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

IDENTIFICATION CHANGES.

Continuation to MPC 5921.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1938 BN	*	1938 01	28.94372	08 39 54.13	-00 34 00.4	1177		020
1940 GC1	*	1940 04	12.92632	12 19 11.83	+03 12 11.2	1940 EF		062
1942 TJ	*	1942 10	03.91	00 03.0	+14 09	1942 RS		062
1942 TJ		1942 10	11.90	23 57.1	+13 30	1942 RS		062
1962 DA	*	1962 02	26.49	09 11.7	+19 59	534	14.6	388
1963 KH	*	1963 05	25.89097	17 20 22.67	-25 09 49.8	321	15.5	076
1966 QS	*	1966 08	19.00101	23 29 27.34	-06 03 06.6	991		095
1966 RQ	*	1966 09	12.97	23 30.8	-06 44	991		020
1966 RQ		1966 09	14.99	23 29.7	-06 54	991		020
1966 RQ		1966 09	19.96333	23 25 35.53	-07 13 43.2	991		020
1966 RQ		1966 09	19.99861	23 25 34.40	-07 13 57.3	991		020
1968 FQ	*	1968 03	25.87598	11 04 51.12	+04 30 31.8	1968 DK		095
1968 QX1	*	1968 08	31.92815	22 39 20.40	-07 35 00.7	1968 QM		095
1969 CA	*	1969 02	11.03930	08 48 40.82	+20 31 18.9	991		020
1969 CA		1969 02	11.05385	08 48 40.21	+20 31 27.5	991		020
1969 CA		1969 02	13.02731	08 47 21.43	+20 37 34.5	991		020
1969 CA		1969 02	17.91603	08 43 35.93	+20 51 18.9	991		020
1969 CA		1969 02	17.93058	08 43 34.95	+20 51 24.6	991		020
1969 UV2	*	1969 10	16.89225	00 19 17.93	+07 30 56.1	1969 TP	17.0	095
1971 OV1	*	1971 07	25.91854	20 44 09.76	-12 45 49.8	1971 OE	16.5	095

* * * * *

IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 5921.

	Note		Note		Note
A911 MC = (2324)	1	A917 SJ = (1475)	1	1925 RM = (370)	2
1926 FF = (2009)	2	1929 LH = (1382)	2	1929 XB = (1642)	2
1930 HO = (821)	2	1930 XL = (1065)	2	1933 BZ = (1576)	2
1933 DH = (1484)	2	1933 FQ = (496)	2	1933 FT = (2289)	2
1933 QK = (1314)	2	1933 TA = (763)	2	1934 AJ = (391)	2
1934 BC = (1735)	2	1934 RE1 = (197)	2	1934 SE = (983)	2
1934 SF = (612)	2	1935 QO = (903)	2	1935 UP = (2227)	2
1936 AE = (2123)	2	1937 UJ = (544)	2	1938 DO2 = (316)	2
1938 XG = (389)	2	1939 RL = (2271)	2	1942 GO = (2215)	2
1978 NB = (2091)	2	1981 GK = (2376)	1		

Note 1: identification by E. Bowell. 2: identification by B. G. Marsden.

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

020 Nice. Observer B. Milet.
046 Klet. Observers A. Mrkos and L. Brozek.
063 Turku-Tuorla. Observer T. Korhonen.
065 Traunstein. Observer R. Bendel. Measured by R. Hempel.
075 Tartu. Observer H. K. Raudsaar. From Kiev Komet. Tsirk. No. 276.
210 Alma-Ata. Observers B. D. D'yakonova and L. A. Usol'tseva. From Kiev Komet. Tsirk. No. 276.
323 Perth. Observers P. Jekabsons and M. P. Candy.
372 Geisei. Observer T. Seki. From Japan Astron. Circ. No. 297.
394 JCPM Hamatonbetsu Station. Observer M. Takeishi. From JCPM Hamatonbetsu Sta. Rep. No. 5.
413 U.K. Schmidt Telescope Unit, Siding Spring. Observer D. H. Morgan. Preliminary measurement by R. J. Smyth.
415 Kambah. Observer D. Herald.
474 Mount John Observatory. 0.6-m reflector. Observers A. C. Gilmore and P. M. Kilmartin.
485 Carter Observatory. 0.4-m reflector. Observers A. C. Gilmore and R. E. Millington. Measured by P. M. Kilmartin.
489 Hemingford Abbots. Observer A. Young. Communicated by G. M. Hurst.
490 Wimborne Minster. Observer M. Swan. Measured by B. Manning.
494 Stakenbridge. Observer B. Manning. Communicated by G. M. Hurst.
496 Bishopstoke. Observer R. Arbour. Measured by B. Manning.
662 Lick Observatory. 0.9-m reflector. Observer E. Roemer.
671 Stony Ridge. Observers J. Faulkner, P.-Y. de Loreilhe and S. Fuselier.
672 Mt. Wilson. Observer L. E. Cunningham. Measured by L. R. Cotter, A. Q. Howard and A. G. Mowbray. Re-reduction by J. Gibson.
675 Palomar. Observers E. Helin, S. J. Bus, E. Howell, J. Gibson and C. Kowal. See also Note 2 below.
687 Northern Arizona University. Observers C. B. Luginbuhl and B. A. Skiff. Measured by Luginbuhl.
688 Lowell Observatory, Anderson Mesa station. Observers H. L. Giclas and B. A. Skiff. Measured by E. Bowell.
691 Steward Observatory, Kitt Peak. Observer E. Roemer. The many assistants are included in the list on MPC 5860.
693 Lunar and Planetary Laboratory, Catalina station. Observer E. Roemer. The many assistants are included in the list on MPC 5860.
801 Agassiz Station. 1.5-m reflector. Observer C.-Y. Shao.
807 Cerro Tololo. Observer J. H. Elias.
809 European Southern Observatory. Measured by R. M. West.
882 JCPM Oi Station. Observer K. Suzuki. Measured by M. Takeishi. From JCPM Hamatonbetsu Sta. Rep. No. 5.
887 Ojima. Observer T. Niijima. Measured by M. Takeishi. From JCPM Hamatonbetsu Sta. Rep. No. 5. Long. and Parallax 139.34, -345, -250 (see MPC 4766).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Wolf					
/1950 VI	1950	06 18.42464	23 07 52.89	+20 37 15.5	20	N 1	672
/1950 VI	1950	06 18.45519	23 07 54.68	+20 37 33.2		1	672
/1950 VI	1950	06 19.39338	23 08 46.89	+20 45 28.6		1	672
/1950 VI	1950	06 19.43841	23 08 49.29	+20 45 52.0		1	672
/1950 VI	1950	07 20.40345	23 30 04.11	+24 06 36.5			672

/1950 VI	1950	07	20.44720	23	30	05.12	+24	06	46.4			672
/1950 VI	1950	07	21.35278	23	30	27.27	+24	10	13.6	18	N	672
/1950 VI	1950	07	22.37049	23	30	50.85	+24	13	55.5	18.2	N	672
/1950 VI	1950	08	16.31284	23	33	49.80	+24	20	38.1			672
/1950 VI	1950	08	17.31767	23	33	41.08	+24	16	57.2	18	N	672
/1950 VI	1950	09	10.31459	23	25	39.00	+21	00	30.4	18	N	672
/1950 VI	1950	09	11.31078	23	25	11.91	+20	47	55.7	17.8	N	672
/1950 VI	1950	09	12.26917	23	24	45.65	+20	35	29.4	17	N	672
/1950 VI	1950	10	10.32051	23	14	25.95	+13	01	36.2	17.5	N	672
/1950 VI	1950	11	12.25001	23	20	45.70	+04	42	31.7	18	N	672
/1950 VI	1950	12	13.21249	23	47	21.48	+00	56	01.4			672
/1950 VI	1950	12	13.22465	23	47	22.21	+00	55	58.9	18.5	N	672
/1967 XII	1967	09	30.20831	01	07	02.37	+14	56	17.4			693
/1967 XII	1967	11	04.22495	00	52	21.03	+05	15	45.3			693
/1967 XII	1967	11	04.27218	00	52	20.33	+05	15	04.3			693

Periodic Comet Harrington-Wilson

/1951 IX	1952	01	30.45417	12	33	16.24	+11	37	35.2		2	675
/1951 IX	1952	02	04.43056	12	35	52.36	+12	46	18.3		2	675
/1951 IX	1952	02	19.33403	12	37	59.17	+16	34	39.3	17.5	N	672
/1951 IX	1952	02	19.33958	12	37	59.08	+16	34	45.6			672
/1951 IX	1952	02	21.30249	12	37	38.75	+17	05	49.1	17.5	N	672
/1951 IX	1952	02	21.31152	12	37	38.70	+17	05	58.2			672
/1951 IX	1952	02	25.39167	12	36	30.70	+18	09	55.5			672

Periodic Comet Wolf-Harrington

/1952 II	1951	10	07.30972	00	41	47.01	+36	57	35.1		2	675
/1952 II	1951	10	08.29028	00	41	04.44	+36	52	28.3		2	675
/1952 II	1951	10	09.33750	00	40	18.23	+36	46	23.1		2	675
/1952 II	1951	11	25.21896	00	29	39.84	+24	51	32.2	15.5	N	672
/1952 II	1951	11	25.22260	00	29	39.95	+24	51	28.2			672
/1952 II	1951	12	21.29582	01	00	52.69	+18	00	43.5	16	N	672
/1952 II	1951	12	21.29859	01	00	52.96	+18	00	41.3			672
/1952 II	1951	12	23.15258	01	04	01.32	+17	38	42.0	15.6	N	672
/1952 II	1951	12	23.15519	01	04	01.55	+17	38	40.4			672
/1952 II	1952	01	27.23631	02	18	39.17	+13	36	09.4	16	N	672
/1952 II	1952	02	19.20556	03	17	22.77	+12	55	33.0	16.3	N	672
/1952 II	1952	02	19.20885	03	17	23.22	+12	55	32.2			672

Comet Mrkos (1952 V)

/1952 V	1952	05	21.47272	23	57	14.87	+39	43	08.4	15.8	T	672
/1952 V	1952	05	21.46925	23	57	14.88	+39	43	11.0			672

Comet Honda (1955 V)

/1955 V	1955	08	30.18648	15	41	32.13	+56	15	27.8		3	662
/1955 V	1955	09	08.20500	16	03	55.92	+43	12	46.0			662
/1955 V	1955	09	08.20500	16	03	56.37	+43	12	42.3		4	662
/1955 V	1955	09	21.17070	16	15	29.96	+35	12	33.2			662
/1955 V	1955	09	21.17070	16	15	30.31	+35	12	30.6		4	662
/1955 V	1955	09	21.18801	16	15	30.65	+35	12	07.6			662
/1955 V	1955	09	21.18801	16	15	31.00	+35	12	04.8		4	662
/1955 V	1955	09	26.15263	16	18	52.15	+33	26	10.4			662
/1955 V	1955	09	26.15263	16	18	52.44	+33	26	08.4		4	662
/1955 V	1955	09	26.15609	16	18	52.18	+33	26	06.4			662
/1955 V	1955	09	26.15609	16	18	52.46	+33	26	03.9		4	662
/1955 V	1955	09	26.15840	16	18	52.34	+33	26	04.2			662
/1955 V	1955	09	26.15840	16	18	52.69	+33	26	00.9		4	662
/1955 V	1955	09	26.18634	16	18	53.40	+33	25	31.4			662

/1955 V	1955	09	27.15672	16	19	31.80	+33	07	46.1	662
/1955 V	1955	09	27.15672	16	19	32.17	+33	07	43.2	4 662
/1955 V	1955	09	27.15955	16	19	31.88	+33	07	43.0	662
/1955 V	1955	09	27.15955	16	19	32.30	+33	07	40.1	4 662
/1955 V	1955	09	27.16638	16	19	32.19	+33	07	35.8	662
/1955 V	1955	09	27.16843	16	19	32.22	+33	07	33.4	662
/1955 V	1955	09	28.17830	16	20	11.93	+32	49	56.5	662
/1955 V	1955	09	28.18043	16	20	12.02	+32	49	54.4	662
/1955 V	1955	09	28.18240	16	20	12.06	+32	49	52.2	662
/1955 V	1955	09	29.15892	16	20	50.44	+32	33	37.2	662
/1955 V	1955	09	29.16302	16	20	50.63	+32	33	35.1	662
/1955 V	1955	09	29.16505	16	20	50.69	+32	33	31.3	662
/1955 V	1955	10	05.16034	16	24	45.45	+31	08	33.3	662
/1955 V	1955	10	05.16293	16	24	45.53	+31	08	32.0	662
/1955 V	1955	10	05.17113	16	24	45.89	+31	08	25.6	662
/1955 V	1955	10	06.15731	16	25	24.82	+30	56	34.5	662
/1955 V	1955	10	06.15985	16	25	24.98	+30	56	32.4	662
/1955 V	1955	10	06.16990	16	25	25.30	+30	56	25.3	662
/1955 V	1955	10	07.15275	16	26	04.18	+30	45	06.7	662
/1955 V	1955	10	07.15500	16	26	04.24	+30	45	06.4	662
/1955 V	1955	11	06.12301	16	47	22.91	+27	57	33.4	662
			Comet Wild (1967 III)							
/1967 III	1967	03	04.16179	05	07	35.18	+31	43	43.0	693
/1967 III	1967	03	04.16943	05	07	35.08	+31	42	56.4	693
/1967 III	1967	04	10.12606	05	21	44.97	-00	26	10.8	693
/1967 III	1967	04	10.14236	05	21	45.60	-00	26	36.0	693
			Periodic Comet Tempel 2							
/1967 X	1967	02	12.49387	16	05	19.75	-07	37	27.0	693
/1967 X	1967	07	03.25527	18	29	34.69	-08	56	24.6	693
/1967 X	1967	07	03.26429	18	29	34.67	-08	56	37.2	693
/1967 X	1967	09	30.11074	21	05	09.33	-37	03	13.9	693
/1967 X	1967	09	30.11907	21	05	10.70	-37	03	10.1	693
			Periodic Comet Reinmuth 2							
/1967 XI	1967	06	07.37366	22	46	04.11	-05	28	20.4	693
/1967 XI	1967	06	07.39866	22	46	06.26	-05	28	00.3	693
/1967 XI	1967	09	30.15484	23	18	38.59	+09	11	55.0	693
/1967 XI	1967	09	30.16386	23	18	38.33	+09	11	53.7	693
/1967 XI	1967	11	04.13122	23	19	07.63	+07	53	14.5	693
/1967 XI	1967	11	04.15622	23	19	08.36	+07	53	13.3	693
			Comet Ikeya-Seki (1968 I)							
/1968 I	1968	05	26.15109	06	55	40.57	+54	15	26.3	693
/1968 I	1968	05	26.15526	06	55	40.71	+54	15	21.8	693
/1968 I	1968	10	19.41498	07	16	23.87	+39	27	48.4	693
/1968 I	1968	10	19.42609	07	16	23.00	+39	27	48.5	693
/1968 I	1968	11	23.50005	06	11	35.84	+38	22	46.3	693
/1968 I	1968	11	23.52366	06	11	32.54	+38	22	39.0	693
			Periodic Comet Harrington-Abell							
/1969 III	1968	11	23.33199	03	23	51.52	-10	33	04.0	693
/1969 III	1968	11	23.37713	03	23	49.24	-10	33	10.6	693
/1969 III	1969	02	16.09817	03	37	17.72	+02	17	40.5	693
/1969 III	1969	02	16.12248	03	37	19.64	+02	18	02.1	693
/1969 III	1969	04	19.13888	05	41	23.40	+15	43	05.1	693
/1969 III	1969	04	20.14240	05	43	54.56	+15	52	10.3	693

Periodic Comet Churyumov-Gerasimenko

/1969	IV	1969	11	05.47668	10	07	49.14	+18	20	21.8	691
/1969	IV	1969	11	05.48061	10	07	49.70	+18	20	19.8	691
/1969	IV	1970	02	03.35538	11	20	50.22	+17	56	37.9	691
/1969	IV	1970	02	03.36435	11	20	49.66	+17	56	42.0	691
/1969	IV	1970	03	07.17638	10	44	33.36	+20	40	09.4	693
/1969	IV	1970	03	07.19999	10	44	31.83	+20	40	12.6	693
/1969	IV	1970	05	08.16319	10	29	51.44	+17	08	53.0	691
/1969	IV	1970	05	08.20822	10	29	52.64	+17	08	35.1	691

Comet Tago-Sato-Kosaka (1969 IX)

/1969	IX	1970	02	03.12558	02	07	16.03	+23	37	47.3	691
/1969	IX	1970	02	03.12679	02	07	16.44	+23	37	54.9	691
/1969	IX	1970	03	07.10449	03	54	31.66	+45	44	21.8	693
/1969	IX	1970	03	07.10935	03	54	32.35	+45	44	26.1	693
/1969	IX	1970	04	06.13053	05	01	40.81	+50	23	39.9	693
/1969	IX	1970	04	06.15484	05	01	43.91	+50	23	48.0	693

Periodic Comet d’Arrest

/1970	VII	1970	07	04.44309	02	59	18.26	+07	01	23.9	693
/1970	VII	1970	07	04.45212	02	59	19.90	+07	01	25.2	693
/1970	VII	1970	09	26.47900	05	32	05.22	+01	30	47.2	691
/1970	VII	1970	09	26.50092	05	32	05.83	+01	30	36.6	691
/1970	VII	1970	11	26.21337	04	58	37.92	-03	44	18.3	691
/1970	VII	1970	11	26.26290	04	58	34.14	-03	44	15.2	691
/1970	VII	1971	01	20.22627	04	17	06.32	+01	51	52.4	691

Periodic Comet Jackson-Neujmin

/1970	IX	1970	10	01.38750	05	02	28.86	+02	11	23.9	693
/1970	IX	1970	10	01.41250	05	02	30.48	+02	11	04.3	693
/1970	IX	1970	10	05.38785	05	06	34.10	+01	18	06.0	691
/1970	IX	1970	10	05.39767	05	06	34.59	+01	17	58.3	691
/1970	IX	1970	10	31.38821	05	13	47.45	-03	48	11.7	693
/1970	IX	1970	10	31.43404	05	13	46.36	-03	48	36.7	693
/1970	IX	1970	11	25.28588	04	56	07.38	-05	43	30.9	691
/1970	IX	1970	11	25.32963	04	56	04.79	-05	43	29.9	691

Comet Gehrels (1971 I)

/1971	I	1972	04	13.21181	11	33.37		+00	26.5		693
/1971	I	1972	04	13.24097	11	33.34		+00	26.7		693
/1971	I	1972	04	18.19520	11	28.13		+00	59.7		691
/1971	I	1973	01	08.48409	11	10.19		+01	48.8		691
/1971	I	1973	01	08.53345	11	10.16		+01	49.0		691

Periodic Comet Tsuchinshan 1

/1971	VIII	1971	12	20.51539	13	47	19.59	-01	14	28.2	691
/1971	VIII	1971	12	21.47315	13	49	15.30	-01	22	01.6	691
/1971	VIII	1972	01	21.47917	14	42	46.74	-04	11	22.8	693
/1971	VIII	1972	01	21.52569	14	42	50.65	-04	11	29.1	693
/1971	VIII	1972	02	11.47975	15	07	00.58	-04	41	18.4	691
/1971	VIII	1972	02	11.52332	15	07	02.80	-04	41	17.9	691
/1971	VIII	1972	03	10.43287	15	19	22.23	-03	48	41.0	691
/1971	VIII	1972	03	10.49045	15	19	22.08	-03	48	29.1	691

Comet Bradfield (1972 III)

/1972	III	1972	04	09.70822	01	12	39.35	-48	37	56.4	485
/1972	III	1972	04	09.72120	01	12	47.12	-48	38	18.2	485
/1972	III	1972	04	10.71247	01	23	24.20	-49	08	29.6	485

/1972 III	1972	04	10.73604	01	23	39.47	-49	09	11.8	5	485
/1972 III	1972	04	20.30974	03	35	20.40	-49	59	26.2		485
/1972 III	1972	04	21.39171	03	52	04.82	-49	24	28.1		485
/1972 III	1972	04	21.40323	03	52	15.28	-49	24	01.4		485
/1972 III	1972	05	01.40351	06	05	23.05	-37	41	56.2		485
/1972 III	1972	05	01.41600	06	05	30.37	-37	40	47.0		485
/1972 III	1972	05	07.37038	06	57	26.21	-28	34	46.0		485
/1972 III	1972	05	07.37870	06	57	29.49	-28	34	03.2		485
/1972 III	1972	05	08.32199	07	04	07.61	-27	11	14.3	5	485
/1972 III	1972	05	08.33594	07	04	13.40	-27	10	00.8	5	485
/1972 III	1972	05	10.39618	07	17	28.69	-24	16	07.2		485
/1972 III	1972	05	10.40799	07	17	33.49	-24	15	02.6	5	485
/1972 III	1972	05	18.32882	07	56	41.19	-14	50	04.8		485
/1972 III	1972	05	18.34202	07	56	44.16	-14	49	15.1		485

Comet Sandage (1972 IX)

/1972 IX	1972	07	14.29656	15	11	04.43	+24	12	42.5		691
/1972 IX	1972	07	14.30069	15	11	04.37	+24	12	42.6		691
/1972 IX	1972	08	10.14444	15	10	56.38	+24	28	48.8		693
/1972 IX	1972	08	10.15312	15	10	56.47	+24	28	48.6		693
/1972 IX	1972	08	14.13889	15	11	51.53	+24	26	46.8		691
/1972 IX	1972	08	14.14618	15	11	51.64	+24	26	46.6		691
/1972 IX	1972	09	04.11806	15	20	17.74	+24	08	54.6		693
/1972 IX	1972	09	04.12847	15	20	18.08	+24	08	53.8		693
/1972 IX	1972	10	09.13333	15	45	49.15	+23	51	25.9		693
/1972 IX	1972	10	09.14375	15	45	49.70	+23	51	26.0		693
/1972 IX	1973	02	04.51111	18	09	11.86	+36	35	12.3		693
/1972 IX	1973	02	04.52986	18	09	13.33	+36	35	27.9		693
/1972 IX	1973	04	04.44997	19	16	56.04	+52	22	14.1		693
/1972 IX	1973	04	04.45969	19	16	56.52	+52	22	24.2		693
/1972 IX	1973	05	25.45185	19	39	04.68	+65	24	01.2		691
/1972 IX	1973	05	25.45648	19	39	04.64	+65	24	04.4		691
/1972 IX	1973	07	02.34647	19	13	24.32	+71	01	30.7		691
/1972 IX	1973	07	02.35573	19	13	23.65	+71	01	33.3		691
/1972 IX	1973	10	22.08021	19	08	32.66	+62	48	50.2		691
/1972 IX	1973	10	22.08785	19	08	33.28	+62	48	46.3		691
/1972 IX	1974	06	17.39578	00	46	51.95	+59	18	10.7		691

Periodic Comet Reinmuth 1

/1973 IV	1972	09	12.43611	05	42	42.92	+15	58	56.6		691
/1973 IV	1972	09	12.48194	05	42	46.64	+15	58	55.2		691
/1973 IV	1972	11	04.40208	06	38	27.08	+14	58	56.8		693
/1973 IV	1972	11	04.44653	06	38	28.51	+14	58	54.8		693
/1973 IV	1972	12	04.32431	06	42	48.26	+15	13	12.2		693
/1973 IV	1972	12	04.35069	06	42	47.71	+15	13	16.2		693
/1973 IV	1973	01	01.33681	06	26	23.31	+17	13	52.0		693
/1973 IV	1973	01	01.36250	06	26	22.08	+17	14	01.6		693
/1973 IV	1973	04	03.24860	07	10	15.10	+25	00	57.0		693

Periodic Comet Schwassmann-Wachmann 1

/1974 II	1981	03	27.88359	10	05	01.39	+07	06	17.1	16.5T	046
/1974 II	1981	03	27.89771	10	05	01.14	+07	06	16.4		046
/1974 II	1981	03	29.87578	10	04	26.28	+07	09	09.5	16.8T	046
/1974 II	1981	03	29.88995	10	04	25.90	+07	09	10.5		046

Periodic Comet Wirtanen

/1974 XI	1975	02	06.43900	14	00.89		+03	44.4			691
/1974 XI	1975	02	06.50874	14	00.90		+03	44.7			691

Periodic Comet Kohoutek

/1975 III	1975	03	13.16944	05	10.50	+20	30.4		693

Comet Helin (1977 VIII)

/1977 VIII	1977	04	18.40660	12	31 16.20	-08	02 13.0		675

Comet West (1977 IX)

/1977 IX	1978	03	14.24958	14	17 23.67	-05	46 19.4		809

Comet Bradfield (1978 VII)

/1978 VII	1978	02	06.66597	18	34 01.75	-48	43 51.9	6	474

Comet Meier (1978 XXI)

/1978 XXI	1978	05	03.92083	07	26 14.25	+52	14 02.3		063
/1978 XXI	1979	11	10.59117	22	22 37.81	-15	58 38.8		210
/1978 XXI	1979	11	10.60696	22	22 37.74	-15	58 22.4		210
/1978 XXI	1979	11	11.56858	22	22 37.55	-15	54 05.7		210
/1978 XXI	1979	11	11.58317	22	22 37.34	-15	54 02.3		210
/1978 XXI	1979	11	11.60221	22	22 37.38	-15	53 51.0		210
/1978 XXI	1979	11	13.63708	22	22 39.33	-15	44 46.8	15.3T	210
/1978 XXI	1979	11	14.60679	22	22 41.12	-15	40 18.5	15.6T	210
/1978 XXI	1979	11	15.57925	22	22 44.43	-15	35 57.5	15.2T	210
/1978 XXI	1979	11	15.59368	22	22 44.39	-15	35 56.2	15.0T	210
/1978 XXI	1979	11	16.57039	22	22 48.20	-15	31 22.9	14.9T	210
/1978 XXI	1979	11	17.58734	22	22 52.74	-15	26 39.0	15.2T	210
/1978 XXI	1979	11	17.59807	22	22 52.75	-15	26 37.5	15.1T	210
/1978 XXI	1979	11	18.58264	22	22 58.45	-15	22 01.4	15.1T	210

Periodic Comet Forbes

/1980a	1980	07	06.30214	13	03 52.78	-10	23 56.3		474
/1980a	1980	07	06.33962	13	03 55.76	-10	24 18.5		474

Comet Bowell (1980b)

/1980b	1981	04	02.19861	12	20 48.68	-00	03 30.8		687
/1980b	1981	04	03.53818	12	20 14.02	+00	00 22.9		474
/1980b	1981	04	03.54803	12	20 13.79	+00	00 24.7		474
/1980b	1981	05	02.15694	12	09 54.14	+01	04 57.2		688
/1980b	1981	05	02.25208	12	09 52.66	+01	05 05.1		688

Periodic Comet Wild 3

/1980d	1980	07	10.29728	13	19 49.69	+00	29 29.4		474
/1980d	1980	07	10.32160	13	19 51.04	+00	29 10.9		474

Periodic Comet Stephan-Oterma

/1980g	1980	12	08.90694	05	31 45.85	+23	52 11.6	8 T	496
/1980g	1981	01	25.48021	05	48 32.79	+42	32 37.4		882
/1980g	1981	01	25.48368	05	48 32.85	+42	32 40.7		882

Periodic Comet Tuttle

/1980h	1980	12	05.82431	10	54 47.88	-22	11 31.8		882
/1980h	1980	12	05.82674	10	54 48.11	-22	11 53.5		882
/1980h	1980	12	13.81042	11	09 48.92	-40	45 23.3		882
/1980h	1980	12	13.81262	11	09 48.98	-40	45 40.1		882
/1980h	1981	01	26.45451	14	45 11.3	-82	52 13.5		415
/1980h	1981	02	23.47361	19	44 32.3	-84	54 49.7		415
/1980h	1981	02	28.43819	20	13 27	-84	56 18		415
/1980h	1981	03	12.59479	20	58 40.2	-85	30 30.9		415

Periodic Comet Borrelly

/1980i	1981	04	02.15868	03	54	51.43	+30	22	37.6				687

Comet Meier (1980q)

/1980q	1981	02	04.83785	17	43	45.89	+21	04	46.1				882
/1980q	1981	02	04.84549	17	43	45.61	+21	04	46.0				882
/1980q	1981	03	07.80938	17	05	18.04	+22	29	07.6				882
/1980q	1981	03	07.81285	17	05	17.33	+22	29	09.8				882
/1980q	1981	05	08.85653	13	27	09.31	+14	45	03.1	11.5	T		046
/1980q	1981	05	08.85959	13	27	09.03	+14	44	59.4				046

Comet Bradfield (1980t)

/1980t	1981	01	12.75174	20	45	20.70	+01	03	03.0				494
/1980t	1981	01	12.75851	20	45	22.57	+01	03	16.3				494
/1980t	1981	01	12.76458	20	45	24.24	+01	03	37.8				494
/1980t	1981	01	24.75940	21	25	17.5	+05	09	26.0				494

Comet Panther (1980u)

/1980u	1980	10	09.08054	19	13	58.72	+37	45	02.8			7	801
/1980u	1980	10	27.97561	18	49	24.81	+35	50	04.7	12	T	7	801
/1980u	1981	01	04.77569	18	52	09.77	+41	36	18.6				490
/1980u	1981	01	10.75903	18	55	42.20	+43	39	08.0				494
/1980u	1981	01	10.7691	18	55	42.57	+43	39	23.1				494
/1980u	1981	01	10.79340	18	55	43.45	+43	39	54.5				489
/1980u	1981	01	10.80556	18	55	43.89	+43	40	11.8				494
/1980u	1981	01	11.78472	18	56	20.25	+44	02	19.9				490
/1980u	1981	02	04.80139	19	13	30.07	+56	41	14.5				882
/1980u	1981	02	04.80451	19	13	30.24	+56	41	21.7				882
/1980u	1981	02	07.48056	19	15	41.6	+58	35	50				671
/1980u	1981	02	07.49514	19	15	43.1	+58	36	34				671
/1980u	1981	02	11.24635	19	18	55.44	+61	28	11.4				494
/1980u	1981	02	26.74306	19	35	11.62	+75	38	36.2				075
/1980u	1981	02	27.73264	19	36	37.75	+76	40	04.4				075
/1980u	1981	03	07.77049	19	59	52.63	+85	22	44.1				882
/1980u	1981	03	07.77396	19	59	53.66	+85	22	58.4				882
/1980u	1981	03	10.74688	21	07	00.79	+88	40	28.0				882
/1980u	1981	03	25.12847	07	42	13.65	+74	50	04.8				675
/1980u	1981	03	25.17118	07	42	17.49	+74	47	15.8				675
/1980u	1981	04	02.18264	07	52	11.46	+66	13	26.6				687
/1980u	1981	04	03.50000	07	53	38.09	+64	53	09.8	8.5	T		394
/1980u	1981	04	03.52153	07	53	39.71	+64	51	49.9				394
/1980u	1981	04	06.16597	07	56	30.05	+62	14	44.1				687
/1980u	1981	04	06.86597	07	57	13.93	+61	34	03.1				065
/1980u	1981	04	06.86887	07	57	14.26	+61	33	54.5				065
/1980u	1981	04	06.87292	07	57	14.56	+61	33	38.5				065
/1980u	1981	04	06.89242	07	57	15.80	+61	32	32.0				065
/1980u	1981	04	06.89549	07	57	16.09	+61	32	22.7				065
/1980u	1981	04	08.46042	07	58	54.26	+60	03	06.3				887

Periodic Comet Bus

/1981b	1981	04	03.43473	11	34	23.95	+02	47	55.8	18	T		474
/1981b	1981	04	03.46131	11	34	23.12	+02	48	03.5				474
/1981b	1981	04	25.20729	11	28	32.53	+04	00	52.1	17.5	T		675

Comet Elias (1981c)

/1981c	1981	04	03.016	11	19	17.82	-77	10	12.6	15	T		807
/1981c	1981	04	03.134	11	18	54.62	-77	08	24.4				807
/1981c	1981	04	04.011	11	16	10.14	-76	56	25.5				807
/1981c	1981	04	04.132	11	15	49.66	-76	54	24.8				807

/1981c	1981	04	04.141	11	15	47.76	-76	54	22.9	807
/1981c	1981	04	20.1576	10	41	28.17	-72	26	13.0	807
/1981c	1981	04	29.38079	10	31	52.68	-69	24	24.6	413
/1981c	1981	05	02.33281	10	29	56.25	-68	23	30.4	15 T 474
/1981c	1981	05	02.35469	10	29	55.40	-68	23	04.4	15 T 474
/1981c	1981	05	03.9847	10	29	02.93	-67	49	03.2	807
			Comet Bus (1981d)							
/1981d	1981	04	26.32361	15	26	34.12	-06	46	02.3	16.5T 675
/1981d	1981	04	28.37778	15	18	15.53	-06	26	03.1	675
/1981d	1981	04	30.57497	15	09	08.57	-06	03	54.5	16 T 474
/1981d	1981	04	30.59658	15	09	03.01	-06	03	41.8	474
/1981d	1981	04	30.69896	15	08	37.0	-06	02	46	15.5T 8 372
/1981d	1981	04	30.71250	15	08	33.9	-06	02	36	372
/1981d	1981	05	01.57328	15	04	56.07	-05	53	41.4	16 T 474
/1981d	1981	05	01.58611	15	04	52.75	-05	53	34.0	474
/1981d	1981	05	03.19171	14	58	02.39	-05	37	02.8	801
/1981d	1981	05	04.1354	14	53	59.13	-05	26	57.5	807
/1981d	1981	05	04.60405	14	51	57.32	-05	22	04.3	16 T 474
/1981d	1981	05	04.62361	14	51	52.21	-05	21	51.0	16 T 474
/1981d	1981	05	05.23264	14	49	14.44	-05	15	36.7	15.5T 9 688
/1981d	1981	05	06.98012	14	41	38.90	-04	57	04.2	020
/1981d	1981	05	08.03392	14	37	04.17	-04	45	50.6	16.0T 046
/1981d	1981	05	08.04833	14	37	00.43	-04	45	39.4	046
/1981d	1981	05	11.38507	14	22	31.31	-04	10	17.8	675
/1981d	1981	05	13.28830	14	14	21.07	-03	50	27.7	675
			Periodic Comet Finlay							
/1981e	1981	05	07.87951	23	55	59.45	-03	24	35.5	16 T 323
/1981e	1981	05	08.87986	23	59	50.09	-02	59	06.0	16 T 323

Note 1: images weak, far from center. 2: these plates were taken by R. G. Harrington and A. G. Wilson, re-reduced by J. Gibson. 3: observation with the 0.5-m astrograph. 4: secondary nucleus. 5: remeasurements of the positions given on IAUC 2402 and 2411. 6: plate taken by R. R. D. Austin with the 0.25-m astrograph. 7: prediscovery observations from Damon Sky Patrol plates taken by A. J. Aho and G. Schwartz. 8: right ascension changed by -4.0 seconds of time. 9: measurement uncertain.

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OBSERVATIONS MADE AT TAUTENBURG BY BARTL, BORNGEN, KALLOGHLJAN, LOCHNO AND ZIENER. REDUCTIONS BY F. BORNGEN AND K. KIRSCH. COMMUNICATED BY S. MARX.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
153	1969	10 08.94028	00 19 11.66	+09 09 40.8	13.1V	033
153	1969	10 08.96111	00 19 10.92	+09 09 33.8		033
167	1973	10 31.90521	01 30 49.85	+07 04 56.8		033
167	1973	11 01.95000	01 30 03.51	+07 00 09.2		033
167	1973	11 02.90521	01 29 22.11	+06 55 51.8	13.6R	033
167	1973	11 03.95521	01 28 37.16	+06 51 13.6		033
992	1969	10 08.94028	00 14 38.95	+08 19 31.2	16.9V	033
992	1969	10 08.96111	00 14 38.06	+08 19 22.1		033
1322	1976	09 22.80556	00 41 09.68	+40 33 14.9		033
1322	1976	09 22.83681	00 41 07.86	+40 33 04.1		033
1322	1976	09 22.86806	00 41 06.19	+40 32 53.6		033
1322	1976	09 23.03090	00 40 56.42	+40 31 59.8	16.0	033
1578	1973	11 22.79861	01 27 08.40	+08 22 52.5	15.3R	033
1578	1973	11 22.93507	01 27 05.28	+08 22 38.0		033

1666			1969	10	08.94028	00	16	14.38	+07	53	32.5	15.5V 033
1666			1969	10	08.96111	00	16	13.31	+07	53	23.5	033
1757			1973	11	01.95000	01	30	48.28	+08	22	50.2	033
1757			1973	11	02.90521	01	29	55.82	+08	19	17.8	15.4R 033
1757			1973	11	03.95521	01	28	58.39	+08	15	27.1	033
1961			1973	11	22.79861	01	19	42.25	+09	07	39.7	14.8R 033
1961			1973	11	22.93507	01	19	38.73	+09	07	34.8	033
2367			1973	11	22.79861	01	25	55.08	+07	26	52.8	15.0R 033
2367			1973	11	22.93507	01	25	51.10	+07	26	27.2	033
1969	TX6	*	1969	10	08.94028	00	11	50.02	+09	38	59.2	18.9V 033
1969	TX6		1969	10	08.96111	00	11	48.89	+09	38	59.2	033
1969	TY6	*	1969	10	08.94028	00	12	06.47	+07	03	34.6	20.5V 033
1969	TY6		1969	10	08.96111	00	12	05.11	+07	03	31.9	033
1969	TZ6	*	1969	10	08.94028	00	12	11.35	+08	12	07.2	19.3V 033
1969	TZ6		1969	10	08.96111	00	12	10.45	+08	11	56.8	033
1969	TA7	*	1969	10	08.94028	00	12	21.67	+08	36	44.1	18.7V 033
1969	TA7		1969	10	08.96111	00	12	20.75	+08	36	34.8	033
1969	TB7	*	1969	10	08.94028	00	12	28.89	+06	39	41.6	19.9V 033
1969	TB7		1969	10	08.96111	00	12	27.69	+06	39	33.0	033
1969	TC7	*	1969	10	08.94028	00	12	30.59	+09	09	14.7	20.3V 033
1969	TC7		1969	10	08.96111	00	12	29.45	+09	09	08.2	033
1969	TD7	*	1969	10	08.94028	00	12	59.62	+09	36	36.7	18.9V 033
1969	TD7		1969	10	08.96111	00	12	58.70	+09	36	27.8	033
1969	TE7	*	1969	10	08.94028	00	13	03.99	+06	38	55.3	19.9V 033
1969	TE7		1969	10	08.96111	00	13	02.82	+06	38	48.0	033
1969	TF7	*	1969	10	08.94028	00	13	05.02	+08	13	49.4	20.3V 033
1969	TF7		1969	10	08.96111	00	13	03.95	+08	13	42.3	033
1969	TG7	*	1969	10	08.94028	00	13	31.56	+07	43	39.8	19.5V 033
1969	TG7		1969	10	08.96111	00	13	30.25	+07	43	35.7	033
1969	TH7	*	1969	10	08.94028	00	14	16.64	+07	11	41.2	19.7V 033
1969	TH7		1969	10	08.96111	00	14	15.43	+07	11	36.7	033
1969	TJ7	*	1969	10	08.94028	00	15	37.90	+08	12	13.4	18.7V 033
1969	TJ7		1969	10	08.96111	00	15	36.54	+08	12	06.6	033
1969	TK7	*	1969	10	08.94028	00	15	53.93	+07	03	32.1	20.1V 033
1969	TK7		1969	10	08.96111	00	15	52.48	+07	03	32.7	033
1969	TL7	*	1969	10	08.94028	00	16	03.59	+08	16	28.7	18.7V 033
1969	TL7		1969	10	08.96111	00	16	02.64	+08	16	17.3	033
1969	TM7	*	1969	10	08.94028	00	16	28.57	+07	07	56.4	19.3V 033
1969	TM7		1969	10	08.96111	00	16	27.49	+07	07	44.6	033
1969	TN7	*	1969	10	08.94028	00	17	48.41	+07	24	27.2	19.3V 033
1969	TN7		1969	10	08.96111	00	17	47.59	+07	24	16.2	033
1969	TO7	*	1969	10	08.94028	00	17	58.60	+06	48	20.5	20.1V 033
1969	TO7		1969	10	08.96111	00	17	57.79	+06	48	09.6	033
1969	TP7	*	1969	10	08.94028	00	18	31.76	+08	00	11.4	19.1V 033
1969	TP7		1969	10	08.96111	00	18	30.43	+08	00	08.3	033
1969	TQ7	*	1969	10	08.94028	00	18	43.23	+07	16	25.0	19.5V 033
1969	TQ7		1969	10	08.96111	00	18	42.24	+07	16	19.9	033
1969	TR7	*	1969	10	08.94028	00	19	32.29	+09	46	23.3	19.7V 033
1969	TR7		1969	10	08.96111	00	19	31.40	+09	46	11.3	033
1969	TS7	*	1969	10	08.94028	00	20	18.79	+08	28	22.3	19.5V 033
1969	TS7		1969	10	08.96111	00	20	17.90	+08	28	12.8	033
1969	TT7	*	1969	10	08.94028	00	21	45.82	+09	03	34.8	19.9V 033
1969	TT7		1969	10	08.96111	00	21	44.79	+09	03	27.7	033
1969	TU7	*	1969	10	08.94028	00	22	04.34	+07	51	32.6	19.5V 033
1969	TU7		1969	10	08.96111	00	22	03.38	+07	51	25.3	033
1969	TV7	*	1969	10	08.94028	00	22	29.00	+08	57	12.9	19.7V 033
1969	TV7		1969	10	08.96111	00	22	27.65	+08	57	03.7	033
1969	TW7	*	1969	10	08.94028	00	22	54.47	+08	05	40.1	19.7V 033
1969	TW7		1969	10	08.96111	00	22	53.39	+08	05	33.3	033

1969	TX7	*	1969	10	08.94028	00	23	06.85	+07	39	28.2	20.1V 033
1969	TX7		1969	10	08.96111	00	23	05.60	+07	39	21.7	033
1969	TY7	*	1969	10	08.94028	00	23	25.78	+07	06	03.5	19.9V 033
1969	TY7		1969	10	08.96111	00	23	24.40	+07	06	01.7	033
1969	TZ7	*	1969	10	08.94028	00	24	01.77	+08	03	47.3	17.5V 033
1969	TZ7		1969	10	08.96111	00	24	00.95	+08	03	41.6	033
1969	TA8	*	1969	10	08.94028	00	24	33.88	+08	22	52.6	19.7V 033
1969	TA8		1969	10	08.96111	00	24	32.47	+08	22	46.0	033
1969	TB8	*	1969	10	08.94028	00	24	34.28	+06	58	48.2	19.9V 033
1969	TB8		1969	10	08.96111	00	24	33.38	+06	58	37.1	033
1969	TC8	*	1969	10	08.94028	00	24	42.82	+08	52	24.6	17.5V 033
1969	TC8		1969	10	08.96111	00	24	41.93	+08	52	09.6	033
1969	TD8	*	1969	10	08.96111	00	15	17.43	+08	29	17.6	19.7V 033
1969	TE8	*	1969	10	08.96111	00	15	56.43	+09	13	35.7	20.1V 033
1973	SX3		1973	10	31.90521	01	29	33.69	+06	19	24.0	033
1973	SX3		1973	11	01.95000	01	28	45.73	+06	18	10.7	033
1973	SX3		1973	11	02.90521	01	28	02.90	+06	17	08.1	14.8R 033
1973	SX3		1973	11	03.95521	01	27	16.43	+06	16	05.1	033
1973	SZ3		1973	10	31.90521	01	29	24.90	+09	17	25.1	033
1973	SZ3		1973	11	01.95000	01	28	27.93	+09	14	13.8	033
1973	SZ3		1973	11	02.90521	01	27	37.41	+09	11	25.6	14.7R 033
1973	SZ3		1973	11	03.95521	01	26	42.92	+09	08	26.9	033
1973	UZ4	*	1973	10	27.89306	01	19	11.68	+06	51	24.1	033
1973	UZ4		1973	10	28.90451	01	18	05.95	+06	58	35.5	16.8V 033
1973	UA5	*	1973	10	27.89306	01	20	09.89	+07	50	52.2	033
1973	UA5		1973	10	27.97083	01	20	05.87	+07	50	10.5	033
1973	UA5		1973	10	28.90451	01	19	19.57	+07	41	59.7	16.4V 033
1973	UB5	*	1973	10	27.89306	01	21	24.48	+08	55	23.1	033
1973	UB5		1973	10	27.97083	01	21	21.01	+08	55	02.7	033
1973	UB5		1973	10	28.90451	01	20	41.91	+08	51	08.8	15.5V 033
1973	UB5		1973	10	31.90521	01	18	40.10	+08	38	56.8	033
1973	UB5		1973	11	01.95000	01	17	59.34	+08	34	51.0	033
1973	UC5	*	1973	10	27.89306	01	21	35.84	+06	53	50.8	033
1973	UC5		1973	10	27.97083	01	21	31.89	+06	53	43.4	033
1973	UC5		1973	10	28.90451	01	20	45.37	+06	52	29.4	17.6V 033
1973	UD5	*	1973	10	27.89306	01	21	40.23	+07	55	05.0	033
1973	UD5		1973	10	27.97083	01	21	35.39	+07	54	55.7	033
1973	UD5		1973	10	28.90451	01	20	39.54	+07	53	17.0	16.3V 033
1973	UE5	*	1973	10	27.89306	01	22	19.48	+07	59	54.6	033
1973	UE5		1973	10	27.97083	01	22	15.79	+07	59	37.0	033
1973	UE5		1973	10	28.90451	01	21	31.35	+07	56	06.5	17.4V 033
1973	UE5		1973	10	31.90521	01	19	12.46	+07	45	12.5	033
1973	UF5	*	1973	10	27.89306	01	23	06.66	+07	57	06.9	033
1973	UF5		1973	10	27.97083	01	23	03.96	+07	57	02.8	033
1973	UF5		1973	10	28.90451	01	22	32.85	+07	56	14.1	15.7V 033
1973	UF5		1973	10	31.90521	01	20	53.90	+07	53	45.2	033
1973	UF5		1973	11	01.95000	01	20	20.09	+07	52	56.6	033
1973	UF5		1973	11	02.90521	01	19	49.49	+07	52	13.5	033
1973	UF5		1973	11	03.95521	01	19	16.18	+07	51	28.2	033
1973	UG5	*	1973	10	27.89306	01	25	06.36	+09	13	59.2	033
1973	UG5		1973	10	27.97083	01	25	02.56	+09	13	18.4	033
1973	UG5		1973	10	28.90451	01	24	19.32	+09	05	12.9	15.0V 033
1973	UG5		1973	10	31.90521	01	22	03.72	+08	39	32.5	033
1973	UG5		1973	11	01.95000	01	21	18.08	+08	30	46.9	033
1973	UG5		1973	11	02.90521	01	20	37.26	+08	22	50.8	033
1973	UG5		1973	11	03.95521	01	19	53.18	+08	14	13.9	033
1973	UH5	*	1973	10	27.89306	01	25	15.83	+07	00	18.3	033
1973	UH5		1973	10	27.97083	01	25	12.42	+06	59	32.8	033
1973	UH5		1973	10	28.90451	01	24	30.85	+06	50	14.4	16.0V 033

1973	UH5		1973	10	31.90521	01	22	22.24	+06	21	11.9		033
1973	UJ5	*	1973	10	27.89306	01	25	26.31	+07	57	49.4		033
1973	UJ5		1973	10	27.97083	01	25	22.69	+07	57	25.0		033
1973	UJ5		1973	10	28.90451	01	24	40.77	+07	52	41.1	15.7V	033
1973	UJ5		1973	10	31.90521	01	22	29.52	+07	37	53.5		033
1973	UJ5		1973	11	01.95000	01	21	45.46	+07	32	54.0		033
1973	UJ5		1973	11	02.90521	01	21	06.12	+07	28	27.0		033
1973	UJ5		1973	11	03.95521	01	20	23.59	+07	23	38.4		033
1973	UK5	*	1973	10	27.89306	01	25	27.22	+07	04	49.9		033
1973	UK5		1973	10	27.97083	01	25	22.67	+07	04	32.3		033
1973	UK5		1973	10	28.90451	01	24	30.34	+07	01	12.7	17.9V	033
1973	UK5		1973	10	31.90521	01	21	45.94	+06	51	00.4		033
1973	UK5		1973	11	02.90521	01	20	01.38	+06	44	43.6		033
1973	UK5		1973	11	03.95521	01	19	08.14	+06	41	37.9		033
1973	UL5	*	1973	10	27.89306	01	25	39.29	+09	20	23.2		033
1973	UL5		1973	10	27.97083	01	25	35.59	+09	20	02.9		033
1973	UL5		1973	10	28.90451	01	24	54.09	+09	16	01.4	17.5V	033
1973	UL5		1973	10	31.90521	01	22	43.57	+09	03	21.5		033
1973	UL5		1973	11	02.90521	01	21	20.07	+08	55	12.5		033
1973	UL5		1973	11	03.95521	01	20	37.48	+08	51	02.3		033
1973	UM5	*	1973	10	27.89306	01	26	13.35	+06	44	52.5		033
1973	UM5		1973	10	27.97083	01	26	09.09	+06	44	13.7		033
1973	UM5		1973	10	28.90451	01	25	18.53	+06	39	40.1	18.3V	033
1973	UN5	*	1973	10	27.89306	01	26	55.42	+07	03	06.2		033
1973	UN5		1973	10	27.97083	01	26	50.91	+07	02	46.2		033
1973	UN5		1973	10	28.90451	01	25	57.34	+06	59	06.4	18.7V	033
1973	UN5		1973	11	02.90521	01	21	20.64	+06	40	35.3	17.8R	033
1973	UO5	*	1973	10	27.89306	01	26	59.66	+08	13	03.9		033
1973	UO5		1973	10	27.97083	01	26	55.84	+08	12	40.8		033
1973	UO5		1973	10	28.90451	01	26	12.68	+08	08	07.2	17.8V	033
1973	UO5		1973	10	31.90521	01	23	59.64	+07	54	07.2		033
1973	UO5		1973	11	02.90521	01	22	37.20	+07	45	27.8		033
1973	UP5	*	1973	10	27.89306	01	27	43.70	+07	15	01.2		033
1973	UP5		1973	10	27.97083	01	27	39.80	+07	14	30.5		033
1973	UP5		1973	10	28.90451	01	26	53.64	+07	08	28.6	15.9V	033
1973	UP5		1973	11	01.95000	01	23	40.32	+06	43	15.3		033
1973	UP5		1973	11	02.90521	01	22	57.09	+06	37	35.0		033
1973	UP5		1973	11	03.95521	01	22	10.21	+06	31	27.0		033
1973	UQ5	*	1973	10	27.89306	01	29	05.59	+08	07	47.4		033
1973	UQ5		1973	10	27.97083	01	29	01.28	+08	07	19.4		033
1973	UQ5		1973	10	28.90451	01	28	16.58	+08	01	47.7	16.7V	033
1973	UQ5		1973	10	31.90521	01	25	56.89	+07	44	41.0		033
1973	UQ5		1973	11	02.90521	01	24	29.61	+07	33	56.5		033
1973	UQ5		1973	11	03.95521	01	23	45.63	+07	28	31.4		033
1973	UR5	*	1973	10	27.89306	01	29	52.09	+09	21	57.3		033
1973	UR5		1973	10	28.90451	01	28	58.21	+09	19	22.3	15.6V	033
1973	UR5		1973	10	31.90521	01	26	24.03	+09	12	08.8		033
1973	UR5		1973	11	01.95000	01	25	32.61	+09	09	49.3		033
1973	UR5		1973	11	02.90521	01	24	47.05	+09	07	46.9		033
1973	UR5		1973	11	03.95521	01	23	58.06	+09	05	38.7		033
1973	US5	*	1973	10	27.89306	01	30	17.24	+08	04	14.3		033
1973	US5		1973	10	27.97083	01	30	13.18	+08	03	42.0		033
1973	US5		1973	10	28.90451	01	29	23.84	+07	57	36.4	17.6V	033
1973	US5		1973	10	31.90521	01	26	49.49	+07	38	30.6		033
1973	US5		1973	11	02.90521	01	25	12.17	+07	26	26.3		033
1973	US5		1973	11	03.95521	01	24	22.77	+07	20	16.8		033
1973	UT5	*	1973	10	27.89306	01	30	17.80	+08	59	02.4		033
1973	UT5		1973	10	28.90451	01	29	12.10	+08	57	29.8	15.3V	033

1973	UT5		1973	10	31.90521	01	26	01.26	+08	53	14.3	033
1973	UT5		1973	11	01.95000	01	24	56.41	+08	51	52.9	033
1973	UT5		1973	11	02.90521	01	23	58.43	+08	50	41.8	033
1973	UT5		1973	11	03.95521	01	22	55.43	+08	49	28.7	033
1973	UU5	*	1973	10	27.89306	01	30	25.03	+08	27	11.2	033
1973	UU5		1973	10	27.97083	01	30	21.45	+08	26	47.8	033
1973	UU5		1973	10	28.90451	01	29	38.87	+08	22	14.7	16.9V 033
1973	UU5		1973	10	31.90521	01	27	24.92	+08	07	53.8	033
1973	UU5		1973	11	02.90521	01	25	59.06	+07	58	41.3	033
1973	UU5		1973	11	03.95521	01	25	15.09	+07	53	59.2	033
1973	UV5	*	1973	10	27.97083	01	26	48.26	+09	30	35.5	033
1973	UV5		1973	10	28.90451	01	25	57.52	+09	22	44.7	15.3V 033
1973	UV5		1973	10	31.90521	01	23	18.64	+08	57	54.7	033
1973	UV5		1973	11	01.95000	01	22	25.31	+08	49	28.1	033
1973	UV5		1973	11	02.90521	01	21	37.84	+08	41	50.5	033
1973	UV5		1973	11	03.95521	01	20	46.53	+08	33	34.2	033
1973	UW5	*	1973	10	28.90451	01	30	08.71	+06	41	01.0	16.9V 033
1973	UW5		1973	11	02.90521	01	25	36.76	+06	18	30.4	16.3R 033
1973	UX5	*	1973	10	28.90451	01	30	15.02	+07	56	51.5	16.5V 033
1973	UX5		1973	10	31.90521	01	27	28.25	+07	41	17.1	033
1973	UX5		1973	11	01.95000	01	26	32.89	+07	36	10.7	033
1973	UX5		1973	11	02.90521	01	25	43.71	+07	31	36.1	033
1973	UX5		1973	11	03.95521	01	24	50.98	+07	26	45.4	033
1973	UY5	*	1973	10	31.90521	01	21	06.76	+09	27	15.8	033
1973	UY5		1973	11	01.95000	01	20	21.00	+09	21	43.6	033
1973	UY5		1973	11	02.90521	01	19	40.34	+09	16	46.0	14.5R 033
1973	UY5		1973	11	03.95521	01	18	56.55	+09	11	24.2	033
1973	UZ5	*	1973	10	31.90521	01	28	33.46	+06	30	46.4	17.9 033
1973	UZ5		1973	11	02.90521	01	27	00.39	+06	17	33.9	16.0R 033
1973	VB	*	1973	11	02.90521	01	18	42.19	+07	49	54.2	16.8R 033
1973	VC	*	1973	11	02.90521	01	20	35.02	+06	31	43.3	15.1R 033
1973	VD	*	1973	11	02.90521	01	20	40.94	+09	01	23.3	16.0R 033
1973	VE	*	1973	11	02.90521	01	23	02.99	+06	55	12.6	17.6R 033
1973	VF	*	1973	11	02.90521	01	23	05.74	+06	57	25.9	17.2R 033
1973	VG	*	1973	11	02.90521	01	23	11.58	+07	01	59.6	18.0R 033
1973	VH	*	1973	11	02.90521	01	23	17.92	+08	01	45.0	16.6R 033
1973	VJ	*	1973	11	02.90521	01	23	23.84	+07	24	44.6	17.8R 033
1973	VK	*	1973	11	02.90521	01	23	41.92	+06	39	05.9	16.6R 033
1973	VL	*	1973	11	02.90521	01	24	26.30	+07	33	44.0	19.0R 033
1973	VM	*	1973	11	02.90521	01	26	53.78	+08	44	50.6	17.7R 033
1973	VN	*	1973	11	02.90521	01	27	09.22	+08	27	00.4	16.7R 033
1973	VO	*	1973	11	02.90521	01	27	27.94	+08	03	51.2	17.1R 033
1973	VP	*	1973	11	02.90521	01	29	10.29	+08	44	25.2	17.9R 033
1973	VQ	*	1973	11	02.90521	01	29	17.52	+07	20	35.5	17.5R 033
1973	VQ		1973	11	03.95521	01	28	29.40	+07	14	30.6	033
1973	VR	*	1973	11	02.90521	01	29	33.77	+09	27	25.7	16.1R 033
1973	VS	*	1973	11	02.90521	01	29	39.66	+08	53	08.8	18.3R 033
1973	VT	*	1973	11	02.90521	01	29	48.17	+08	01	03.0	16.4R 033
1973	VU	*	1973	11	02.90521	01	30	22.31	+07	37	48.1	18.1R 033
1973	VV	*	1973	11	02.90521	01	30	30.28	+06	52	40.0	17.5R 033
1973	VW	*	1973	11	03.95521	01	30	21.17	+08	48	26.0	16.7R 033
1973	WJ	*	1973	11	22.79861	01	19	47.32	+06	39	13.1	17.8R 033
1973	WK	*	1973	11	22.79861	01	20	20.30	+09	21	31.9	16.2R 033
1973	WK		1973	11	22.93507	01	20	16.93	+09	21	10.1	033
1973	WL	*	1973	11	22.79861	01	21	29.61	+08	05	51.4	17.1R 033
1973	WM	*	1973	11	22.79861	01	22	07.76	+09	03	07.0	17.6R 033
1973	WM		1973	11	22.93507	01	22	03.98	+09	03	03.8	033
1973	WN	*	1973	11	22.79861	01	26	16.56	+07	26	07.0	16.3R 033

OBSERVATIONS MADE AT BUDAPEST BY G. KULIN. MEASURED BY L. KRESAK.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1072	1940 04	12.95694	12 19 42.10	+03 40 46.7	053
1940 EF	1940 04	02.94514	12 26 34.67	+02 33 02.2	053
1940 EF	1940 04	12.95694	12 19 02.06	+03 15 22.8	053

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

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
1072	1940 04	04.86124	12 25 32.70	+03 20 18.9		062
1072	1940 04	12.92632	12 19 43.93	+03 40 44.4		062
1940 EF	1940 04	12.92632	12 19 03.89	+03 15 21.4	1	062
1942 RS	1942 09	08.03985	00 29 59.63	+14 06 01.5		062
1942 RS	1942 09	11.99749	00 26 42.63	+14 12 29.3		062
1942 RS	1942 10	03.90613	00 05 34.60	+13 51 38.2		062
1942 RS	1942 10	11.89644	23 58 19.96	+13 26 20.4		062
1942 TJ	1942 09	08.03985	00 21 58.12	+15 20 57.4		062
1942 TJ	1942 09	11.99749	00 19 23.24	+15 16 57.9		062
1942 TJ	1942 10	03.90613	00 02 55.36	+14 08 59.7		062
1942 TJ	1942 10	11.89644	23 57 08.41	+13 30 04.2		062

Note 1: very faint, difficult to measure.

OBSERVATIONS MADE AT GEISEI BY T. SEKI. IN PART FROM NIHONDAIRA OBS. CIRC. NOS. 1192 AND 1197.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2369	1981 04	30.65972	15 40 47.6	-19 51 05	17	372
2369	1981 04	30.68264	15 40 46.4	-19 51 02		372
1975 FW	1981 04	30.62743	14 56 31.96	-14 07 39.7	15.5	372
1975 FW	1981 04	30.64063	14 56 31.35	-14 07 37.9		372
1978 VJ7	1981 04	30.65972	15 44 53.5	-19 05 17	16.5	372
1978 VJ7	1981 04	30.68264	15 44 52.6	-19 05 13		372
1981 CA	1981 04	22.50590	11 06 03.68	+22 46 29.5	17.5	372
1981 CB	1981 04	22.47743	10 41 19.12	+13 44 39.0	17	372
1981 CB	1981 04	22.59618	10 41 38.85	+13 50 48.6		372
1981 GA	1981 04	25.53785	12 24 11.59	+00 14 45.6	17	372
1981 GA	1981 04	25.55104	12 24 11.31	+00 14 49.4		372
1981 JA	1981 04	30.62743	14 58 18.16	-14 26 05.0	16.5	372
1981 JA	1981 04	30.64063	14 58 17.51	-14 26 00.2		372
1981 JA	1981 05	07.63611	14 52 49.9	-14 01 19	16.8	372
1981 JA	1981 05	07.64375	14 52 49.4	-14 01 14		372

OBSERVATIONS MADE AT MT. JOHN UNIVERSITY OBSERVATORY (CODE 474) AND AT HAPPY VALLEY (CODE 484) BY A. C. GILMORE AND P. M. KILMARTIN (ASSISTED BY R. MC INTOSH).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
558	1980 07	06.38136	13 18 33.94	+01 11 05.4			474
558	1980 07	06.40005	13 18 34.54	+01 10 57.6			474
558	1980 07	10.29728	13 20 59.99	+00 47 20.0			474
558	1980 07	10.32160	13 21 00.92	+00 47 10.7			474
1537	1981 04	04.56875	14 01 42.51	-14 20 47.5	18.5		474
1537	1981 04	04.59051	14 01 41.62	-14 20 41.2			474
2274	1980 04	19.40869	14 33 39.16	-18 38 05.9			484
2274	1980 04	19.47038	14 33 35.45	-18 37 50.2			484
2286	1980 07	10.42088	17 06 11.92	-24 12 17.9		1	474
2368	1980 07	09.51094	17 37 44.20	-25 25 23.4			474
2368	1980 07	09.52257	17 37 43.59	-25 25 13.1			474
1941 SS	1981 04	03.57159	15 24 08.40	-22 29 36.9			474
1941 SS	1981 04	03.66216	15 24 06.75	-22 29 29.7			474
1941 SS	1981 04	05.63414	15 23 32.98	-22 26 23.6	17.5		474

1941	SS		1981	04	05.69340	15	23	31.74	-22	26	17.4	474
1966	BA1		1981	04	02.61392	15	26	32.95	-35	08	14.8	18.3 474
1966	BA1		1981	04	02.69013	15	26	31.46	-35	08	21.3	474
1966	BA1		1981	04	03.59829	15	26	13.84	-35	09	36.1	474
1966	BA1		1981	04	03.68941	15	26	11.91	-35	09	44.1	474
1972	NC		1981	04	04.50868	12	33	47.76	-10	20	01.6	474
1972	NC		1981	04	04.53507	12	33	46.09	-10	19	50.8	474
1972	NC		1981	04	05.50938	12	32	46.44	-10	13	13.7	17.6 474
1972	NC		1981	04	05.52367	12	32	45.50	-10	13	07.3	474
1974	FG		1981	04	03.49039	11	57	22.11	-03	40	09.0	474
1974	FG		1981	04	03.51192	11	57	20.98	-03	39	56.8	474
1974	FG		1981	04	04.46152	11	56	36.18	-03	30	34.8	474
1974	FG		1981	04	04.48287	11	56	35.11	-03	30	22.0	474
1974	FG		1981	04	05.46262	11	55	49.59	-03	20	47.7	16.3 474
1974	FG		1981	04	05.48385	11	55	48.65	-03	20	35.7	474
1975	TN		1981	04	02.35178	08	55	51.50	+01	17	09.6	1 474
1975	TN		1981	04	02.37552	08	55	51.66	+01	17	18.2	1 474
1976	AG		1981	04	05.59792	14	28	37.01	-14	56	56.6	17.4 474
1976	AG		1981	04	05.61227	14	28	36.42	-14	56	50.1	474
1977	CA		1981	04	02.50678	11	33	08.98	-35	43	36.7	15.6 474
1977	CA		1981	04	02.51911	11	33	07.67	-35	43	38.8	474
1977	GA		1981	04	02.46111	10	59	32.79	-36	22	21.8	17.3 474
1977	GA		1981	04	02.48299	10	59	31.68	-36	22	07.9	474
1977	GA		1981	04	04.35532	10	58	07.22	-36	02	20.9	474
1977	GA		1981	04	04.39861	10	58	05.22	-36	01	52.3	474
1977	GA		1981	04	05.35367	10	57	23.25	-35	51	30.2	1 474
1977	GA		1981	04	05.37569	10	57	22.26	-35	51	15.3	1 474
1977	TZ		1980	07	10.35227	15	53	05.77	-39	32	33.1	474
1977	TZ		1980	07	10.39380	15	53	04.68	-39	32	24.0	474
1977	VC		1980	07	09.46362	16	19	59.58	-49	05	50.4	474
1977	VC		1980	07	09.48507	16	19	58.26	-49	05	49.1	474
1981	GX		1981	04	12.49363	10	55	51.55	-33	40	32.9	17.0 474
1981	GX		1981	04	12.51597	10	55	51.34	-33	40	06.8	474
1981	GD1	*	1981	04	03.49039	11	58	40.63	-03	43	34.5	18.2 474
1981	GD1		1981	04	03.51192	11	58	39.70	-03	43	27.3	474
1981	GD1		1981	04	04.46152	11	58	00.79	-03	37	58.6	474
1981	GD1		1981	04	04.48287	11	57	59.89	-03	37	51.9	474
1981	GD1		1981	04	05.46262	11	57	20.26	-03	32	14.2	474
1981	GD1		1981	04	05.48385	11	57	19.50	-03	32	06.9	474
1981	GE1	*	1981	04	03.57159	15	24	43.61	-22	28	04.7	474
1981	GE1		1981	04	03.66216	15	24	42.83	-22	28	14.1	16.1 474
1981	GE1		1981	04	04.61843	15	24	36.55	-22	29	41.2	474
1981	GE1		1981	04	05.63414	15	24	27.52	-22	31	07.6	474
1981	GE1		1981	04	05.69340	15	24	26.75	-22	31	12.2	474
1981	GE1		1981	04	12.66406	15	22	24.40	-22	36	39.3	474
1981	GE1		1981	04	12.68565	15	22	23.74	-22	36	38.7	474
1981	GF1	*	1981	04	04.50868	12	35	18.39	-10	20	52.4	474
1981	GF1		1981	04	04.53507	12	35	17.04	-10	20	47.1	474
1981	GF1		1981	04	05.50938	12	34	29.50	-10	17	46.1	18.3 474
1981	GF1		1981	04	05.52367	12	34	28.74	-10	17	43.1	474
1981	GF1		1981	04	12.60347	12	28	49.99	-09	54	19.5	474
1981	GF1		1981	04	12.62031	12	28	49.28	-09	54	14.7	474
1981	GG1	*	1981	04	04.50868	12	35	21.70	-10	09	54.5	474
1981	GG1		1981	04	04.53507	12	35	20.33	-10	09	44.9	474
1981	GG1		1981	04	05.50938	12	34	34.78	-10	03	50.0	18.5 474
1981	GG1		1981	04	05.52367	12	34	34.05	-10	03	45.1	474
1981	GH1	*	1981	04	05.50938	12	34	32.29	-10	18	11.1	18.8 474
1981	GH1		1981	04	05.52367	12	34	31.56	-10	18	03.5	474

Note 1: image trailed.

OBSERVATIONS MADE AT HEMINGFORD ABBOTS (CODE 489) BY A. YOUNG AND AT STAKENBRIDGE (CODE 494) BY B. MANNING. COMMUNICATED BY G. M. HURST.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
352	1981 04	27.89271	10 00 13.22	+07 40 34.0	13.8V	494
352	1981 04	27.95642	10 00 14.63	+07 40 32.6	13.6V	489
352	1981 04	27.96389	10 00 14.84	+07 40 31.8		489
737	1981 05	02.91111	10 02 53.59	+07 32 07.9	13.5V	494
1639	1980 11	27.8618	01 22 25.16	+23 15 32.4		494
1639	1980 11	29.84878	01 21 58.73	+23 05 32.5		494
1862	1980 11	27.87639	01 24 55.42	+29 27 45.5		494

OBSERVATIONS MADE AT TRAUNSTEIN (CODE 065) BY R. BENDEL AND AT REINTAL (CODE 556) BY F. SEILER (ASSISTED BY F. FREVERT AND R. HEMPEL).

Object	Date	UT	R. A. (1950)	Decl.	Obs.
486	1981 01	30.97118	11 34 20.34	+19 48 13.6	065
486	1981 01	30.98438	11 34 20.32	+19 48 22.4	065
486	1981 01	30.99826	11 34 20.10	+19 48 29.9	065
486	1981 01	31.01215	11 34 20.01	+19 48 40.2	065
486	1981 02	01.05799	11 34 12.95	+19 59 31.9	065
486	1981 02	01.07535	11 34 12.76	+19 59 42.5	065
486	1981 02	01.08090	11 34 12.68	+19 59 46.3	065
486	1981 02	01.08646	11 34 12.68	+19 59 51.3	065
486	1981 02	01.97465	11 34 05.11	+20 09 12.7	065
486	1981 02	01.98576	11 34 05.00	+20 09 20.1	065
486	1981 02	01.99688	11 34 04.87	+20 09 28.0	065
486	1981 02	02.00243	11 34 04.77	+20 09 30.6	065
686	1980 09	07.90978	23 56 24.42	+29 45 36.2	065
2288	1981 01	30.88924	08 29 07.69	+37 10 09.6	556
2288	1981 01	30.90313	08 29 06.81	+37 10 14.2	556
2288	1981 01	30.91007	08 29 06.36	+37 10 16.7	556
2288	1981 01	30.91701	08 29 05.90	+37 10 19.5	556
2288	1981 01	31.87431	08 28 08.01	+37 16 02.5	556
2288	1981 01	31.89514	08 28 06.79	+37 16 11.1	556
2288	1981 02	01.86875	08 27 08.24	+37 21 48.4	556
2288	1981 02	01.87569	08 27 07.67	+37 21 49.1	556
2288	1981 02	01.89653	08 27 06.76	+37 21 57.4	556
2288	1981 02	01.90347	08 27 06.05	+37 21 59.5	556
2326	1981 01	24.75590	03 21 38.33	-00 26 04.1	556
2326	1981 01	24.76979	03 21 38.74	-00 25 57.0	556
2326	1981 01	30.77674	03 25 46.89	+00 34 18.7	556
2326	1981 01	30.78368	03 25 47.40	+00 34 24.3	556
2326	1981 01	30.79063	03 25 47.75	+00 34 28.9	556
2326	1981 01	30.79757	03 25 47.96	+00 34 32.3	556
2326	1981 01	31.75625	03 26 31.74	+00 44 13.6	556
2326	1981 01	31.77014	03 26 32.37	+00 44 23.3	556
2326	1981 01	31.77708	03 26 32.70	+00 44 25.4	556
2326	1981 01	31.78403	03 26 33.08	+00 44 31.2	556
2326	1981 02	01.75764	03 27 18.97	+00 54 26.2	556
2326	1981 02	01.77153	03 27 19.48	+00 54 33.0	556
2326	1981 02	01.77847	03 27 19.70	+00 54 37.9	556

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY UNDER THE DIRECTION OF C. O. LAMPLAND AND H. L. GICLAS. MEASURED BY E. BOWELL.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
32	1929 11	03.27986	03 11 06.09	+16 56 06.4		690
114	1929 10	27.30903	03 32 19.30	+12 17 10.1	2	690
114	1929 11	03.27986	03 26 45.06	+11 44 29.9	3	690
214	1949 08	24.28203	22 00 43.60	-13 33 20.6		690
214	1949 08	26.28376	21 58 54.74	-13 40 14.3		690

397		1931	05	09.23438	14	20	04.94	-16	34	14.2	690
397		1931	05	11.23681	14	18	25.30	-16	19	07.4	690
538		1949	08	20.28191	22	09	29.52	-12	37	26.7	690
538		1949	08	24.28203	22	06	40.05	-13	04	00.4	690
538		1949	08	26.28376	22	05	15.04	-13	17	09.1	690
551		1949	08	20.28191	22	16	50.33	-11	05	35.9	690
551		1949	08	24.28203	22	13	41.01	-11	22	57.7	690
551		1949	08	26.28376	22	12	05.51	-11	31	38.6	690
578		1931	05	10.22917	14	34	44.16	-17	54	48.6	690
578		1931	05	13.21875	14	31	53.39	-17	50	12.4	690
621		1949	08	20.28191	22	11	57.42	-14	39	02.7	690
621		1949	08	24.28203	22	08	56.12	-14	56	03.3	690
621		1949	08	26.28376	22	07	25.06	-15	04	20.2	690
733		1949	08	20.28191	22	25	38.84	-16	06	37.7	690
733		1949	08	24.28203	22	22	16.92	-16	09	19.6	690
733		1949	08	26.28376	22	20	35.38	-16	10	29.5	690
909		1949	08	20.28191	22	13	22.89	-12	16	19.6	690
909		1949	08	24.28203	22	10	51.79	-12	50	25.4	690
909		1949	08	26.28376	22	09	35.74	-13	07	23.7	690
1142		1949	08	20.28191	22	07	18.98	-12	06	50.8	690
1142		1949	08	24.28203	22	04	20.90	-12	25	31.2	690
1142		1949	08	26.28376	22	02	52.36	-12	34	41.8	690
1412		1929	10	27.30903	03	21	04.60	+14	42	13.4	690
1412		1929	11	03.27986	03	14	10.59	+14	34	46.5	3 690
1682		1949	08	20.28191	22	04	09.23	-11	30	58.1	690
1682		1949	08	24.28203	22	00	21.48	-11	33	38.8	690
1682		1949	08	26.28376	21	58	28.99	-11	34	55.4	690
2019		1931	05	09.23438	14	13	59.95	-17	46	12.1	5 690
2019		1931	05	11.23681	14	12	13.15	-17	30	46.6	7 690
2164		1949	08	24.28203	22	29	15.93	-12	12	17.0	690
2164		1949	08	26.28376	22	27	47.51	-12	22	31.3	1 690
1929	UC	1929	10	27.30903	03	24	26.42	+15	56	01.6	690
1929	UC	1929	11	03.27986	03	17	27.62	+15	25	40.7	690
1929	VX	1929	10	27.30903	03	28	44.41	+14	03	47.6	690
1929	VX	1929	11	03.27986	03	23	00.24	+13	30	27.7	690
1931	JO	1931	05	10.22917	14	25	15.28	-19	00	42.4	690
1931	JO	1931	05	13.21875	14	22	46.99	-18	48	12.0	690
1949	PL	1949	08	24.28203	22	03	32.52	-11	22	34.5	1 690
1949	PL	1949	08	26.28376	22	01	46.93	-11	34	03.4	690
1949	PQ	1949	08	20.28191	22	15	55.58	-12	46	20.7	1 690
1949	PQ	1949	08	24.28203	22	11	59.83	-13	08	28.1	690
1949	PQ	1949	08	26.28376	22	10	02.54	-13	19	09.7	690
1949	PR	1949	08	20.28191	22	19	38.57	-12	00	13.0	690
1949	PR	1949	08	24.28203	22	16	32.97	-12	28	53.9	3 690
1949	PR	1949	08	26.28376	22	14	59.22	-12	43	03.9	690
1949	QZ	1949	08	20.28191	22	11	47.64	-13	05	23.5	690
1949	QZ	1949	08	24.28203	22	07	36.35	-13	01	59.2	690
1949	QZ	1949	08	26.28376	22	05	29.89	-12	59	59.4	690
1949	QA1	1949	08	20.28191	22	16	39.45	-09	11	40.1	690
1949	QB1	1949	08	20.28191	22	18	30.22	-11	53	00.6	690
1949	QC1	1949	08	20.28191	22	24	51.49	-10	22	17.5	1 690
1949	QC1	1949	08	24.28203	22	20	47.04	-10	14	12.5	690
1949	QC1	1949	08	26.28376	22	18	43.08	-10	10	13.0	1 690
1949	QD1	1949	08	20.28191	22	25	02.62	-14	01	07.3	690
1949	QD1	1949	08	24.28203	22	22	01.52	-14	38	55.5	690
1949	QD1	1949	08	26.28376	22	20	29.08	-14	57	29.3	690

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: remeasurement of MPC 4142. 5 = 1 + 4. 6 = image very weak. 7 = 4 + 6.

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* M. P. C. 6000 *
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INDEX TO ORBITAL ELEMENTS.

The following index to orbital elements continues that on MPC 5000-5006 and refers to orbits of both comets and minor planets published since then. Only the latest orbit for each object is indexed, and multiple-designation minor planets are listed only under the principal designation.

Comet	MPC	Comet	MPC	Comet	MPC	Comet	MPC
/1937 II	5411	/1976 XII	5128	/1977 X	5030	/1978 XXI	5031
/1979 V	5639	/1979 VI	5639	/1979 VII	5031	/1979 VIII	5031
/1979 IX	5175	/1979 X	5411	/1980b	5897	/1980c	5128
/1980d	5413	/1980e	5836	/1980h	5126	/1980i	5126
/1980k	5640	/1980l	5837	/1980o	5639	/1980q	5975
/1980s	5975	/1980t	5837	/1980u	5837	/1981b	5897

Comet	MPC	Comet	MPC	Comet	MPC
P/de Vico-Swift	5129	P/Encke	5129	P/Finlay	5639
P/Gale	5837	P/Gehrels 2	5640	P/Kearns-Kwee	5129
P/Swift-Gehrels	5638				

Planet	MPC	Planet	MPC	Planet	MPC	Planet	MPC	Planet	MPC
(452)	5975	(603)	5219	(612)	5031	(646)	5012	(682)	5517
(730)	5788	(937)	5409	(975)	5409	(1009)	5313	(1020)	5273
(1037)	5413	(1105)	5314	(1198)	5640	(1221)	5975	(1229)	5277
(1260)	5409	(1275)	5409	(1306)	5410	(1316)	5176	(1324)	5313
(1370)	5410	(1474)	5841	(1480)	5410	(1489)	5410	(1537)	5975
(1538)	5788	(1619)	5410	(1626)	5410	(1627)	5640	(1638)	5411
(1642)	5411	(1650)	5411	(1651)	5411	(1685)	5441	(1772)	5974
(1793)	5837	(1862)	5641	(1865)	5641	(1867)	5789	(2035)	5412
(2060)	5412	(2179)	5031	(2180)	5033	(2181)	5034	(2182)	5034
(2183)	5034	(2184)	5035	(2185)	5035	(2186)	5035	(2187)	5036
(2188)	5036	(2189)	5127	(2190)	5127	(2191)	5127	(2192)	5129
(2193)	5131	(2194)	5131	(2195)	5131	(2196)	5132	(2197)	5132
(2198)	5132	(2199)	5133	(2200)	5133	(2201)	5176	(2202)	5176
(2203)	5178	(2204)	5178	(2205)	5178	(2206)	5178	(2207)	5179
(2208)	5179	(2209)	5179	(2210)	5180	(2211)	5218	(2212)	5218
(2213)	5219	(2214)	5220	(2215)	5220	(2216)	5220	(2217)	5220
(2218)	5221	(2219)	5415	(2220)	5221	(2221)	5222	(2222)	5222
(2223)	5222	(2224)	5222	(2225)	5223	(2226)	5273	(2227)	5273
(2228)	5274	(2229)	5274	(2230)	5274	(2231)	5278	(2232)	5278
(2233)	5278	(2234)	5280	(2235)	5314	(2236)	5315	(2237)	5315
(2238)	5315	(2239)	5316	(2240)	5316	(2241)	5316	(2242)	5319
(2243)	5319	(2244)	5320	(2245)	5320	(2246)	5320	(2247)	5321
(2248)	5348	(2249)	5348	(2250)	5348	(2251)	5349	(2252)	5349
(2253)	5350	(2254)	5350	(2255)	5350	(2256)	5351	(2257)	5352
(2258)	5353	(2259)	5353	(2260)	5353	(2261)	5354	(2262)	5354
(2263)	5354	(2264)	5354	(2265)	5413	(2266)	5414	(2267)	5414
(2268)	5416	(2269)	5416	(2270)	5416	(2271)	5440	(2272)	5441
(2273)	5442	(2274)	5442	(2275)	5442	(2276)	5443	(2277)	5443
(2278)	5444	(2279)	5444	(2280)	5444	(2281)	5444	(2282)	5445
(2283)	5445	(2284)	5446	(2285)	5446	(2286)	5446	(2287)	5446
(2288)	5447	(2289)	5447	(2290)	5519	(2291)	5519	(2292)	5520
(2293)	5521	(2294)	5597	(2295)	5598	(2296)	5599	(2297)	5600

(2298) 5641	(2299) 5641	(2300) 5641	(2301) 5642	(2302) 5642
(2303) 5642	(2304) 5643	(2305) 5643	(2306) 5644	(2307) 5644
(2308) 5644	(2309) 5645	(2310) 5645	(2311) 5645	(2312) 5646
(2313) 5646	(2314) 5646	(2315) 5647	(2316) 5647	(2317) 5647
(2318) 5647	(2319) 5648	(2320) 5649	(2321) 5650	(2322) 5677
(2323) 5677	(2324) 5678	(2325) 5678	(2326) 5679	(2327) 5680
(2328) 5680	(2329) 5680	(2330) 5681	(2331) 5683	(2332) 5684
(2333) 5684	(2334) 5684	(2335) 5685	(2336) 5685	(2337) 5685
(2338) 5686	(2339) 5686	(2340) 5789	(2341) 5789	(2342) 5791
(2343) 5792	(2344) 5792	(2345) 5835	(2346) 5838	(2347) 5838
(2348) 5838	(2349) 5839	(2350) 5841	(2351) 5842	(2352) 5842
(2353) 5842	(2354) 5842	(2355) 5843	(2356) 5843	(2357) 5843
(2358) 5892	(2359) 5892	(2360) 5893	(2361) 5893	(2362) 5893
(2363) 5894	(2364) 5894	(2365) 5894	(2366) 5895	(2367) 5895
(2368) 5897	(2369) 5973	(2370) 5976	(2371) 5976	(2372) 5976
(2373) 5978	(2374) 5978	(2375) 5978	(2376) 5979	(2377) 5979

Planet	MPC	Planet	MPC	Planet	MPC	Planet	MPC
A903 SB	5272	A905 VA	5272	A906 BJ	5272	A906 VB	5216
A907 PB	5272	A908 SA	5216	A908 SB	5216	A908 SC	5216
A909 TF	5439	A916 PA	5216	A917 SD	5311	A917 SG	5216
A917 XC	5216	A918 RC	5216	A919 SA	5844	A919 SB	5216
A919 SD	5311	A921 SA	5792	A922 VB	5216	A922 WC	5272
A924 EG	5216	1925 VF	5216	1926 FF	5174	1926 FG	5174
1926 GC	5216	1927 TC	5676	1928 QB	5648	1928 SL	5312
1928 TK	5417	1928 UF	5312	1929 BD	5174	1929 PA	5174
1929 PB	5175	1929 PK	5175	1930 DA	5175	1930 HB	5312
1930 KA	5676	1930 VD	5312	1930 XL	5439	1931 EE	5272
1931 EG	5175	1931 FC	5272	1931 RN	5272	1931 TK	5312
1931 TW	5175	1931 TS1	5175	1931 TU1	5175	1931 TD2	5175
1931 UG	5216	1931 VP	5216	1932 BH	5275	1932 BN	5216
1932 CN	5216	1932 CW	5175	1932 CY	5175	1932 CB1	5312
1932 EO	5312	1932 HD	5312	1932 WB	5175	1933 FK	5216
1933 FM	5312	1933 FO	5312	1933 GA	5216	1933 GB	5272
1933 OD	5175	1933 QU	5175	1933 SR	5216	1933 UR	5439
1934 AF	5175	1934 AK	5312	1934 CZ	5175	1934 FF	5844
1934 GA	5175	1934 RB	5312	1934 RR	5839	1934 RE1	5312
1934 SE	5312	1935 CF	5175	1935 CL	5175	1935 FF	5216
1935 SU1	5175	1935 SA2	5175	1935 TC	5790	1935 UZ	5312
1936 PB	5408	1936 UB	5408	1936 UG	5312	1937 AC	5216
1937 GG	5175	1937 QB	5408	1937 QC	5312	1937 RB	5175
1937 TB	5175	1937 UE	5175	1938 BF	5676	1938 DV1	5216
1938 HE	5272	1938 SX	5175	1939 DG	5216	1939 DH	5175
1939 FY	5844	1939 PJ	5175	1939 UJ	5006	1939 VD	5175
1940 AC	5216	1940 CK	5175	1940 GD	5006	1940 GN	5644
1940 GO	5006	1941 FN	5676	1941 SS	5417	1942 AC	5175
1942 EB	5175	1942 RZ	5355	1943 EN	5006	1943 EC1	5408
1945 TE	5312	1947 CC	5175	1948 WF	5175	1949 DA	5123
1949 GJ	5123	1949 GK	5123	1949 PV	5123	1949 QJ2	5123
1950 DH	5439	1950 DL	5447	1950 FC	5275	1950 SH	5123
1950 TF	5123	1950 TO4	5123	1951 GC	5123	1951 JQ	5123
1951 OM	5123	1951 RL	5414	1951 SX	5006	1951 TA	5123
1952 HS	5123	1952 JH	5123	1952 QX	5123	1952 SG	5123
1953 GM	5601	1953 XL1	5175	1955 WB	5678	1957 AA	5973
1959 RJ	5648	1961 RA	5599	1964 TA1	5224	1964 TC2	5686
1964 TR2	5006	1964 TS2	5006	1964 TT2	5006	1964 TU2	5006
1964 VY	5448	1964 VM1	5599	1964 VZ2	5006	1964 VA3	5006
1964 XA	5130	1965 AK1	5006	1965 SN	5006	1965 SO	5006
1965 SP	5006	1965 SU	5006	1965 UZ	5006	1965 UA1	5006

1965 UB1	5006	1965 UC1	5006	1965 UP1	5006	1965 UU1	5007
1965 UD2	5007	1965 WR	5317	1965 YG	5007	1966 AA	5007
1966 BL	5007	1966 BO	5007	1966 BW	5007	1966 BZ	5007
1966 BA1	5687	1966 CF	5007	1966 CK	5007	1966 CL	5007
1966 CM	5007	1966 DH	5007	1966 PD	5321	1967 JO	5279
1968 HK1	5356	1968 SB	5037	1968 UP	5276	1969 UC	5216
1969 VW	5351	1970 HA	5276	1970 PL	5521	1971 SC	5032
1971 UR	5272	1971 UG1	5519	1971 UM1	5599	1972 KE	5439
1972 KJ	5839	1972 NC	5521	1972 RV3	5276	1972 TF2	5650
1973 FF1	5032	1973 SO2	5600	1973 SZ2	5836	1973 SJ4	5181
1974 FD	5346	1974 FF	5346	1974 FG	5601	1974 FJ	5347
1974 FN	5347	1974 FO	5347	1974 HR	5439	1974 HZ	5347
1974 KB	5840	1974 MH	5272	1974 OZ	5439	1974 OA1	5439
1974 QM2	5676	1974 RV1	5440	1974 RY1	5439	1974 RA2	5439
1974 SF	5439	1974 SJ	5840	1974 SP	5439	1974 ST	5439
1974 SN1	5790	1974 SY4	5439	1974 SB5	5439	1974 SD5	5439
1974 TW	5439	1974 XX	5793	1974 YP	5007	1975 BU	5218
1975 BV	5007	1975 BX	5007	1975 BP1	5007	1975 DA	5224
1975 FW	5649	1975 FX	5177	1975 NY	5356	1975 RB	5448
1975 RP	5784	1975 RQ	5784	1975 RR	5784	1975 TN	5013
1975 TU2	5356	1975 TL6	5784	1975 UF	5596	1975 UJ	5676
1975 VD	5033	1975 VD2	5596	1975 VE2	5676	1975 VF2	5596
1975 VK2	5676	1975 VM2	5596	1975 VN2	5596	1975 VO2	5598
1975 VW3	5687	1975 VK4	5971	1975 VY4	5971	1975 VR5	5971
1975 WK1	5007	1975 WO1	5679	1975 XL	5971	1975 XX1	5007
1975 XY1	5834	1975 XA3	5518	1975 XF3	5007	1975 XP3	5834
1976 AG	5602	1976 DC	5033	1976 DD	5219	1976 GC1	5440
1976 GM2	5891	1976 GN2	5515	1976 GJ3	5600	1976 GL8	5216
1976 GN8	5216	1976 JF2	5356	1976 KV	5793	1976 QL	5637
1976 QM	5637	1976 QN	5637	1976 QP	5637	1976 QR	5637
1976 QS	5637	1976 QV	5790	1976 QX	5637	1976 QG1	5836
1976 QZ1	5784	1976 QK2	5784	1976 QL2	5784	1976 SC	5515
1976 SF	5312	1976 SG	5312	1976 SJ	5312	1976 SK	5312
1976 SL	5312	1976 SG1	5515	1976 SZ9	5312	1976 SR10	5898
1976 UQ1	5596	1976 US1	5596	1976 UT1	5596	1976 UW1	5596
1976 UK2	5596	1976 UN2	5596	1976 US2	5676	1976 UZ7	5596
1976 UN14	5596	1976 UR15	5596	1976 UW15	5602	1976 UB16	5596
1976 UH16	5596	1976 UP20	5793	1976 VA	5784	1976 WB1	5791
1976 YA	5515	1976 YX	5681	1976 YS1	5791	1976 YX1	5321
1976 YQ2	5520	1976 YF3	5596	1976 YT3	5007	1977 CA	5898
1977 DA	5676	1977 ET1	5600	1977 FZ	5681	1977 NK	5216
1977 NQ	5216	1977 NR	5216	1977 NT	5276	1977 PE1	5216
1977 PO1	5217	1977 PP1	5217	1977 PW1	5217	1977 PY1	5598
1977 PZ1	5441	1977 PA2	5217	1977 QB1	5217	1977 QC1	5217
1977 QE1	5217	1977 QL2	5679	1977 QX2	5441	1977 QY2	5217
1977 QM3	5518	1977 QP4	5522	1977 QA5	5217	1977 QC5	5217
1977 QD5	5217	1977 RD	5312	1977 RD4	5217	1977 RL6	5217
1977 RM6	5217	1977 RN6	5217	1977 RR6	5217	1977 RS6	5217
1977 RW6	5217	1977 RZ6	5277	1977 RC7	5322	1977 RE7	5217
1977 RG7	5217	1977 RH7	5347	1977 RX7	5318	1977 RY7	5217
1977 RB8	5217	1977 SA1	5217	1977 SM1	5677	1977 SN1	5677
1977 SS1	5347	1977 TZ	5036	1977 TB1	5217	1977 TC1	5347
1977 TQ3	5007	1977 TS3	5347	1977 UP	5520	1977 UQ	5899
1977 VJ	5007	1977 VN	5007	1977 VL1	5007	1977 VM1	5217
1978 CH	5891	1978 CK	5891	1978 DA	5840	1978 GB	5352
1978 GC	5130	1978 LB	5971	1978 NC	5515	1978 NN1	5596
1978 NZ2	5596	1978 NC3	5679	1978 OB	5972	1978 PP2	5844
1978 PQ2	5845	1978 PT2	5834	1978 PU2	5834	1978 PB3	5834
1978 PF3	5845	1978 PH3	5834	1978 PM3	5834	1978 PO3	5834

1978 PP3	5845	1978 PS3	5834	1978 PU3	5834	1978 PV3	5834
1978 PW3	5834	1978 PX3	5834	1978 PA4	5834	1978 PB4	5834
1978 PC4	5834	1978 PG4	5834	1978 PL4	5972	1978 QC	5834
1978 QE	5596	1978 QJ	5596	1978 QK	5596	1978 QX	5972
1978 QF1	5834	1978 QK1	5845	1978 QP1	5834	1978 QU1	5834
1978 QW1	5972	1978 QA2	5834	1978 QB2	5974	1978 QC2	5834
1978 QE2	5834	1978 QG2	5834	1978 QJ2	5972	1978 QK2	5834
1978 QL2	5972	1978 QN2	5974	1978 QO2	5972	1978 QQ2	5834
1978 QU2	5834	1978 QV2	5834	1978 QW2	5834	1978 QX2	5834
1978 QB3	5834	1978 QG3	5972	1978 QH3	5972	1978 RF	5834
1978 RG	5596	1978 RH	5602	1978 RM	5834	1978 RN	5834
1978 RO	5834	1978 RP	5840	1978 RR	5597	1978 RS	5597
1978 RT	5679	1978 RU	5834	1978 RV	5597	1978 RW	5597
1978 RX	5597	1978 RY	5597	1978 RZ	5597	1978 RG1	5834
1978 RK1	5597	1978 RL1	5834	1978 RO1	5834	1978 RP1	5597
1978 RQ1	5834	1978 RR1	5834	1978 RS1	5834	1978 RU1	5977
1978 RV1	5834	1978 RW1	5834	1978 RX1	5834	1978 RA2	5834
1978 RD2	5597	1978 RJ2	5834	1978 RM2	5835	1978 RY3	5835
1978 SP	5602	1978 SQ	5279	1978 SR	5597	1978 SD1	5597
1978 SE1	5597	1978 SG1	5597	1978 SH1	5597	1978 SP2	5835
1978 SQ2	5835	1978 SR2	5835	1978 SS2	5835	1978 SU2	5835
1978 SV2	5835	1978 SX2	5835	1978 SY2	5846	1978 SZ2	5835
1978 SA3	5835	1978 SB3	5835	1978 SD3	5835	1978 SE3	5835
1978 SH3	5835	1978 SJ3	5835	1978 TA	5791	1978 UA	5007
1978 UV	5972	1978 UU1	5175	1978 UF2	5972	1978 UH2	5972
1978 UJ2	5972	1978 UK2	5972	1978 UM2	5972	1978 UQ2	5972
1978 UR2	5972	1978 VN	5007	1978 VO	5007	1978 VP	5007
1978 VU	5007	1978 VX	5007	1978 VD1	5007	1978 VF1	5007
1978 VH1	5007	1978 VJ1	5007	1978 VK1	5007	1978 VN1	5007
1978 VO1	5007	1978 VQ1	5008	1978 VT1	5008	1978 VW1	5008
1978 VZ1	5008	1978 VB2	5008	1978 VF2	5008	1978 VH2	5008
1978 VP2	5008	1978 VQ2	5008	1978 VR2	5008	1978 VS2	5008
1978 VT2	5008	1978 VW2	5123	1978 VX2	5123	1978 VC3	5123
1978 VD3	5123	1978 VE3	5123	1978 VF3	5123	1978 VG3	5418
1978 VH3	5123	1978 VJ3	5123	1978 VK3	5123	1978 VL3	5123
1978 VN3	5123	1978 VO3	5123	1978 VQ3	5123	1978 VR3	5123
1978 VS3	5123	1978 VT3	5123	1978 VU3	5123	1978 VV3	5123
1978 VW3	5123	1978 VX3	5123	1978 VY3	5123	1978 VZ3	5123
1978 VB4	5123	1978 VC4	5123	1978 VD4	5123	1978 VE4	5123
1978 VF4	5123	1978 VG4	5123	1978 VH4	5124	1978 VJ4	5124
1978 VL4	5124	1978 VM4	5124	1978 VN4	5124	1978 VO4	5124
1978 VP4	5124	1978 VQ4	5133	1978 VR4	5124	1978 VT4	5124
1978 VW4	5124	1978 VX4	5124	1978 VA5	5124	1978 VB5	5124
1978 VC5	5124	1978 VD5	5124	1978 VE5	5124	1978 VF5	5124
1978 VG5	5124	1978 VH5	5124	1978 VL5	5124	1978 VO5	5124
1978 VQ5	5318	1978 VS5	5124	1978 VU5	5124	1978 VV5	5124
1978 VW5	5124	1978 VX5	5124	1978 VY5	5124	1978 VZ5	5124
1978 VB6	5124	1978 VC6	5124	1978 VE6	5124	1978 VF6	5124
1978 VG6	5124	1978 VO6	5124	1978 VP6	5124	1978 VT6	5124
1978 VU6	5124	1978 VV6	5318	1978 VW6	5124	1978 VX6	5124
1978 VZ6	5124	1978 VB7	5124	1978 VD7	5124	1978 VE7	5124
1978 VF7	5124	1978 VG7	5124	1978 VH7	5124	1978 VJ7	5518
1978 VL7	5124	1978 VM7	5124	1978 VQ7	5124	1978 VU7	5124
1978 VW7	5124	1978 VY7	5124	1978 VZ7	5125	1978 VC8	5125
1978 VD8	5125	1978 VE8	5125	1978 VF8	5125	1978 VG8	5125
1978 VH8	5125	1978 VJ8	5125	1978 VK8	5125	1978 VL8	5125
1978 VM8	5125	1978 VO8	5125	1978 VQ8	5125	1978 VR8	5125
1978 VS8	5125	1978 VT8	5125	1978 VU8	5125	1978 VV8	5125
1978 VW8	5125	1978 VX8	5125	1978 VY8	5125	1978 VZ8	5125

1978 VA9	5125	1978 VB9	5125	1978 VE9	5125	1978 VH9	5125
1978 VK9	5125	1978 VL9	5125	1978 VM9	5125	1978 VN9	5125
1978 VP9	5125	1978 VQ9	5125	1978 VR9	5125	1978 VS9	5125
1978 VT9	5318	1978 VU9	5125	1978 VV9	5125	1978 VB10	5125
1978 VD10	5125	1978 VE10	5125	1978 VG10	5125	1978 VJ10	5125
1978 VK10	5125	1978 VL10	5125	1978 VM10	5125	1978 VN10	5125
1978 VO10	5125	1978 VP10	5125	1978 VQ10	5125	1978 VR10	5125
1978 VS10	5125	1978 VT10	5125	1978 VU10	5125	1978 VE11	5125
1978 VG11	5125	1978 VH11	5125	1978 VJ11	5125	1978 VL11	5125
1978 VM11	5125	1978 VN11	5126	1978 VP11	5126	1978 WH14	5972
1978 WM14	5972	1978 WN14	5972	1978 WU14	5972	1978 XC	5277
1979 BA	5443	1979 BH	5784	1979 DE	5008	1979 HK1	5347
1979 KA	5682	1979 KC	5682	1979 KL	5846	1979 KN	5846
1979 KO	5008	1979 KQ	5008	1979 KS	5008	1979 KT	5008
1979 KV	5008	1979 KX	5008	1979 MA	5784	1979 MC	5008
1979 MF	5008	1979 MK1	5784	1979 ML1	5784	1979 MM1	5784
1979 MN1	5784	1979 MP1	5846	1979 MQ1	5784	1979 MR1	5784
1979 MS1	5784	1979 MV1	5784	1979 MW1	5784	1979 MX1	5784
1979 MZ1	5784	1979 MC2	5784	1979 MD2	5784	1979 ME2	5784
1979 MF2	5784	1979 MG2	5784	1979 MH2	5784	1979 MK2	5784
1979 ML2	5784	1979 MM2	5784	1979 MN2	5794	1979 MO2	5784
1979 MP2	5784	1979 MQ2	5784	1979 MR2	5784	1979 MS2	5784
1979 MT2	5784	1979 MU2	5784	1979 MW2	5784	1979 MX2	5899
1979 MY2	5784	1979 MZ2	5784	1979 MA3	5784	1979 MB3	5784
1979 MC3	5784	1979 MF3	5784	1979 MG3	5784	1979 MK3	5784
1979 ML3	5784	1979 MM3	5784	1979 MN3	5784	1979 MP3	5785
1979 MQ3	5972	1979 MR3	5785	1979 MT3	5785	1979 MV3	5785
1979 MW3	5785	1979 MX3	5785	1979 MY3	5785	1979 MZ3	5900
1979 MA4	5785	1979 MC4	5785	1979 ME4	5785	1979 MF4	5785
1979 MG4	5785	1979 MH4	5785	1979 MJ4	5785	1979 MK4	5785
1979 MM4	5785	1979 MN4	5785	1979 MP4	5785	1979 MQ4	5785
1979 MR4	5900	1979 MS4	5785	1979 MT4	5785	1979 MU4	5785
1979 MV4	5785	1979 MW4	5785	1979 MX4	5008	1979 MY4	5785
1979 MZ4	5785	1979 MA5	5785	1979 MB5	5785	1979 MC5	5785
1979 MD5	5785	1979 MF5	5785	1979 MG5	5785	1979 MJ5	5785
1979 MM5	5896	1979 MO5	5785	1979 MP5	5785	1979 MQ5	5785
1979 MR5	5847	1979 MS5	5785	1979 MX5	5785	1979 MY5	5785
1979 MZ5	5785	1979 MA6	5785	1979 MB6	5785	1979 MC6	5009
1979 ME6	5785	1979 MG6	5785	1979 MH6	5785	1979 MJ6	5785
1979 MK6	5785	1979 ML6	5785	1979 MM6	5785	1979 MN6	5785
1979 MO6	5785	1979 MQ6	5785	1979 MR6	5785	1979 MS6	5785
1979 MU6	5786	1979 MV6	5786	1979 MW6	5786	1979 MX6	5786
1979 MY6	5786	1979 MZ6	5786	1979 MA7	5786	1979 MC7	5786
1979 MD7	5786	1979 ME7	5786	1979 MF7	5786	1979 MG7	5786
1979 MH7	5786	1979 MK7	5786	1979 ML7	5786	1979 MM7	5786
1979 MN7	5786	1979 MO7	5786	1979 MR7	5786	1979 MS7	5786
1979 MU7	5786	1979 MV7	5786	1979 MW7	5786	1979 MX7	5786
1979 MY7	5786	1979 MZ7	5786	1979 MC8	5786	1979 MD8	5786
1979 ME8	5847	1979 MG8	5786	1979 MH8	5786	1979 MJ8	5786
1979 MM8	5786	1979 MO8	5786	1979 MQ8	5786	1979 MS8	5794
1979 MT8	5786	1979 MU8	5786	1979 MV8	5786	1979 MX8	5786
1979 MZ8	5786	1979 MB9	5786	1979 MC9	5786	1979 OA	5126
1979 OB	5126	1979 OC	5841	1979 OY	5786	1979 OZ	5786
1979 OE1	5786	1979 OH1	5786	1979 OL1	5786	1979 OM1	5786
1979 ON1	5786	1979 OO1	5786	1979 OP1	5786	1979 OS1	5786
1979 OV1	5786	1979 OZ1	5786	1979 OK2	5786	1979 OL2	5786
1979 OM2	5786	1979 OO2	5786	1979 OW2	5786	1979 OK3	5787
1979 OU3	5787	1979 OV3	5787	1979 OY3	5787	1979 OG4	5787
1979 OK4	5787	1979 ON4	5787	1979 OS4	5787	1979 OV4	5787

1979 OZ4	5787	1979 OF5	5787	1979 OJ5	5787	1979 OL5	5787
1979 OW5	5787	1979 OA8	5787	1979 OD8	5787	1979 OF8	5787
1979 OG8	5787	1979 OH8	5787	1979 OV8	5787	1979 OW8	5787
1979 OX8	5787	1979 OY8	5787	1979 OZ8	5787	1979 OB9	5787
1979 OF9	5787	1979 OG9	5787	1979 OH9	5787	1979 OJ9	5787
1979 OK9	5787	1979 ON9	5787	1979 OO9	5787	1979 OQ9	5787
1979 OR9	5787	1979 OU9	5787	1979 OY9	5787	1979 OZ9	5787
1979 OB10	5787	1979 OC10	5787	1979 OE10	5787	1979 OF10	5787
1979 OH10	5787	1979 OJ10	5787	1979 OK10	5787	1979 OL10	5787
1979 ON10	5787	1979 OQ10	5787	1979 OT10	5787	1979 OV10	5787
1979 OW10	5787	1979 OZ10	5787	1979 OB11	5787	1979 OD11	5787
1979 OF11	5787	1979 OG11	5787	1979 OJ11	5787	1979 OK11	5787
1979 OL11	5787	1979 ON11	5787	1979 OP11	5788	1979 OS11	5788
1979 OT11	5788	1979 OU11	5788	1979 OB12	5788	1979 PA	5009
1979 PB	5682	1979 QB	5515	1979 QE	5683	1979 QP	5515
1979 QS	5515	1979 QU	5515	1979 QX	5515	1979 QY	5515
1979 QZ	5515	1979 QA1	5515	1979 QB1	5515	1979 QC1	5515
1979 QD1	5515	1979 QE1	5515	1979 QF1	5515	1979 QH1	5515
1979 QJ1	5515	1979 QL1	5515	1979 QM1	5515	1979 QN1	5515
1979 QO1	5515	1979 QR1	5515	1979 QT1	5515	1979 QV1	5515
1979 QW1	5515	1979 QZ1	5515	1979 QA2	5515	1979 QB2	5515
1979 QC2	5515	1979 QD2	5515	1979 QF2	5515	1979 QG2	5515
1979 QK2	5515	1979 QP2	5515	1979 QQ2	5515	1979 QR2	5515
1979 QS2	5515	1979 QT2	5515	1979 QU2	5515	1979 QW2	5515
1979 QX2	5515	1979 QY2	5515	1979 QA3	5516	1979 QC3	5516
1979 QD3	5516	1979 QG3	5516	1979 QM3	5516	1979 QO3	5516
1979 QP3	5516	1979 QR3	5516	1979 QS3	5516	1979 QW3	5516
1979 QX3	5516	1979 QZ3	5516	1979 QA4	5516	1979 QB4	5516
1979 QH4	5516	1979 QJ4	5516	1979 QK4	5516	1979 SC	5009
1979 SD	5009	1979 SF	5126	1979 SH	5126	1979 SJ	5126
1979 SK	5516	1979 SM	5009	1979 SN	5009	1979 SO	5126
1979 SQ	5126	1979 SR	5126	1979 SS	5126	1979 ST	5009
1979 SB1	5788	1979 TA	5217	1979 TH	5788	1979 TK	5788
1979 TM	5972	1979 UC	5175	1979 UD	5683	1979 UE	5175
1979 UG	5277	1979 UH	5175	1979 UQ	5972	1979 UR	5126
1979 US	5126	1979 UT	5126	1979 UX	5126	1979 UA1	5126
1979 UA2	5788	1979 VA	5319	1979 XB	5131	1979 XE	5272
1979 XJ	5272	1979 XK	5312	1979 XL	5312	1979 YB	5347
1979 YM	5272	1979 YN	5272	1979 YO	5272	1979 YP	5972
1979 YQ	5312	1980 AA	5279	1980 AB	5217	1980 BA	5272
1980 CA	5272	1980 CB	5217	1980 CF	5352	1980 CG	5272
1980 CJ	5272	1980 CK	5357	1980 CO	5319	1980 CR	5312
1980 CT	5408	1980 CU	5408	1980 DA	5312	1980 DC	5347
1980 DF	5312	1980 DG	5312	1980 DH	5312	1980 DJ	5312
1980 DK	5312	1980 DL	5312	1980 DN	5312	1980 DO	5312
1980 DP	5312	1980 DQ	5312	1980 DR	5273	1980 DS	5312
1980 DU	5312	1980 DV	5312	1980 DW	5312	1980 DX	5312
1980 DY	5312	1980 DA1	5516	1980 DC1	5312	1980 DD1	5312
1980 DE1	5312	1980 EA	5273	1980 EB	5440	1980 EC	5313
1980 EE	5313	1980 EF	5347	1980 EG	5408	1980 FB	5347
1980 GA	5409	1980 GB	5347	1980 GC	5409	1980 GD	5347
1980 GF	5347	1980 GG	5347	1980 GH	5347	1980 GJ	5347
1980 GK	5347	1980 GL	5347	1980 GM	5347	1980 GN	5347
1980 GO	5347	1980 GP	5409	1980 HB	5409	1980 JA	5409
1980 JC	5409	1980 JD	5409	1980 JE	5409	1980 JF	5409
1980 JG	5409	1980 JH	5409	1980 JJ	5409	1980 JM	5409
1980 JP	5409	1980 KC	5516	1980 KD	5516	1980 KE	5516
1980 KF	5516	1980 KG	5516	1980 KH	5516	1980 KJ	5650
1980 KK	5516	1980 KL	5516	1980 KM	5597	1980 KN	5516

1980 KO	5516	1980 LA	5977	1980 LB	5977	1980 LD	5518
1980 LE	5516	1980 LJ	5516	1980 LK	5516	1980 LL	5516
1980 LM	5516	1980 LN	5516	1980 LO	5516	1980 LP	5637
1980 LU	5637	1980 LY	5637	1980 LB1	5637	1980 LC1	5637
1980 LE1	5638	1980 MA	5516	1980 MB	5516	1980 MC	5516
1980 MD	5638	1980 OA	5516	1980 OB	5522	1980 OC	5523
1980 OD	5638	1980 OE	5651	1980 OF	5638	1980 OG	5516
1980 OH	5651	1980 PA	5899	1980 PF	5638	1980 PG	5638
1980 PH	5516	1980 PJ	5638	1980 PM	5638	1980 PN	5649
1980 PP	5638	1980 PQ	5516	1980 PS	5516	1980 PT	5516
1980 PU	5517	1980 PV	5517	1980 PW	5517	1980 PX	5597
1980 PZ	5638	1980 PA1	5977	1980 PB1	5517	1980 PJ1	5891
1980 PO1	5891	1980 PP1	5891	1980 PS1	5891	1980 PT1	5891
1980 PU1	5891	1980 PV1	5891	1980 PZ1	5891	1980 PA2	5891
1980 PB2	5892	1980 PD2	5892	1980 RA	5638	1980 RB	5638
1980 RC	5597	1980 RJ	5638	1980 RK	5638	1980 RP	5638
1980 RQ	5638	1980 RR	5638	1980 RU	5638	1980 RX	5638
1980 RY	5649	1980 RB1	5847	1980 RC1	5597	1980 RD1	5597
1980 RE1	5597	1980 RG1	5677	1980 RM1	5677	1980 RN1	5638
1980 RX1	5638	1980 SD	5638	1980 SF	5638	1980 SG	5638
1980 SH	5677	1980 SJ	5638	1980 SM	5638	1980 SO	5847
1980 SP	5638	1980 SQ	5638	1980 TA	5638	1980 TE	5677
1980 TF	5788	1980 TG	5788	1980 TN	5677	1980 TO	5794
1980 TP	5677	1980 TP3	5972	1980 TR3	5972	1980 TS3	5972
1980 TT3	5972	1980 TX3	5972	1980 TA4	5972	1980 TD4	5972
1980 TF4	5972	1980 TL4	5972	1980 TM4	5972	1980 TN4	5972
1980 TU4	5972	1980 TX4	5972	1980 UA	5677	1980 UC	5788
1980 UJ	5972	1980 UK	5972	1980 UL	5972	1980 VA	5835
1980 VG	5677	1980 VH	5677	1980 VJ	5677	1980 VN	5836
1980 VO	5677	1980 VP	5848	1980 VQ	5677	1980 VW	5900
1980 VX	5794	1980 WA	5788	1980 WF	5841	1980 XA	5795
1980 XB	5835	1980 XE	5892	1980 XM	5835	1980 YC	5892
1980 YH	5892	1980 YL	5835	1980 YM	5892	1980 YS	5899
1981 AA	5892	1981 AD	5892	1981 AE	5896	1981 AQ	5892
1981 AT	5896	1981 AV	5835	1981 AD1	5896	1981 AH1	5897
1981 BC	5972	1981 BD	5892	1981 BF	5892	1981 CA	5972
1981 CB	5974	1981 CH	5972	1981 CN	5892	1981 CS	5897
1981 CW	5977	1981 CX	5979	1981 CY	5972	1981 CB1	5972
1981 EE	5972	1981 EF	5972	1981 EG	5980	1981 FA	5972
1981 FB	5972	1981 FD	5978	1981 FE	5972	1981 FF	5972
1981 FG	5972	1981 FH	5972	1981 FK	5972	1981 FL	5972
1981 FN	5972	1981 GA	5972	1981 GB	5972	1981 GC	5973
1981 GM	5973	1981 GN	5973	1981 GO	5973	1981 GP	5973
1981 GQ	5973	1981 GR	5973	1981 GS	5973	1981 GT	5973
1981 GX	5973	2533 P-L	5523	2540 P-L	5980	2580 P-L	5322
2605 P-L	5322	3537 P-L	5638	4021 P-L	5687	4081 P-L	5980
4578 P-L	5323	6578 P-L	5687	7071 P-L	5603		

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
126	1981 04	02.99043	12 33 49.00	-02 31 36.9		046
126	1981 04	03.00484	12 33 48.15	-02 31 33.7		046
126	1981 04	09.97690	12 27 24.04	-01 58 32.2		046
126	1981 04	09.99108	12 27 23.29	-01 58 28.2		046
126	1981 04	22.86771	12 17 02.44	-01 07 17.4		046
126	1981 04	22.88194	12 17 01.89	-01 07 14.6		046

126	1981	04	28.89481	12	13	13.94	-00	49	59.5		046
126	1981	04	28.90905	12	13	13.45	-00	49	57.8		046
229	1981	04	22.86771	12	17	54.23	-01	04	49.9		046
229	1981	04	22.88194	12	17	53.75	-01	04	47.0		046
229	1981	04	28.89481	12	14	53.64	-00	48	19.8		046
229	1981	04	28.90905	12	14	53.25	-00	48	17.5		046
340	1981	04	22.86771	12	18	30.70	-00	17	15.6		046
340	1981	04	22.88194	12	18	30.09	-00	17	13.1		046
340	1981	04	28.89481	12	15	04.03	-00	05	49.0		046
340	1981	04	28.90905	12	15	03.58	-00	05	47.9		046
413	1981	05	07.99336	15	33	09.71	+05	15	52.3		046
413	1981	05	08.00765	15	33	08.85	+05	15	54.6		046
425	1981	03	27.92115	11	09	57.63	+11	40	24.2		046
425	1981	03	27.93538	11	09	56.97	+11	40	27.6		046
425	1981	03	29.91368	11	08	36.43	+11	45	31.6		046
425	1981	03	29.92797	11	08	35.87	+11	45	33.3		046
533	1981	04	10.04819	12	47	35.80	-02	24	19.7		046
533	1981	04	10.06243	12	47	35.16	-02	24	14.2		046
547	1981	05	07.95742	15	06	51.41	-03	39	29.5		046
547	1981	05	07.97160	15	06	50.75	-03	39	24.9		046
563	1981	05	08.03392	14	33	00.47	-04	05	10.2		046
563	1981	05	08.04833	14	32	59.70	-04	05	08.5		046
611	1981	05	08.03392	14	36	12.21	-04	27	05.8		046
611	1981	05	08.04833	14	36	11.53	-04	27	00.3		046
770	1981	03	27.99707	13	07	38.76	-02	56	55.8		046
770	1981	03	28.01142	13	07	37.89	-02	56	52.2		046
770	1981	03	29.98544	13	05	37.02	-02	47	21.7		046
770	1981	03	29.99973	13	05	36.03	-02	47	18.4		046
947	1981	04	02.95247	12	46	30.22	+01	14	58.9	16.4	046
947	1981	04	02.96682	12	46	29.60	+01	15	01.0		046
947	1981	04	03.90897	12	45	42.85	+01	18	48.6		046
947	1981	04	03.92321	12	45	42.16	+01	18	49.8		046
947	1981	04	07.89779	12	42	25.91	+01	34	11.7		046
947	1981	04	07.91226	12	42	25.24	+01	34	14.8		046
947	1981	04	10.01278	12	40	43.07	+01	41	54.3		046
947	1981	04	10.02707	12	40	42.57	+01	41	57.1		046
1229	1981	04	02.99043	12	34	00.97	-03	54	24.0		046
1229	1981	04	03.00484	12	34	00.44	-03	54	18.8		046
1229	1981	04	28.89481	12	18	14.69	-02	07	24.9		046
1229	1981	04	28.90905	12	18	14.34	-02	07	20.8		046
1358	1981	04	02.99043	12	34	32.40	-03	00	20.0		046
1358	1981	04	03.00484	12	34	31.34	-03	00	15.9		046
1358	1981	04	09.97690	12	28	03.20	-02	25	04.0		046
1358	1981	04	09.99108	12	28	02.36	-02	24	59.0		046
1358	1981	04	22.86771	12	17	26.42	-01	28	49.6		046
1358	1981	04	22.88194	12	17	25.64	-01	28	44.5		046
1618	1981	04	02.95247	12	38	41.47	+01	12	20.8		046
1618	1981	04	02.96682	12	38	40.80	+01	12	25.1		046
1618	1981	04	03.90897	12	37	56.04	+01	17	08.3		046
1618	1981	04	03.92321	12	37	55.51	+01	17	12.4		046
1618	1981	04	07.89779	12	34	48.48	+01	36	26.6		046
1618	1981	04	07.91226	12	34	47.76	+01	36	29.8		046
1618	1981	04	10.01278	12	33	10.90	+01	46	08.1		046
1618	1981	04	10.02707	12	33	10.15	+01	46	12.1		046
2045	1981	04	02.99043	12	32	18.74	-03	24	20.4	16.8	046
2045	1981	04	03.00484	12	32	17.93	-03	24	20.4		046
2045	1981	04	09.97690	12	25	16.98	-03	08	26.7		046
2045	1981	04	09.99108	12	25	16.16	-03	08	25.3		046
2123	1981	04	09.97690	12	31	42.48	-04	50	06.6		046

2123		1981	04	09.99108	12	31	41.77	-04	50	03.2	046
2199		1981	03	27.92115	11	06	48.07	+12	17	46.5	046
2199		1981	03	27.93538	11	06	47.36	+12	17	53.1	046
2199		1981	03	29.91368	11	05	11.28	+12	32	33.6	046
2199		1981	03	29.92797	11	05	10.39	+12	32	41.4	046
2199		1981	04	02.91057	11	02	11.58	+12	59	35.8	046
2199		1981	04	02.92469	11	02	10.77	+12	59	42.1	046
2239		1981	03	27.92115	11	07	37.22	+13	59	21.0	16.4 046
2239		1981	03	27.93538	11	07	36.68	+13	59	21.7	046
2239		1981	03	29.91368	11	06	16.36	+14	01	08.6	046
2239		1981	03	29.92797	11	06	15.75	+14	01	09.3	046
2239		1981	04	02.91057	11	03	43.48	+14	03	16.2	046
2239		1981	04	02.92469	11	03	42.86	+14	03	17.2	046
2239		1981	04	03.85532	11	03	09.53	+14	03	30.1	046
2239		1981	04	03.86950	11	03	08.96	+14	03	31.2	046
2239		1981	04	09.94073	10	59	50.32	+14	02	14.8	046
2239		1981	04	09.95491	10	59	49.72	+14	02	15.0	046
2239		1981	04	22.82963	10	54	59.59	+13	44	40.4	046
2239		1981	04	22.84381	10	54	59.45	+13	44	39.0	046
2239		1981	04	28.84916	10	53	48.45	+13	29	54.9	046
2239		1981	04	28.86339	10	53	48.26	+13	29	55.0	046
2246		1981	04	02.95247	12	39	26.23	+01	17	17.1	16.6 046
2246		1981	04	02.96682	12	39	25.68	+01	17	22.9	046
2246		1981	04	03.90897	12	38	51.72	+01	22	07.5	046
2246		1981	04	03.92321	12	38	51.25	+01	22	11.1	046
2246		1981	04	07.89779	12	36	29.66	+01	41	40.2	046
2246		1981	04	07.91226	12	36	29.12	+01	41	47.3	046
2246		1981	04	10.01278	12	35	15.29	+01	51	36.0	046
2246		1981	04	10.02707	12	35	14.84	+01	51	40.2	046
2365		1981	03	27.80159	07	46	57.68	+16	49	10.4	046
2365		1981	03	27.81576	07	46	58.16	+16	49	08.9	046
1970	HA	1981	05	07.95742	15	12	31.36	-03	10	17.0	17.0 046
1970	HA	1981	05	07.97160	15	12	30.71	-03	10	13.6	046
1976	YS1	1981	03	27.96073	12	45	02.78	-02	31	51.9	046
1976	YS1	1981	03	27.97497	12	45	01.54	-02	31	44.2	046
1976	YS1	1981	03	29.94991	12	43	00.97	-02	21	22.3	046
1976	YS1	1981	03	29.96409	12	43	00.09	-02	21	17.2	046
1981	AJ1	1981	01	08.88066	07	29	40.61	+18	09	30.7	046
1981	AJ1	1981	01	08.89484	07	29	39.69	+18	09	34.1	046
1981	FK	1981	03	27.99707	13	00	20.63	-02	21	20.5	16.8 046
1981	FK	1981	03	28.01142	13	00	19.67	-02	21	17.1	046
1981	FK	1981	03	29.98544	12	58	24.20	-02	14	02.6	046
1981	FK	1981	03	29.99973	12	58	23.03	-02	13	57.2	046
1981	FK	1981	04	10.04819	12	47	26.21	-01	35	44.9	046
1981	FK	1981	04	10.06243	12	47	25.43	-01	35	42.0	046
1981	FS *	1981	03	27.84771	08	21	54.28	+18	34	09.4	16 046
1981	FS	1981	03	27.86189	08	21	54.49	+18	34	11.8	046
1981	FS	1981	03	29.80020	08	22	34.87	+18	38	29.6	046
1981	FS	1981	03	29.81438	08	22	35.17	+18	38	30.4	046
1981	FT *	1981	03	27.92115	11	03	25.81	+13	34	22.7	17.0 046
1981	FT	1981	03	27.93538	11	03	25.02	+13	34	25.5	046
1981	FT	1981	03	29.91368	11	01	56.42	+13	37	10.9	046
1981	FT	1981	03	29.92797	11	01	55.63	+13	37	11.0	046
1981	FT	1981	04	02.91057	10	59	17.40	+13	39	47.4	046
1981	FT	1981	04	02.92469	10	59	17.03	+13	39	44.6	046
1981	FU *	1981	03	27.96073	12	46	19.84	-04	19	18.6	17.6 046
1981	FU	1981	03	27.97497	12	46	18.65	-04	19	14.8	046
1981	FU	1981	03	29.94991	12	44	28.81	-04	08	03.3	046
1981	FU	1981	03	29.96409	12	44	27.80	-04	07	58.9	046

1981	FV	*	1981	03	27.96073	12	49	22.39	-00	01	25.4		17.8	046
1981	FV		1981	03	27.97497	12	49	21.77	-00	01	20.4			046
1981	FW	*	1981	03	27.96073	12	50	32.53	-00	41	43.6		17.8	046
1981	FW		1981	03	27.97497	12	50	31.80	-00	41	38.4			046
1981	FX	*	1981	03	27.99707	13	06	11.63	-02	12	59.6		17.8	046
1981	FX		1981	03	28.01142	13	06	10.93	-02	12	57.9			046
1981	FY	*	1981	03	27.99707	13	08	24.24	-02	09	01.6		17.9	046
1981	FY		1981	03	28.01142	13	08	23.50	-02	09	01.1			046
1981	FZ	*	1981	03	27.92115	11	11	17.83	+11	06	49.2			046
1981	FZ		1981	03	27.93538	11	11	17.23	+11	06	55.3			046
1981	FZ		1981	03	29.91368	11	10	02.60	+11	17	14.2		17.0	046
1981	FZ		1981	03	29.92797	11	10	02.21	+11	17	17.8			046
1981	GA		1981	03	27.96073	12	46	34.23	-03	13	02.5		16.8	046
1981	GA		1981	03	27.97497	12	46	33.34	-03	12	54.1			046
1981	GA		1981	03	29.94991	12	44	47.82	-02	56	15.6			046
1981	GA		1981	03	29.96409	12	44	46.95	-02	56	09.0			046
1981	GA		1981	04	02.99043	12	41	09.28	-02	22	12.7			046
1981	GA		1981	04	03.00484	12	41	08.44	-02	22	06.1			046
1981	GA		1981	04	09.97690	12	35	02.42	-01	25	41.9			046
1981	GA		1981	04	09.99108	12	35	01.67	-01	25	33.6			046
1981	GN		1981	03	27.96073	12	41	30.77	-03	45	34.4		16.2	046
1981	GN		1981	03	27.97497	12	41	29.91	-03	45	30.4			046
1981	GN		1981	03	29.94991	12	39	30.33	-03	38	42.4			046
1981	GN		1981	03	29.96409	12	39	29.46	-03	38	39.9			046
1981	GN		1981	04	02.99043	12	35	23.71	-03	24	36.7			046
1981	GN		1981	04	03.00484	12	35	22.84	-03	24	35.2			046
1981	GN		1981	04	09.97690	12	28	29.00	-03	01	25.4			046
1981	GN		1981	04	09.99108	12	28	28.19	-03	01	22.7			046
1981	GN		1981	04	22.86771	12	17	57.90	-02	30	47.8			046
1981	GN		1981	04	22.88194	12	17	57.28	-02	30	46.2			046
1981	GN		1981	04	28.89481	12	14	35.09	-02	24	45.5			046
1981	GN		1981	04	28.90905	12	14	34.75	-02	24	44.6			046
1981	GP		1981	03	27.96073	12	48	01.82	-03	07	20.2		16.4	046
1981	GP		1981	03	27.97497	12	48	00.23	-03	07	28.3			046
1981	GP		1981	03	29.94991	12	44	41.77	-03	24	46.3			046
1981	GP		1981	03	29.96409	12	44	40.27	-03	24	52.6			046
1981	GP		1981	04	02.99043	12	38	00.21	-03	59	19.5			046
1981	GP		1981	04	03.00484	12	37	58.69	-03	59	26.7			046
1981	GP		1981	04	09.97690	12	27	04.56	-04	56	36.1			046
1981	GP		1981	04	09.99108	12	27	03.38	-04	56	43.3			046
1981	GQ		1981	03	27.96073	12	47	08.61	-03	19	59.9		16.6	046
1981	GQ		1981	03	27.97497	12	47	07.68	-03	20	00.5			046
1981	GQ		1981	03	29.94991	12	45	10.06	-03	24	39.5			046
1981	GQ		1981	03	29.96409	12	45	09.16	-03	24	40.5			046
1981	GQ		1981	04	02.99043	12	41	07.26	-03	34	03.7			046
1981	GQ		1981	04	03.00484	12	41	06.37	-03	34	06.4			046
1981	GQ		1981	04	09.97690	12	34	17.72	-03	50	45.5			046
1981	GQ		1981	04	09.99108	12	34	16.83	-03	50	47.2			046
1981	GR		1981	03	27.96073	12	47	43.07	-04	04	00.2		17.0	046
1981	GR		1981	03	27.97497	12	47	42.20	-04	03	55.3			046
1981	GR		1981	03	29.94991	12	46	08.64	-03	51	13.5			046
1981	GR		1981	03	29.96409	12	46	07.86	-03	51	09.9			046
1981	GR		1981	04	02.99043	12	42	55.25	-03	25	11.2			046
1981	GR		1981	04	03.00484	12	42	54.61	-03	25	06.7			046
1981	GC1	*	1981	04	02.99043	12	33	05.87	-02	16	00.0		17.0	1 046
1981	GC1		1981	04	03.00484	12	33	05.25	-02	15	54.9			1 046
1981	GC1		1981	04	09.97690	12	25	38.23	-01	48	52.6			046
1981	GC1		1981	04	09.99108	12	25	37.66	-01	48	49.5			046
1981	JZ	*	1981	05	08.03392	14	31	13.10	-05	58	16.9		16.8	046

1981 JZ 1981 05 08.04833 14 31 12.29 -05 58 17.9 046
1981 JZ 1981 05 09.92509 14 29 33.44 -06 00 47.5 046
1981 JZ 1981 05 09.93522 14 29 32.93 -06 00 47.7 046
Note 1: near edge of plate.

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY N. S. CHERNYKH, L. I. CHERNYKH, L. G. KARACHKINA, T. M. SMIRNOVA AND L. V. ZHURAVLEVA (42ND AND 43RD REPORTS).

Object		Date	UT	R. A. (1950)	Decl.	O - C	Mag.	N	Obs.
819		1966 10	18.86525	00 32 56.03	+10 17 00.2	3.0+ 24+			095
182		1970 09	29.82890	22 13 29.70	-14 05 49.6				095
1976 GX2		1976 05	25.83990	13 15 23.26	-00 01 15.0		15.0	5	095
1978 EC7	*	1978 03	05.88148	10 24 22.18	+00 05 21.2		15.5	4	095
1978 ED7	*	1978 03	05.88634	09 55 57.78	+02 10 57.6		17.0	1	095
764		1978 03	05.88634	09 59 00.60	-02 44 46.2	0.2- 1-		1	095
1978 EE7	*	1978 03	05.88634	10 00 58.05	-00 29 59.6		16.0	1	095
1978 EF7	*	1978 03	05.88634	10 01 33.56	+04 20 08.8		17.0		095
1978 EG7	*	1978 03	05.88634	10 02 10.46	+04 00 35.6		17.0		095
1978 EH7	*	1978 03	05.88634	10 04 05.05	+02 06 27.8		18.0		095
1978 EJ7	*	1978 03	05.88634	10 05 04.19	+02 22 17.1		18.0		095
1647		1978 03	05.88634	10 05 12.34	+04 21 15.8		17.0		095
1978 EK7	*	1978 03	05.88634	10 05 50.60	+02 47 26.6		16.8		095
1485		1978 03	05.88634	10 05 54.56	+03 21 03.6	0.2- 0			095
1978 EL7	*	1978 03	05.88634	10 08 03.24	+03 46 26.8		15.8		095
1978 EM7	*	1978 03	05.88634	10 08 43.60	+01 39 59.4		17.5		095
1978 EN7	*	1978 03	05.88634	10 10 12.76	+07 01 41.7		17.0	1	095
1978 EO7	*	1978 03	05.88634	10 10 39.36	+00 43 19.0		18.0		095
1978 EP7	*	1978 03	05.88634	10 11 14.28	+06 18 18.5		18.0	1	095
1959		1978 03	05.88634	10 11 23.65	+02 40 00.1	0.1- 1-			095
1978 EQ7	*	1978 03	05.88634	10 11 28.17	+04 00 05.0		18.0		095
1978 ER7	*	1978 03	05.88634	10 11 40.45	+02 41 27.8		18.0		095
1978 ES7	*	1978 03	05.88634	10 11 58.13	+01 01 43.8		18.0		095
1978 ET7	*	1978 03	05.88634	10 13 07.19	+00 54 01.8		18.0	2	095
805		1978 03	05.88634	10 13 42.93	+06 53 59.6	0.1- 0		1	095
1978 EU7	*	1978 03	05.88634	10 14 21.04	+02 26 17.4		17.0		095
1978 EV7	*	1978 03	05.88634	10 14 52.66	+02 48 14.5		17.5		095
437		1978 03	05.88634	10 15 03.27	-00 35 46.2	0.3- 0			095
1978 EW7	*	1978 03	05.88634	10 16 19.88	+04 19 03.2		16.5	2	095
2275		1978 03	05.88634	10 17 39.88	+03 52 35.2		17.0		095
1978 EX7	*	1978 03	05.88634	10 18 00.87	-00 58 54.9		17.5	1	095
1978 EY7	*	1978 03	05.88634	10 19 26.13	+00 45 46.9		18.0		095
1978 EZ7	*	1978 03	05.88634	10 19 34.88	+05 34 35.0		17.5		095
1978 EA8	*	1978 03	05.88634	10 19 35.30	+03 02 20.2		17.5		095
137		1978 03	05.88634	10 21 02.82	-03 00 47.5	0.1- 1-		1	095
1978 EB8	*	1978 03	05.88634	10 22 12.97	+04 11 23.4		18.0		095
541		1978 03	05.88634	10 22 49.58	+00 45 27.7	0.6+ 7-			095
1978 EC8	*	1978 03	05.88634	10 23 12.56	+04 06 02.8		18.0		095
1978 ED8	*	1978 03	05.88634	10 25 04.51	-02 59 03.3		17.0	1	095
1978 EE8	*	1978 03	05.88634	10 25 30.90	+00 58 47.5		17.5		095
1978 EF8	*	1978 03	05.88634	10 25 32.70	+04 43 46.1		17.5		095
1978 EG8	*	1978 03	05.88634	10 28 18.82	+01 10 42.9		17.0	3	095
1978 EH8	*	1978 03	05.88634	10 28 50.46	+03 57 32.6		17.0		095
1978 EJ8	*	1978 03	05.88634	10 29 06.73	+06 21 59.4		17.0		095
1978 EK8	*	1978 03	05.88634	10 29 27.85	+04 36 27.9		17.0	1	095
1978 EL8	*	1978 03	05.88634	10 31 10.10	+03 23 53.3		17.0	1	095
34		1978 03	05.88634	10 31 10.89	+05 14 54.4	0.1- 0		1	095
1095		1978 03	05.88634	10 32 02.37	+04 07 38.1	0.2- 0		1	095
1978 EM8	*	1978 03	05.88634	10 32 03.65	+02 37 10.7		17.0	1	095
801		1978 03	05.88634	10 33 09.17	-01 23 12.6	0.2- 1-		1	095

1406		1978	03	05.88634	10	33	10.05	+06	31	33.4	0.1-	1+		1 095
1978	EN8	* 1978	03	05.88634	10	35	07.85	+04	37	57.3			17.0	1 095
1978	EC7	1978	03	05.89120	10	24	20.93	+00	05	12.7			15.5	4 095
155		1978	04	08.00495	14	51	46.00	-15	05	38.8	0.2+	1-		1 095
236		1978	04	08.00495	14	52	58.50	-10	51	18.8	0.3+	0		1 095
1978	GD3	* 1978	04	08.00495	14	54	11.03	-16	13	10.1			15.7	1 095
1978	GE3	* 1978	04	08.00495	14	54	38.28	-13	20	14.7			15.8	1 095
264		1978	04	08.00495	14	54	47.03	-13	15	12.7	0.1+	1+		1 095
2053		1978	04	08.00495	14	58	54.04	-11	52	26.0				1 095
1978	GF3	* 1978	04	08.00495	15	01	50.99	-15	58	46.5			16.7	095
2117		1978	04	08.00495	15	02	54.00	-15	36	29.2				095
171		1978	04	08.00495	15	03	46.90	-13	54	42.9	0.2+	1-		095
1190		1978	04	08.00495	15	04	38.06	-18	22	21.4	0.2+	1-		1 095
308		1978	04	08.00495	15	10	18.10	-13	44	51.9	0.3+	2-		095
2344		1978	04	08.00495	15	11	21.86	-12	43	59.0			16.0	095
811		1978	04	08.00495	15	13	56.68	-13	16	39.9	0.2+	1-		095
37		1978	04	08.00495	15	14	14.36	-20	29	44.8	0.2+	1-		1 095
2058		1978	04	08.00495	15	15	24.54	-14	52	50.6				095
1261		1978	04	08.00495	15	16	07.88	-16	23	45.3	0.2+	1-		095
666		1978	04	08.00495	15	16	56.10	-17	01	47.7	0.0	1-		095
1764		1978	04	08.00495	15	19	27.29	-15	10	31.7	0.3+	1-		095
16		1978	04	08.00495	15	21	04.67	-14	18	16.3	0.3+	0		095
1968		1978	04	08.00495	15	21	13.79	-14	21	54.0	0.3+	1-		095
1978	GG3	* 1978	04	08.00495	15	23	45.07	-11	34	14.0			16.5	1 095
2069		1978	04	08.00495	15	24	58.58	-17	32	25.8				3 095
1978	GH3	* 1978	04	11.93131	14	06	54.71	-16	18	55.9			16.8	1 095
1978	GJ3	* 1978	04	11.93652	13	36	21.47	-12	01	16.6			17.5	1 095
902		1978	04	11.93652	13	36	43.39	-15	47	45.0	0.1+	1-		1 095
1978	GK3	* 1978	04	11.93652	13	37	09.68	-08	36	07.2			17.5	3 095
320		1978	04	11.93652	13	37	43.22	-13	44	28.6	0.1-	1+		1 095
1978	GL3	* 1978	04	11.93652	13	37	50.09	-12	28	12.3			16.5	1 095
557		1978	04	11.93652	13	41	04.47	-15	06	20.5	0.1+	0		1 095
1978	GM3	* 1978	04	11.93652	13	41	14.77	-10	53	24.2			16.9	1 095
1978	GN3	* 1978	04	11.93652	13	41	29.26	-10	44	00.2			16.9	1 095
2052		1978	04	11.93652	13	42	36.05	-12	39	00.9				1 095
1046		1978	04	11.93652	13	43	23.60	-14	05	48.7	0.1+	0		095
1978	GO3	* 1978	04	11.93652	13	44	07.27	-08	35	44.3			16.8	1 095
2030		1978	04	11.93652	13	46	16.34	-07	53	51.5				1 095
1978	GP3	* 1978	04	11.93652	13	47	05.12	-07	42	32.1			16.7	1 095
515		1978	04	11.93652	13	47	38.43	-08	07	05.0	0.0	0		1 095
1978	GQ3	* 1978	04	11.93652	13	47	42.05	-09	46	05.0			16.5	095
1978	GR3	* 1978	04	11.93652	13	47	55.00	-10	01	08.5			16.5	095
77		1978	04	11.93652	13	48	09.77	-12	51	11.0	0.0	0		095
1978	GS3	* 1978	04	11.93652	13	49	20.98	-09	41	52.0			17.0	095
1978	GT3	* 1978	04	11.93652	13	49	27.41	-09	43	58.7			16.9	095
1978	GU3	* 1978	04	11.93652	13	49	55.02	-11	05	12.6			17.0	095
248		1978	04	11.93652	13	50	54.54	-16	08	23.0	0.2+	1-		1 095
1978	GV3	* 1978	04	11.93652	13	53	20.26	-16	30	58.8			16.5	1 095
1978	GW3	* 1978	04	11.93652	13	54	02.10	-08	07	30.1			16.6	1 095
1183		1978	04	11.93652	13	54	22.94	-12	52	38.0	0.0	0		095
262		1978	04	11.93652	13	54	32.62	-09	16	59.0	0.0	0		095
1978	GX3	* 1978	04	11.93652	13	55	10.88	-13	07	11.8			16.5	095
1978	GY3	* 1978	04	11.93652	13	55	13.04	-10	17	12.8			16.8	095
1978	GZ3	* 1978	04	11.93652	13	55	21.90	-11	37	09.3			16.7	095
1978	GA4	* 1978	04	11.93652	13	55	55.52	-07	26	12.9			17.0	1 095
1978	GB4	* 1978	04	11.93652	13	56	03.81	-13	07	01.4			16.9	095
1445		1978	04	11.93652	13	57	55.84	-09	03	12.6	0.3+	0		095
1978	GC4	* 1978	04	11.93652	13	57	55.94	-09	05	57.7			16.8	095
1978	GD4	* 1978	04	11.93652	13	58	27.07	-15	52	06.2			16.9	1 095

1978	GE4	*	1978	04	11.93652	13	58	56.60	-11	29	23.5			16.8		095
1978	GF4	*	1978	04	11.93652	13	59	24.55	-15	16	11.6			16.6	1	095
1978	GG4	*	1978	04	11.93652	13	59	52.22	-08	55	22.8			16.9		095
1978	GH4	*	1978	04	11.93652	13	59	52.93	-10	34	39.5			17.0		095
1479			1978	04	11.93652	13	59	54.71	-14	27	11.3	0.0	0			095
2224			1978	04	11.93652	14	00	21.83	-10	33	57.6					095
1978	GJ4	*	1978	04	11.93652	14	00	53.06	-07	37	10.9			16.7	1	095
1978	GK4	*	1978	04	11.93652	14	01	41.42	-08	15	32.0			16.9	1	095
1061			1978	04	11.93652	14	03	52.58	-09	24	48.4	1.6+	9-			095
1978	GL4	*	1978	04	11.93652	14	04	08.42	-11	03	35.0			16.6		095
1978	GM4	*	1978	04	11.93652	14	05	41.38	-10	22	40.8			16.5		095
1978	GN4	*	1978	04	11.93652	14	05	46.50	-07	48	29.6			16.6	1	095
1978	GO4	*	1978	04	11.93652	14	06	01.56	-11	27	11.7			17.0		095
1203			1978	04	11.93652	14	06	23.59	-14	54	48.7	0.3+	2-			095
1978	GP4	*	1978	04	11.93652	14	08	48.00	-10	25	30.6			16.9		095
1171			1978	04	11.93652	14	10	22.49	-08	46	39.3	0.1+	1-		1	095
1978	GQ4	*	1978	04	11.93652	14	10	55.35	-14	18	26.6			16.6	1	095
509			1978	04	11.93652	14	13	54.55	-15	47	20.9	0.2+	0		1	095
1978	GR4	*	1978	04	11.94174	14	11	58.72	-09	38	10.0			16.8	1	095
136			1978	04	12.00320	14	49	52.16	-08	23	08.6	0.0	0		1	095
1605			1978	04	12.00814	14	51	22.08	-05	48	44.1	0.1-	0		1	095
1978	GS4	*	1978	04	12.00814	14	51	43.10	-07	31	38.7			16.5	1	095
1356			1978	04	12.00814	14	53	05.37	-10	08	33.3	0.0	0		1	095
2332			1978	04	12.00814	14	57	01.88	-07	28	47.0			16.1		095
1558			1978	04	12.00814	14	57	02.68	-02	11	32.6	0.1-	0			095
365			1978	04	12.00814	14	57	36.85	-06	47	50.8	0.0	0			095
1978	GT4	*	1978	04	12.00814	14	58	00.62	-09	08	12.6			16.5	1	095
1978	GU4	*	1978	04	12.00814	14	58	16.64	-01	54	09.3			16.7		095
1978	GV4	*	1978	04	12.00814	15	02	50.60	-05	07	51.5			16.6		095
1978	GW4	*	1978	04	12.00814	15	06	06.10	-05	03	34.0			16.3		095
1546			1978	04	12.00814	15	06	16.97	-06	34	38.8	0.0	0			095
1054			1978	04	12.00814	15	08	30.83	-06	04	59.9	0.3-	1+			095
1978	GX4	*	1978	04	12.00814	15	08	32.48	-01	28	41.6			16.4	1	095
1978	GY4	*	1978	04	12.00814	15	09	46.35	-04	54	16.0			16.7		095
1978	GZ4	*	1978	04	12.00814	15	10	13.83	-01	02	39.5			16.2	1	095
1528			1978	04	12.00814	15	18	49.21	-02	44	20.8	0.1+	1-		1	095
2086			1978	04	12.00814	15	20	03.99	-08	05	08.7				1	095
329			1978	04	12.00814	15	23	27.40	-01	22	31.9	0.0	1+		1	095
45			1978	04	12.00814	15	23	46.45	-08	22	03.5	0.0	0		1	095
924			1978	04	12.00814	15	26	20.53	-06	36	20.2	0.0	0		1	095
252			1978	05	05.80256	11	57	08.24	-02	12	08.5	0.0	0		1	095
1785			1978	05	05.80256	11	57	34.14	-06	36	52.3	0.1-	1-		1	095
1763			1978	05	05.80256	11	59	47.68	-06	48	00.8	0.2+	0		3	095
302			1978	05	05.80256	11	59	49.97	-00	48	29.0	0.3-	1+		1	095
1881			1978	05	05.80256	12	01	27.26	-05	52	25.2	0.1-	1+		1	095
1978	JJ	*	1978	05	05.80256	12	03	35.17	-02	11	14.5			16.6	1	095
1978	JK	*	1978	05	05.80256	12	10	19.20	-02	19	07.2			17.0		095
1080			1978	05	05.80256	12	11	59.67	-03	15	15.4	0.3-	1+			095
1978	JL	*	1978	05	05.80256	12	13	08.01	-02	14	16.3			17.1		095
642			1978	05	05.80256	12	13	27.60	-03	27	37.4	0.2-	1-			095
1978	JM	*	1978	05	05.80256	12	14	29.50	-03	48	52.4			16.7		095
1978	JN	*	1978	05	05.80256	12	15	21.19	-00	11	08.2			16.6		095
1743			1978	05	05.80256	12	16	00.93	+00	44	44.7	0.0	1+		1	095
1442			1978	05	05.80256	12	16	03.40	-02	30	28.1	0.5-	2+			095
1978	JO	*	1978	05	05.80256	12	16	36.30	-04	45	14.9			17.5		095
1793			1978	05	05.80256	12	17	36.74	-03	00	23.5	0.1+	1+			095
1204			1978	05	05.80256	12	17	55.52	-02	40	15.3	0.4-	2+			095
1978	JP	*	1978	05	05.80256	12	18	11.22	-04	39	43.5			17.0		095
309			1978	05	05.80256	12	18	17.23	-04	17	05.8	0.3-	2+			095

1363			1978	05	05.80256	12	20	26.30	-02	42	00.0	0.0	3-		095
204			1978	05	05.80256	12	21	34.83	-03	13	43.8	0.3-	3+		095
2353			1978	05	05.80256	12	25	02.63	-01	55	24.7			16.7	095
1854			1978	05	05.80256	12	25	07.08	-01	06	45.5	0.4-	2+	17.3	095
1797			1978	05	05.80256	12	28	22.55	-02	26	15.1	0.3-	2+	1	095
1527			1978	05	05.80256	12	29	32.91	-04	21	07.0	0.3-	2+	1	095
572			1978	05	05.80256	12	29	37.93	-01	28	14.2	0.3-	3+	1	095
1939			1978	05	05.80256	12	30	16.33	-02	46	56.6	0.2-	2+	1	095
1060			1978	05	05.80256	12	31	55.94	-06	28	32.7	0.4-	2+	1	095
1978	JQ	*	1978	05	05.80256	12	33	18.04	-03	09	09.1			16.7 1	095
320			1978	05	05.87200	13	21	02.71	-11	11	48.6	0.3-	1+	1	095
1046			1978	05	05.87200	13	23	57.35	-13	01	19.4	0.2-	1+		095
2030			1978	05	05.87200	13	25	45.99	-05	23	37.2			1	095
2052			1978	05	05.87200	13	25	55.87	-10	01	45.1				095
1978	GO3		1978	05	05.87200	13	26	02.19	-06	48	31.1			16.5 1	095
77			1978	05	05.87200	13	28	00.13	-11	10	19.0	0.1-	1+		095
152			1978	05	05.87200	13	28	34.86	-05	39	55.7	0.2-	0	1	095
1978	GR3		1978	05	05.87200	13	30	26.55	-08	11	57.9			16.6	095
248			1978	05	05.87200	13	30	30.47	-13	30	26.8	0.1-	1+	1	095
515			1978	05	05.87200	13	30	43.88	-06	31	55.1	0.2-	1+	1	095
1183			1978	05	05.87200	13	32	32.07	-11	36	48.0	0.3-	1+		095
262			1978	05	05.87200	13	32	38.08	-08	07	55.1	0.3-	1+		095
1978	GV3		1978	05	05.87200	13	34	19.02	-14	51	00.8			16.9 1	095
1978	GY3		1978	05	05.87200	13	36	12.91	-07	48	15.1			17.0	095
1978	GX3		1978	05	05.87200	13	36	16.38	-11	31	42.5			16.5	095
1978	GZ3		1978	05	05.87200	13	36	35.90	-08	50	43.6			16.5	095
1978	GW3		1978	05	05.87200	13	37	05.58	-06	32	39.1			16.7 1	095
1479			1978	05	05.87200	13	37	45.39	-13	21	51.0	0.2-	1+	1	095
1978	GF4		1978	05	05.87200	13	38	59.83	-14	32	25.8			16.6 1	095
1978	GC4		1978	05	05.87200	13	40	20.92	-07	32	19.8			16.9	095
1445			1978	05	05.87200	13	40	29.41	-07	34	45.4	0.1+	2-		095
1978	GE4		1978	05	05.87200	13	40	34.41	-09	41	53.3			16.9	095
2224			1978	05	05.87200	13	41	00.52	-09	07	37.3				095
1978	GA4		1978	05	05.87200	13	41	01.48	-05	49	00.9			16.8 1	095
1978	GJ4		1978	05	05.87200	13	43	28.12	-06	23	46.7			16.7 1	095
1978	GO4		1978	05	05.87200	13	45	50.54	-08	37	50.6			16.8	095
1978	GL4		1978	05	05.87200	13	46	15.05	-08	59	50.0			16.9	095
1061			1978	05	05.87200	13	46	48.55	-07	56	37.4	1.3+	8-		095
1203			1978	05	05.87200	13	48	23.85	-12	51	08.1	0.1+	1-	17.0	095
1978	GQ4		1978	05	05.87200	13	49	12.22	-13	27	32.8			16.5 1	095
1978	GM4		1978	05	05.87200	13	49	44.39	-08	27	34.0			16.5	095
2112			1978	05	05.87200	13	52	11.48	-14	12	08.1			3	095
1171			1978	05	05.87200	13	53	30.07	-07	15	28.7	0.1-	1+	1	095
509			1978	05	05.87200	13	57	00.22	-12	50	17.1	0.0	1+	1	095
1978	JR	*	1978	05	05.94458	14	28	43.62	-04	05	55.3			17.0 1	095
136			1978	05	05.94458	14	29	49.82	-04	42	08.7	0.2-	2+	1	095
1978	JS	*	1978	05	05.94458	14	30	38.61	-06	54	49.5			16.7 1	095
236			1978	05	05.94458	14	32	29.32	-08	13	44.0	0.0	0	1	095
1978	GS4		1978	05	05.94458	14	32	38.08	-06	51	10.4			16.6 1	095
1978	JT	*	1978	05	05.94458	14	34	07.52	-08	12	12.0			17.0 1	095
1605			1978	05	05.94458	14	34	35.90	-03	25	36.9	0.1-	1+	1	095
2332			1978	05	05.94458	14	37	17.03	-07	17	50.0			16.1 1	095
1978	JU	*	1978	05	05.94458	14	39	18.80	-06	31	39.5			16.6	095
365			1978	05	05.94458	14	40	16.79	-04	09	19.4	0.1+	1+		095
1558			1978	05	05.94458	14	40	23.75	-00	51	37.5	0.0	1+		095
1978	JV	*	1978	05	05.94458	14	40	25.94	-06	30	43.9			16.5	095
1978	GV4		1978	05	05.94458	14	41	10.10	-03	16	20.9			16.8	095
1978	GW4		1978	05	05.94458	14	45	57.14	-03	01	56.8			16.5	095
1978	JW	*	1978	05	05.94458	14	49	29.67	-04	38	31.4			17.0	095

1978	JX	*	1978	05	05.94458	14	50	11.90	-05	50	03.8			16.8		095
1054			1978	05	05.94458	14	50	20.74	-05	04	53.5	0.3-	2+			095
1546			1978	05	05.94458	14	50	42.06	-03	46	34.5	0.1-	1+			095
1978	GZ4		1978	05	05.94458	14	53	26.83	+00	42	05.5			16.4	1	095
1978	GY4		1978	05	05.94458	14	55	38.90	-01	45	42.1			16.7		095
2086			1978	05	05.94458	15	00	09.58	-06	08	38.5					095
1528			1978	05	05.94458	15	01	25.11	-00	18	04.4	0.1+	2+		1	095
1978	JY	*	1978	05	05.94458	15	03	42.47	-05	18	10.7			16.4	1	095
1978	JZ	*	1978	05	05.94458	15	03	47.20	-04	19	43.9			16.8	1	095
45			1978	05	05.94458	15	07	19.90	-06	19	25.4	0.1-	2+		1	095
455			1978	05	06.01247	16	19	39.74	-15	23	31.6	0.2+	0		1	095
1978	JA1	*	1978	05	06.01247	16	24	34.04	-15	23	59.7			17.0	1	095
992			1978	05	06.01247	16	26	17.64	-14	02	02.2	0.3+	0		1	095
1914			1978	05	06.01247	16	27	51.07	-12	16	41.8	0.2+	0		1	095
1427			1978	05	06.01247	16	31	27.72	-16	56	17.3	0.4+	0			095
1096			1978	05	06.01247	16	32	39.38	-16	09	19.4	0.3+	0			095
738			1978	05	06.01247	16	36	40.12	-17	07	55.0	0.2+	0			095
837			1978	05	06.01247	16	41	01.01	-14	52	03.6	0.2+	0			095
2021			1978	05	06.01247	16	46	20.56	-12	23	27.0					095
1200			1978	05	06.01247	16	49	21.95	-18	07	04.7	0.9+	1-			095
1978	JB1	*	1978	05	06.01247	16	49	54.94	-14	02	37.4			17.0		095
2245			1978	05	06.01247	16	50	57.32	-16	10	16.7					095
1607			1978	05	06.01247	16	51	45.87	-10	53	19.5	0.3+	0		1	095
464			1978	05	06.01247	16	53	48.41	-13	17	30.3	0.2+	0			095
56			1978	05	06.01247	16	57	25.64	-12	05	01.9	0.3+	0		1	095
1651			1978	05	06.01247	16	59	34.57	-15	23	29.1	0.4+	0		1	095
1064			1978	05	06.80398	11	50	22.82	-14	06	36.3	0.0	3-		1	095
1978	JC1	*	1978	05	06.80398	11	51	05.43	-09	06	17.9			16.6	1	095
1785			1978	05	06.80398	11	57	27.92	-06	33	27.1	0.3-	1-		1	095
134			1978	05	06.80398	11	59	08.54	-09	38	15.8	0.2-	2-			095
1978	JD1	*	1978	05	06.80398	12	01	09.76	-08	30	16.5			16.5		095
1978	JE1	*	1978	05	06.80398	12	02	32.02	-10	43	50.4			16.5		095
2352			1978	05	06.80398	12	08	27.13	-13	12	20.8					095
1760			1978	05	06.80398	12	09	06.82	-08	21	55.0	0.0	2-		1	095
1639			1978	05	06.80398	12	10	31.32	-12	08	20.4	0.2-	2-			095
1978	JF1	*	1978	05	06.80398	12	11	32.60	-12	54	01.1			16.7		095
1035			1978	05	06.80398	12	12	15.12	-08	22	47.0	0.0	1-		1	095
1978	JG1	*	1978	05	06.80398	12	14	34.62	-07	47	37.1			16.7	1	095
241			1978	05	06.80398	12	17	14.90	-09	34	56.2	0.1-	1-			095
216			1978	05	06.80398	12	22	14.06	-08	01	51.6	0.3-	1+		1	095
1171			1978	05	06.87525	13	52	50.14	-07	12	07.8	0.1-	1+		1	095
1978	JH1	*	1978	05	06.87525	13	53	58.35	-09	54	33.7			17.5	1	095
509			1978	05	06.87525	13	56	20.13	-12	42	46.3	0.0	0		1	095
1978	JJ1	*	1978	05	06.87525	13	57	35.56	-08	07	50.6			16.8	1	095
551			1978	05	06.87525	13	58	05.31	-12	22	15.2	0.0	0		1	095
2364			1978	05	06.87525	13	58	37.00	-10	05	06.1			16.0	1	095
1978	JK1	*	1978	05	06.87525	13	59	31.14	-10	49	33.6			17.5	1	095
1856			1978	05	06.87525	14	00	53.98	-07	08	30.5	0.2-	2+			095
1725			1978	05	06.87525	14	05	04.67	-07	45	05.4	0.1-	1+			095
1978	JL1	*	1978	05	06.87525	14	07	08.64	-10	38	30.6			16.9		095
1978	JM1	*	1978	05	06.87525	14	09	08.22	-03	22	37.9			16.7	1	095
1978	JN1	*	1978	05	06.87525	14	09	18.68	-05	39	32.8			16.9		095
1978	JO1	*	1978	05	06.87525	14	10	07.14	-03	33	24.9			16.8	1	095
391			1978	05	06.87525	14	12	55.25	-09	17	46.8	0.2-	0			095
76			1978	05	06.87525	14	15	16.93	-12	48	13.9	0.1-	1+		1	095
431			1978	05	06.87525	14	16	22.22	-10	55	20.0	0.2-	1+			095
1978	JP1	*	1978	05	06.87525	14	17	06.58	-08	47	03.4			17.1		095
86			1978	05	06.87525	14	17	10.66	-08	30	24.6	0.0	1+			095
1978	JQ1	*	1978	05	06.87525	14	18	56.54	-03	35	24.7			16.8	1	095

163		1978	05	06.87525	14	19	05.05	-06	41	55.5	0.1+	1+		095
1671		1978	05	06.87525	14	20	46.51	-09	56	34.6	0.0	0		095
2031		1978	05	06.87525	14	23	22.50	-07	54	32.9				095
1423		1978	05	06.87525	14	25	05.30	-12	59	46.2	0.0	0	1	095
136		1978	05	06.87525	14	28	59.83	-04	34	25.1	0.2-	2+	1	095
264		1978	05	06.87525	14	30	42.68	-12	32	29.1	0.2-	1+	1	095
1978	JR1 *	1978	05	06.87525	14	31	00.90	-09	18	14.6		16.5	1	095
1968		1978	05	06.93938	15	00	24.16	-13	36	02.5	0.0	0	1	095
1764		1978	05	06.93938	15	01	00.81	-13	33	20.0	0.1-	1+	1	095
16		1978	05	06.93938	15	01	17.16	-12	36	40.3	0.0	0	1	095
1978	JS1 *	1978	05	06.93938	15	03	40.34	-16	53	31.0		17.0	1	095
2069		1978	05	06.93938	15	03	52.32	-17	09	28.3			1	095
2341		1978	05	06.93938	15	04	39.80	-15	39	42.9		16.7	1	095
1978	JT1 *	1978	05	06.93938	15	07	08.57	-17	45	35.4		16.6	1	095
1978	JU1 *	1978	05	06.93938	15	08	03.22	-12	35	11.7		16.7	1	095
1978	JG	1978	05	06.93938	15	09	03.00	-14	58	39.8		16.0		095
1978	JV1 *	1978	05	06.93938	15	09	40.76	-13	39	37.9		16.8		095
770		1978	05	06.93938	15	10	53.97	-18	19	54.0	0.1+	1-	1	095
1978	JW1 *	1978	05	06.93938	15	12	16.10	-11	38	36.5		17.0	1	095
1978	JX1 *	1978	05	06.93938	15	13	16.26	-13	07	36.7		17.0		095
750		1978	05	06.93938	15	13	20.50	-15	22	31.6	0.1+	1-		095
1978	JY1 *	1978	05	06.93938	15	15	03.00	-16	38	24.9		16.8		095
1978	JZ1 *	1978	05	06.93938	15	15	22.76	-14	04	23.9		16.8		095
1978	JA2 *	1978	05	06.93938	15	15	23.35	-15	02	10.8		16.5		095
1978	JB2 *	1978	05	06.93938	15	17	01.64	-14	00	19.2		17.2		095
1978	JC2 *	1978	05	06.93938	15	17	33.72	-18	10	16.0		17.0	1	095
1978	JD2 *	1978	05	06.93938	15	20	31.15	-18	01	57.5		17.0	1	095
529		1978	05	06.93938	15	21	25.93	-14	04	21.6	0.1-	0		095
2132		1978	05	06.93938	15	21	56.02	-13	34	14.2				095
1978	JE2 *	1978	05	06.93938	15	23	30.96	-10	52	14.5		15.8	5	095
1359		1978	05	06.93938	15	23	45.48	-14	37	20.4	0.0	1+		095
1975	WO1	1978	05	06.93938	15	25	51.79	-11	26	43.2		16.4	1	095
103		1978	05	06.93938	15	26	55.51	-09	56	12.1	0.1-	1+	1	095
1978	JF2 *	1978	05	06.93938	15	28	28.02	-13	54	00.1		16.7		095
1978	JG2 *	1978	05	06.93938	15	29	35.86	-12	13	42.4		16.6		095
694		1978	05	06.93938	15	31	59.00	-18	30	08.3	0.0	0	1	095
1978	JH2 *	1978	05	06.93938	15	34	22.55	-19	03	04.1		16.6	1	095
1978	JJ2 *	1978	05	06.93938	15	41	32.15	-16	34	20.7		16.7	1	095
1978	JK2 *	1978	05	09.85220	12	37	07.18	-05	48	57.2		17.0	1	095
2026		1978	05	09.85220	12	38	57.57	-08	33	13.9			1	095
1287		1978	05	09.85220	12	40	02.58	-04	18	18.4	0.2-	2+	1	095
2197		1978	05	09.85220	12	40	59.13	-02	12	51.9			1	095
1512		1978	05	09.85220	12	43	13.12	-06	40	29.5	0.2-	1+	1	095
1978	JL2 *	1978	05	09.85220	12	43	30.30	-03	02	59.8		17.0	1	095
1332		1978	05	09.85220	12	44	24.18	-05	17	58.6	0.1-	1+	1	095
1978	JM2 *	1978	05	09.85220	12	44	50.16	+00	08	48.2		17.0	1	095
438		1978	05	09.85220	12	46	50.08	-00	01	37.9	0.2-	1+	1	095
1978	JN2 *	1978	05	09.85220	12	49	14.40	-02	23	37.9		17.0		095
1462		1978	05	09.85220	12	50	14.35	-05	24	05.4	0.1-	1+		095
144		1978	05	09.85220	12	51	22.61	+00	14	08.3	0.2-	1+	1	095
1564		1978	05	09.85220	12	54	45.64	+00	20	24.9	0.1-	1+	1	095
710		1978	05	09.85220	12	55	37.67	-03	24	12.8	0.1-	1+		095
1674		1978	05	09.85220	12	55	43.74	-02	11	46.9	0.1-	0		095
1473		1978	05	09.85220	12	58	34.83	-09	37	19.5	0.2-	2+		095
1978	JO2 *	1978	05	09.85220	12	58	58.59	-05	39	43.3		16.9		095
854		1978	05	09.85220	12	59	48.80	-02	30	26.5	0.3-	2+		095
240		1978	05	09.85220	13	00	07.71	-03	13	40.4	0.2-	1+		095
1978	JP2 *	1978	05	09.85220	13	00	17.45	-07	48	25.4		16.7	1	095
875		1978	05	09.85220	13	00	29.98	-01	39	53.5	0.2-	1+		095

1978	JQ2	*	1978	05	09.85220	13	05	24.04	-00	26	47.9			16.6	1	095
1424			1978	05	09.85220	13	06	23.22	-02	56	36.6	0.1-	0			095
1978	JR2	*	1978	05	09.85220	13	06	37.64	-01	24	34.0			16.4	1	095
1621			1978	05	09.85220	13	07	32.04	-04	35	44.0	0.2-	1+			095
1978	JS2	*	1978	05	09.85220	13	08	47.85	-08	24	29.8			16.5	1	095
1073			1978	05	09.85220	13	09	31.09	-06	52	55.2	0.2-	1+		1	095
1978	JT2	*	1978	05	09.85220	13	10	26.54	-06	44	00.9			16.6	1	095
894			1978	05	09.85220	13	10	26.91	-02	00	31.4	0.2-	0		1	095
1912			1978	05	09.85220	13	11	53.36	-04	01	01.9	0.0	1+		1	095
264			1978	05	09.92197	14	28	00.26	-12	27	46.7	0.2-	1+		1	095
1978	GD3		1978	05	09.92197	14	31	40.73	-14	12	59.4			16.2	1	095
1978	JU2	*	1978	05	09.92197	14	32	54.64	-18	07	13.9			16.8	1	095
1190			1978	05	09.92197	14	35	42.15	-16	54	09.6	0.0	0			095
1978	JV2	*	1978	05	09.92197	14	37	36.30	-11	56	55.9			16.9		095
2117			1978	05	09.92197	14	38	21.57	-14	11	54.3					095
2019			1978	05	09.92197	14	39	10.48	-19	19	17.5				1	095
171			1978	05	09.92197	14	40	53.56	-12	17	37.5	0.0	0			095
1978	JW2	*	1978	05	09.92197	14	44	55.53	-15	28	56.7			16.7		095
1956			1978	05	09.92197	14	46	15.00	-13	58	54.3	0.0	0			095
2344			1978	05	09.92197	14	46	49.70	-10	58	53.3			16.0	1	095
308			1978	05	09.92197	14	47	07.28	-11	08	17.7	0.0	0		1	095
37			1978	05	09.92197	14	47	46.64	-19	11	29.2	0.0	0		1	095
1978	JE		1978	05	09.92197	14	50	50.44	-15	01	38.5			16.2		095
811			1978	05	09.92197	14	51	12.30	-11	22	40.9	0.0	0		1	095
666			1978	05	09.92197	14	52	29.33	-14	18	02.5	0.2-	1+			095
1827			1978	05	09.92197	14	52	41.08	-15	47	37.4	0.0	1-			095
1261			1978	05	09.92197	14	53	33.56	-15	10	42.2	0.0	0			095
2058			1978	05	09.92197	14	53	47.83	-13	27	26.4					095
1968			1978	05	09.92197	14	57	42.07	-13	30	45.6	0.0	0			095
1764			1978	05	09.92197	14	58	39.49	-13	22	28.6	0.0	1+			095
16			1978	05	09.92197	14	58	52.23	-12	25	41.0	0.2-	0			095
1978	JT1		1978	05	09.92197	15	04	43.43	-17	37	41.3			16.8	1	095
770			1978	05	09.92197	15	07	36.11	-18	12	02.5	0.0	1-		1	095
1978	JX2	*	1978	05	09.99210	15	52	28.97	-10	07	36.1			17.0		095
1925			1978	05	09.99210	15	53	37.52	-09	35	50.2	0.1+	0		1	095
1978	JY2	*	1978	05	09.99210	15	57	17.00	-10	05	34.6			16.2	1	095
1978	JZ2	*	1978	05	09.99210	15	57	28.06	-12	29	01.6			16.9		095
1161			1978	05	09.99210	15	57	40.87	-16	47	40.8	0.1+	0			095
564			1978	05	09.99210	16	01	15.89	-11	09	04.3	0.3+	0			095
1978	JA3	*	1978	05	09.99210	16	02	33.53	-12	02	02.5			17.8		095
1655			1978	05	09.99210	16	02	58.46	-09	31	34.2	0.1-	0		1	095
1830			1978	05	09.99210	16	03	28.64	-13	29	29.4	0.1+	1+			095
1975	TU2		1978	05	09.99210	16	04	08.30	-10	10	23.6				1	095
1978	JB3	*	1978	05	09.99210	16	06	54.25	-12	42	04.1			18.0	2	095
1978	JC3	*	1978	05	09.99210	16	08	32.02	-16	22	51.4			17.0		095
1978	JD3	*	1978	05	09.99210	16	10	24.58	-10	50	29.9			17.0		095
1978	JE3	*	1978	05	09.99210	16	11	58.70	-10	54	09.4			17.0		095
455			1978	05	09.99210	16	16	15.46	-15	26	07.8	0.2+	0			095
444			1978	05	09.99210	16	16	44.57	-10	25	05.0	0.1+	0		1	095
1978	JF3	*	1978	05	09.99210	16	17	35.30	-13	50	24.4			17.5		095
1978	JA1		1978	05	09.99210	16	21	59.52	-15	04	32.1			17.5		095
992			1978	05	09.99210	16	23	40.68	-13	37	52.1	0.2+	0		1	095
1914			1978	05	09.99210	16	25	05.88	-12	07	59.8	0.2+	0		1	095
1427			1978	05	09.99210	16	28	32.91	-17	00	29.1	0.2+	1-		1	095
1096			1978	05	09.99210	16	29	38.32	-16	12	39.1	0.2+	1-		1	095
146			1978	05	30.93680	16	15	54.00	-14	33	40.8	0.0	0		1	095
738			1978	05	30.93680	16	17	25.05	-16	24	21.7	0.0	0		1	095
837			1978	05	30.93680	16	18	42.48	-12	38	45.4	0.0	0		1	095
1581			1978	05	30.93680	16	19	13.85	-19	01	46.0	0.3-	0		1	095

2021		1978	05	30.93680	16	26	01.68	-10	45	12.6				095
1978	KA	* 1978	05	30.93680	16	26	08.28	-12	44	36.3			17.0	095
1718		1978	05	30.93680	16	26	58.37	-11	21	51.2	0.2+	1-		095
2107		1978	05	30.93680	16	28	09.75	-15	21	27.1			17.0	095
1607		1978	05	30.93680	16	30	15.89	-10	04	26.2	0.1+	1+	1	095
1200		1978	05	30.93680	16	31	37.78	-16	45	07.8	0.9+	1-		095
464		1978	05	30.93680	16	33	51.84	-13	10	06.3	0.1+	0		095
1651		1978	05	30.93680	16	37	24.21	-13	33	28.2	0.1+	0		095
12		1978	05	30.93680	16	43	36.12	-17	45	43.6	0.1+	1-	1	095
504		1978	05	30.93680	16	46	29.76	-10	37	34.1	0.0	1+		095
740		1978	05	30.93680	16	47	38.89	-10	40	20.0	0.0	0		095
124		1978	05	30.93680	16	50	57.73	-17	55	23.7	0.1-	0	1	095
1353		1978	05	30.93680	16	53	35.03	-13	17	45.9	0.1-	0	1	095
1210		1978	05	30.93680	16	54	26.31	-12	29	43.3	0.0	1+	1	095
478		1978	05	30.93680	16	55	34.81	-16	14	20.6	0.1+	0	1	095
750		1978	06	07.83748	14	46	00.23	-14	32	35.5	0.2-	0	1	095
207		1978	06	07.83748	14	49	35.34	-19	47	02.2	0.3-	1+	1	095
529		1978	06	07.83748	14	56	11.33	-13	51	53.4	0.2-	0		095
2132		1978	06	07.83748	14	56	14.76	-12	47	32.1				095
1359		1978	06	07.83748	14	58	53.23	-14	26	56.6	0.2-	1+		095
694		1978	06	07.83748	15	03	47.07	-13	33	05.2	0.3-	2+		095
1056		1978	06	07.83748	15	10	43.74	-10	44	40.5	0.4-	1+	1	095
42		1978	06	07.83748	15	15	14.28	-12	02	10.3	0.4-	1+		095
1855		1978	06	07.83748	15	18	05.42	-13	44	39.6	0.2-	1+	1	095
1978	LB	1978	06	09.86691	14	45	39.39	-01	32	23.3			15.6	095
1069		1978	06	09.87107	14	36	38.98	+04	19	39.4	0.0	1-	1	095
1528		1978	06	09.87107	14	38	34.76	-00	27	27.6	0.0	1+	1	095
924		1978	06	09.87107	14	46	14.70	-03	23	26.6	0.1-	1+		095
2199		1978	06	09.87107	14	46	19.03	+00	05	25.4			15.6	095
1369		1978	06	09.87107	14	51	48.50	+01	00	33.9	0.3-	1+		095
2326		1978	06	09.87107	14	53	55.93	+03	55	52.8			16.0	1 095
1461		1978	06	09.87107	14	55	35.20	+00	35	56.0	0.0	1+		095
532		1978	06	09.87107	14	55	42.17	+04	25	59.8	0.1-	1+	1	095
1649		1978	06	09.87107	14	55	51.51	-00	49	22.0	0.2-	1+		095
904		1978	06	09.87107	15	01	13.36	-03	58	50.4	0.1-	1+	1	095
1978	LP	* 1978	06	09.87107	15	12	08.47	+01	38	00.7			15.5	5 095
504		1978	07	07.82816	16	14	47.78	-12	41	03.8	0.4-	1+		095
12		1978	07	07.82816	16	17	11.80	-13	18	20.1	0.5-	3+	1	095
56		1978	07	07.82816	16	17	17.88	-07	57	27.5	0.4-	2+	1	095
740		1978	07	07.82816	16	21	18.50	-12	03	01.4	0.3-	1+		095
1210		1978	07	07.82816	16	26	29.68	-14	13	13.4	0.3-	1+	1	095
1353		1978	07	07.82816	16	27	35.42	-11	40	08.0	0.3-	1+		095
478		1978	07	07.82816	16	28	59.56	-13	55	57.5	0.2-	1+	1	095
2091		1978	07	07.82816	16	29	56.71	-12	34	08.5				095
1734		1978	07	07.82816	16	33	36.31	-09	54	27.4	0.1-	1+		095
1978	NV3	* 1978	07	07.82816	16	36	36.80	-09	19	15.4			16.5	095
1978	NW3	* 1978	07	07.82816	16	48	10.16	-09	06	14.6			15.0	4 095
1978	NX3	* 1978	07	09.84726	16	25	48.74	+09	43	39.5			17.5	1 095
1355		1978	07	09.84726	16	30	42.10	+08	43	10.0	0.1+	3+		095
1568		1978	07	09.84726	16	36	49.88	+12	09	06.2	0.1+	1+		095
183		1978	07	09.84726	16	48	02.60	+08	52	05.3	0.1-	1-		095
1299		1978	07	10.85054	16	50	40.27	-11	44	07.9	0.0	0	1	095
931		1978	07	10.85054	16	55	32.86	-15	10	21.7	0.0	1+	1	095
1978	NY3	* 1978	07	10.85054	16	58	56.39	-14	54	00.8			16.5	1 095
1978	NZ3	* 1978	07	10.85054	16	59	52.85	-12	25	06.2			16.5	095
2192		1978	07	10.85054	17	02	38.38	-10	09	30.0			16.5	095
1978	NA4	* 1978	07	10.85054	17	03	52.22	-13	29	20.4			16.8	095
1978	NB4	* 1978	07	10.85054	17	04	37.64	-10	23	50.4			17.0	095
1978	NC4	* 1978	07	10.85054	17	06	16.64	-14	22	25.1			17.0	1 095

1978	ND4	*	1978	07	10.85054	17	13	18.71	-05	39	11.4			16.5	1 095
313			1978	07	10.85054	17	14	23.52	-05	14	01.0	0.1+	0		1 095
1978	NE4	*	1978	07	10.85054	17	16	26.60	-12	35	59.8			17.0	095
1355			1978	07	11.83351	16	30	11.47	+08	44	30.3	0.0	1+		095
1568			1978	07	11.83351	16	35	40.57	+11	47	00.1	0.0	2+		095
183			1978	07	11.83351	16	46	53.43	+08	39	08.5	0.1+	1+		095
834			1978	09	06.04009	00	40	58.32	+04	33	13.4	0.2+	1+		1 095
717			1978	09	06.04009	00	42	15.00	+05	19	01.0	0.0	0		1 095
72			1978	09	06.04009	00	43	46.70	+09	47	54.1	0.2+	2+		1 095
1978	RV4	*	1978	09	06.04009	00	46	54.37	+05	45	01.2			17.0	095
1978	RW4	*	1978	09	06.04009	00	50	08.45	+08	08	00.6			16.8	095
1978	RX4	*	1978	09	06.04009	00	52	30.78	+09	36	37.8			17.5	095
1978	RY4	*	1978	09	06.04009	00	53	38.13	+03	30	13.2			17.0	1 095
1978	RZ4	*	1978	09	06.04009	00	53	46.31	+07	58	16.4			17.5	095
1978	RA5	*	1978	09	06.04009	00	54	29.38	+04	54	22.5			17.5	095
1978	RB5	*	1978	09	06.04009	00	54	42.05	+07	40	35.9			17.0	095
24			1978	09	06.04009	00	55	34.21	+05	23	22.8	0.2+	0		095
1978	RC5	*	1978	09	06.04009	00	56	14.04	+08	53	30.8			16.8	095
1978	RD5	*	1978	09	06.04009	00	57	17.26	+07	48	58.0			17.5	095
2079			1978	09	06.04009	00	58	06.26	+10	57	00.5				095
1978	RE5	*	1978	09	06.04009	00	58	19.23	+06	45	20.5			17.5	095
1978	RF5	*	1978	09	06.04009	01	00	54.24	+04	28	00.6			17.5	095
1978	RG5	*	1978	09	06.04009	01	01	40.53	+10	25	01.2			17.5	095
1978	RH5	*	1978	09	06.04009	01	03	17.88	+03	28	30.3			17.0	1 095
620			1978	09	06.04009	01	03	54.02	+07	20	17.0	0.3+	1+		095
193			1978	09	06.04009	01	03	54.87	+12	01	43.0	0.3+	3+		1 095
1978	RJ5	*	1978	09	06.04009	01	04	39.88	+03	04	27.1			17.0	1 095
1978	RK5	*	1978	09	06.04009	01	06	09.62	+06	59	51.3			17.5	095
1978	RL5	*	1978	09	06.04009	01	06	20.40	+07	35	43.1			17.5	095
1978	RM5	*	1978	09	06.04009	01	06	50.17	+06	01	30.0			17.5	095
1978	RN5	*	1978	09	06.04009	01	08	05.58	+08	53	44.8			16.5	095
1978	RO5	*	1978	09	06.04009	01	09	23.81	+04	46	12.7			17.5	095
1978	RP5	*	1978	09	06.04009	01	10	49.97	+05	53	25.1			17.5	095
1978	RQ5	*	1978	09	06.04009	01	10	58.09	+06	32	23.2			17.5	095
1978	RR5	*	1978	09	06.04009	01	11	00.37	+04	49	02.9			17.5	095
1618			1978	09	06.04009	01	11	27.61	+02	34	11.0	0.2+	1+		1 095
1978	RS5	*	1978	09	06.04009	01	17	04.39	+07	25	32.7			17.5	1 095
2034			1978	09	06.04009	01	18	22.00	+03	48	36.2				1 095
611			1978	09	13.04984	01	33	25.09	+08	28	34.2	0.2+	1+		1 095
1924			1978	09	13.04984	01	35	01.08	+11	37	41.6	0.3+	3+		1 095
1978	RT5	*	1978	09	13.04984	01	35	07.38	+12	05	14.2			17.0	1 095
1978	RU5	*	1978	09	13.04984	01	35	12.42	+10	18	31.6			16.5	1 095
1225			1978	09	13.04984	01	35	21.35	+09	46	44.0	0.3+	2+		1 095
1978	RV5	*	1978	09	13.04984	01	36	14.07	+10	46	15.0			16.5	1 095
1846			1978	09	13.04984	01	37	39.34	+09	20	58.4	0.3+	2+		1 095
2114			1978	09	13.04984	01	38	07.97	+10	25	28.5				1 095
1978	RW5	*	1978	09	13.04984	01	39	25.95	+08	08	53.2			17.0	095
1978	RX5	*	1978	09	13.04984	01	40	21.38	+06	08	53.6			17.5	095
1978	RY5	*	1978	09	13.04984	01	41	14.00	+11	05	32.4			17.5	095
1340			1978	09	13.04984	01	43	40.69	+11	03	06.4	0.2+	1+		095
1978	RZ5	*	1978	09	13.04984	01	44	31.61	+06	49	04.8			16.5	095
1142			1978	09	13.04984	01	45	06.18	+08	19	45.7	0.1+	1+		095
277			1978	09	13.04984	01	47	08.08	+12	08	44.4	0.2+	2+		095
331			1978	09	13.04984	01	47	44.48	+09	59	35.4	0.4+	1+		095
1978	RA6	*	1978	09	13.04984	01	47	58.67	+08	32	39.6			17.5	095
1978	RB6	*	1978	09	13.04984	01	49	12.68	+13	49	36.6			17.0	1 095
1976	GX2		1978	09	13.04984	01	50	06.60	+10	53	59.0			17.5	095
343			1978	09	13.04984	01	50	26.93	+08	12	35.6	0.3+	2+		095
1978	RC6	*	1978	09	13.04984	01	50	29.66	+07	31	37.3			17.0	095

533		1978	09	13.04984	01	52	12.76	+08	43	51.1	0.1+	1+		095
1978	RD6	* 1978	09	13.04984	01	52	23.59	+13	08	01.7			17.0	1 095
586		1978	09	13.04984	01	54	19.64	+12	55	22.9				095
1978	RE6	* 1978	09	13.04984	01	54	23.16	+08	24	47.6			16.5	095
1805		1978	09	13.04984	01	57	54.81	+09	00	54.8				095
1071		1978	09	13.04984	01	57	58.48	+06	59	18.3				095
953		1978	09	13.04984	01	58	04.50	+07	07	33.3	0.3+	1+		095
1978	RF6	* 1978	09	13.04984	01	58	54.56	+08	07	30.6			17.0	095
1202		1978	09	13.04984	01	59	43.42	+09	39	06.8	0.0	0		095
1978	RG6	* 1978	09	13.04984	02	01	56.95	+11	11	13.0			17.5	2 095
755		1978	09	13.04984	02	02	01.30	+10	35	27.2				095
1137		1978	09	13.04984	02	04	43.08	+05	50	20.3				095
952		1978	09	13.04984	02	11	24.48	+12	37	38.2				1 095
1218		1978	09	13.04984	02	11	33.26	+09	27	29.5				3 095
728		1978	09	13.04984	02	12	20.77	+06	53	54.6				1 095
1978	RT5	1978	09	27.96389	01	22	20.38	+11	45	22.1			17.0	1 095
1978	SN4	* 1978	09	27.96389	01	23	30.28	+06	49	22.7			16.5	1 095
1541		1978	09	27.96389	01	23	30.62	+10	53	46.9	0.0	1+		1 095
1924		1978	09	27.96389	01	24	46.80	+11	00	48.2	0.2+	1+		1 095
1978	SO4	* 1978	09	27.96389	01	24	48.95	+09	26	29.8			17.5	1 095
1225		1978	09	27.96389	01	25	05.23	+09	12	31.4	0.0	1+		1 095
1978	SP4	* 1978	09	27.96389	01	25	40.47	+08	33	11.4			17.8	1 095
611		1978	09	27.96389	01	26	27.31	+06	31	50.6	0.0	0		1 095
1978	RV5	1978	09	27.96389	01	26	49.25	+10	35	11.6			16.5	1 095
1978	SQ4	* 1978	09	27.96389	01	28	08.12	+12	41	07.9			17.5	1 095
1978	RU5	1978	09	27.96389	01	28	17.92	+08	09	58.6			17.0	095
1846		1978	09	27.96389	01	28	27.07	+08	51	57.4	0.1+	0		095
1978	RX5	1978	09	27.96389	01	29	41.75	+05	49	36.9			17.5	095
2114		1978	09	27.96389	01	29	52.73	+09	39	48.2				095
1978	SR4	* 1978	09	27.96389	01	29	52.87	+10	12	35.3			17.5	095
1978	SS4	* 1978	09	27.96389	01	30	45.20	+05	15	48.9			17.5	095
1978	ST4	* 1978	09	27.96389	01	30	54.32	+08	10	21.7			17.5	095
1978	RY5	1978	09	27.96389	01	31	40.30	+11	34	54.3			17.5	095
1978	RW5	1978	09	27.96389	01	32	35.14	+07	17	24.4			17.0	095
1978	SU4	* 1978	09	27.96389	01	33	11.85	+13	18	35.6			17.8	1 095
1978	SV4	* 1978	09	27.96389	01	34	25.62	+09	02	49.6			17.8	095
1978	SW4	* 1978	09	27.96389	01	35	01.39	+08	29	17.0			17.8	095
1340		1978	09	27.96389	01	35	42.38	+10	19	29.7	0.0	1-		095
1978	RZ5	1978	09	27.96389	01	36	30.39	+05	35	57.1			16.5	095
1142		1978	09	27.96389	01	37	19.16	+07	25	05.7	0.0	0		095
1978	SX4	* 1978	09	27.96389	01	37	22.04	+10	06	38.8			17.0	095
74		1978	09	27.96389	01	37	25.08	+10	18	10.8	1.2+	8+		095
1978	SY4	* 1978	09	27.96389	01	37	27.75	+08	14	48.9			17.5	095
1978	SZ4	* 1978	09	27.96389	01	37	38.52	+13	49	28.9			17.5	1 095
1978	SA5	* 1978	09	27.96389	01	38	09.61	+10	15	35.2			17.8	095
1978	SB5	* 1978	09	27.96389	01	38	47.38	+07	13	16.5			17.5	095
1978	RA6	1978	09	27.96389	01	39	24.29	+08	31	35.1			17.5	095
1978	SC5	* 1978	09	27.96389	01	39	29.36	+06	48	15.5			17.8	095
331		1978	09	27.96389	01	39	29.40	+09	43	49.3	0.1-	1-		095
277		1978	09	27.96389	01	39	48.26	+11	25	16.5	0.1+	0		095
1978	SD5	* 1978	09	27.96389	01	40	19.28	+06	24	18.6			17.5	095
1978	SE5	* 1978	09	27.96389	01	40	39.62	+12	02	29.4			17.5	095
1978	SF5	* 1978	09	27.96389	01	40	53.54	+06	07	52.1			17.8	095
1978	RB6	1978	09	27.96389	01	41	04.20	+13	28	36.5			16.5	1 095
1978	RC6	1978	09	27.96389	01	41	52.59	+07	18	40.6			17.0	095
1976	GX2	1978	09	27.96389	01	42	14.53	+09	31	22.7			17.5	095
1978	SG5	* 1978	09	27.96389	01	43	07.99	+11	33	46.0			16.5	095
533		1978	09	27.96389	01	45	07.39	+07	29	36.3	0.1-	0		095
343		1978	09	27.96389	01	45	37.43	+08	08	39.8	0.0	1-		095

1978	SH5	*	1978	09	27.96389	01	45	52.07	+07	19	10.8		17.8		095
1978	SJ5	*	1978	09	27.96389	01	45	54.93	+07	30	26.6		17.5		095
1978	SK5	*	1978	09	27.96389	01	46	22.21	+10	58	29.7		17.6	2	095
586			1978	09	27.96389	01	47	21.13	+12	14	36.6	0.0 0			095
953			1978	09	27.96389	01	48	43.70	+06	49	39.3	0.0 0			095
1978	SL5	*	1978	09	27.96389	01	49	15.31	+12	42	26.7		17.5	1	095
1978	SM5	*	1978	09	27.96389	01	49	36.87	+07	55	52.8		17.8		095
1978	SN5	*	1978	09	27.96389	01	49	45.07	+09	02	52.1		17.8		095
1071			1978	09	27.96389	01	50	44.34	+06	27	10.5	0.1- 0			095
1805			1978	09	27.96389	01	50	44.87	+08	17	14.4	0.0 1-			095
1978	SO5	*	1978	09	27.96389	01	51	27.07	+08	02	20.6		17.8		095
1978	SP5	*	1978	09	27.96389	01	51	56.76	+09	55	30.0		17.8		095
1978	SQ5	*	1978	09	27.96389	01	53	26.29	+10	55	34.3		17.8		095
1978	RG6		1978	09	27.96389	01	53	27.87	+10	28	07.3		17.5		095
1202			1978	09	27.96389	01	53	47.72	+09	12	09.2				095
1978	RF6		1978	09	27.96389	01	54	06.18	+06	33	00.2		17.0		095
755			1978	09	27.96389	01	55	06.08	+09	44	19.3	0.1- 0			095
1978	SR5	*	1978	09	27.96389	01	57	03.09	+08	44	13.0		17.8		095
1137			1978	09	27.96389	01	57	59.77	+05	02	37.2	0.2+ 1+		1	095
1978	SS5	*	1978	09	27.96389	01	58	25.78	+11	31	24.5		17.8	3	095
1978	ST5	*	1978	09	27.96389	01	59	07.37	+09	48	25.6		17.0	1	095
1978	UO2		1978	09	27.96389	02	00	00.34	+04	37	17.2		17.0		095
1794			1978	09	28.03512	02	42	45.15	+18	27	37.6	0.1- 1-		1	095
2209			1978	09	28.03512	02	43	35.28	+12	25	34.5			1	095
1978	SU5	*	1978	09	28.03512	02	46	07.07	+18	41	41.8		16.5		095
988			1978	09	28.03512	02	46	45.30	+15	31	56.0	0.1- 0			095
65			1978	09	28.03512	02	47	18.73	+12	03	05.0	0.1- 0			095
1978	SV5	*	1978	09	28.03512	02	48	26.70	+16	00	50.3		16.5		095
90			1978	09	28.03512	02	49	01.67	+14	13	37.8	0.2- 0			095
1813			1978	09	28.03512	02	49	41.30	+15	37	00.8	0.1- 0			095
2274			1978	09	28.03512	02	51	00.34	+18	43	22.9		17.0		095
1978	SW5	*	1978	09	28.03512	02	55	13.82	+19	48	59.2		15.5	1	095
1978	SX5	*	1978	09	28.03512	03	01	22.40	+16	07	25.0		17.0		095
877			1978	09	28.03512	03	02	50.10	+09	44	53.0	0.2- 0		1	095
813			1978	09	28.03512	03	05	47.04	+13	21	51.0				095
2228			1978	09	28.03512	03	08	34.03	+14	47	55.3				095
167			1978	09	28.03512	03	09	02.83	+15	17	07.4	0.2- 1-			095
1977	NT		1978	09	28.03512	03	09	34.94	+18	01	43.1		17.5		095
1978	SY5	*	1978	09	28.03512	03	10	39.82	+15	45	27.6		17.0		095
140			1978	09	28.03512	03	11	57.17	+13	15	49.4	0.1- 1-			095
1978	TA2		1978	09	28.03512	03	14	40.23	+12	05	28.2		16.0	1	095
1978	SZ5	*	1978	09	28.97966	02	02	09.48	+13	57	08.8		17.0	1	095
952			1978	09	28.97966	02	04	51.11	+13	36	51.5	0.0 0		1	095
1978	SA6	*	1978	09	28.97966	02	05	40.17	+12	52	49.6		16.5	1	095
1978	SB6	*	1978	09	28.97966	02	07	26.60	+15	55	24.4		17.5		095
1308			1978	09	28.97966	02	08	54.93	+17	31	57.1	0.0 0			095
2232			1978	09	28.97966	02	11	27.75	+14	45	51.8				095
514			1978	09	28.97966	02	14	19.96	+18	42	45.0	0.0 0		1	095
1978	SC6	*	1978	09	28.97966	02	19	52.47	+13	30	46.4		17.5		095
1978	UF		1978	09	28.97966	02	19	56.02	+10	27	38.8		17.5	3	095
1978	SD6	*	1978	09	28.97966	02	20	22.67	+10	00	43.5		17.5	2	095
1978	SE6	*	1978	09	28.97966	02	20	43.31	+17	47	10.4		17.5		095
1978	SF6	*	1978	09	28.97966	02	21	29.62	+18	13	00.7		17.0	1	095
1472			1978	09	28.97966	02	22	02.75	+09	52	16.5	0.0 0		1	095
1454			1978	09	28.97966	02	23	04.73	+18	59	12.4	0.0 0		1	095
1978	UG		1978	09	28.97966	02	23	34.67	+11	35	06.2		17.0	2	095
1978	UJ		1978	09	28.97966	02	23	43.76	+10	52	04.5		16.5		095
1978	SG6	*	1978	09	28.97966	02	25	40.25	+09	24	44.2		17.0	1	095
1978	SH6	*	1978	09	28.97966	02	26	06.05	+09	48	56.6		17.0	1	095

254		1978	09	28.97966	02	28	02.96	+14	14	11.2	0.0	0		095
1767		1978	09	28.97966	02	29	02.32	+10	47	27.2	0.0	0		095
1978	SJ6 *	1978	09	28.97966	02	29	18.76	+17	27	54.2			17.5	095
1978	SK6 *	1978	09	28.97966	02	29	25.27	+15	55	25.4			16.5	095
1978	SL6 *	1978	09	28.97966	02	30	52.71	+13	25	05.1			17.5	095
462		1978	09	28.97966	02	31	41.16	+09	58	27.3	0.2+	0		1 095
1978	SM6 *	1978	09	28.97966	02	34	40.07	+16	13	45.8			17.0	2 095
1978		1978	09	28.97966	02	34	50.83	+10	30	20.9	0.1-	0		1 095
2087		1978	09	28.97966	02	36	16.91	+12	06	14.5				095
1978	UV	1978	09	28.97966	02	37	07.90	+10	50	27.1			16.5	095
1978	SN6 *	1978	09	28.97966	02	37	14.19	+13	25	21.7			17.0	2 095
2209		1978	09	28.97966	02	43	14.52	+12	22	40.5				1 095
1541		1978	10	03.97688	01	18	39.69	+10	35	16.7	0.0	1+		1 095
1978	SN4	1978	10	03.97688	01	19	12.54	+06	25	33.6			16.5	1 095
1924		1978	10	03.97688	01	19	22.47	+10	37	19.9	0.3+	2+		1 095
1225		1978	10	03.97688	01	19	29.41	+08	50	25.0	0.2+	1+		1 095
1978	SO4	1978	10	03.97688	01	20	55.16	+09	12	41.9			17.5	1 095
1978	RV5	1978	10	03.97688	01	21	23.25	+10	20	52.6			16.5	1 095
1978	TB2 *	1978	10	03.97688	01	21	53.51	+07	58	55.2			17.8	1 095
611		1978	10	03.97688	01	22	40.66	+05	38	00.5	0.1+	0		1 095
1846		1978	10	03.97688	01	23	12.38	+08	32	16.9	0.2+	1+		1 095
1978	SQ4	1978	10	03.97688	01	23	26.38	+12	44	39.9			17.5	1 095
1978	RX5	1978	10	03.97688	01	23	53.67	+05	36	42.2			17.5	095
1978	RU5	1978	10	03.97688	01	24	17.71	+07	08	01.3			17.0	095
1978	TC2 *	1978	10	03.97688	01	24	57.77	+10	15	49.9			17.8	2 095
1978	SR4	1978	10	03.97688	01	25	08.47	+09	39	32.2			17.5	095
1978	TD2 *	1978	10	03.97688	01	25	37.90	+09	45	41.4			17.8	095
2114		1978	10	03.97688	01	25	50.32	+09	16	50.3				095
1978	SS4	1978	10	03.97688	01	25	51.66	+04	40	19.0			17.8	1 095
1978	RY5	1978	10	03.97688	01	26	15.77	+11	39	23.1			17.0	2 095
1978	TE2 *	1978	10	03.97688	01	27	32.84	+12	09	21.4			17.8	1 095
1978	SU4	1978	10	03.97688	01	28	46.24	+12	31	47.0			17.8	1 095
1978	TF2 *	1978	10	03.97688	01	28	59.72	+07	33	35.1			17.5	095
1978	RW5	1978	10	03.97688	01	29	09.09	+06	53	14.1			17.0	095
1978	SV4	1978	10	03.97688	01	30	11.70	+08	34	43.4			17.8	095
1978	TG2 *	1978	10	03.97688	01	31	02.47	+08	13	37.7			17.8	095
1340		1978	10	03.97688	01	31	43.64	+09	57	05.4	0.0	0		095
1978	RZ5	1978	10	03.97688	01	32	16.06	+05	02	13.8			16.5	095
1978	TH2 *	1978	10	03.97688	01	32	58.47	+04	30	10.6			17.8	1 095
1978	TJ2 *	1978	10	03.97688	01	33	47.65	+06	44	50.8			17.8	095
74		1978	10	03.97688	01	33	53.67	+09	40	09.9	1.3+	9+		095
1978	RA6	1978	10	03.97688	01	34	06.98	+08	24	05.6			17.5	095
1978	SA5	1978	10	03.97688	01	34	19.02	+09	48	20.0			17.8	095
1978	TK2 *	1978	10	03.97688	01	34	31.83	+05	13	18.1			17.8	095
1978	SB5	1978	10	03.97688	01	34	39.21	+06	46	13.0			17.5	095
331		1978	10	03.97688	01	35	01.36	+09	31	48.0	0.0	0		095
1978	TL2 *	1978	10	03.97688	01	35	02.54	+08	05	47.1			17.8	095
1978	SX4	1978	10	03.97688	01	35	09.43	+08	41	14.8			17.0	095
1978	SC5	1978	10	03.97688	01	35	11.41	+06	27	44.3			17.8	095
1978	SF5	1978	10	03.97688	01	35	17.18	+06	07	27.2			17.8	2 095
1978	SD5	1978	10	03.97688	01	35	24.95	+06	08	31.5			17.5	095
277		1978	10	03.97688	01	35	39.10	+10	59	57.6	0.2+	2+		095
1978	RB6	1978	10	03.97688	01	36	01.34	+13	08	30.6			16.5	1 095
1978	TM2 *	1978	10	03.97688	01	36	32.18	+06	51	26.6			17.8	095
1978	SE5	1978	10	03.97688	01	36	33.68	+11	13	43.5			17.5	095
1978	TN2 *	1978	10	03.97688	01	37	04.97	+09	52	52.5			17.8	095
1978	RC6	1978	10	03.97688	01	37	18.22	+07	09	32.0			17.0	095
1978	SG5	1978	10	03.97688	01	38	14.28	+11	59	45.7			16.5	095
1978	TO2 *	1978	10	03.97688	01	40	30.72	+09	32	41.0			17.8	2 095

1978	SJ5		1978	10	03.97688	01	41	07.16	+07	31	25.0		17.5	095
533			1978	10	03.97688	01	41	16.64	+06	54	31.1	0.1+ 1+		095
343			1978	10	03.97688	01	41	42.10	+07	59	35.4	0.3+ 1+		095
1978	SK5		1978	10	03.97688	01	42	37.97	+09	56	01.9		17.6	095
1978	TP2	*	1978	10	03.97688	01	43	25.55	+05	04	28.7		17.8	095
586			1978	10	03.97688	01	43	28.06	+11	51	16.2	0.1+ 1+		095
953			1978	10	03.97688	01	43	42.12	+06	38	14.2	0.2+ 0		095
1978	TQ2	*	1978	10	03.97688	01	43	46.33	+09	59	28.3		17.8	095
1978	SM5		1978	10	03.97688	01	45	05.43	+07	35	14.3		17.8	095
1978	TR2	*	1978	10	03.97688	01	45	07.65	+12	35	25.5		17.5 1	095
1978	SL5		1978	10	03.97688	01	45	11.22	+12	22	30.5		17.8 1	095
1978	SN5		1978	10	03.97688	01	45	24.57	+08	24	51.2		17.8	095
1978	TS2	*	1978	10	03.97688	01	45	40.09	+08	36	23.5		17.5	095
1071			1978	10	03.97688	01	46	28.17	+06	09	31.2	0.2+ 1+		095
1978	SO5		1978	10	03.97688	01	46	46.37	+07	52	27.3		17.8	095
1805			1978	10	03.97688	01	46	55.25	+07	55	16.2	0.2+ 0		095
1978	SP5		1978	10	03.97688	01	48	12.28	+09	21	39.8		17.5	095
1978	RG6		1978	10	03.97688	01	48	28.97	+10	02	36.2		17.5	095
1978	SQ5		1978	10	03.97688	01	49	38.89	+10	36	35.7		17.8	095
1202			1978	10	03.97688	01	50	24.88	+08	56	48.5	0.2+ 2+		095
1978	TT2	*	1978	10	03.97688	01	50	39.31	+09	17	21.0		17.8	095
1978	RF6		1978	10	03.97688	01	50	51.63	+05	48	30.4		17.0	095
755			1978	10	03.97688	01	51	26.28	+09	19	04.2	0.0 1+		095
1978	SR5		1978	10	03.97688	01	52	26.86	+08	28	36.2		17.8	095
1978	TU2	*	1978	10	03.97688	01	52	52.65	+06	57	01.2		17.8 1	095
1978	TV2	*	1978	10	03.97688	01	52	58.96	+04	58	36.5		17.8 1	095
1137			1978	10	03.97688	01	53	34.10	+04	38	19.4	0.4+ 1+	1	095
1978	SS5		1978	10	03.97688	01	54	44.47	+10	59	59.6		17.8 1	095
1978	UO2		1978	10	03.97688	01	55	02.87	+04	38	27.5		17.0 1	095
1978	ST5		1978	10	03.97688	01	55	27.27	+09	30	33.6		17.0 1	095
1978	TW2	*	1978	10	03.97688	01	56	17.82	+08	28	06.0		17.2 1	095
1978	TX2	*	1978	10	03.97688	01	59	04.94	+11	05	05.2		17.5 1	095
1978	SZ5		1978	10	04.04780	01	59	11.88	+13	33	37.1		17.0 1	095
952			1978	10	04.04780	02	01	16.41	+13	50	01.7	0.3+ 1+	1	095
1978	SA6		1978	10	04.04780	02	02	33.76	+12	35	35.5		16.5 1	095
1978	SB6		1978	10	04.04780	02	03	48.57	+15	40	11.3		17.5	095
1308			1978	10	04.04780	02	05	33.04	+17	26	28.9	0.3+ 1+		095
2232			1978	10	04.04780	02	08	11.10	+14	22	25.0			095
514			1978	10	04.04780	02	11	25.87	+18	30	16.5	0.2+ 1+	1	095
1978	TY2	*	1978	10	04.04780	02	12	47.08	+11	26	32.0		17.5	095
1978	TZ2	*	1978	10	04.04780	02	14	21.08	+18	36	23.5		17.0 1	095
1978	SC6		1978	10	04.04780	02	16	36.50	+13	17	23.4		17.5	095
1978	TA3	*	1978	10	04.04780	02	16	54.32	+11	23	35.9		17.5	095
1978	UF		1978	10	04.04780	02	17	05.19	+09	39	38.0		17.5 1	095
1978	TB3	*	1978	10	04.04780	02	17	39.68	+14	09	56.1		17.5	095
1978	SD6		1978	10	04.04780	02	18	01.23	+10	13	13.0		17.5 1	095
1978	TC3	*	1978	10	04.04780	02	18	15.01	+14	37	36.2		17.5	095
1978	SE6		1978	10	04.04780	02	18	49.63	+17	51	20.6		17.0 1	095
1472			1978	10	04.04780	02	19	07.54	+09	53	22.0	0.3+ 0	1	095
1454			1978	10	04.04780	02	19	47.29	+19	00	20.7	0.3+ 2+	1	095
1978	TD3	*	1978	10	04.04780	02	20	19.94	+15	40	53.6		17.5	095
1978	UJ		1978	10	04.04780	02	20	38.78	+10	34	59.8		16.5	095
1978	UG		1978	10	04.04780	02	20	48.47	+11	30	12.5		17.0	095
1978	SG6		1978	10	04.04780	02	23	12.51	+09	32	18.5		17.0 1	095
1978	SH6		1978	10	04.04780	02	23	22.34	+10	15	55.1		17.0 1	095
254			1978	10	04.04780	02	24	10.69	+14	05	58.1	0.4+ 1+		095
1978	SJ6		1978	10	04.04780	02	25	34.69	+17	18	39.1		17.5	095
1767			1978	10	04.04780	02	26	35.34	+10	15	13.4	0.1+ 0	1	095
1978	SK6		1978	10	04.04780	02	26	46.80	+16	08	52.7		16.5	095

1978	SL6		1978	10	04.04780	02	27	51.79	+13	09	38.9		17.5	095
462			1978	10	04.04780	02	29	01.99	+09	41	20.5	0.4+ 1+	1	095
1978	TE3	*	1978	10	04.04780	02	30	29.71	+18	06	39.0		17.0 1	095
1978	SM6		1978	10	04.04780	02	30	34.88	+15	34	53.6		17.0	095
1978			1978	10	04.04780	02	31	22.95	+10	23	40.8	0.3+ 2+	1	095
2087			1978	10	04.04780	02	33	41.05	+11	50	57.1		1	095
1978	SN6		1978	10	04.04780	02	34	41.81	+13	40	27.2		17.0 1	095
1978	UV		1978	10	04.04780	02	35	23.04	+10	57	28.0		16.5 1	095
1978	TF3	*	1978	10	04.90794	00	20	51.73	+05	00	53.8		16.5	095
1978	TG3	*	1978	10	04.90794	00	21	08.75	+02	22	12.7		17.0	095
834			1978	10	04.90794	00	21	08.92	+01	50	11.7	0.2- 1-		095
72			1978	10	04.90794	00	21	29.08	+05	56	21.1	0.1- 1-		095
717			1978	10	04.90794	00	23	18.41	+03	47	55.2	0.2- 1-		095
1978	TH3	*	1978	10	04.90794	00	23	47.07	-00	05	01.9		17.0 1	095
723			1978	10	04.90794	00	24	08.75	-00	45	58.4	0.2- 1-	1	095
1978	TJ3	*	1978	10	04.90794	00	28	06.56	-00	29	27.9		17.0 1	095
1978	TK3	*	1978	10	04.90794	00	29	11.89	+05	47	56.3		16.5	095
1978	TL3	*	1978	10	04.90794	00	32	03.62	+07	57	16.7		17.0 1	095
1978	TM3	*	1978	10	04.90794	00	32	33.08	+01	35	37.3		16.5	095
1978	TN3	*	1978	10	04.90794	00	33	45.06	-00	01	56.0		16.5 1	095
24			1978	10	04.90794	00	36	49.08	+03	27	49.9	0.1- 1-		095
1978	TO3	*	1978	10	04.90794	00	36	56.58	+01	21	42.1		16.5	095
2239			1978	10	04.90794	00	38	01.43	+00	43	44.8		16.5	095
1978	TP3	*	1978	10	04.90794	00	38	03.54	+06	24	17.2		17.0	095
1978	TQ3	*	1978	10	04.90794	00	38	16.94	+06	52	09.9		17.0	095
620			1978	10	04.90794	00	38	36.16	+07	17	50.6	0.0 0		095
1978	TR3	*	1978	10	04.90794	00	39	09.43	+08	35	58.7		16.5 1	095
1978	TS3	*	1978	10	04.90794	00	39	37.56	+04	36	15.6		17.0	095
1978	TT3	*	1978	10	04.90794	00	40	36.04	+05	15	12.5		17.0	095
795			1978	10	04.90794	00	41	24.33	+00	30	49.4	0.0 1-		095
1978	TU3	*	1978	10	04.90794	00	41	55.58	+03	56	53.4		17.0	095
1978	TV3	*	1978	10	04.90794	00	43	01.15	+00	59	39.4		17.0	095
1978	TW3	*	1978	10	04.90794	00	44	18.15	+01	35	20.7		17.0	095
1978	TX3	*	1978	10	04.90794	00	44	56.14	+04	55	05.5		17.0	095
1978	RR5		1978	10	04.90794	00	45	18.12	+06	18	21.9		15.5	095
1978	TY3	*	1978	10	04.90794	00	45	26.68	+04	16	41.7		17.0	095
1978	TZ3	*	1978	10	04.90794	00	45	45.44	+02	20	58.0		17.0	095
1978	TA4	*	1978	10	04.90794	00	46	08.38	+04	15	12.4		16.5 2	095
2249			1978	10	04.90794	00	46	48.20	+00	37	36.1		16.5	095
1978	TB4	*	1978	10	04.90794	00	47	05.73	+04	56	59.7		17.0	095
1978	TC4	*	1978	10	04.90794	00	49	48.25	+04	08	31.4		16.5 1	095
1978	TD4	*	1978	10	04.90794	00	50	24.01	+05	15	53.6		16.5 1	095
1618			1978	10	04.90794	00	52	26.53	+00	15	18.9	0.0 1-	1	095
1978	TE4	*	1978	10	04.97946	01	32	24.90	-00	48	28.5		16.0 1	095
99			1978	10	04.97946	01	35	23.50	+01	19	08.6	0.0 1-	1	095
1978	TF4	*	1978	10	04.97946	01	36	25.91	+00	50	38.9		16.5 1	095
1978	TG4	*	1978	10	04.97946	01	38	04.98	-04	27	52.1		16.0	095
1238			1978	10	04.97946	01	39	15.92	-00	40	59.7	0.2+ 1-		095
1978	TH4	*	1978	10	04.97946	01	40	11.78	-03	52	04.0		17.0	095
1567			1978	10	04.97946	01	42	40.83	-03	24	15.0	0.2+ 1+		095
2206			1978	10	04.97946	01	43	17.24	-01	12	01.6		17.0	095
2122			1978	10	04.97946	01	44	37.78	-03	42	37.8			095
1978	TJ4	*	1978	10	04.97946	01	45	38.64	-00	04	42.1		16.5	095
1978	TK4	*	1978	10	04.97946	01	47	05.45	+02	54	52.5		17.0 1	095
1978	TL4	*	1978	10	04.97946	01	51	08.16	+03	31	01.9		16.5 1	095
1772			1978	10	04.97946	01	55	55.18	+03	11	28.0	0.1+ 1-	1	095
1516			1978	10	04.97946	01	56	59.26	-01	13	13.4	0.1+ 1-		095
1978	TM4	*	1978	10	04.97946	02	01	11.82	+02	04	51.6		17.0	095
1978	TN4	*	1978	10	04.97946	02	02	15.10	-01	08	58.7		17.0	095

39		1978	10	04.97946	02	03	33.41	-00	16	32.9	0.2+	1-		095
1978	TO4	* 1978	10	04.97946	02	09	59.38	-04	47	18.0			17.0	1 095
674		1978	10	04.97946	02	10	48.07	+00	15	50.9	0.3-	6-		1 095
1794		1978	10	05.04958	02	39	29.91	+17	57	08.5	0.2+	1+		1 095
2209		1978	10	05.04958	02	40	31.08	+12	01	46.4				1 095
1978	SU5	1978	10	05.04958	02	42	49.00	+18	14	14.2			16.5	1 095
988		1978	10	05.04958	02	44	08.58	+15	24	13.7	0.2+	1+		095
65		1978	10	05.04958	02	44	12.37	+11	41	05.5	0.2+	0		095
90		1978	10	05.04958	02	45	37.30	+13	58	51.6	0.1+	1+		095
1813		1978	10	05.04958	02	45	49.38	+15	35	45.9	0.2+	1+		095
1978	SV5	1978	10	05.04958	02	46	49.14	+15	27	07.3			16.5	095
2274		1978	10	05.04958	02	47	13.90	+18	34	47.4			17.0	095
1978	SX5	1978	10	05.04958	02	57	45.92	+15	54	55.9			17.0	095
1978	TP4	* 1978	10	05.04958	02	57	55.69	+12	21	19.4			17.0	095
813		1978	10	05.04958	03	02	51.62	+13	23	27.6	0.2-	3-		095
167		1978	10	05.04958	03	06	32.15	+14	59	24.6	0.2+	0		095
1977	NT	1978	10	05.04958	03	06	44.24	+17	52	08.1			17.5	095
2228		1978	10	05.04958	03	06	57.80	+14	34	13.2				095
140		1978	10	05.04958	03	08	59.59	+12	57	42.3	0.3+	1+		095
1978	TA2	1978	10	05.04958	03	12	34.56	+11	31	06.6			16.0	095
821		1978	10	05.04958	03	18	38.69	+16	55	13.6				3 095
1978	TQ4	* 1978	10	07.97904	01	18	30.44	+07	26	12.0			17.8	1 095
1846		1978	10	07.97904	01	19	23.32	+08	17	21.9	0.1+	0		1 095
1978	RX5	1978	10	07.97904	01	19	45.69	+05	27	23.6			17.5	1 095
1978	SQ4	1978	10	07.97904	01	19	54.84	+12	43	48.4			17.5	3 095
611		1978	10	07.97904	01	19	58.10	+05	01	03.7	0.1+	0		1 095
1978	RU5	1978	10	07.97904	01	21	22.47	+06	24	46.6			17.0	1 095
1978	SR4	1978	10	07.97904	01	21	38.09	+09	15	00.3			17.5	1 095
1978	TC2	1978	10	07.97904	01	22	14.19	+09	26	07.1			17.8	1 095
1978	RY5	1978	10	07.97904	01	22	19.40	+11	40	17.6			17.0	1 095
1978	TD2	1978	10	07.97904	01	22	23.13	+09	29	32.5			17.8	1 095
2114		1978	10	07.97904	01	23	00.62	+09	00	37.4				1 095
1978	TR4	* 1978	10	07.97904	01	24	02.02	+06	20	02.2			17.8	1 095
1978	TF2	1978	10	07.97904	01	25	10.21	+07	33	30.5			17.5	095
1978	SU4	1978	10	07.97904	01	25	31.70	+11	57	33.4			17.8	1 095
1978	RW5	1978	10	07.97904	01	26	44.00	+06	36	34.3			17.0	095
1978	SV4	1978	10	07.97904	01	27	09.85	+08	14	47.8			17.8	095
1978	TG2	1978	10	07.97904	01	27	56.92	+07	48	52.1			17.8	095
1978	TS4	* 1978	10	07.97904	01	28	48.44	+03	53	49.0			17.8	1 095
1340		1978	10	07.97904	01	28	55.24	+09	41	06.0	0.1-	0		095
1978	RZ5	1978	10	07.97904	01	29	14.85	+04	39	17.8			16.5	095
1978	TT4	* 1978	10	07.97904	01	29	49.57	+08	11	51.8			17.8	095
1978	RA6	1978	10	07.97904	01	30	10.54	+08	17	28.3			17.5	095
1978	TH2	1978	10	07.97904	01	30	17.42	+03	57	38.3			17.8	1 095
1978	TU4	* 1978	10	07.97904	01	30	33.66	+05	40	28.5			17.8	095
1978	SF5	1978	10	07.97904	01	31	10.40	+06	06	17.3			17.8	095
1978	TJ2	1978	10	07.97904	01	31	12.96	+06	11	49.9			17.8	095
74		1978	10	07.97904	01	31	13.54	+09	12	39.7	1.2+	8+		095
1978	SA5	1978	10	07.97904	01	31	16.98	+09	27	10.1			17.8	095
1978	TK2	1978	10	07.97904	01	31	38.93	+04	37	30.9			17.8	095
1978	SB5	1978	10	07.97904	01	31	42.79	+06	27	30.9			17.5	095
1978	SD5	1978	10	07.97904	01	31	45.86	+05	56	58.7			17.5	095
331		1978	10	07.97904	01	31	48.41	+09	22	29.4	0.1-	1-		095
1978	SC5	1978	10	07.97904	01	31	56.67	+06	12	52.9			17.8	095
1978	TL2	1978	10	07.97904	01	32	09.06	+07	50	18.5			17.8	095
277		1978	10	07.97904	01	32	37.75	+10	41	16.1	0.1+	1+		095
1978	TN2	1978	10	07.97904	01	33	04.31	+09	39	06.7			17.8	2 095
1978	TV4	* 1978	10	07.97904	01	33	15.13	+02	46	01.9			17.3	1 095
1978	TM2	1978	10	07.97904	01	33	15.24	+06	42	50.3			17.8	095

1978	SX4		1978	10	07.97904	01	33	16.10	+07	40	12.6			17.0		095
1978	SE5		1978	10	07.97904	01	33	32.74	+10	38	50.3			17.5		095
1978	RC6		1978	10	07.97904	01	34	00.94	+07	02	40.6			17.0		095
1978	SG5		1978	10	07.97904	01	34	25.57	+12	14	31.7			16.5	1	095
1976	GX2		1978	10	07.97904	01	35	18.03	+08	24	51.6			17.5		095
1978	TW4	*	1978	10	07.97904	01	36	23.80	+10	30	33.7			17.8		095
1978	SJ5		1978	10	07.97904	01	37	29.24	+07	30	48.0			17.5		095
1978	TO2		1978	10	07.97904	01	37	44.57	+09	16	30.4			17.8		095
533			1978	10	07.97904	01	38	29.97	+06	30	13.0	0.1-	0			095
343			1978	10	07.97904	01	38	36.13	+07	51	52.9	0.1+	0			095
1978	TX4	*	1978	10	07.97904	01	38	38.14	+07	53	36.7			17.8		095
1978	TY4	*	1978	10	07.97904	01	39	05.86	+05	30	25.6			17.8		095
1978	TZ4	*	1978	10	07.97904	01	39	06.72	+06	39	12.0			17.8		095
1978	SH5		1978	10	07.97904	01	39	19.32	+05	33	11.7			17.8		095
953			1978	10	07.97904	01	40	05.46	+06	29	55.0	0.0	0			095
1978	TP2		1978	10	07.97904	01	40	29.79	+04	32	54.8			17.8		095
586			1978	10	07.97904	01	40	38.06	+11	34	01.2	0.1-	0		1	095
1978	TQ2		1978	10	07.97904	01	40	52.08	+09	40	35.5			17.8		095
1978	SM5		1978	10	07.97904	01	41	47.65	+07	20	24.3			17.8		095
1978	TR2		1978	10	07.97904	01	42	06.94	+12	19	16.0			17.5	1	095
1978	SN5		1978	10	07.97904	01	42	07.14	+07	57	48.9			17.8		095
1978	SL5		1978	10	07.97904	01	42	13.92	+12	07	31.2			17.8	1	095
1978	TS2		1978	10	07.97904	01	42	55.06	+08	19	31.9			17.5		095
1978	SO5		1978	10	07.97904	01	43	10.64	+07	44	16.0			17.5		095
1071			1978	10	07.97904	01	43	18.27	+05	56	53.7	0.0	0			095
1978	TA5	*	1978	10	07.97904	01	43	52.23	+06	09	43.0			17.8		095
1805			1978	10	07.97904	01	44	09.35	+07	39	43.6	0.0	0			095
1978	TB5	*	1978	10	07.97904	01	44	25.92	+07	15	11.1			17.8		095
1978	RG6		1978	10	07.97904	01	44	48.03	+09	43	39.7			17.5		095
1978	TC5	*	1978	10	07.97904	01	45	11.31	+08	53	12.1			17.8		095
1978	SP5		1978	10	07.97904	01	45	23.17	+08	57	20.4			17.5		095
1978	SQ5		1978	10	07.97904	01	46	52.42	+10	22	35.2			17.8		095
1978	TT2		1978	10	07.97904	01	47	38.70	+09	02	45.2			17.8		095
1202			1978	10	07.97904	01	47	55.98	+08	45	37.3	0.1+	1+			095
1978	RF6		1978	10	07.97904	01	48	23.83	+05	17	52.3			17.0		095
755			1978	10	07.97904	01	48	47.86	+09	01	14.7	0.0	0			095
1978	TD5	*	1978	10	07.97904	01	48	48.51	+03	26	31.2			17.0	1	095
1978	SR5		1978	10	07.97904	01	48	57.44	+08	16	38.3			17.8		095
1978	TU2		1978	10	07.97904	01	48	58.18	+06	45	50.8			17.8		095
1978	TE5	*	1978	10	07.97904	01	49	20.33	+08	36	43.0			17.8		095
1978	TV2		1978	10	07.97904	01	49	54.99	+04	47	40.2			17.5		095
1137			1978	10	07.97904	01	50	12.54	+04	21	29.3	0.2+	1+			095
1978	TF5	*	1978	10	07.97904	01	50	34.99	+08	26	52.5			17.8		095
1978	UO2		1978	10	07.97904	01	51	26.76	+04	39	00.4			17.0		095
1978	TG5	*	1978	10	07.97904	01	51	31.68	+08	41	33.5			17.8		095
1978	SS5		1978	10	07.97904	01	51	52.45	+10	36	41.0			17.8		095
1978	TH5	*	1978	10	07.97904	01	52	06.35	+09	21	44.4			17.8		095
1978	ST5		1978	10	07.97904	01	52	42.04	+09	17	16.5			17.0		095
1978	TW2		1978	10	07.97904	01	53	04.28	+08	03	39.5			17.8		095
1978	TX2		1978	10	07.97904	01	56	26.83	+10	52	27.5			17.5	1	095
1978	TJ5	*	1978	10	07.97904	01	56	55.97	+08	11	22.6			17.5	1	095
728			1978	10	07.97904	01	57	40.31	+05	15	15.4	0.1+	0		1	095
1978	TK5	*	1978	10	07.97904	01	59	12.19	+07	50	08.2			17.8	1	095
1280			1978	10	08.05183	02	35	26.49	+24	29	46.6	0.1+	1+		1	095
1978	TL5	*	1978	10	08.05183	02	36	09.03	+20	33	00.6			17.5	1	095
1978	TM5	*	1978	10	08.05183	02	36	22.60	+24	04	35.8			17.5	1	095
1978	SU5		1978	10	08.05183	02	40	59.05	+17	59	51.9			16.5	1	095
2274			1978	10	08.05183	02	45	14.74	+18	29	14.1			17.0	1	095
1978	TN5	*	1978	10	08.05183	02	45	56.33	+20	41	13.4			17.0		095

1978	TO5	*	1978	10	08.05183	02	46	37.96	+21	11	43.7			16.5		095
1978	TP5	*	1978	10	08.05183	02	46	41.32	+21	19	33.8			16.0		095
1978	TQ5	*	1978	10	08.05183	02	47	28.69	+24	15	02.7			16.5		095
1978	TR5	*	1978	10	08.05183	02	49	27.45	+24	34	16.3			16.5		095
1978	SW5		1978	10	08.05183	02	51	56.73	+20	42	01.9			15.5		095
919			1978	10	08.05183	02	52	52.84	+20	03	01.8	0.1+	0			095
1978	TS5	*	1978	10	08.05183	02	54	56.95	+22	05	02.2			17.5		095
1978	TT5	*	1978	10	08.05183	02	55	47.91	+22	41	05.9			16.5		095
1823			1978	10	08.05183	02	57	37.87	+21	34	30.0	0.2+	1+			095
1978	TU5	*	1978	10	08.05183	02	59	07.55	+26	59	50.3			17.0	1	095
1978	TV5	*	1978	10	08.05183	03	00	41.54	+25	09	20.9			17.0		095
1207			1978	10	08.05183	03	02	10.13	+21	52	40.9	0.1+	1+			095
1978	TW5	*	1978	10	08.05183	03	04	19.39	+21	07	35.4			17.0		095
1977	NT		1978	10	08.05183	03	05	13.43	+17	46	44.7			17.5	1	095
230			1978	10	08.05183	03	05	56.37	+24	09	39.9	0.1+	1+			095
1978	TX5	*	1978	10	08.05183	03	13	29.19	+24	48	38.2			17.0		095
1967	JO		1978	10	08.05183	03	14	19.68	+20	59	41.2			17.2		095
632			1978	10	08.05183	03	17	26.71	+20	25	17.6				3	095
1292			1978	10	08.05183	03	18	02.46	+20	55	24.8				1	095
1978	RZ5		1978	11	02.88776	01	09	57.88	+02	28	16.8			17.0	3	095
1978	VD12	*	1978	11	02.88776	01	10	36.57	+03	09	50.1			17.5	3	095
1142			1978	11	02.88776	01	12	21.15	+04	49	30.2	0.2-	0		3	095
1238			1978	11	02.88776	01	12	30.85	-01	29	52.8	0.1-	2-		3	095
1978	VE12	*	1978	11	02.88776	01	15	12.27	+00	08	01.6			17.5	1	095
1976	GX2		1978	11	02.88776	01	15	59.34	+05	25	43.7			17.5	1	095
953			1978	11	02.88776	01	16	28.97	+05	43	10.1	0.1-	1-		1	095
1978	SX4		1978	11	02.88776	01	19	31.48	+01	07	00.3			17.0		095
1978	VF12	*	1978	11	02.88776	01	19	35.84	+01	30	55.5			17.5		095
533			1978	11	02.88776	01	19	47.82	+03	58	57.2	0.2-	3+			095
2206			1978	11	02.88776	01	20	07.58	-02	13	18.3					095
1071			1978	11	02.88776	01	21	05.59	+04	42	19.7	0.1-	2-			095
1978	VG12	*	1978	11	02.88776	01	21	23.05	+04	35	36.9			17.5		095
1978	VH12	*	1978	11	02.88776	01	22	28.90	-00	46	35.4			17.0		095
1978	VJ12	*	1978	11	02.88776	01	24	10.06	-01	53	37.8			16.5		095
1805			1978	11	02.88776	01	25	04.23	+05	58	43.8	0.0	0		1	095
1978	SP5		1978	11	02.88776	01	25	29.78	+06	16	11.1			17.5	1	095
1978	VK12	*	1978	11	02.88776	01	25	55.46	-01	42	05.7			17.8		095
1137			1978	11	02.88776	01	26	25.19	+02	53	09.5	0.0	1-			095
1978	VL12	*	1978	11	02.88776	01	27	00.05	+03	04	29.0			17.0		095
1978	UO2		1978	11	02.88776	01	27	02.07	+04	54	29.7			16.5		095
1978	VM12	*	1978	11	02.88776	01	28	04.14	+04	04	23.8			17.5		095
1978	VN12	*	1978	11	02.88776	01	28	50.10	+05	20	09.1			17.5	1	095
1978	VO12	*	1978	11	02.88776	01	28	57.46	+05	12	24.3			17.8	1	095
1978	VP12	*	1978	11	02.88776	01	30	16.94	-02	20	27.8			17.8		095
1772			1978	11	02.88776	01	30	22.59	+01	11	33.2	0.1-	2-			095
1978	RF6		1978	11	02.88776	01	30	51.56	+02	14	37.3			17.0		095
1978	VQ12	*	1978	11	02.88776	01	31	01.31	+06	18	07.3			17.5	1	095
1978	VR12	*	1978	11	02.88776	01	31	36.00	-00	07	08.6			17.8		095
728			1978	11	02.88776	01	31	58.42	+03	21	03.7	0.0	1-			095
1516			1978	11	02.88776	01	33	21.95	-03	36	30.8	0.2-	2-		1	095
1978	VS12	*	1978	11	02.88776	01	35	19.50	+00	52	08.7			17.8	2	095
1978	VT12	*	1978	11	02.88776	01	38	11.32	+06	08	52.4			17.8	1	095
1978	VU12	*	1978	11	02.88776	01	39	15.50	+05	40	10.2			17.5	1	095
1978	VV12	*	1978	11	02.88776	01	40	24.79	+05	48	15.1			17.8	3	095
1978	VW12	*	1978	11	02.88776	01	41	50.84	-00	04	06.5			17.5	2	095
1978	VX12	*	1978	11	02.88776	01	43	31.79	+03	50	25.0			17.8		095
1978	VY12	*	1978	11	02.88776	01	44	21.69	+02	02	21.7			17.5		095
1978	VZ12	*	1978	11	02.88776	01	44	28.88	-00	10	43.7			17.0	1	095
674			1978	11	02.88776	01	44	38.10	-00	09	29.7	0.6-	7-		1	095

1978	VA13*	1978	11	02.88776	01	46	17.86	+00	58	17.0			17.5	1	095
1978	VB13*	1978	11	02.88776	01	48	23.67	+04	37	57.0			17.8	1	095
172		1978	12	22.81434	03	35	59.95	+35	28	27.0	0.3-	1+		1	095
469		1978	12	22.81434	03	40	52.82	+36	03	42.4	0.2-	1+		1	095
1978	YJ *	1978	12	22.81434	03	42	38.16	+37	58	17.5			17.5		095
680		1978	12	22.81434	03	47	53.54	+31	43	40.4	0.2-	0			095
1978	YK *	1978	12	22.81434	03	50	13.12	+39	14	48.3			17.5	3	095
1978	YL *	1978	12	22.81434	03	53	33.05	+35	09	11.8			16.5		095
115		1978	12	22.81434	04	01	31.97	+38	03	14.1	0.5+	3+			095
1978	YM *	1978	12	22.81434	04	01	59.18	+34	55	49.7			17.5		095
2105		1978	12	22.81434	04	04	47.25	+36	46	33.9					095
84		1978	12	22.81434	04	06	55.21	+36	02	09.3	0.0	3+			095
576		1978	12	22.81434	04	07	15.65	+31	47	20.0	0.3-	1+			095
1518		1978	12	22.81434	04	09	57.86	+31	27	47.7	0.4-	2+			095
987		1978	12	22.81434	04	11	30.43	+33	10	53.7	0.2-	1+			095
617		1978	12	22.81434	04	12	26.64	+34	33	59.1	0.1-	1+			095
1524		1978	12	22.81434	04	13	10.48	+39	35	05.4	0.1-	2+		1	095
1978	YN *	1978	12	22.81434	04	14	48.30	+31	14	43.3			17.0		095
1978	YO *	1978	12	22.81434	04	17	04.88	+31	28	32.0			17.0		095
1978	YP *	1978	12	22.81434	04	19	39.57	+33	57	22.5			17.0	3	095
1978	YQ *	1978	12	22.81434	04	21	05.82	+35	24	07.4			17.0	1	095
1978	YR *	1978	12	22.81434	04	21	34.83	+31	52	51.1			17.0	1	095
1978	YS *	1978	12	22.87880	04	46	28.33	+19	14	27.5			16.0	1	095
14		1978	12	22.87880	04	47	04.13	+20	36	32.4	0.1-	0		1	095
1978	YT *	1978	12	22.87880	04	49	57.99	+15	09	17.8			17.8		095
1978	YU *	1978	12	22.87880	04	52	00.01	+15	15	11.8			17.8		095
1978	YV *	1978	12	22.87880	04	52	16.26	+15	38	41.0			17.5		095
1978	YW *	1978	12	22.87880	04	53	02.01	+17	58	56.7			16.5		095
1978	YX *	1978	12	22.87880	04	54	23.92	+17	59	41.4			16.5		095
182		1978	12	22.87880	04	54	26.44	+20	58	21.1	0.3-	1-		1	095
1978	YY *	1978	12	22.87880	04	55	54.29	+18	02	17.9			17.0		095
1978	YZ *	1978	12	22.87880	04	57	45.12	+17	45	39.2			17.0		095
1978	YA1 *	1978	12	22.87880	04	57	49.74	+20	03	10.8			17.5		095
1978	YB1 *	1978	12	22.87880	04	58	04.63	+17	00	36.4			17.5		095
1150		1978	12	22.87880	04	58	49.40	+19	06	33.5	0.1-	1-			095
1978	YC1 *	1978	12	22.87880	04	59	07.14	+21	31	11.5			17.5	1	095
1978	YD1 *	1978	12	22.87880	04	59	20.67	+15	08	17.9			17.5		095
441		1978	12	22.87880	04	59	59.84	+20	57	45.7	0.0	0		1	095
1978	YE1 *	1978	12	22.87880	05	01	00.07	+17	46	36.0			17.0		095
1978	YF1 *	1978	12	22.87880	05	01	30.82	+17	20	27.4			17.5		095
1774		1978	12	22.87880	05	01	43.58	+19	52	51.8	0.1-	1-			095
1978	YG1 *	1978	12	22.87880	05	02	16.46	+16	41	39.7			16.5		095
1978	YH1 *	1978	12	22.87880	05	03	54.85	+18	35	37.6			17.8		095
1978	YJ1 *	1978	12	22.87880	05	04	13.59	+14	37	50.0			17.8		095
1978	YK1 *	1978	12	22.87880	05	05	46.14	+16	02	38.7			17.8		095
1978	YL1 *	1978	12	22.87880	05	06	26.23	+18	54	40.9			17.8		095
1978	YM1 *	1978	12	22.87880	05	07	14.42	+14	33	51.9			17.5		095
1492		1978	12	22.87880	05	07	15.18	+14	24	46.1	0.0	2-			095
1020		1978	12	22.87880	05	08	04.46	+16	51	33.4	0.2-	0			095
1978	YN1 *	1978	12	22.87880	05	08	04.84	+12	14	49.1			17.0	1	095
1978	YO1 *	1978	12	22.87880	05	08	19.26	+21	37	59.3			17.8	1	095
700		1978	12	22.87880	05	08	22.91	+20	11	00.0	0.0	0			095
1978	YP1 *	1978	12	22.87880	05	10	26.39	+14	04	51.9			17.8		095
1807		1978	12	22.87880	05	11	01.91	+19	48	13.4	0.3-	1-			095
1978	YQ1 *	1978	12	22.87880	05	11	03.07	+20	18	36.5			17.8		095
1978	YR1 *	1978	12	22.87880	05	11	34.36	+19	25	35.1			17.8		095
1978	YS1 *	1978	12	22.87880	05	12	14.73	+15	46	57.3			17.5		095
1978	YT1 *	1978	12	22.87880	05	13	28.51	+20	45	40.7			17.8	1	095
1978	YU1 *	1978	12	22.87880	05	15	54.07	+19	21	49.8			17.5		095

1432		1978	12	22.87880	05	17	04.82	+14	13	10.1	0.0	1-		095
1063		1978	12	22.87880	05	17	49.78	+21	12	13.7	0.1-	1-	1	095
1978	YV1 *	1978	12	22.87880	05	19	00.05	+15	49	23.2		17.8		095
1978	YW1 *	1978	12	22.87880	05	20	05.82	+16	28	54.4		17.0	1	095
1978	YX1 *	1978	12	22.87880	05	25	02.78	+19	30	14.3		17.0	1	095
172		1978	12	27.66688	03	33	20.01	+34	53	48.2	0.1-	0	1	095
469		1978	12	27.66688	03	37	50.91	+35	38	56.3	0.1-	1-		095
115		1978	12	27.66688	03	59	13.29	+37	05	10.2	0.9+	3+		095
2105		1978	12	27.66688	04	01	34.05	+34	44	51.7				095
84		1978	12	27.66688	04	03	23.96	+35	25	01.2	0.2+	2+		095
1208		1978	12	27.66688	04	08	14.20	+40	15	17.1	0.0	0		095
1524		1978	12	27.66688	04	09	30.32	+39	12	10.2	0.1-	0		095
617		1978	12	27.66688	04	09	41.56	+34	31	14.4	0.0	2-		095
672		1978	12	28.68453	03	30	02.82	+35	23	53.1			3	095
172		1978	12	28.68453	03	32	53.11	+34	46	38.1			3	095
469		1978	12	28.68453	03	37	17.07	+35	33	42.1				095
680		1978	12	28.68453	03	44	01.34	+31	34	27.2				095
1978	YM	1978	12	28.68453	03	58	07.67	+34	26	16.0		17.0		095
115		1978	12	28.68453	03	58	51.98	+36	53	01.6	0.9+	3+		095
2105		1978	12	28.68453	04	01	01.64	+34	19	43.0				095
84		1978	12	28.68453	04	02	46.40	+35	17	12.2	0.2+	1+		095
576		1978	12	28.68453	04	03	28.12	+31	14	00.7	0.2-	0		095
1518		1978	12	28.68453	04	05	55.80	+31	18	29.4	0.2-	1-		095
987		1978	12	28.68453	04	07	36.84	+32	43	20.3	0.2-	1-		095
1524		1978	12	28.68453	04	08	48.98	+39	07	12.4	0.1-	0	1	095
617		1978	12	28.68453	04	09	09.06	+34	30	33.0	0.1-	1+		095
1978	YN	1978	12	28.68453	04	11	17.00	+30	40	57.3		17.0		095
1978	YQ	1978	12	28.68453	04	16	35.19	+35	01	31.5		17.0	1	095
680		1978	12	31.67642	03	42	18.75	+31	29	34.1	0.1-	1+	1	095
1978	YM	1978	12	31.67642	03	56	44.06	+34	10	52.7		17.0		095
115		1978	12	31.67642	03	58	05.58	+36	17	28.5	0.4+	2+		095
2105		1978	12	31.67642	03	59	43.08	+33	06	43.0				095
84		1978	12	31.67642	04	01	10.83	+34	54	18.2	0.0	3+		095
576		1978	12	31.67642	04	01	52.00	+30	57	10.5	0.3-	1+		095
1518		1978	12	31.67642	04	04	26.87	+31	13	10.8	0.6-	0		095
987		1978	12	31.67642	04	05	57.03	+32	29	07.9	0.1-	1+		095
1524		1978	12	31.67642	04	06	56.46	+38	52	09.2	0.2-	3+	1	095
617		1978	12	31.67642	04	07	38.25	+34	28	21.3	0.2-	0		095
1978	YQ	1978	12	31.67642	04	14	35.84	+34	49	21.4		17.0		095
1978	YW	1978	12	31.73789	04	46	38.45	+18	09	28.4		16.5	1	095
182		1978	12	31.73789	04	47	41.76	+21	02	48.7	0.5-	1-	1	095
1978	YX	1978	12	31.73789	04	47	50.15	+17	57	49.5		16.5	1	095
1150		1978	12	31.73789	04	50	40.26	+18	55	16.3	0.3-	2-		095
1978	YA1	1978	12	31.73789	04	51	06.82	+19	46	37.4		17.5		095
441		1978	12	31.73789	04	52	53.07	+20	20	33.2	0.2-	1-		095
1978	YE1	1978	12	31.73789	04	53	22.17	+17	53	21.3		17.0	2	095
1774		1978	12	31.73789	04	54	40.20	+19	45	56.7	0.3-	1-		095
1492		1978	12	31.73789	04	58	04.59	+14	38	15.4	0.3-	1-		095
1978	YN1	1978	12	31.73789	04	58	22.78	+12	07	42.7		17.0	1	095
700		1978	12	31.73789	04	58	51.19	+20	30	32.2	0.3-	1+		095
1020		1978	12	31.73789	05	00	42.23	+16	46	57.5	0.4-	1-		095
1807		1978	12	31.73789	05	02	53.16	+19	26	00.9	0.4-	1-		095
1978	YT1	1978	12	31.73789	05	04	49.13	+20	38	19.8		17.5	3	095
1432		1978	12	31.73789	05	08	27.44	+14	43	27.4	0.3-	1-		095
1063		1978	12	31.73789	05	08	30.51	+21	28	48.6	0.3-	0	1	095
1978	YW1	1978	12	31.73789	05	13	00.77	+15	46	08.2		17.0		095
1978	YX1	1978	12	31.73789	05	17	08.17	+19	18	03.6		17.0		095
1562		1978	12	31.73789	05	20	31.91	+17	41	57.0	0.3-	1-	1	095

1419		1978	12	31.73789	05	22	34.61	+13	47	33.9	0.3-	2-		1 095
1762		1978	12	31.73789	05	23	55.37	+19	51	32.7	0.2-	0		1 095
427		1979	07	31.98597	22	26	15.47	-05	45	55.1	0.0	0		1 095
1979	OD13*	1979	07	31.98597	22	28	45.22	-09	15	00.8			17.0	1 095
811		1979	07	31.98597	22	33	57.47	-10	23	36.3	0.3+	1+		095
1972	RV3	1979	07	31.98597	22	37	02.81	-12	08	05.7			16.5	1 095
1979	OE13*	1979	07	31.98597	22	37	24.00	-09	50	57.0			17.0	095
1979	OF13*	1979	07	31.98597	22	38	01.64	-08	29	28.0			16.2	095
2086		1979	07	31.98597	22	39	09.69	-10	37	52.6				095
1979	OG13*	1979	07	31.98597	22	40	28.03	-06	52	46.8			17.0	095
1004		1979	07	31.98597	22	41	04.19	-07	59	37.9	0.1+	0		095
830		1979	07	31.98597	22	41	14.81	-09	38	12.6	0.1+	1+		095
47		1979	07	31.98597	22	43	21.84	-13	19	46.9	0.2+	0		1 095
308		1979	07	31.98597	22	43	27.09	-04	12	26.4	0.2+	2+		1 095
1979	OH13*	1979	07	31.98597	22	43	51.45	-10	44	31.6			17.2	095
1979	OJ13*	1979	07	31.98597	22	45	09.55	-04	22	23.4			17.0	095
306		1979	07	31.98597	22	46	49.75	-08	28	05.7	0.2+	2+		095
2225		1979	07	31.98597	22	49	46.63	-11	57	03.7			17.0	1 095
1979	OK13*	1979	07	31.98597	22	50	39.00	-06	38	09.3			16.5	095
1299		1979	07	31.98597	22	52	08.35	-03	55	05.2	0.2+	2+		1 095
1979	OL13*	1979	07	31.98597	22	52	19.53	-11	46	00.7			17.2	095
66		1979	07	31.98597	22	52	56.16	-10	27	52.1	0.3+	1+		095
499		1979	07	31.98597	22	53	05.96	-04	17	05.2	0.1+	1+		095
1979	OM13*	1979	07	31.98597	22	54	11.78	-08	42	04.2			16.7	095
1382		1979	07	31.98597	22	56	13.88	-08	04	32.7	0.4+	2+		095
2293		1979	07	31.98597	22	57	13.06	-07	21	33.4			16.7	095
1979	ON13*	1979	07	31.98597	22	57	19.17	-09	54	03.0			15.8	095
1979	OO13*	1979	07	31.98597	22	57	20.97	-08	58	51.0			16.7	095
1979	OP13*	1979	07	31.98597	22	58	17.00	-10	00	59.3			16.8	095
1745		1979	07	31.98597	22	58	32.13	-11	28	31.4	0.2+	0		095
1968	SB	1979	07	31.98597	22	58	32.44	-10	47	45.0			16.2	095
534		1979	07	31.98597	23	02	13.14	-10	29	01.6	0.0	1+		1 095
1979	OQ13*	1979	07	31.98597	23	06	06.00	-09	43	08.1			17.0	1 095
1979	OR13*	1979	07	31.98597	23	06	07.53	-07	24	05.8			16.5	1 095
811		1979	08	19.95310	22	21	37.00	-12	01	58.4	0.1+	0		1 095
1979	QA6 *	1979	08	19.95310	22	22	22.65	-09	50	30.7			16.8	3 095
2086		1979	08	19.95310	22	26	08.10	-13	00	35.4				1 095
1979	QB6 *	1979	08	19.95310	22	26	31.28	-11	55	08.2			16.5	095
1979	OF13	1979	08	19.95310	22	26	47.75	-10	39	55.2			16.2	095
1972	RV3	1979	08	19.95310	22	27	07.62	-14	13	56.6			16.5	1 095
830		1979	08	19.95310	22	29	14.41	-10	31	19.2	0.0	0		095
47		1979	08	19.95310	22	30	12.72	-14	12	37.3	0.1+	2-		095
1979	QC6 *	1979	08	19.95310	22	30	21.91	-13	58	31.9			16.8	1 095
1004		1979	08	19.95310	22	30	30.03	-09	18	01.4	0.1-	1-		095
308		1979	08	19.95310	22	31	37.28	-05	40	44.9	0.3+	0		1 095
1979	QD6 *	1979	08	19.95310	22	34	08.47	-05	19	29.8			16.7	1 095
306		1979	08	19.95310	22	36	51.00	-11	23	29.8	0.1-	0		095
2225		1979	08	19.95310	22	37	48.66	-13	30	36.8			16.8	1 095
1979	QE6 *	1979	08	19.95310	22	38	53.72	-06	21	13.6			16.6	095
1979	QF6 *	1979	08	19.95310	22	39	24.87	-04	52	11.0			17.0	1 095
66		1979	08	19.95310	22	40	40.31	-11	32	38.6	0.2+	0		095
1382		1979	08	19.95310	22	41	17.34	-09	22	36.1	0.3+	1+		095
1299		1979	08	19.95310	22	41	52.50	-05	41	26.2	0.1+	2+		1 095
499		1979	08	19.95310	22	43	53.37	-05	05	04.9	0.0	0		1 095
2293		1979	08	19.95310	22	46	20.81	-08	28	04.6			16.8	095
1745		1979	08	19.95310	22	47	19.69	-12	58	59.3	0.1+	0		1 095
1979	ON13	1979	08	19.95310	22	48	00.84	-10	28	25.9			15.8	095
1968	SB	1979	08	19.95310	22	49	01.63	-12	05	13.8			16.5	095

1979	QG6	*	1979	08	19.95310	22	49	17.44	-04	39	45.2			17.0	1	095
1979	QH6	*	1979	08	19.95310	22	50	41.16	-07	54	05.6			16.7	1	095
534			1979	08	19.95310	22	51	30.19	-11	59	54.7	0.2+	0		1	095
1979	QJ6	*	1979	08	19.95310	22	53	15.91	-10	43	55.2			16.8	1	095
1979	OR13		1979	08	19.95310	22	53	48.28	-07	39	11.4			16.3	1	095
1979	QK6	*	1979	08	19.95310	22	54	44.50	-12	21	22.0			16.7	1	095
1979	QL6	*	1979	08	19.95310	22	55	26.31	-10	16	49.7			16.3	1	095
180			1979	08	19.95310	22	55	40.97	-06	16	18.4	0.2+	1+		1	095
811			1979	08	27.93386	22	15	25.83	-12	46	39.5	0.1-	1-		1	095
1979	QM6	*	1979	08	27.93386	22	15	41.88	-12	31	29.3			16.5		095
2086			1979	08	27.93386	22	19	10.56	-14	06	05.0			16.5	3	095
1979	OF13		1979	08	27.93386	22	21	07.72	-11	39	42.6			16.5		095
1979	QN6	*	1979	08	27.93386	22	22	17.02	-07	57	57.2			17.0		095
830			1979	08	27.93386	22	23	12.11	-10	57	27.8	0.1-	1-			095
47			1979	08	27.93386	22	23	23.86	-14	35	11.7	0.0	1-		1	095
1004			1979	08	27.93386	22	25	05.10	-09	56	32.3	0.2-	1-			095
308			1979	08	27.93386	22	25	26.16	-06	28	41.2	0.1-	0		1	095
1979	QO6	*	1979	08	27.93386	22	25	34.44	-05	00	41.8			17.2	3	095
306			1979	08	27.93386	22	30	48.75	-12	46	04.3	0.2-	1-			095
1979	QP6	*	1979	08	27.93386	22	31	59.00	-06	24	11.0			16.8	1	095
1382			1979	08	27.93386	22	33	15.49	-10	03	06.6	0.2+	1+			095
1979	QQ6	*	1979	08	27.93386	22	33	32.94	-05	52	24.3			17.0	1	095
66			1979	08	27.93386	22	33	45.10	-12	05	22.8	0.0	0			095
1979	QR6	*	1979	08	27.93386	22	34	16.75	-06	14	24.7			16.3	1	095
1299			1979	08	27.93386	22	36	02.63	-06	39	18.3	0.0	0		1	095
1979	QS6	*	1979	08	27.93386	22	36	15.75	-10	16	27.6			17.2		095
1905			1979	08	27.93386	22	37	02.56	-04	52	57.5	0.0	0		1	095
499			1979	08	27.93386	22	39	06.50	-05	32	04.1	0.1-	0		1	095
1979	QT6	*	1979	08	27.93386	22	39	12.88	-09	34	41.0			17.0		095
2293			1979	08	27.93386	22	40	44.33	-09	01	21.4			16.6		095
1745			1979	08	27.93386	22	41	08.31	-13	40	37.7	0.0	1-		1	095
1979	ON13		1979	08	27.93386	22	41	39.44	-10	51	14.4			16.3		095
1979	QU6	*	1979	08	27.93386	22	42	08.76	-08	20	48.0			16.9	2	095
1968	SB		1979	08	27.93386	22	43	24.28	-12	42	48.5			16.5		095
534			1979	08	27.93386	22	45	30.77	-12	42	47.6	0.0	0			095
1979	OR13		1979	08	27.93386	22	46	01.66	-07	56	21.4			16.4	1	095
1979	QL6		1979	08	27.93386	22	48	41.44	-10	46	27.4			16.5	1	095
1979	QK6		1979	08	27.93386	22	49	12.84	-13	30	24.8			16.8	1	095
180			1979	08	27.93386	22	49	29.03	-06	52	10.1	0.1+	1+		1	095
750			1979	09	24.77963	22	02	57.69	-18	10	49.8	0.1-	0		1	095
47			1979	09	24.77963	22	03	19.13	-15	09	55.8	0.1-	1-		1	095
1979	OF13		1979	09	24.77963	22	04	00.16	-14	37	40.7			16.5	1	095
830			1979	09	24.77963	22	04	18.34	-12	10	26.1	0.2-	0		1	095
1004			1979	09	24.77963	22	08	01.56	-11	56	15.6	0.2-	1-			095
1979	SH1	*	1979	09	24.77963	22	08	30.81	-18	06	33.1			16.8		095
1382			1979	09	24.77963	22	09	11.41	-11	52	21.9	0.0	0			095
66			1979	09	24.77963	22	10	57.16	-13	30	12.3	0.1-	0			095
306			1979	09	24.77963	22	13	17.72	-16	28	47.2	0.2-	2-			095
422			1979	09	24.77963	22	15	48.16	-15	02	15.2	0.5-	2-			095
1299			1979	09	24.77963	22	16	19.22	-10	04	40.4	0.2-	1-		1	095
1745			1979	09	24.77963	22	20	25.28	-15	30	56.1	0.1-	1-			095
1979	ON13		1979	09	24.77963	22	21	26.19	-11	38	37.4			16.2		095
1979	SJ1	*	1979	09	24.77963	22	23	36.97	-15	57	19.2			16.5		095
1968	SB		1979	09	24.77963	22	24	21.00	-14	23	14.6			16.2		095
534			1979	09	24.77963	22	24	59.75	-14	43	40.5	0.0	1-			095
1979	QL6		1979	09	24.77963	22	25	26.16	-11	58	14.2			16.3		095
493			1979	09	24.77963	22	29	53.75	-15	55	47.4	0.1-	1-			095
1979	QK6		1979	09	24.77963	22	31	09.91	-16	16	31.2			16.7		095

616	1979 09 24.77963	22 36 09.25	-13 45 43.5	0.2-	1-		1 095
1005	1979 09 24.77963	22 39 56.37	-10 50 35.3	0.2-	2-		1 095

Note 1: near edge of plate. 2: measurement uncertain. 3 = 1 + 2. 4: fast-moving object. 5: correction to MPC 4439.

OBSERVATIONS MADE AT THE TOKYO ASTRONOMICAL OBSERVATORY'S KISO STATION BY H. KOSAI AND K. HURUKAWA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
263	1981 01	08.58625	08 08 37.05	+18 11 41.9	16.0	381
263	1981 01	08.62930	08 08 34.68	+18 11 47.8	16.0	381
476	1981 01	08.58625	07 57 19.78	+18 16 37.6	13.0	381
476	1981 01	08.62930	07 57 17.03	+18 16 34.8	13.0	381
507	1981 01	08.58625	07 53 59.72	+20 59 40.8	14.0	381
507	1981 01	08.62930	07 53 57.24	+20 59 39.7	14.0	381
734	1981 01	08.67096	08 09 04.79	+28 22 32.1	14.5	381
734	1981 01	08.71818	08 09 02.23	+28 22 39.1	14.5	381
786	1981 01	08.67096	08 11 51.00	+29 25 45.3	14.0	381
786	1981 01	08.71818	08 11 48.59	+29 26 04.2	14.0	381
810	1981 01	08.58625	08 07 24.58	+17 29 31.9	17.5	381
810	1981 01	08.62930	08 07 21.53	+17 29 42.1	17.5	381
1089	1981 01	08.60847	08 03 22.49	+25 21 39.7	16.0	381
1089	1981 01	08.65013	08 03 19.66	+25 21 54.3	16.0	381
1675	1981 01	08.69318	08 06 58.49	+33 42 44.9	14.5	381
1675	1981 01	08.74180	08 06 54.99	+33 42 58.7	14.5	381
1789	1981 01	08.58625	08 03 57.79	+21 07 11.8	17.5	381
1789	1981 01	08.62930	08 03 54.81	+21 07 20.9	17.5	381
1906	1981 01	08.67096	07 49 09.19	+31 00 23.6	17.0	381
1906	1981 01	08.71818	07 49 05.70	+31 00 27.9	17.0	381
1997	1981 01	08.67096	07 52 48.41	+30 11 54.2	17.5	381
1997	1981 01	08.71818	07 52 44.59	+30 12 00.6	17.5	381
2046	1981 01	08.60847	08 11 41.76	+22 38 24.5	17.5	381
2046	1981 01	08.65013	08 11 39.68	+22 38 30.8	17.5	381
2297	1981 01	08.58625	08 06 39.79	+19 19 04.4	17.5	381
2297	1981 01	08.62930	08 06 37.71	+19 19 11.8	17.5	381
2344	1981 01	08.58625	07 48 41.22	+22 27 51.7	17.5	381
2344	1981 01	08.62930	07 48 38.48	+22 27 57.2	17.5	381
2344	1981 01	08.65013	07 48 37.32	+22 28 02.5	17.5	381
2370	1981 01	08.67096	08 06 32.74	+32 12 27.4	18.0	381
2370	1981 01	08.69318	08 06 31.20	+32 12 34.1	18.0	381
2370	1981 01	08.71818	08 06 29.91	+32 12 36.6	18.0	381
2370	1981 01	08.74180	08 06 28.04	+32 12 42.5	18.0	381
1974 SN1	1981 01	08.67096	08 11 42.15	+32 31 31.1	18.0	381
1974 SN1	1981 01	08.69318	08 11 40.80	+32 31 35.3	18.0	381
1974 SN1	1981 01	08.71818	08 11 39.22	+32 31 41.3	18.0	381
1974 SN1	1981 01	08.74180	08 11 37.69	+32 31 43.6	18.0	381
1981 AA	1981 01	08.60154	08 04 30.78	+22 48 07.1	15.5	381
1981 AA	1981 01	08.61539	08 04 29.69	+22 48 30.9	15.5	381
1981 AA	1981 01	08.64321	08 04 28.01	+22 49 12.3	15.5	381
1981 AA	1981 01	08.65705	08 04 26.73	+22 49 37.7	15.5	381
1981 AJ	1981 01	08.60847	08 04 35.58	+23 30 25.3	17.5	381
1981 AJ	1981 01	08.65013	08 04 33.39	+23 30 33.0	18.5	381
1981 AK	1981 01	08.60847	08 05 10.43	+22 53 20.8	16.0	381
1981 AK	1981 01	08.65013	08 05 08.36	+22 53 30.7	16.0	381
1981 AU	1981 01	08.58625	07 50 25.39	+22 33 15.2	17.5	381
1981 AU	1981 01	08.60847	07 50 23.71	+22 33 14.8	17.5	381
1981 AU	1981 01	08.62930	07 50 22.81	+22 33 17.9	17.5	381
1981 AU	1981 01	08.65013	07 50 21.58	+22 33 22.0	17.5	381
1981 AZ	1981 01	08.58625	08 05 53.05	+20 00 47.4	18.5	381
1981 AZ	1981 01	08.62930	08 05 50.41	+20 01 01.4	18.5	381

1981	AM1	*	1981	01	08.58625	07	49	15.48	+22	51	11.3	17.5	381
1981	AM1		1981	01	08.60847	07	49	13.60	+22	51	00.7	17.5	381
1981	AM1		1981	01	08.62930	07	49	12.07	+22	50	56.6	17.5	381
1981	AM1		1981	01	08.65013	07	49	10.73	+22	50	55.8	17.5	381
1981	AN1	*	1981	01	08.58625	07	49	25.01	+21	14	28.6	17.0	381
1981	AN1		1981	01	08.62930	07	49	22.12	+21	14	32.9	17.0	381
1981	AO1	*	1981	01	08.58625	07	50	53.79	+19	20	48.3	18.0	381
1981	AO1		1981	01	08.62930	07	50	51.76	+19	20	51.9	18.0	381
1981	AP1	*	1981	01	08.58625	07	50	55.06	+22	27	08.3	17.5	381
1981	AP1		1981	01	08.60847	07	50	53.43	+22	27	17.7	17.5	381
1981	AP1		1981	01	08.62930	07	50	52.15	+22	27	26.1	17.5	381
1981	AP1		1981	01	08.65013	07	50	50.74	+22	27	37.8	17.5	381
1981	AQ1	*	1981	01	08.58625	07	51	34.81	+22	37	47.1	17.5	381
1981	AQ1		1981	01	08.60847	07	51	33.32	+22	37	50.6	17.5	381
1981	AQ1		1981	01	08.62930	07	51	32.24	+22	37	52.5	17.5	381
1981	AQ1		1981	01	08.65013	07	51	31.01	+22	37	59.2	17.5	381
1981	AR1	*	1981	01	08.58625	07	51	57.81	+20	56	36.0	18.5	381
1981	AR1		1981	01	08.62930	07	51	54.10	+20	56	35.0	18.0	381
1981	AS1	*	1981	01	08.58625	07	53	13.61	+22	22	12.3	17.5	381
1981	AS1		1981	01	08.62930	07	53	10.45	+22	22	15.1	17.5	381
1981	AS1		1981	01	08.65013	07	53	09.09	+22	22	17.1	17.5	381
1981	AT1	*	1981	01	08.58625	07	53	18.77	+21	45	43.4	16.5	381
1981	AT1		1981	01	08.62930	07	53	15.65	+21	45	45.6	16.5	381
1981	AU1	*	1981	01	08.58625	07	54	08.51	+17	22	27.0	18.0	381
1981	AU1		1981	01	08.62930	07	54	06.84	+17	22	32.6	18.0	381
1981	AV1	*	1981	01	08.58625	07	54	21.20	+22	44	02.8	18.0	381
1981	AV1		1981	01	08.60847	07	54	20.12	+22	44	11.5	18.0	381
1981	AV1		1981	01	08.62930	07	54	18.91	+22	44	17.3	18.0	381
1981	AW1	*	1981	01	08.58625	07	55	25.53	+18	36	57.8	18.0	381
1981	AW1		1981	01	08.62930	07	55	23.62	+18	37	01.0	18.0	381
1981	AX1	*	1981	01	08.58625	07	56	43.64	+20	25	17.4	17.0	381
1981	AX1		1981	01	08.62930	07	56	40.74	+20	25	29.0	17.0	381
1981	AY1	*	1981	01	08.58625	07	57	06.30	+18	02	38.6	18.0	381
1981	AY1		1981	01	08.62930	07	57	03.83	+18	02	45.2	18.0	381
1981	AZ1	*	1981	01	08.58625	07	57	42.93	+19	11	48.5	17.5	381
1981	AZ1		1981	01	08.62930	07	57	40.55	+19	11	53.3	17.5	381
1981	AA2	*	1981	01	08.58625	07	58	27.96	+19	52	51.5	17.0	381
1981	AA2		1981	01	08.62930	07	58	24.97	+19	52	47.1	17.0	381
1981	AB2	*	1981	01	08.58625	07	59	00.53	+20	23	28.0	18.5	381
1981	AB2		1981	01	08.62930	07	58	58.22	+20	23	40.1	18.5	381
1981	AC2	*	1981	01	08.58625	07	59	09.48	+20	38	34.7	18.5	381
1981	AC2		1981	01	08.62930	07	59	06.88	+20	38	37.7	18.5	381
1981	AD2	*	1981	01	08.58625	07	59	46.51	+20	27	58.4	17.0	381
1981	AD2		1981	01	08.62930	07	59	43.54	+20	27	59.1	17.0	381
1981	AE2	*	1981	01	08.58625	08	01	01.85	+21	21	56.9	17.5	381
1981	AE2		1981	01	08.62930	08	00	59.31	+21	21	55.7	17.5	381
1981	AF2	*	1981	01	08.58625	08	01	23.30	+19	34	53.5	17.5	381
1981	AF2		1981	01	08.62930	08	01	20.47	+19	34	56.8	17.5	381
1981	AG2	*	1981	01	08.58625	08	01	28.96	+21	41	49.8	18.5	381
1981	AG2		1981	01	08.62930	08	01	28.88	+21	41	53.6	18.5	381
1981	AH2	*	1981	01	08.58625	08	02	15.79	+22	14	59.0	18.0	381
1981	AH2		1981	01	08.60847	08	02	14.09	+22	15	14.7	18.0	381
1981	AH2		1981	01	08.65013	08	02	11.46	+22	15	39.3	18.0	381
1981	AJ2	*	1981	01	08.58625	08	02	58.50	+22	10	49.3	17.5	381
1981	AJ2		1981	01	08.62930	08	02	56.04	+22	10	56.2	17.5	381
1981	AJ2		1981	01	08.65013	08	02	54.81	+22	10	59.4	17.5	381
1981	AK2	*	1981	01	08.58625	08	03	57.13	+18	47	02.3	17.5	381
1981	AK2		1981	01	08.62930	08	03	54.49	+18	47	19.1	17.5	381
1981	AL2	*	1981	01	08.58625	08	03	58.85	+19	13	38.4	18.0	381

1981	AL2		1981	01	08.62930	08	03	56.63	+19	13	45.7	18.0	381
1981	AM2	*	1981	01	08.58625	08	04	51.73	+20	53	25.5	18.5	381
1981	AM2		1981	01	08.62930	08	04	49.00	+20	53	44.0	18.5	381
1981	AN2	*	1981	01	08.58625	08	06	00.97	+20	48	14.9	18.5	381
1981	AN2		1981	01	08.62930	08	05	58.28	+20	48	19.2	18.5	381
1981	AO2	*	1981	01	08.58625	08	06	08.51	+22	36	45.1	17.5	381
1981	AO2		1981	01	08.62930	08	06	05.58	+22	37	01.6	17.5	381
1981	AO2		1981	01	08.65013	08	06	04.34	+22	37	08.7	17.5	381
1981	AP2	*	1981	01	08.58625	08	06	14.28	+19	33	37.6	17.5	381
1981	AP2		1981	01	08.62930	08	06	11.92	+19	33	46.9	17.5	381
1981	AQ2	*	1981	01	08.58625	08	06	42.96	+18	03	34.1	18.0	381
1981	AQ2		1981	01	08.62930	08	06	40.43	+18	03	30.8	18.0	381
1981	AR2	*	1981	01	08.58625	08	07	55.00	+21	16	08.1	18.5	381
1981	AR2		1981	01	08.62930	08	07	52.79	+21	16	14.9	18.5	381
1981	AS2	*	1981	01	08.61539	08	09	51.26	+24	06	55.1	17.5	381
1981	AS2		1981	01	08.65705	08	09	48.53	+24	07	43.2	17.5	381
1981	AT2	*	1981	01	08.60847	07	54	24.67	+26	18	31.0	17.5	381
1981	AT2		1981	01	08.65013	07	54	22.38	+26	18	36.9	17.5	381
1981	AU2	*	1981	01	08.60847	07	54	34.25	+24	32	08.5	17.5	381
1981	AU2		1981	01	08.65013	07	54	31.77	+24	32	26.0	17.5	381
1981	AV2	*	1981	01	08.60847	07	55	04.28	+23	37	58.1	17.5	381
1981	AV2		1981	01	08.65013	07	55	01.24	+23	38	10.1	17.5	381
1981	AW2	*	1981	01	08.60847	07	55	04.69	+26	13	49.1	18.0	381
1981	AW2		1981	01	08.65013	07	55	01.96	+26	13	46.1	18.0	381
1981	AX2	*	1981	01	08.60847	07	56	23.56	+25	46	32.9	17.5	381
1981	AX2		1981	01	08.65013	07	56	20.49	+25	46	45.1	17.5	381
1981	AY2	*	1981	01	08.60847	07	56	56.31	+23	22	43.9	18.0	381
1981	AY2		1981	01	08.65013	07	56	54.48	+23	22	49.6	18.0	381
1981	AZ2	*	1981	01	08.60847	08	01	04.65	+25	28	08.7	18.5	381
1981	AZ2		1981	01	08.65013	08	01	01.85	+25	28	16.7	18.5	381
1981	AA3	*	1981	01	08.60847	08	01	08.14	+27	12	31.2	17.5	381
1981	AA3		1981	01	08.65013	08	01	05.88	+27	12	33.2	17.5	381
1981	AA3		1981	01	08.67096	08	01	04.48	+27	12	34.2	17.5	381
1981	AA3		1981	01	08.71818	08	01	01.81	+27	12	38.3	17.5	381
1981	AB3	*	1981	01	08.60847	08	01	08.74	+27	18	27.9	17.5	381
1981	AB3		1981	01	08.67096	08	01	05.00	+27	18	36.1	17.5	381
1981	AB3		1981	01	08.71818	08	01	02.26	+27	18	45.3	17.5	381
1981	AC3	*	1981	01	08.60847	08	03	21.43	+27	04	49.7	17.5	381
1981	AC3		1981	01	08.65013	08	03	18.70	+27	04	44.8	17.5	381
1981	AC3		1981	01	08.67096	08	03	17.55	+27	04	45.9	17.5	381
1981	AC3		1981	01	08.71818	08	03	14.38	+27	04	42.3	17.5	381
1981	AD3	*	1981	01	08.60847	08	03	29.05	+27	13	36.1	18.0	381
1981	AD3		1981	01	08.65013	08	03	26.04	+27	13	47.2	18.0	381
1981	AD3		1981	01	08.67096	08	03	24.53	+27	13	54.2	18.0	381
1981	AD3		1981	01	08.71818	08	03	21.12	+27	14	07.0	18.0	381
1981	AE3	*	1981	01	08.60847	08	04	20.38	+25	50	46.8	17.5	381
1981	AE3		1981	01	08.65013	08	04	18.10	+25	50	55.3	17.5	381
1981	AF3	*	1981	01	08.60847	08	04	54.04	+24	37	09.4	17.5	381
1981	AF3		1981	01	08.65013	08	04	51.40	+24	37	21.3	17.5	381
1981	AG3	*	1981	01	08.60847	08	06	56.20	+25	00	41.4	18.0	381
1981	AG3		1981	01	08.65013	08	06	54.38	+25	00	47.9	18.0	381
1981	AH3	*	1981	01	08.60847	08	06	59.36	+22	51	17.1	18.0	381
1981	AH3		1981	01	08.65013	08	06	56.85	+22	51	27.5	18.0	381
1981	AJ3	*	1981	01	08.67096	07	46	51.81	+28	55	18.6	18.0	381
1981	AJ3		1981	01	08.71818	07	46	48.38	+28	55	33.3	18.0	381
1981	AK3	*	1981	01	08.67096	07	47	49.06	+28	09	49.8	18.5	381
1981	AK3		1981	01	08.71818	07	47	46.10	+28	09	57.0	18.5	381
1981	AL3	*	1981	01	08.67096	07	48	06.77	+30	32	32.2	18.5	381
1981	AL3		1981	01	08.71818	07	48	04.21	+30	32	38.3	18.5	381

1981	AM3	*	1981	01	08.67096	07 50 20.07	+30	28	49.1	18.0	381
1981	AM3		1981	01	08.71818	07 50 16.82	+30	29	12.6	18.0	381
1981	AN3	*	1981	01	08.67096	07 52 22.09	+29	02	08.5	17.0	381
1981	AN3		1981	01	08.71818	07 52 19.55	+29	02	25.1	17.0	381
1981	AO3	*	1981	01	08.67096	07 53 11.98	+28	35	37.0	18.0	381
1981	AO3		1981	01	08.71818	07 53 09.21	+28	35	46.7	18.0	381
1981	AP3	*	1981	01	08.67096	07 57 05.22	+28	07	58.4	17.5	381
1981	AP3		1981	01	08.71818	07 57 01.96	+28	08	05.6	17.5	381
1981	AQ3	*	1981	01	08.67096	08 01 20.22	+29	52	17.0	17.5	381
1981	AQ3		1981	01	08.71818	08 01 17.15	+29	52	16.8	17.5	381
1981	AR3	*	1981	01	08.67096	08 03 25.66	+27	48	20.6	17.5	381
1981	AR3		1981	01	08.71818	08 03 22.24	+27	48	25.0	17.5	381
1981	AS3	*	1981	01	08.67096	08 03 29.52	+28	33	01.9	17.5	381
1981	AS3		1981	01	08.71818	08 03 27.45	+28	33	07.8	17.5	381
1981	AT3	*	1981	01	08.67096	08 04 07.16	+30	56	31.6	17.5	381
1981	AT3		1981	01	08.71818	08 04 03.93	+30	56	26.5	17.5	381
1981	AU3	*	1981	01	08.67096	08 05 33.23	+29	11	48.5	18.5	381
1981	AU3		1981	01	08.71818	08 05 30.46	+29	11	58.2	18.5	381
1981	AV3	*	1981	01	08.67096	08 09 46.93	+31	23	23.4	18.0	381
1981	AV3		1981	01	08.71818	08 09 44.32	+31	23	41.5	18.0	381
1981	AW3	*	1981	01	08.69318	07 54 49.22	+36	31	40.1	18.5	381
1981	AW3		1981	01	08.74180	07 54 46.25	+36	31	45.3	18.0	381
1981	AX3	*	1981	01	08.69318	07 55 41.59	+36	07	49.5	17.5	381
1981	AX3		1981	01	08.74180	07 55 38.23	+36	08	02.4	17.5	381
1981	AY3	*	1981	01	08.69318	07 59 26.09	+36	08	31.1	18.5	381
1981	AY3		1981	01	08.74180	07 59 22.62	+36	08	45.4	18.5	381
1981	AZ3	*	1981	01	08.69318	07 59 53.74	+37	30	01.1	18.5	381
1981	AZ3		1981	01	08.74180	07 59 50.79	+37	30	13.5	18.5	381
1981	AA4	*	1981	01	08.69318	08 04 49.36	+34	04	18.7	18.0	381
1981	AA4		1981	01	08.74180	08 04 46.09	+34	04	22.2	18.0	381
1981	AB4	*	1981	01	08.69318	08 10 46.07	+33	50	20.4	18.0	381
1981	AB4		1981	01	08.74180	08 10 42.60	+33	50	24.2	18.0	381
1981	AC4	*	1981	01	08.69318	08 11 19.97	+34	16	45.8	18.5	381
1981	AC4		1981	01	08.74180	08 11 17.22	+34	16	57.0	18.5	381

OBSERVATIONS MADE AT THE JCPM HAMATONBETSU STATION (CODE 394) BY M. TAKEISHI AND AT OJIMA (CODE 887) BY T. NIIJIMA. MEASURED BY TAKEISHI. FROM JCPM HAMATONBETSU STA. REP. NO. 5.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
402	1981 04	03.59097	12 55 36.32	+13 33 48.0	13	394
402	1981 04	03.66944	12 55 32.45	+13 34 22.9		394
472	1981 04	03.61042	13 06 09.93	+17 14 06.8	14	394
472	1981 04	03.68819	13 06 05.91	+17 14 38.1		394
579	1981 04	03.64028	13 11 53.36	+08 46 52.9	13	394
579	1981 04	03.71181	13 11 49.76	+08 47 10.4		394
1088	1981 03	10.66944	11 16 51.13	+17 12 22.6		887
1088	1981 03	10.68021	11 16 50.37	+17 12 26.4		887

OBSERVATIONS MADE WITH THE 0.46-M SCHMIDT AT PALOMAR BY E. HELIN AND S. J. BUS. SCANNED AND MEASURED BY C. S. SHOEMAKER. REDUCED BY R. WOLFE.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
241	1980 10	07.34028	00 43 13.58	+13 44 53.7		675
241	1980 10	08.33681	00 42 27.60	+13 39 29.3		675
241	1980 10	09.33056	00 41 41.70	+13 34 01.5		675
241	1980 10	10.26875	00 40 58.83	+13 28 43.6		675
1881	1980 10	07.34028	00 47 50.53	+11 22 39.0		675
1881	1980 10	08.33681	00 47 08.41	+11 15 24.3		675
1881	1980 10	09.33056	00 46 26.76	+11 08 08.9		675
1881	1980 10	10.26875	00 45 47.66	+11 01 16.9		675

1980	TY4		1980	10	08.33681	00	20	06.34	+11	57	08.8		675
1980	TY4	*	1980	10	09.33056	00	19	16.76	+11	48	12.3	16	675
1980	TY4		1980	10	10.26875	00	18	30.99	+11	39	47.7		675
1980	TZ4		1980	10	07.34028	00	21	20.05	+15	16	08.8		675
1980	TZ4		1980	10	08.33681	00	20	22.45	+15	11	41.7		675
1980	TZ4	*	1980	10	09.33056	00	19	25.57	+15	07	11.7	17	675
1980	TZ4		1980	10	10.26875	00	18	33.39	+15	02	47.4		675
1980	TA5		1980	10	07.34028	00	25	36.62	+16	07	05.8		675
1980	TA5		1980	10	08.33681	00	24	45.91	+16	02	38.7		675
1980	TA5	*	1980	10	09.33056	00	23	55.64	+15	58	02.0	16.5	675
1980	TA5		1980	10	10.26875	00	23	08.93	+15	53	35.0		675
1980	TB5		1980	10	07.34028	00	27	04.20	+12	01	47.6		675
1980	TB5		1980	10	08.33681	00	26	02.60	+11	59	36.5		675
1980	TB5	*	1980	10	09.33056	00	25	01.44	+11	57	24.8	16.5	675
1980	TB5		1980	10	10.26875	00	24	04.56	+11	55	18.0		675
1980	TC5		1980	10	07.34028	00	26	39.45	+12	22	56.0		675
1980	TC5		1980	10	08.33681	00	25	57.47	+12	13	59.8		675
1980	TC5	*	1980	10	10.26875	00	24	37.96	+11	56	29.8	16.5	675
1980	TD5		1980	10	07.34028	00	27	46.22	+12	16	04.8		675
1980	TD5		1980	10	08.33681	00	26	44.61	+12	13	32.4		675
1980	TD5	*	1980	10	09.33056	00	25	43.59	+12	10	53.3	16.5	675
1980	TD5		1980	10	10.26875	00	24	46.83	+12	08	18.9		675
1980	TE5		1980	10	08.33681	00	29	06.12	+10	13	06.0		675
1980	TE5	*	1980	10	09.33056	00	28	02.01	+10	08	30.8	17	675
1980	TE5		1980	10	10.26875	00	27	02.06	+10	04	08.8		675
1980	TF5		1980	10	08.33681	00	29	16.80	+13	20	01.7		675
1980	TF5	*	1980	10	09.33056	00	28	14.83	+13	18	21.8	17.5	675
1980	TF5		1980	10	10.26875	00	27	17.04	+13	16	41.9		675
1980	TG5		1980	10	07.34028	00	29	59.96	+15	42	06.4		675
1980	TG5		1980	10	08.33681	00	29	17.75	+15	33	28.4		675
1980	TG5	*	1980	10	09.33056	00	28	36.27	+15	24	45.2	16	675
1980	TG5		1980	10	10.26875	00	27	57.44	+15	16	27.5		675
1980	TH5	*	1980	10	09.33056	00	29	18.74	+12	34	50.2	17.5	675
1980	TH5		1980	10	10.26875	00	28	28.69	+12	34	34.1		675
1980	TJ5	*	1980	10	09.33056	00	30	39.33	+14	49	27.4	17.5	675
1980	TJ5		1980	10	10.26875	00	29	36.79	+14	50	43.9		675
1980	TK5		1980	10	08.33681	00	32	49.36	+11	00	48.5		675
1980	TK5	*	1980	10	09.33056	00	32	05.96	+10	53	45.5	17	675
1980	TK5		1980	10	10.26875	00	31	25.13	+10	47	03.2		675
1980	TL5		1980	10	07.34028	00	34	45.88	+15	28	20.0		675
1980	TL5		1980	10	08.33681	00	33	55.79	+15	23	40.1		675
1980	TL5	*	1980	10	09.33056	00	33	06.13	+15	18	50.1	16.5	675
1980	TL5		1980	10	10.26875	00	32	19.73	+15	14	07.0		675
1980	TM5		1980	10	08.33681	00	34	07.47	+12	24	30.3		675
1980	TM5	*	1980	10	09.33056	00	33	24.06	+12	18	26.0	17	675
1980	TM5		1980	10	10.26875	00	32	43.71	+12	12	35.9		675
1980	TN5	*	1980	10	09.33056	00	33	40.75	+12	37	57.7	17.5	675
1980	TN5		1980	10	10.26875	00	32	50.72	+12	29	37.0		675
1980	TO5		1980	10	08.33681	00	35	02.11	+12	35	27.5		675
1980	TO5	*	1980	10	09.33056	00	34	19.57	+12	27	32.8	17	675
1980	TO5		1980	10	10.26875	00	33	39.74	+12	20	02.0		675
1980	TP5		1980	10	08.33681	00	37	17.59	+10	41	16.0		675
1980	TP5	*	1980	10	09.33056	00	36	12.56	+10	41	30.9	16.5	675
1980	TP5		1980	10	10.26875	00	35	11.48	+10	41	38.8		675
1980	TQ5		1980	10	07.34028	00	39	17.46	+11	10	39.5		675
1980	TQ5		1980	10	08.33681	00	38	31.97	+11	05	35.9		675
1980	TQ5	*	1980	10	09.33056	00	37	46.83	+11	00	31.0	16.5	675
1980	TQ5		1980	10	10.26875	00	37	04.67	+10	55	42.4		675
1980	TR5		1980	10	07.34028	00	39	46.60	+12	16	26.1		675

1980 TR5		1980	10	08.33681	00	38	48.09	+12	12	28.9	675
1980 TR5	*	1980	10	09.33056	00	37	50.23	+12	08	25.1	16 675
1980 TS5		1980	10	08.33681	00	40	35.71	+15	52	36.9	675
1980 TS5	*	1980	10	09.33056	00	39	35.17	+15	51	49.5	17.5 675
1980 TS5		1980	10	10.26875	00	38	38.26	+15	50	58.3	675
1980 TT5	*	1980	10	09.33056	00	40	06.73	+16	17	39.2	17.5 675
1980 TT5		1980	10	10.26875	00	39	29.59	+16	08	04.5	675
1980 TU5		1980	10	08.33681	00	44	56.15	+09	31	33.5	675
1980 TU5	*	1980	10	09.33056	00	43	59.09	+09	28	35.4	15.5 675
1980 TV5		1980	10	08.33681	00	46	08.84	+14	46	12.8	675
1980 TV5	*	1980	10	09.33056	00	45	12.81	+14	44	00.4	17.5 675
1980 TV5		1980	10	10.26875	00	44	19.95	+14	41	53.7	675
1980 TW5		1980	10	07.34028	00	46	43.76	+11	12	16.1	675
1980 TW5		1980	10	08.33681	00	45	58.09	+11	07	08.5	675
1980 TW5	*	1980	10	09.33056	00	45	12.89	+11	02	00.6	16.5 675
1980 TW5		1980	10	10.26875	00	44	30.53	+10	57	06.2	675
1980 TX5		1980	10	07.34028	00	35	36.14	+12	34	54.0	675
1980 TX5		1980	10	08.33681	00	34	39.66	+12	27	17.5	675
1980 TX5	*	1980	10	10.26875	00	32	50.93	+12	12	22.9	17 675

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

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
6066 P-L	*	1960 09	24.33613	00 05 29.80	+05 27 53.3		1	675
6066 P-L		1960 09	25.32502	00 04 48.29	+05 22 52.4		1	675
6066 P-L		1960 09	26.27573	00 04 08.32	+05 17 59.9		1	675
6066 P-L		1960 09	28.32780	00 02 42.29	+05 07 23.1		1	675
6066 P-L		1960 10	17.27085	23 50 37.84	+03 30 20.1		1	675
6066 P-L		1960 10	22.15559	23 48 08.34	+03 07 44.3		1	675
6066 P-L		1960 10	24.18787	23 47 12.26	+02 58 52.3		1	675
6066 P-L		1960 10	26.26113	23 46 18.93	+02 50 10.9		1	675
1981 JD	*	1981 05	09.41250	17 58 02.61	+68 31 51.1	16.0	2	675
1981 JD		1981 05	09.47500	17 56 11.00	+68 26 00.9		2	675

Note 1: observer T. Gehrels, plates scanned and measured by C. J. van Houten and I. van Houten-Groeneveld. 2: observer C. Kowal; the observations, which refer to the beginning and end of a single trail, should possibly be interchanged.

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
46	1981 05	05.32778	16 48 33.15	-19 14 02.2			688
46	1981 05	05.37569	16 48 31.30	-19 13 55.9			688
50	1981 05	03.30486	14 42 33.36	-12 30 52.9			688
50	1981 05	03.34028	14 42 31.45	-12 30 44.2			688
50	1981 05	08.36528	14 38 08.73	-12 08 03.7			688
50	1981 05	08.41181	14 38 06.24	-12 07 51.0			688
74	1981 05	03.21528	13 13 19.64	-06 48 37.3			688
74	1981 05	03.26458	13 13 17.54	-06 48 23.0			688
87	1981 05	02.18056	08 18 23.67	+29 24 38.8			688
87	1981 05	02.20000	08 18 24.49	+29 24 34.8			688
91	1981 05	03.28681	14 25 00.76	-16 08 20.8			688
91	1981 05	03.32292	14 24 58.71	-16 08 11.7			688
126	1981 05	02.15694	12 11 30.73	-00 42 45.4			688
126	1981 05	02.25208	12 11 27.82	-00 42 34.3			688
142	1981 05	05.27917	15 45 41.51	-23 35 21.4			688
142	1981 05	05.30278	15 45 40.38	-23 35 14.6			688
167	1981 05	03.30486	14 35 48.82	-12 17 23.3			688
167	1981 05	03.34028	14 35 46.93	-12 17 14.3			688
167	1981 05	08.36528	14 31 40.38	-11 55 36.0			688

167	1981	05	08.41181	14	31	38.10	-11	55	23.5	688
184	1981	05	03.35833	15	23	56.14	-20	21	50.3	688
184	1981	05	03.39583	15	23	54.36	-20	21	44.4	688
215	1981	05	02.15694	11	55	41.46	+01	01	15.9	688
215	1981	05	02.25208	11	55	39.44	+01	01	24.4	688
229	1981	05	02.15694	12	13	28.15	-00	40	44.2	688
229	1981	05	02.25208	12	13	25.76	-00	40	32.0	688
261	1981	05	05.35139	17	16	30.13	-19	57	00.8	688
261	1981	05	05.40000	17	16	28.51	-19	57	01.3	688
261	1981	05	08.38958	17	14	45.53	-19	57	10.5	688
261	1981	05	08.43264	17	14	43.84	-19	57	11.0	688
266	1981	05	05.32778	16	54	36.34	-19	22	46.3	688
266	1981	05	05.37569	16	54	34.62	-19	22	32.4	688
315	1981	05	03.30486	14	37	04.98	-11	27	24.8	688
315	1981	05	03.34028	14	37	02.72	-11	27	12.6	688
315	1981	05	08.36528	14	31	53.82	-10	59	19.3	688
315	1981	05	08.41181	14	31	50.95	-10	59	03.1	688
340	1981	05	02.15694	12	13	30.58	-00	01	33.5	688
340	1981	05	02.25208	12	13	27.95	-00	01	27.7	688
393	1981	05	03.28681	14	24	46.92	-11	03	55.4	688
393	1981	05	03.32292	14	24	45.03	-11	03	29.2	688
401	1981	05	03.30486	14	37	04.49	-16	18	16.0	688
401	1981	05	03.34028	14	37	02.82	-16	18	11.7	688
448	1981	05	03.30486	14	39	31.77	-17	20	05.1	688
448	1981	05	03.34028	14	39	29.85	-17	20	03.6	688
462	1981	05	03.21528	13	23	24.06	-03	54	01.5	688
462	1981	05	03.26458	13	23	21.82	-03	53	52.2	688
519	1981	05	03.35833	15	13	37.27	-19	04	00.7	688
519	1981	05	03.39583	15	13	35.15	-19	04	00.4	688
563	1981	05	05.23264	14	35	25.02	-04	10	53.4	688
578	1981	05	03.21528	13	08	44.36	-06	57	50.5	688
578	1981	05	03.26458	13	08	41.83	-06	57	45.2	688
611	1981	05	05.23264	14	38	15.53	-04	44	02.9	688
632	1981	05	05.32778	16	48	31.09	-25	58	55.2	688
632	1981	05	05.37569	16	48	29.64	-25	58	57.7	688
659	1981	05	03.35833	15	14	50.32	-23	03	05.1	688
659	1981	05	03.39583	15	14	49.10	-23	03	01.7	688
674	1981	05	05.32778	16	42	03.40	-24	14	17.0	688
674	1981	05	05.37569	16	42	01.22	-24	14	22.3	688
758	1981	05	05.35139	17	26	05.58	-19	10	04.4	688
758	1981	05	05.40000	17	26	04.22	-19	10	03.4	688
758	1981	05	08.38958	17	24	39.23	-19	09	01.6	688
758	1981	05	08.43264	17	24	37.92	-19	09	00.9	688
797	1981	05	02.15694	11	54	59.07	-04	30	02.5	688
797	1981	05	02.25208	11	54	57.57	-04	29	36.1	688
814	1981	05	05.35139	17	17	08.47	-13	52	16.5	688
814	1981	05	05.40000	17	17	06.90	-13	52	19.6	688
814	1981	05	08.38958	17	15	26.95	-13	55	28.3	688
814	1981	05	08.43264	17	15	25.41	-13	55	31.6	688
852	1981	05	02.22361	11	04	36.25	+22	06	03.2	688
852	1981	05	02.27986	11	04	35.08	+22	05	31.2	688
919	1981	05	03.35833	15	17	47.35	-18	26	55.6	688
919	1981	05	03.39583	15	17	45.48	-18	26	42.9	688
981	1981	05	03.28681	14	02	14.86	-11	51	43.2	688
981	1981	05	03.32292	14	02	13.12	-11	51	35.7	688
988	1981	05	02.15694	12	08	56.63	+00	08	35.0	1 688
988	1981	05	02.25208	12	08	54.47	+00	08	46.7	688
999	1981	05	02.15694	12	05	51.48	-05	35	49.5	688
999	1981	05	02.25208	12	05	49.02	-05	35	14.3	688

1071	1981	05	05.27917	15	52	02.74	-20	35	25.5			688
1071	1981	05	05.30278	15	52	01.54	-20	35	23.6			688
1132	1981	05	02.15694	12	13	15.91	+01	18	56.8			688
1132	1981	05	02.25208	12	13	12.47	+01	18	59.7			688
1243	1981	05	03.35833	14	58	57.18	-23	43	03.3			688
1243	1981	05	03.39583	14	58	55.29	-23	42	48.8			688
1331	1981	05	03.21528	13	15	22.48	-03	11	48.2			688
1331	1981	05	03.26458	13	15	20.43	-03	11	39.1			688
1341	1981	05	02.22361	11	01	02.04	+23	34	33.7			688
1341	1981	05	02.27986	11	01	02.35	+23	34	16.9			688
1350	1981	05	05.35139	17	09	02.14	-18	56	32.3			688
1350	1981	05	05.40000	17	09	00.66	-18	56	30.2			688
1350	1981	05	08.43264	17	07	22.37	-18	52	29.9			688
1358	1981	05	02.15694	12	11	42.43	-01	00	33.7			688
1358	1981	05	02.25208	12	11	39.38	-01	00	20.6			688
1438	1981	05	03.35833	15	06	38.86	-18	03	06.0			688
1438	1981	05	03.39583	15	06	37.13	-18	02	56.3			688
1439	1981	05	03.35833	15	05	57.85	-18	41	26.0			688
1439	1981	05	03.39583	15	05	56.34	-18	41	22.0			688
1450	1981	05	05.27917	15	50	42.70	-17	31	43.6		17.0	688
1450	1981	05	05.30278	15	50	41.42	-17	31	41.0			688
1497	1981	05	03.35833	15	12	35.21	-19	29	53.4			688
1497	1981	05	03.39583	15	12	33.24	-19	29	46.3			688
1536	1981	05	05.35139	17	08	58.61	-21	02	43.2			688
1536	1981	05	05.40000	17	08	57.01	-21	02	37.3		1	688
1536	1981	05	08.38958	17	07	11.06	-20	57	18.7		1	688
1536	1981	05	08.43264	17	07	09.10	-20	57	13.2			688
1666	1981	05	02.15694	12	12	28.82	-05	25	58.4			688
1666	1981	05	02.25208	12	12	25.54	-05	25	29.2			688
1708	1981	05	03.28681	14	14	21.34	-09	43	30.7		2	688
1708	1981	05	03.32292	14	14	19.71	-09	43	21.0			688
1720	1981	05	05.32778	16	36	43.69	-20	56	44.9		1	688
1720	1981	05	05.37569	16	36	41.44	-20	56	42.6			688
1738	1981	05	03.21528	13	11	10.79	-05	10	48.8			688
1738	1981	05	03.26458	13	11	07.91	-05	10	40.8			688
1753	1981	05	05.27917	15	40	09.59	-17	44	01.5			688
1753	1981	05	05.30278	15	40	08.40	-17	44	01.9			688
1762	1981	05	05.35139	17	17	24.61	-19	53	15.8			688
1762	1981	05	08.38958	17	15	51.61	-19	49	24.2			688
1801	1981	05	02.22361	10	59	48.26	+21	05	56.8			688
1801	1981	05	02.27986	10	59	48.39	+21	05	40.0			688
1805	1981	05	03.21528	13	21	26.04	-05	23	56.7			688
1805	1981	05	03.26458	13	21	23.98	-05	23	49.1			688
1808	1981	05	03.28681	14	15	59.27	-14	59	12.0		3	688
1808	1981	05	03.32292	14	15	57.43	-14	59	05.5			688
1841	1981	05	03.30486	14	59	16.53	-17	02	38.9		16.5	688
1841	1981	05	03.34028	14	59	14.72	-17	02	33.2			688
1841	1981	05	03.35833	14	59	14.15	-17	02	32.7		16.8	688
1841	1981	05	03.39583	14	59	12.37	-17	02	26.4			688
1879	1981	05	03.35833	15	11	14.69	-18	55	50.3		1	688
1879	1981	05	03.39583	15	11	12.40	-18	55	40.2			688
1972	1981	05	03.32292	14	10	11.80	-12	02	33.0			688
1976	1981	05	03.21528	13	22	01.79	-04	40	50.0		17.0	688
1976	1981	05	03.26458	13	21	59.28	-04	40	40.4			688
2012	1981	05	03.28681	14	06	56.54	-17	32	34.8			688
2012	1981	05	03.32292	14	06	54.30	-17	32	23.0			688
2016	1981	05	03.28681	14	21	43.93	-14	37	30.7		3	688
2016	1981	05	03.32292	14	21	42.26	-14	37	21.6		2	688
2045	1981	05	02.15694	12	08	53.64	-02	45	54.0			688

2045		1981	05	02.25208	12	08	50.92	-02	45	56.1			688
2056		1981	05	05.32778	16	51	11.34	-20	39	57.8			688
2056		1981	05	05.37569	16	51	09.28	-20	39	49.8			688
2110		1981	05	05.27917	15	40	12.15	-17	27	25.9		1	688
2181		1981	05	02.15694	11	53	50.82	+01	33	02.3			688
2181		1981	05	02.25208	11	53	48.50	+01	32	39.9			688
2182		1981	05	03.35833	15	12	48.95	-17	40	22.3			688
2182		1981	05	03.39583	15	12	47.06	-17	40	17.3			688
2191		1981	05	03.35833	15	10	40.84	-22	09	45.4			688
2191		1981	05	03.39583	15	10	39.05	-22	09	33.8		1	688
2228		1981	05	03.30486	14	41	36.46	-12	50	20.5			688
2228		1981	05	03.34028	14	41	34.40	-12	50	09.1			688
2228		1981	05	08.41181	14	37	46.91	-12	32	22.7			688
2270		1981	05	05.32778	16	47	16.48	-21	39	37.5			688
2270		1981	05	05.37569	16	47	14.86	-21	39	36.3			688
2321		1981	05	05.32778	16	39	54.32	-25	36	06.9		3	688
2369		1981	05	05.27917	15	36	59.70	-19	43	13.1	16.8	1	688
2369		1981	05	05.30278	15	36	58.61	-19	43	11.1			688
2371		1981	05	02.15694	12	11	50.89	-03	05	48.3	17.0		688
2371		1981	05	02.25208	12	11	48.53	-03	05	27.5			688
2375		1981	04	05.13194	07	51	41.43	+28	14	54.0	16.8		688
2375		1981	04	05.17014	07	51	42.60	+28	14	52.2			688
2375		1981	05	02.18056	08	14	14.21	+27	36	24.7	17.0		688
2375		1981	05	02.20000	08	14	15.46	+27	36	19.6			688
2376		1981	05	03.21528	13	30	27.45	-06	18	59.8	16.8		688
2376		1981	05	03.26458	13	30	25.07	-06	18	51.4			688
1941	SS	1981	05	03.35833	15	03	43.88	-20	34	07.6	17.0		688
1941	SS	1981	05	03.39583	15	03	41.46	-20	33	52.7			688
1975	FW	1981	05	03.30486	14	54	08.55	-14	06	35.5	16.2		688
1975	FW	1981	05	03.34028	14	54	06.62	-14	06	34.7			688
1975	FW	1981	05	08.36528	14	49	33.68	-14	04	36.3	16.5		688
1975	FW	1981	05	08.41181	14	49	31.02	-14	04	35.3			688
1975	FX	1981	05	03.30486	14	41	51.98	-12	26	40.7	16.8		688
1975	FX	1981	05	03.34028	14	41	49.94	-12	26	38.6			688
1975	FX	1981	05	08.36528	14	37	29.11	-12	21	27.8	16.8		688
1975	FX	1981	05	08.41181	14	37	26.74	-12	21	26.4			688
1975	XA3	1981	05	05.32778	16	50	00.65	-25	28	13.0	17.2	2	688
1975	XA3	1981	05	05.37569	16	49	58.60	-25	28	20.9			688
1976	AG	1981	05	03.28681	14	06	52.77	-11	14	23.0	17.0		688
1976	AG	1981	05	03.32292	14	06	50.90	-11	14	05.0			688
1977	RC7	1981	05	03.28681	14	25	18.25	-11	10	07.4	17.0		688
1977	RC7	1981	05	03.32292	14	25	16.50	-11	09	58.3			688
1978	VG3	1981	05	05.32778	16	54	07.94	-24	25	59.4	16.8		688
1978	VG3	1981	05	05.37569	16	54	06.10	-24	26	05.2			688
1978	VQ5	1981	05	05.32778	16	42	55.17	-21	28	05.6	17.2		688
1978	VQ5	1981	05	05.37569	16	42	53.52	-21	28	04.6			688
1978	VJ7	1981	05	05.27917	15	41	34.04	-18	53	01.4	17.0	1	688
1978	VJ7	1981	05	05.30278	15	41	32.93	-18	52	57.4			688
1980	CF	1981	05	05.35139	17	17	21.71	-16	39	49.3	17.0		688
1980	CF	1981	05	05.40000	17	17	20.05	-16	39	44.3		1	688
1980	CF	1981	05	08.38958	17	15	54.51	-16	34	57.6	17.0		688
1980	CF	1981	05	08.43264	17	15	53.31	-16	34	53.3			688
1981	CA	1981	05	02.22361	11	04	18.00	+22	22	11.5	17.5		688
1981	CA	1981	05	02.27986	11	04	17.61	+22	22	00.6			688
1981	CB	1981	05	03.16042	10	43	24.50	+13	58	03.0	16.8		688
1981	CB	1981	05	03.23889	10	43	25.75	+13	58	03.9			688
1981	FB	1981	05	02.15694	11	55	50.10	+01	24	18.1	17.2		688
1981	FB	1981	05	02.25208	11	55	49.61	+01	24	53.5			688
1981	FE	1981	05	02.15694	11	50	04.27	-02	13	37.7	17.0		688

1981	FE		1981	05	02.25208	11	50	02.16	-02	13	45.3			688
1981	FF		1981	05	02.15694	11	52	38.88	-02	50	39.4	16.5		688
1981	FF		1981	05	02.25208	11	52	36.30	-02	50	59.1			688
1981	FN		1981	05	03.21528	13	24	56.69	-00	33	26.9	16.8		688
1981	FN		1981	05	03.26458	13	24	54.09	-00	33	29.6			688
1981	GB		1981	05	02.15694	12	09	45.47	+00	15	50.5	17.0		688
1981	GB		1981	05	02.25208	12	09	44.68	+00	16	05.5			688
1981	GC		1981	05	02.15694	12	07	16.25	-03	16	54.8	17.0		688
1981	GC		1981	05	02.25208	12	07	14.67	-03	16	42.9			688
1981	GG		1981	05	03.21528	13	13	32.41	-04	29	22.1	17.2		688
1981	GG		1981	05	03.26458	13	13	29.68	-04	29	36.0			688
1981	GJ		1981	05	03.21528	13	26	28.28	-01	22	28.1	15.4		688
1981	GJ		1981	05	03.26458	13	26	26.31	-01	22	00.3			688
1981	GN		1981	05	02.15694	12	13	14.85	-02	24	05.1	16.8		688
1981	GN		1981	05	02.25208	12	13	12.61	-02	24	06.0			688
1981	GE1		1981	05	03.35833	15	08	02.12	-22	09	02.1	15.8		688
1981	GE1		1981	05	03.39583	15	08	00.04	-22	08	55.8			688
1981	JB	*	1981	05	02.15694	12	11	35.96	-03	21	06.7	17.2	4	688
1981	JB		1981	05	02.25208	12	11	33.94	-03	20	44.1			688
1981	JE	*	1981	05	03.28681	14	11	53.95	-17	12	30.5	16.8	4	688
1981	JE		1981	05	03.32292	14	11	51.93	-17	12	16.5			688
1981	JF	*	1981	05	03.28681	14	12	02.09	-10	49	27.6	17.0	4	688
1981	JF		1981	05	03.32292	14	11	59.83	-10	49	13.2			688
1981	JG	*	1981	05	03.28681	14	20	40.43	-17	05	41.6	17.0	5	688
1981	JG		1981	05	03.32292	14	20	38.71	-17	05	23.9			688
1981	JH	*	1981	05	03.30486	14	33	03.79	-14	19	24.1	17.0	4	688
1981	JH		1981	05	03.34028	14	33	01.45	-14	19	19.0			688
1981	JJ	*	1981	05	03.30486	14	35	09.96	-15	21	32.0	17.2	4	688
1981	JJ		1981	05	03.34028	14	35	08.18	-15	21	25.3			688
1981	JK	*	1981	05	03.30486	14	35	34.56	-11	55	24.0	15.8	4	688
1981	JK		1981	05	03.34028	14	35	32.29	-11	55	13.2			688
1981	JK		1981	05	08.36528	14	30	36.53	-11	31	59.6	16.0		688
1981	JK		1981	05	08.41181	14	30	33.73	-11	31	46.5			688
1981	JL	*	1981	05	03.30486	14	36	55.20	-14	57	43.7	16.5	4	688
1981	JL		1981	05	03.34028	14	36	53.10	-14	57	38.0			688
1981	JM	*	1981	05	03.30486	14	50	11.54	-12	36	14.2	16.8	4	688
1981	JM		1981	05	03.34028	14	50	09.86	-12	36	06.4			688
1981	JM		1981	05	08.41181	14	46	09.75	-12	18	02.7			688
1981	JN	*	1981	05	03.30486	14	57	16.23	-13	19	49.0	16.0	4	688
1981	JN		1981	05	03.34028	14	57	14.26	-13	19	29.7			688
1981	JN		1981	05	08.36528	14	52	57.04	-12	33	17.8	16.5		688
1981	JN		1981	05	08.41181	14	52	54.46	-12	32	52.8			688
1981	JO	*	1981	05	03.30486	14	57	21.58	-17	13	51.8	17.0	4	688
1981	JO		1981	05	03.34028	14	57	19.03	-17	13	30.0			688
1981	JP	*	1981	05	03.30486	14	59	13.09	-10	42	47.2	16.0	4	688
1981	JP		1981	05	03.34028	14	59	10.94	-10	42	37.5			688
1981	JP		1981	05	08.36528	14	54	18.63	-10	20	34.2	16.0		688
1981	JP		1981	05	08.41181	14	54	15.75	-10	20	23.1			688
1981	JQ	*	1981	05	03.35833	15	04	58.09	-19	48	11.0	16.8	4	688
1981	JQ		1981	05	03.39583	15	04	55.79	-19	48	07.9			688
1981	JR	*	1981	05	03.35833	15	11	31.48	-18	34	16.0	16.8	4	688
1981	JR		1981	05	03.39583	15	11	30.31	-18	34	06.1			688
1981	JS	*	1981	05	05.27917	15	33	57.04	-19	14	41.6	16.5	4	688
1981	JS		1981	05	05.30278	15	33	55.93	-19	14	33.8			688
1981	JT	*	1981	05	05.27917	15	44	12.56	-19	18	23.9	16.5	4	688
1981	JT		1981	05	05.30278	15	44	11.20	-19	18	17.1			688
1981	JU	*	1981	05	05.27917	15	45	39.44	-21	35	36.0	16.8	7	688
1981	JU		1981	05	05.30278	15	45	38.13	-21	35	40.3		1	688
1981	JV	*	1981	05	05.27917	15	49	22.23	-17	45	33.6	16.5	4	688

1981	JV		1981	05	05.30278	15	49	21.07	-17	45	31.7		688
1981	JW	*	1981	05	05.27917	15	54	05.13	-20	27	50.2	16.8 4	688
1981	JW		1981	05	05.30278	15	54	04.17	-20	27	37.2		688
1981	JX	*	1981	05	05.27917	15	58	41.95	-18	37	10.4	16.5 4	688
1981	JX		1981	05	05.30278	15	58	40.85	-18	37	08.4		688
1981	JY	*	1981	05	05.35139	17	12	43.97	-21	38	08.6	16.8 5	688
1981	JY		1981	05	05.40000	17	12	42.27	-21	38	25.8		688
1981	JA1	*	1981	05	03.35833	15	05	41.02	-19	53	10.5	17.2 4	688
1981	JA1		1981	05	03.39583	15	05	38.51	-19	53	21.7	1	688
1981	JB1	*	1981	05	05.32778	16	42	09.58	-22	34	49.0	16.8 4	688
1981	JB1		1981	05	05.37569	16	42	07.67	-22	34	55.7		688
1981	JC1	*	1981	05	05.35139	17	24	11.75	-14	01	04.4	16.5 4	688
1981	JC1		1981	05	05.40000	17	24	11.03	-14	00	55.2		688
1981	JC1		1981	05	08.38958	17	23	27.01	-13	51	10.6	16.8	688
1981	JC1		1981	05	08.43264	17	23	26.08	-13	51	02.8		688

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

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

Object			Date	UT	R. A. (1950)			Decl.			Mag.	N	Obs.
266			1976	05 03.18618	15	06	25.09	-20	27	38.9	14.0		809
499			1976	05 03.18618	15	02	15.91	-18	33	05.4	16.5		809
597			1976	05 03.18618	15	13	53.98	-22	24	26.2	14.5		809
1340			1976	05 03.18618	15	00	48.12	-17	42	48.3	16.0		809
1383			1976	05 03.18618	15	12	57.12	-17	54	23.8	17.0		809
1537			1976	05 03.18618	15	00	33.29	-17	29	58.7	18.0		809
1967	JO		1976	05 03.18618	14	54	20.39	-20	40	22.6	16.5		809
1976	JJ3	*	1976	05 03.18618	14	52	31.53	-20	38	23.2	18.5		809
1976	JK3	*	1976	05 03.18618	14	52	38.75	-17	31	03.1	18.0		809
1976	JL3	*	1976	05 03.18618	14	52	42.35	-21	27	48.3	18.5		809
1976	JM3	*	1976	05 03.18618	14	52	42.79	-19	39	44.9	18.0		809
1976	JN3	*	1976	05 03.18618	14	52	57.84	-22	05	12.4	18.5		809
1976	JO3	*	1976	05 03.18618	14	52	59.01	-20	44	45.9	17.5		809
1976	JP3	*	1976	05 03.18618	14	53	36.92	-20	19	49.4	18.0		809
1976	JQ3	*	1976	05 03.18618	14	53	39.58	-19	49	40.9	18.5		809
1976	JR3	*	1976	05 03.18618	14	53	54.18	-19	44	25.4	19.0		809
1976	JS3	*	1976	05 03.18618	14	53	55.54	-20	05	19.7	18.5		809
1976	JT3	*	1976	05 03.18618	14	54	29.60	-18	40	22.7	19.0		809
1976	JU3	*	1976	05 03.18618	14	54	31.34	-20	58	55.5	19.0		809
1976	JV3	*	1976	05 03.18618	14	54	35.68	-19	47	03.0	17.0		809
1976	JW3	*	1976	05 03.18618	14	55	04.77	-18	23	35.5	18.5		809
1976	JX3	*	1976	05 03.18618	14	55	22.20	-22	21	40.4	18.5		809
1976	JY3	*	1976	05 03.18618	14	55	44.19	-21	04	37.5	18.5		809
1976	JZ3	*	1976	05 03.18618	14	55	57.79	-19	36	54.3	19.5		809
1976	JA4	*	1976	05 03.18618	14	56	07.04	-21	50	05.6	19.0		809
1976	JB4	*	1976	05 03.18618	14	56	25.86	-20	42	41.5	18.5		809
1976	JC4	*	1976	05 03.18618	14	56	44.17	-17	23	53.1	18.0		809
1976	JD4	*	1976	05 03.18618	14	56	46.55	-17	16	26.9	19.0		809
1976	JE4	*	1976	05 03.18618	14	57	14.37	-19	09	47.7	19.0		809
1976	JF4	*	1976	05 03.18618	14	57	15.88	-21	31	47.7	18.0		809
1976	JG4	*	1976	05 03.18618	14	57	30.32	-19	56	50.0	17.5		809
1976	JH4	*	1976	05 03.18618	14	57	49.21	-18	45	16.4	18.0		809
1976	JJ4	*	1976	05 03.18618	14	57	59.95	-21	11	06.8	18.5		809
1976	JK4	*	1976	05 03.18618	14	58	52.63	-17	39	57.7	17.5		809
1976	JL4	*	1976	05 03.18618	14	59	11.46	-17	17	47.8	18.5		809
1976	JM4	*	1976	05 03.18618	14	59	15.36	-17	31	15.1	18.0		809
1976	JN4	*	1976	05 03.18618	14	59	25.65	-17	51	04.9	18.5		809
1976	JO4	*	1976	05 03.18618	14	59	31.34	-21	29	34.6	18.5		809

1976	JP4	*	1976	05	03.18618	14	59	31.58	-21	19	15.3	19.0	809
1976	JQ4	*	1976	05	03.18618	14	59	33.65	-21	57	14.9	19.0	809
1976	JR4	*	1976	05	03.18618	14	59	43.75	-17	20	29.9	18.5	809
1976	JS4	*	1976	05	03.18618	14	59	44.46	-18	05	24.9	17.0	809
1976	JT4	*	1976	05	03.18618	15	00	00.17	-22	17	03.9	18.0	809
1976	JU4	*	1976	05	03.18618	15	00	17.97	-19	48	23.5	19.0	809
1976	JV4	*	1976	05	03.18618	15	00	31.76	-17	37	20.2	19.0	809
1976	JW4	*	1976	05	03.18618	15	00	32.99	-17	44	28.7	19.0	809
1976	JX4	*	1976	05	03.18618	15	00	33.11	-17	42	20.9	18.0	809
1976	JY4	*	1976	05	03.18618	15	00	46.73	-19	55	14.1	19.0	809
1976	JZ4	*	1976	05	03.18618	15	01	06.01	-20	48	36.7	18.5	809
1976	JA5	*	1976	05	03.18618	15	01	09.70	-22	34	47.5	17.0	1 809
1976	JB5	*	1976	05	03.18618	15	01	17.76	-22	06	23.2	18.5	809
1976	JC5	*	1976	05	03.18618	15	01	19.25	-20	15	59.7	18.5	809
1976	JD5	*	1976	05	03.18618	15	01	24.37	-18	32	08.0	19.0	809
1976	JE5	*	1976	05	03.18618	15	02	14.91	-19	48	01.3	18.0	809
1976	JF5	*	1976	05	03.18618	15	02	21.98	-20	01	09.8	18.0	809
1976	JG5	*	1976	05	03.18618	15	02	41.14	-19	11	23.5	18.0	809
1976	JH5	*	1976	05	03.18618	15	02	49.72	-17	39	06.7	17.5	809
1976	JJ5	*	1976	05	03.18618	15	02	52.18	-17	46	28.5	19.0	809
1976	JK5	*	1976	05	03.18618	15	02	58.39	-18	54	45.1	19.0	809
1976	JL5	*	1976	05	03.18618	15	03	11.74	-18	52	56.2	19.0	809
1976	JM5	*	1976	05	03.18618	15	03	16.95	-22	24	59.3	18.5	809
1976	JN5	*	1976	05	03.18618	15	03	43.97	-20	41	24.9	19.5	809
1976	JO5	*	1976	05	03.18618	15	03	46.74	-17	45	58.2	19.0	809
1976	JP5	*	1976	05	03.18618	15	03	50.46	-20	39	11.6	17.5	809
1976	JQ5	*	1976	05	03.18618	15	04	10.53	-17	42	52.6	18.5	809
1976	JR5	*	1976	05	03.18618	15	04	22.37	-22	37	11.9	18.0	1 809
1976	JS5	*	1976	05	03.18618	15	04	23.70	-17	41	18.1	17.5	809
1976	JT5	*	1976	05	03.18618	15	04	26.60	-20	30	48.0	19.0	809
1976	JU5	*	1976	05	03.18618	15	05	08.15	-18	30	24.8	18.5	809
1976	JV5	*	1976	05	03.18618	15	05	49.09	-18	43	56.7	18.0	809
1976	JW5	*	1976	05	03.18618	15	06	35.89	-21	02	11.8	18.5	2 809
1976	JX5	*	1976	05	03.18618	15	06	40.14	-17	56	07.8	19.0	809
1976	JY5	*	1976	05	03.18618	15	06	59.99	-19	43	03.4	18.0	809
1976	JZ5	*	1976	05	03.18618	15	07	06.75	-20	33	11.4	17.5	809
1976	JA6	*	1976	05	03.18618	15	07	20.08	-18	20	36.4	19.0	809
1976	JB6	*	1976	05	03.18618	15	07	54.70	-21	06	57.8	18.5	809
1976	JC6	*	1976	05	03.18618	15	08	44.80	-17	25	02.8	18.0	809
1976	JD6	*	1976	05	03.18618	15	10	06.91	-20	23	05.9	19.5	809
1976	JE6	*	1976	05	03.18618	15	10	26.54	-18	11	04.0	19.5	809
1976	JF6	*	1976	05	03.18618	15	10	36.75	-21	47	24.4	18.0	809
1976	JG6	*	1976	05	03.18618	15	10	51.63	-18	16	26.2	17.5	809
1976	JH6	*	1976	05	03.18618	15	10	58.11	-19	50	02.0	18.5	809
1976	JJ6	*	1976	05	03.18618	15	11	00.00	-20	53	08.8	18.5	809
1976	JK6	*	1976	05	03.18618	15	11	28.45	-22	20	17.5	19.5	809
1976	JL6	*	1976	05	03.18618	15	11	36.12	-18	54	21.9	17.0	809
1976	JM6	*	1976	05	03.18618	15	11	51.63	-17	32	29.8	18.0	809
1976	JN6	*	1976	05	03.18618	15	12	18.37	-17	16	33.2	18.5	1 809
1976	JO6	*	1976	05	03.18618	15	12	29.91	-18	16	33.4	18.0	809
1976	JP6	*	1976	05	03.18618	15	12	34.65	-18	56	36.7	18.5	809
1976	JQ6	*	1976	05	03.18618	15	13	03.19	-17	58	13.0	19.5	809
1976	JR6	*	1976	05	03.18618	15	13	03.89	-20	31	04.1	18.0	809
1976	JS6	*	1976	05	03.18618	15	13	18.88	-20	31	54.0	18.0	809
1976	JT6	*	1976	05	03.18618	15	13	35.59	-18	02	20.2	17.0	809
1976	JU6	*	1976	05	03.18618	15	14	01.62	-20	39	06.2	17.5	1 809
1976	JV6	*	1976	05	03.18618	15	14	02.15	-19	21	56.3	18.5	1 809
1976	JW6	*	1976	05	03.18618	15	14	25.76	-21	55	33.4	18.5	1 809

Note 1: near edge of plate. 2: image overlaps that of star.

OBSERVATIONS MADE AT TOKAI BY T. FURUTA. MAINLY FROM NIHONDAIRA OBS. CIRC. NOS. 1191, 1192 AND 1197.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1976 AG		1981 04	25.58264	14 13 09.77	-12 18 18.8		879
1976 AG		1981 04	25.59502	14 13 09.22	-12 18 12.4		879
1978 VJ7		1981 05	04.63646	15 42 02.63	-18 54 47.0		879
1978 VJ7		1981 05	04.64896	15 42 02.13	-18 54 45.2		879
1981 CA		1981 04	07.49167	11 12 09.98	+22 56 23.7		879
1981 CA		1981 04	07.50590	11 12 09.58	+22 56 23.4		879
1981 GA		1981 04	23.49479	12 25 18.61	+00 04 16.7	16.5	879
1981 GA		1981 04	23.50903	12 25 18.04	+00 04 20.6		879
1981 GA		1981 04	23.52292	12 25 17.61	+00 04 22.8		879
1981 GA		1981 04	25.51979	12 24 12.22	+00 14 40.8		879
1981 GA		1981 04	25.53333	12 24 11.89	+00 14 44.0		879
1981 GA		1981 04	25.54740	12 24 11.48	+00 14 47.2		879
1981 GA		1981 04	28.50556	12 22 46.69	+00 28 22.1	17	879
1981 GA		1981 04	28.52118	12 22 46.26	+00 28 26.1		879
1981 GA		1981 04	28.53646	12 22 45.70	+00 28 28.7		879
1981 GA		1981 05	04.54549	12 20 39.5	+00 49 51	17	879
1981 GA		1981 05	04.58160	12 20 38.99	+00 49 55.6		879
1981 JA	*	1981 05	04.60451	14 55 12.66	-14 12 00.8	17	879
1981 JA		1981 05	04.61771	14 55 11.97	-14 11 57.5		879
1981 JC	*	1981 05	04.63646	15 44 49.40	-19 21 45.1	17	879
1981 JC		1981 05	04.64896	15 44 48.95	-19 21 43.1		879

* * * * *

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, E = E. Bowell, 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
1940 EF	13.0	400401	318.71	151.33	91.56	3.13	0.1586	2.9546	10	5		M
1942 TJ	12.2	421004	329.24	115.11	291.76	8.55	0.1225	3.1956	34	4		O
1969 TK	12.5	691006	352.74	92.53	286.96	3.61	0.1244	3.9855	9	4	3	M
1973 SX3	12.5	731025	24.21	311.72	42.47	7.52	0.1479	3.1461	39	6		M
1973 SZ3	15.5	731025	346.17	14.52	32.14	2.42	0.1311	2.1732	39	5		M
1973 UB5	13.5	731025	3.32	69.47	311.62	0.21	0.1688	3.2030	5	5	1	M
1973 UE5	15.0	731025	319.53	46.56	37.37	2.06	0.1961	2.9833	4	4	1	M
1973 UF5	10.5	731025	9.73	347.75	26.08	20.28	0.0272	5.2253	7	7	1	M
1973 UG5	13.0	731025	279.51	272.62	208.19	9.79	0.1201	2.6363	7	7		M
1973 UH5	14.0	731025	356.50	188.70	201.69	11.02	0.0550	2.5148	4	4	1	M
1973 UJ5	13.5	731025	358.22	200.09	188.21	1.86	0.0743	2.8831	7	7	1	M
1973 UK5	16.0	731025	314.79	42.23	47.18	2.88	0.1833	2.4334	7	6		M
1973 UL5	14.0	731025	325.31	84.70	349.85	0.34	0.1711	3.1600	7	6	1	M
1973 UN5	15.5	731025	244.10	111.84	44.52	3.97	0.1498	2.3961	6	4		M
1973 UO5	17.0	731025	349.61	238.52	165.82	0.57	0.2204	2.3320	6	5		M
1973 UP5	14.5	731025	83.91	110.51	191.53	4.01	0.0064	2.4820	7	6	1	M
1973 UQ5	15.5	731025	356.06	203.92	189.27	1.70	0.1594	2.3707	7	6	1	M
1973 UR5	15.5	731025	351.36	11.33	29.61	2.92	0.1893	2.3905	7	6		M
1973 US5	16.5	731025	327.12	251.01	187.36	1.64	0.2201	2.2597	7	6		M
1973 UT5	14.0	731025	277.25	94.20	29.96	8.93	0.1208	2.3334	7	6		M
1973 UU5	14.0	731025	324.14	262.73	179.94	1.25	0.2304	3.1054	7	6		M
1973 UV5	14.5	731025	300.43	252.95	211.09	4.38	0.1568	2.2498	7	6		M
1978 JE	13.5	780512	298.60	66.34	222.59	11.82	0.0061	2.4851	8	3		M
1978 RU5	14.0	780929	299.69	259.96	192.97	12.74	0.1530	2.6074	25	4		B
1978 RV5	14.5	780929	11.44	357.83	2.12	3.37	0.1182	2.2490	21	3		B

1978	RX5	15.0	780929	39.46	294.41	31.42	6.00	0.1118	2.3035	25	4		M
1978	RY5	14.5	780929	325.61	52.78	9.78	9.45	0.1516	2.5722	25	4		B
1978	RA6	15.5	780929	317.79	44.27	24.60	5.76	0.1237	2.2561	25	4		B
1978	RC6	13.0	780929	286.75	69.50	30.27	10.40	0.0673	3.0182	25	4		B
1978	RF6	13.5	780929	10.57	186.59	177.61	8.15	0.1859	3.1076	51	5		M
1978	RG6	14.5	780929	164.24	164.82	48.67	1.38	0.0738	2.2532	25	4		B
1978	SQ4	16.5	780929	349.49	37.05	354.09	4.48	0.2215	2.3450	10	3		B
1978	SR4	16.0	780929	358.93	163.33	212.48	1.16	0.1233	2.1858	10	3	1	M
1978	SU4	16.5	780929	29.09	112.24	215.77	4.67	0.2453	2.3867	10	3		B
1978	SV4	15.0	780929	29.34	154.15	171.31	1.06	0.2832	3.1464	10	3		B
1978	SX4	15.5	780929	342.79	209.89	194.30	11.32	0.2540	2.3929	36	4		M
1978	SA5	17.0	780929	340.98	207.10	195.74	0.78	0.1919	2.1713	10	3	1	M
1978	SB5	13.5	780929	56.99	173.60	126.54	2.03	0.1985	3.2111	10	3	1	M
1978	SC5	16.5	780929	6.21	301.23	64.12	2.16	0.2061	2.4255	10	3		B
1978	SD5	16.0	780929	4.10	325.06	44.78	3.88	0.1388	2.3191	10	3		B
1978	SE5	15.0	780929	36.27	127.07	203.97	8.00	0.1365	2.5839	10	3		B
1978	SF5	16.5	780929	24.50	304.65	32.27	6.19	0.2115	2.2672	10	3		B
1978	SG5	15.5	780929	351.89	16.18	11.60	7.15	0.2128	2.1972	10	3		B
1978	SJ5	16.0	780929	8.38	331.55	31.06	5.83	0.2084	2.3960	10	3		B
1978	SL5	13.0	780929	251.09	176.99	337.34	1.38	0.2383	2.9517	10	3		B
1978	SM5	14.0	780929	216.52	120.21	48.32	4.39	0.0794	2.6487	10	3		B
1978	SN5	16.5	780929	29.08	158.96	169.44	2.33	0.2523	2.3641	10	3		B
1978	SO5	16.5	780929	20.90	299.85	41.97	3.23	0.2315	2.2306	10	3		B
1978	SP5	14.5	780929	0.30	193.42	185.96	3.90	0.1119	2.7712	36	4		M
1978	SQ5	13.5	780929	359.02	343.59	39.68	1.55	0.0227	3.1845	10	3	1	M
1978	SR5	15.0	780929	283.06	84.98	39.77	5.58	0.2399	2.4776	10	3	1	B
1978	SS5	15.5	780929	20.68	155.92	192.53	2.61	0.1983	2.6136	10	3		B
1978	ST5	13.0	780929	317.35	18.88	56.68	2.61	0.1236	3.1157	10	3		B
1978	SU5	13.5	780929	225.26	302.81	225.01	5.91	0.0503	2.3141	10	3		B
1978	TA2	11.5	780929	114.79	90.28	189.05	9.33	0.0238	3.0411	12	3		M
1978	UF	14.0	781019	59.07	118.64	194.06	12.06	0.1624	2.5821	29	3		B
1978	UG	15.0	781019	19.76	312.51	46.18	3.19	0.2117	2.4369	29	3		B
1978	UJ	13.0	781019	135.51	164.22	88.71	2.41	0.0223	2.6487	29	3		B
1978	UV	14.5	781019	347.13	7.91	45.97	6.27	0.2626	2.6680	40	6		M
1978	UO2	13.5	781019	43.22	279.62	38.19	14.54	0.2417	3.1197	36	5		M
1978	YM	14.5	781218	46.41	14.99	0.71	7.86	0.1437	2.2356	9	3		B
1978	YQ	12.5	781218	112.53	324.03	349.09	9.63	0.0943	2.9933	9	3		B
1979	OF13	12.5	790904	77.57	103.03	148.52	10.50	0.0480	3.0134	55	4		B
1979	OR13	14.5	790815	303.40	65.96	337.41	5.22	0.1365	2.2257	27	3		B
1979	QK6	16.0	790815	6.61	200.07	119.71	4.02	0.1968	2.1759	36	3		B
1979	QL6	15.0	790815	340.00	346.70	12.09	2.32	0.1632	2.1984	36	3		B
1980	TY4	13.5	801008	2.60	132.38	236.26	7.28	0.0298	2.3850	2	3	1	M
1980	TZ4	15.5	801008	39.56	354.40	316.98	7.29	0.2382	2.3762	3	4		M
1980	TA5	14.5	801008	343.27	102.14	296.87	6.93	0.2063	2.7297	3	4		M
1980	TB5	14.0	801008	357.46	32.39	343.24	9.77	0.0599	2.4647	3	4	1	M
1980	TC5	14.5	801008	13.26	118.84	233.04	7.21	0.2060	2.7053	3	3	1	M
1980	TD5	15.0	801008	348.93	52.38	334.72	7.09	0.1196	2.3108	3	4		M
1980	TE5	14.0	801008	158.03	223.75	343.11	8.25	0.2230	2.1705	2	3		M
1980	TF5	15.0	801008	29.45	352.88	342.99	10.10	0.1267	2.4706	2	3		M
1980	TG5	13.0	801008	24.17	106.73	233.71	10.83	0.1501	2.9879	3	4		M
1980	TK5	14.0	801008	358.99	139.54	234.47	6.41	0.1131	2.9546	2	3	1	M
1980	TL5	16.0	801008	340.45	122.19	286.30	5.19	0.2677	2.5222	3	4		M
1980	TM5	16.0	801008	351.06	123.89	265.71	3.90	0.2670	2.5095	2	3		M
1980	TO5	12.5	801008	167.74	344.78	218.81	12.85	0.0731	2.9578	2	3		M
1980	TP5	16.0	801008	330.53	80.48	346.56	5.41	0.2958	2.1736	2	3	1	M
1980	TQ5	12.5	801008	68.28	356.08	282.89	4.33	0.2300	3.2095	3	4	1	M
1980	TR5	15.0	801008	13.73	34.90	320.18	4.15	0.1610	2.1651	2	3	1	M
1980	TS5	14.5	801008	311.33	90.50	347.93	14.03	0.1434	2.8412	2	3		M
1980	TV5	14.5	801008	359.53	33.70	342.97	10.31	0.0618	2.8188	2	3	1	M

1980 TW5	13.5	801008	35.31	42.17	278.02	3.60	0.2284	3.2079	3	4	1 M
1980 TX5	14.0	801008	179.37	304.45	249.48	5.86	0.1106	2.2739	2	3	1 M
1981 AA	14.0	810205	38.74	307.02	110.26	23.96	0.2952	2.3288	68	0	M
1981 CA	11.5	810225	150.58	270.20	96.11	13.02	0.1639	3.0941	82	0	M
1981 FB	14.2	810406	41.87	300.60	192.59	13.11	0.1457	2.6206	33	9	E
1981 FE	13.2	810406	350.85	196.40	2.86	11.77	0.1321	3.1527	33	0	E
1981 FK	14.5	810406	57.87	90.89	36.21	5.04	0.0864	2.3774	13	0	M
1981 FN	14.7	810406	27.71	100.06	67.80	6.83	0.0915	2.2260	34	8	E
1981 FT	15.0	810406	355.42	122.76	59.98	3.98	0.0876	2.1794	6	6	M
1981 GA	14.0	810406	46.84	321.19	176.86	3.98	0.0847	2.2489	38	0	M
1981 GB	14.3	810406	350.82	19.02	188.20	3.80	0.2852	3.0277	31	8	E
1981 GC	14.4	810406	341.87	276.36	301.72	1.37	0.1937	2.6327	31	0	E
1981 GG	14.6	810406	24.88	128.21	35.96	14.14	0.1846	2.6452	28	6	E
1981 GJ	12.9	810406	323.30	68.91	188.29	10.38	0.2165	2.6080	28	6	E
1981 GP	15.0	810406	42.68	102.35	11.61	24.15	0.3425	2.4560	12	0	M
1981 GQ	14.5	810406	15.20	151.59	13.36	14.92	0.2776	3.2199	13	0	M
1981 GR	13.5	810406	92.92	271.35	180.77	3.69	0.0648	2.7494	12	0	M
1981 GX	15.5	810406	34.21	253.90	253.55	20.37	0.0987	1.9433	10	8	M
1981 GD1	15.0	810406	338.20	346.59	229.82	3.21	0.1611	3.1181	2	6	M
1981 GF1	14.5	810406	306.71	285.40	338.57	7.03	0.1675	3.2005	8	6	1 M
1981 JA	13.0	810426	300.88	143.87	142.52	1.63	0.0392	3.1180	8	6	M

Note 1: e assumed. 2: double designation 1969 TK = 1969 UV2 (M). 3 = 1 + 2.

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

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

(2378)* 1935 CY = 1935 EP = A918 RE = 1938 UD1 = 1960 HD = 1967 RB1
= 1970 GP1 = 1972 RH3 = 1977 RR5

Discovered 1935 Feb. 13 by H. van Gent at Johannesburg. The double designation 1935 CY = 1935 EP is by O. Kippes (MPC 1330). The double designation A918 RE = A918 UA (J. Obs. 35, 158) is invalid.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M	216.78151	(1950.0)	P	Q
n	0.20091529	Peri. 265.26876	+0.06475071	-0.99789123
a	2.8870927	Node 181.05106	+0.98506819	+0.06464148
e	0.1442073	Incl. 14.26614	+0.15952431	+0.00587936
P	4.91	B(1,0) 12.0		

Residuals in seconds of arc

180916	024	1.0+	0.2-	600423	760	0.3-	1.1-	700413	805	0.2+	0.2+
350213	078	0.8+	0.0	600426	839	0.7+	3.3+	700413	805	0.2-	0.3-
350225	078	1.4+	1.3-	670912	095	3.0-	1.8-	700413	805	0.1-	0.0
350304	078	1.7-	0.5+	700411	805	0.5+	0.3-	720905	095	1.3+	1.1+
381022	062	1.1-	1.4+	700411	805	0.2-	0.3-	770909	095	1.6+	1.8+
600423	760	0.0	1.6+	700411	805	0.6-	0.4-				

(2379)* 1941 ST = 1935 QD1 = 1953 VL = 1953 XT = 1964 RD = 1965 YD
= 1970 RM = 1971 YA = 1974 FR = 1975 NK = 1976 US5

Discovered 1941 Sept. 21 by Y. Vaisala at Turku. The double designations 1953 VL = 1953 XS (NAZ 12, 23) and 1953 VG = 1953 XT (NAZ 13, 3) are invalid.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 347.28211		(1950.0)	P	Q
n 0.17380216	Peri.	179.36530	+0.86280424	+0.50552179
a 3.1800401	Node	150.26760	-0.46383557	+0.79480701
e 0.2677501	Incl.	0.47028	-0.20106071	+0.33575219
P 5.67	B(1,0)	12.0		

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

350820	078	(8.5-	38.4-)X	531112	062	(68.7+	3.7-)X	700909	095	1.0-	0.4+
410921	062	0.3+	0.3+	531202	024	5.9-	1.2-	711216	095	3.3-	3.4-
410925	062	0.6-	0.2-	531209	210	(29.5+	23.8+)X	740319	095	0.8+	0.5+
410927	062	1.5-	1.1+	640904	760	(0.07-	0.02+)X	750708	095	0.2-	2.3-
411015	062	2.6+	1.1-	651219	330	0.5+	0.5+	761030	095	5.0+	0.1+
411112	062	2.2+	1.5+	651230	330	1.7-	1.3+				

(2380)* 1965 SN = 1939 SD = 1962 XT = 1968 QX1 = 1973 AD2 = 1975 XZ2 = 1978 RB6

Discovered 1965 Sept. 18 at the Purple Mountain Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 260.57372		(1950.0)	P	Q
n 0.30371245	Peri.	107.74912	+0.30743588	-0.95136814
a 2.1919349	Node	324.32733	+0.85981558	+0.28653111
e 0.0601275	Incl.	1.92024	+0.40767676	+0.11313078
P 3.25	B(1,0)	14.0		

Residuals in seconds of arc

390918	062	(18.2+	4.8+)X	651020	330	0.1+	0.4+	730104	095	0.0	1.3-
390919	062	(40.9-	8.9+)X	651024	330	0.7+	0.4-	751202	095	0.3+	3.2-
621202	760	(13.9-	14.7+)X	680831	095	2.1+	5.0-	780913	095	2.8-	2.6+
650918	330	0.0	1.2+	730101	095	(1.2+	9.6+)	780927	095	0.2+	2.4+
651016	330	0.7-	0.9-	730102	095	0.2+	1.5+	781003	095	0.3+	1.5+

(2381)* 1976 AF = 1951 EG1 = 1953 QP = 1968 FF = 1970 SD = 1978 NN3

Discovered 1976 Jan. 3 at the El Leoncito Station of the Felix Aquilar Observatory, University of Cuyo.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 141.52409		(1950.0)	P	Q
n 0.23346241	Peri.	277.06648	+0.37344600	-0.92020772
a 2.6121097	Node	150.14365	+0.91661382	+0.34659513
e 0.1662360	Incl.	13.62666	+0.14267858	+0.18190537
P 4.22	B(1,0)	12.5		

Residuals in seconds of arc

510305	711	4.1-	3.4+ Y	680327	095	1.2+	0.1+	760109	808	0.8-	0.7+
510305	711	1.3+	2.7- Y	700927	095	0.6+	0.3+	760125	808	0.5+	1.2+
510310	760	2.8+	1.1-	760103	808	0.6-	0.1+	760125	808	0.6+	0.8+
510310	760	0.4-	1.0+	760103	808	0.2-	0.5-	780711	095	0.8-	2.9+
530816	024	0.1-	0.5+	760109	808	0.1+	0.4+				

(2382)* 1977 GA

Discovered 1977 Apr. 13 at the Perth Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 286.58711		(1950.0)	P	Q
n 0.21473623	Peri.	66.53442	+0.55324961	+0.68780807
a 2.7618442	Node	245.75602	-0.81734100	+0.55713559
e 0.3285994	Incl.	31.02320	+0.16083703	+0.46531708
P 4.59	B(1,0)	12.0		

Residuals in seconds of arc

770413	323	0.3-	2.3+		770918	323	0.9-	1.0+		781230	879	1.6+	1.5+
770414	323	1.1-	1.7+		771014	323	0.9-	0.2+		790201	801	1.3-	2.5+
770414	323	1.0+	1.2+		781101	801	0.2+	0.3-		800122	801	0.6-	0.8+
770420	323	0.3+	0.5-		781103	801	0.3+	0.5-		810108	474	0.1-	1.6+
770420	323	1.1+	0.5+		781105	675	0.2+	0.8-		810108	474	0.8-	2.2+
770513	323	0.9-	0.1-		781106	675	0.8-	0.7-		810203	474	0.0	2.4+
770513	323	0.3-	0.0		781107	675	0.5-	0.5-		810203	474	1.2-	1.4+
770623	323	1.7-	0.1+		781108	675	0.4-	0.7-		810402	474	1.6-	4.7-
770623	323	0.2+	0.4-		781126	801	1.0+	1.0+		810402	474	2.4-	4.4-
770712	323	0.6+	0.8-		781129	675	0.9-	1.5-		810404	474	2.7+	0.9-
770712	323	0.5+	0.8-		781130	675	0.8-	1.6-		810404	474	2.4+	0.1-
770815	323	1.1+	0.2-		781229	801	1.2+	1.0+		810405	474	0.6-	0.2-
770830	323	0.9-	0.3+		781230	879	0.8+	2.7+		810405	474	0.8-	0.4+

(2383)* 1981 GN = 1928 DU = 1938 EO = 1969 TW5 = 1975 QP = 1976 YM

Discovered 1981 Apr. 5 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M	25.18676		(1950.0)	P	Q
n	0.29836858	Peri.	183.87396	-0.95119280	+0.30822390
a	2.2180295	Node	14.10668	-0.28141850	-0.84619138
e	0.1048373	Incl.	3.56967	-0.12663287	-0.43469319
P	3.30	B(1,0)	14.5		

Residuals in seconds of arc

280226	024	2.0-	1.6+		761216	095	4.1-	0.6-		810407	688	0.6+	0.9-
280318	024	2.7+	1.2+		761218	095	1.0+	1.3+		810409	688	0.6-	0.1-
380305	020	2.1+	3.0+		761220	095	1.5+	0.4+		810409	688	0.5+	0.5-
380307	020	(12.6+	8.8+)		810327	046	1.3-	1.3+		810409	046	1.0-	0.1+
691015	095	0.2+	0.8-		810327	046	0.9-	2.4+		810409	046	0.5-	0.2+
691017	095	3.1+	1.0-		810329	046	1.7-	0.3+		810422	046	0.2+	0.3-
750830	808	0.5-	1.6+		810329	046	1.3-	0.2-		810422	046	0.2-	0.0
750830	808	0.1+	0.8+		810402	046	0.9-	0.6+		810428	046	0.9+	0.8-
750831	808	0.5-	1.3+		810403	046	0.3-	0.9-		810428	046	2.3+	0.3-
750902	808	(6.7+	1.1-)		810405	688	1.3+	1.1-		810502	688	0.0	1.5-
750902	808	0.0	0.1-		810405	688	0.0	1.4-		810502	688	0.7+	1.8-
750905	808	1.8-	1.0+		810407	688	0.7+	0.6-					

1941 UV = 1958 DY = 1968 UJ1 = 1972 XH2

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	97.64884		(1950.0)	P	Q
n	0.25617287	Peri.	102.38299	+0.42964286	-0.90297720
a	2.4553580	Node	322.17013	+0.82442705	+0.39507794
e	0.1728107	Incl.	0.58487	+0.36841152	+0.16895445
P	3.85	B(1,0)	14.0		

Residuals in seconds of arc

411015	062	0.7-	1.7-		411115	062	0.2-	0.3-		681026	095	1.9-	0.5+
411027	062	0.3+	1.7-		580224	760	(74.7-	60.3-)X		721201	095	0.3-	1.2-
411112	062	0.7-	0.2-		681022	095	1.5-	1.0-					
411114	062	0.3+	2.9+		681023	095	2.3+	1.8-					

1953 TX2 = 1981 CJ

The identification is by E. Bowell.

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	108.82851		(1950.0)	P	Q
n	0.26137599	Peri.	306.03957	+0.66743345	-0.74194031
a	2.4226636	Node	101.96187	+0.70242548	+0.59886384
e	0.1849634	Incl.	3.73315	+0.24724692	+0.30147417
P	3.77	B(1,0)	15.0		

Residuals in seconds of arc

531014 760	0.8-	1.0-	531105 760	2.2-	0.8+	810209 046	2.0+	1.3-
531014 760	0.0	0.2-	531105 760	0.9-	0.2+	810210 046	1.7+	0.0
531031 760	1.9+	0.1-	810202 046	1.8-	0.6+			
531031 760	1.5+	0.2+	810202 046	1.9-	0.8+			

1962 RE = 1954 UF = 1977 NJ = 1978 RW5
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	180.86790		(1950.0)	P	Q
n	0.12495246	Peri.	151.50255	+0.68986152	+0.72379077
a	3.9625404	Node	162.10319	-0.67295849	+0.64866357
e	0.1202040	Incl.	2.75392	-0.26686692	+0.23529234
P	7.89	B(1,0)	12.0		

Residuals in seconds of arc

541020 760(0.04-	0.00+)X	620924 760	2.8+	1.0-	780913 095	0.3+	0.6+	
620907 760	1.1-	2.7-	620929 760	0.3+	2.8+	780927 095	0.3+	0.1-
620907 760	2.3+	1.2-	620929 760	2.5+	0.5+	781003 095	0.4+	0.2-
620924 760	0.7+	0.7+	770714 095	0.7+	1.7+	781007 095	0.5+	0.2-

1968 OG = 1978 JA1
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	212.52633		(1950.0)	P	Q
n	0.18566028	Peri.	37.18794	-0.44405127	+0.89411364
a	3.0431562	Node	206.59580	-0.85009223	-0.44091253
e	0.1015204	Incl.	7.46072	-0.28312835	-0.07846609
P	5.31	B(1,0)	13.5		

Residuals in seconds of arc

680718 805	0.4+	0.2-	680728 805	0.5-	1.0+	680822 805	0.1+	0.3-
680719 805	1.0-	0.1-	680730 805	0.2-	1.5+	780506 095	0.3-	1.9+
680725 805	0.1-	0.1+	680730 805	0.3+	1.1+	780509 095	2.0-	0.1+

1975 NF = 1953 RF = 1953 TA2 = 1979 ON13
The double designation 1953 RF = 1953 TA2 is by O. Kippes (MPC 1331).
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	180.31279		(1950.0)	P	Q
n	0.26463380	Peri.	335.42676	+0.92785886	+0.37292625
a	2.4027396	Node	2.67941	-0.33472089	+0.83512855
e	0.2153605	Incl.	2.43698	-0.16443803	+0.40433441
P	3.72	B(1,0)	14.5		

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

530908 760(0.10+	0.03+)X	750707 808	1.3+	0.2+	790731 095	0.2+	0.6-	
531009 760 (5.8+	56.9+)X	750707 808	0.9-	0.2+	790819 095	0.5-	0.6+	
750701 808	0.0	0.5+	750712 808	0.5+	0.7-	790827 095	0.6+	0.2-
750701 808	0.7-	0.1+	750712 808	0.4-	0.6-	790924 095	0.3-	0.0

1976 GM2 = 1978 TS2
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	298.23223		(1950.0)	P	Q
n	0.17288735	Peri.	113.06794	-0.40248297	+0.91517980
a	3.1912544	Node	133.18066	-0.85017459	-0.36506778
e	0.1604122	Incl.	1.67331	-0.33942690	-0.17079651
P	5.70	B(1,0)	13.5		

Residuals in seconds of arc

760330 552	1.5-	2.1-	760403 552	0.7+	1.4+	760501 095	0.0	0.5+
760330 552	3.2-	0.2-	760403 552	0.6+	1.6-	760502 095	0.9-	0.6-
760401 095	1.7+	1.1+	760403 552	1.0+	1.0+	781003 095	0.4-	0.1+
760403 552	1.4+	0.8+	760404 095	0.2+	0.5-	781007 095	0.4+	0.1-

1978 QL2 = 1951 XA1 = 1962 WY1
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 164.41673		(1950.0)	P	Q
n 0.17695556	Peri.	224.53641	+0.95385102	-0.29983155
a 3.1421537	Node	152.89842	+0.28456314	+0.88512625
e 0.1823777	Incl.	2.06423	+0.09587516	+0.35588278
P 5.57	B(1,0)	13.5		

Residuals in seconds of arc

511205	711	0.3-	0.4-	Y	780823	414	0.5+	0.3+	780826	414	0.8+ 0.3-
621130	760	1.4-	0.1+		780823	414	1.4-	2.5+	780831	095	0.5- 0.5-
621130	760	1.9-	0.4+		780824	414	1.0+	0.0	780905	095	2.1- 0.6-
621203	760	0.9-	0.2+		780824	414	1.7+	0.3-	780927	095	0.2- 1.3-
621203	760	3.6+	0.3+		780826	414	1.0+	0.3+			

1978 RZ5 = 1956 EF = 1972 LB = 1976 GO
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 270.28713		(1950.0)	P	Q
n 0.19681264	Peri.	140.84087	+0.41534935	+0.90914420
a 2.9270822	Node	153.65819	-0.85097170	+0.40025168
e 0.1217633	Incl.	3.96572	-0.32145306	+0.11513219
P 5.01	B(1,0)	12.5		

Residuals in seconds of arc

560309	024	0.6-	0.3-		760404	095	2.1-	1.3+	781007	095	0.8+ 0.4+
720607	095	1.4-	0.6-		780913	095	0.6+	0.1+	781102	095	0.2- 2.2+
720614	095	0.6+	0.5-		780927	095	0.4-	0.7-			
760401	095	0.4-	1.9+		781003	095	0.4+	0.3-			

1979 DK = 1951 EJ2 = 1971 OV1
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 182.58199		(1950.0)	P	Q
n 0.21094203	Peri.	245.23504	-0.96390972	-0.23113803
a 2.7948693	Node	281.18033	+0.26561382	-0.86864698
e 0.0886931	Incl.	7.73934	-0.01809282	-0.43820957
P 4.67	B(1,0)	13.0		

Residuals in seconds of arc

510311	711	1.6-	0.2+	Y	790324	026	0.3-	0.4+	790424	026	1.0- 1.2+
510313	711	3.2+	0.2+	Y	790324	026	0.4-	0.5-	790424	026	0.4- 0.3-
710725	095	0.2+	0.5-		790419	026	1.2-	0.0			
790228	026	0.0	0.9-		790419	026	0.4+	0.0			

1980 RA = 1969 SD
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 44.70412		(1950.0)	P	Q
n 0.26964637	Peri.	78.71525	+0.53627320	-0.83197673
a 2.3728696	Node	337.04811	+0.55910209	+0.47637983
e 0.3619219	Incl.	21.38907	+0.63230997	+0.28438878
P 3.66	B(1,0)	15.0		

Residuals in seconds of arc

690919	808	1.1+	1.2-		800902	688	1.5-	0.9+	800907	688	0.9- 0.9-
690920	808	0.8+	0.7-		800904	688	0.7-	1.1-	800917	688	0.0 2.7+
800808	688	2.4-	1.0+		800904	688	0.8+	1.1-	801002	688	1.0- 1.4+
800902	688	0.9-	0.6-		800907	688	4.3+	0.4-			

1981 FA = 1952 DW = 1961 TK = 1972 VN
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	112.82399		(1950.0)	P	Q
n	0.27325605	Peri.	80.24943	+0.03857358	-0.99913452
a	2.3519264	Node	7.59192	+0.86434439	+0.02554522
e	0.1134626	Incl.	6.76606	+0.50141884	+0.03282749
P	3.61	B(1,0)	14.0		

Residuals in seconds of arc

520224	711	1.7-	3.8+	Y	721108	095	0.0	2.4-	810401	688	0.9-	0.9-
520227	760	3.8+	0.1+		721112	095	1.3+	0.7-	810405	688	0.7-	1.9-
520227	760	0.0	2.0-		810330	688	0.2+	1.2-	810405	688	0.1-	0.9-
611007	760	0.6+	1.8-		810330	688	0.4-	2.0-	810409	688	0.9-	1.5-
611007	760	0.6+	2.4-		810401	688	0.9+	0.5-	810409	688	0.4+	0.7-

6066 P-L = 1978 YA1
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	91.37967		(1950.0)	P	Q
n	0.17539133	Peri.	292.57689	-0.97022571	-0.23523603
a	3.1608084	Node	233.86423	+0.24004789	-0.90224552
e	0.1214664	Incl.	4.09496	+0.03223463	-0.36140976
P	5.62	B(1,0)	13.5		

Residuals in seconds of arc

600924	675	0.8-	1.0-		601017	675	1.1-	0.4-	781222	095	1.1+	0.9-
600925	675	0.4+	0.4+		601022	675	0.9+	0.1-	781231	095	0.9-	1.0-
600926	675	0.4-	0.4+		601024	675	1.5+	0.1+				
600928	675	0.3+	0.1+		601026	675	0.1+	0.2-				

* * * * *

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

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

Comet Elias (1981c)
T 1981 Aug. 16.81813 ET

q	4.7459392		(1950.0)	P	Q
		Peri.	310.01718	-0.66451355	-0.74455677
		Node	175.95889	+0.01707049	+0.07008830
e	1.0	Incl.	115.33521	-0.74708121	+0.66386960

From 7 observations 1981 Apr.3-May 3.

Comet Bus (1981d)
T 1981 July 30.60126 ET

q	2.4589948		(1950.0)	P	Q
		Peri.	189.77383	-0.96740137	-0.21593303
		Node	23.55120	-0.20417566	+0.97412346
e	1.0	Incl.	160.66158	-0.14982285	+0.06675621

From 13 observations 1981 Apr. 26-May 13.

(2384)* 1943 EC1 = 1943 GV = A909 BF = 1960 FE = 1962 WL1 = 1970 RP = 1981 FF

Discovered 1943 Mar. 2 by M. Laugier at Nice.
Epoch 1981 July 15.0 ET = JDE 2444800.5

M	6.39726		(1950.0)	P	Q
n	0.23382697	Peri.	202.97056	-0.86115684	+0.50735099
a	2.6093940	Node	7.74839	-0.42222607	-0.67917641
e	0.1232048	Incl.	13.59180	-0.28307957	-0.53039076
P	4.22	B(1,0)	13.5		

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

090129	024	1.5-	0.2+		430407	062	0.1+	1.4+		810330	688	1.4-	0.7-
430302	020	1.1+	0.8+		430408	020	(0.07-	0.02+)		810401	688	0.8+	0.7-
430302	020	4.5+	0.7-		430408	020	(0.07-	0.02+)		810401	688	0.4-	1.0-
430312	020	(2.5+ | 5.6-)		430408	020	(0.03- | 0.00-)		810405	688	0.2+	0.4-
430312	020	(3.7+	5.3+)		600323	760	2.9-	0.2-		810405	688	0.8-	1.3-
430404	020	1.3-	1.7+		600323	760	(8.9+	0.2+)		810409	688	1.7-	0.2-
430404	020	2.4-	0.9+		621130	760	(73.2+	23.7+)X		810409	688	0.1-	0.2-
430406	062	0.9+	2.3+		700913	095	1.6+	1.8-		810502	688	0.5+	0.4+
430406	062	0.6+	1.2+		810330	688	0.3-	0.6+		810502	688	0.4+	0.1-

(2385)* 1969 VW = A915 RH = A915 SA = 1976 YQ3

Discovered 1969 Nov. 11 by L. I. Chernykh at the Crimean Astrophysical Observatory. The key identification 1969 VW = 1976 YQ3 is by H. Oishi (NOC 1094).

Epoch 1981 July 15.0 ET = JDE 2444800.5

			(1950.0)	P	Q
M	219.29436				
n	0.29330523	Peri.	189.71914	+0.95383419	+0.29857423
a	2.2434833	Node	152.84047	-0.27054025	+0.90111374
e	0.1604179	Incl.	4.07801	-0.13041588	+0.31440013
P	3.36	B(1,0)	14.5		

Residuals in seconds of arc

150908	024	0.1+	0.5-		691115	095	0.4+	0.0		810210	801	0.1-	0.0
150930	029	(68.2+	27.2+)Y		761216	095	0.5-	0.4-		810228	801	0.8-	0.2-
691111	095	0.2+	1.1+		761220	095	1.3-	0.4+		810311	801	1.0-	2.1+
691113	095	0.9-	0.2-		770113	095	2.1+	0.6-		810312	801	2.0+	1.6-

(2386)* 1974 SN1 = 1941 SY = 1951 WB1 = 1979 UB2

Discovered 1974 Sept. 19 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identification 1974 SN1 = 1941 SY is by P. Herget.

Epoch 1981 July 15.0 ET = JDE 2444800.5

			(1950.0)	P	Q
M	193.28292				
n	0.20879722	Peri.	308.63358	+0.69158897	+0.72215011
a	2.8139707	Node	5.19273	-0.60389834	+0.58896165
e	0.1570908	Incl.	9.07814	-0.39624676	+0.36279938
P	4.72	B(1,0)	13.0		

Residuals in seconds of arc

410920	062	1.2-	0.1+		740921	095	0.4-	0.6+		791119	330	3.7+	4.0-
410925	062	1.4+	0.8-		740923	095	1.3+	0.4+		791123	330	0.4-	1.3-
410927	062	(85.9+	14.6-)		741009	095	0.9-	0.3-		810108	381	0.6+	1.0-
511129	711	0.2-	1.2+ Y		791019	330	1.0-	0.0		810108	381	0.6+	0.6-
511129	711	0.2-	1.8+ Y		791022	330	0.3-	2.8+		810108	381	0.2-	1.1+
740919	095	0.0	0.3-		791026	330	0.9-	0.6+		810108	381	1.5-	0.6-

(2387)* 1975 FX = 1936 UE = 1949 FH1 = 1976 KH1

Discovered 1975 Mar. 17 at the Purple Mountain Observatory. The key 1978 recovery was made on the basis of computations at the Purple Mountain Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

			(1950.0)	P	Q
M	134.20311				
n	0.18765664	Peri.	40.92020	-0.06044813	-0.98649683
a	3.0215289	Node	53.09524	+0.85897638	-0.12908646
e	0.0776715	Incl.	10.97369	+0.50843445	+0.10080026
P	5.25	B(1,0)	13.0		

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

361016	020	(0.31-	0.23+)	490322	094	(0.03-	0.05-)X	
361020	020	(0.06-	0.03+)	750317	330	2.9-	0.3+	
361021	020	9.2+	1.6-	750401	330	0.5+	1.1-	
361023	020	(15.4-	15.2+)	750403	330	1.8-	3.9+	
361024	020	1.8-	3.4+	750411	330	1.9+	0.4-	
361108	020	(17.7-	10.7-)	760529	095	1.5-	1.0-	
361110	020	4.9-	3.9-	781028	330	0.3-	0.6+	
361110	020	3.4-	7.9-	781103	330	1.8-	0.3-	

781107	330	1.4-	1.3-					
781126	330	3.6+	0.4-					
800214	801	1.8+	1.7-					
800510	801	0.3+	1.0-					
810503	688	0.5+	1.8-					
810503	688	1.6-	2.0-					
810508	688	1.0-	1.1-					
810508	688	0.2+	2.6-					

(2388)* 1977 EA2 = 1931 JO = 1973 GE = 1978 SR2 = 1981 GE1

Discovered 1977 Mar. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M	24.53730	(1950.0)	P	Q
n	0.25686921	Peri. 253.88873	-0.78771554	+0.61562100
a	2.4509137	Node 324.09946	-0.54935293	-0.71863889
e	0.1790247	Incl. 2.21798	-0.27877514	-0.32337118
P	3.84	B(1,0) 14.0		

Residuals in seconds of arc

310510	690	1.8-	2.2+	780926	095	0.1+	0.1+	
310513	690	4.2+	4.1+	781002	095	0.4+	2.3+	
730403	029	0.1-	0.2-	781008	095	2.1-	0.6+	
730403	029	0.4-	0.7-	810403	474	1.6-	0.1-	
770313	095	1.1-	2.8+	810403	474	2.3-	0.6-	
770322	095	0.3+	2.0+	810404	474	0.9-	0.6+	
770325	095	3.2+	0.0	810405	474	0.3+	1.0-	

810405	474	0.0	1.1-	
810412	474	0.2-	0.9-	
810412	474	1.2-	0.1-	
810503	688	1.1+	2.8-	
810503	688	1.8+	3.1-	

(2389)* 1977 QC1 = 1935 SH = 1950 ND1 = 1958 UL = 1973 QW

Discovered 1977 Aug. 19 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M	29.34611	(1950.0)	P	Q
n	0.25774713	Peri. 336.21115	+0.64417928	+0.76252442
a	2.4453451	Node 333.76986	-0.67817299	+0.53318022
e	0.2301162	Incl. 7.79081	-0.35371521	+0.36643603
P	3.82	B(1,0) 14.5		

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

350922	012	1.9+	0.4+	581011	690	(5.1-	0.1-)Y	
350928	012	1.3-	1.4-	581017	760	0.3+	1.0-	
351001	012	2.8+	1.2-	581017	760	0.1-	1.3+	
500710	078	(0.04+	0.00-)X	730828	095	0.2+	0.7-	
581010	690	(0.4+	10.6-)Y	730901	095	1.5+	0.6+	

770819	095	0.7-	0.9+	
770820	095	1.5-	3.0+	
770822	095	2.5-	1.7-	
770824	095	0.1+	0.0	
770912	095	1.3-	2.0+	

(2390)* 1980 PA1 = A904 RC = 1942 RS

Discovered 1980 Aug. 14 by Z. Vavrova at the Klet Observatory.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M	89.07813	(1950.0)	P	Q
n	0.23258652	Peri. 353.81192	+0.75937876	+0.64266094
a	2.6186635	Node 325.51032	-0.58896698	+0.61256131
e	0.1470729	Incl. 10.34036	-0.27651724	+0.46016905
P	4.24	B(1,0) 13.0		

Residuals in seconds of arc

040912	024	5.2-	4.2+		800817	046	0.6-	0.4+		800907	046	0.8+	0.4-
040918	024	5.5+	5.5-		800817	046	0.7+	0.3-		800907	046	0.8-	0.3-
420908	062	0.7-	0.3+		800818	046	0.4+	0.2-		800908	046	0.5+	0.9+
420911	062	0.9-	1.2+		800818	046	0.8+	0.2+		800908	046	1.0-	0.7+
421003	062	1.0-	0.5-		800903	046	0.0	0.4-		801002	688	1.7+	0.2-
421011	062	1.1+	0.7+		800903	046	0.7+	0.2-		801005	688	1.0+	0.4+
800814	046	0.2-	0.3+		800906	046	3.2-	0.6-					
800815	046	0.2+	0.5-		800906	046	0.9-	1.0-					

1926 FG = 1935 DF = 1965 UP1 = 1969 RD = 1978 PQ1
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	122.39310		(1950.0)	P	Q
n	0.21472110	Peri.	282.25572	+0.38384654	-0.92111050
a	2.7619794	Node	144.94861	+0.88503630	+0.34692940
e	0.0233932	Incl.	6.49264	+0.26338674	+0.17662229
P	4.59	B(1,0)	13.0		

Residuals in seconds of arc

260318	024	5.7+	5.3-		350226	024	1.9-	2.5-		690908	095	0.0	4.9-
260322	024	2.4+	1.6+		651018	330	2.1+	0.3+		780808	095	1.0+	0.1-
260401	024	3.4-	2.3-		651023	330	1.6-	0.6-					
260404	024	4.7-	3.4+		651125	330	5.0-	0.3+					

1938 DV = 1932 AF = 1962 QG = 1972 LF1 = 1976 GK4 = 1978 PR = 1981 FS
The identification 1938 DV = 1932 AF is by O. Kippes (MPC 2807).
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	63.09352		(1950.0)	P	Q
n	0.18096316	Peri.	297.58555	+0.10589008	-0.98930736
a	3.0955902	Node	145.87427	+0.96366582	+0.07722360
e	0.1672838	Incl.	10.29801	+0.24522533	+0.12372333
P	5.45	B(1,0)	11.5		

Residuals in seconds of arc

320107	094(31.1+ | 48.0-)X		380404	062	1.8+	1.8-		780808	095	1.2+	1.6-
380222	062	3.4-	0.3-		380420	062	1.0-	2.1-		810327	046	0.5+	0.2-
380225	062	2.0+	4.0-		620830	760(94.2-	12.4-)X			810327	046	0.2-	0.2+
380308	062	1.7+	0.3+		720614	095	1.5-	1.6+		810329	046	0.5-	0.9+
380323	062	4.0-	3.1-		760402	095	3.3+	9.3+		810329	046	0.5-	0.1-

1942 CB = 1931 DD = 1931 EQ = 1968 DK
The double designation 1931 DD = 1931 EQ is by O. Kippes.
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	262.08641		(1950.0)	P	Q
n	0.26678319	Peri.	155.02566	-0.33581479	-0.94123174
a	2.3898168	Node	314.57278	+0.85539587	-0.28864344
e	0.1963092	Incl.	2.91374	+0.39436825	-0.17540743
P	3.69	B(1,0)	14.0		

Residuals in seconds of arc

310225	024(64.7- | 40.5+)X		420206	062	3.3+	1.3-		420313	062	9.6-	3.5+
310314	024	0.8-	0.8+		420217	062	4.0+	0.2+		680225	095	1.6+	1.3+
310315	024	0.1-	2.0-		420221	062	2.9+	0.5+					
310319	024 (2.7+	54.9+)		420306	062	6.3-	1.8+						

1943 EO = 1943 FF = 1933 GC = 1953 DG = 1971 SY3
The double designation 1943 EO = 1943 FF is by L. Oterma (MPC 4654).

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 234.61304		(1950.0)	P	Q
n 0.19531756	Peri.	128.47322	-0.79383546	-0.60302811
a 2.9420003	Node	14.98492	+0.41866685	-0.63570147
e 0.2207866	Incl.	17.70366	+0.44107067	-0.48191361
P 5.05	B(1,0)	12.5		

Residuals in seconds of arc

330414 024	1.0+	4.8+	430303 062	0.5-	0.6-	530217 210	(0.7+	31.0+)X
330420 024	0.2+	0.5-	430308 062	0.6-	0.6+	710926 805	0.9+	3.4+
430303 062	0.7+	1.2+	430325 062	1.5+	2.4-	710927 805	2.2-	0.8+

1973 UX5 = 1976 QL1

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 229.71712		(1950.0)	P	Q
n 0.31341595	Peri.	177.15386	+0.54179008	+0.84044915
a 2.1464603	Node	125.65149	-0.77137176	+0.50211076
e 0.1705807	Incl.	0.73527	-0.33383996	+0.20378911
P 3.14	B(1,0)	15.5		

Residuals in seconds of arc

731028 033	0.0	0.5-	731102 033	0.3+	0.2-	760924 095	0.7-	0.1-
731031 033	0.4-	0.6-	731103 033	0.1-	0.2-	760928 095	0.5+	0.7+
731101 033	0.6+	1.2+	760826 095	0.1+	0.4-			

1976 GT1 = 1981 AK

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 38.79621		(1950.0)	P	Q
n 0.17166226	Peri.	19.92622	-0.24764184	-0.96736008
a 3.2064196	Node	84.44105	+0.88137828	-0.24796865
e 0.2016761	Incl.	3.09513	+0.40230069	-0.05221129
P 5.74	B(1,0)	13.0		

Residuals in seconds of arc

760401 095	2.2-	0.9+	810103 688	0.4-	1.0-	810108 381	1.3-	0.6+
760404 095	0.6+	1.5-	810103 688	0.1+	0.6-	810130 688	1.5+	0.2+
760502 095	1.6+	0.5+	810108 381	2.1-	0.3+	810130 688	2.1+	0.9+

1976 GX2 = 1955 VE

The key 1978 recovery was made on the basis of computations at the Crimean Astrophysical Observatory. The double designation 1955 SK2 = 1955 VE (NAZ 12, 23) is invalid.

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 61.23903		(1950.0)	P	Q
n 0.21501804	Peri.	350.18551	-0.99032267	+0.12328462
a 2.7594359	Node	197.28972	-0.10828583	-0.97363380
e 0.2647742	Incl.	12.38285	-0.08680550	-0.19193257
P 4.58	B(1,0)	12.5		

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

551110 760(0.07-	0.02-)X		760523 095	0.0	3.1+	780927 095	0.9+	0.6-
760401 095	3.8+	1.4+	760525 095	0.4-	0.6-	781007 095	1.0+	0.4-
760404 095(12.3+	3.9-)		760529 095	1.8+	0.4-	781102 095	1.7-	4.6+
760503 095	4.7-	0.6-	780913 095	0.9-	0.0			

1977 PW1 = 1938 UD

Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 127.88107		(1950.0)	P	Q
n 0.17471016	Peri.	180.68945	-0.26404685	-0.95021818
a 3.1690187	Node	284.63105	+0.88569350	-0.17097239
e 0.0742998	Incl.	9.84403	+0.38187207	-0.26048771
P 5.64	B(1,0)	12.0		

Residuals in seconds of arc
381016 062 2.3+ 1.6- 770814 095 0.2+ 1.0- 770909 095 0.5+ 0.1+
381021 062 2.8- 0.7+ 770821 095 1.0- 0.8+

1977 QR2 = 1973 UY5
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	301.59762	(1950.0)	P	Q
n	0.23401717	Peri. 156.10106	+0.91211343	-0.40949417
a	2.6079850	Node 228.08604	+0.37184108	+0.84603484
e	0.1208284	Incl. 1.46835	+0.17257837	+0.34137893
P	4.21	B(1,0) 15.0		

Residuals in seconds of arc
731031 033 0.4- 0.5- 731103 033 0.5- 0.2+ 770909 095 0.5- 0.6-
731101 033 0.3+ 0.4- 770821 095 0.3+ 0.1- 771007 095 0.2+ 1.0+
731102 033 0.8+ 0.4+ 770823 095 0.0 0.1-

1978 RO1 = 1978 RQ = 1939 EG = 1955 FV = 1977 FS1
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M	64.27107	(1950.0)	P	Q
n	0.31065856	Peri. 39.22790	-0.43566495	+0.90009537
a	2.1591428	Node 204.94565	-0.82871088	-0.40324232
e	0.0986971	Incl. 0.67075	-0.35133220	-0.16499682
P	3.17	B(1,0) 15.0		

Residuals in seconds of arc (or two decimals in units of degrees)
390314 062 0.3+ 2.4+ 780901 095 2.3+ 1.4+ 780928 095 0.1- 0.2+
390317 062 0.3+ 0.9- 780905 095 0.5- 0.1+ 781004 095 1.2- 0.7-
550329 760(0.08- 0.01+)X 780907 095 1.0- 0.4- 781009 095 0.3- 0.0
770326 095 1.5- 0.4+ 780912 095 1.5+ 1.2+

* * * * *

ORBITAL ELEMENTS BY P. HERGET, UNIVERSITY OF CINCINNATI.

The identifications are by P. Herget unless otherwise stated.

(321) Florentina
Epoch 1981 July 15.0 ET = JDE 2444800.5

M	71.77746	(1950.0)	P	Q
n	0.20105788	Peri. 33.08403	+0.28941116	-0.95675917
a	2.88572748	Node 40.11489	+0.86803634	+0.24946864
e	0.04239622	Incl. 2.59812	+0.40342791	+0.14959039

From 47 observations at 27 oppositions 1901-1981, mean residual 3".7.

(534) Nassovia
Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	132.46815	(1950.0)	P	Q
n	0.20095222	Peri. 335.18790	+0.35599633	-0.93274719
a	2.88673884	Node 93.91564	+0.86659086	+0.30668980
e	0.05494145	Incl. 3.27542	+0.34969540	+0.18953638

From 64 observations at 21 oppositions 1904-1980, mean residual 3".2.

(991) McDonalda
Epoch 1981 July 15.0 ET = JDE 2444800.5

M	265.59863	(1950.0)	P	Q
n	0.17598609	Peri. 245.23544	+0.62919597	+0.77655364
a	3.15367646	Node 63.79559	-0.69920954	+0.58395710
e	0.14643361	Incl. 2.09603	-0.33943841	+0.23655555

Residuals in seconds of arc

360220	024	2.6+	0.0	640316	760	(27.8- 21.7+)X	750308	095	0.7-	0.9+
360310	024	0.3+	3.7+	660820	095	(25.8- 17.9-)	760402	095	4.9+	0.0
360317	024	0.4+	4.8+	661016	095	0.2+ 0.3-	770326	809	0.5-	0.5-
360318	024	2.3-	2.0+	700406	805	2.3- 1.4-	770327	809	1.8-	0.4-
501112	711	1.8-	(32.0-)Y	710620	076	0.4+ 0.9+	770328	809	1.6-	0.2-
540605	760	(70.9-	1.4+)X	710627	095	1.0- 2.6-	770818	095	0.6-	2.0+
540624	760	(26.2-	43.8+)X	721006	095	1.5+ 1.2+	770908	095	3.0-	0.8+
600814	839	0.1-	1.8+	721007	095	5.5+ 3.7-	771003	095	3.5-	0.8-
600814	839	0.3-	0.3+	721013	095	3.0+ 0.8+	810330	688	0.8-	2.8-
600820	839	1.7+	0.7+	721203	693	1.6- 1.0+	810330	688	1.1-	2.2-
600820	839	2.0+	1.4+	721204	693	1.9- 0.6+				

(1177) Gonnessia
Epoch 1981 July 15.0 ET = JDE 2444800.5

M	73.78001	(1950.0)	P	Q
n	0.16049854	Peri. 192.03672	+0.10949362	-0.96278424
a	3.35342542	Node 252.06946	+0.93211542	+0.18579144
e	0.01497451	Incl. 15.05300	+0.34521295	-0.19628561

From 75 observations at 24 oppositions 1930-1981, mean residual 1".8.

(2391)* 1957 AA = 1957 BA = 1929 VX = 1938 BF = 1977 KM = 1978 PA4

Discovered 1957 Jan. 9 by K. Reinmuth at Heidelberg. The key identification 1957 AA = 1978 PA4 is by H. Oishi (JAM 812). The identifications 1957 AA = 1929 VX = 1977 KM are by T. Urata (MPC 5973). The double designation 1957 AA = 1957 BA was found by O. Kippes (MPC 1750).

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	278.01262	(1950.0)	P	Q
n	0.25860583	Peri. 281.30467	+0.09796225	-0.99507327
a	2.43992887	Node 163.05095	+0.93222069	+0.08638874
e	0.13708121	Incl. 2.99863	+0.34837907	+0.04864312
P	3.81	B(1,0) 13.5		

Residuals in seconds of arc

291027	690	1.4-	1.2-	380202	020	5.2+ 4.1+	770523	095	1.9-	0.4+
291103	690	2.5-	0.2-	570109	024	1.7+ 2.2-	780809	095	1.6+	2.5+
380125	094	(23.9-	9.3-)X	570122	012	0.5+ 2.7-	780831	095	0.3+	0.3+
380127	020	1.1+	2.6+	570123	012	6.6- 0.5-	780905	095	1.2+	1.9+
380129	020	2.0+	0.8+	770519	095	1.6- 0.3+				

(2392)* 1979 MN1 = 1969 VK1 = 1974 CW = 1976 SR9

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

Epoch 1982 Aug. 19.0 ET = JDE 2445200.5

M	172.41309	(1950.0)	P	Q
n	0.27456514	Peri. 301.88977	+0.12544454	-0.99140793
a	2.34443993	Node 140.85039	+0.92887429	+0.10424335
e	0.15414992	Incl. 3.36583	+0.34850568	+0.07901661
P	3.59	B(1,0) 15.5		

Residuals in seconds of arc

691111	095	0.7+	1.2+	760929	095	1.8+ 4.9-	790724	675	0.7-	0.6+
691113	095	2.8-	0.6+	790623	413	1.2- 0.5-	790724	413	2.0+	0.0
691115	095	0.8+	2.6+	790624	413	0.0 0.0	790725	675	0.5-	1.8+
740215	095	0.2-	1.2-	790625	413	0.0 0.5+				

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

The following orbital elements are from NOC 1192 and 1194-1196. The identifications are by T. Urata unless otherwise stated.

(2393)* 1955 WB = 1955 XR = 1966 UG = 1972 XH1 = 1976 GQ8 = 1976 JW

Discovered 1955 Nov. 17 by M. Laugier at Nice. The double designation 1955 WB = 1955 XR is by O. Kippes (MPC 1453).

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 231.38094		(1950.0)	P	Q
n 0.17033018	Peri.	101.60189	+0.83665395	+0.53283738
a 3.2231089	Node	226.35323	-0.54550117	+0.78970601
e 0.2009361	Incl.	10.09736	-0.04938252	+0.30405385
P 5.79	B(1,0)	11.8		

Residuals in seconds of arc

551113	388(81.2-	4.7+)	551213	760	0.8+	0.7-	760524	095	0.9+ 0.3+
551113	388(87.3-	4.8+)	551213	760	1.0+	3.0-	760526	095	2.5+ 0.9+
551117	020(10.5+	2.6+)	661018	095	0.0	1.7-	781126	330	1.3+ 0.6-
551122	020(69.1-	33.2+)X	721203	095	0.9+	0.4+	781130	330	3.5- 3.1+
551123	020	2.7- 1.6+	760405	808	1.6-	0.4-	781205	330	1.6+ 0.6+
551204	020	1.3+ 0.2-	760405	808	0.8-	0.4-	810209	372	0.7- 0.5-
551206	020(15.9-	11.7-)	760502	095	0.7-	0.3-	810209	372	0.3+ 0.5-

(2394)* 1973 SZ2 = 1950 TH4 = 1969 AR = 1975 BT = 1978 PC1

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

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 93.55042		(1950.0)	P	Q
n 0.17169304	Peri.	298.13130	+0.41360020	-0.91018067
a 3.2060301	Node	127.41982	+0.84491231	+0.37450180
e 0.1881046	Incl.	1.62307	+0.33920208	+0.17697332
P 5.74	B(1,0)	12.6		

Residuals in seconds of arc

501009	711	0.6- 2.3+ Y	731002	095	0.7-	3.9-	810130	372	0.4- 0.7+
501010	711	4.4+ 0.7+ Y	731026	095	0.3-	0.4-	810227	386	2.1- 0.4+
690115	095	0.8- 1.6-	750117	095	0.3+	2.2+	810227	386	1.4- 0.4-
730922	095	1.5+ 2.0+	780808	095	0.4+	3.1-	810305	372	2.0+ 4.1- Y
730926	095	1.0+ 0.2-	810130	372	0.0	1.1-	810305	372	1.1+ 0.3- Y

(2395)* 1977 FA = 1977 DC2 = 1967 JB = 1974 SS1 = 1979 QO1

Discovered 1977 Mar. 17 at the Harvard College Observatory's Agassiz Station. The identification 1977 FA = 1974 SS1 was independently suggested by E. Bowell.

Epoch 1981 July 15.0 ET = JDE 2444800.5

M 183.41543		(1950.0)	P	Q
n 0.18248815	Peri.	165.89380	-0.09321369	+0.99563237
a 3.0783141	Node	98.75749	-0.91395532	-0.08347911
e 0.0558738	Incl.	0.30343	-0.39496439	-0.04180222
P 5.40	B(1,0)	13.6		

Residuals in seconds of arc

670502	095	0.1+ 0.2+	770317	801	1.1+	0.8+	790823	809	0.3- 0.8-
740919	095	0.9- 1.0+	770318	801	1.3+	3.8+	790823	809	0.2- 0.5-
740921	095	0.6+ 0.4-	770320	801	1.8-	0.3-	790826	809	0.4- 0.5+
740923	095	(8.1+ 5.0+)	770322	801	2.5-	1.3+	790826	809	0.1+ 1.0-
770218	381	1.0+ 3.6-	770419	801	0.4-	0.6-	790826	809	0.1- 0.8-
770218	381	0.5- 2.6-	790822	809	0.3+	0.6-	790830	809	1.3+ 0.1-
770219	381	0.3+ 1.0-	790822	809	0.9+	0.1-	790830	809	(0.9+ 10.4-)
770219	381	0.1+ 0.7-	790822	809	0.3-	0.2-			

1974 RA2 = 1970 RJ = 1978 PH2 = 1978 SZ3
Epoch 1981 July 15.0 ET = JDE 2444800.5 (J-P)

M 229.68104		(1950.0)	P	Q
n 0.24050271	Peri.	169.88662	+0.99139231	-0.13086113
a 2.5608861	Node	197.63430	+0.11915450	+0.91474234
e 0.1654546	Incl.	0.77178	+0.05425394	+0.38225881
P 4.10	B(1,0)	14.5		

Residuals in seconds of arc

700909 095	0.0	0.4+	740921 808	0.1-	0.5+	780808 095	0.7-	0.1-
740914 095	0.5+	1.3+	741019 808	0.5-	0.1-	780928 095	1.0+	0.2-
740921 808	0.1-	1.6-	741019 808	0.2-	0.2-			

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

(1862) Apollo
Epoch 1981 July 15.0 ET = JDE 2444800.5

M 162.40742		(1950.0)	P	Q
n 0.55281457	Peri.	285.45404	+0.77258561	+0.63165621
a 1.4703353	Node	35.44371	-0.53174714	+0.69898875
e 0.5598869	Incl.	6.35635	-0.34692428	+0.33529860
P 1.78	B(1,0)	17.1		

Residuals in seconds of arc

320427 024	0.4+	0.4-	320514 662	0.0	1.0+	730929 693	0.7+	0.1-
320427 024	0.8+	1.6+	320514 662	0.5-	1.6+	731126 801	4.5-	1.6+
320429 801	1.2-	0.8+	320515 754	0.9+	0.1+	731219 801	4.0-	(8.7+)
320430 801	2.0+	1.6-	320515 754	3.2-	2.1+	731224 693	2.6-	0.3+
320430 024	2.5-	0.1+	730328 801	2.4-	1.9-	731224 693	2.4-	0.1+
320430 012	0.5-	0.7-	730328 801	2.0-	0.7-	740128 801	2.7-	0.4+
320430 012	2.9+	1.1-	730328 801	0.6-	1.9-	740225 691	0.9-	0.4+
320501 024	0.6-	0.9+	730329 801	3.6-	0.5-	740225 691	0.7-	0.5+
320502 754	0.0	0.5-	730329 801	3.9-	0.3+	740313 801	1.8-	0.8+
320502 012	2.4-	0.2+	730330 801	3.6-	0.7+	760205 801	1.7-	0.3+
320502 012	0.1+	0.3+	730403 693	0.3-	0.4+	780203 801	1.5+	0.5-
320503 801	2.8-	0.7-	730403 693	0.7-	0.8+	780313 801	0.3+	0.3+
320503 754	4.6+	4.1+	730407 805	(5.7-)	2.4+	801112 688	3.0+	0.1-
320503 024	0.5-	0.6-	730407 805	2.9-	1.1+	801112 688	(8.7+)	1.8+
320505 012	4.4+	2.9-	730407 805	2.9-	1.1-	801113 688	(6.6-)	0.4-
320505 024	3.7+	1.0+	730427 691	0.6+	0.2-	801113 688	2.8-	0.4-
320505 012	1.0-	1.0-	730427 691	0.4+	0.2-	801115 386	1.0-	3.2+
320505 012	3.6-	0.7-	730506 801	2.7-	0.8-	801115 386	0.5+	2.2+
320506 801	1.9-	1.7+	730528 801	2.9-	0.6-	801117 688	1.9+	2.2+
320506 012	0.3-	1.3+	730530 801	2.3-	0.1-	801117 688	1.0+	1.2+
320507 078	4.3+	0.9+	730530 693	0.9+	1.2+	801117 688	1.5-	1.4-
320507 078	0.6-	1.4-	730530 693	3.4-	1.0+	801119 688	1.7-	0.1+
320509 754	0.6+	0.2+	730903 693	3.2+	1.9-	801119 688	0.3+	1.1-
320509 027	4.0+	0.4-	730903 693	1.9+	2.0-	801201 386	1.6-	1.6+
320510 027	3.8+	1.3+	730921 691	0.6+	0.2+	801201 386	3.9-	1.3+
320512 754	0.2+	0.3+	730926 801	0.9+	1.3+	801215 801	1.2-	0.7-
320512 027	4.3+	1.5-	730929 693	1.1+	0.0	810111 801	1.4+	1.3-

(2042) Sitarski
Epoch 1981 July 15.0 ET = JDE 2444800.5

M 144.88796		(1950.0)	P	Q
n 0.21567629	Peri.	54.87517	+0.31024320	-0.95026246
a 2.7538130	Node	17.11392	+0.83907249	+0.26016865
e 0.1505406	Incl.	5.34137	+0.44688533	+0.17121195
P 4.57	B(1,0)	14.0		

Residuals in seconds of arc

600924	675	0.9+	1.5+	601022	675	0.2-	0.5-	760327	801	2.0-	1.2+
600926	675	0.7-	0.6-	601024	675	1.1-	0.2-	760402	801	0.1-	1.8+
600926	675	1.7+	0.5+	601025	675	0.2-	1.3-	760402	095	1.6+	0.0
600927	675	0.6-	1.1+	601026	675	0.5-	0.2-	770616	474	3.6-	2.9-
600927	675	1.8+	0.4+	601026	675	0.9-	0.7-	791214	688	0.6+	1.0+
600928	675	0.9+	0.5-	710125	095	5.2-	3.5-				
601017	675	0.5+	0.3-	760227	801	6.1+	3.6-				

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NEW NAMES OF MINOR PLANETS.

(2197) Shanghai = 1965 YN
Discovered 1965 Dec. 30 at the Purple Mountain Observatory.
Named for the largest city in China, one of the best known ports in the world, located at the mouth of the Yangtze River.

(2209) Tianjin = 1978 US1
Discovered 1978 Oct. 28 at the Purple Mountain Observatory.
Named for the largest port city in northern China, site of the latitude station of the Peking Observatory.

(2215) Sichuan = 1964 VX2
Discovered 1964 Nov. 12 at the Purple Mountain Observatory.
Named for the most populous province of China, noted for its agricultural products.

(2230) Yunnan = 1978 UT1
Discovered 1978 Oct. 29 at the Purple Mountain Observatory.
Named for a province along the southwestern border of China. The Yunnan Observatory is situated in its capital city of Kunming.

(2253) Espinette = 1932 PB
Discovered 1932 July 30 by G. Van Biesbroeck at the Yerkes Observatory.
Named for the discoverer’s residence in Williams Bay, Wisconsin. For many of the 45 years the discoverer worked at the Yerkes Observatory the Van Biesbroecks fed and housed students and visiting astronomers from all over the world. The name originally comes from a small cafe in one of the parks in Brussels. Name proposed by the discoverer’s children, Edwin Van Biesbroeck, Simone Van Biesbroeck Titus and Micheline Van Biesbroeck Wilson.

(2255) Qinghai = 1977 VK1
Discovered 1977 Nov. 3 at the Purple Mountain Observatory.
Named for a large province in the western part of China. The sources of the two largest rivers in China, the Yellow River and the Yangtze, are in this province.

(2263) Shaanxi = 1978 UW1
Discovered 1978 Oct. 30 at the Purple Mountain Observatory.
Named for a province in central China, near the upper reaches of the Yellow River. Its capital, Xi’an, is one of the best known ancient cities in the country.

(2280) Kunikov = 1971 SL2
Discovered 1971 Sept. 26 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named in memory of Tzezar' L'vovich Kunikov (1909-1943), commander of the landing party that seized Malaya Zemlya in the Novorossijsk region in February 1943.

(2304) Slavia = 1979 KB
Discovered 1979 May 18 by A. Mrkos at the Klet Observatory.
This is an ancient Slavonic name, now also that of a famous sports club in Prague.

(2315) Czechoslovakia = 1980 DZ
Discovered 1980 Feb. 19 by Z. Vavrova at the Klet Observatory.
Named in honor of the discoverer's country, renowned for its research activity on minor planets, comets, meteorites and meteor streams.

(2321) Luznice = 1980 DB1
Discovered 1980 Feb. 19 by Z. Vavrova at the Klet Observatory.
Named for the small river running through the idyllic southern Bohemian countryside very close to the fifteenth meridian.

(2325) Chernykh = 1979 SP
Discovered 1979 Sept. 25 by A. Mrkos at the Klet Observatory.
Named in honor of Ludmila I. Chernykh and Nikolaj S. Chernykh, astronomers at the Crimean Astrophysical Observatory who lead the impressive program of observations and discoveries of minor planets there.

(2336) Xinjiang = 1975 WL1
Discovered 1975 Nov. 26 at the Purple Mountain Observatory.
Named for the Xinjiang Uygur Autonomous Region, the largest Chinese region by area, situated at the northwestern border of the country.

(2338) Bokhan = 1977 QA3
Discovered 1977 Aug. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Nadezhda Antonovna Bokhan, a staff member of the Institute for Theoretical Astronomy in Leningrad during 1944-1957 and 1965-1974, known for her valuable contributions to the study of minor planets and for her investigation on the motion of periodic comet Encke.

(2340) Hathor = 1976 UA
Discovered 1976 Oct. 22 by C. Kowal at Palomar.
Like the other objects of Aten type, (2340) is named for an Egyptian deity. Known as a sky-goddess and the daughter of Ra, Hathor was also identified with Aphrodite. Name proposed by E. Helin, who made an independent discovery of the object and who also made crucial recovery observations in 1981.

(2342) Lebedev = 1968 UQ
Discovered 1968 Oct. 22 by T. M. Smirnova at the Crimean Astrophysical Observatory.
Named in memory of Nikolaj Aleksandrovich Lebedev (1914-1942), a valiant tank officer who fell in the battle of Stalingrad.

(2344) Xizang = 1979 SC1
Discovered 1979 Sept. 27 at the Purple Mountain Observatory.
Named for the autonomous region, also known as Tibet, on the southwestern border of China.

(2350) von Lude = 1938 CG
Discovered 1938 Feb. 6 by A. Bohrmann at Heidelberg.

Named in memory of Heinz von Lude (1914-1974), astronomer at the Astronomisches Rechen-Institut who calculated many preliminary orbits of minor planets. He also studied a fictitious example of 3/1 libration in the restricted three-body problem and was involved with the meridian-circle program at the Heidelberg Observatory.

(2355) Nei Monggol = 1978 UV1

Discovered 1978 Oct. 30 at the Purple Mountain Observatory.

Named for an autonomous region, also known as Inner Mongolia, on the northern border of China, noted for its extensive prairie lands.

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EPHEMERIDES.

(2381) 1976 AF Elements MPC 6046

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981	05 16	13 16.35	+09 21.5	2.095	2.916	136.8	13.7	16.7
1981	05 26	13 12.97	+09 15.6					
1981	06 05	13 11.70	+08 51.4	2.320	2.937	118.1	17.7	17.1
1981	06 15	13 12.53	+08 11.8					
1981	06 25	13 15.30	+07 20.0	2.586	2.957	101.2	19.7	17.4
1981	07 05	13 19.83	+06 18.6					
1981	07 15	13 25.91	+05 10.0	2.868	2.975	86.0	19.9	17.6
1981	07 25	13 33.34	+03 56.1					
1981	08 04	13 41.96	+02 38.7	3.145	2.991	72.0	18.8	17.8
1981	08 14	13 51.61	+01 19.1					
1981	08 24	14 02.15	-00 01.5	3.401	3.005	58.9	16.7	17.9

1974 RA2 Elements MPC 6058

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981	05 16	13 25.66	-08 40.3	2.017	2.926	148.4	10.4	18.6
1981	05 26	13 20.73	-08 09.6					
1981	06 05	13 18.00	-07 52.1	2.182	2.909	127.1	16.1	18.9
1981	06 15	13 17.56	-07 48.7					
1981	06 25	13 19.32	-07 58.7	2.404	2.891	108.4	19.5	19.2
1981	07 05	13 23.12	-08 20.9					
1981	07 15	13 28.77	-08 53.8	2.651	2.870	91.8	20.7	19.4
1981	07 25	13 36.04	-09 35.9					
1981	08 04	13 44.76	-10 25.3	2.899	2.847	77.0	20.3	19.6
1981	08 14	13 54.77	-11 20.7					
1981	08 24	14 05.91	-12 20.4	3.129	2.823	63.3	18.7	19.7

1977 PW1 Elements MPC 6054

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981	05 16	14 49.49	-28 21.6	2.298	3.290	166.9	4.0	16.4
1981	05 26	14 42.12	-27 26.8					
1981	06 05	14 36.16	-26 29.6	2.388	3.302	149.4	9.0	16.7
1981	06 15	14 32.10	-25 34.9					
1981	06 25	14 30.15	-24 46.6	2.572	3.313	129.5	13.7	17.0
1981	07 05	14 30.33	-24 07.3					
1981	07 15	14 32.58	-23 38.3	2.820	3.324	111.1	16.6	17.2
1981	07 25	14 36.71	-23 19.5					
1981	08 04	14 42.54	-23 10.3	3.102	3.334	94.2	17.7	17.5
1981	08 14	14 49.90	-23 09.7					
1981	08 24	14 58.58	-23 16.2	3.392	3.343	78.7	17.2	17.7
1981	09 03	15 08.44	-23 28.3					
1981	09 13	15 19.33	-23 44.7	3.668	3.352	64.1	15.7	17.8

(2388) 1977 EA2 Elements MPC 6052

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 05 16	14 56.55	-21 25.0	1.014	2.020	172.0	4.0	15.6
1981 05 26	14 48.58	-20 45.2					
1981 06 05	14 43.00	-20 08.9	1.087	2.032	150.4	14.3	16.0
1981 06 15	14 40.59	-19 42.5					
1981 06 25	14 41.55	-19 29.2	1.233	2.048	131.0	22.0	16.5
1981 07 05	14 45.73	-19 29.6					
1981 07 15	14 52.84	-19 42.9	1.429	2.069	114.6	26.5	17.0
1981 07 25	15 02.49	-20 06.5					
1981 08 04	15 14.31	-20 37.8	1.655	2.094	100.6	28.4	17.4
1981 08 14	15 27.99	-21 14.0					
1981 08 24	15 43.24	-21 52.4	1.898	2.123	88.2	28.4	17.7
1981 09 03	15 59.83	-22 30.5					
1981 09 13	16 17.56	-23 06.2	2.147	2.155	76.9	27.1	17.9
1981 09 23	16 36.24	-23 37.4					
1981 10 03	16 55.72	-24 02.5	2.394	2.189	66.1	24.7	18.2
1981 10 13	17 15.85	-24 20.1					
1981 10 23	17 36.47	-24 29.2	2.630	2.225	55.6	21.6	18.3

6066 P-L Elements MPC 6050

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 05 16	18 11.07	-20 50.1	2.288	3.146	141.9	11.4	18.0
1981 05 26	18 05.70	-20 36.7					
1981 06 05	17 58.66	-20 23.9	2.182	3.170	163.8	5.1	17.8
1981 06 15	17 50.61	-20 11.7					
1981 06 25	17 42.35	-20 00.6	2.183	3.193	172.2	2.5	17.6
1981 07 05	17 34.67	-19 51.0					
1981 07 15	17 28.29	-19 43.9	2.293	3.216	150.3	9.0	18.0
1981 07 25	17 23.73	-19 39.8					
1981 08 04	17 21.27	-19 39.2	2.495	3.239	129.7	14.0	18.4
1981 08 14	17 21.01	-19 41.8					
1981 08 24	17 22.89	-19 47.2	2.760	3.261	110.9	16.8	18.7
1981 09 03	17 26.77	-19 54.5					
1981 09 13	17 32.48	-20 02.9	3.058	3.283	93.8	17.8	18.9
1981 09 23	17 39.79	-20 11.1					
1981 10 03	17 48.53	-20 18.2	3.362	3.304	78.1	17.2	19.1
1981 10 13	17 58.48	-20 23.1					
1981 10 23	18 09.47	-20 24.9	3.652	3.324	63.2	15.5	19.3

1976 GX2 Elements MPC 6054

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 05 16	18 43.10	-06 04.3	1.625	2.413	131.1	18.4	15.9
1981 05 26	18 39.23	-05 01.0					
1981 06 05	18 32.89	-04 11.6	1.543	2.469	149.1	12.2	15.7
1981 06 15	18 24.78	-03 39.7					
1981 06 25	18 15.86	-03 27.6	1.546	2.525	160.0	7.9	15.6
1981 07 05	18 07.17	-03 35.3					
1981 07 15	17 59.72	-04 00.8	1.646	2.582	150.9	11.0	15.9
1981 07 25	17 54.22	-04 40.4					
1981 08 04	17 51.10	-05 29.8	1.834	2.639	133.7	16.1	16.3
1981 08 14	17 50.53	-06 24.7					
1981 08 24	17 52.41	-07 21.4	2.087	2.695	116.6	19.6	16.7
1981 09 03	17 56.58	-08 16.9					
1981 09 13	18 02.80	-09 08.9	2.380	2.751	100.7	21.1	17.1
1981 09 23	18 10.78	-09 55.8					
1981 10 03	18 20.29	-10 36.3	2.692	2.805	86.0	20.8	17.4
1981 10 13	18 31.10	-11 09.3					
1981 10 23	18 42.96	-11 34.3	3.003	2.858	72.1	19.3	17.6

(2378) 1935 CY Elements MPC 6045

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 05 16	20 05.18	-03 34.2	2.773	3.274	111.0	16.8	17.2
1981 05 26	20 05.55	-02 52.5					
1981 06 05	20 03.93	-02 19.4	2.530	3.264	128.8	14.0	16.9
1981 06 15	20 00.34	-01 57.4					
1981 06 25	19 54.98	-01 48.7	2.351	3.252	147.1	9.8	16.6
1981 07 05	19 48.20	-01 54.7					
1981 07 15	19 40.55	-02 16.0	2.263	3.239	160.6	6.0	16.4
1981 07 25	19 32.71	-02 51.5					
1981 08 04	19 25.39	-03 38.7	2.280	3.224	154.2	7.9	16.5
1981 08 14	19 19.28	-04 34.3					
1981 08 24	19 14.88	-05 34.4	2.399	3.208	136.5	12.5	16.7
1981 09 03	19 12.49	-06 35.6					
1981 09 13	19 12.28	-07 34.6	2.595	3.191	117.8	16.2	17.0
1981 09 23	19 14.21	-08 29.0					
1981 10 03	19 18.18	-09 17.2	2.837	3.172	100.3	18.1	17.2
1981 10 13	19 24.03	-09 57.9					
1981 10 23	19 31.54	-10 30.3	3.097	3.152	84.0	18.3	17.4

(2379) 1941 ST Elements MPC 6045

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 05 16	21 02.74	-16 28.4	2.043	2.451	101.3	23.9	16.0
1981 05 26	21 11.48	-15 50.3					
1981 06 05	21 18.19	-15 20.0	1.787	2.418	116.6	22.0	15.7
1981 06 15	21 22.63	-14 59.8					
1981 06 25	21 24.57	-14 51.4	1.569	2.390	134.1	17.8	15.3
1981 07 05	21 23.87	-14 55.7					
1981 07 15	21 20.61	-15 12.3	1.410	2.367	154.2	10.8	14.9
1981 07 25	21 15.16	-15 39.2					
1981 08 04	21 08.21	-16 12.5	1.336	2.349	176.4	1.5	14.3
1981 08 14	21 00.82	-16 47.0					
1981 08 24	20 54.13	-17 17.7	1.358	2.337	160.8	8.2	14.7
1981 09 03	20 49.17	-17 40.6					
1981 09 13	20 46.71	-17 53.1	1.471	2.330	139.6	16.3	15.0
1981 09 23	20 47.07	-17 54.2					
1981 10 03	20 50.29	-17 43.8	1.652	2.329	120.9	21.6	15.4
1981 10 13	20 56.21	-17 21.8					
1981 10 23	21 04.48	-16 48.7	1.876	2.334	104.6	24.4	15.8

1977 QR2 Elements MPC 6055

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 06 05	21 48.18	-11 23.4	2.012	2.523	108.4	22.4	19.0
1981 06 15	21 52.80	-10 50.8					
1981 06 25	21 55.11	-10 29.8	1.766	2.498	125.6	19.3	18.7
1981 07 05	21 54.89	-10 22.4					
1981 07 15	21 52.05	-10 29.4	1.569	2.473	145.3	13.5	18.3
1981 07 25	21 46.75	-10 50.5					
1981 08 04	21 39.40	-11 23.7	1.449	2.449	167.5	5.1	17.8
1981 08 14	21 30.83	-12 04.7					
1981 08 24	21 22.13	-12 48.2	1.427	2.426	168.3	4.8	17.8
1981 09 03	21 14.41	-13 28.5					
1981 09 13	21 08.70	-14 01.1	1.505	2.404	145.7	13.7	18.1
1981 09 23	21 05.62	-14 23.1					
1981 10 03	21 05.47	-14 33.0	1.662	2.383	125.2	20.1	18.5
1981 10 13	21 08.23	-14 30.3					
1981 10 23	21 13.69	-14 15.0	1.868	2.364	107.4	23.7	18.8
1981 11 02	21 21.52	-13 47.6					
1981 11 12	21 31.41	-13 08.4	2.097	2.347	91.9	24.9	19.0

1978 RO1 Elements MPC 6055

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 06 05	22 26.17	-08 54.4	1.623	2.042	98.8	29.4	18.3
1981 06 15	22 35.32	-07 57.7					
1981 06 25	22 42.05	-07 14.5	1.433	2.063	113.6	26.8	18.0
1981 07 05	22 45.99	-06 47.8					
1981 07 15	22 46.86	-06 39.9	1.268	2.085	131.4	21.5	17.6
1981 07 25	22 44.50	-06 52.2					
1981 08 04	22 38.99	-07 24.4	1.155	2.107	152.6	12.8	17.2
1981 08 14	22 30.88	-08 12.8					
1981 08 24	22 21.20	-09 11.0	1.121	2.131	176.4	1.7	16.7
1981 09 03	22 11.31	-10 10.6					
1981 09 13	22 02.67	-11 03.0	1.184	2.154	159.1	9.6	17.2
1981 09 23	21 56.40	-11 42.3					
1981 10 03	21 53.17	-12 05.2	1.335	2.177	137.0	18.3	17.7
1981 10 13	21 53.16	-12 10.9					
1981 10 23	21 56.20	-12 00.0	1.550	2.199	118.0	23.5	18.2
1981 11 02	22 01.95	-11 33.9					
1981 11 12	22 10.02	-10 53.9	1.801	2.221	101.5	25.9	18.6

(2380) 1965 SN Elements MPC 6046

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 06 25	23 08.24	-05 45.0	1.714	2.234	107.1	25.8	17.5
1981 07 05	23 13.87	-05 01.5					
1981 07 15	23 16.99	-04 32.4	1.490	2.221	123.6	22.4	17.1
1981 07 25	23 17.32	-04 19.7					
1981 08 04	23 14.64	-04 24.8	1.309	2.207	143.2	16.0	16.7
1981 08 14	23 09.00	-04 47.6					
1981 08 24	23 00.87	-05 25.3	1.199	2.194	166.0	6.4	16.2
1981 09 03	22 51.14	-06 12.8					
1981 09 13	22 41.15	-07 02.3	1.183	2.180	169.4	4.9	16.1
1981 09 23	22 32.30	-07 46.0					
1981 10 03	22 25.74	-08 17.7	1.264	2.166	145.8	15.0	16.5
1981 10 13	22 22.23	-08 33.5					
1981 10 23	22 22.00	-08 32.1	1.420	2.152	125.1	22.2	16.9
1981 11 02	22 24.95	-08 13.7					
1981 11 12	22 30.77	-07 39.2	1.622	2.139	107.4	26.2	17.3
1981 11 22	22 39.06	-06 50.2					
1981 12 02	22 49.45	-05 47.9	1.845	2.126	92.2	27.6	17.6

1979 DK Elements MPC 6049

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1981 06 25	00 04.79	+08 28.6	2.896	3.043	88.4	19.5	18.2
1981 07 05	00 10.19	+09 34.7					
1981 07 15	00 13.96	+10 32.5	2.626	3.043	104.4	18.9	17.9
1981 07 25	00 15.91	+11 20.3					
1981 08 04	00 15.86	+11 56.2	2.377	3.041	122.2	16.4	17.7
1981 08 14	00 13.70	+12 18.1					
1981 08 24	00 09.47	+12 24.2	2.179	3.039	141.9	11.8	17.4
1981 09 03	00 03.40	+12 13.4					
1981 09 13	23 55.97	+11 45.9	2.062	3.035	162.0	5.9	17.1
1981 09 23	23 47.87	+11 04.0					
1981 10 03	23 39.90	+10 11.7	2.053	3.031	165.1	4.9	17.0
1981 10 13	23 32.90	+09 15.0					
1981 10 23	23 27.53	+08 19.8	2.154	3.025	145.3	10.8	17.3
1981 11 02	23 24.20	+07 31.3					
1981 11 12	23 23.14	+06 53.6	2.344	3.018	124.6	15.7	17.6
1981 11 22	23 24.32	+06 28.8					
1981 12 02	23 27.61	+06 17.7	2.592	3.010	105.6	18.4	17.9