		19 28.57	+02 42.7	1.196	2.085	141.5	17.6	15.9	
1982 08 29		19 27.42	+01 09.1						
1982 09 08		19 29.48	-00 28.2	1.314	2.076	126.4	23.0	16.2	
1982 09 18		19 34.70	-02 01.9						
1982 09 28		19 42.87	-03 26.2	1.481	2.074	111.8	26.7	16.5	
1982 10 08		19 53.61	-04 37.3						
1982 10 18		20 06.55	-05 32.9	1.681	2.077	98.5	28.3	16.9	

1979 SD7						Elements MPC 7141			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 07 10		20 27.91	-24 43.9	1.685	2.673	162.8	6.4	17.9	
1982 07 20		20 17.85	-25 16.9						
1982 07 30		20 07.12	-25 43.6	1.656	2.663	170.7	3.5	17.7	
1982 08 09		19 56.95	-26 00.5						
1982 08 19		19 48.44	-26 06.5	1.733	2.650	148.7	11.5	18.1	
1982 08 29		19 42.41	-26 02.1						
1982 09 08		19 39.30	-25 48.9	1.898	2.636	127.6	17.6	18.4	
1982 09 18		19 39.18	-25 28.6						
1982 09 28		19 41.95	-25 02.2	2.117	2.619	108.9	21.2	18.7	
1982 10 08		19 47.29	-24 30.3						
1982 10 18		19 54.89	-23 53.2	2.363	2.600	92.3	22.5	19.0	
1982 10 28		20 04.44	-23 10.5						
1982 11 07		20 15.58	-22 22.0	2.610	2.580	77.3	22.0	19.1	

1981 EZ2						Elements MPC 7138			
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Phase	Mag.	
1982 07 10		21 27.25	-01 16.2	1.717	2.590	-1.31	-5.2	17.6	
1982 07 20		21 20.99	-01 18.3						
1982 07 30		21 13.09	-01 39.6	1.632	2.610	-1.41	-5.6	17.3	
1982 08 09		21 04.39	-02 18.0						
1982 08 19		20 55.88	-03 09.4	1.645	2.631	-1.41	-5.7	17.3	
1982 08 29		20 48.52	-04 08.3						
1982 09 08		20 43.11	-05 08.6	1.760	2.650	-1.29	-5.2	17.6	
1982 09 18		20 40.08	-06 05.3						
1982 09 28		20 39.66	-06 54.5	1.958	2.668	-1.13	-4.6	18.0	
1982 10 08		20 41.78	-07 33.6						
1982 10 18		20 46.25	-08 01.5	2.210	2.686	-0.99	-4.0	18.3	
1982 10 28		20 52.81	-08 17.4						
1982 11 07		21 01.16	-08 21.2	2.489	2.702	-0.86	-3.5	18.6	

1981 EW3		R. A. (1950)		Decl.	Delta	r	Elements MPC		7138 Mag.
Date	ET						Variation		
1982 07 10		21 55.67	-05 11.8		1.274	2.135	-2.03	-13.4	17.1
1982 07 20		21 51.79	-04 28.5						
1982 07 30		21 45.25	-04 03.1		1.166	2.138	-2.28	-14.7	16.7
1982 08 09		21 36.84	-03 55.7						
1982 08 19		21 27.72	-04 04.1		1.142	2.145	-2.34	-15.0	16.5
1982 08 29		21 19.26	-04 24.0						
1982 09 08		21 12.71	-04 49.5		1.212	2.156	-2.15	-13.9	16.9
1982 09 18		21 08.87	-05 14.9						
1982 09 28		21 08.18	-05 35.2		1.362	2.171	-1.84	-12.2	17.3
1982 10 08		21 10.61	-05 47.0						
1982 10 18		21 15.92	-05 48.2		1.568	2.189	-1.54	-10.4	17.7
1982 10 28		21 23.77	-05 37.7						
1982 11 07		21 33.73	-05 15.1		1.810	2.210	-1.31	-9.1	18.1
1982 11 17		21 45.44	-04 40.6						
1982 11 27		21 58.57	-03 54.7		2.067	2.235	-1.14	-8.0	18.4
1982 12 07		22 12.81	-02 58.0						
1982 12 17		22 27.94	-01 51.7		2.328	2.261	-1.01	-7.2	18.7

1981 EO3		R. A. (1950)		Decl.	Delta	r	Elements MPC		7138 Mag.
Date	ET						Variation		
1982 07 10		22 38.61	-13 15.6		1.270	2.080	-1.80	-21.5	18.1
1982 07 20		22 35.81	-12 04.6						
1982 07 30		22 29.58	-11 00.5		1.142	2.089	-2.11	-23.4	17.7
1982 08 09		22 20.45	-10 02.7						
1982 08 19		22 09.44	-09 10.3		1.093	2.102	-2.27	-23.6	17.3
1982 08 29		21 58.02	-08 22.0						
1982 09 08		21 47.81	-07 36.6		1.142	2.121	-2.15	-21.8	17.6
1982 09 18		21 40.02	-06 52.7						
1982 09 28		21 35.46	-06 08.8		1.281	2.144	-1.83	-19.1	18.1
1982 10 08		21 34.32	-05 23.1						
1982 10 18		21 36.43	-04 34.1		1.487	2.171	-1.50	-16.5	18.6
1982 10 28		21 41.46	-03 40.5						
1982 11 07		21 48.96	-02 41.0		1.734	2.202	-1.24	-14.2	19.0
1982 11 17		21 58.50	-01 35.2						
1982 11 27		22 09.73	-00 22.7		2.002	2.237	-1.05	-12.4	19.4
1982 12 07		22 22.29	+00 56.6						
1982 12 17		22 35.93	+02 22.4		2.275	2.274	-0.92	-10.9	19.6

1979 SJ9		R. A. (1950)		Decl.	Delta	r	Elements MPC		7153 Mag.
Date	ET						Elong.	Phase	
1982 07 10		22 34.37	-05 11.1		1.670	2.438	128.6	19.0	18.0
1982 07 20		22 32.18	-05 24.8						
1982 07 30		22 27.32	-05 57.4		1.507	2.437	149.5	12.2	17.6
1982 08 09		22 20.15	-06 47.1						
1982 08 19		22 11.33	-07 49.9		1.427	2.434	172.6	3.1	17.2
1982 08 29		22 01.88	-08 59.2						
1982 09 08		21 53.01	-10 07.3		1.450	2.429	162.2	7.3	17.4
1982 09 18		21 45.77	-11 07.5						
1982 09 28		21 40.98	-11 54.8		1.572	2.423	139.4	15.6	17.8
1982 10 08		21 39.04	-12 26.6						
1982 10 18		21 40.01	-12 42.2		1.767	2.415	119.2	21.1	18.1
1982 10 28		21 43.73	-12 42.0						
1982 11 07		21 49.91	-12 27.0		2.001	2.406	101.6	23.8	18.5
1982 11 17		21 58.20	-11 58.2						
1982 11 27		22 08.29	-11 16.8		2.250	2.395	86.1	24.3	18.7
1982 12 07		22 19.85	-10 24.1						
1982 12 17		22 32.63	-09 21.1		2.494	2.383	72.1	23.1	18.9

3071 P-L		Elements MPC 7155							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 07 10		23 13.26	+00 34.9	1.432	2.103	117.4	25.4	18.5	
1982 07 20		23 15.55	+01 35.7						
1982 07 30		23 14.81	+02 18.5	1.270	2.115	135.2	19.8	18.1	
1982 08 09		23 11.05	+02 40.8						
1982 08 19		23 04.55	+02 41.1	1.167	2.131	155.7	11.3	17.7	
1982 08 29		22 56.09	+02 20.3						
1982 09 08		22 46.85	+01 42.9	1.147	2.149	171.2	4.1	17.5	
1982 09 18		22 38.19	+00 55.8						
1982 09 28		22 31.37	+00 07.5	1.223	2.169	154.0	11.7	17.9	
1982 10 08		22 27.24	-00 34.3						
1982 10 18		22 26.17	-01 04.5	1.383	2.192	133.5	19.3	18.4	
1982 10 28		22 28.17	-01 19.9						
1982 11 07		22 32.99	-01 19.5	1.602	2.216	115.4	23.8	18.8	
1982 11 17		22 40.24	-01 03.7						
1982 11 27		22 49.56	-00 33.1	1.856	2.242	99.5	25.7	19.2	
1982 12 07		23 00.58	+00 10.6						
1982 12 17		23 12.98	+01 06.0	2.125	2.269	85.4	25.6	19.5	

1972 RX3		Elements MPC 7151							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 07 10		00 06.89	-08 51.4	1.415	1.990	108.7	28.9	16.9	
1982 07 20		00 16.42	-08 27.0						
1982 07 30		00 23.52	-08 18.5	1.205	1.957	123.4	25.7	16.5	
1982 08 09		00 27.79	-08 26.6						
1982 08 19		00 28.77	-08 51.0	1.034	1.928	140.9	19.4	15.9	
1982 08 29		00 26.21	-09 28.5						
1982 09 08		00 20.30	-10 12.5	0.923	1.902	160.5	10.2	15.5	
1982 09 18		00 11.74	-10 53.7						
1982 09 28		00 01.94	-11 21.0	0.892	1.881	166.6	7.1	15.3	
1982 10 08		23 52.65	-11 25.5						
1982 10 18		23 45.44	-11 03.2	0.947	1.866	147.4	16.7	15.6	
1982 10 28		23 41.45	-10 14.1						
1982 11 07		23 41.11	-09 01.7	1.073	1.855	128.0	24.9	16.1	
1982 11 17		23 44.33	-07 30.2						
1982 11 27		23 50.79	-05 43.5	1.244	1.851	111.6	29.7	16.5	
1982 12 07		00 00.02	-03 45.2						
1982 12 17		00 11.57	-01 38.1	1.442	1.852	97.7	31.8	16.9	

1981 ER5		Elements MPC 7139							
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.	
1982 07 10		00 05.02	+10 01.0	1.236	1.753	-2.16	-13.5	18.0	
1982 07 20		00 16.77	+12 27.7						
1982 07 30		00 26.07	+14 41.3	1.088	1.762	-2.58	-14.3	17.6	
1982 08 09		00 32.49	+16 37.6						
1982 08 19		00 35.57	+18 11.6	0.964	1.781	-3.10	-15.9	17.3	
1982 08 29		00 35.03	+19 17.0						
1982 09 08		00 31.03	+19 48.1	0.882	1.809	-3.55	-18.9	16.9	
1982 09 18		00 24.23	+19 41.0						
1982 09 28		00 16.00	+18 56.9	0.864	1.845	-3.61	-21.7	16.7	
1982 10 08		00 08.06	+17 44.2						
1982 10 18		00 01.95	+16 16.4	0.928	1.889	-3.20	-21.3	17.0	
1982 10 28		23 58.78	+14 48.5						
1982 11 07		23 58.99	+13 32.6	1.072	1.938	-2.62	-18.0	17.5	
1982 11 17		00 02.49	+12 35.7						
1982 11 27		00 08.95	+12 00.8	1.281	1.992	-2.11	-14.1	18.1	
1982 12 07		00 17.91	+11 47.3						
1982 12 17		00 28.91	+11 53.1	1.533	2.049	-1.73	-10.9	18.6	

1978 PC3				Elements MPC 7136				
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1982 07 10	00	39.69	+06 30.3	1.674	2.037	-1.36	-11.4	18.8
1982 07 20	00	49.76	+08 15.1					
1982 07 30	00	57.69	+09 50.0	1.480	2.049	-1.59	-12.5	18.6
1982 08 09	01	03.12	+11 13.3					
1982 08 19	01	05.63	+12 22.5	1.309	2.065	-1.88	-14.0	18.2
1982 08 29	01	04.91	+13 14.8					
1982 09 08	01	00.91	+13 47.4	1.181	2.086	-2.18	-15.9	17.8
1982 09 18	00	53.96	+13 58.3					
1982 09 28	00	44.89	+13 47.4	1.124	2.110	-2.34	-17.6	17.5
1982 10 08	00	35.07	+13 18.5					
1982 10 18	00	25.96	+12 38.6	1.161	2.137	-2.22	-17.7	17.6
1982 10 28	00	18.92	+11 56.7					
1982 11 07	00	14.77	+11 21.3	1.292	2.168	-1.91	-15.9	18.1
1982 11 17	00	13.81	+10 58.2					
1982 11 27	00	16.02	+10 50.5	1.495	2.201	-1.58	-13.3	18.6
1982 12 07	00	21.05	+10 58.9					
1982 12 17	00	28.54	+11 22.3	1.745	2.236	-1.33	-11.0	19.0

1981 JS				Elements MPC 7155				
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1982 07 30	01	55.87	+15 11.4	2.086	2.380	93.8	25.2	18.6
1982 08 09	02	03.68	+15 55.0					
1982 08 19	02	09.41	+16 26.3	1.852	2.388	109.5	23.6	18.3
1982 08 29	02	12.66	+16 43.6					
1982 09 08	02	13.15	+16 45.2	1.641	2.395	127.8	19.4	17.9
1982 09 18	02	10.65	+16 29.4					
1982 09 28	02	05.22	+15 55.1	1.483	2.399	149.3	12.3	17.5
1982 10 08	01	57.32	+15 03.1					
1982 10 18	01	47.77	+13 56.7	1.410	2.403	173.3	2.8	17.1
1982 10 28	01	37.80	+12 42.4					
1982 11 07	01	28.73	+11 29.1	1.446	2.404	160.9	7.8	17.4
1982 11 17	01	21.61	+10 24.8					
1982 11 27	01	17.18	+09 36.1	1.582	2.404	137.5	16.1	17.8
1982 12 07	01	15.69	+09 06.1					
1982 12 17	01	17.11	+08 55.4	1.791	2.402	116.9	21.4	18.2
1982 12 27	01	21.22	+09 02.8					
1983 01 06	01	27.71	+09 25.9	2.037	2.398	99.1	23.9	18.5

1978 PX2				Elements MPC 7136				
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1982 08 19	02	56.06	+18 19.7	1.516	1.940	-1.73	-8.3	18.6
1982 08 29	03	07.60	+19 24.4					
1982 09 08	03	16.63	+20 18.1	1.338	1.958	-2.04	-8.7	18.2
1982 09 18	03	22.61	+21 00.2					
1982 09 28	03	25.04	+21 29.7	1.184	1.981	-2.41	-9.6	17.9
1982 10 08	03	23.66	+21 45.3					
1982 10 18	03	18.50	+21 45.6	1.079	2.008	-2.76	-11.4	17.5
1982 10 28	03	10.22	+21 29.8					
1982 11 07	03	00.14	+21 00.0	1.052	2.040	-2.85	-13.2	17.1
1982 11 17	02	49.93	+20 21.0					
1982 11 27	02	41.31	+19 40.7	1.122	2.076	-2.58	-13.2	17.6
1982 12 07	02	35.50	+19 06.8					
1982 12 17	02	33.08	+18 44.7	1.282	2.114	-2.16	-11.5	18.1
1982 12 27	02	34.15	+18 37.2					
1983 01 06	02	38.43	+18 44.0	1.507	2.155	-1.78	-9.2	18.6
1983 01 16	02	45.52	+19 03.2					
1983 01 26	02	55.03	+19 32.6	1.771	2.198	-1.50	-7.1	19.0

1978 QJ		Elements MPC 7152							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 08 19		03 20.38	+28 45.2	1.722	1.998	90.1	30.4	18.9	
1982 08 29		03 31.47	+29 46.6						
1982 09 08		03 39.74	+30 36.3	1.573	2.070	104.5	28.1	18.7	
1982 09 18		03 44.68	+31 13.5						
1982 09 28		03 45.85	+31 36.1	1.435	2.142	122.1	23.4	18.5	
1982 10 08		03 43.06	+31 41.4						
1982 10 18		03 36.42	+31 25.7	1.337	2.215	142.9	15.7	18.2	
1982 10 28		03 26.64	+30 45.9						
1982 11 07		03 15.07	+29 42.4	1.316	2.287	164.7	6.6	18.0	
1982 11 17		03 03.33	+28 19.9						
1982 11 27		02 53.07	+26 47.8	1.399	2.357	162.0	7.5	18.3	
1982 12 07		02 45.45	+25 17.2						
1982 12 17		02 41.03	+23 56.7	1.585	2.426	140.3	15.0	18.8	
1982 12 27		02 39.90	+22 52.1						
1983 01 06		02 41.80	+22 05.2	1.850	2.492	120.0	20.0	19.3	
1983 01 16		02 46.37	+21 35.2						
1983 01 26		02 53.22	+21 20.2	2.160	2.555	102.1	22.1	19.7	

1978 PD3		Elements MPC 7136							
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.		
1982 08 19		03 10.16	+24 03.8	1.759	2.083	-1.51	-6.4	19.0	
1982 08 29		03 21.68	+25 26.8						
1982 09 08		03 31.02	+26 42.4	1.554	2.091	-1.79	-6.1	18.7	
1982 09 18		03 37.65	+27 49.9						
1982 09 28		03 41.01	+28 48.0	1.370	2.101	-2.14	-6.4	18.3	
1982 10 08		03 40.72	+29 34.2						
1982 10 18		03 36.56	+30 04.9	1.228	2.114	-2.51	-7.8	17.9	
1982 10 28		03 28.85	+30 15.5						
1982 11 07		03 18.60	+30 03.2	1.160	2.130	-2.69	-10.1	17.6	
1982 11 17		03 07.37	+29 28.1						
1982 11 27		02 57.02	+28 36.1	1.188	2.148	-2.52	-11.6	17.7	
1982 12 07		02 49.12	+27 36.7						
1982 12 17		02 44.60	+26 39.5	1.311	2.169	-2.14	-10.9	18.1	
1982 12 27		02 43.79	+25 52.3						
1983 01 06		02 46.56	+25 18.7	1.507	2.191	-1.78	-9.0	18.6	
1983 01 16		02 52.51	+24 59.5						
1983 01 26		03 01.23	+24 53.5	1.748	2.215	-1.52	-6.9	19.0	

1938 SD1		Elements MPC 7148							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982 09 08		03 53.19	+24 33.1	1.364	1.871	103.2	31.6	16.8	
1982 09 18		04 05.68	+25 37.5						
1982 09 28		04 15.49	+26 33.8	1.173	1.860	117.3	28.6	16.4	
1982 10 08		04 21.99	+27 21.8						
1982 10 18		04 24.55	+28 00.4	1.014	1.854	134.6	22.5	15.9	
1982 10 28		04 22.77	+28 26.9						
1982 11 07		04 16.82	+28 38.0	0.907	1.855	155.4	12.8	15.4	
1982 11 17		04 07.54	+28 30.0						
1982 11 27		03 56.73	+28 02.6	0.878	1.861	172.5	4.0	15.1	
1982 12 07		03 46.58	+27 20.8						
1982 12 17		03 39.02	+26 33.1	0.940	1.873	153.6	13.5	15.5	
1982 12 27		03 35.29	+25 49.1						
1983 01 06		03 35.78	+25 15.3	1.080	1.891	132.7	22.4	16.1	
1983 01 16		03 40.28	+24 54.1						
1983 01 26		03 48.38	+24 45.3	1.274	1.914	115.2	27.7	16.6	
1983 02 05		03 59.50	+24 46.1						
1983 02 15		04 13.10	+24 53.4	1.499	1.941	100.6	30.0	17.0	

(2471) 6545 P-L					Elements MPC 6419			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1982 10 18		06 54.26	+33 39.2	2.851	3.212	102.2	17.7	18.2
1982 10 28		06 57.90	+34 14.7					
1982 11 07		06 59.06	+34 54.2	2.600	3.221	120.7	15.3	18.0
1982 11 17		06 57.51	+35 36.6					
1982 11 27		06 53.16	+36 19.0	2.402	3.229	141.0	11.1	17.7
1982 12 07		06 46.23	+36 57.8					
1982 12 17		06 37.17	+37 28.4	2.291	3.236	160.6	5.8	17.5
1982 12 27		06 26.87	+37 46.6					
1983 01 06		06 16.42	+37 50.4	2.293	3.242	161.7	5.5	17.4
1983 01 16		06 06.94	+37 40.0					
1983 01 26		05 59.38	+37 18.2	2.410	3.247	142.6	10.6	17.7
1983 02 05		05 54.36	+36 48.6					
1983 02 15		05 52.11	+36 15.0	2.616	3.251	122.2	14.9	18.0
1983 02 25		05 52.63	+35 40.2					
1983 03 07		05 55.72	+35 05.9	2.878	3.255	103.4	17.3	18.3
1983 03 17		06 01.09	+34 32.8					
1983 03 27		06 08.45	+34 00.9	3.161	3.257	86.5	17.8	18.5

(2311) 1974 TA1					Elements MPC 5645			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1982 10 18		06 49.55	+16 03.4	3.354	3.689	101.8	15.3	17.3
1982 10 28		06 51.85	+15 45.9					
1982 11 07		06 52.26	+15 31.0	3.087	3.695	120.8	13.3	17.1
1982 11 17		06 50.71	+15 19.8					
1982 11 27		06 47.23	+15 13.1	2.874	3.700	141.8	9.5	16.8
1982 12 07		06 42.04	+15 11.3					
1982 12 17		06 35.50	+15 14.6	2.752	3.706	163.6	4.3	16.6
1982 12 27		06 28.18	+15 22.8					
1983 01 06		06 20.74	+15 35.4	2.745	3.712	167.7	3.2	16.5
1983 01 16		06 13.86	+15 51.5					
1983 01 26		06 08.16	+16 10.4	2.858	3.717	146.3	8.5	16.8
1983 02 05		06 04.08	+16 31.2					
1983 02 15		06 01.88	+16 53.2	3.068	3.722	124.9	12.6	17.1
1983 02 25		06 01.67	+17 15.4					
1983 03 07		06 03.40	+17 37.1	3.339	3.727	105.3	14.9	17.3
1983 03 17		06 06.96	+17 57.5					
1983 03 27		06 12.16	+18 15.8	3.638	3.732	87.6	15.5	17.5

(843) Nicolaia					Elements MPC 6414			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1982 10 18		07 04.39	+31 52.4	2.053	2.432	99.9	23.8	18.8
1982 10 28		07 10.37	+32 24.3					
1982 11 07		07 13.19	+33 02.1	1.851	2.473	117.7	20.8	18.6
1982 11 17		07 12.47	+33 45.2					
1982 11 27		07 07.97	+34 30.9	1.688	2.512	138.3	15.2	18.3
1982 12 07		06 59.81	+35 14.1					
1982 12 17		06 48.58	+35 48.0	1.602	2.548	159.8	7.7	18.0
1982 12 27		06 35.49	+36 06.4					
1983 01 06		06 22.22	+36 05.8	1.623	2.582	163.8	6.1	18.0
1983 01 16		06 10.40	+35 47.2					
1983 01 26		06 01.35	+35 15.1	1.755	2.613	143.6	12.9	18.4
1983 02 05		05 55.76	+34 35.4					
1983 02 15		05 53.76	+33 53.2	1.972	2.641	122.8	18.3	18.8
1983 02 25		05 55.16	+33 11.6					
1983 03 07		05 59.54	+32 32.1	2.241	2.666	104.3	21.1	19.2
1983 03 17		06 06.46	+31 54.7					
1983 03 27		06 15.50	+31 18.7	2.530	2.688	88.1	21.8	19.5

1978 RW1		Elements MPC 7153							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982	10	18	07 01.92	+18 16.6	1.717	2.116	99.1	27.7	17.4
1982	10	28	07 12.23	+17 41.9					
1982	11	07	07 20.03	+17 08.6	1.476	2.092	114.5	25.5	17.0
1982	11	17	07 24.87	+16 39.6					
1982	11	27	07 26.31	+16 18.1	1.266	2.068	132.9	20.4	16.6
1982	12	07	07 24.12	+16 06.7					
1982	12	17	07 18.29	+16 07.4	1.114	2.047	154.7	11.9	16.1
1982	12	27	07 09.42	+16 20.3					
1983	01	06	06 58.74	+16 43.6	1.047	2.028	174.0	2.9	15.6
1983	01	16	06 47.94	+17 14.3					
1983	01	26	06 38.85	+17 48.9	1.081	2.011	153.8	12.5	16.0
1983	02	05	06 32.86	+18 24.5					
1983	02	15	06 30.70	+18 58.6	1.198	1.998	131.9	21.6	16.4
1983	02	25	06 32.56	+19 29.5					
1983	03	07	06 38.16	+19 55.2	1.370	1.987	113.5	27.2	16.8
1983	03	17	06 47.06	+20 14.2					
1983	03	27	06 58.77	+20 24.9	1.569	1.980	98.5	29.9	17.1

1978 VB5		Elements MPC 7140							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982	10	18	07 28.97	+24 05.6	2.221	2.491	93.6	23.5	19.3
1982	10	28	07 38.00	+24 15.7					
1982	11	07	07 44.84	+24 33.1	1.948	2.470	110.0	22.1	18.9
1982	11	17	07 49.09	+24 59.8					
1982	11	27	07 50.33	+25 37.3	1.704	2.449	129.1	18.2	18.5
1982	12	07	07 48.30	+26 25.6					
1982	12	17	07 42.86	+27 22.4	1.519	2.427	150.9	11.4	18.1
1982	12	27	07 34.31	+28 22.9					
1983	01	06	07 23.50	+29 20.3	1.427	2.404	171.9	3.3	17.7
1983	01	16	07 11.76	+30 07.7					
1983	01	26	07 00.77	+30 40.7	1.444	2.381	156.8	9.4	17.9
1983	02	05	06 52.02	+30 58.6					
1983	02	15	06 46.50	+31 03.3	1.560	2.358	134.2	17.5	18.2
1983	02	25	06 44.70	+30 58.1					
1983	03	07	06 46.58	+30 45.5	1.742	2.334	114.5	22.8	18.6
1983	03	17	06 51.82	+30 27.2					
1983	03	27	07 00.02	+30 03.7	1.955	2.311	97.7	25.3	18.9

(2481) 1977 UQ		Elements MPC 6469							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1982	11	07	08 41.39	+20 52.2	2.686	2.966	96.5	19.4	19.5
1982	11	17	08 45.36	+20 45.2					
1982	11	27	08 46.99	+20 47.2	2.447	3.005	115.4	17.3	19.2
1982	12	07	08 46.09	+20 58.7					
1982	12	17	08 42.58	+21 19.5	2.249	3.041	136.8	12.8	19.0
1982	12	27	08 36.53	+21 47.8					
1983	01	06	08 28.34	+22 20.6	2.130	3.074	160.4	6.2	18.7
1983	01	16	08 18.66	+22 53.9					
1983	01	26	08 08.43	+23 23.7	2.125	3.105	173.4	2.1	18.5
1983	02	05	07 58.71	+23 46.9					
1983	02	15	07 50.40	+24 02.0	2.240	3.132	149.7	9.2	18.9
1983	02	25	07 44.21	+24 08.8					
1983	03	07	07 40.49	+24 08.2	2.455	3.157	127.4	14.5	19.3
1983	03	17	07 39.32	+24 01.3					
1983	03	27	07 40.60	+23 48.9	2.732	3.179	107.6	17.4	19.6
1983	04	06	07 44.07	+23 31.6					
1983	04	16	07 49.46	+23 09.8	3.036	3.198	90.0	18.3	19.9