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Solar - Geophysical Data

NO. 478 JUNE 1984

Part II (Comprehensive Reports)

DATA FOR
DECEMBER 1983

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
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S O L A R - G E O P H Y S I C A L D A T A

NUMBER 478

(Issued in Two Parts)

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*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in SOLAR-GEOPHYSICAL DATA, No. 461, Part II, pages 103-235.

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OUTSTANDING OCCURRENCES

DECEMBER 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
01	410	LEAR	8	S	0259.1	0300.1	1.2	17.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	0259.1	0300.3	1.2	4.0			QL=6 ST=2 TYP=3
	1000	TYKW	5	S	2335.0	2335.2	0.7	4.0	1.5		
02	3750	TYKW	20	GRF	0415.0	0430.0	65.0	2.0	1.0		
	2000	TYKW	20	GRF	0420.0	0430.0	50.0	1.5	0.7		
	9400	TYKW	20	GRF	0425.0	0436.0	50.0	2.0	1.0		
03	260	ONDR	27	RF	0920.0	0954.0	72.0	5.0	4.0		
	260	ONDR	8	S	0923.8	0924.0	.5	4.0			
	810	KRAK	8	S	0941.2	0941.2	.2	12.0			
	260	ONDR	8	S	1134.0	1135.0	1.0U	2.0			
	9400	TYKW	5	S	2237.3	2237.5	1.0	4.0	1.5		
04	245	LEAR	8	S	0127.3	0127.3	1.0	10.0			QL=5 ST=2 TYP=3
	245	LEAR	8	S	0606.8	0606.8	.2	13.0			QL=5 ST=2 TYP=3
	245	LEAR	8	S	0623.1	0623.3	.4	8.0			QL=5 ST=2 TYP=3
	245	LEAR	8	S	0647.8	0648.0	.3	29.0			QL=6 ST=2 TYP=3
	260	ONDR	8	S	1005.0	1005.6	.5	2.0			
05	245	LEAR	47	GB	0018.5	0018.6	.1	73.0			QL=6 ST=2 TYP=5
	410	LEAR	4	S/F	0018.6	0018.6	12.0	5.0			QL=6 ST=3 TYP=3
	430	KRAK	46	C	0956.5	1000.5	10.2	200.0	43.0		
	430	KRAK			0956.5	1005.0D		360.0D			
	810	KRAK	8	S	1152.8	1152.8	.2	18.0			
	260	ONDR	40	F	1205.0	1205.2	2.5	5.0			
	260	ONDR	40	F	1225.0	1241.5	21.0	7.0			
	2800	OTTA	32	ABS	1555.0	1615.0	35.0	-2.0	-1.0		
06	260	ONDR	43	NS	0935.0		205.0D	3.0			
	245	LEAR	8	S	0008.8	0009.6	1.3	15.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0009.6	0009.8	.2	3.0			QL=6 ST=2 TYP=3
	3750	TYKW	20	GRF	0200.0	0235.0	150.0	1.0	0.5		
	3750	TYKW	20	GRF	0345.0	0438.0	125.0	1.5	0.7		
	3100	CRIM	24	R	0630.0	1030.0		23.0			
	9100	GORK	21	GRF	0656.7	0747.0	243.0U	10.0			
	204	IZMI	41	F	0703.5	0704.8	1.5	80.0			
	245	LEAR	47	GB	0703.6	0703.8	1.0	119.0			QL=6 ST=2 TYP=5
	410	LEAR	8	S	0703.8	0704.8	1.8	10.0			QL=6 ST=2 TYP=3
	610	LEAR	8	S	0703.8	0704.8	2.0	11.0			QL=6 ST=2 TYP=3
	1415	LEAR	8	S	0704.1	0704.8	1.0	6.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0704.1	0704.8	1.2	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0704.1	0704.8	.9	15.0			QL=6 ST=2 TYP=3
	4995	LEAR	8	S	0704.1	0704.8	.9	13.0			QL=6 ST=2 TYP=3
	6100	KISV	1	S	0704.4	0704.5	0.5	5.0D			
	9100	GORK	1	S	0704.5	0704.6	.3	11.0	5.5		
	2950	GORK	1	S	0704.5	0704.7	.4	3.7	1.8		
	610	LEAR	8	S	0724.1	0724.6	.7	17.0			QL=6 ST=2 TYP=3
	2950	GORK	20	GRF	0756.1	0934.4	101.0	3.7			
	3000	POTS	1	S	0933.9	0934.4	1.4	3.0			
	1470	POTS	8	S	0934.1	0934.4	2.6	4.0			
	1470	POTS	21	GRF	1000.0	1011.8	30.0	3.0			
	9500	POTS	20	GRF	1000.0	1025.5	185.0	15.0			
	3000	POTS	21	GRF	1000.0	1027.4	30.0	12.0			
	2950	GORK	20	GRF	1007.8	1025.2	75.0D	8.7			
	808	ONDR	46	C	1009.0		12.0				
	808	ONDR			1009.0	1011.0U		6.0D			
	808	ONDR			1009.0	1019.0U		6.0D			
	930	GORK	46	C	1009.2	1009.8	4.8	19.0			
	930	GORK			1009.2	1011.7		58.0			
	930	GORK			1009.2	1012.4		110.0			
	650	GORK	23	GRF	1010.6		12.4	9.0U			
	930	GORK	30	PBI	1014.0	1015.0	13.6	2.5			
	536	ONDR	46	C	1015.5		13.0		16.0		
	536	ONDR			1015.5	1019.5		60.0			
	536	ONDR			1015.5	1023.5		13.0			
	610	LEAR	47	GB	1016.8	1019.6	3.5	100.0			QL=6 ST=2 TYP=5
	6100	KISV			1017.4	1018.8		4.0			
	6100	KISV			1017.4	1025.2		10.0			
	6100	KISV	46	C	1017.4	1027.4	13.0	12.0			
	6100	KISV			1017.4	1029.6		9.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
06	650	GORK	4	S/F	1017.6	1019.4	3.1	60.0			
	9100	GORK	2	S/F	1025.0	1025.5	3.6	6.0			
	6100	KISV	29	PBI	1030.0	1030.0	52.0	8.0			
	536	ONDR	4	S/F	1238.0	1238.1	.7	9.0			
	33	UPIC		C	1321.8	1322.7	2.3				
	113	POTS	4	S/F	1322.8	1322.8	.6	420.0	15.0		III/V
	29	UPIC	4	S/F	1322.8	1323.1	1.5				
	2800	OTTA	20	GRF	1335.0		65.0	2.6			
	2800	OTTA	24	OAR	1525.0	1550.0	25.0	3.0	1.5		
	245	SGMR	47	GB	1542.3	1542.5	.5	93.0			QL=6 ST=2 TYP=5
	2800	OTTA	2	S/F	1543.0	1545.4	5.0	4.4	1.1		
	610	SGMR	47	GB	1543.3	1543.5	.3	61.0			QL=6 ST=2 TYP=5
	2800	OTTA	20	GRF	1605.0	1630.0	60.0	4.8	2.6		
	2800	OTTA	22	GRF	1735.0	1835.0	110.0	2.8	1.3		
	2800	OTTA	27	RF	1930.0		100.0	1.6	1.4		
	2800	OTTA	24	R	1930.0	1940.0	10.0	1.6	.8		
	2800	OTTA	24P	R	1940.0		80.0	1.6			
	2800	OTTA	26	FAL	2100.0	2110.0	10.0	-1.6	-.8		
	9400	TYKW	20	GRF	2235.0	2247.0	45.0	4.0	2.0		
	8800	LEAR	20	GRF	2235.3	2240.3	28.7	11.0			QL=6 ST=2 TYP=2
	15400	LEAR	20	GRF	2235.6	2256.6	34.9	33.0			QL=6 ST=2 TYP=2
	4995	LEAR	20	GRF	2235.8	2303.3	46.2	8.0			QL=6 ST=2 TYP=2
	2695	LEAR	20	GRF	2236.1	2253.1	45.9	5.0			QL=6 ST=2 TYP=2
	1415	LEAR	20	GRF	2237.6	2308.6	44.4	7.0			QL=6 ST=2 TYP=2
	1000	TYKW	21	GRF	2303.0	2350.0	190.0	3.0	1.5		
	200	HIRA	42	SER	2309.0	2315.8	25.0	11.0			O
	200	HIRA			2309.0	2325.2		11.0			WL
	410	LEAR	4	S/F	2311.8	2315.3	6.3	4.0			QL=6 ST=2 TYP=3
	245	LEAR	4	S/F	2313.8	2316.1	4.3	5.0			QL=6 ST=2 TYP=3
	610	LEAR	4	S/F	2314.0	2316.1	4.3	4.0			QL=6 ST=2 TYP=3
	500	HIRA	42	SER	2314.0	2325.3	17.0	4.0			ML
	245	LEAR	4	S/F	2323.8	2325.3	3.3	10.0			QL=6 ST=2 TYP=3
	410	LEAR	4	S/F	2323.8	2326.0	3.7	9.0			QL=6 ST=2 TYP=3
	610	LEAR	4	S/F	2324.1	2325.5	3.0	4.0			QL=6 ST=2 TYP=3
	610	LEAR	4	S/F	2327.8	2330.1	4.3	4.0			QL=6 ST=2 TYP=3
	245	LEAR	4	S/F	2328.8	2330.3	6.0	13.0			QL=6 ST=2 TYP=3
	410	LEAR	4	S/F	2328.8	2330.8	6.2	5.0			QL=6 ST=2 TYP=3
	3750	TYKW	20	GRF	2335.0	2358.0	65.0	2.0	1.0		
	2000	TYKW	20	GRF	2337.0E	0000.0	60.0D	3.0	1.5D		
	245	LEAR	8	S	2339.3	2339.5	.7	9.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	2339.3	2339.6	.8	13.0			QL=6 ST=2 TYP=3
	610	LEAR	8	S	2339.5	2339.6	1.3	5.0			QL=6 ST=2 TYP=3
	1000	TYKW	45	C	2339.7	2340.1	1.0	117.0	7.0		
07	260	ONDR	44	NS	0805.0E		355.0D	36.0			
	127	TORN	43	NS	0949.0	1021.9	183.0	270.0	2.0		V=2
	9400	TYKW	21	GRF	0041.0	0049.0	95.0	4.0	2.0		
	9400	TYKW	5	S	0042.0	0042.3	2.0	18.0	2.0		
	3750	TYKW	5	S	0042.0	0042.8	2.0	2.0	0.7		
	3750	TYKW	21	GRF	0042.0	0145.0	130.0	4.0	2.0		
	2000	TYKW	20	GRF	0053.0	0105.0	65.0	2.0	1.0		
	3750	TYKW	21	GRF	0054.0	0102.0	35.0	4.0	2.0		
	9400	TYKW	45	C	0055.0	0057.2	8.0	12.0	6.0		
	8800	LEAR	20	GRF	0055.6	0057.1	25.7	5.0			QL=6 ST=2 TYP=2
	4995	LEAR	20	GRF	0055.8	0057.1	25.5	6.0			QL=6 ST=2 TYP=2
	15400	LEAR	20	GRF	0055.8	0057.3	25.5	13.0			QL=6 ST=2 TYP=2
	3750	TYKW	5	S	0056.5	0057.2	1.5	1.5	0.5		
	9400	TYKW	29	PBI	0103.0		30.0	6.0	3.0		
	9400	TYKW	20	GRF	0143.0	0153.0	30.0	2.0	1.0		
	3750	TYKW	21	GRF	0330.0	0343.0	130.0	2.0	1.0		
	9400	TYKW	5	S	0334.0	0334.4	1.0	3.0	1.0		
	3750	TYKW	20	GRF	0430.0	0455.0	60.0	1.0	0.5		
	610	LEAR	4	S/F	0737.8	0742.0	5.2	26.0			QL=6 ST=2 TYP=3
	200	GORK	41	F	0738.1	0741.8	8.4	405.0			
	200	GORK			0738.1	0745.7		65.0			
	410	LEAR	4	S/F	0739.6	0742.0	3.4	20.0			QL=6 ST=2 TYP=3
	204	IZMI	41	F	0741.2	0742.0	5.0	90.0			
	245	LEAR	47	GB	0741.3	0741.8	.7	110.0			QL=6 ST=2 TYP=5
	410	LEAR	8	S	0745.1	0745.8	1.7	20.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	0745.1	0745.8	1.7	20.0			QL=6 ST=2 TYP=3
	430	KRAK	42	SER	0955.7	0957.3	8.0	30.0			

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
07	204	IZMI	5	S	1002.5	1002.6	.2	35.0	15.0		
	204	IZMI	41	F	1033.0	1037.9	6.0	35.0			
	430	KRAK	8	S	1034.6	1034.6	.4	8.0			
	245	LEAR	8	S	1037.8	1037.8	.3	50.0			QL=6 ST=2 TYP=3
	536	ONDR	40	F	1114.0	1123.0	10.0	30.0			
	204	IZMI	41	F	1114.5	1123.0	16.0	400.0			
	113	POTS	41	F	1114.5	1127.3	15.0	200.0	1.0		III
	200	GORK	41	F	1118.0	1122.9	11.1	1730.0			
	200	GORK			1118.0	1127.2		1000.0			
	430	KRAK	42	SER	1118.4	1118.8	9.5	25.0			
	430	KRAK			1118.4	1121.9		35.0			
	430	KRAK			1118.4	1126.4		14.0			
	234	POTS	42	SER	1119.5	1122.7	9.2	300.0	3.0		III
	33	UPIC	45	C	1125.3	1126.8	2.1				
	29	UPIC	42	SER	1125.4	1128.8	4.1				
	33	UPIC	8	S	1242.4	1242.4	.3				
	113	POTS	42	SER	1242.5	1249.5	8.9	2100.0	5.0		III
	29	UPIC	8	S	1242.7	1242.9	.3				
	536	ONDR	40	F	1247.0	1249.0	4.5	11.0			
	234	POTS	8	S	1249.4	1249.5	.3	165.0	50.0		III
	2800	OTTA	20	GRF	1805.0	1840.0	95.0	2.0	1.3		
	8800	PALE	47	GB	1857.3	1857.6	.7	82.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2016.1	2017.1	2.5	330.0			QL=6 ST=3 TYP=5
	245	LEAR	8	S	2339.3	2339.5	.7	9.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	2339.3	2339.6	.8	13.0			QL=6 ST=2 TYP=3
	610	LEAR	8	S	2339.5	2339.6	1.3	5.0			QL=6 ST=2 TYP=3
08	260	ONDR	44	NS	0816.0E		327.0D	11.0			
	127	TORN	43	NS	1050.0	1155.3	172.0	170.0	6.0		V=1
	200	HIRA	27	RF	0044.0	0057.0	96.0	5.0	2.0		0
	3750	TYKW	20	GRF	0100.0	0153.0	140.0	2.0	1.0		
	245	LEAR	4	S/F	0549.1	0549.1	7.0	5.0			QL=6 ST=2 TYP=3
	410	LEAR	4	S/F	0549.1	0549.1	8.0	10.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0721.0	0721.0	.1	11.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	0721.0	0721.0	.1	10.0			QL=6 ST=2 TYP=3
	3100	CRIM	24	R	0735.0	0950.0		4.0			
	410	LEAR	8	S	0739.0	0739.0	.1	15.0			QL=6 ST=2 TYP=3
	6100	KISV	46	C	0751.5	0753.0	3.0	7.0			
	430	KRAK	8	S	0817.0	0817.0	.4	11.0			
	410	LEAR	8	S	0846.3	0846.5	.3	4.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	0846.3	0846.5	.3	11.0			QL=6 ST=2 TYP=3
	2950	GORK	1	S	0909.6	0909.8	2.4	2.5			
	430	KRAK	46	C	0944.7	0948.0D	6.5	350.0D	80.0		
	430	KRAK	42	SER	1011.7	1017.8	21.0	9.0			
	430	KRAK			1011.7	1026.5		10.0			
	2950	GORK	1	S	1018.3	1018.7	.9	3.7			
	6100	KISV	1	S	1018.3	1018.7	1.0	5.0			
	430	KRAK	8	S	1042.2	1042.2	.2	5.0			
	430	KRAK	42	SER	1110.2	1119.8	16.0	13.0			
	9400	HUAN	20	GRF	1218.3	1224.0	16.0	4.2	2.3		0
	430	KRAK	42	SER	1220.8	1222.2	35.5	35.0			
	2800	OTTA	20	GRF	1350.0	1430.0	115.0	2.0	1.4		
	9400	HUAN	20	GRF	1805.0	1813.2	20.4	2.8	1.2		R
	2800	OTTA	1	S	1842.5	1844.3	2.5	3.6	1.2		
	245	LEAR	8	S	2155.1	2155.1	.2	16.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	2155.1	2155.1	.2	20.0			QL=6 ST=2 TYP=3
09	260	ONDR	44	NS	0800.0E		350.0D	19.0			
	410	LEAR	8	S	0017.8	0018.1	.3	10.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	0017.8	0018.1	.3	28.0			QL=6 ST=2 TYP=3
	3750	TYKW	21	GRF	0210.0	0220.0	70.0	1.0	0.5		
	2000	TYKW	20	GRF	0210.0	0240.0	80.0	1.0	0.5		
	9400	TYKW	5	S	0230.0	0230.6	1.5	5.0	1.5		
	3750	TYKW	20	GRF	0230.0	0236.0	45.0	2.0	1.0		
	9400	TYKW	20	GRF	0232.0	0237.0	30.0	3.0	1.5		
	3750	TYKW	20	GRF	0340.0	0413.0	130.0	4.0	2.0		
	9400	TYKW	20	GRF	0350.0	0410.0	100.0	3.0	1.5		
	2000	TYKW	20	GRF	0350.0	0415.0	110.0	2.0	1.0		
	245	LEAR	8	S	0635.1	0635.3	.4	13.0			QL=6 ST=2 TYP=3
	2950	GORK	20	GRF	0656.0	0830.0	260.0D	5.9			
	9100	GORK	22	GRF	0752.5	0821.3	76.5	16.0			

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09	430	KRAK	8	S	0954.4	0954.5	.4	11.0			
	245	LEAR	8	S	1009.6	1009.8	.4	34.0			QL=6 ST=2 TYP=3
	430	KRAK	1	S	1223.3	1223.8	1.5	8.0	4.0		
	2800	OTTA	240	R	1505.0	1600.0	550.0	2.0	1.0		
	245	LEAR	47	GB	2159.6	2200.8	1.2	53.0			QL=5 ST=2 TYP=5
	410	LEAR	4	S/F	2243.8	2243.8	3.0	10.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	2334.0	2334.0	.1	46.0			QL=6 ST=2 TYP=3
10	245	LEAR	43	NS	0540.3	0703.1	301.7D	22.0			QL=6 ST=2 TYP=1
	245	LEAR	43	NS	2151.0	0711.6	771.0D	24.0			QL=6 ST=2 TYP=1
	3750	TYKW	20	GRF	0020.0	0120.0	180.0	2.0	1.0		
	245	PALE	8	S	0141.8	0142.5	.8	37.0			QL=6 ST=2 TYP=3
	245	LEAR	47	GB	0334.0	0334.1	0.1	110.0			QL=1 ST=2 TYP=5
	2000	TYKW	20	GRF	0450.0	0520.0	100.0	1.0	0.5		
	245	LEAR	4	S/F	0537.8	0538.6	2.5	31.0			QL=6 ST=2 TYP=3
	2950	GORK	20	GRF	0730.0	1014.0	230.0D	5.0			
	430	KRAK	2	S/F	0947.8	0948.0	1.5	12.0	3.0		
	430	KRAK	2	S/F	0958.0	0959.0	1.8	18.0	4.0		
	610	LEAR	4	S/F	0959.6	1001.8	4.2	18.0			QL=6 ST=2 TYP=3
	810	KRAK	48	C	1020.4	1024.2	21.5	180.0	70.0		
	810	KRAK			1020.4	1026.0U		450.0D			
	6100	KISV	20	GRF	1029.0	1043.1	27.0	5.0			
	430	KRAK	8	S	1209.0	1209.4	1.0	110.0			
	2800	OTTA	1	S	1831.0	1831.5	1.2	2.4	1.1		
11	260	ONDR	44	NS	0800.0E		350.0D	7.0			
	245	LEAR	43	NS	2151.0	0037.5	429.0	15.0			QL=6 ST=2 TYP=1
	3750	TYKW	32	ABS	0110.0	0250.0	230.0	-2.0	-1.0		
	9400	TYKW	32	ABS	0130.0	0250.0	190.0	-2.0	-1.0		
	2000	TYKW	32	ABS	0130.0	0250.0	210.0	-2.0	-1.0		
	6100	KISV	2	S/F	0603.0	0607.9	8.0	4.0			
	810	KRAK	8	S	1143.6	1143.6	0.2	4.0			
	430	KRAK	8	S	1221.0	1221.0	0.2	16.0			
	2800	OTTA	27	RF	1340.0		190.0	2.2	2.0		
	2800	OTTA	24	R	1340.0	1350.0	10.0	2.2	1.1		
	2800	OTTA	24P	R	1350.0		165.0	2.2			
	2800	OTTA	26	FAL	1635.0	1650.0	15.0	-2.2	-1.1		
	2800	OTTA	20	GRF	1655.0	1830.0	170.0	3.4	2.3		
12	245	LEAR	43	NS	2342.1	0005.1	287.9	8.0			QL=6 ST=2 TYP=1
	3750	TYKW	20	GRF	0155.0	0220.0	90.0	1.5	0.7		
	3750	TYKW	20	GRF	0350.0	0430.0	100.0	2.0	1.0		
	204	IZMI	41	F	0722.0	0722.1	3.0	40.0			
	810	KRAK	40	F	1009.2	1018.3	11.5	42.0			
	430	KRAK	42	SER	1129.8	1137.6	15.2	13.0			
	2800	OTTA	21	GRF	1923.0	2030.0	115.0	1.8	1.0		
	2800	OTTA	1	S	1924.0	1925.5	3.0	1.6	.7		
	410	LEAR	8	S	2321.3	2321.3	0.5	4.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	2321.3	2321.5	0.3	10.0			QL=6 ST=2 TYP=3
	245	PALE	47	GB	2337.8	2337.8	0.3	130.0			QL=6 ST=2 TYP=5
	245	LEAR	47	GB	2337.8	2338.0	0.5	81.0			QL=6 ST=2 TYP=5
	245	LEAR	8	S	2341.8	2341.8	0.2	18.0			QL=6 ST=2 TYP=3
	200	HIRA	27	RF	2343.0	0010.0	71.0	9.0	2.0		WL
13	208	VORO	44	NS	0000.0E		60.0D				
	208	VORO	4	S/F	0028.0	0029.0	2.0	200.0D			
	3750	TYKW	45	C	0029.0	0029.6	4.0	3.0	0.7		
	100	HIRA	46	C	0029.0	0029.7	1.2	480.0	265.0		
	500	HIRA	45	C	0029.1	0029.1	1.0	30.0	18.0		WR
	200	HIRA	46	C	0029.1	0029.4	1.0	500.0	180.0		MR
	245	PALE	49	GB	0029.3	0029.5	1.0	650.0			QL=6 ST=2 TYP=6
	410	LEAR	8	S	0029.3	0029.6	0.8	37.0			QL=6 ST=2 TYP=3
	245	LEAR	49	GB	0029.3	0029.6	1.0	510.0			QL=6 ST=2 TYP=6
	610	LEAR	8	S	0029.3	0029.8	1.3	18.0			QL=6 ST=2 TYP=3
	245	PALE	47	GB	0101.8	0102.0	0.5	83.0			QL=6 ST=2 TYP=5
	100	HIRA	8	S	0101.9	0102.2	.6	510.0			
	245	LEAR	47	GB	0102.0	0102.1	.3	83.0			QL=6 ST=2 TYP=5
	245	PALE	8	S	0138.8	0139.1	.8	21.0			QL=6 ST=2 TYP=3
	3750	TYKW	20	GRF	0142.0	0153.0	45.0	3.0	1.5		
	9400	TYKW	20	GRF	0142.0	0153.0	45.0	4.0	1.5		
	245	PALE	8	S	0150.8	0151.0	.3	19.0			QL=6 ST=2 TYP=3

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13	3750	TYKW	20	GRF	0310.0	0330.0	70.0	1.5	0.7		
	2000	TYKW	5	S	0336.4	0337.0	1.0	10.0	3.0		
	500	HIRA	8	S	0336.6	0336.9	.7	4.0			O
	260	ONDR	40	F	0929.5	0935.5	9.5	6.0			
	610	SGMR	47	GB	1930.5	1930.6		65.0			QL=6 ST=1 TYP=5
	245	LEAR	8	S	2354.6	2354.6	.2	15.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	2354.6	2354.6	.2	6.0			QL=6 ST=2 TYP=3
14	3750	TYKW	21	GRF	0025.0	0055.0	170.0	3.0	1.5		
	3750	TYKW	20	GRF	0120.0	0145.0	65.0	2.0	1.0		
	9400	TYKW	20	GRF	0125.0	0145.0	55.0	2.0	1.0		
	2000	TYKW	20	GRF	0125.0	0150.0	65.0	1.5	0.7		
	430	KRAK	45	C	1248.8	1250.4	3.5	270.0	20.0		
	3750	TYKW	20	GRF	2340.0	0010.0	100.0	1.5	0.7		
15	500	HIRA	8	S	0522.1	0522.8	.7	3.0			WL
	430	KRAK	8	S	0822.8	0822.8	.2	5.0			
	430	KRAK	8	S	0935.5	0935.5	.2	12.0			
	260	ONDR	8	S	1012.5	1012.5	.5	3.0			
	260	ONDR	40	F	1153.5	1154.0	10.0	2.0			
	536	ONDR	40	F	1234.0	1239.5	10.0	9.0			
	2800	OTTA	20	GRF	1500.0		80.0	1.0	.7		
	2800	OTTA	20	GRF	1700.0	1750.0	110.0	1.8	1.2		
16	245	LEAR	43	NS	2153.0	0940.0	773.0D	31.0			QL=6 ST=2 TYP=1
	3750	TYKW	20	GRF	0225.0	0235.0	35.0	1.0	0.5		
	410	LEAR	8	S	0700.3	0700.3	.2	3.0			QL=5 ST=2 TYP=3
	245	LEAR	8	S	0700.3	0700.3	.2	11.0			QL=5 ST=2 TYP=3
	610	LEAR	8	S	0700.3	0700.3	.2	1.0			QL=5 ST=2 TYP=3
	430	KRAK	45	C	1133.5	1134.5	3.5	310.0	10.0		
	2800	OTTA	8	S	1342.0	1342.2	.7	4.0	1.8		
	2800	OTTA	21	GRF	1505.0	1545.0	150.0	4.6	1.6		
	9400	HUAN	21	GRF	1537.3	1547.0	30.5	6.7	2.0		R
	2800	OTTA	40	F	1540.8	1541.0	1.5	4.8			
	9400	HUAN	1	S	1542.6	1544.4	2.5	19.4	7.6		R
	2800	OTTA	2	S/F	1543.0	1544.5	2.5	5.4	2.6		
	2800	OTTA	3	S	1549.5	1550.0	2.5	10.2	2.6		
	2800	OTTA	1	S	1558.0	1558.6	1.0	2.0	.7		
	2800	OTTA	2	S/F	1755.5	1756.0	2.5	2.0	1.0		
	2800	OTTA	1	S	1759.0	1759.1	1.0	2.4	1.0		
	9400	TYKW	5	S	2328.0	2328.4	1.0	7.0	2.0		
17	245	LEAR	43	NS	2154.0	0259.0	772.0D	27.0			QL=6 ST=3 TYP=1
	9400	TYKW	5	S	0041.5	0042.1	1.5	7.0	2.0		
	245	LEAR	8	S	0353.6	0354.0	.7	10.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0353.8	0354.0	.5	2.0			QL=6 ST=2 TYP=3
	3750	TYKW	20	GRF	0420.0	0434.0	40.0	1.0	0.5		
	3750	TYKW	21	GRF	0525.0	0528.0	85.0	1.5	0.7		
	9400	TYKW	21	GRF	0525.0	0528.0	35.0	4.0	2.0		
	2000	TYKW	21	GRF	0525.0	0528.0	85.0	1.0	0.5		
	1000	TYKW	45	C	0527.0	0527.5	2.0	3.0	0.5		
	245	LEAR	8	S	0534.1	0534.3	.7	11.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0534.1	0534.3	.4	4.0			QL=6 ST=2 TYP=3
	200	HIRA	46	C	0552.2	0552.8	3.0	83.0	17.0		O
	2000	TYKW	5	S	0552.5	0553.2	1.5	6.0	2.0		
	1000	TYKW	5	S	0552.5	0553.2	1.5	9.0	3.0		
	3750	TYKW	5	S	0552.5	0553.2	2.5	4.0	1.5		
	100	HIRA	45	C	0552.6	0552.8	1.0	470.0	57.0		
	500	HIRA	3	S	0552.6	0553.1	1.0	22.0	10.0		WL
	1415	LEAR	8	S	0552.6	0553.1	1.7	8.0			QL=6 ST=2 TYP=3
	4995	LEAR	8	S	0552.8	0553.1	1.0	4.0			QL=6 ST=2 TYP=3
	245	LEAR	4	S/F	0552.8	0553.1	2.5	30.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0552.8	0553.1	1.3	6.0			QL=6 ST=2 TYP=3
	9400	TYKW	5	S	0552.9	0553.2	0.6	5.0	2.0		
	610	LEAR	8	S	0553.1	0553.1	.4	20.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0553.1	0553.1	.2	23.0			QL=6 ST=2 TYP=3
	2000	TYKW	29	PBI	0554.0		8.0	1.0	0.5		
	6100	KISV	20	GRF	0601.0	0619.5	49.0	6.0			
	2000	TYKW	20	GRF	0604.0	0618.0	35.0	2.0	1.0		
	3750	TYKW	20	GRF	0605.0	0618.0	35.0	3.0	1.5		
	15000	KISV	20	GRF	0607.0	0623.2	45.2	10.0			

SOLAR RADIO EMISSION
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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
17	2695	LEAR	20	GRF	0611.3	0617.8	14.2	9.0			QL=6 ST=2 TYP=2
	245	LEAR	47	GB	0613.6	0614.1	5.2	70.0			QL=6 ST=2 TYP=5
	200	HIRA	46	C	0613.7	0614.6	8.0	145.0	28.0		WL
	410	LEAR	4	S/F	0613.8	0617.8	5.3	8.0			QL=6 ST=2 TYP=3
	1000	TYKW	5	S	0614.0	0614.7	1.5	3.0	1.0		
	1415	LEAR	8	S	0614.0	06'4.1	1.3	19.0			QL=6 ST=2 TYP=3
	610	LEAR	4	S/F	0614.0	0617.1	4.8	18.0			QL=6 ST=2 TYP=3
	6100	KISV	46	C	0729.7	0735.0	8.5	9.0			
	6100	KISV	29	PBI	0738.0	0738.0	55.0	4.0			
	245	LEAR	4	S/F	0744.0	0748.8	4.8D	.80			QL=6 ST=2 TYP=
	410	LEAR	4	S/F	0744.3	0746.8	2.5	4.0			QL=6 ST=2 TYP=3
	127	TORN	27	RF	0842.3	0845.3	5.0	20.0	10.0		
	808	ONDR	8	S	1125.5	1125.5	.3	6.0			
	536	ONDR	40	F	1138.5	1139.5	15.0	3.0			
	808	ONDR	40	F	1220.0	1221.0	3.0	12.0			
	127	TORN	7	C	1224.8	1225.0	0.9	30.0	10.0		
	536	ONDR	40	F	1225.0	1225.0	17.0	4.0			
	9400	HUAN	22	GRF	1359.6	1406.6	29.5	4.5	1.5		0
	610	SGMR	47	GB	1400.1	1400.1	1.4	130.0			QL=6 ST=2 TYP=5
	9400	HUAN	20	GRF	1555.6	1601.1	14.2	5.5	1.6		0
	610	SGMR	47	GB	1559.1	1559.3	.7	200.0			QL=6 ST=2 TYP=5
	2800	OTTA	2	S/F	1559.2	1601.3	6.0	7.4	3.0		
	245	SGMR	4	S/F	1613.1	1615.3	3.0	43.0			QL=6 ST=2 TYP=3
	245	SGMR	8	S	1618.1	1618.3	.5	28.0			QL=6 ST=2 TYP=3
	9400	HUAN	2	S/F	1625.2	1627.0	2.8	2.7	1.4		0
	9400	HUAN	20	GRF	1711.9	1725.3	32.2	3.4	1.5		0
	9400	HUAN	1	S	1842.0	1843.2	2.1	11.0	3.2		R
	2800	OTTA	45	C	1842.6	1843.0	3.0	6.0	1.8		
	4995	PALE	8	S	1843.0	1843.1	.3	13.0			QL=6 ST=2 TYP=3
	9400	HUAN	29	PBI	1844.1	1844.1	11.2	6.8	4.3		0
	2800	OTTA	1	S	1847.0	1848.3	7.0	1.8	.6		
	2800	OTTA	2	S/F	2033.8	2034.3	2.5	5.8	2.0		
	610	PALE	47	GB	2034.0	2034.3	1.3	410.0			QL=6 ST=2 TYP=5
	410	PALE	47	GB	2034.1	2034.3	.7	239.0			QL=6 ST=2 TYP=5
	1415	PALE	8	S	2034.1	2034.3	.5	29.0			QL=6 ST=2 TYP=3
	610	SGMR	47	GB	2034.1	2034.5	.7	310.0			QL=6 ST=2 TYP=5
	2695	PALE	8	S	2034.3	2034.3	.3	11.0			QL=6 ST=2 TYP=3
	410	SGMR	47	GB	2034.3	2034.5	.5	160.0			QL=6 ST=2 TYP=5
	2695	PENT	8	S	2132.1	2132.4	.6	2.0	1.0		
	245	PALE	47	GB	2132.3	2132.5	.5	160.0			QL=6 ST=2 TYP=5
	610	PALE	47	GB	2132.6	2132.6	.2	30.0			QL=6 ST=2 TYP=5
	3750	TYKW	21	GRF	2240.0	2310.0	140.0	3.0	1.5		
	2000	TYKW	21	GRF	2240.0	2310.0	140.0	2.0	1.0		
	3750	TYKW	45	C	2242.0	2243.7	4.0	24.0	4.0		
	9400	TYKW	45	C	2242.0	2243.7	4.0	19.0	5.0		
	15400	LEAR	8	S	2242.0	2243.1	1.1	44.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	2242.8	2243.6	2.0	24.0			QL=6 ST=2 TYP=3
	2695	PENT	4	S/F	2242.9	2243.5	2.0	18.0	7.5		
	1000	TYKW	45	C	2243.0	2243.4	2.0	200.0	18.0		
	2000	TYKW	45	C	2243.0	2243.7	3.0	17.0	3.0		
	500	HIRA	46	C	2243.0	2243.6	1.5	960.0	150.0		MR
	1415	PALE	47	GB	2243.1	2243.3	1.4	50.0			QL=6 ST=2 TYP=5
	410	PALE	49	GB	2243.1	2243.6	1.4	1300.0			QL=6 ST=2 TYP=6
	1415	LEAR	8	S	2243.3	2243.6	.8	44.0			QL=6 ST=2 TYP=3
	4995	LEAR	8	S	2243.3	2243.6	.8	22.0			QL=6 ST=2 TYP=3
	200	HIRA	46	C	2243.3	2243.7	1.6	110.0	94.0		WR
	410	LEAR	49	GB	2243.3	2243.8	1.3	1199.0			QL=6 ST=2 TYP=6
	2695	LEAR	8	S	2243.3	2243.8	1.3	31.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2243.5	2243.6	.5	27.0			QL=6 ST=2 TYP=3
	610	PALE	47	GB	2243.5	2244.1	1.1	230.0			QL=6 ST=2 TYP=5
	610	LEAR	47	GB	2243.5	2244.3	1.1	230.0			QL=6 ST=2 TYP=5
	4995	PALE	8	S	2243.6	2243.6	.2	11.0			QL=6 ST=2 TYP=3
	245	PALE	47	GB	2243.6	2243.6	.4	219.0			QL=6 ST=2 TYP=5
	245	LEAR	47	GB	2243.6	2243.8	.5	189.0			QL=6 ST=2 TYP=5
	9400	TYKW	29	PBI	2246.0		15.0	4.0	2.0		
	500	HIRA	20	GRF	2246.7	2303.0	50.0	3.0	2.0		MR
	1000	TYKW	20	GRF	2255.0	2310.0	125.0	2.0	1.0		
	410	LEAR	8	S	2325.3	2325.3	.3	6.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	2325.3	2325.5	.3	9.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	2348.3	2348.8	.7	17.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	2348.3	2348.8	1.5	19.0			QL=6 ST=2 TYP=3

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
18	410	LEAR	43	NS	0634.0	0637.5		13.0			QL=6 ST=2 TYP=1
	260	ONDR	44	NS	0842.0E		300.0D	11.0			
	245	LEAR	43	NS	2154.0	1000.5	773.0D	60.0			QL=6 ST=2 TYP=1
	610	LEAR	8	S	0001.5	0001.8	.6	44.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0001.6	0001.8	.4	5.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	0001.8	0001.8	.2	8.0			QL=6 ST=2 TYP=3
	9400	TYKW	5	S	0041.0	0041.4	1.0	9.0	3.0		
	100	HIRA	41	F	0049.4	0049.5	6.3	195.0			
	500	HIRA	46	C	0049.4	0049.7	2.8	25.0	7.0		ML
	200	HIRA	41	F	0049.6	0049.8	2.7	96.0			WL
	410	LEAR	8	S	0049.6	0050.1	.7	11.0			QL=6 ST=2 TYP=3
	610	LEAR	47	GB	0049.8	0050.0	3.0	78.0			QL=6 ST=2 TYP=5
	610	PALE	47	GB	0049.8	0050.0	.3	87.0			QL=6 ST=2 TYP=5
	245	LEAR	8	S	0049.8	0050.1	1.0	39.0			QL=6 ST=2 TYP=3
	3750	TYKW	20	GRF	0210.0	0240.0	100.0	1.0	0.5		
	500	HIRA	8	S	0304.1	0304.2	.1	6.0			SL
	9400	TYKW	5	S	0426.0	0426.7	1.5	3.0	1.0		
	500	HIRA	8	S	0552.7	0552.8	.1	15.0			MR
	536	ONDR	8	S	1146.7	1146.7	.3	25.0			
	536	ONDR	8	S	1213.3	1213.3	.3	10.0			
	2800	OTTA	40	F	1618.5	1620.2	3.5	13.2			
	1415	SGMR	47	GB	1618.5	1620.3	2.1	54.0			QL=6 ST=2 TYP=5
	500	HIRA	8	S	2316.7	2316.7	.1	8.0			WR
19	260	ONDR	44	NS	0810.0E	1025.0U	334.0D	110.0			
	200	HIRA	42	SER	0014.3	0015.7	4.6	180.0			0
	208	VORO	4	S/F	0015.0	0016.0	2.0	100.0			
	100	HIRA	42	SER	0015.7	0015.8	3.0	160.0			
	245	LEAR	47	GB	0015.8	0016.1	1.2	160.0			QL=6 ST=2 TYP=5
	500	HIRA	46	C	0021.6	0022.3	1.0	15.0	5.0		MR
	500	HIRA	8	S	0131.3	0131.4	.4	8.0			MR
	245	PALE	47	GB	0247.6	0247.6	.5	130.0			QL=6 ST=2 TYP=5
	430	KRAK	4	S/F	1024.4	1025.0	2.0	34.0	4.0		
	2800	OTTA	22	GRF	1420.0	1550.0	170.0	2.8	1.4		
	2800	OTTA	20	GRF	1730.0	1845.0	110.0	1.8	1.0		
	610	SGMR	47	GB	1928.6	1929.6	2.0	74.0			QL=6 ST=2 TYP=5
20	208	VORO	44	NS	0000.0E		240.0D				
	410	LEAR	43	NS	0359.1	0404.3	40.7	20.0			QL=6 ST=2 TYP=1
	245	PALE	47	GB	0005.3	0005.3	0.3	110.0			QL=6 ST=2 TYP=5
	410	PALE	8	S	0116.3	0116.5	0.5	47.0			QL=6 ST=2 TYP=3
	500	HIRA	20	GRF	0259.0	0400.0	106.0	3.0	1.0		MR
	245	PALE	47	GB	0304.1	0304.3	0.2	94.0			QL=6 ST=2 TYP=5
	430	KRAK	42	SER	0826.8	0840.2	41.0	11.0			
	430	KRAK	42	SER	1144.0	1144.2	42.0	7.0			
	430	KRAK			1144.0	1222.8		8.0			
	245	SGMR	8	S	1423.1	1423.3	0.5	1399.0			QL=5 ST=2 TYP=3
	9400	HUAN	20	GRF	1530.4	1549.7	28.4	2.9	1.5		0
	9400	HUAN	1	S	2206.0	2208.4	4.7	4.4	3.7		0
21	1000	TYKW	5	S	0006.7	0006.9	0.7	5.0	1.5		
	500	HIRA	45	C	0116.7	0120.5	5.0	3.0	2.0		WR
	500	HIRA	8	S	0147.2	0147.3	0.5	11.0			0
	500	HIRA	46	C	0243.3	0244.6	8.0	2.0	1.0		0
	650	GORK	4	S/F	0814.1	0815.0	1.2D	7.2			
	430	KRAK	1	S	1128.0	1128.5	1.0	9.0	3.0		
	430	KRAK	4	S/F	1138.3	1141.3	4.8	22.0	10.0		
	430	KRAK	42	SER	1153.0	1157.6	53.5	220.0			
	430	KRAK			1153.0	1222.0		350.0D			
	430	KRAK			1153.0	1232.2		350.0D			
	127	TORN	40	F	1239.1		16.0		2.0		
	127	TORN	8	S	1252.4	1252.6	0.6	100.0	50.0		
	430	KRAK	45	C	1315.8	1317.6	8.2	220.0	24.0		
	430	KRAK			1315.8	1323.0		210.0			
	245	SGMR	8	S	1644.5	1644.8	1.1	820.0			QL=2 ST=2 TYP=3
24	9400	TYKW	5	S	0040.4	0040.7	1.0	6.0	2.0		
25	245	LEAR	8	S	0653.1	0653.3	0.2	13.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	0733.0	0733.1	0.1	17.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0733.0	0733.1	0.1	8.0			QL=1 ST=2 TYP=3

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
25	2800	OTTA	20	GRF	1430.0	1635.0	260.0	1.8	.9		
	9400	HUAN	20	GRF	1722.2	1752.6	54.7	5.8	3.2		0
26	245	SGMR	49	GB	1504.3	1504.3	0.5	860.0			QL=1 ST=2 TYP=6
	9400	HUAN	20	GRF	1814.7	1824.5	19.3	4.4	1.3		0
	9400	HUAN	22	GRF	1920.2	2006.5	63.9	5.4	1.5		0
	245	PALE	8	S	2147.5	2148.1	0.6	33.0			QL=6 ST=2 TYP=3
27	245	LEAR	8	S	0126.6	0126.8	0.2	40.0			QL=1 ST=2 TYP=3
	9400	HUAN	1	S	1314.7	1315.4	1.7	9.3	2.0		0
28	3750	TYKW	20	GRF	0110.0	0220.0	170.0	1.0	0.5		
	204	IZMI	41	F	0944.0	0946.0	3.0	250.0			
	234	POTS	4	S/F	0944.1	0946.0	3.5	100.0	1.0		III
	113	POTS	4	S/F	0944.2	0946.0	3.9	525.0	25.0		III
	127	TORN	4	S/F	0944.3	0946.0	3.5	800.0	400.0		
	33	UPIC	46	C	0944.9	0945.7	2.6				
	245	LEAR	47	GB	0945.5	0946.1	0.8	110.0			QL=6 ST=2 TYP=5
	410	LEAR	8	S	0945.6	0945.8	0.4	21.0			QL=6 ST=2 TYP=3
	245	LEAR	8	S	2325.1	2325.3	0.2	17.0			QL=6 ST=2 TYP=3
30	430	KRAK	8	S	0847.2	0847.2	0.2	11.0			
	430	KRAK	40	F	0948.8	0950.0	4.2	95.0			
	536	ONDR	27	RF	1021.0	1030.5	40.0	19.0	15.0		
	536	ONDR	42	SER	1031.3	1040.5	22.0	19.0			
	260	ONDR	40	F	1136.5	1138.2	3.0	3.0			
	2800	OTTA	240	R	1545.0	1615.0	30.0	1.8	.9		

Reports are received routinely from the following observatories:

ATHN = Athens
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
DWIN = Dwingeloo
GORK = Gorky
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
IZMI = IZMIRAN
KISV = Kislovodsk
KRAK = Krakow
LEAR = Learmonth
MANI = Manila
NAGO = Nagoya
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PALE = Palehua
PEKG = Peking
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
UPIC = Upice
VORO = Voroshilov

Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
33 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm In Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
16A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A Post Burst Decrease A
32A Absorption A
46F Complex F

SMS-GOES X-RAYS

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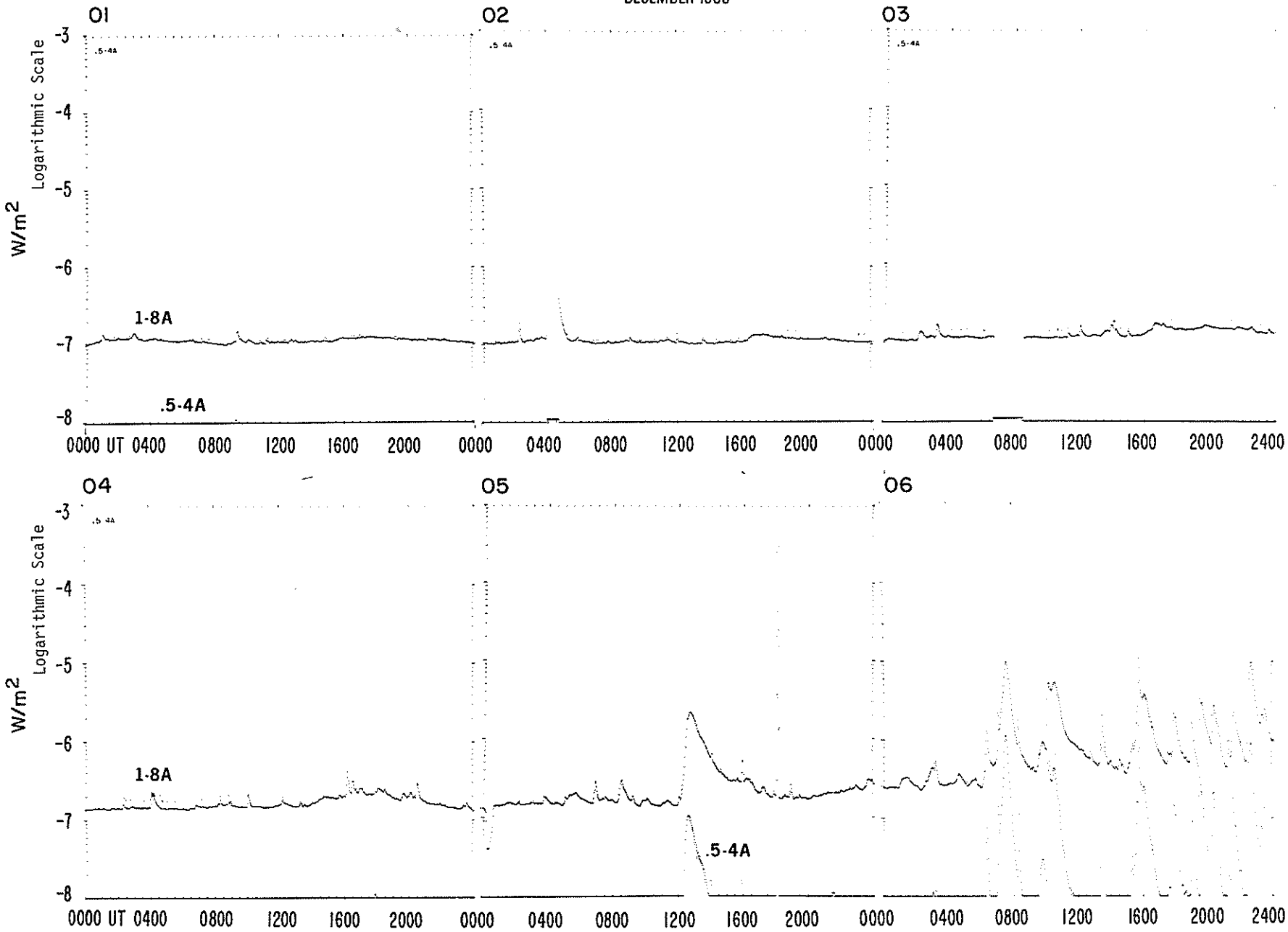
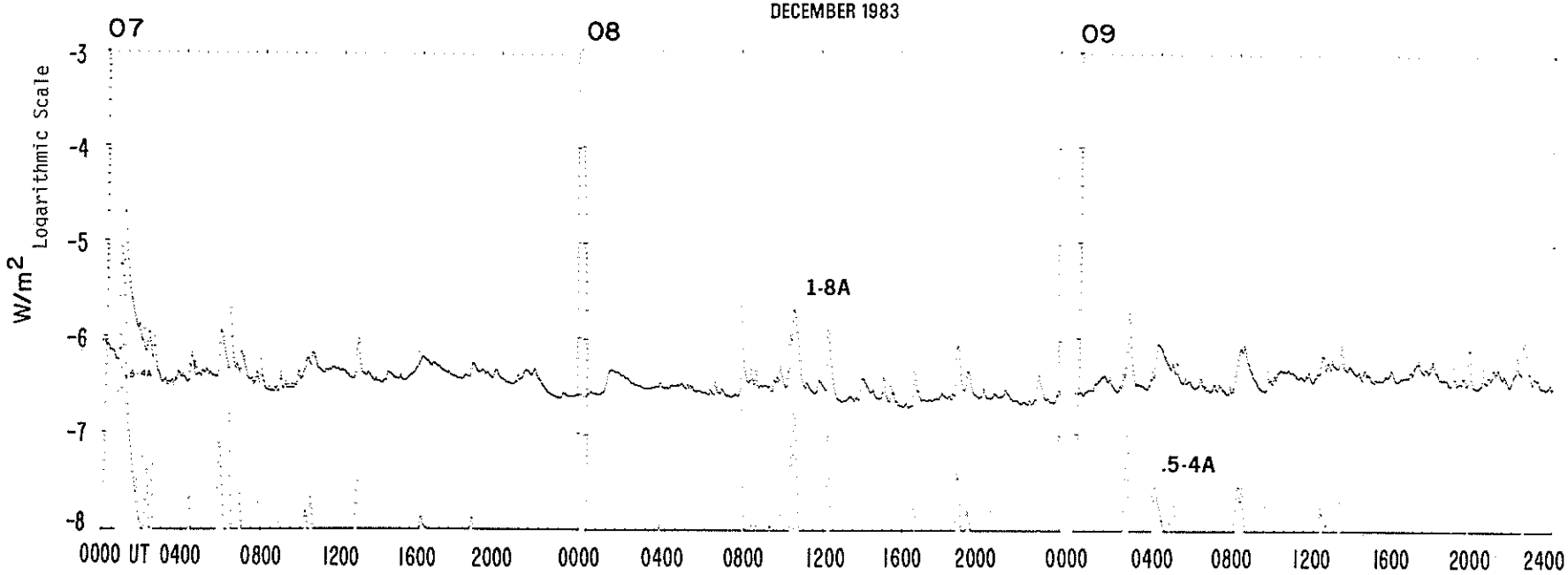
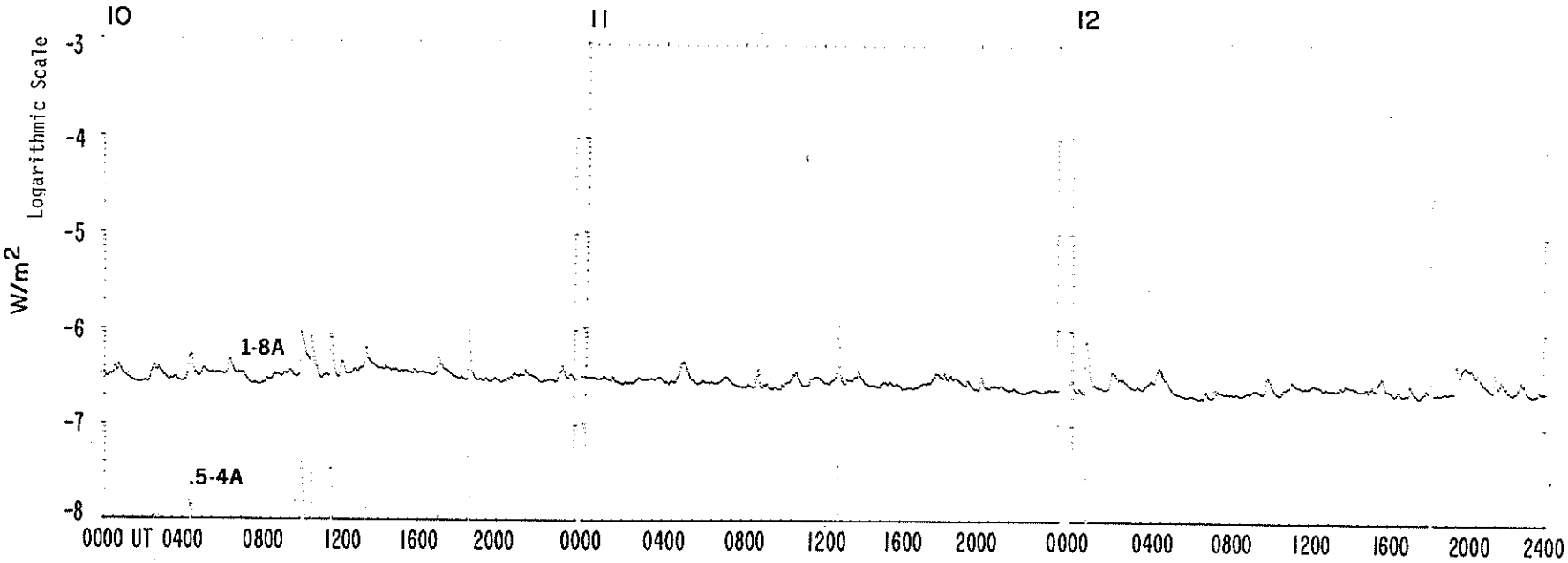


SMS-GOES X-RAYS

DECEMBER 1983





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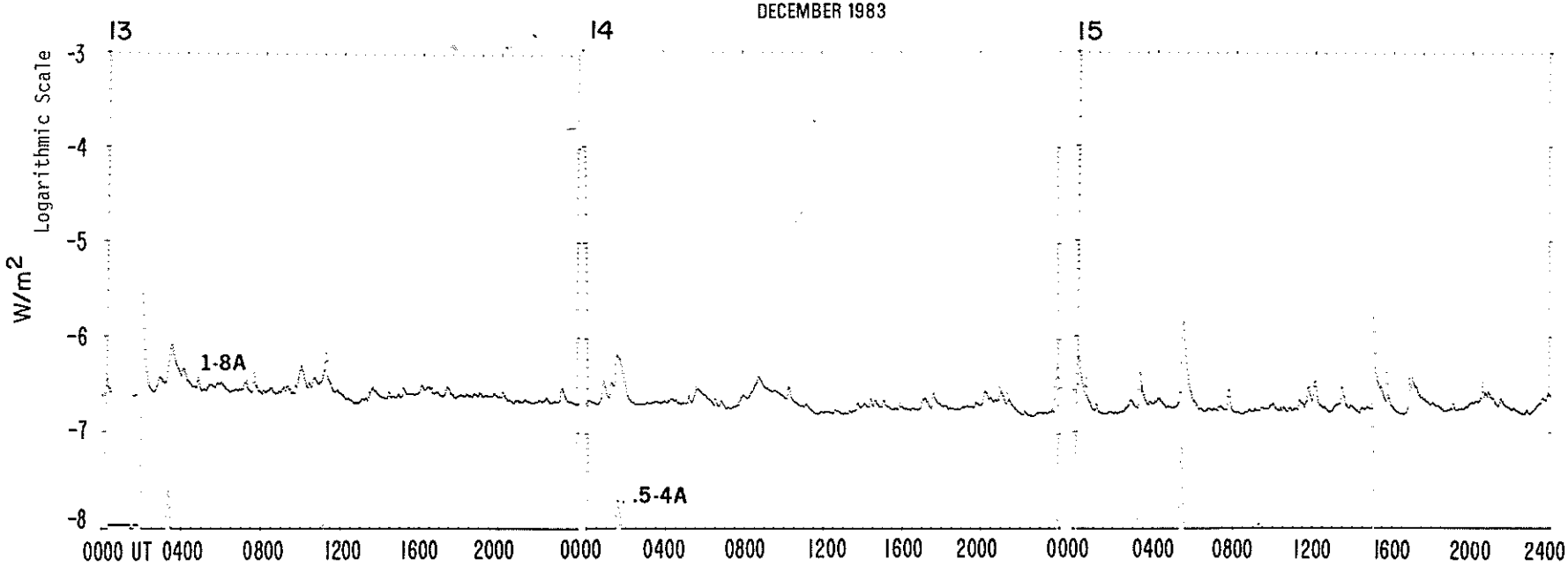
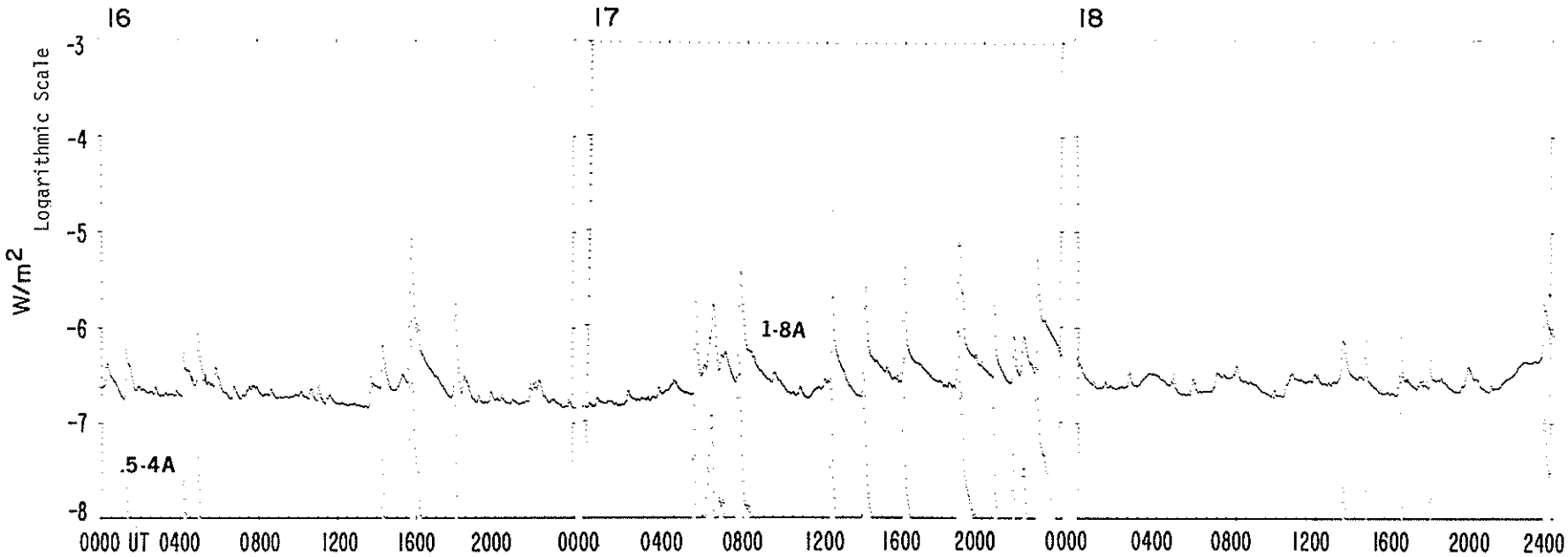
DECEMBER 1983





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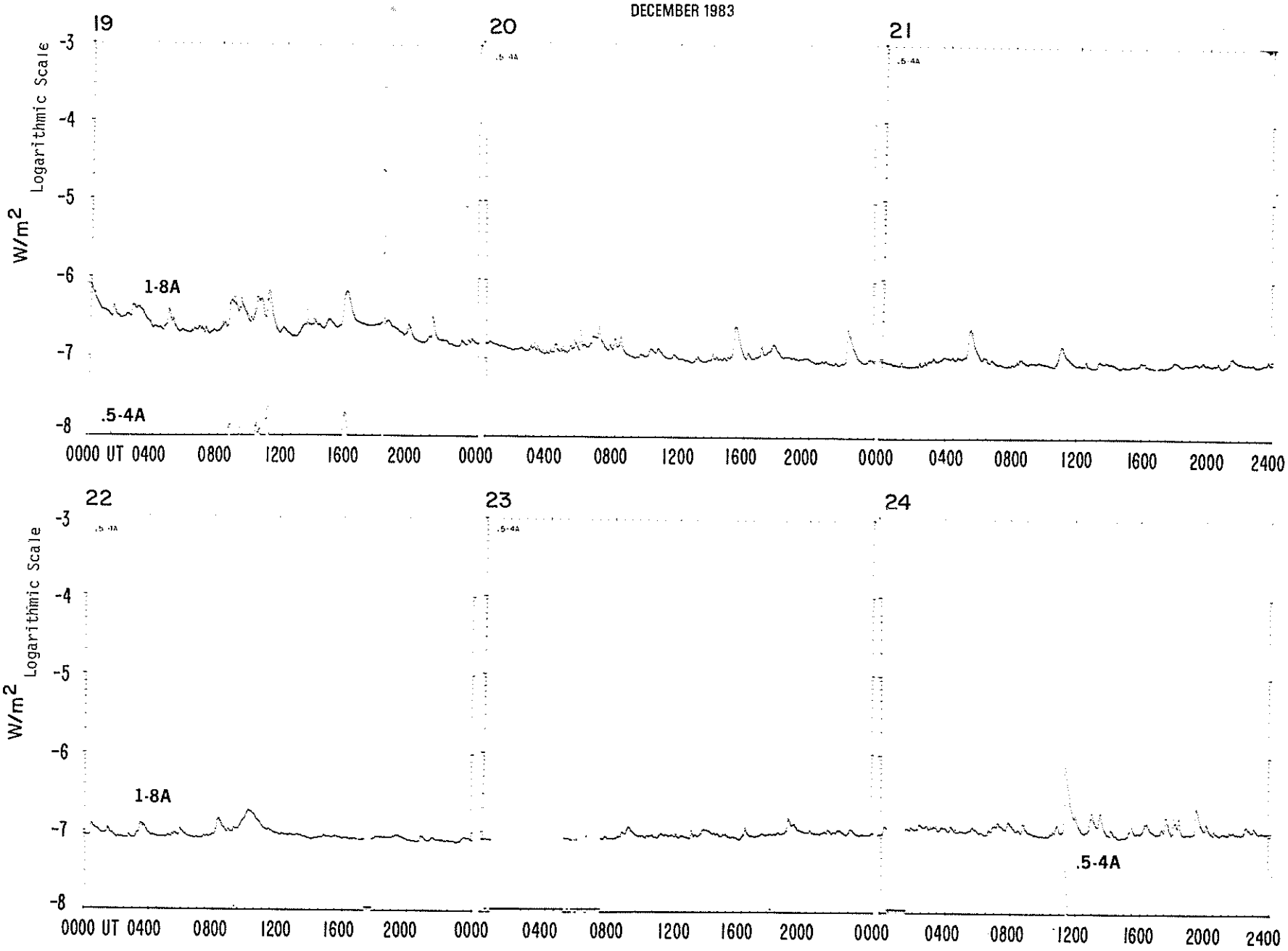
DECEMBER 1983



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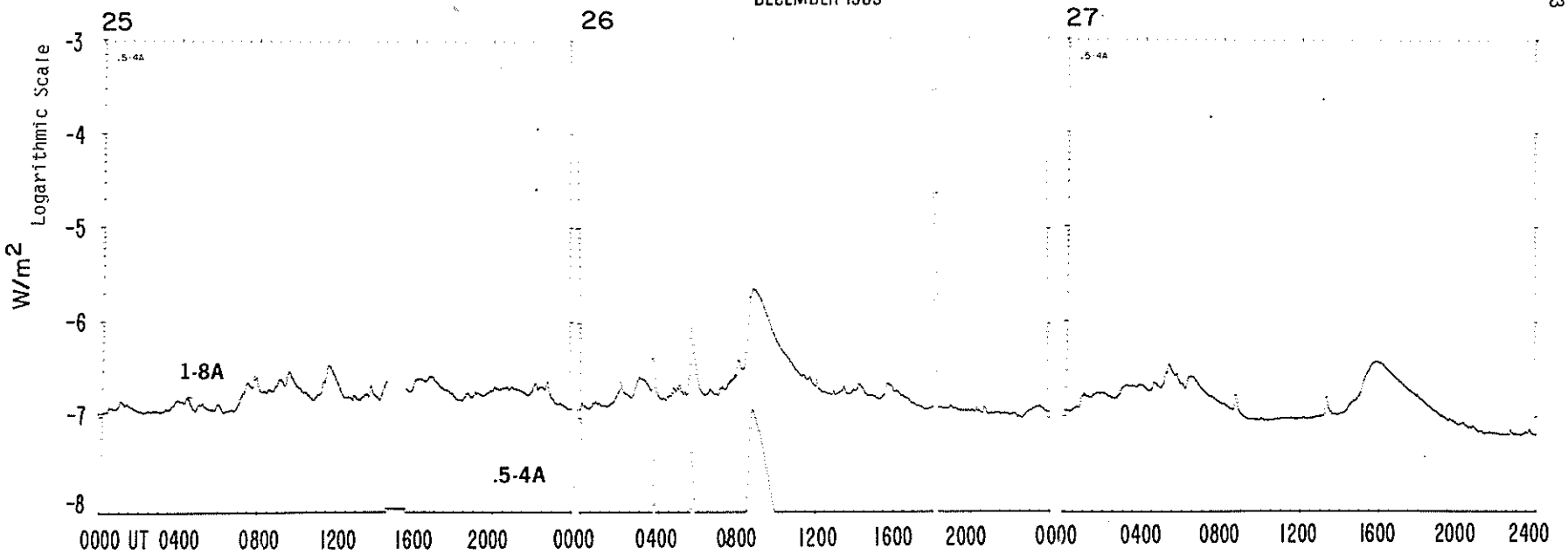
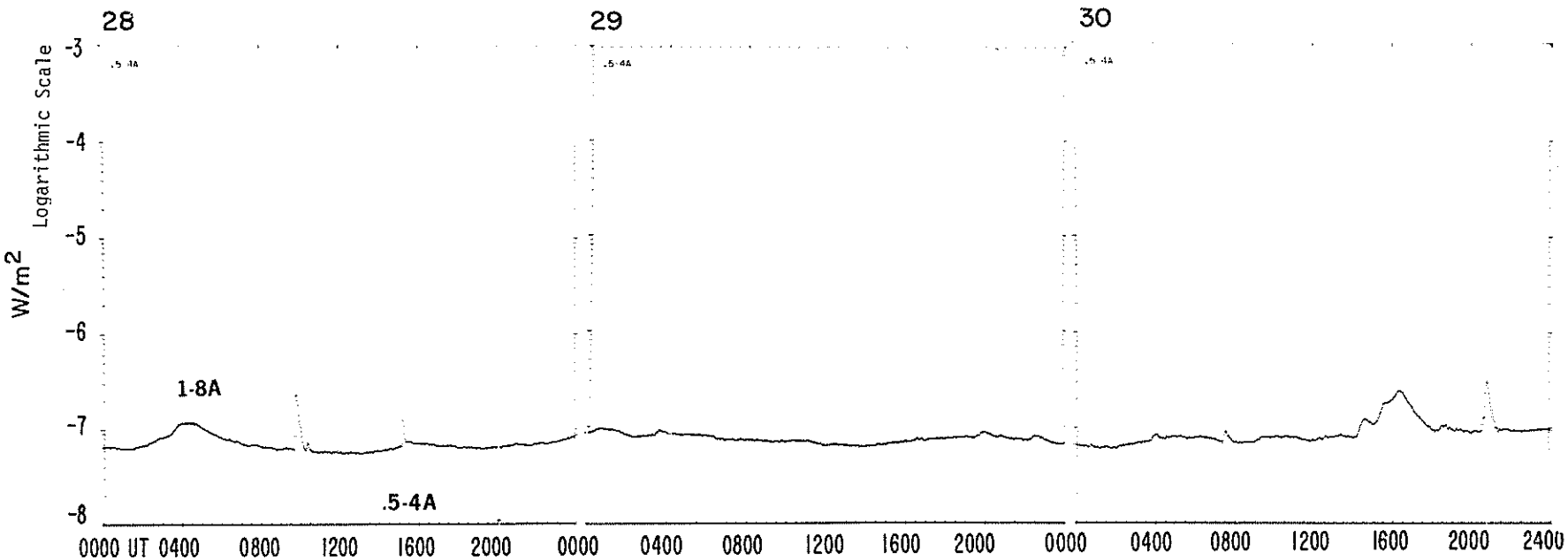
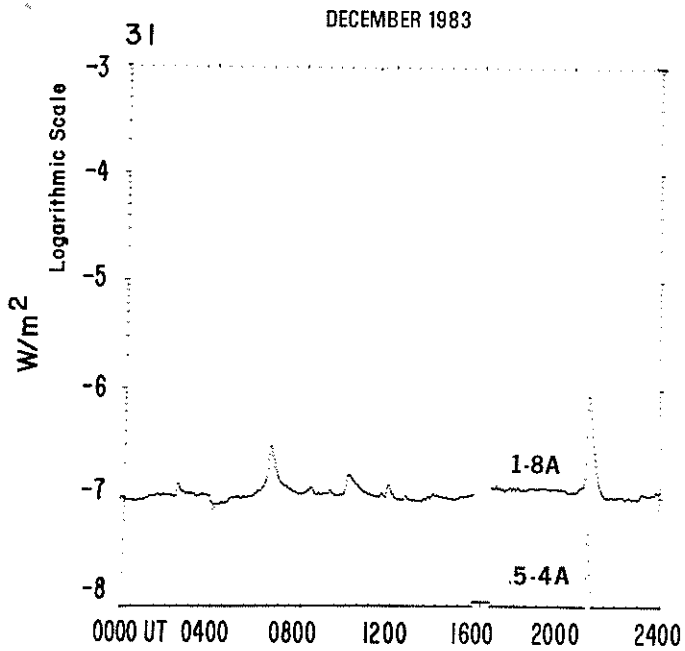
SMS-GOES X-RAYS

DECEMBER 1983





SMS - GOES X-RAYS



MASS EJECTIONS FROM THE SUN

DECEMBER 1983

Sta	Day	Observed UT Start	Max	End	Location RA°	R/R$_\odot$	Freq or Wavelength	Kind of Event
WEND	Dec 08	0954	1011	1024	D 080	1.00	H-alpha	S
WEND	Dec 11	1241	1254	1307	096	0.99-1.04	H-alpha	SP
KHAR	Dec 17	0855	E	0915	D 108	0.55	H-alpha	S
KHAR	Dec 17	0950	E	1025	D 260	0.98	H-alpha	S
KHAR	Dec 17	1045	E	1056	D 263	0.98	H-alpha	S
ABST	Dec 20	0614	E 0648	0852	D 089	1.00	H-alpha	Q
ABST	Dec 22	0626	E 0647	0900	D 050	1.00	H-alpha	Q
ABST	Dec 31	0756	E 0818	0906	D 110	1.00	H-alpha	Q

QUALIFIERS ON START, MAX AND END TIMES
- D = event ended after tabulated time
- E = event began before the tabulated time
- U = uncertain time

REPORTING STATIONS
- ABST = Abastumani
- KHAR = Kharkov
- WEND = Wendelstein

TYPE OF EVENT
- A = eruptive active region prominence
- CB = coronal cloud bubble
- D = coronal depletions
- E = coronal enhancement
- EL = coronal expanding loop
- II = Type II radio burst
- IVm = moving Type IV radio burst
- Q = eruptive quiescent prominence
- R = coronal ray or streamer
- S = flare-surge if there is a known flare association
- SP = flare-spray if there is a known flare association
- * = movement may be caused by ionospheric refraction

C O N T E N T S

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IMP 8 Data for Jan - Mar 1983. 28-39

ACTIVE REGIONS
CARRINGTON ROTATION 1740

(September 21 to October 18, 1983)

Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1739	Activity at West Limb
1	13°S	340	3	-3			decreasing
2	8°S	337	1	>6	x		dispersed
3	9°S	333	2	>6		5	dispersed
4	8°S	313	1	>6	x	6	decreasing
5	15°S	313	1	>6	x		decreasing
6	7°N	307	1	0	x		disappeared
7	17°S	299	2	>6			decreasing
8	10°S	282	1	>6	x	10	decreasing
9	21°S	282	1	>6	x	11	decreasing
10	22°S	268	7	>6			decreasing
11	11°N	241	2	>6			decreasing
12	15°S	235	1	>6	x		dispersed
13	10°N	227	1	>6	x	13	dispersed
14	12°N	194	2	+3			decreasing
15	12°S	186	1	>6	x		decreasing
16	16°S	173	1	>6	x		dispersed
17	5°S	169	1	>6	x		dispersed
18	14°S	149	3	-3			stable
19	13°S	144	1	>6	x		dispersed
20	21°S	144	1	>6	x		dispersed
21	20°N	139	2	>6			decreasing
22	9°N	134	6	>6			decreasing
23	4°S	133	1	>6	x		dispersed
24	16°S	121	3	+1			decreasing
25	16°N	115	1	>6	x		decreasing
26	6°N	112	2	+1			decreasing
27	16°N	111	3	>6		32	decreasing
28	6°N	103	1	>6	x		disappeared
29	7°S	93	3	>6			decreasing
30	21°N	87	1	>6	x	34	disappeared
31	19°N	76	3	-2			stable
32	23°N	73	5	+2			stable
33	14°S	67	1	>6	x	40-41	dispersed
34	12°N	52	1	>6	x		disappeared
35	15°N	38	1	+2	x		disappeared
36	2°S	24	1	+5	x		dispersed
37	13°S	22	2	>6			decreasing
38	6°S	16	3	>6			decreasing

A C T I V E R E G I O N S
CARRINGTON ROTATION 1741

(October 18 to November 15, 1983)

Region No.	Coordinates Lat.	Coordinates Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1740	Activity at West Limb
1	11°S	357	2	>6			decreasing
2	14°S	344	1	>6	x	1	dispersed
3	22°S	333	2	-3			stable
4	16°S	330	1	>6	x		dispersed
5	13°S	321	1	>6	x	5	disappeared
6	6°S	320	1	>6	x	4	disappeared
7	21°S	289	1	>6	x	9	dispersed
8	16°S	279	1	>6	x		dispersed
9	23°S	264	1	>6	x	10	decreasing
10	11°S	260	1	+3	x		dispersed
11	9°S	257	1	+1	x		dispersed
12	7°S	253	2	>6			decreasing
13	12°S	251	1	>6	x		disappeared
14	19°S	221	1	+1	x		decreasing
15	5°S	208	2	+6			decreasing
16	8°S	196	1	>6	x		disappeared
17	4°S	182	1	>6	x		dispersed
18	6°N	170	1	-5	x		(?)
19	18°N	163	1	+6	x		disappeared
20	21°N	163	1	+6	x		disappeared
21	15°S	151	1	>6	x	18-19	decreasing
22	9°S	143	1	>6	x	22	dispersed
23	14°N	123	1	>6	x	25-27	dispersed
24	8°S	117	1	+1	x		disappeared
25	10°S	110	2	+2			stable
26	8°S	101	1	+2	x		disappeared
27	18°S	93	2	>6			decreasing
28	19°N	86	1	>6	x		decreasing
29	15°S	83	3	>6			decreasing
30	17°N	76	1	+2	x		decreasing
31	22°N	76	1	>6	x	31-32	decreasing
32	28°N	71	1	>6	x		decreasing
33	9°S	67	1	>6	x		decreasing
34	10°S	63	3	>6			decreasing
35	19°S	25	2	+6			disappeared
36	13°S	5	3	+1			decreasing

ACTIVE REGIONS
CARRINGTON ROTATION 1742

(November 15 to December 12, 1983)

Region No.	Coordinates Lat.	Coordinates Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1741	Activity at West Limb
1	15°S	330	1	+5	x		decreasing
2	25°S	257	1	>6	x	9	dispersed
3	17°N	219	1	+5	x		disappeared
4	12°N	193	1	+5	x		disappeared
5	20°S	122	2	-1			stable
6	5°N	120	1	+2	x		disappeared
7	18°N	119	2	>6			decreasing
8	11°N	100	2	>6			decreasing
9	21°N	80	1	>6	x		dispersed
10	12°S	73	1	>6	x	33	decreasing
11	11°S	62	1	0	x		decreasing
12	24°N	62	1	>6	x	31-32	dispersed
13	11°N	59	3	-1			decreasing
14	3°S	19	2	>6			decreasing
15	14°S	18	4	>6			decreasing
16	16°S	9	1	>6	x		decreasing
17	8°S	5	1	-2	x		decreasing

A C T I V E R E G I O N S
CARRINGTON ROTATION 1743

(December 12, 1983 to January 8, 1984)

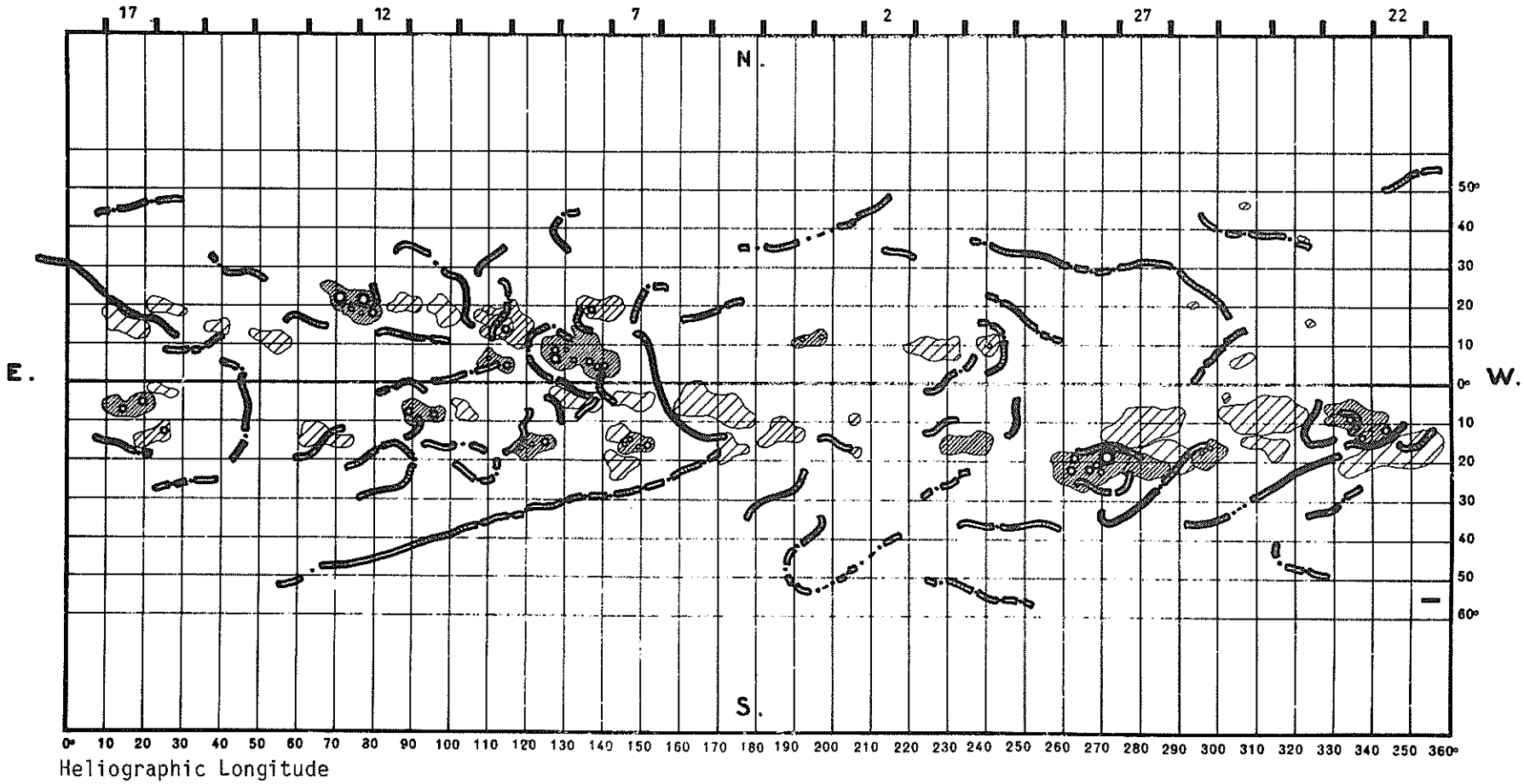
Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1742	Activity at West Limb
1	1°N	329	3	>6			decreasing
2	7°N	312	1	+6	x		dispersed
3	14°S	286	1	>6	x		dispersed
4	12°N	278	1	>6	x		dispersed
5	10°S	263	3	+5			decreasing
6	17°S	219	1	-4	x		dispersed
7	3°N	194	1	0	x		dispersed
8	11°N	153	1	+3	x		disappeared
9	22°S	119	1	>6	x	5	dispersed
10	15°N	116	3	>6			stable
11	20°N	90	1	>6		9	dispersed
12	11°N	88	1	>6	x		dispersed
13	2°N	25	1	>6	x		dispersed
14	9°S	19	1	>6	x		decreasing
15	17°S	16	1	>6	x	15+16	dispersed
16	15°S	10	2	-1			decreasing

PRELIMINARY SYNOPTIC SOLAR MAP

CARRINGTON ROTATION NUMBER 1740
(September 21 to October 18, 1983)

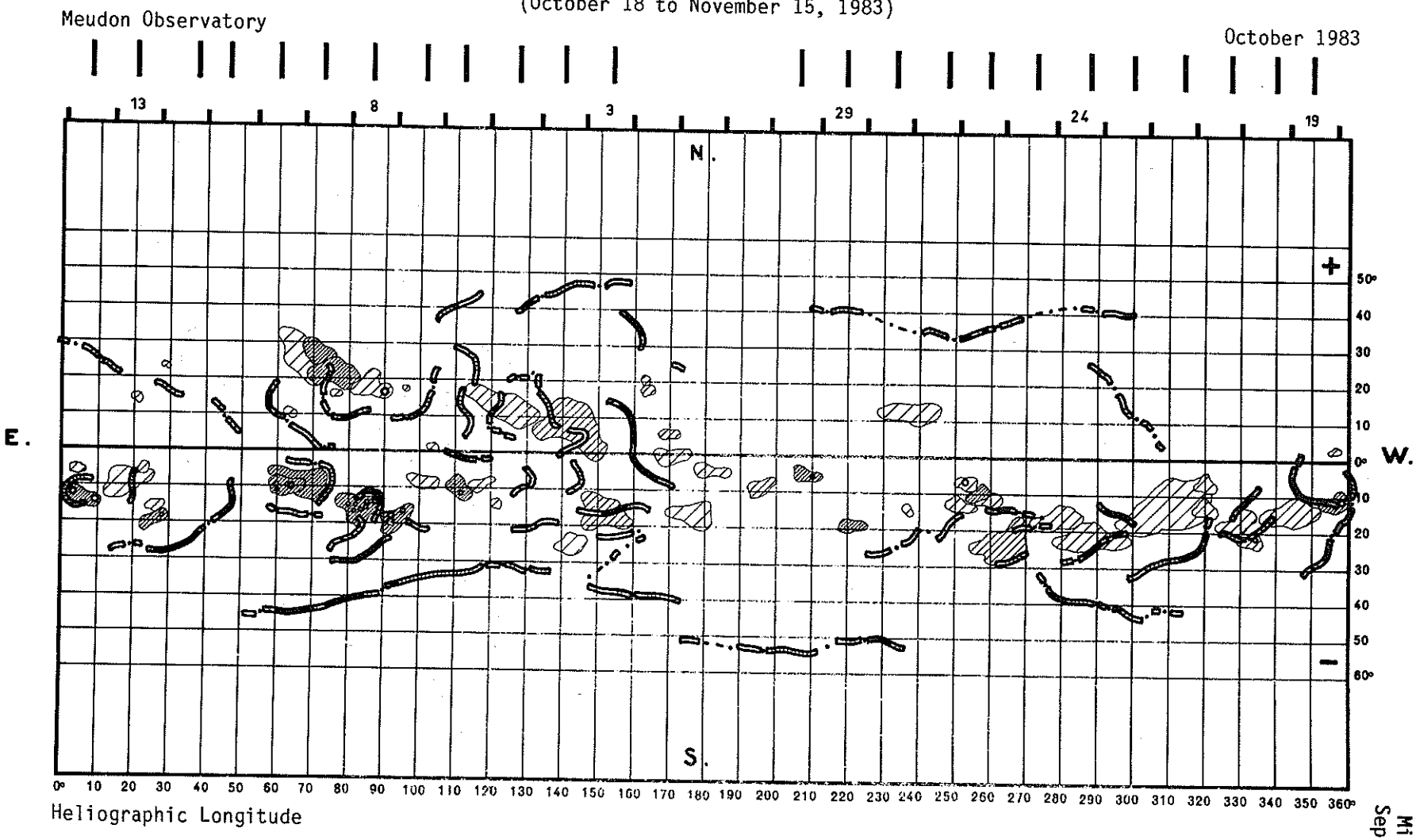
Meudon Observatory

September 1983



PRELIMINARY SYNOPTIC SOLAR MAP

CARRINGTON ROTATION NUMBER 1741
(October 18 to November 15, 1983)



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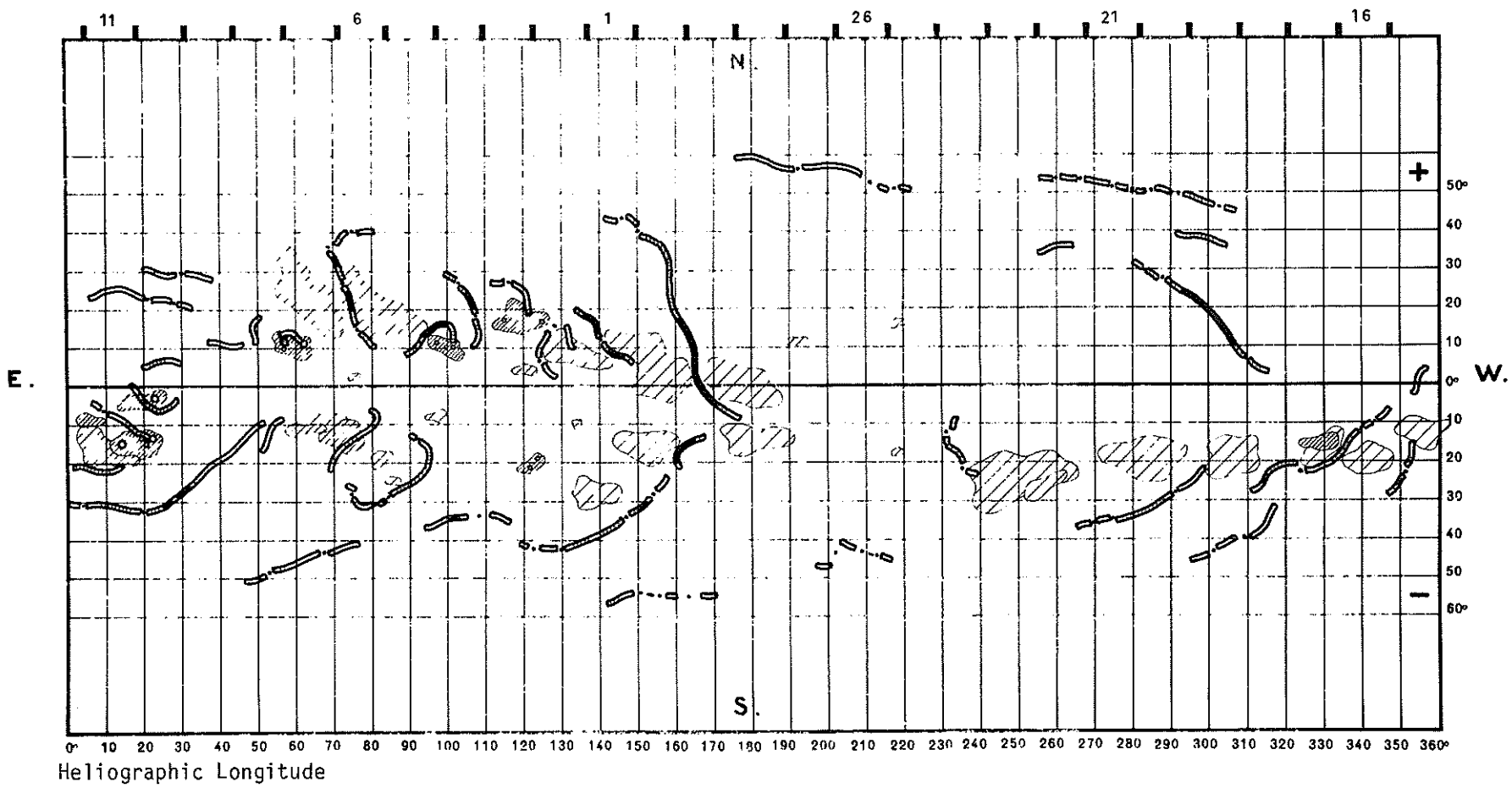
PRELIMINARY SYNOPTIC SOLAR MAP

CARRINGTON ROTATION NUMBER 1742
(November 15 to December 12, 1983)

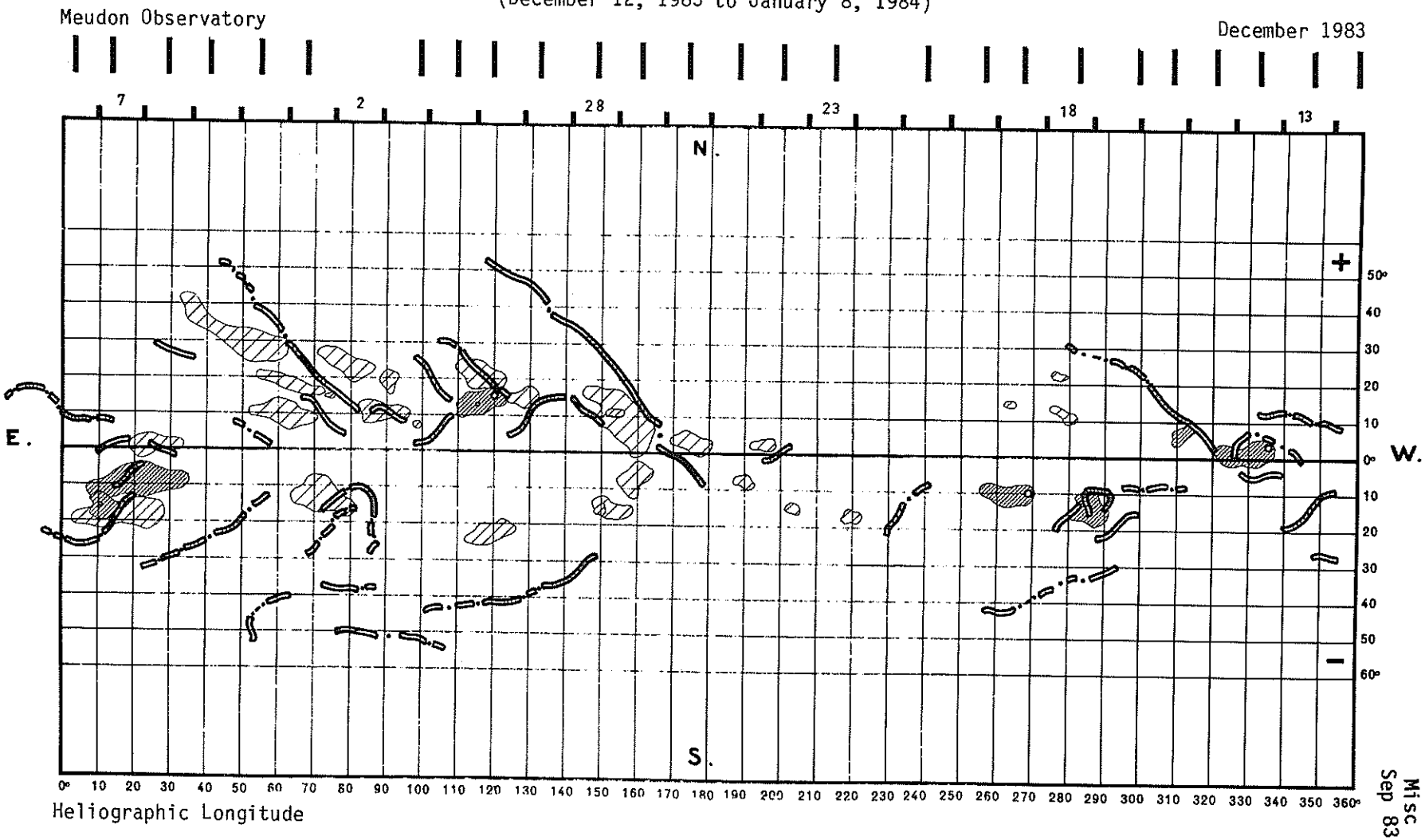
Meudon Observatory

November 1983



PRELIMINARY SYNOPTIC SOLAR MAP

CARRINGTON ROTATION NUMBER 1743
(December 12, 1983 to January 8, 1984)



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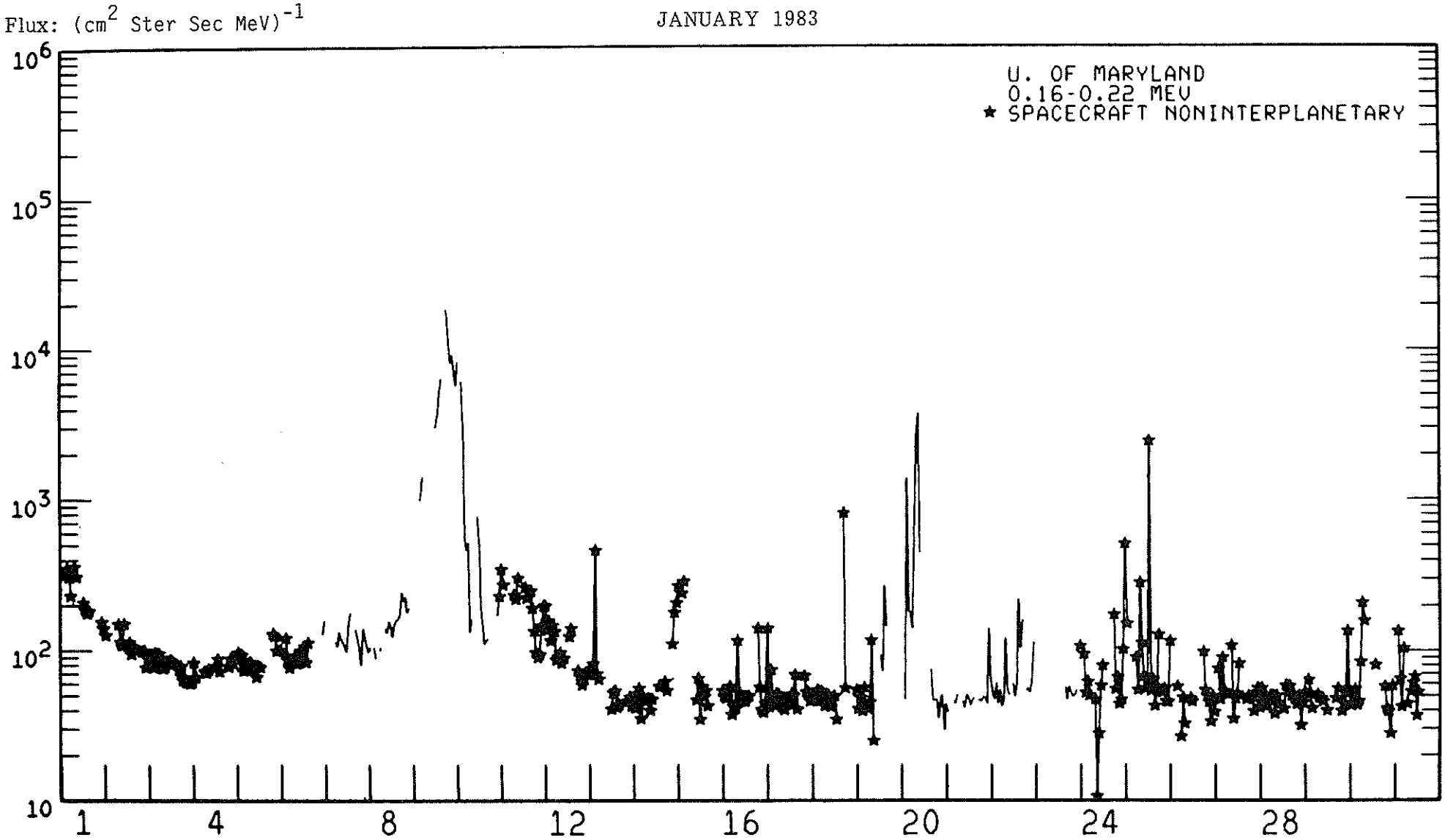
Misc
Sep 83

IMP 8 LOW ENERGY PROTONS

JANUARY 1983



IMP 8 INTERMEDIATE ENERGY PROTONS

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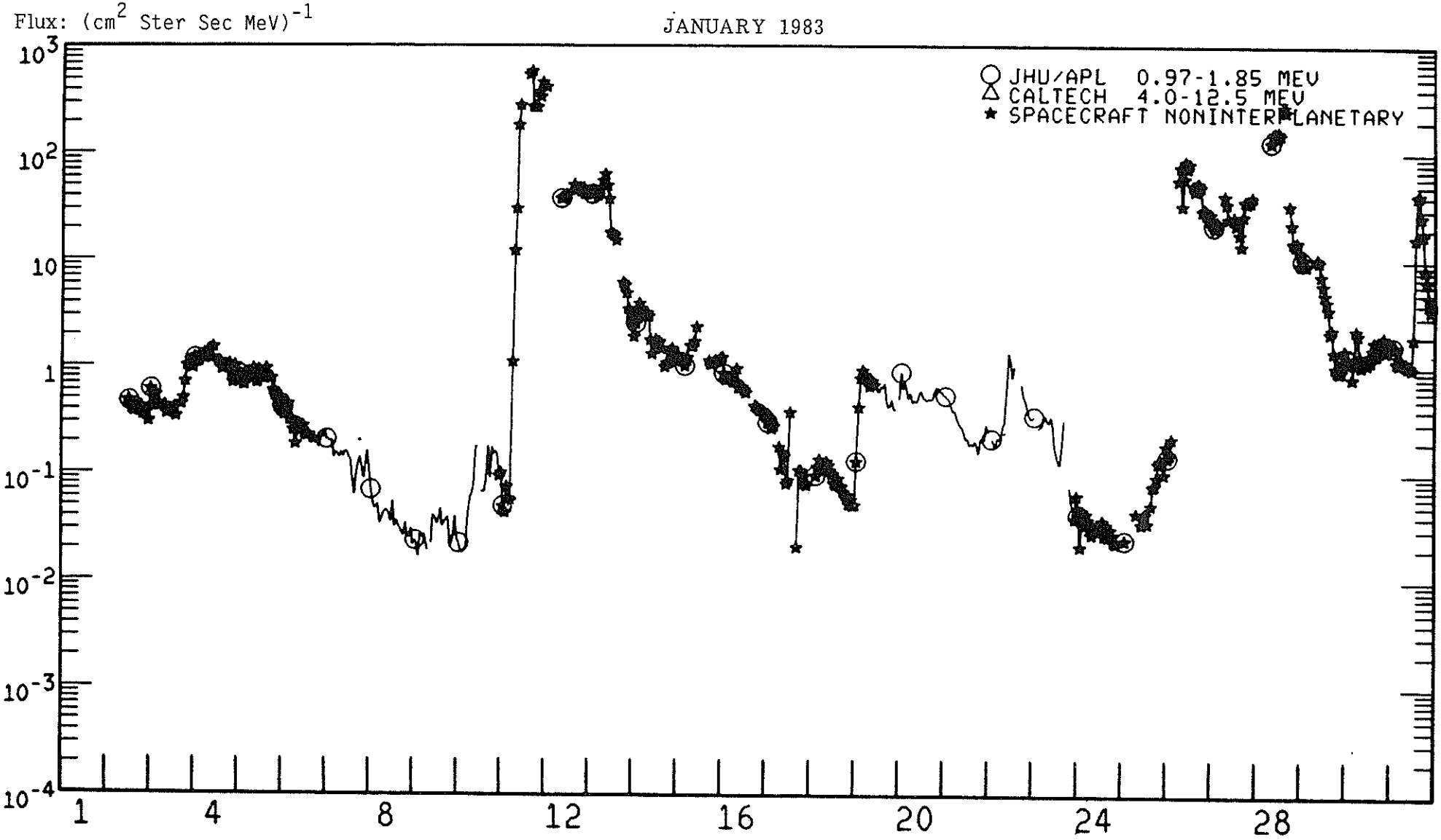

IMP 8 HIGH ENERGY PROTONS

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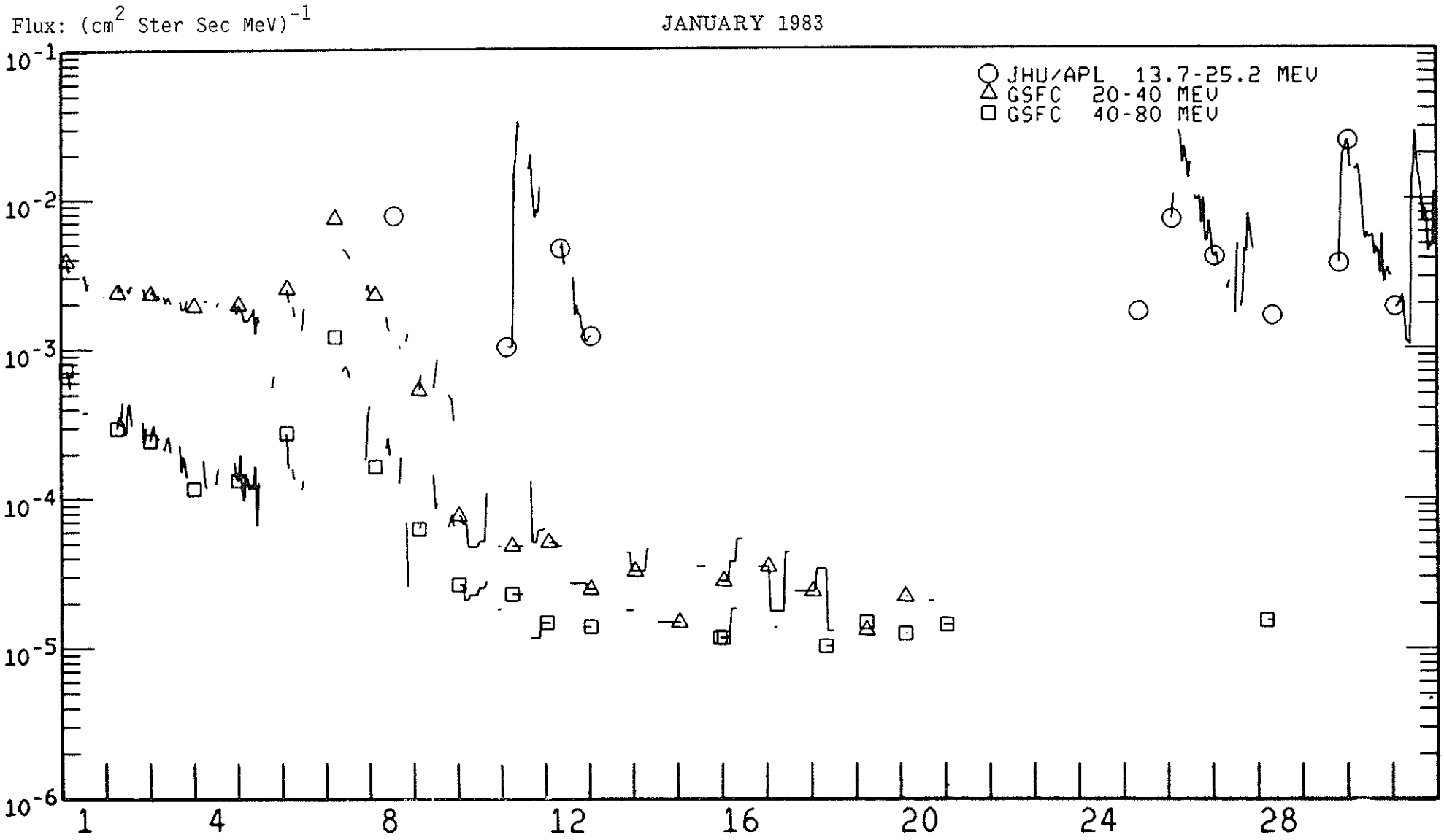

IMP 8 ALPHA PARTICLES

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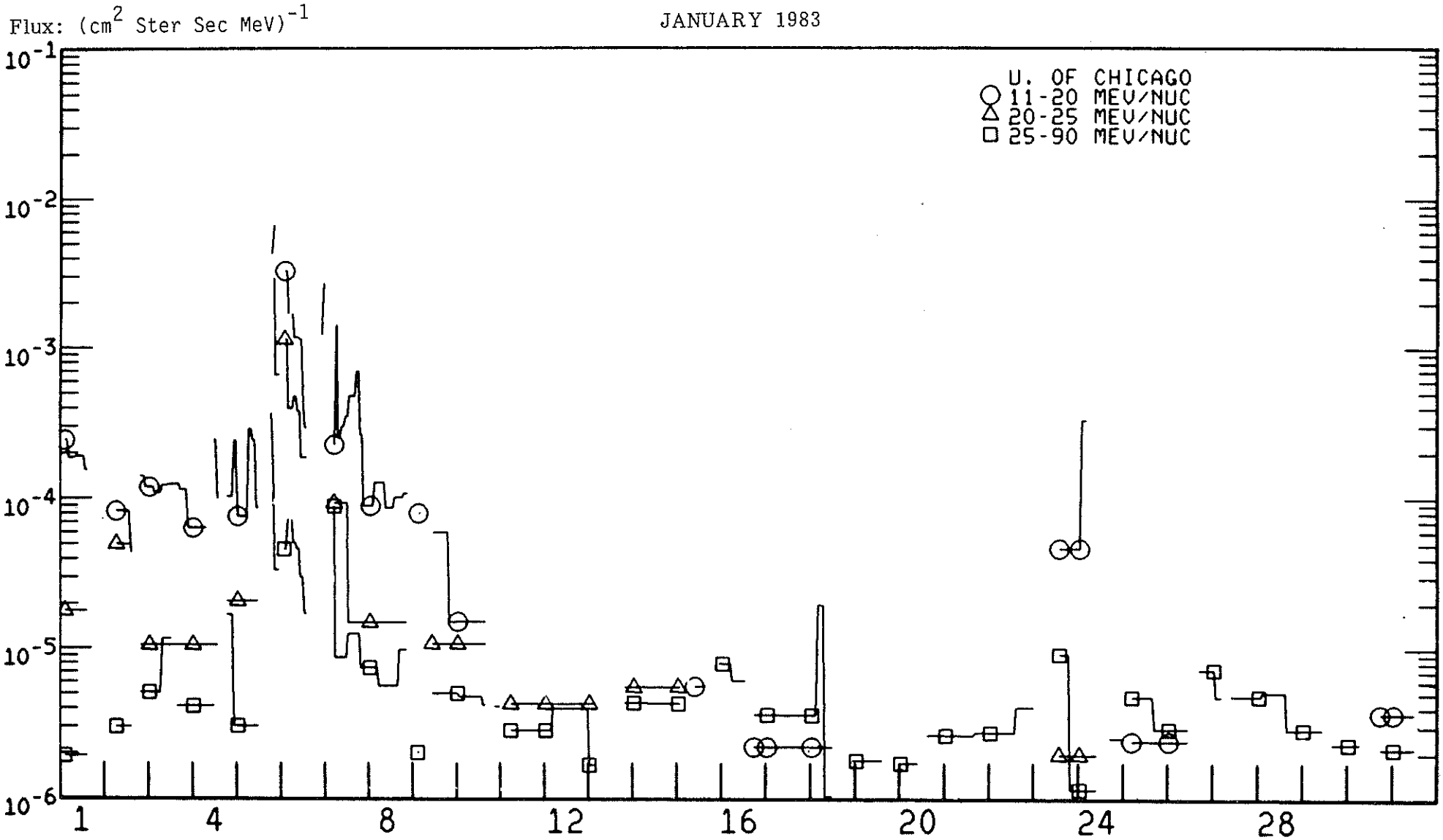

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Misc
Jan 83

IMP 8 LOW ENERGY PROTONS

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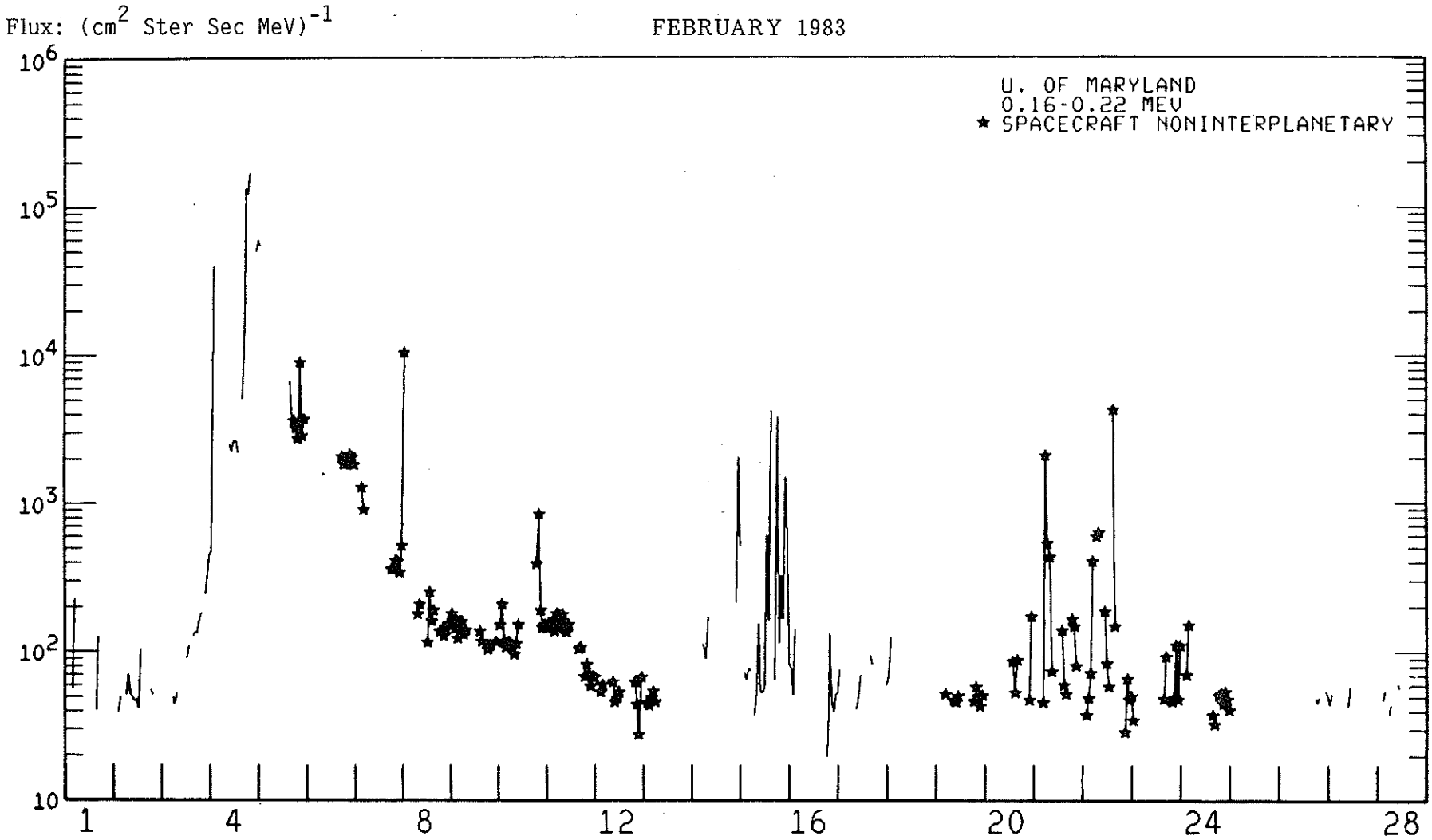

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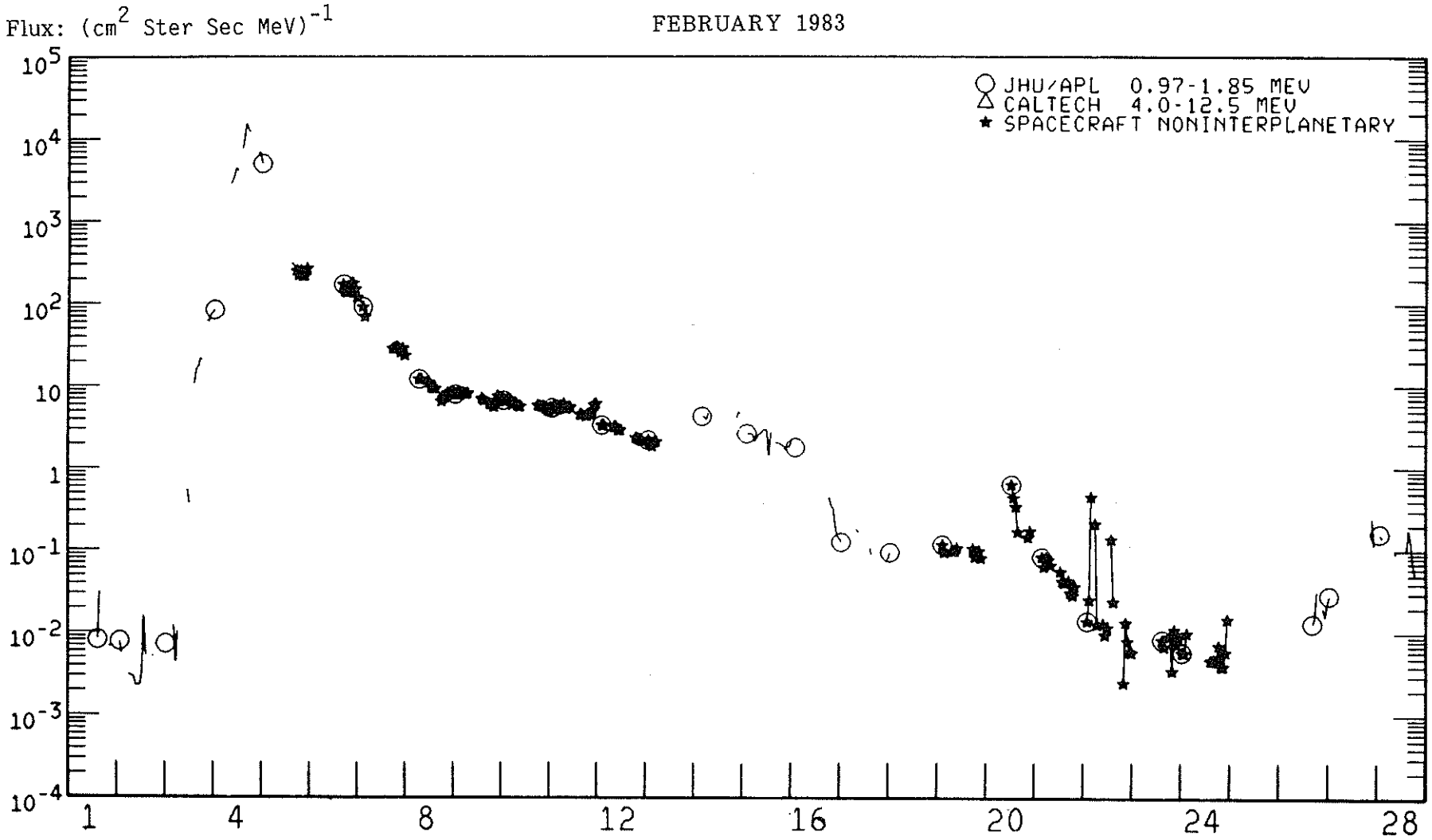

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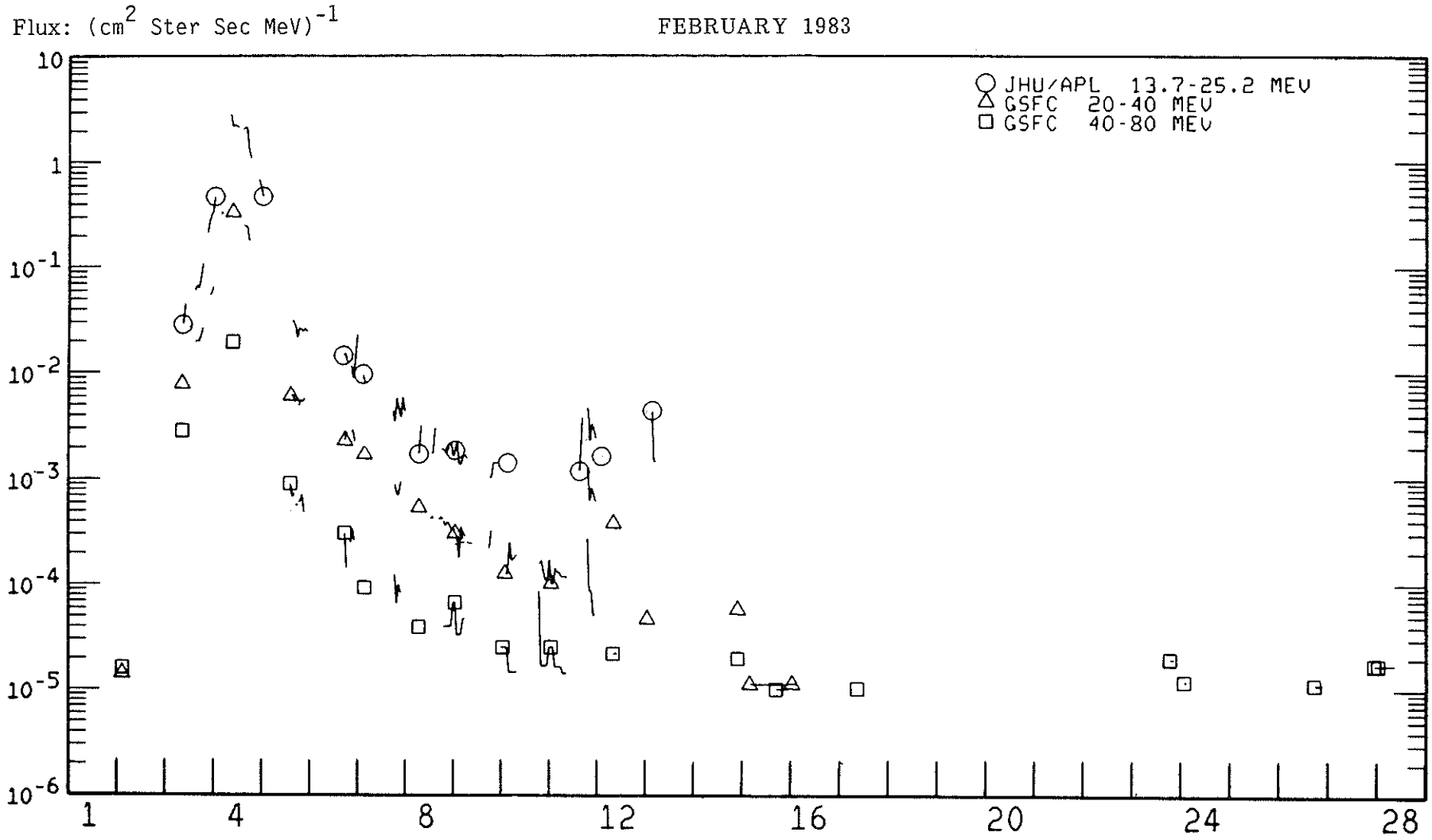

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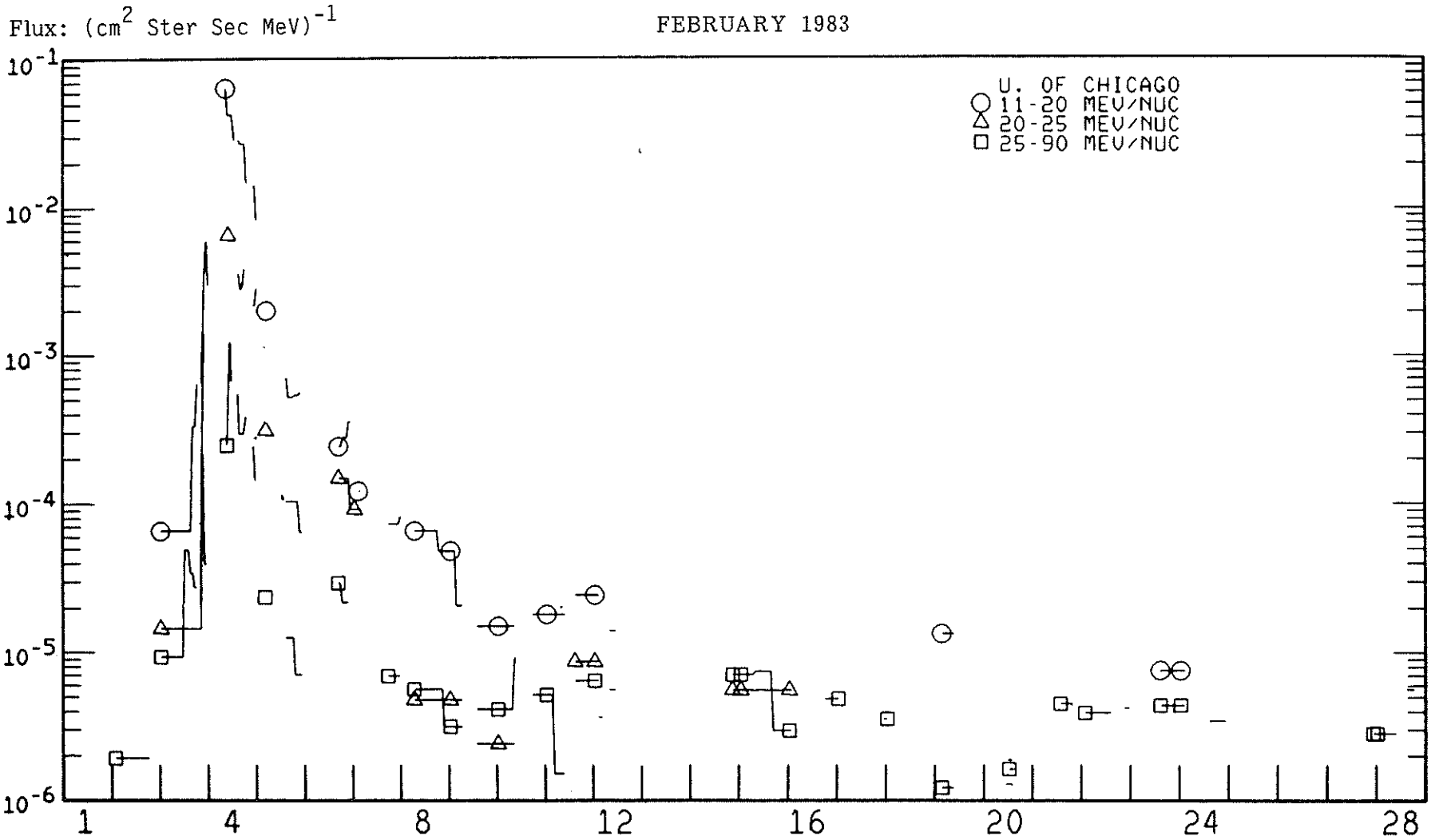
FEBRUARY 1983



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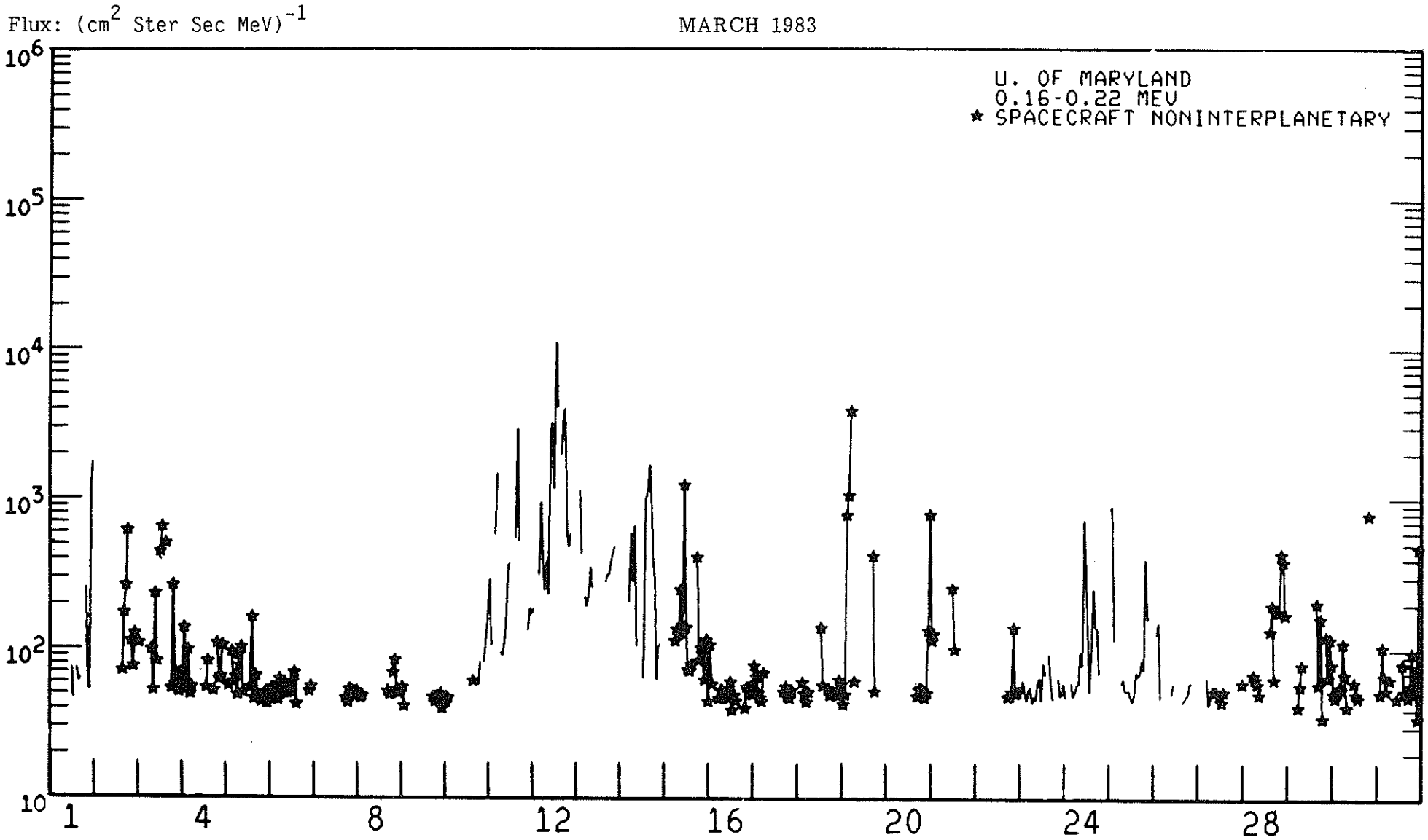
Misc
Feb 83

IMP 8 LOW ENERGY PROTONS

MARCH 1983



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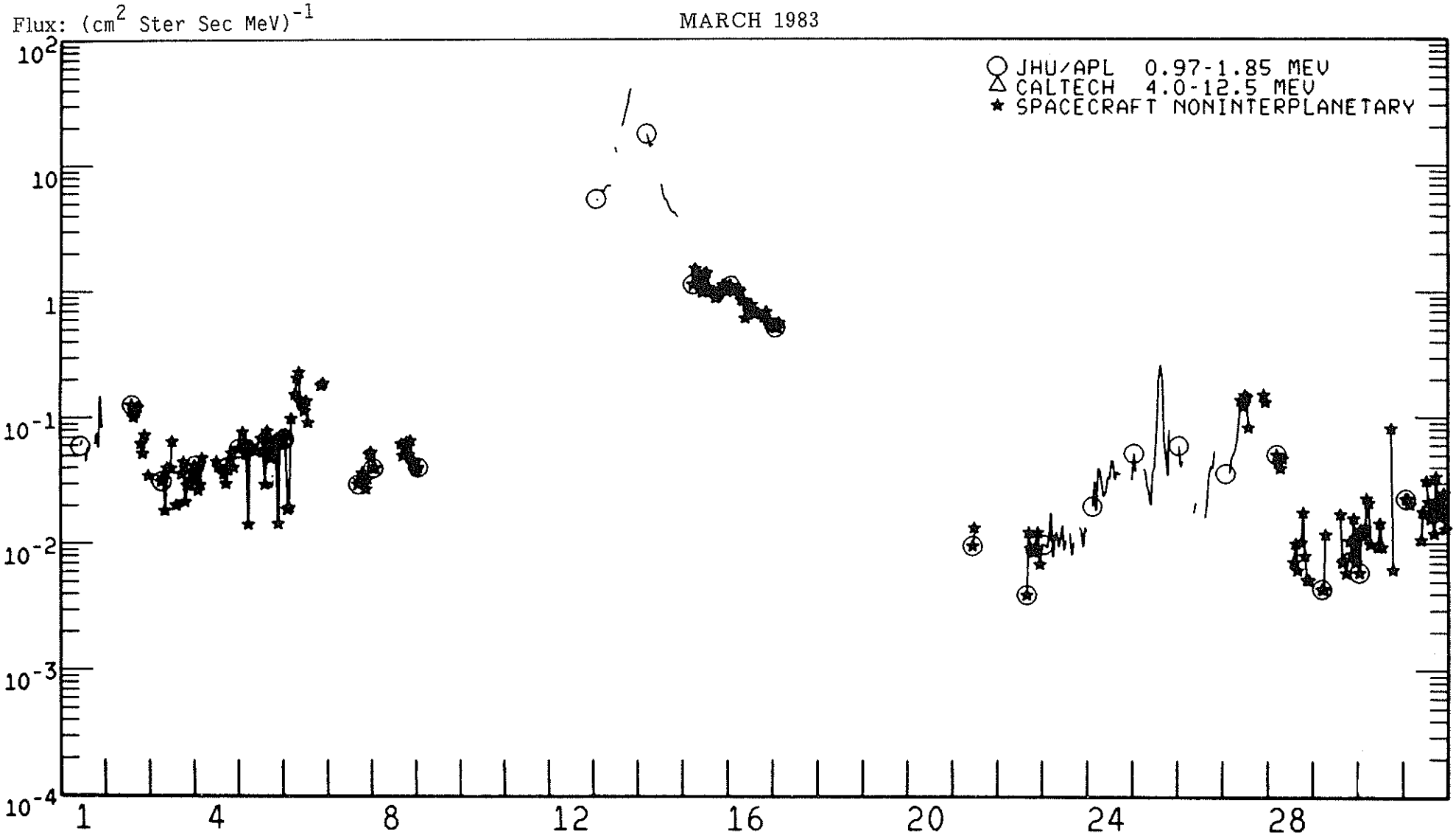

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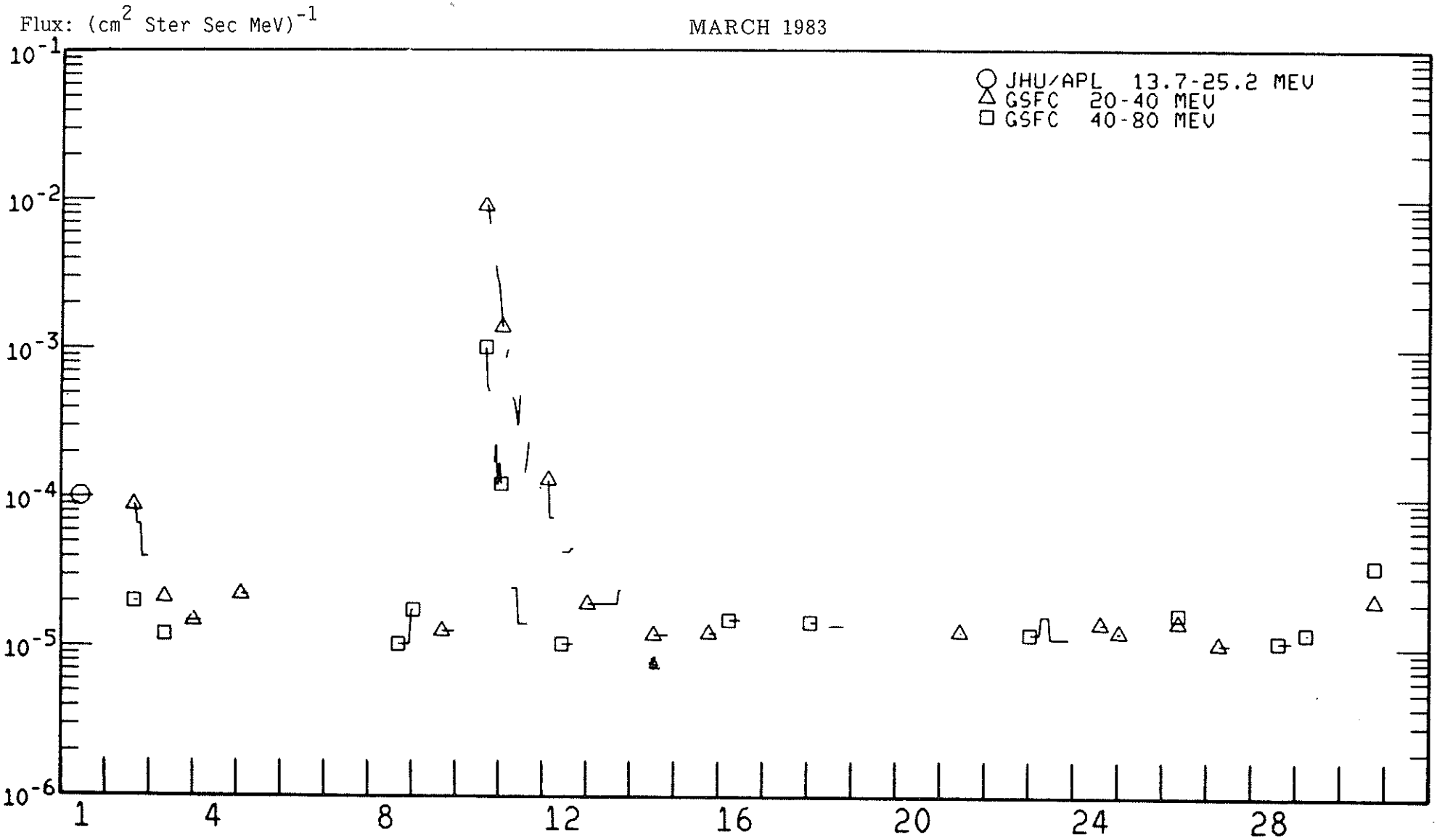
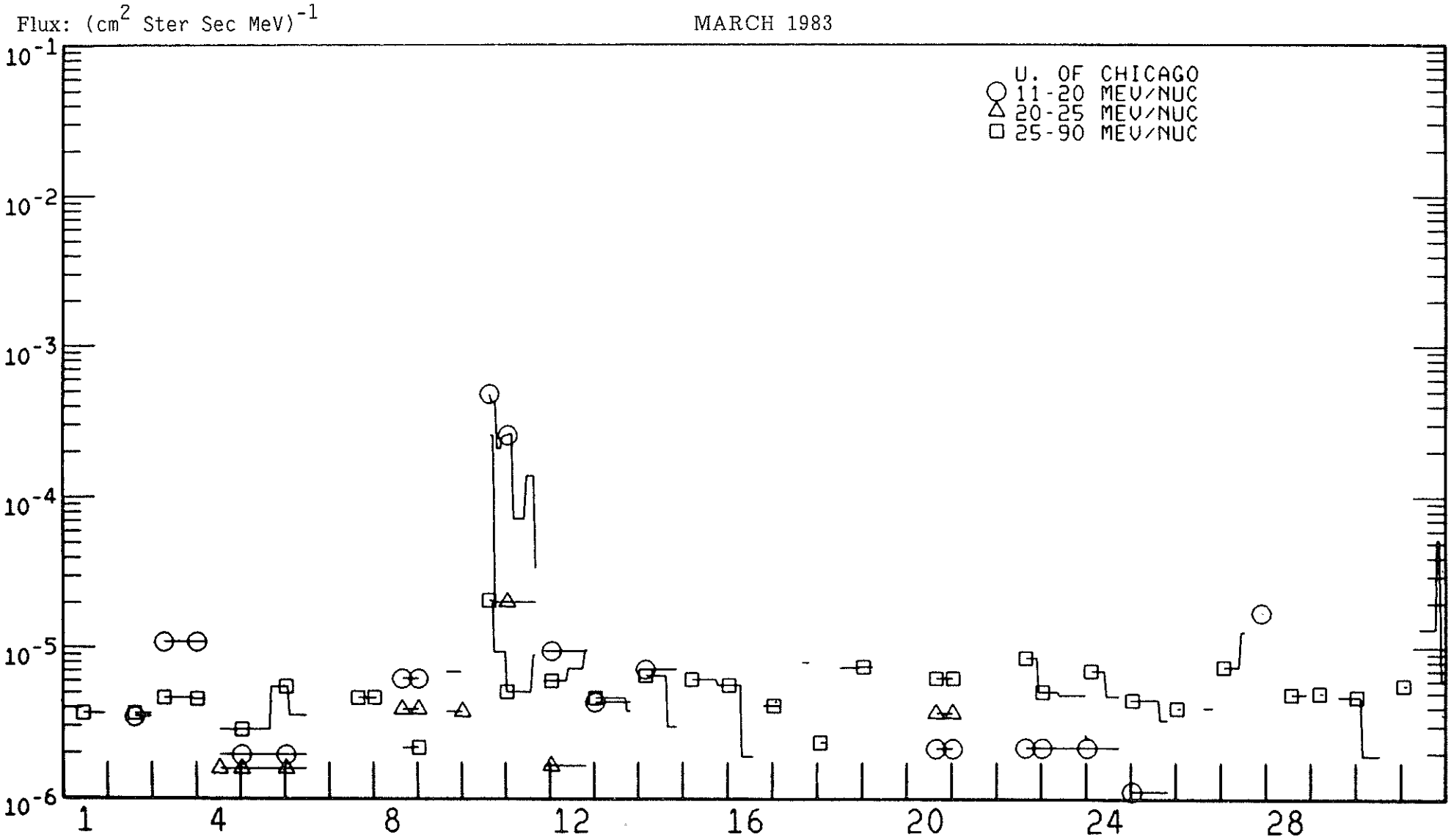
MARCH 1983

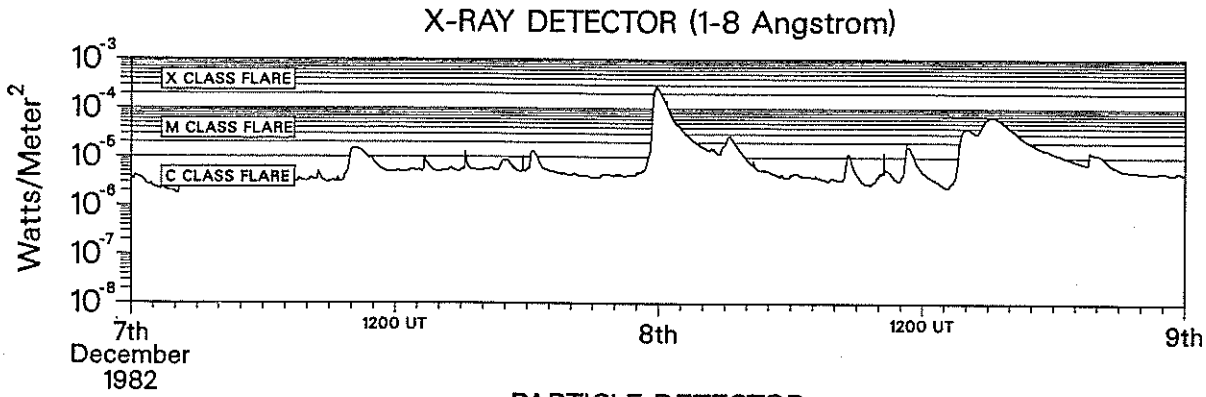


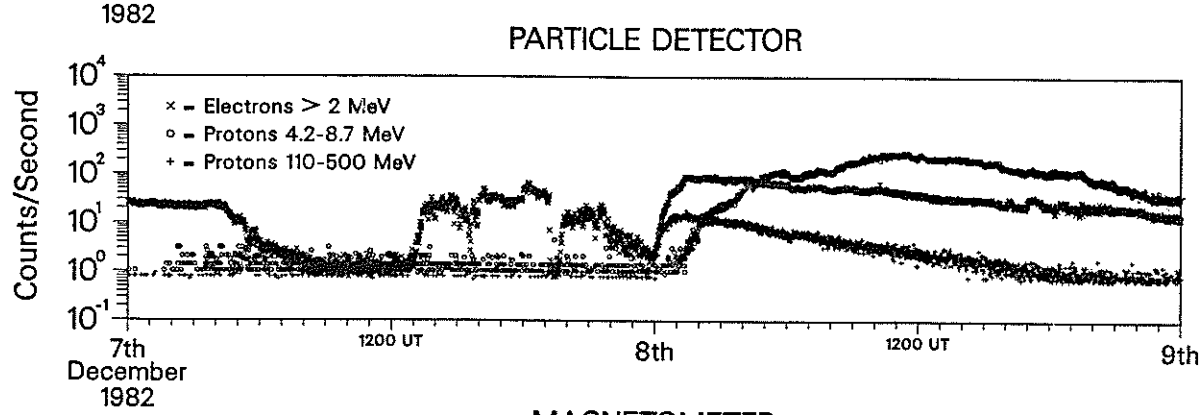
IMP 8 ALPHA PARTICLES

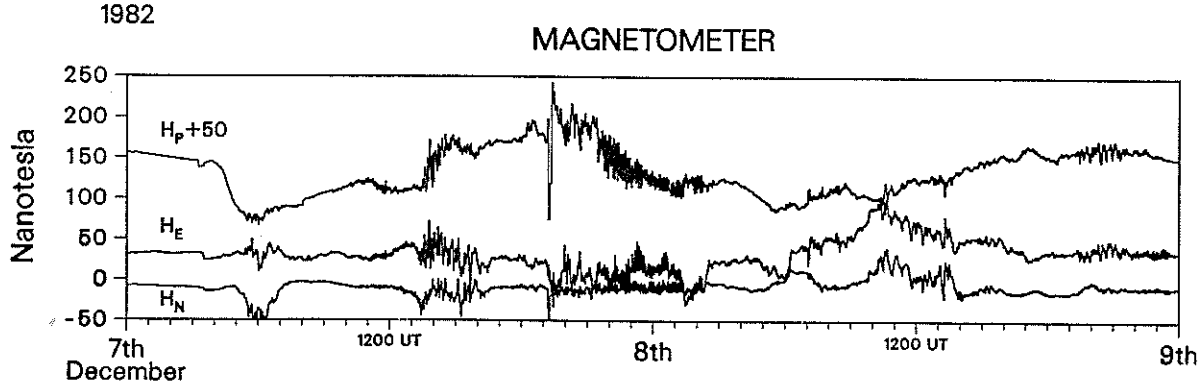
MARCH 1983



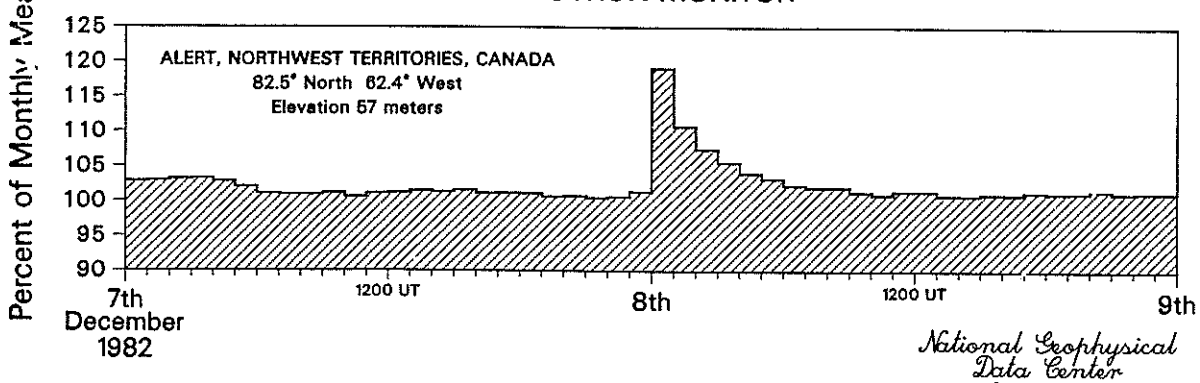
GOES-2 SPACE ENVIRONMENT MONITOR
(108° West Longitude)







GROUND LEVEL COSMIC RAY OBSERVATIONS
NEUTRON MONITOR



National Geophysical Data Center
D.G. Wilkinson

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The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."