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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
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Data for November 1996

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SOLAR-GEOPHYSICAL DATA

Number 633

(Issued in Two Parts)

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DATA FOR NOVEMBER 1996

Hα SOLAR FLARES

NOVEMBER 1996

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
		01	0000		0144	No Flare Patrol													
		01	1020		1048	No Flare Patrol													
		01	1106		1124	No Flare Patrol													
		01	1209		1218	No Flare Patrol													
		01	1405		1409	No Flare Patrol													
		01	1528		1535	No Flare Patrol													
		01	1553		1611	No Flare Patrol													
		01	1940		1955	No Flare Patrol													
		01	2021		2039	No Flare Patrol													
		02	2050		2102	No Flare Patrol													
		02	2124		2157	No Flare Patrol													
		04	2137		2253	No Flare Patrol													
		05	0000		0553	No Flare Patrol													
		05	0611		0616	No Flare Patrol													
		05	0643		0734	No Flare Patrol													
		05	0804		0927	No Flare Patrol													
		05	1525		1528	No Flare Patrol													
		05	1904		1912	No Flare Patrol													
		05	1927		2053	No Flare Patrol													
		06	1029		1051	No Flare Patrol													
		07	0656		0802	No Flare Patrol													
		08	0157		0316	No Flare Patrol													
		09	0406		0510	No Flare Patrol													
		09	0532		0545	No Flare Patrol													
		09	0637		0644	No Flare Patrol													
		09	0659		0717	No Flare Patrol													
		09	0757		0802	No Flare Patrol													
		09	2356		2400	No Flare Patrol													
		10	0000		0043	No Flare Patrol													
		10	0755		0804	No Flare Patrol													
		10	1021		1134	No Flare Patrol													
		12	0343		0430	No Flare Patrol													
		12	0442		0446	No Flare Patrol													
		12	1126		1326	No Flare Patrol													
		12	1349		1429	No Flare Patrol													
		13	1127		1216	No Flare Patrol													
		13	1229		1340	No Flare Patrol													
		14	1020		1047	No Flare Patrol													
		14	2134		2144	No Flare Patrol													
		15	0528		0538	No Flare Patrol													
		15	0547		0600	No Flare Patrol													
		15	1019		1049	No Flare Patrol													
		15	1813		1832	No Flare Patrol													
		15	1836		2230	No Flare Patrol													
		15	2353		2400	No Flare Patrol													
		16	0000		0018	No Flare Patrol													
		16	1021		1046	No Flare Patrol													
		16	1404		1428	No Flare Patrol													
		16	1535		1602	No Flare Patrol													
		16	1908		1915	No Flare Patrol													
		16	2021		2155	No Flare Patrol													
		17	1027		1046	No Flare Patrol													
		18	1016		1339	No Flare Patrol													
		18	1353		1409	No Flare Patrol													
		18	1416		1434	No Flare Patrol													
		19	1055		1427	No Flare Patrol													
		20	1422		1424	No Flare Patrol													
		20	1952		1957	No Flare Patrol													
		21	1234		1425	No Flare Patrol													
		21	1451		1514	No Flare Patrol													
0001	HOLL	21	2050	2054	2103	S03	E63	7999	11	26.6	13	SF	B 1.4	3	E		31		
0002		21	23311	2332	2340	S04	E60	7999	11	26.5	9	SF	B 1.7				15		
	HOLL	21	2331	2332	2340	S04	E61	7999	11	26.5	9	SF	B 1.7	3	E		13		
	PALE	21	2332	2332	2339	S04	E58	7999	11	26.3	7	SF		3	E		17		
		22	1319		1358	No Flare Patrol													

NOVEMBER 1996

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0003	RAMY	22	1417E	1418U	1430D	N05	W23	7997	11	20.9	13D	SF		3	E		20		
0004	RAMY	22	1649	1649	1655	N05	W24	7997	11	20.9	6	SF		3	E		37		
0005	LEAR	23	0629	0635	0638	S05	E41	7999	11	26.3	9	SF	C 1.0	3	E		58		
0006	LEAR	23	0646	0647	0649	S05	E41	7999	11	26.3	3	SF		3	E		16		
0007	KANZ	23	1348E	1352U	1404D	S04	E40	7999	11	26.6	16D	SF		2	C				
		23	1456		1635	No Flare Patrol													
		23	1655		1732	No Flare Patrol													
0008	HOLL	23	1728	1730	1745	S03	E38	7999	11	26.6	17	SF		3	E		28		
0009		23	19251	1927	1931	S04	E35	7999	11	26.4	6	SF	B 9.2				28		
	HOLL	23	1925	1927	1932	S04	E36	7999	11	26.5	7	SF	B 9.2	3	E		30		
	PALE	23	1926	1927	1930	S04	E34	7999	11	26.3	4	SF		3	E		27		
		24	1342		1400	No Flare Patrol													
		24	1406		1416	No Flare Patrol													
		24	1418		1457	No Flare Patrol													
		24	1505		1530	No Flare Patrol													
0010		24	17331	1734*	1757	S02	E22	7999	11	26.4	24	SF	C 2.8				25		
	HOLL	24	1733	1734	1753	S01	E23	7999	11	26.4	20	SF		3	E		24		
	PALE	24	1734	1754	1801	S02	E22	7999	11	26.4	27	SF	C 2.8	3	E		26		
0011		24	1933	1934	1952	S02	E22	7999	11	26.4	19	SF	C 1.3				23		EF
	RAMY	24	1920E	1922U	1958D	S02	E21	7999	11	26.4	38D	SF		2	E		25		FE
	HOLL	24	1933	1934	1952	S01	E22	7999	11	26.4	19	SF	C 1.3	3	E		21		
0012		24	20031	2004	2008	S03	E24	7999	11	26.6	5	SF	C 1.8				26		
	HOLL	24	2003	2004	2007	S03	E23	7999	11	26.5	4	SF		3	E		29		
	PALE	24	2004	2004	2009	S03	E24	7999	11	26.6	5	SF	C 1.8	3	E		23		
0013	HOLL	24	2111	2113	2121	S04	E20	7999	11	26.4	10	SF	C 1.0	3	E		37		
0014		25	0019	00211	0038	S03	E18	7999	11	26.3	19	1N	C 8.0				100	0.5	DF
	PALE	25	0017E	0022	0052	S03	E16	7999	11	26.2	35D	1F	C 8.0	3	E		154		F
	MITK	25	0019	0021	0023	S03	E20	7999	11	26.5	4	SN			C	0021	47	0.5	D
0015	PALE	25	0057	0057	0102	S03	E16	7999	11	26.2	5	SF	C 1.2	3	E		18		
0016	MITK	25	0411	0411	0412	S04	E23	7999	11	26.9	1	SN			C	0411	33	0.4	E
0017	MITK	25	0622	0624	0630	S03	E15	7999	11	26.4	8	SN			C	0624	67	0.7	D
		25	0654		0914	No Flare Patrol													
		25	0939		0958	No Flare Patrol													
0018	KANZ	25	1125	1129	1133	S03	E09	7999	11	26.1	8	SF		2	C				
0019		25	1225	1225	1229	N06	W62	7997	11	20.9	4	SF	C 1.8				24		
	KANZ	25	1225	1225	1229	N05	W62	7997	11	20.9	4	SF		2	C				
	RAMY	25	1225	1225	1238D	N06	W63	7997	11	20.8	13D	SF	C 1.8	3	E		24		
0020		25	1241*	1313	1329	S02	E12	7999	11	26.4	48	1N	C 4.6				106		F
	RAMY	25	1241	1313	1353D	S02	E11	7999	11	26.3	72D	1N	C 4.6	2	E		106		F
	KANZ	25	1313	1313	1329	S03	E12	7999	11	26.4	16	SF		2	C				
0021		25	1529	1536	1551	S03	E10	7999	11	26.4	22	SF	B 9.1				24		F
	RAMY	25	1522E	1522U	1553	S03	E08	7999	11	26.2	31D	SF		2	E		22		F
	HOLL	25	1529	1536	1549	S03	E12	7999	11	26.5	20	SF	B 9.1	3	E		25		F
0022	RAMY	25	1807E	1808U	1814D	S02	E06	7999	11	26.2	7D	SF		3	E		12		
0023		25	18252	1832	1924	S03	E07	7999	11	26.3	59	1N	C 5.8				138		FU
	HOLL	25	1825	1832	1931	S03	E08	7999	11	26.4	66	1N	C 5.8	4	E		137		UF
	PALE	25	1827	1832	1916	S03	E06	7999	11	26.2	49	1F		3	E		139		

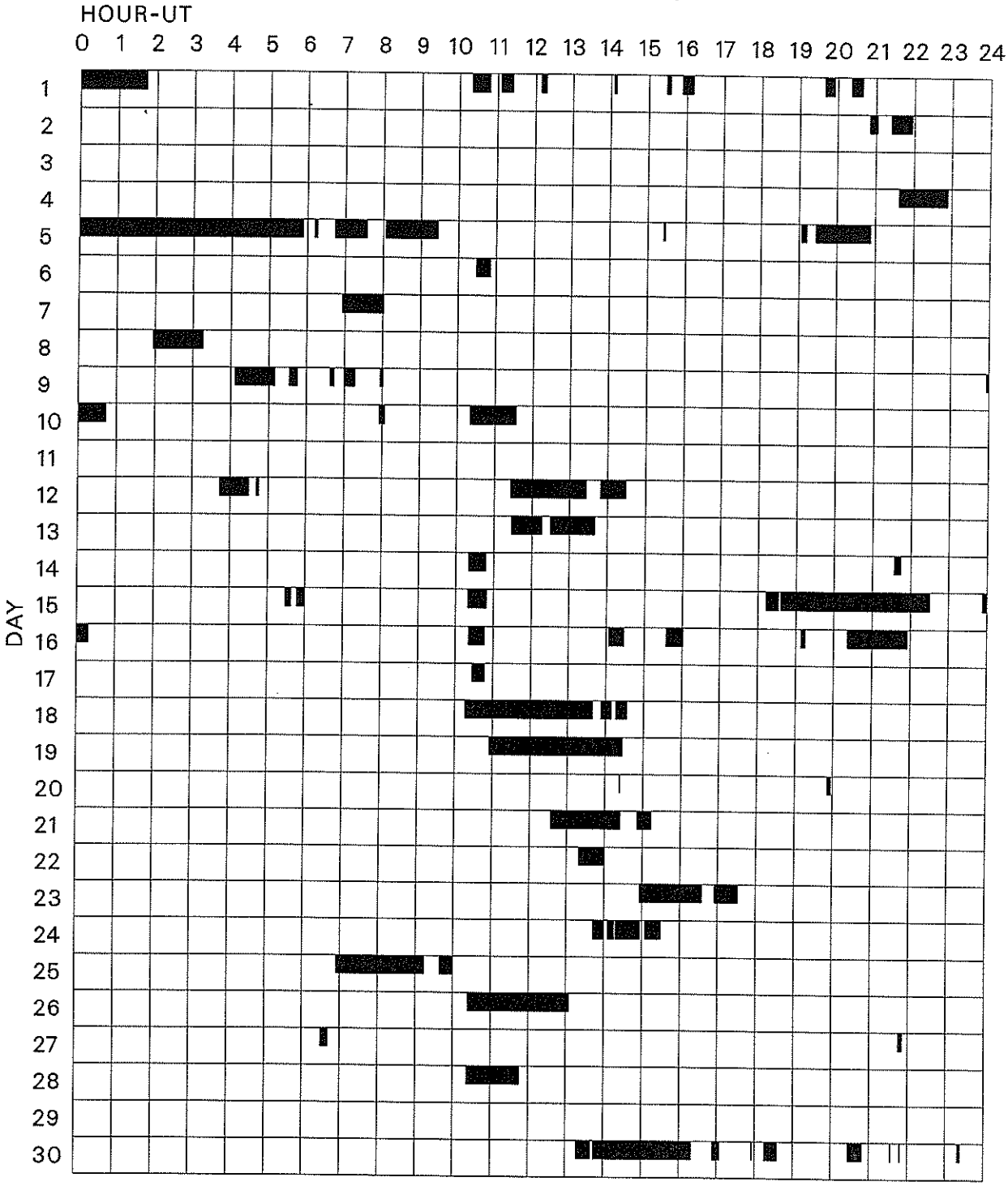
Hα SOLAR FLARES

NOVEMBER 1996

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0024	RAMY	25	1830E	1903	1940	S03	E07	7999	11	26.3	70D	1N		3	E		122		EF
0025	HOLL	25	1854	1857	1908	N04	W68	7997	11	20.7	14	SF		3	E		55		
0026	HOLL	25	2014	2023	2044	S14	W54	8000	11	21.8	30	SF		3	E		18		
0027	HOLL	25	2014	2023	2044	S16	W73	7998	11	20.3	30	SF		3	E		18		
		26	1024		1305	No Flare Patrol													
0028	RAMY	26	1307E	1309U	1427	S03	W02	7999	11	26.4	80D	SF	C 1.6	3	E		47		
		27	0629		0641	No Flare Patrol													
0029	RAMY	27	1154	1157	1217	S03	W14	7999	11	26.4	23	SF		4	E		11		F
0030	HOLL	27	1929	1929	1941	S04	W18	7999	11	26.5	12	SF	B 8.9	3	E		14		F
		27	2145		2151	No Flare Patrol													
		28	1022		1146	No Flare Patrol													
0031	RAMY	28	1235	1242	1347	S04	W29	7999	11	26.3	72	SF	C 1.1	3	E		48		F
0032	LEAR	29	0001	0008	0026	S04	W37	7999	11	26.2	25	SF		3	E		14		
0033	LEAR	29	0026	0032	0037	S03	W35	7999	11	26.4	11	SF		3	E		14		
0034	LEAR	29	0050	0051	0057	S03	W35	7999	11	26.4	7	SF		3	E		20		
0035	RAMY	29	2025E	2025U	2116D	S05	W49	7999	11	26.2	51D	SF		2	E		72		
0036		29	2036E	2041U	2109D	S06	W48	7999	11	26.3	33D	1F	M 1.0				154		
	PALE	29	2036E	2043U	2109D	S06	W47	7999	11	26.3	33D	1F	M 1.0	3	E		131		
	HOLL	29	2040E	2041U	2042D	S07	W49	7999	11	26.2	2D	1F		1	E		178		
0037	LEAR	30	0022	0025	0027	S04	W48	7999	11	26.4	5	SF		3	E		15		
0038	LEAR	30	0039	0101	0149	S04	W48	7999	11	26.4	70	SF		3	E		52		F
0039	LEAR	30	0149	0154	0159	S04	W49	7999	11	26.4	10	SF		3	E		41		
		30	1317		1340	No Flare Patrol													
		30	1345		1620	No Flare Patrol													
		30	1653		1705	No Flare Patrol													
0040	HOLL	30	1716	1716	1720	S04	W58	7999	11	26.4	4	SF	C 1.0	3	E		30		
		30	1755		1756	No Flare Patrol													
		30	1815		1835	No Flare Patrol													
0041	RAMY	30	1905E	1905U	1918D	S06	W61	7999	11	26.2	13D	SF		2	E		18		
		30	2027		2049	No Flare Patrol													
0042		30	2049	2101	2214	S04	W60	7999	11	26.4	85	1N	C 8.6				134		FU
	HOLL	30	2049	2101	2259	S05	W63	7999	11	26.1	130	1N	C 8.6	3	E		175		UU
	RAMY	30	2054E	2054U	2128	S04	W58	7999	11	26.5	34D	SN		3	E		92		F
0043	PALE	30	2110E	2111U	2115	S06	W62	7999	11	26.2	5D	SF		3	E		22		
		30	2133		2134	No Flare Patrol													
		30	2148		2149	No Flare Patrol													
0044	LEAR	30	2150E	2225	2318D	S05	W63	7999	11	26.2	88D	SF		4	E		35		F
		30	2319		2323	No Flare Patrol													

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

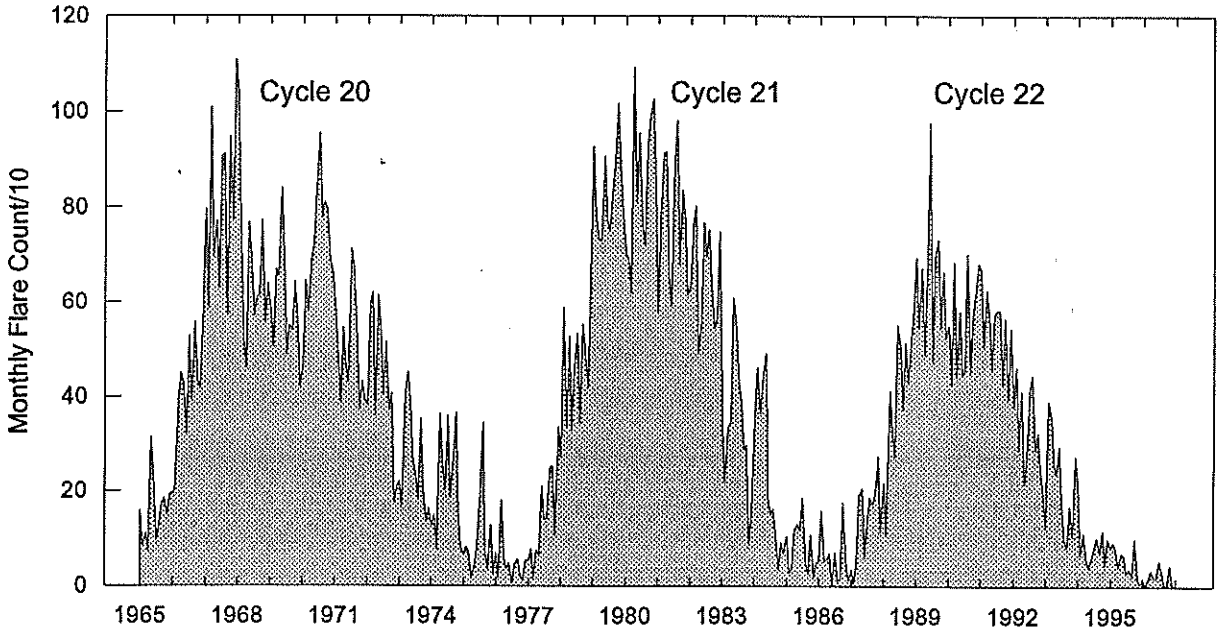
NOVEMBER 1996



Times of no flare patrol, shown here as shaded areas, combine reports from the stations listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind (neither visual nor cinematographic); portions of a panel with only the bottom half shaded mark times of only visual patrol.

Holloman	Kharkov	Mitaka	Ramey
Hurbanovo	Learmonth	Palehua	San Vito
Kanzelhoehe	Meudon		

Monthly Counts of Grouped Solar Flares
Jan 1965 - Nov 1996



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1965	158	85	110	74	315	231	99	127	173	184	150	193	1899
1966	194	205	390	449	429	323	528	391	558	432	417	543	4859
1967	796	589	1009	694	771	629	907	911	573	946	775	1109	9709
1968	1037	773	519	460	768	697	573	611	616	772	556	640	8022
1969	581	504	669	655	839	694	489	551	540	643	566	422	7153
1970	466	646	578	688	722	836	954	780	811	797	687	667	8632
1971	598	505	387	546	461	430	713	673	518	375	431	394	6031
1972	384	599	621	361	614	541	404	515	371	408	175	210	5203
1973	221	171	410	453	388	270	232	182	353	201	136	163	3180
1974	127	148	79	364	255	204	360	187	270	366	153	81	2594
1975	68	82	69	19	42	85	196	346	68	38	127	25	1165
1976	69	18	180	60	38	48	6	47	57	23	13	55	614
1977	54	77	18	76	64	210	140	140	250	252	107	336	1724
1978	274	588	338	526	330	460	533	346	554	499	418	648	5514
1979	926	781	731	731	907	772	750	821	901	1018	888	786	10012
1980	703	689	621	1092	811	956	763	720	924	988	1027	838	10132
1981	578	782	914	915	658	592	893	982	680	836	773	615	9218
1982	631	766	803	490	553	769	696	753	615	544	564	748	7932
1983	332	220	337	346	609	561	427	389	289	298	88	152	4048
1984	353	461	366	440	492	185	151	161	95	36	92	69	2901
1985	104	29	38	119	129	116	185	53	25	108	19	50	975
1986	51	158	54	56	68	3	71	12	14	174	56	13	730
1987	36	7	52	192	205	61	132	185	172	198	273	114	1627
1988	217	109	413	328	274	551	502	375	513	429	518	587	4816
1989	695	544	672	488	691	977	474	699	733	547	665	526	7711
1990	550	424	684	442	580	445	454	703	449	574	623	682	6610
1991	672	503	625	570	458	574	582	581	425	565	396	544	6495
1992	380	462	287	412	214	271	413	447	287	325	248	206	3952
1993	123	392	357	262	237	296	154	92	82	167	104	275	2541
1994	217	67	111	60	40	56	81	101	72	117	45	99	1066
1995	82	95	77	42	69	66	29	37	23	99	14	6	639
1996	14	3	15	34	21	16	54	31	3	0	44		235

The term 'grouped' means observations of the same event by different sites were lumped together and counted as one.

SOLAR RADIO EMISSION
Outstanding Occurrences

NOVEMBER 1996

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
09	200	HIRA	8	S	0544.1	0544.3	0.7	33.0			O
	200	HIRA	46	C	2318.0	2323.1	6.5	19.0	3.0		O
	200	HIRA	46	C	2318.0	2323.6	6.5	123.0	4.0		WL
	410	LEAR	4	S/F	2319.0	2324.0	5.0	13.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	2320.0	2322.0	4.0	7.0			QL=4 ST=2 TYP=3
	610	LEAR	8	S	2323.0	2323.0	1.0	6.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2323.0	2323.0	1.0	7.0			QL=4 ST=3 TYP=3
	610	PALE	8	S	2323.0	2324.0	1.0	5.0			QL=4 ST=3 TYP=3
	410	PALE	8	S	2323.0	2324.0	1.0	15.0			QL=4 ST=3 TYP=3
11	2800	HIRA	1	S	0107.0	0107.6	5.2	2.0			O
12	410	LEAR	4	S/F	0532.0	0533.0	3.0	10.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	0532.0	0533.0	4.0	20.0			QL=4 ST=2 TYP=3
18	204	IZMI	7	C	0736.0	0736.5	0.8	25.0	12.0		
	204	IZMI	7	C	0907.0	0907.1	0.5	20.0	10.0		
19	204	IZMI	8	S	0917.0	0917.1	0.1	14.0			
	204	IZMI	8	S	0939.6	0939.7	0.5	9.0			
21	2840	PEKG	45	C	0641.0	0651.0	11.0	6.3			
22	204	IZMI	24	R	1042.0		78.0D		5.0		
23	127	TORN	43	NS	0720.0		420.0		3.0		V=1
	204	IZMI	43	NS	0800.0		240.0D		20.0		
	235	CUBA	44	NS	1320.0E		490.0D		31.0		
	280	CUBA	44	NS	1320.0E		510.0D		25.0		
	245	SGMR	43	NS	1535.0	1535.0	31.0	9.0			QL=2 ST=3 TYP=1
	245	SGMR	43	NS	1800.0	1921.0	147.0	9.0			QL=2 ST=2 TYP=1
	245	PALE	43	NS	1800.0	1801.0	360.0	6.0			QL=4 ST=3 TYP=1
	245	PALE	43	NS	1800.0	2052.0	360.0	72.0			QL=4 ST=3 TYP=1
	245	LEAR	43	NS	2149.0	2217.0U	131.0	8.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2149.0	2341.0U	131.0	13.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2149.0	2311.0U	131.0	11.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2149.0	2212.0U	131.0	8.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2149.0	2154.0U	131.0	6.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2149.0	2231.0U	131.0	9.0			QL=4 ST=1 TYP=1
	5730	IRKU	21	GRF	0607.0	0654.0	120.0D	5.0	U		
	245	PALE	8	S	1744.0	1745.0	2.0	4.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1744.0	1745.0	1.0	4.0			QL=2 ST=3 TYP=3
	410	PALE	8	S	1745.0	1745.0	1.0	24.0			QL=4 ST=3 TYP=3
	610	PALE	8	S	1745.0	1745.0	1.0	19.0			QL=4 ST=3 TYP=3
	1415	PALE	8	S	1745.0	1745.0	U	2.0			QL=4 ST=3 TYP=3
	1415	SGMR	8	S	1745.0	1745.0	U	2.0			QL=4 ST=3 TYP=3
	610	SGMR	8	S	1745.0	1745.0	U	21.0			QL=4 ST=3 TYP=3
	410	SGMR	8	S	1745.0	1745.0	U	30.0			QL=4 ST=3 TYP=3
	410	LEAR	8	S	2236.0	2237.0	2.0	4.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	2237.0	2237.0	1.0	22.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	2237.0	2238.0	1.0	6.0			QL=2 ST=3 TYP=3
	245	PALE	8	S	2237.0	2237.0	1.0	19.0			QL=2 ST=3 TYP=3
	245	LEAR	8	S	2332.0	2332.0	1.0	13.0			QL=4 ST=2 TYP=3
24	245	SVTO	43	NS	0619.0	1154.0	522.0	28.0			QL=4 ST=2 TYP=1
	127	TORN	44	NS	0650.0E		450.0D		90.0		V=2
	204	IZMI	44	NS	0700.0E		300.0D		10.0		
	410	SVTO	43	NS	1130.0	1133.0U	8.0	8.0			QL=4 ST=3 TYP=1
	245	SGMR	43	NS	1210.0	1501.0U	397.0	24.0			QL=2 ST=2 TYP=1
	280	CUBA	44	NS	1340.0E		490.0D		30.0		
	235	CUBA	44	NS	1340.0E		490.0D		37.0		
	245	PALE	43	NS	1730.0	2139.0	601.0	11.0			QL=2 ST=2 TYP=1
	245	SGMR	43	NS	1941.0	1941.0	U	6.0			QL=2 ST=3 TYP=1
	410	PALE	43	NS	2126.0	2144.0	365.0	10.0			QL=2 ST=2 TYP=1
	245	LEAR	43	NS	2148.0	0302.0	763.0	17.0			QL=4 ST=2 TYP=1
	5730	IRKU	7	C	0441.8	0444.3	5.8	6.0	U		
	2840	PEKG	1	S	0444.0	0444.0	3.0	5.4			
	410	SVTO	8	S	1055.0	1055.0	U	6.0			QL=2 ST=2 TYP=3
	245	SVTO	8	S	1358.0	1359.0	1.0	14.0			QL=2 ST=2 TYP=3

SOLAR RADIO EMISSION
Outstanding Occurrences

NOVEMBER 1996

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
24	245	SGMR	8	S	1359.0	1359.0	U	17.0			QL=2 ST=3 TYP=3
	410	PALE	8	S	2039.0	2039.0	1.0	5.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2107.0	2108.0	2.0	43.0			QL=2 ST=2 TYP=3
	2800	PENT	8	S	2108.3	2108.4	0.2	10.0			
	410	PALE	4	S/F	2118.0	2118.0	5.0	10.0			QL=2 ST=3 TYP=3
	410	PALE	4	S/F	2313.0	2314.0	6.0				QL=2 ST=3 TYP=3
	410	PALE	4	S/F	2313.0	2314.0	6.0				QL=2 ST=2 TYP=3
	410	LEAR	4	S/F	2337.0	2338.0	3.0	6.0			QL=4 ST=2 TYP=3
25	245	SVTO	43	NS	0613.0	1447.0	528.0	26.0			QL=4 ST=3 TYP=1
	245	SVTO	44	NS	0613.0E	1033.0	1067.0D	14.0			QL=4 ST=3 TYP=1
	245	SVTO	44	NS	0613.0E	1219.0	1067.0D	14.0			QL=4 ST=3 TYP=1
	245	SVTO	44	NS	0613.0E	0645.0	1067.0D	14.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	0613.0	0000.0U	1067.0	6.0			QL=4 ST=3 TYP=1
	410	SVTO	44	NS	0620.0E	0710.0	95.0D	14.0			QL=4 ST=3 TYP=1
	410	SVTO	44	NS	0620.0E	0710.0	1060.0D	14.0			QL=4 ST=3 TYP=1
	410	SVTO	43	NS	0620.0	0000.0U	1060.0	8.0			QL=4 ST=3 TYP=1
	127	TORN	44	NS	0650.0E		450.0D		30.0		V=2
	204	IZMI	44	NS	0700.0E		300.0D		70.0		
	410	SGMR	43	NS	1211.0	0000.0	709.0	8.0			QL=4 ST=1 TYP=1
	245	SGMR	43	NS	1219.0	1219.0	701.0	10.0			QL=2 ST=3 TYP=1
	410	SVTO	43	NS	1252.0	1252.0	39.0	28.0			QL=4 ST=2 TYP=1
	410	SGMR	43	NS	1252.0	1252.0	668.0	8.0			QL=4 ST=3 TYP=1
	410	SGMR	43	NS	1257.0	1308.0	58.0	10.0			QL=4 ST=2 TYP=1
	235	CUBA	44	NS	1300.0E		530.0D		27.0		
	280	CUBA	44	NS	1300.0E		530.0D		35.0		
	245	PALE	43	NS	1708.0	1708.0U	247.0	14.0			QL=2 ST=2 TYP=1
	245	PALE	43	NS	1730.0	2139.0	601.0	11.0			QL=2 ST=2 TYP=1
	410	PALE	43	NS	2126.0	2126.0	365.0	10.0			QL=2 ST=3 TYP=1
	245	LEAR	8	S	0018.0	0018.0	1.0	29.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0026.0	0026.0	1.0				QL=2 ST=3 TYP=3
	5730	IRKU	1	S	0337.0	0338.0	7.0	1.0	U		
	5730	IRKU	1	S	0346.5	0353.7	16.5	2.0	U		
	5730	IRKU	31	ABS	0407.0	0411.0	18.0	2.0	U		
	200	HIRA	8	S	0409.9	0410.0	0.6	102.0			WL
	200	HIRA	8	S	0410.0	0410.0	0.1	7.0			O
	2840	PEKG	1	S	0513.0	0514.0	2.0	8.7			
	5730	IRKU	7	C	0514.2	0514.5	18.3	24.0	U		
	2800	HIRA	1	S	0514.3	0514.6	0.8	8.0			O
	5730	IRKU	1	S	0549.5	0552.0	9.5	2.0	U		
	5730	IRKU	31	ABS	0600.0	0602.0	12.0	3.0	U		
	5730	IRKU	21	GRF	0618.5	0623.8	19.5	5.0	U		
	5730	IRKU	21	GRF	0652.0	0711.0	44.0	7.0	U		
	4995	SGMR	8	S	1310.0	1311.0	2.0	6.0			QL=4 ST=2 TYP=3
	4995	SVTO	4	S/F	1310.0	1311.0	4.0	5.0			QL=4 ST=3 TYP=3
	8800	SVTO	4	S/F	1310.0	1311.0	4.0	5.0			QL=4 ST=3 TYP=3
	8800	SGMR	8	S	1311.0	1311.0	U	5.0			QL=4 ST=2 TYP=3
	15400	SGMR	4	S/F	1826.0	1830.0	7.0	2.0			QL=4 ST=2 TYP=3
	4995	SGMR	4	S/F	1826.0	1830.0	7.0	7.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1828.0	1831.0	5.0	2.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1828.0	1830.0	5.0	5.0			QL=4 ST=2 TYP=3
	2800	PENT	3	S	1828.0	1830.7	10.0	20.0			
	4995	PALE	4	S/F	1829.0	1830.0	8.0	6.0			QL=2 ST=3 TYP=3
26	245	LEAR	43	NS	0541.0	0545.0	32.0	10.0			QL=4 ST=2 TYP=1
	245	SVTO	43	NS	0611.0	0618.0	13.0	6.0			QL=4 ST=2 TYP=1
	204	IZMI	44	NS	0700.0E		300.0D		15.0		
	127	TORN	43	NS	0730.0		410.0		10.0		V=1
	245	SVTO	43	NS	0807.0	0807.0	U	6.0			QL=4 ST=2 TYP=1
	245	SVTO	43	NS	1226.0	1307.0	68.0	11.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	1226.0	1307.0	68.0	11.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	1226.0	1236.0	694.0	7.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	1226.0	1307.0	694.0	11.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	1236.0	1226.0	684.0	7.0			QL=4 ST=3 TYP=1
	280	CUBA	44	NS	1300.0E		530.0D		38.0		
	235	CUBA	44	NS	1300.0E		530.0D		44.0		
	245	SGMR	43	NS	1307.0	1627.0	406.0	23.0			QL=4 ST=2 TYP=1
	410	SGMR	43	NS	1704.0	1724.0	81.0	15.0			QL=4 ST=2 TYP=1
	410	PALE	43	NS	1708.0	1723.0	106.0	12.0			QL=2 ST=3 TYP=1

SOLAR RADIO EMISSION
Outstanding Occurrences

NOVEMBER 1996

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
26	245	PALE	43	NS	1708.0	2020.0	304.0	32.0			QL=2 ST=2 TYP=1
	245	SGMR	43	NS	1941.0	2011.0	51.0	11.0			QL=4 ST=2 TYP=1
	245	LEAR	8	S	0248.0	0248.0	U	5.0			QL=4 ST=2 TYP=3
	5730	IRKU	21	GRF	0509.3	0511.5	15.2	2.0	U		
	5730	IRKU	7	C	0526.0	0526.7	55.0	15.0	U		
	5730	IRKU	21	GRF	0622.0	0624.9	20.0	4.0	U		
	204	IZMI	42	SER	0746.0	0746.5	18.0	150.0			
	245	SGMR	8	S	1418.0	1418.0	U	8.0			QL=4 ST=2 TYP=3
	410	SGMR	8	S	1959.0	1959.0	1.0	5.0			QL=4 ST=2 TYP=3
	410	SGMR	8	S	2011.0	2011.0	U	5.0			QL=4 ST=2 TYP=3
27	245	PALE	43	NS	0008.0	0141.0	109.0	9.0			QL=2 ST=2 TYP=1
	410	SVTO	43	NS	0600.0	0712.0U	1080.0	11.0			QL=4 ST=1 TYP=1
	245	SVTO	43	NS	0620.0	0713.0U	134.0	48.0			QL=4 ST=2 TYP=1
	410	SVTO	43	NS	0636.0	0712.0U	100.0	11.0			QL=4 ST=3 TYP=1
	410	SVTO	43	NS	0636.0	0636.0U	1044.0	5.0			QL=4 ST=3 TYP=1
	127	TORN	44	NS	0650.0E		450.0D		9.0		V=2
	204	IZMI	44	NS	0700.0E		300.0D		25.0		
	610	SVTO	43	NS	0726.0	0732.0U	9.0	7.0			QL=4 ST=2 TYP=1
	245	SVTO	43	NS	0956.0	0957.0	116.0	9.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	0956.0	0957.0U	844.0	9.0			QL=4 ST=3 TYP=1
	280	CUBA	44	NS	1300.0E		500.0D		25.0		
	235	CUBA	44	NS	1410.0E		460.0D		17.0		
	245	SGMR	43	NS	1559.0	1600.0	7.0	23.0			QL=2 ST=3 TYP=1
	245	SGMR	43	NS	1659.0	1600.0	1387.0	23.0			QL=2 ST=2 TYP=1
	245	SGMR	43	NS	1718.0	1731.0	46.0	12.0			QL=2 ST=2 TYP=1
	245	PALE	43	NS	1731.0	0218.0	600.0	16.0			QL=2 ST=2 TYP=1
	245	SGMR	43	NS	1852.0	1940.0	94.0	17.0			QL=2 ST=2 TYP=1
	410	SGMR	43	NS	1940.0	1940.0	6.0	6.0			QL=4 ST=2 TYP=1
	245	LEAR	43	NS	2223.0	0840.0	731.0	21.0			QL=4 ST=2 TYP=1
	245	PALE	49	GB	0238.0	0239.0	2.0	100.0			QL=2 ST=2 TYP=6
	5730	IRKU	1	S	0449.7	0450.6	2.1	1.0	U		
	5730	IRKU	1	S	0503.7	0504.3	1.6	1.0	U		
	204	IZMI	42	SER	0700.0E	0733.0	49.0D	900.0			
	410	LEAR	4	S/F	0710.0	0711.0	4.0	5.0			QL=4 ST=2 TYP=3
	245	LEAR	48	C	0710.0	0713.0	7.0	62.0			QL=4 ST=2 TYP=8
	245	LEAR	46	C	0733.0	0734.0	7.0	28.0			QL=4 ST=2 TYP=8
	410	LEAR	4	S/F	0733.0	0738.0	7.0	4.0			QL=4 ST=2 TYP=3
	204	IZMI	41	F	0817.0	0819.0	4.0	700.0			
	245	LEAR	8	S	0820.0	0820.0	U	22.0			QL=4 ST=2 TYP=3
	204	IZMI	42	SER	1015.0	1017.0	14.0	850.0			
	204	IZMI	41	F	1126.0	1126.4	3.0	350.0			
	245	SGMR	8	S	1250.0	1250.0	U	6.0			QL=2 ST=2 TYP=3
28	245	SVTO	43	NS	0613.0	1233.0	526.0	17.0			QL=4 ST=3 TYP=1
	245	SVTO	43	NS	0613.0	1233.0	586.0	18.0			QL=4 ST=3 TYP=1
	127	TORN	44	NS	0650.0E		450.0D		25.0		V=2
	204	IZMI	44	NS	0700.0E		300.0D		50.0		
	245	SGMR	43	NS	1229.0	1233.0	173.0	14.0			QL=4 ST=2 TYP=1
	235	CUBA	44	NS	1300.0E		300.0D		14.0		
	280	CUBA	44	NS	1300.0E		300.0D		19.0		
	245	LEAR	43	NS	2302.0	2309.0	692.0	15.0			QL=4 ST=2 TYP=1
	245	PALE	43	NS	2338.0	2338.0	78.0	7.0			QL=2 ST=2 TYP=1
	245	LEAR	8	S	0218.0	0218.0	1.0	16.0			QL=4 ST=2 TYP=3
	610	SGMR	8	S	1558.0	1558.0	2.0	6.0			QL=4 ST=2 TYP=3
	410	SGMR	8	S	1558.0	1558.0	1.0	6.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1827.0	1827.0	U	9.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	1946.0	1946.0	1.0	6.0			QL=2 ST=2 TYP=3
	245	SGMR	8	S	1946.0	1946.0	1.0	6.0			QL=4 ST=2 TYP=3
	245	PALE	4	S/F	2135.0	2138.0	4.0	6.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2138.0	2138.0	1.0	8.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2259.0	2259.0	1.0	6.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2307.0	2307.0	U	7.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2309.0	2309.0	U	11.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2326.0	2327.0	1.0	6.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2334.0	2334.0	U	9.0			QL=2 ST=2 TYP=3
29	245	SVTO	43	NS	0620.0	0625.0	52.0	12.0			QL=4 ST=2 TYP=1
	245	SVTO	43	NS	0620.0	0652.0	52.0	12.0			QL=4 ST=2 TYP=1

SOLAR RADIO EMISSION
Outstanding Occurrences

NOVEMBER 1996

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
29	127	TORN	44	NS	0650.0E		450.0D		16.0		V=2
	245	SVTO	43	NS	0941.0	0949.0	38.0	17.0			QL=4 ST=3 TYP=1
	280	CUBA	44	NS	1300.0E		300.0D		13.0		
	280	CUBA	44	NS	1410.0E		450.0D		9.0		
	3000	IZMI	5	S	0837.0	0837.1	0.5	4.0	2.0		
	245	SGMR	8	S	1229.0	1233.0	4.0	5.0			QL=2 ST=3 TYP=3
	245	SGMR	4	S/F	1229.0	1233.0	4.0	5.0			QL=2 ST=3 TYP=3
	245	SVTO	4	S/F	1333.0	1336.0	3.0	6.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1336.0	1336.0	U	6.0			QL=2 ST=2 TYP=3
	245	SVTO	8	S	1336.0	1336.0	U	7.0			QL=4 ST=3 TYP=3
	2800	PENT	3	S	2033.0	2034.3	7.0	60.0			
	4995	PALE	8	S	2034.0	2034.0	1.0	8.0			QL=4 ST=2 TYP=3
	1415	PALE	8	S	2034.0	2034.0	U	7.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	2034.0	2034.0	1.0	5.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2034.0	2034.0	U	6.0			QL=4 ST=2 TYP=3
	15400	PALE	8	S	2034.0	2034.0	1.0	3.0			QL=4 ST=2 TYP=3
30	245	LEAR	43	NS	0214.0	0217.0	116.0	18.0			QL=4 ST=2 TYP=1
	245	PALE	43	NS	0231.0	0250.0	60.0	15.0			QL=4 ST=2 TYP=1
	245	PALE	43	NS	2112.0	2331.0	223.0	15.0			QL=4 ST=2 TYP=1
	245	LEAR	43	NS	2149.0	2149.0	131.0	8.0			QL=2 ST=3 TYP=1
	245	LEAR	43	NS	2149.0	2331.0U	131.0	10.0			QL=4 ST=3 TYP=1
	245	LEAR	44	NS	2149.0E	2149.0U	131.0D	8.0			QL=2 ST=3 TYP=1
	245	LEAR	43	NS	2149.0	2331.0U	176.0	10.0			QL=4 ST=3 TYP=1
	245	LEAR	4	S/F	0055.0	0059.0	5.0	12.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0059.0	0059.0	1.0	12.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0215.0	0215.0	U	9.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	0217.0	0217.0	1.0	21.0			QL=4 ST=2 TYP=3
	2800	PENT	41	F	2030.0	2057.0	60.0	55.0			
	4995	PALE	4	S/F	2047.0	2048.0	10.0	8.0			QL=4 ST=2 TYP=3
	15400	PALE	20	GRF	2047.0	2100.0	20.0	4.0			QL=4 ST=2 TYP=2
	2695	PALE	8	S	2048.0	2048.0	2.0	5.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2048.0	2048.0	1.0	3.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2059.0	2100.0	2.0	14.0			QL=4 ST=2 TYP=3
	410	PALE	4	S/F	2059.0	2100.0	4.0	28.0			QL=4 ST=2 TYP=3
	1415	PALE	4	S/F	2059.0	2100.0	3.0	11.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2108.0	2108.0	1.0	5.0			QL=4 ST=2 TYP=3
	610	LEAR	4	S/F	2300.0	2303.0	3.0	3.0			QL=4 ST=2 TYP=3
	410	LEAR	4	S/F	2301.0	2303.0	4.0	4.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	2301.0	2303.0	2.0	7.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:

BERN = Berne	HUMN = Humain	ONDR = Ondrejov	SVTO = San Vito
CRIM = Crimea	IZMI = IZMIRAN	PEKG = Peking	TORN = Torun
CUBA = Havana	KISV = Kislovodsk	PALE = Palehua	TRST = Trieste
GORK = Gorky	KRAK = Krakow	PENT = Penticton	TYKW = Toyokawa
HIRA = Hiraiso	LEAR = Learmonth	POTS = Potsdam	UPIC = Upice
HUAN = Huancayo	NOBE = Nobeyama	SGMR = Sagamore Hill	

Explanation of Type Code:

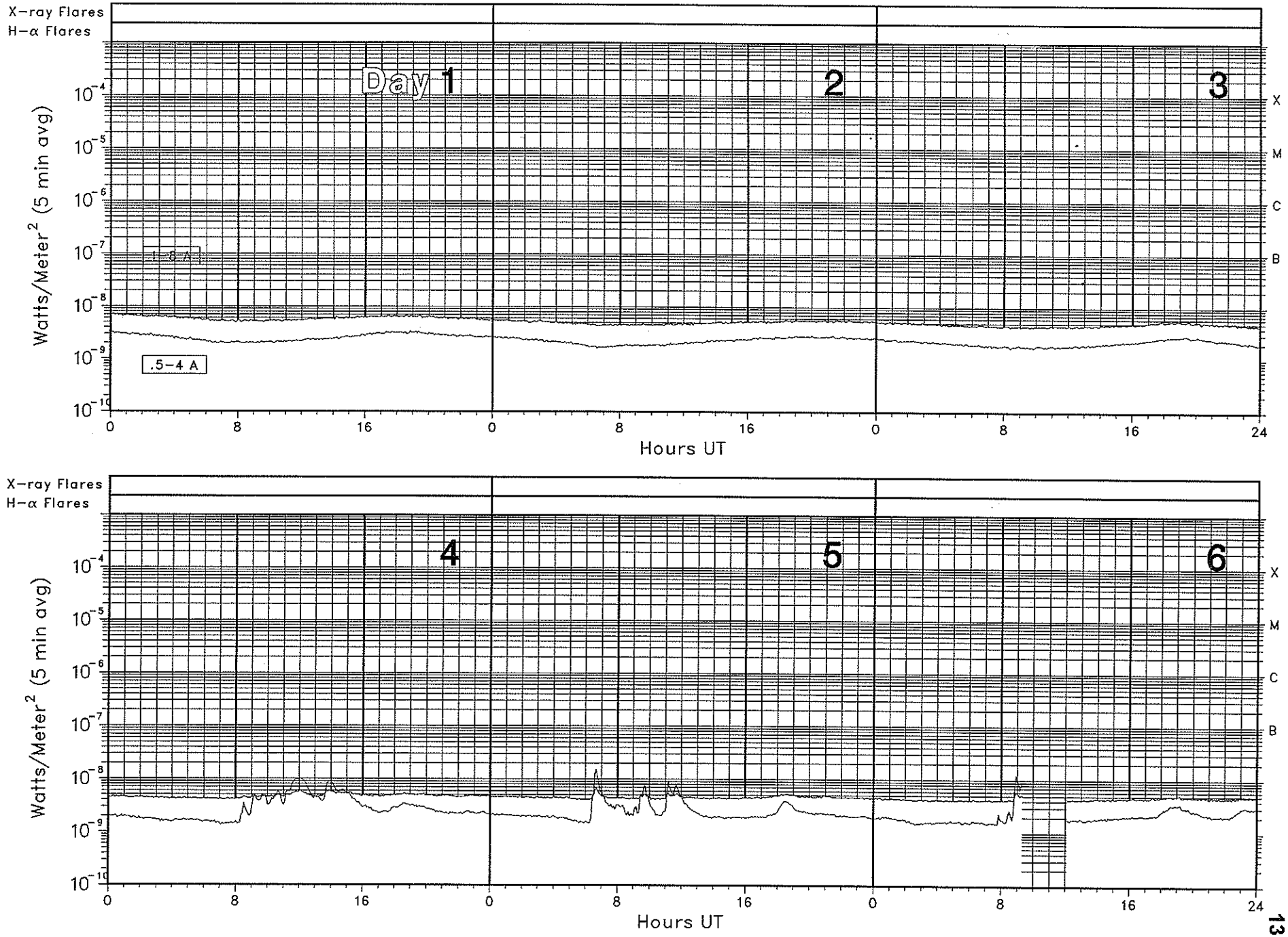
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple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

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

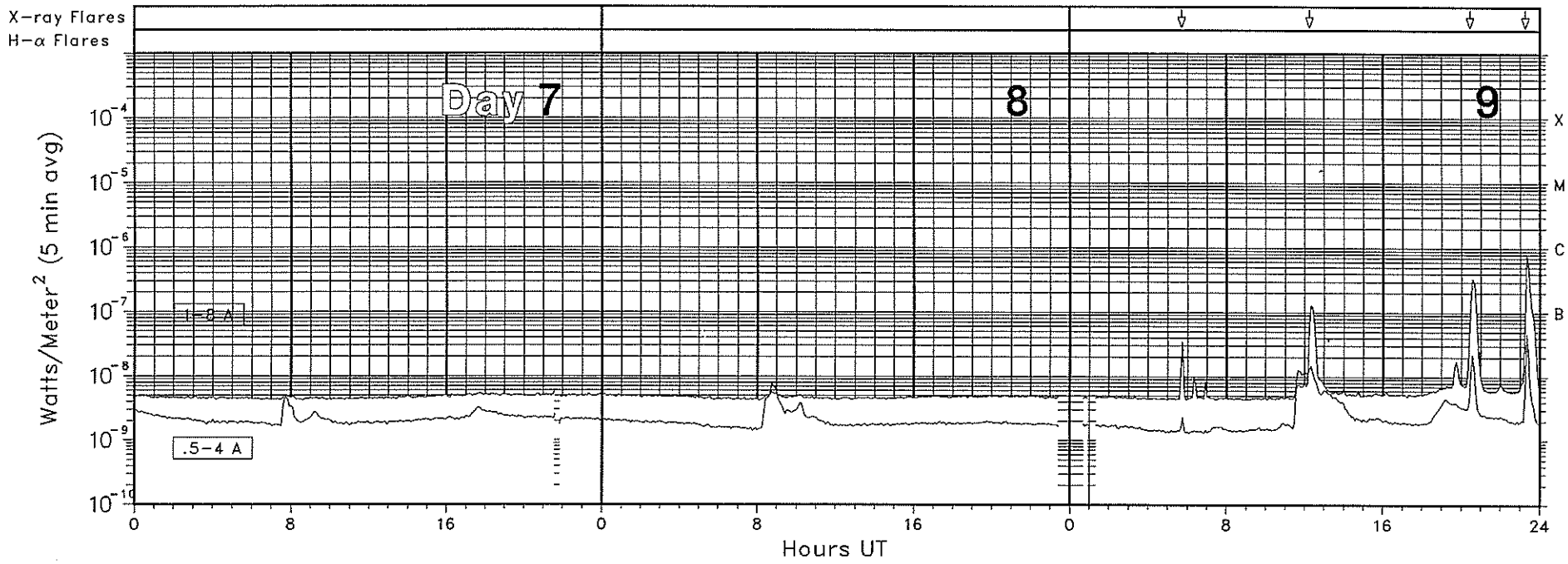
GOES-7 X-RAY DETECTOR

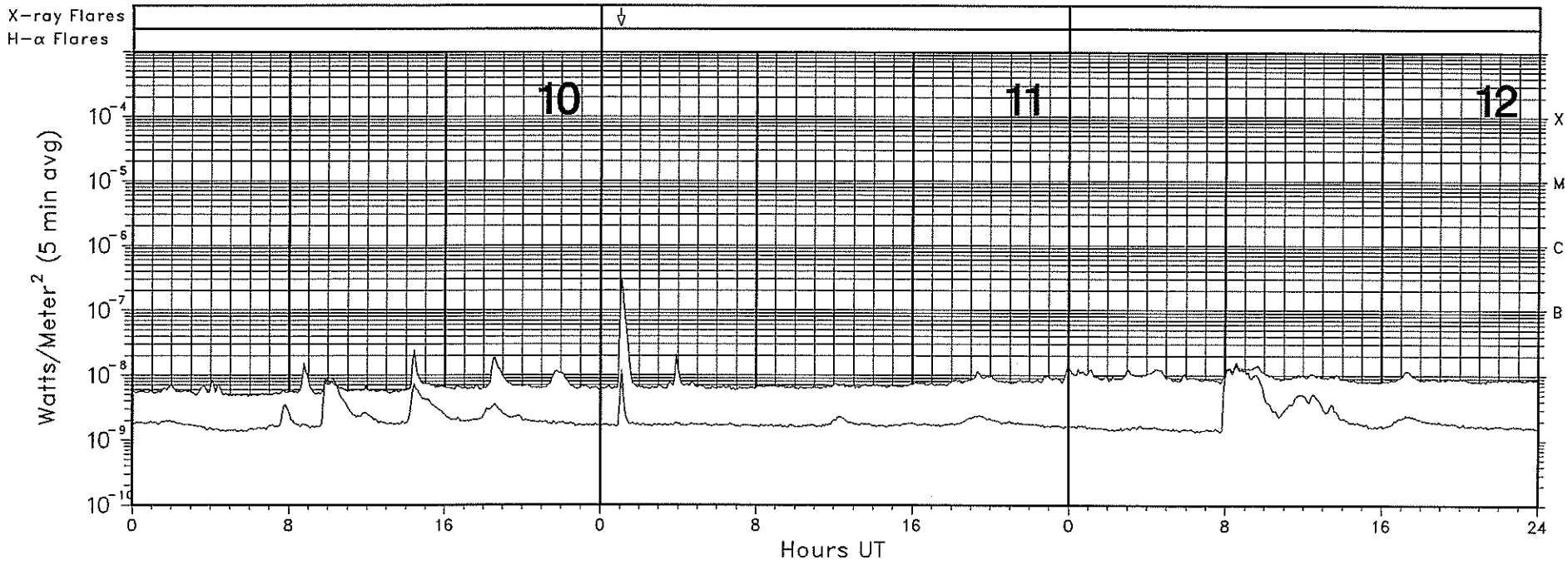
November 1996



GOES-7 X-RAY DETECTOR

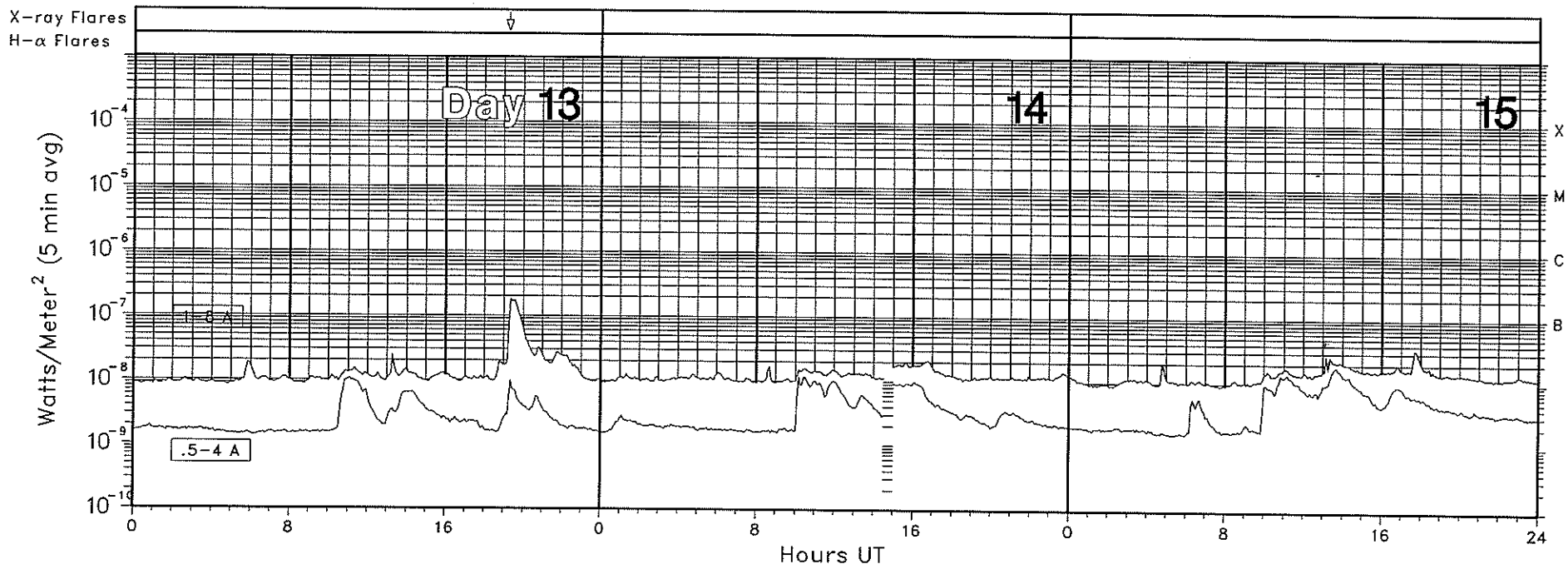
November 1996

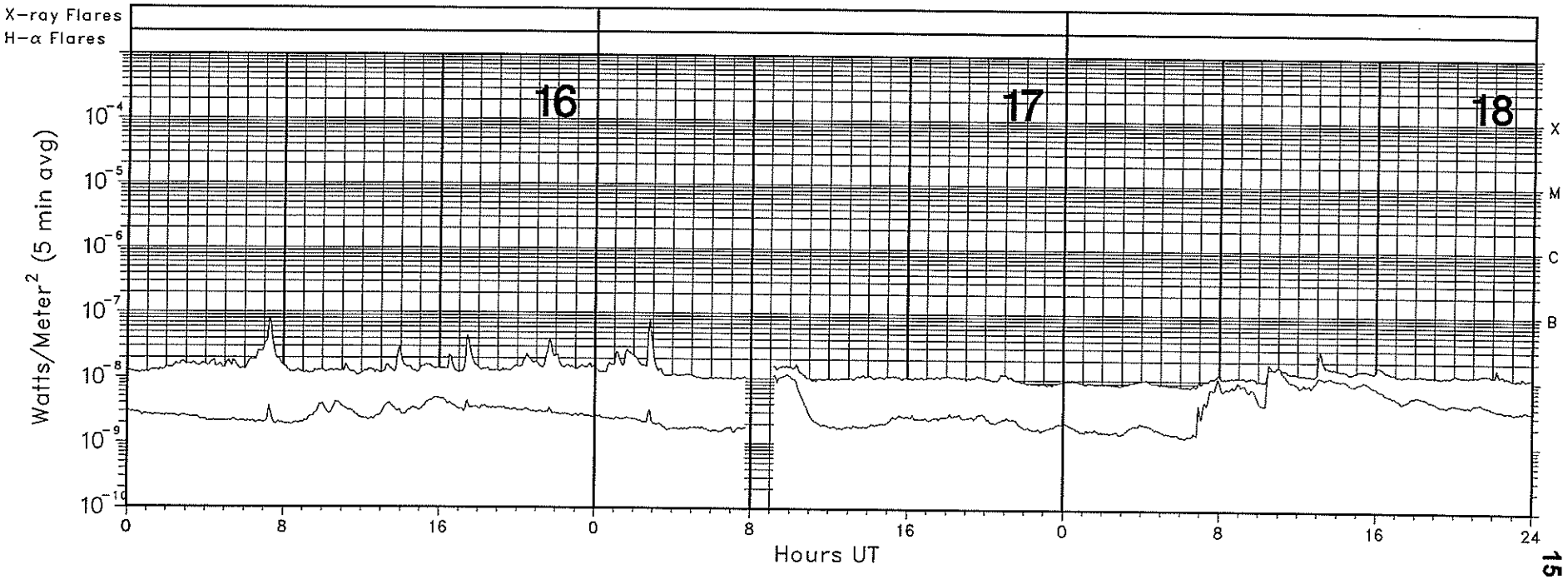




GOES-7 X-RAY DETECTOR

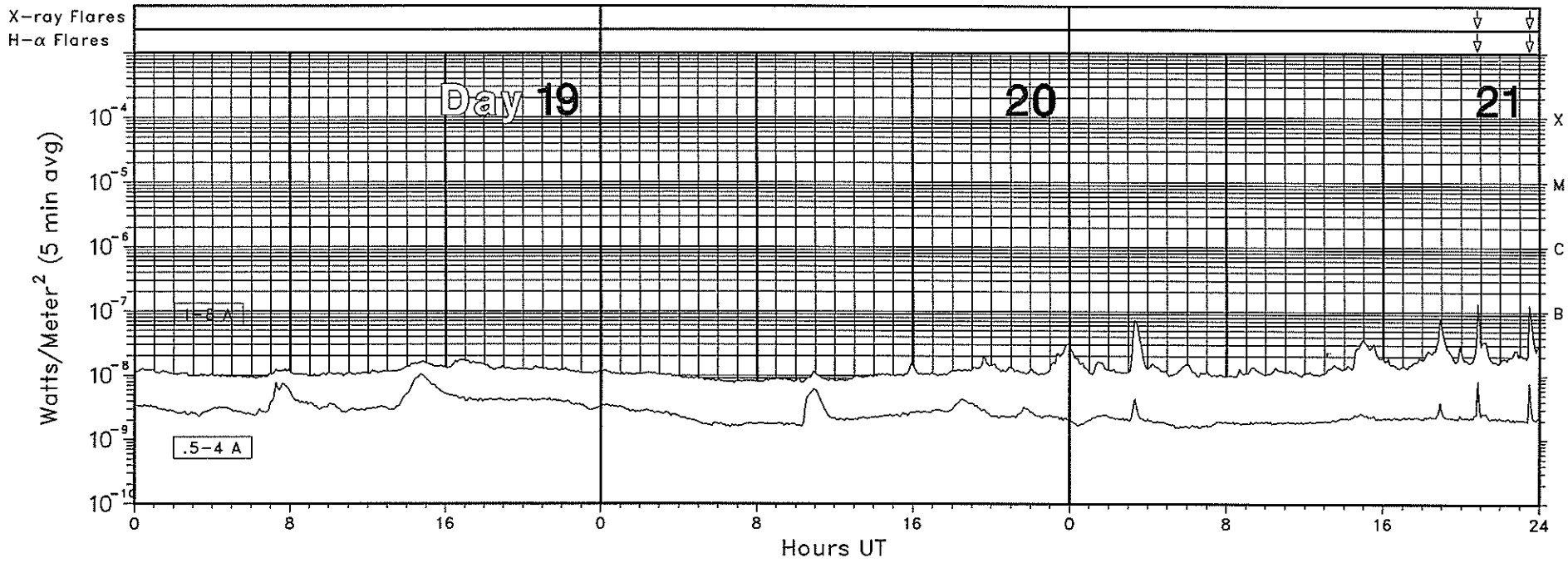
November 1996

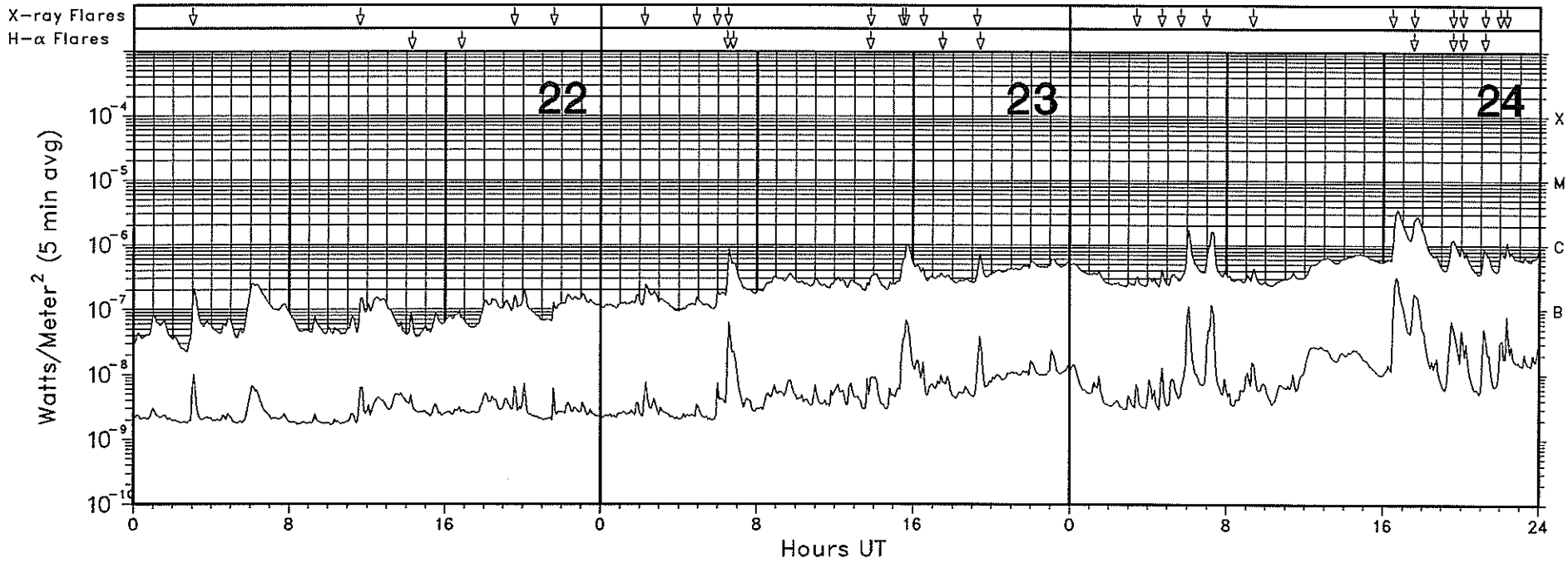




GOES-7 X-RAY DETECTOR

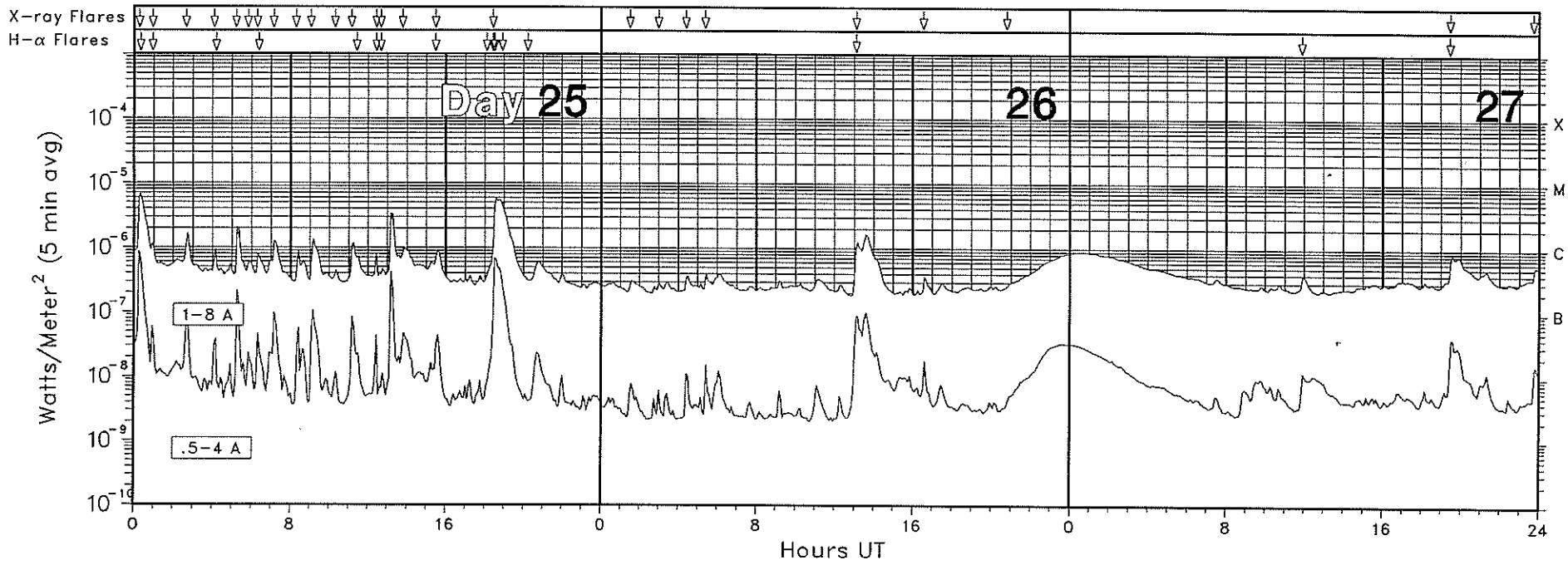
November 1996

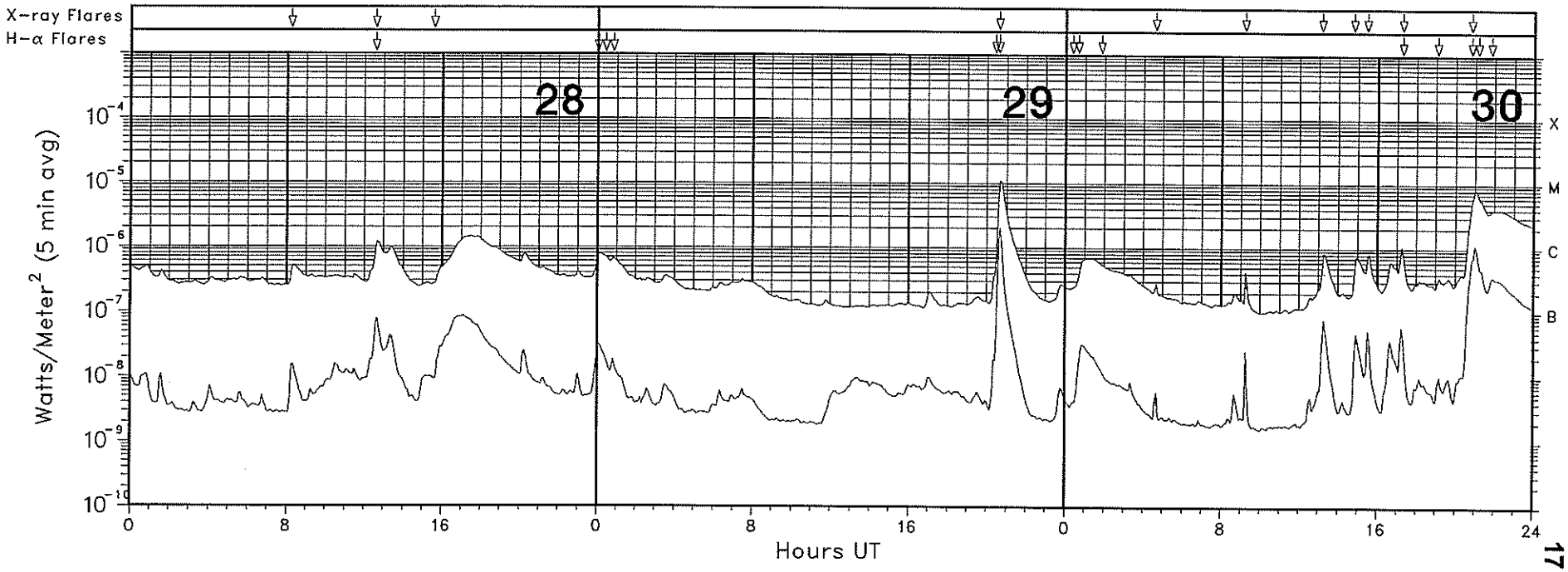




GOES-7 X-RAY DETECTOR

November 1996





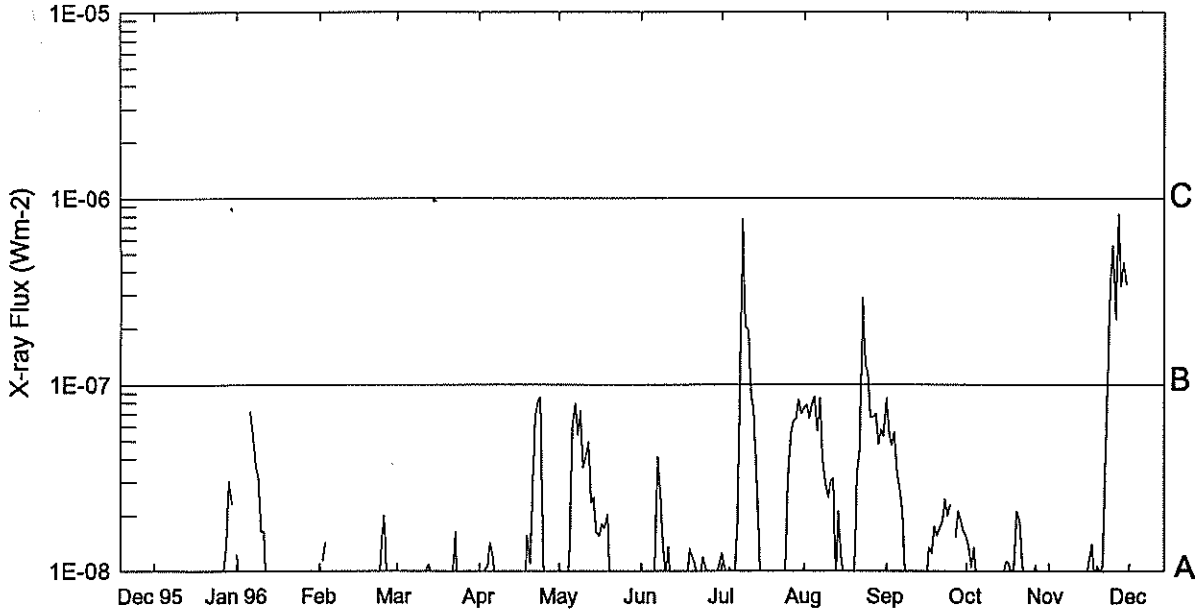
GOES S O L A R X-RAY F L A R E S
Preliminary Listing

November 1996

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
09	0542	0545	0547				B1.0	
09	1217	1224	1229				B1.4	
09	2028	2038	2045				B3.8	
09	2316	2323	2329				B8.9	
11	0100	0107	0112				B3.3	
13	1916	1922	1948				B1.8	
21	2050	2054	2103	S03	E63	SF	B1.4	7999
21	2331	2332	2340	S04	E61	SF	B1.7	7999
22	0300	0306	0316				B2.2	
22	1136	1140	1151				B1.5	
22	1933	1940	1943				B1.5	
22	2135	2139	2141				B2.0	
23	0215	0222	0231				B2.5	
23	0453	0457	0501				B1.4	
23	0557	0601	0606				B2.2	
23	0631	0636	0639	S05	E41	SF	C1.0	7999
23	1350	1410	1416				B3.3	
23	1526	1530	1532				B7.7	
23	1536	1546	1555				C1.0	
23	1631	1634	1636				B6.4	
23	1914	1926	1929	S04	E36	SF	B9.2	7999
24	0325	0329	0332				B3.6	
24	0441	0447	0450				B4.1	
24	0540	0610	0617				C1.0	
24	0657	0719	0724				C2.0	
24	0920	0925	0930				B4.8	
24	1629	1647	1702				C3.3	
24	1734	1754	1801	S02	E22	SF	C2.8	7999
24	1933	1934	1952	S01	E22	SF	C1.3	7999
24	2004	2004	2009	S03	E24	SF	C1.8	7999
24	2111	2113	2121	S04	E20	SF	C1.0	7999
24	2157	2206	2217				B7.8	
24	2219	2222	2226				C1.5	
25	0017	0022	0052	S03	E16	1F	C8.0	7999
25	0057	0057	0102	S03	E16	SF	C1.2	7999
25	0240	0246	0250				C1.8	
25	0405	0410	0413				C1.2	
25	0512	0519	0525				C2.4	
25	0549	0554	0559				B6.9	
25	0618	0623	0630				B9.1	
25	0707	0713	0720				C1.3	
25	0817	0825	0829				C1.1	
25	0904	0911	0923				C1.3	
25	1017	1020	1025				B4.8	
25	1109	1113	1119				C1.6	
25	1225	1225	1238	N06	W63	SF	C1.8	7997
25	1241	1313	1353	S02	E11	1N	C4.6	7999
25	1346	1404	1408				C1.0	
25	1529	1536	1549	S03	E12	SF	B9.1	7999
25	1825	1832	1931	S03	E08	1N	C5.8	7999
26	0131	0135	0156				B3.1	
26	0259	0303	0306				B2.8	
26	0424	0429	0434				B4.3	
26	0524	0527	0530				B5.3	
26	1307	1309	1427	S03	W02	SF	C1.6	7999
26	1632	1637	1644				B3.4	
26	2048	0032	0456				B9.0	
27	1929	1929	1941	S04	W18	SF	B8.9	7999
27	2344	2351	0012				B5.6	7999
28	0813	0823	0844				B5.1	
28	1235	1242	1347	S04	W29	SF	C1.1	7999
28	1535	1732	1902				C1.3	
29	2036	2043	2109	S06	W47	1F	M1.0	7999
30	0437	0440	0443				B3.4	
30	0912	0917	0921				B4.3	
30	1310	1318	1330				B9.2	
30	1447	1456	1519				B7.8	
30	1528	1534	1540				B8.5	
30	1716	1716	1720	S04	W58	SF	C1.0	7999
30	2049	2101	2259	S05	W63	1N	C8.6	7999

EDITOR's NOTE: Please note that whenever optical flares are given, the times given are times of the optical flares and not the times of the X-ray flares. These data are taken directly from the NOAA SEC "Preliminary Report and Forecast of Solar Geophysical Data" weekly report.

Preliminary GOES Satellite Daily X-Ray Background
Dec 95 - Nov 96



Day	Dec 95	Jan 96	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	<A1.0	A1.0	---	<A1.0	<A1.0	<A1.0	<A1.0	A1.2	A7.4	A8.5	A1.5	<A1.0
2	---	<A1.0	A1.1	<A1.0	<A1.0	<A1.0	<A1.0	A1.1	A7.7	A5.5	A1.3	<A1.0
3	---	<A1.0	A1.4	<A1.0	A1.0	<A1.0	<A1.0	<A1.0	A6.6	A4.7	A1.0	<A1.0
4	<A1.0	---	---	<A1.0	A1.0	<A1.0	<A1.0	A1.0	A7.8	A5.5	A1.3	<A1.0
5	<A1.0	---	---	<A1.0	A1.4	A1.3	<A1.0	<A1.0	A8.5	A3.2	<A1.0	<A1.0
6	<A1.0	A7.1	---	<A1.0	A1.1	A5.9	A1.0	A1.0	A5.6	A2.7	<A1.0	<A1.0
7	<A1.0	A5.0	<A1.0	---	<A1.0	A7.8	A4.1	A1.8	A8.4	A2.1	<A1.0	<A1.0
8	<A1.0	A3.6	<A1.0	<A1.0	<A1.0	A5.3	A2.6	B1.2	A4.0	<A1.0	<A1.0	<A1.0
9	<A1.0	A3.1	<A1.0	<A1.0	<A1.0	A7.2	A1.4	B7.7	A3.0	<A1.0	<A1.0	<A1.0
10	<A1.0	A1.6	<A1.0	<A1.0	<A1.0	A3.6	<A1.0	B2.0	A2.4	<A1.0	<A1.0	<A1.0
11	<A1.0	A1.6	<A1.0	<A1.0	<A1.0	A4.0	A1.3	B1.9	A3.0	<A1.0	<A1.0	<A1.0
12	A1.0	<A1.0	<A1.0	A1.0	<A1.0	A4.9	<A1.0	A9.0	A3.1	<A1.0	<A1.0	<A1.0
13	<A1.0	<A1.0	<A1.0	A1.0	<A1.0	A2.3	<A1.0	A7.4	<A1.0	<A1.0	<A1.0	<A1.0
14	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A2.4	<A1.0	A3.9	A2.1	<A1.0	<A1.0	<A1.0
15	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A1.6	<A1.0	A1.5	A1.1	<A1.0	<A1.0	<A1.0
16	<A1.0	---	<A1.0	<A1.0	<A1.0	A1.5	<A1.0	<A1.0	<A1.0	<A1.0	A1.1	A1.1
17	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A1.8	<A1.0	<A1.0	<A1.0	A1.3	A1.1	A1.3
18	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A1.7	<A1.0	<A1.0	<A1.0	A1.2	<A1.0	<A1.0
19	---	<A1.0	<A1.0	<A1.0	A1.5	A2.0	A1.3	<A1.0	<A1.0	A1.7	A1.1	A1.0
20	<A1.0	<A1.0	---	<A1.0	A1.1	A1.0	A1.1	<A1.0	A1.0	A1.5	A2.1	A1.0
21	<A1.0	<A1.0	<A1.0	<A1.0	A3.0	<A1.0	A1.1	<A1.0	A3.3	A1.7	A1.8	A1.0
22	<A1.0	<A1.0	<A1.0	A1.0	A6.8	<A1.0	<A1.0	<A1.0	A4.3	A1.8	A1.2	A3.3
23	---	<A1.0	<A1.0	A1.6	A8.3	<A1.0	<A1.0	<A1.0	B2.9	A2.4	<A1.0	B1.0
24	<A1.0	<A1.0	A1.3	<A1.0	A8.5	<A1.0	A1.2	<A1.0	B1.2	A1.9	<A1.0	B3.3
25	<A1.0	<A1.0	A2.0	<A1.0	A1.0	<A1.0	A1.0	<A1.0	B1.1	A2.2	<A1.0	B5.5
26	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A3.1	A6.6	---	<A1.0	B2.2
27	<A1.0	<A1.0	---	<A1.0	<A1.0	<A1.0	<A1.0	A5.5	A6.7	A1.5	A1.0	B8.2
28	A1.3	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A6.4	A6.9	A2.1	<A1.0	B3.3
29	A3.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A6.5	A4.7	A1.8	<A1.0	B4.5
30	A2.2	<A1.0	---	<A1.0	<A1.0	<A1.0	A1.0	A8.3	A5.7	A1.6	<A1.0	B3.4
31	---	---		<A1.0		<A1.0		A7.0	A5.2		<A1.0	

ACTIVE PROMINENCES AND FILAMENTS

NOVEMBER 1996

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
03	DSD	1425E	1750D	S07	E10	11	4.3		02	5	5	E	RAMY		
03	DSD	1755E	2043	S09	W49	10	31.1		02	9	9	E	RAMY		
04	DSD	1159E	1757D	S08	W05	11	4.1		01	9	9	E	RAMY		
04	DSD	1245E	1354D	S12	W37	11	1.7		01	9	9	E	RAMY		
04	DSD	1250E	1354D	S13	W37	11	1.7		01	8	9	E	RAMY		
04	DSD	1456E	1520	S10	W02	11	4.5		02	9	9	E	SVTO		
04	DSD	1823E	2012D	N24	E04	11	5.1		01	9	9	E	RAMY		
05	DSD	0606E	1150D	S11	W15	11	4.1		01	9	9	E	SVTO		
09	DSD	1315E	1445D	S01	E70	11	14.8		02	9	9	E	SVTO		
09	DSD	1331E	1640D	S71	E00	11	9.6		02	6	9	E	RAMY	7993	
09	DSD	1921E	2019D	S67	E00	11	9.8		02	7	9	E	RAMY	7993	
10	AFS	0845E	0953	S11	E43	11	13.6		02	9	9	E	SVTO		
10	DSD	1050E	1621D	S10	E41	11	13.5		01	9	9	E	RAMY	7994	
10	AFS	1050E	2109	S11	E40	11	13.5		01	9	9	E	RAMY	7994	
10	DSD	1136E	1943D	S12	E40	11	13.5		05	9	9	E	RAMY	7994	
10	DSD	1333E	1943D	S01	E57	11	14.8		01	7	9	E	RAMY	7993	
10	AFS	1350E	2355	S12	E38	11	13.4		01	9	9	E	HOLL	7994	
10	DSD	1420E	2010D	S12	E37	11	13.4		04	9	9	E	HOLL	7994	
10	DSD	1730E	2355	N00	E54	11	14.8		05	9	9	E	HOLL	7993	
10	DSD	1735E	2131	S10	E38	11	13.6		02	9	9	E	PALE	7994	
10	AFS	1735E	2131	S11	E37	11	13.5		02	7	6	E	PALE	7994	
10	DSD	1912E	2109	S12	E37	11	13.6		01	9	9	E	RAMY	7994	
10	AFS	2330E	1015	S13	E33	11	13.5		01	4	5	E	LEAR	7994	
11	DSD	0010	0153D	S01	E51	11	14.8		03	9	9	E	LEAR	7993	
11	AFS	0815E	1435	S12	E29	11	13.5		02	9	9	E	SVTO	7994	
11	DSD	0827E	0848D	N00	E48	11	14.9		02	9	9	E	SVTO	7993	
11	AFS	1329E	1654	S13	E27	11	13.6		01	8	8	E	RAMY	7994	
11	AFS	1348E	2346	S11	E26	11	13.5		01	2	4	E	HOLL	7994	
12	AFS	0620E	1005	N01	E73	11	17.7		01	9	5	E	LEAR		
12	AFS	1253E	1603	N05	E64	11	17.3		01	8	7	E	RAMY	7995	
13	APR	1015E	1347D	N32	E90	11	20.5	1		7	7	E	SVTO		
13	DSD	1402	1435	S01	E16	11	14.8		03	9	9	E	HOLL	7993	
13	ADF	2350E	0810	N03	E50	11	17.7	1	07	7	7	E	LEAR	7995	
13	ADF	2350E	1019	S01	E47	11	17.5	1	05	7	7	E	LEAR	7995	
13	DSF	2350U	0810	N03	E50	11	17.7	2	07	7	7	E	LEAR	7995	
14	ADF	0830E	1015D	N03	E42	11	17.5	1	04	7	7	E	SVTO	7995	
14	AFS	0832E	1350	N31	E41	11	17.6		03	9	9	E	SVTO		
14	ASR	0833E	1150D	N08	E90	11	21.1			7	8	E	SVTO		
14	ASR	1113E	1315D	N07	E86	11	20.9			9	9	E	RAMY		
14	AFS	1113E	1835	N30	E27	11	16.6		01	7	7	E	RAMY	7996	
14	AFS	1125E	1835	S12	W26	11	12.5		02	5	7	E	RAMY	7994	
14	DSD	1130E	1730D	N04	E40	11	17.5		02	9	9	E	RAMY	7995	
14	AFS	1133E	2114	N32	E41	11	17.7		01	9	9	E	RAMY	7996	
14	ADF	1134E	1835	S06	E40	11	17.5	1	07	8	5	E	RAMY		
14	DSD	1134E	2114	N31	E39	11	17.5		02	9	9	E	RAMY	7996	
14	DSD	1138E	1341D	N01	E26	11	16.4		03	7	7	E	RAMY	7995	
14	APR	1207E	1255D	S32	E68	11	19.9	1		8	8	E	RAMY		
14	ADF	1215E	2114	N01	E18	11	15.8	1	07	5	5	E	RAMY		
14	ADF	1320E	1703D	N00	E40	11	17.5	1	04	8	8	E	RAMY	7995	
14	DSD	1358E	1835	S01	E23	11	16.3		02	9	9	E	RAMY	7995	
14	DSD	1730E	2114	N00	E37	11	17.5		01	9	9	E	RAMY	7995	
14	ADF	1945E	1835	S43	E48	11	18.8	1	06	5	5	E	RAMY		
15	ADF	0708E	1018	N00	E28	11	17.4	1	05	6	5	E	LEAR	7995	
15	DSD	0715E	0737	S11	W26	11	13.3		03	6	9	E	LEAR	7994	
15	AFS	0835E	1018	N30	E28	11	17.5		02	5	6	E	LEAR	7996	
15	AFS	1113E	1835	N30	E27	11	17.6		01	7	7	E	RAMY	7996	
15	AFS	1125E	1835	S12	W26	11	13.5		02	5	7	E	RAMY	7994	
15	ADF	1134E	1835	S06	E40	11	18.5	1	07	8	5	E	RAMY		
15	DSD	1138E	1341D	N01	E26	11	17.4		03	7	7	E	RAMY	7995	
15	APR	1207E	1255D	S32	E68	11	20.9	1		8	8	E	RAMY		
15	DSD	1358E	1835	S01	E23	11	17.3		02	9	9	E	RAMY	7995	

ACTIVE PROMINENCES AND FILAMENTS

NOVEMBER 1996

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
15	ADF	1945E	1835	S43	E48	11	19.8	1	06	5	5	E	RAMY		
15	AFS	2340E	1020	N01	E18	11	17.3		02	5	5	E	LEAR	7995	
16	AFS	0020E	1020	N30	E25	11	18.0		02	5	7	E	LEAR	7996	
16	ADF	0330E	1020	S12	E35	11	18.8	1	07	7	4	E	LEAR		
16	AFS	0510E	1020	N06	E61	11	20.8		02	9	9	E	LEAR		
16	AFS	0510E	1020	S15	E54	11	20.3		02	9	9	E	LEAR		
16	AFS	1123E	1630D	N08	E57	11	20.7		01	9	9	E	RAMY	7997	
16	DSD	1136E	1445D	S02	E13	11	17.4		01	9	9	E	RAMY	7995	
16	DSD	1145E	1241D	N08	E57	11	20.8		03	9	9	E	RAMY	7997	
16	ADF	1213E	2020	S08	E28	11	18.6	1	06	8	8	E	RAMY		
16	DSD	1432E	1953D	S06	E16	11	17.8		02	9	9	E	RAMY	7995	
16	AFS	1432E	2020	N01	E11	11	17.4		01	9	9	E	RAMY	7995	
16	AFS	1810E	2020	N30	E10	11	17.5		01	7	9	E	RAMY	7996	
17	AFS	0245E	0835D	N07	E49	11	20.8		02	9	9	E	LEAR	7997	
17	DSD	1100E	2004D	S01	W01	11	17.4		01	9	9	E	RAMY	7995	
17	AFS	1105E	2023	N07	E43	11	20.7		02	6	8	E	RAMY	7997	
17	ADF	1140E	2012D	S04	E09	11	18.1	1	11	8	9	E	RAMY		
17	AFS	1726	2350	N08	E40	11	20.7		03	1	2	E	HOLL	7997	
18	ADF	0750E	1015	S13	E07	11	18.8	1	05	8	4	E	LEAR		
18	DSF	1555	1610	S16	E22	11	20.3	3	03	0	0	E	HOLL	7998	
18	DSD	2211	2310D	N07	E19	11	20.3		03	9	9	E	HOLL	7997	
19	AFS	0822E	1054	N08	E17	11	20.6		01	9	9	E	SVTO	7997	
19	AFS	1740E	2327	N08	E11	11	20.6		02	5	4	E	PALE	7997	
20	AFS	0730E	1315D	N08	E06	11	20.8		04	7	7	E	SVTO	7997	
20	AFS	1730E	0330	N00	W44	11	17.4		02	5	5	E	PALE	7995	
21	DSD	1130E	1959	N08	W07	11	20.9		01	9	9	E	RAMY	7997	
21	AFS	1130E	1959	S04	E70	11	26.7		02	9	9	E	RAMY	7999	
21	AFS	1215E	1233	S01	E66	11	26.4		01	9	9	E	SVTO		
21	DSD	1818E	1959	S14	W17	11	20.5		01	9	9	E	RAMY	7998	
21	AFS	2110	2349	S03	E63	11	26.6		03	9	9	E	HOLL	7999	
22	AFS	0520E	1022	S05	E58	11	26.6		01	9	7	E	LEAR	7999	
22	ADF	0550E	1022	N05	W16	11	21.0		03	9	9	E	LEAR	7997	
22	AFS	0740E	1048	N05	W17	11	21.0		03	9	9	E	SVTO	7997	
22	AFS	0742E	1048	S02	E56	11	26.5		02	9	9	E	SVTO	7999	
22	AFS	0858E	1022	N04	W18	11	21.0		02	9	9	E	LEAR	7997	
22	DSD	0933E	1048	N04	W20	11	20.9		02	9	9	E	SVTO	7997	
22	DSD	0935E	1048	N00	E56	11	26.6		01	8	7	E	SVTO	7999	
22	ADF	1004E	1048	N05	W20	11	20.9	1	03	9	9	E	SVTO	7997	
22	AFS	1358E	2123	N04	W23	11	20.9		03	9	9	E	HOLL	7997	
22	AFS	1358E	2123	S03	E50	11	26.3		02	9	9	E	HOLL	7999	
22	AFS	1408E	1927	N06	W24	11	20.8		02	9	9	E	RAMY	7997	
22	AFS	1411E	1927	S04	E53	11	26.5		01	9	9	E	RAMY	7999	
22	ADF	1649E	1927	S04	W27	11	20.7	1	03	9	9	E	RAMY	7997	
22	DSD	1813	1823	N04	W24	11	21.0		02	0	0	E	HOLL	7997	
22	AFS	2213E	1020	N06	W26	11	21.0		02	7	5	E	LEAR	7997	
22	AFS	2213E	1020	S05	E46	11	26.4		03	8	3	E	LEAR	7999	
23	DSD	0656E	1146	S02	E37	11	26.0		04	9	9	E	SVTO	7999	
23	DSD	0656E	1146	S02	E40	11	26.3		09	9	9	E	SVTO	7999	
23	AFS	0656E	1146	S02	E43	11	26.5		02	9	9	E	SVTO	7999	
23	AFS	0656E	1146	S03	E42	11	26.4		02	8	8	E	SVTO	7999	
23	AFS	0728E	1146	N02	W32	11	20.9		02	9	9	E	SVTO	7997	
23	DSD	0749E	1146	N01	W28	11	21.2		02	9	9	E	SVTO	7997	
23	ADF	0830E	1020	S05	E40	11	26.3	1	04	9	9	E	LEAR	7999	
23	AFS	1207E	1654	S03	E40	11	26.5		02	9	9	E	RAMY	7999	
23	AFS	1215E	1654	N07	W34	11	21.0		02	9	9	E	RAMY	7997	
23	DSD	1216E	1645D	S03	E37	11	26.3		06	9	9	E	RAMY	7999	
23	DSD	1229E	1303D	N03	W32	11	21.1		01	9	9	E	RAMY	7997	
23	DSD	1229E	1654	N04	W30	11	21.3		01	9	9	E	RAMY	7997	
23	DSD	1229E	1654	N04	W39	11	20.6		02	9	9	E	RAMY	7997	
23	AFS	1636E	2347	N04	W37	11	20.9		03	9	9	E	HOLL	7997	
23	AFS	1636E	2347	S03	E37	11	26.4		02	9	9	E	HOLL	7999	
23	AFS	1756E	0259	N06	W37	11	21.0		04	9	9	E	PALE	7997	

ACTIVE PROMINENCES AND FILAMENTS

NOVEMBER 1996

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
23	AFS	1756E	0259	S04	E36	11	26.4		03	9	9	E	PALE	7999	
23	ADF	1758	2147D	S01	E34	11	26.3	1	05	9	7	E	HOLL	7999	
23	ADF	1800E	0259	S03	E33	11	26.2	1	04	9	9	E	PALE	7999	
23	ADF	2243	2347	S03	E32	11	26.3	1	06	7	6	E	HOLL	7999	
24	ADF	0820E	1249	S02	E26	11	26.3	2	05	9	9	E	SVTO	7999	
24	AFS	0820E	1249	S02	E27	11	26.4		04	9	9	E	SVTO	7999	
24	DSD	0852E	1237D	N04	W50	11	20.6		02	9	9	E	SVTO	7997	
24	ADF	1132E	1249	S02	E23	11	26.2	1	05	9	9	E	SVTO	7999	
24	AFS	1531E	2348	S01	E26	11	26.6		03	9	9	E	HOLL	7999	
24	AFS	1732E	0210	N06	W51	11	20.9		04	9	9	E	PALE	7997	
24	AFS	1732E	0210	S03	E21	11	26.3		05	9	9	E	PALE	7999	
24	AFS	1825E	2126	S03	E24	11	26.6		02	7	7	E	RAMY	7999	
24	DSD	1912E	2126	N07	W53	11	20.8		02	9	4	E	RAMY	7997	
24	DSD	2225E	2250D	N06	W58	11	20.6		06	9	9	E	PALE	7997	
25	AFS	0345E	1023	N06	W59	11	20.7		02	9	9	E	LEAR	7997	
25	AFS	1005E	1121	S03	E12	11	26.3		02	9	9	E	SVTO	7999	
25	AFS	1137E	2114	S01	E11	11	26.3		02	9	9	E	RAMY	7999	
25	DSD	1240E	2114	S02	E11	11	26.3		02	9	9	E	RAMY	7999	
25	AFS	1405E	2348	S04	E09	11	26.2		03	9	9	E	HOLL	7999	
25	AFS	1630E	2348	S14	W53	11	21.7		01	6	8	E	HOLL	8000	
25	DSD	1740E	2029D	S13	W50	11	22.0		03	9	9	E	RAMY		
25	AFS	1750E	0321	S03	E09	11	26.4		03	9	9	E	PALE	7999	
25	AFS	2300E	0321	N14	W54	11	21.9		02	9	9	E	PALE	8000	
26	AFS	1306E	2135	S03	W01	11	26.5		02	8	7	E	RAMY	7999	
26	DSD	1512E	1545D	N20	W64	11	21.7		02	9	9	E	RAMY		
26	DSD	1617E	2135	S06	W10	11	25.9		02	9	9	E	RAMY	7999	
26	DSD	1702E	2135	S03	E00	11	26.7		01	9	9	E	RAMY	7999	
26	AFS	1724E	0237	S04	W04	11	26.4		03	9	9	E	PALE	7999	
26	AFS	1729E	2348	S04	W07	11	26.2		04	9	9	E	HOLL	7999	
26	DSD	1735E	1939D	S06	W07	11	26.2		02	9	9	E	PALE	7999	
26	ASR	1941	1957	N03	W90	11	20.1			5	7	E	HOLL	7997	
26	ASR	1946E	2135	N03	W90	11	20.1			4	5	E	RAMY	7997	
26	ASR	2215E	0237	N03	W79	11	21.0			4	3	E	PALE	7997	
27	ASR	0643E	1455	N01	W90	11	20.5			7	7	E	SVTO	7997	
27	ASR	0730E	0745D	N02	W90	11	20.6			9	9	E	SVTO	7997	
27	DSD	0735E	1455	S05	W10	11	26.6		02	9	9	E	SVTO	7999	
27	ASR	1054E	2050	N02	W90	11	20.7			9	9	E	RAMY	7997	
27	DSD	1054E	2050	S05	W16	11	26.2		02	9	9	E	RAMY	7999	
27	BSD	1433E	2050	S11	W77	11	21.8		01	9	9	E	RAMY	8000	
27	DSD	1751E	2259	S06	W20	11	26.2		02	9	9	E	PALE	7999	
27	APR	2330E	0515D	S11	W90	11	21.2	1		7	7	E	LEAR	8000	
27	ADF	2345E	0530D	S03	W19	11	26.6	1	04	6	4	E	LEAR	7999	
28	ASR	0227E	0322	S01	W90	11	21.4			5	6	E	LEAR		
28	ASR	1149E	2002	S11	W90	11	21.7			8	9	E	RAMY	8000	
28	DSD	1211E	2002	S02	W29	11	26.3		01	9	9	E	RAMY	7999	
28	AFS	1357E	2002	S06	W31	11	26.3		03	9	9	E	RAMY	7999	
28	DSD	1633E	2002	S08	W35	11	26.1		03	9	9	E	RAMY	7999	
28	DSD	1739E	0313	S03	W28	11	26.6		03	9	9	E	PALE	7999	
28	ASR	1804	0230D	S14	W89	11	22.0			9	9	E	PALE	8000	
29	ADF	0545E	1030	S08	W41	11	26.2	1	03	9	9	E	LEAR	7999	
29	AFS	0845E	1030	S02	W39	11	26.4		02	9	9	E	LEAR	7999	
29	DSD	1115E	2134	S05	W47	11	25.9		02	8	6	E	RAMY	7999	
29	DSD	1219E	2134	S10	W45	11	26.1		01	9	9	E	RAMY	7999	
30	AFS	0005E	1038	S05	W51	11	26.2		02	9	9	E	LEAR	7999	
30	ADF	0510E	1038	S55	E26	12	2.5	2	52	4	6	E	LEAR		
30	DSF	0510U	2150U	S55	E26	12	2.5	2	52	4	6	E	LEAR		
30	AFS	0715E	1344	S06	W60	11	25.8		02	9	9	E	SVTO	7999	
30	AFS	2220E	0415D	S18	W54	11	26.8		01	9	9	E	LEAR		

1996 SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT

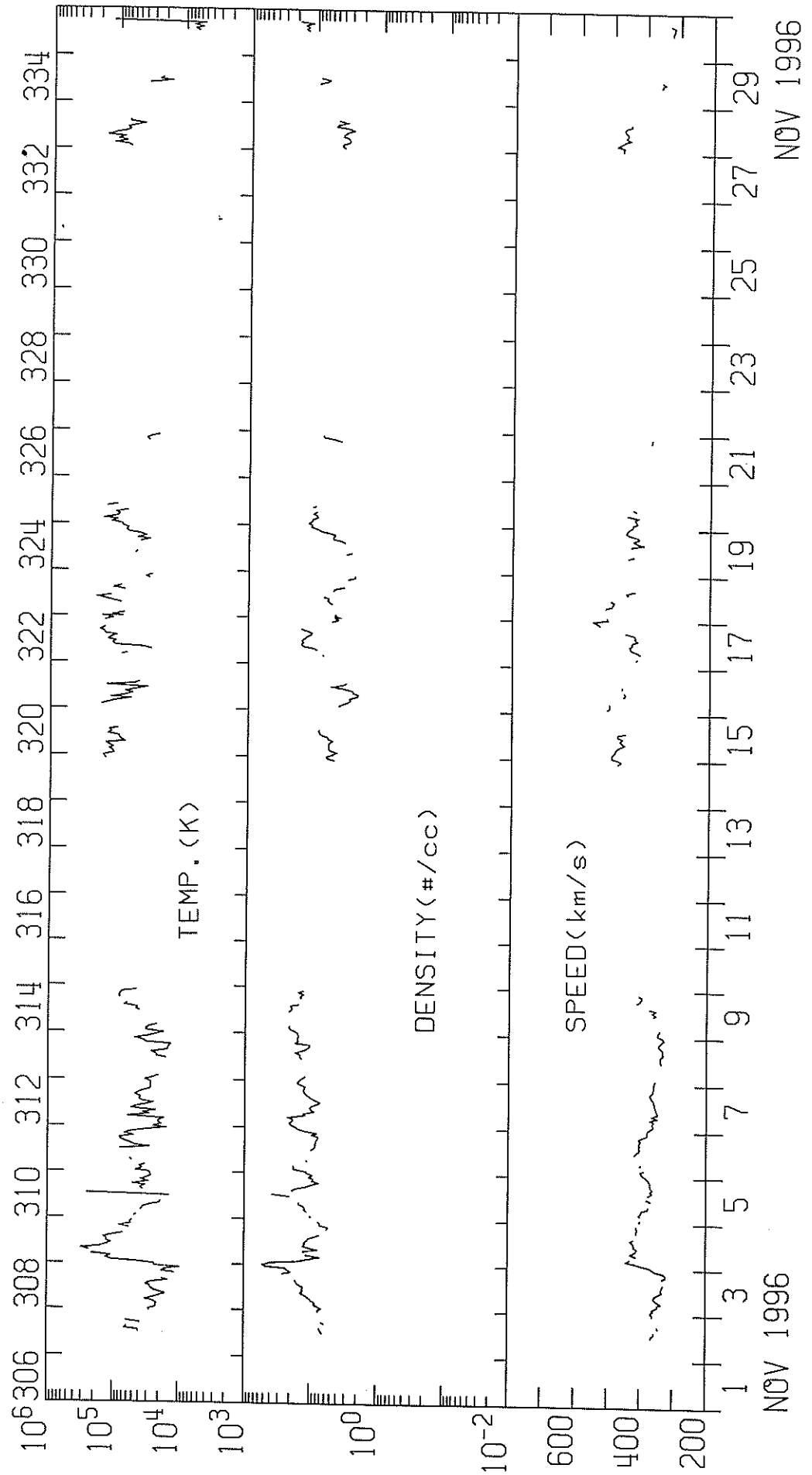
NASA LANGLEY RESEARCH CENTER

WATTS/m^2

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	1364.9	---	---	---	---	---	1364.7	1364.6	---	---	---	---
4	---	1365.5	---	---	---	---	---	---	---	---	---	1364.8
5	---	---	---	---	---	1365.5	---	---	---	---	---	---
6	1365.2	---	---	---	---	---	---	---	---	---	1365.0	---
7	---	---	---	---	---	---	---	---	---	---	---	1365.3
8	---	---	---	---	1365.0	---	1364.4	---	---	---	1365.0	---
9	---	---	---	---	---	1364.8	---	---	---	1364.8	---	---
10	---	---	---	1365.1	1364.5	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	1365.0	---	---	---
12	1364.6	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	1365.3	---	---	---	---
15	---	1365.5	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	1364.9	---	---	---	---	---	1364.8	---	---	---	---	---
18	---	---	---	---	---	---	---	---	1364.4	---	---	1364.7
19	---	---	---	---	---	1364.7	---	---	---	---	---	---
20	---	1365.4	---	---	---	---	---	---	---	---	1365.0	---
21	---	---	1365.9	---	---	---	1364.6	---	---	---	---	---
22	1364.9	---	---	---	---	---	---	---	1364.8	---	---	---
23	---	---	---	---	1364.5	---	---	---	---	1366.0	---	---
24	---	---	---	1365.1	1364.7	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	1365.0	1366.3	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	1364.7	---	---	---	---	---	---	---	---	---
28	---	1364.9	---	---	---	---	---	1364.6	---	1365.2	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	1365.3	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

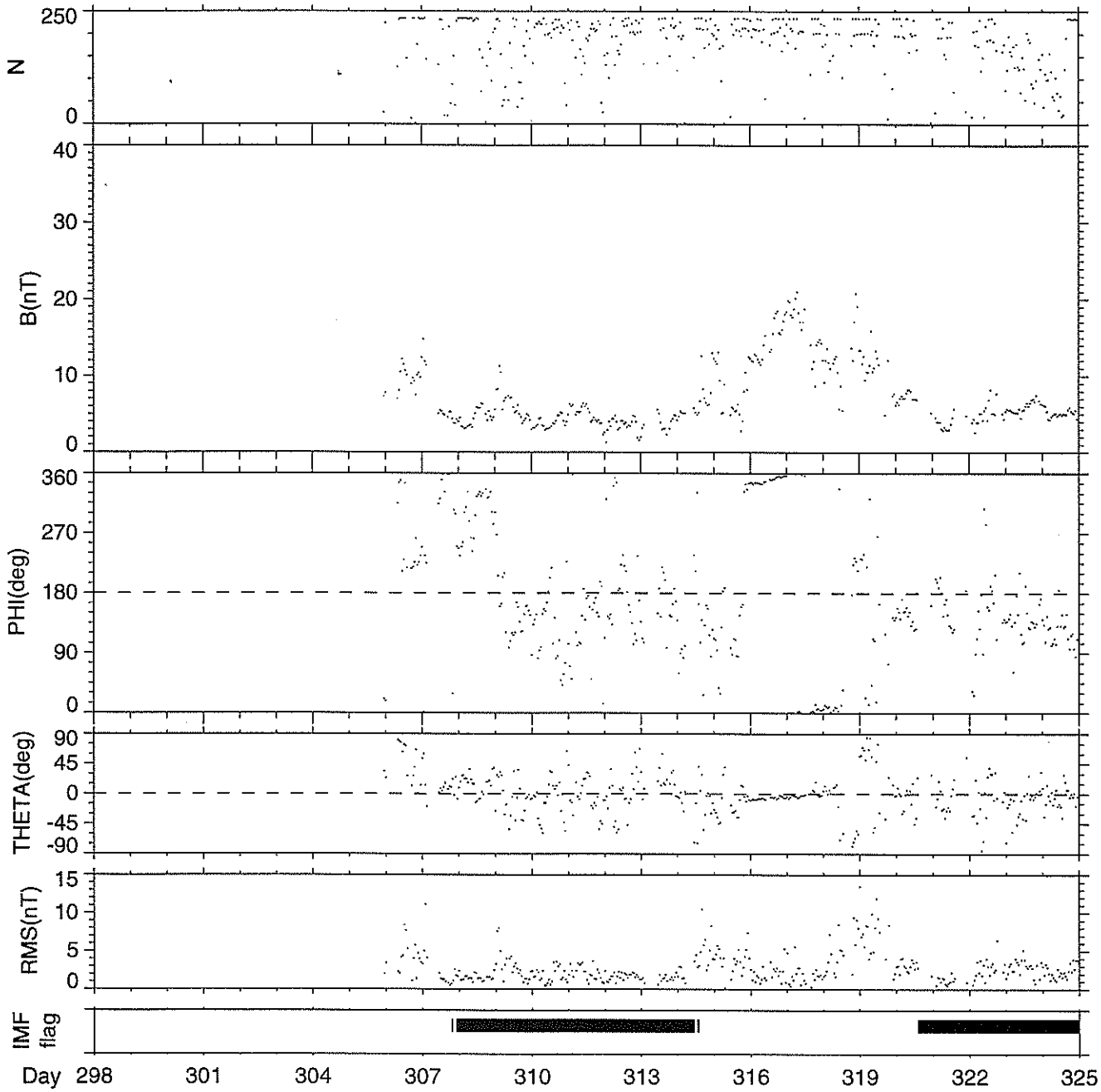
* Solar Irradiance = Instantaneous values are cosine-corrected for any off-axis positioning of the sun in the telescope aperture.
All values are normalized to 1 astronomical unit.

IMP 8 SOLAR WIND PLASMA
NOVEMBER 1996



IMP-8 Magnetic Field Data in GSE Coordinates

1 Hour Averages (c) DOY 305 - 325 October 31 1996 - November 20 1996

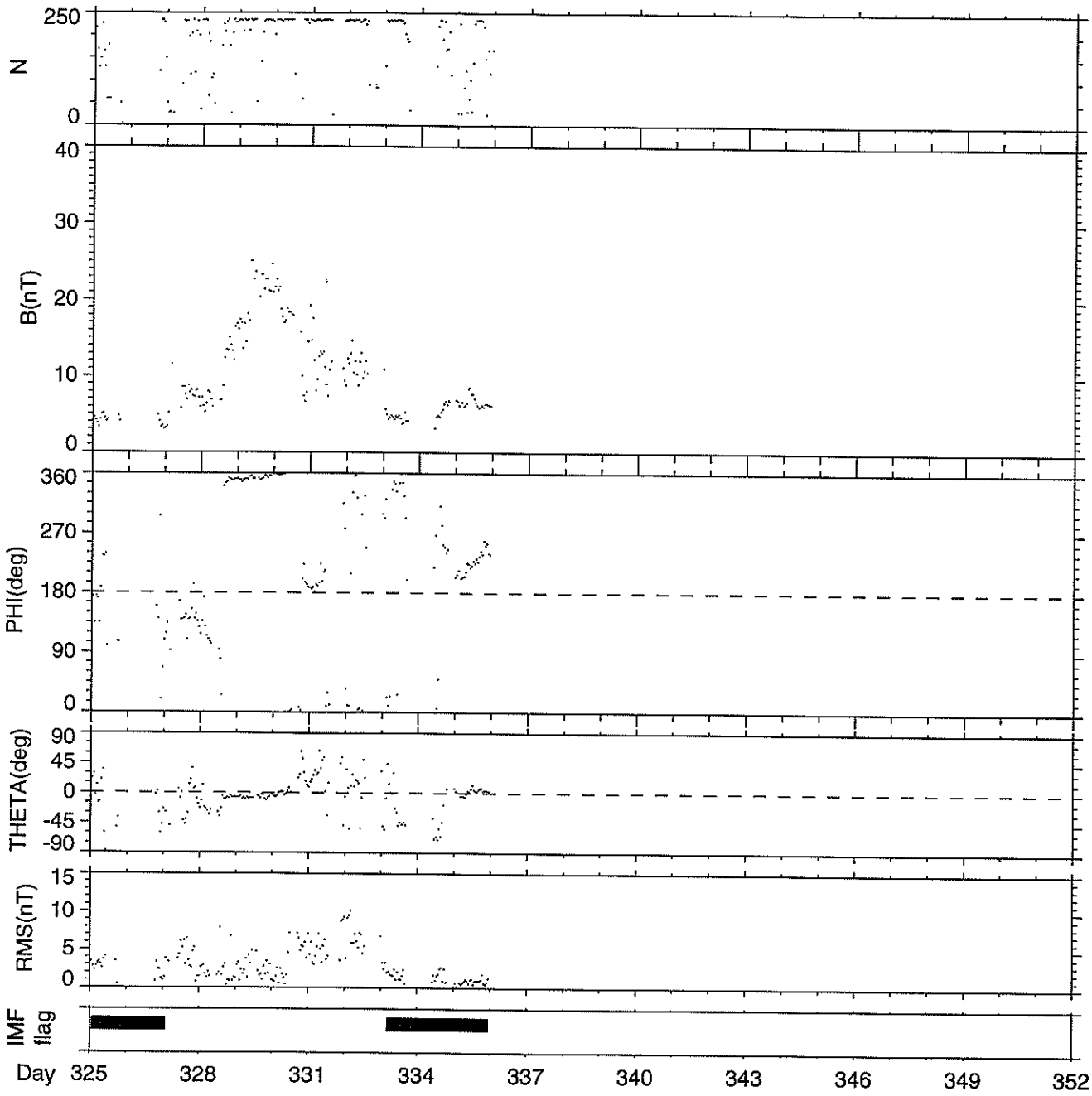


Generation Date : Mon May 19 08:31:04 1997

NOTE: The IMF "flag" (black boxes at the bottom of the plots) indicates where the interplanetary magnetic field regions are according to a dynamic model of the location of the bow shock. At all other times IMP-8 is in the magnetosphere.

IMP-8 Magnetic Field Data in GSE Coordinates

1 Hour Averages (c) DOY 325 - 335 November 20 1996 - November 30 1996



Generation Date : Mon May 19 08:31:08 1997

NOTE: The IMF "flag" (black boxes at the bottom of the plots) indicates where the interplanetary magnetic field regions are according to a dynamic model of the location of the bow shock. At all other times IMP-8 is in the magnetosphere.

CONTENTS

Comprehensive Reports Number 633 Part II

MISCELLANEOUS DATA

Notes on Interplanetary Fluxes of Energetic Particles from SAMPEX.

This issue contains new interplanetary measurements of the flux of energetic electrons, protons, helium nuclei, and heavy ions with Z>6 for the period July to December, 1996. These plots are derived from measurements made on NASA's Solar, Anomalous, and Magnetospheric Particle Explorer (SAMPEX), the first of these series of plots appeared in March 1994, along with the original version of these notes. The next few issues will contain the plots from 1996.

Two main revisions have occured since March 1994. One revision is to the 0.5 - 6.6 MeV/nuc He flux, where it has since been recognized that a time-dependent correction is necessary to account for variations in the instrumental efficiency for detecting He. This change was implemented in the republication of data from January to June 1993 and the new publication of data from July to December 1993.

The medium energy proton rate undergoes a change between April and May 1994. Up through April, the data are derived as before from the MAST M12 counting rate, covering an energy range of ~5-10 MeV. The rate for May and later is derived from the MAST Z1sec counting rate, covering a range from ~7-13 MeV. Caution should be used in comparing the absolute fluxes of the medium energy proton rate from before and after the change. The (older) M12-derived rate is systematically higher than the Z1sec-derived rate, both because the older rate included He and heavy ion counts and because of the different energy range. In addition, however, the geometry factor and efficiency factor used for the M12 rate may have been slightly underestimated; the Z1sec rate is expected to be more reliable. This revision was implemented in the publication of the plots from 1994. We have no plans to revise the previously published data, however.

For the convenience of the user, we repeat the following description of these plots, essentially as published in March, 1994, with revisions for the current data set.

SAMPEX, the first of NASA's Small Explorer series, was launched in July, 1992 into an 82° inclination orbit with an altitude of 520 x 670 km. SAMPEX carries four instruments designed to measure heavy ion composition from ~0.4 to 300 MeV/nuc, proton intensity from ~2 to 85 MeV, and electron intensity from ~0.5 to 30 MeV. The Heavy Ion Large-area Telescope (HILT), built by the Max Planck Institut (Garching) and the Aerospace Corp., is a gas proportional counter, silicon solid-state detector, and scintillating crystal detector system that measures particle energy loss (ΔE) and total energy. The Low-energy Ion Composition Analyzer (LICA), built by the University of Maryland, uses microchannel plates and silicon detectors to measure time-of-flight and total energy. The Mass Spectrometer Telescope (MAST) and the Proton Electron Telescope (PET), built by Caltech and Goddard Space Flight Center, are all-silicon detector stacks which measure ΔE - total energy. The instruments and spacecraft are more fully described in IEEE Transactions on Remote Sensing, volume 31, issue 3, 1993.

SAMPEX has access to interplanetary fluxes of solar energetic particles and galactic cosmic rays over the polar portions of its orbit. The intensities displayed here are obtained by averaging selected counting rates (time resolution of 6 seconds) over two polar cap passes, one north and one south, of one orbit, giving a ~90 minute average with a typical duty cycle of ~20%. For the proton, helium, and heavy ion fluxes, the polar cap was defined by averaging data above 70° invariant latitude. For the electron intensity and the 3.2 - 11 MeV proton intensity, the polar cap was defined by averaging above 78° invariant latitude in order to avoid contributions from particles in the radiation belts. Note that because some orbits do not reach 78° latitude, there are periodic gaps in the electron and 3.2 - 11 MeV proton data.

To derive these particle fluxes, the instrument count rates were divided by the appropriate energy interval (in MeV or MeV/nuc) and the effective geometry factor (in cm2 sr). Each point represents one or more complete orbits. When fluxes are low enough so that fewer than 25 counts are accumulated in a given rate, a point may represent more than one orbit. A horizontal bar indicates the appropriate time interval. The first onset of high intensities is always plotted as an independent point. When an instrument is off or data are not available from an orbit, no point is plotted. Vertical error bars represent statistical uncertainties only.

The user of these data should be warned that while an effort has been made to ensure that the absolute flux levels displayed here are correct, there may be instrumental background that affects the lowest measured flux levels, and instrumental dead-time effects at the very highest flux levels reported here (see also discussion below). As a result, these data are appropriate for identifying the occurrence and magnitude of solar and interplanetary particle events, but caution should be exercised in any quantitative application of the plotted fluxes.

There are several instrumental and spacecraft operations issues that affect the availability of data. Operation of MAST and PET often includes periodic turnoffs for periods of 12 or 24 hours. The HILT sensor is sometimes turned off for a month or more to conserve proportional counter gas. Because of its large geometry factor, HILT cannot operate at the peaks of the largest solar particle events observed.

Since February, 1996 SAMPEX has been rotating at 1 RPM in order to investigate angular distributions of trapped particles. All rates have been corrected by a factor of 0.64 to account for the reduction of exposure to interplanetary particles.

• The 2 - 6 MeV electron flux is derived from the PET ELO rate, based on coincidences between the front two 2-mm-thick silicon detectors with pulse-height limits designed to select electrons exclusively. There is possible background from radiation belt electrons when on some orbits the $> 78°$ invariant latitude selection does not exclude them.

• The 3.2 - 11 MeV proton flux is derived from the HILT PCFE rate, based on measurements in a gas proportional counter which responds to all ions, and to electrons with a much smaller efficiency. HILT has now used up its consumable gas.

• The 7 - 13 MeV proton flux is based on the MAST Z1sec rate, based on coincidences between the 2nd and 3rd 115 μm silicon detectors in the MAST detector stack, with a pulse-height and range limit. This rate responds almost exclusively to protons

• The 19 - 28 MeV proton flux is derived from the PET PLO rate, based on coincidences between the front two 2-mm silicon detectors with pulse height restrictions designed to select protons exclusively.

• The 0.5 - 6.6 MeV/nuc helium flux is derived from the LICA LOPRI rate. This rate responds to lower-energy heavy ions ($Z \geq 3$) as well as to helium. In some types of solar energetic particle events, these heavy ions may compose up to 50% of the "helium" flux. There is some saturation at peak intensities in the large solar energetic particle event in October-November 1992. The plotted intensity has not been corrected for this effect.

• The 8 - 15 MeV/nuc helium flux is derived from the MAST Z2 rate, which responds only to helium nuclei.

• The 0.5 - 8.2 MeV/nuc heavy ion flux is derived from the LICA HIPRI rate, which responds only to nuclei with $Z \geq 3$ and is typically dominated by C, N, and O. The quoted energy range is for oxygen nuclei.

• The 8.2 - 42 MeV/nuc heavy ion flux is derived from the HILT HiZ1 rate, which responds primarily to nuclei with $Z \geq 6$ and is typically dominated by C, N, and O. The HILT sensor has used up its consumable gas and its rates appear only briefly in the most recent plots.

• The 18 - 50 MeV/nuc heavy ion flux is derived from the combination of the MAST HIZR1, HIZR2, and HIZR3 rates, which respond only to nuclei with $Z \geq 3$ and are typically dominated by C, N, and O. The quoted energy range is for oxygen nuclei.

Further information is at: http://lepsam.gsfc.nasa.gov/www/sampex.html. Specific questions on:

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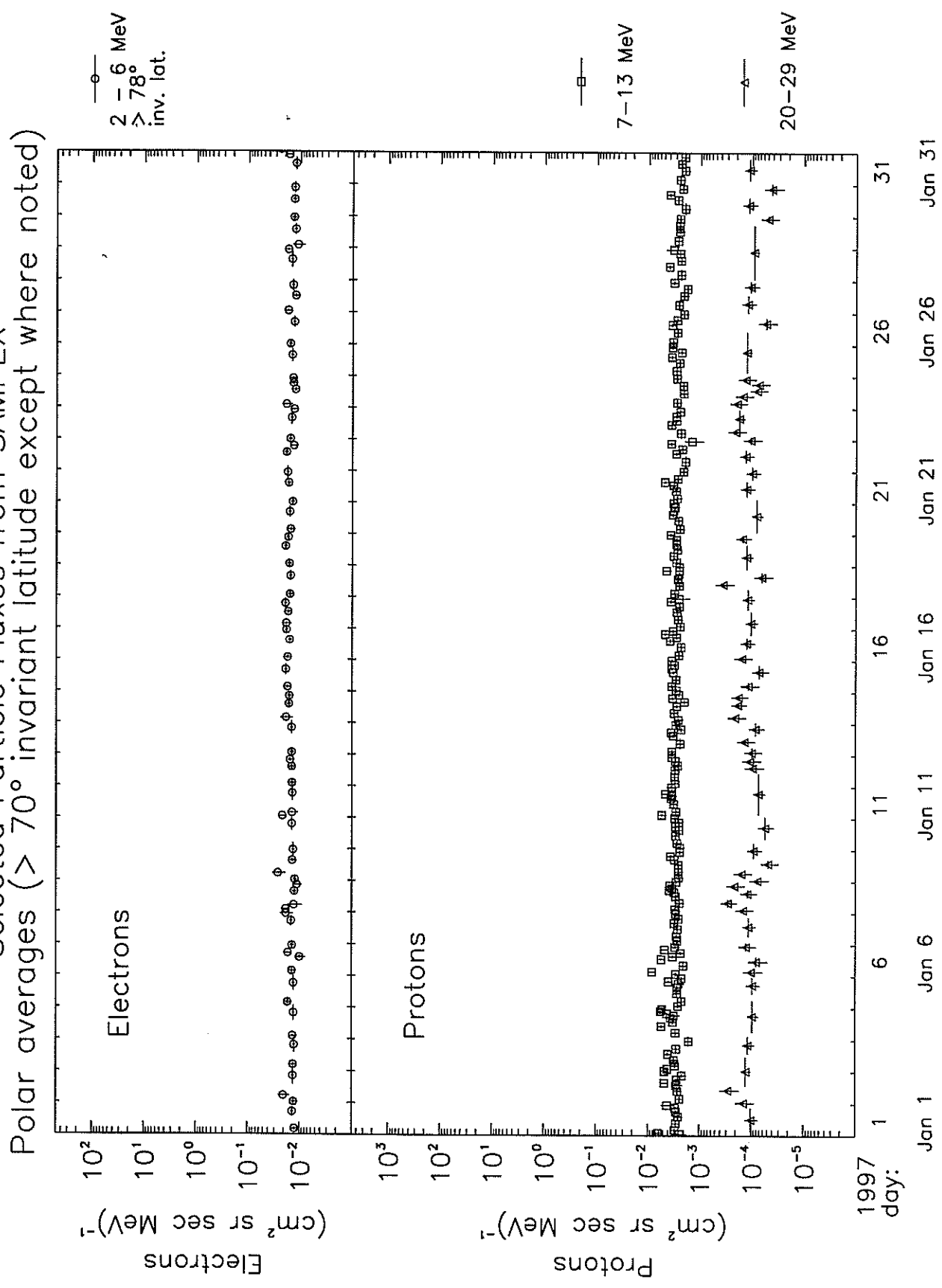
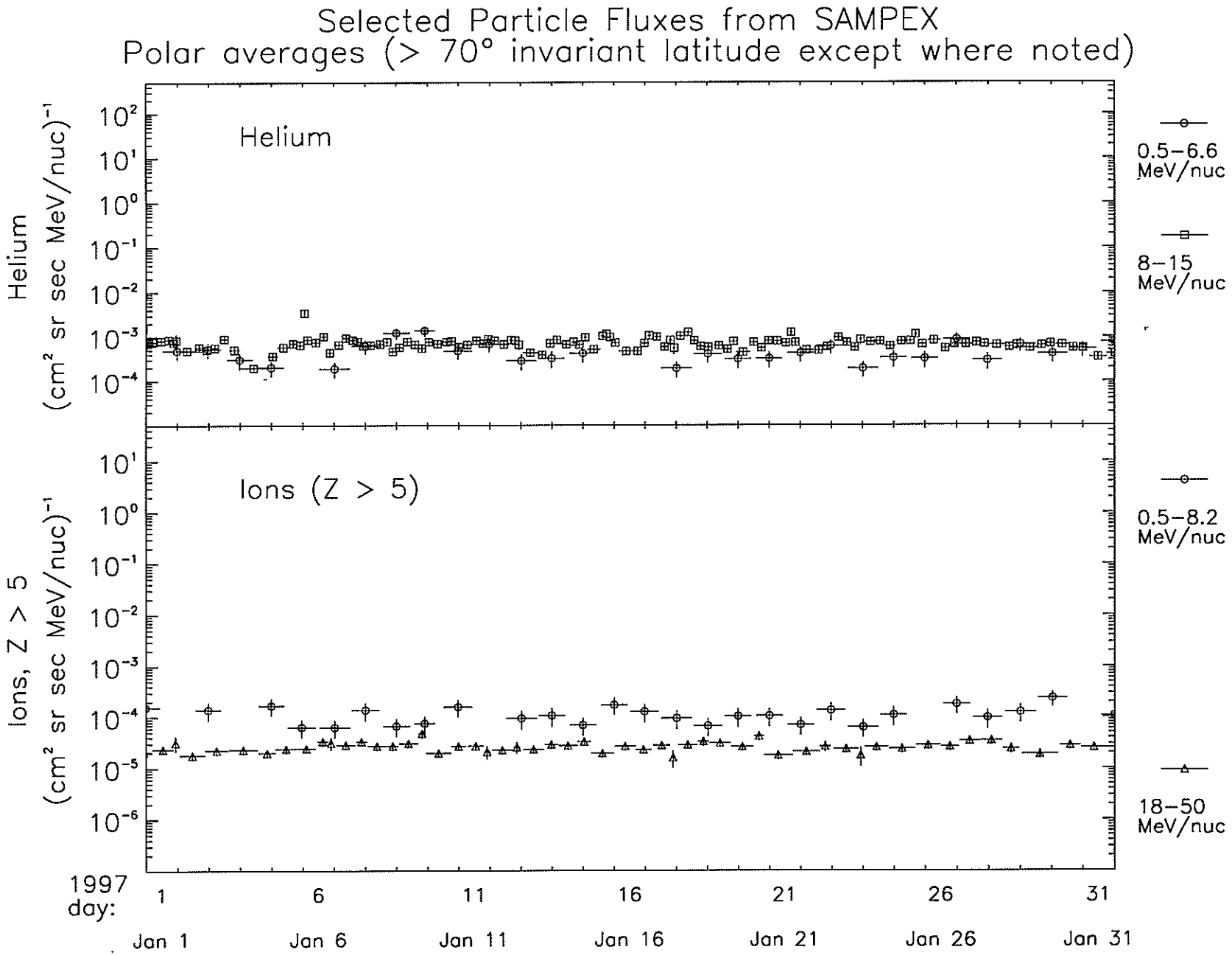

Selected Particle Fluxes from SAMPEX
Polar averages (> 70° invariant latitude except where noted)
2 – 6 MeV
> 78°
inv. lat.
7–13 MeV
20–29 MeV
Electrons
Protons
Electrons
(cm² sr sec MeV)⁻¹
Protons
(cm² sr sec MeV)⁻¹
1997
day:
Jan 1
Jan 6
Jan 11
Jan 16
Jan 21
Jan 26
Jan 31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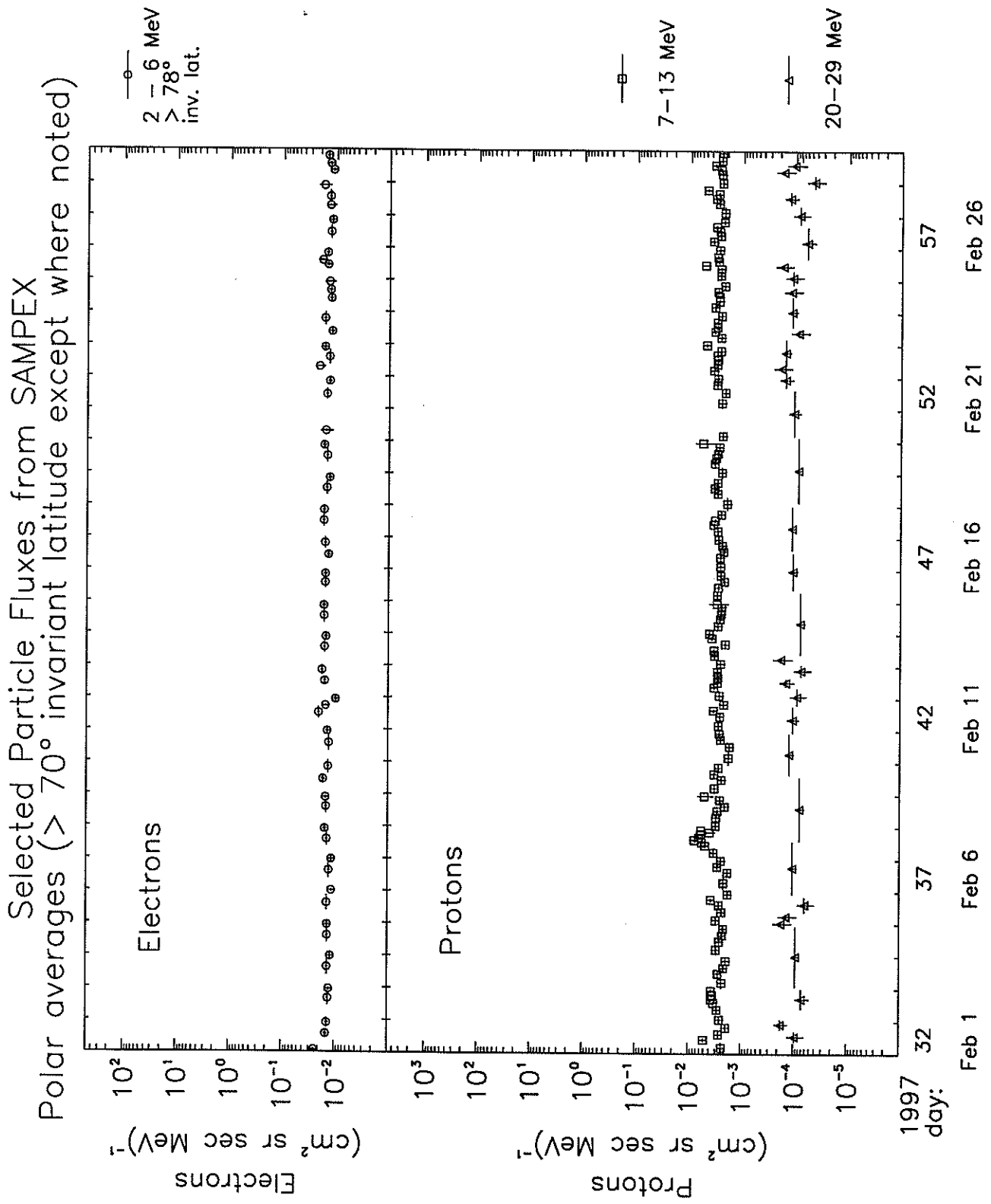
Polar averages (> 70° invariant latitude except where noted)
Helium
Helium
(cm² sr sec MeV/nuc)⁻¹
Ions (Z > 5)
Ions, Z > 5
(cm² sr sec MeV/nuc)⁻¹
0.5–6.6 MeV/nuc
8–15 MeV/nuc
0.5–8.2 MeV/nuc
18–50 MeV/nuc
1997 day:
1
6
11
16
21
26
31
Jan 1
Jan 6
Jan 11
Jan 16
Jan 21
Jan 26
Jan 31


Selected Particle Fluxes from SAMPEX
Polar averages (> 70° invariant latitude except where noted)
2 – 6 MeV
> 78°
inv. lat.
7–13 MeV
20–29 MeV
Electrons
Protons
Electrons
(cm² sr sec MeV)⁻¹
Protons
(cm² sr sec MeV)⁻¹
1997
day:
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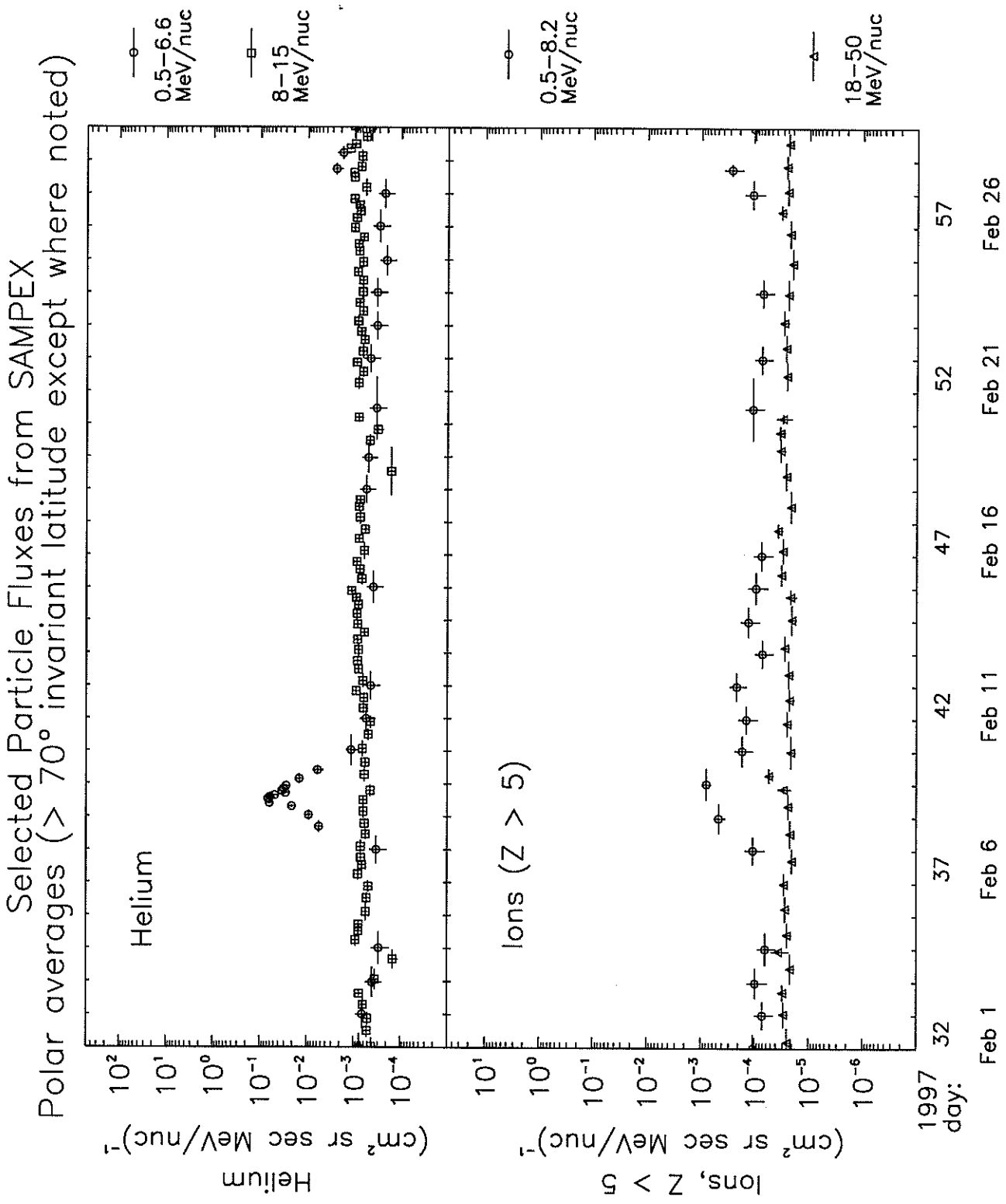
37
42
47
52
57
Feb 1
Feb 6
Feb 11
Feb 16
Feb 21
Feb 26



* U.S. GOVERNMENT PRINTING OFFICE: 1997-573-001/29001

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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."