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SOLAR-GEOPHYSICAL DATA

Number 623

(Issued in Two Parts)

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Comprehensive Reports Number 623 Part II

DATA FOR JANUARY 1996

Hα SOLAR FLARES

JANUARY 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	2036		2050	No Flare Patrol													
		01	2055		2110	No Flare Patrol													
		02	1115		1116	No Flare Patrol													
		02	1251		1448	No Flare Patrol													
		02	1718		1730	No Flare Patrol													
0001	KANZ	03	0750	0754	0806	N09	W06	7938	01	2.9	16	SF		2	C				
0002		03	08207	0830	0836	N10	W07	7938	01	2.8	16	SF					20		
	KANZ	03	0820	0830	0838	N10	W06	7938	01	2.9	18	SF		2	C				
	SVTO	03	0827	0830	0834	N11	W08	7938	01	2.7	7	SF		3	E		20		
0003	KANZ	03	1022	1026	1046	N10	W07	7938	01	2.9	24	SF		2	C				
0004		03	1334	1335	1343	N11	W10	7938	01	2.8	9	SF	B 6.0				38		F
	RAMY	03	1308E	1335	1404D	N11	W08	7938	01	2.9	56D	SF		3	E		60		F
	SVTO	03	1334	1335	1343	N11	W11	7938	01	2.7	9	SF	B 6.0	3	E		17		
0005	RAMY	03	1548	1548	1635D	N11	W12	7938	01	2.7	47D	1F		3	E		145		F
0006	HOLL	03	1602	1603	1607	N10	W10	7938	01	2.9	5	SF	B 2.8	3	E		16		
0007	HOLL	03	1707	1707	1715	N11	W12	7938	01	2.8	8	SF	C 1.0	3	E		18		
		04	1349		1657	No Flare Patrol													
		04	1758		1808	No Flare Patrol													
		04	1828		1925	No Flare Patrol													
0008	LEAR	05	0356	0356	0401	N10	W30	7938	01	2.9	5	SF	C 1.3	3	E		35		F
		05	1106		1108	No Flare Patrol													
		05	1117		1438	No Flare Patrol													
0009	HOLL	05	1446	1446	1450	N10	W36	7938	01	2.9	4	SF		3	E		24		
0010	HOLL	05	1531	1542	1558	N10	W37	7938	01	2.9	27	SF	B 3.8	3	E		38		F
0011	HOLL	05	1803	1809	1812	S11	W05	7937	01	5.4	9	SF	B 1.6	3	E		11		
0012	HOLL	05	2017	2025	2045	N12	W40	7938	01	2.8	28	SF		3	E		14		
		06	1046		1423	No Flare Patrol													
		07	1100		1108	No Flare Patrol													
		07	1120		1132	No Flare Patrol													
		07	1139		1146	No Flare Patrol													
		07	1154		1219	No Flare Patrol													
		07	1256		1611	No Flare Patrol													
		08	1101		1128	No Flare Patrol													
		08	1132		1153	No Flare Patrol													
		08	1204		1507	No Flare Patrol													
0013	HOLL	08	1637	1638	1641	N03	W46	7939	01	5.2	4	SF	B 1.6	3	E		13		
		09	1238		1247	No Flare Patrol													
		09	1314		1320	No Flare Patrol													
		09	1402		1441	No Flare Patrol													
		10	1046		1837	No Flare Patrol													
		11	1045		1448	No Flare Patrol													
		12	1051		1144	No Flare Patrol													
		14	1106		1118	No Flare Patrol													
		14	1155		1214	No Flare Patrol													
		14	1251		1259	No Flare Patrol													
		14	1352		1358	No Flare Patrol													
		14	1404		1421	No Flare Patrol													
		14	1427		1439	No Flare Patrol													
		14	1911		2026	No Flare Patrol													
		15	1106		1333	No Flare Patrol													
		15	1355		1436	No Flare Patrol													
		16	0607		0648	No Flare Patrol													
		21	1423		1437	No Flare Patrol													

Hα SOLAR FLARES

JANUARY 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
		22	0031		0050	No Flare Patrol													
		22	1221		1232	No Flare Patrol													
		22	1312		1314	No Flare Patrol													
		22	2200		2229	No Flare Patrol													
		23	0531		0550	No Flare Patrol													
		23	1051		1128	No Flare Patrol													
		24	1042		1104	No Flare Patrol													
		24	1126		1154	No Flare Patrol													
		24	1410		1426	No Flare Patrol													
		24	1435		1444	No Flare Patrol													
		25	1206		1343	No Flare Patrol													
		25	1812		1844	No Flare Patrol													
		25	2026		2105	No Flare Patrol													
		25	2129		2229	No Flare Patrol													
		26	1047		1141	No Flare Patrol													
		26	1254		1507	No Flare Patrol													
		27	1055		1309	No Flare Patrol													
		27	1335		1345	No Flare Patrol													
		27	1413		1424	No Flare Patrol													
		27	1841		1846	No Flare Patrol													
		27	2130		2157	No Flare Patrol													
		28	1058		1115	No Flare Patrol													
		28	1216		1242	No Flare Patrol													
		28	1308		1339	No Flare Patrol													
		28	1426		1459	No Flare Patrol													
		29	0126		0219	No Flare Patrol													
		29	0626		1157	No Flare Patrol													
		29	1331		1340	No Flare Patrol													
		30	1046		1135	No Flare Patrol													
		30	1301		1411	No Flare Patrol													
		30	2228		2233	No Flare Patrol													
		31	1046		1121	No Flare Patrol													
0014	RAMY	31	1722	1732	1735	N09	W54	7944	01	27.7	13	SF B	2.8	3	E		14		F

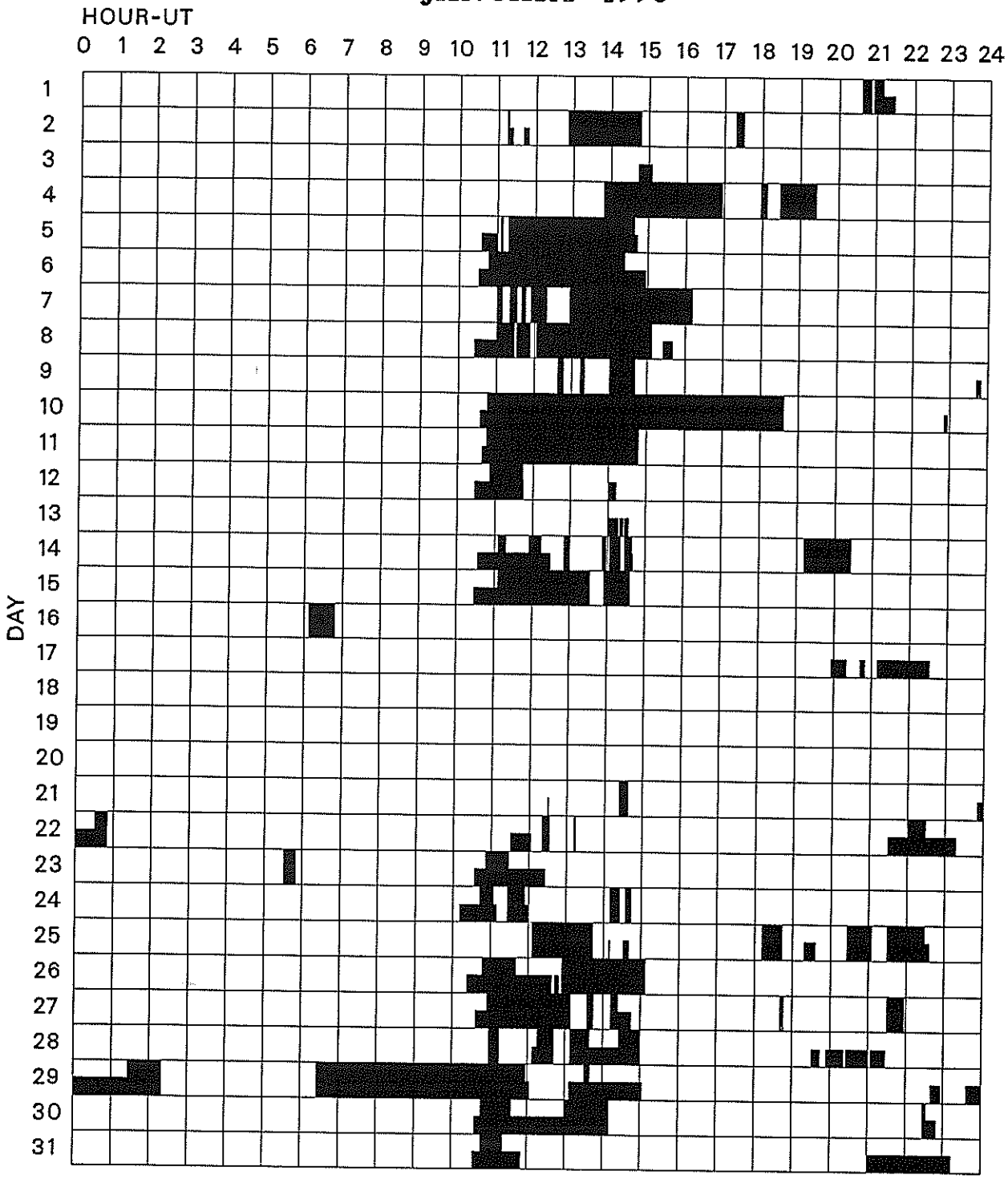
"Remarks"

A = Eruptive prominence whose base is less than 90 degrees from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of Ca II.
P = Flare shows Helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase; important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

Observation Type: C=Cinematographic, E=Electronic, P=Photographic, V=Visual

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

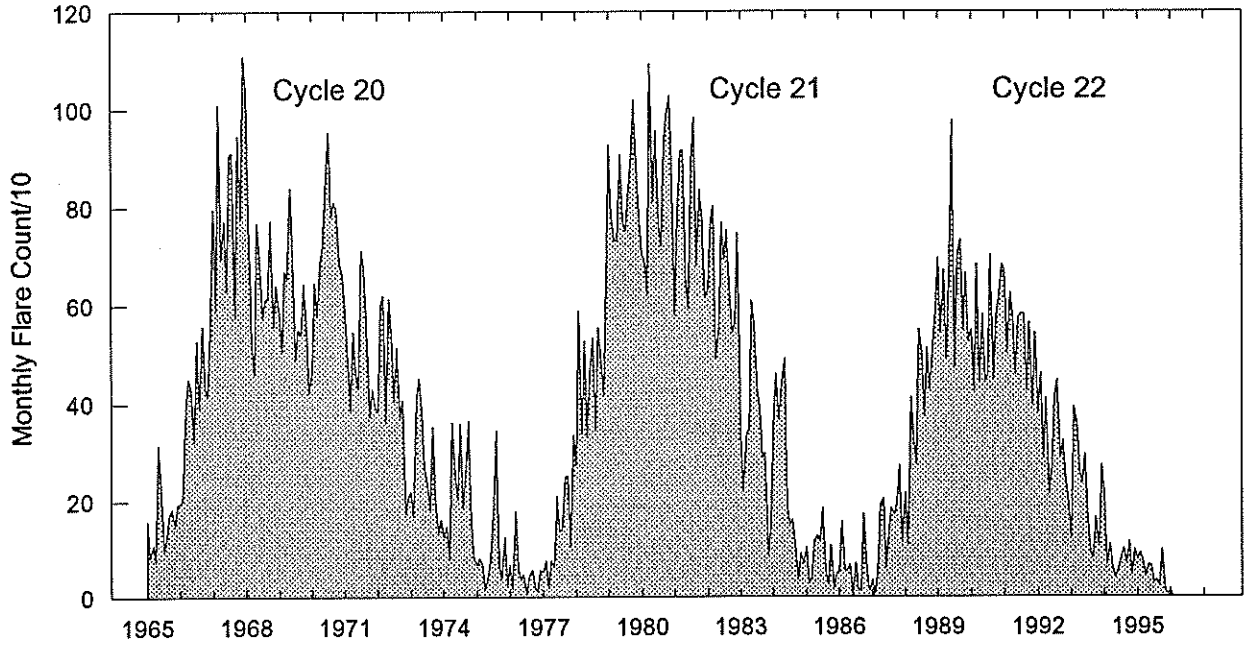
JANUARY 1996



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.

Catania
Holloman
Kankelhoehe
Kharkov
Learmonth
Mitaka
Palehua
Ramey
San Vito

Monthly Counts of Grouped Solar Flares
Jan 1965 - Jan 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												14

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

SOLAR RADIO EMISSION
Outstanding Occurrences

JANUARY 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
03	200	HIRA	44	NS	2150.0E	0510.0	570.0D	4.0	1.0		ML
04	204	IZMI	43	NS	0700.0		300.0D		10.0		
	127	TORN	43	NS	0823.0		273.0				2 V=1
	280	CUBA	44	NS	1410.0E		390.0D		19.0		
	235	CUBA	44	NS	1510.0E		330.0D		13.0		
	200	HIRA	44	NS	2150.0E	0550.0	570.0D	12.0	5.0		ML
	245	LEAR	8	S	0037.0	0037.0	1.0	93.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	0037.0	0037.0	1.0	95.0			QL=4 ST=2 TYP=3
	200	HIRA	8	S	0310.5	0311.0	0.6	29.0			O
	500	HIRA	41	F	0310.5	0310.8	1.0	5.0			O
	245	LEAR	8	S	0311.0	0311.0	U	63.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	0311.0	0311.0	U	59.0			QL=4 ST=2 TYP=3
	2800	HIRA	1	S	0311.0	0311.3	1.5	7.0	3.0		O
	245	PALE	8	S	1755.0	1755.0	1.0	56.0			QL=2 ST=2 TYP=3
	245	SGMR	8	S	1755.0	1755.0	1.0	51.0			QL=4 ST=3 TYP=3
	200	HIRA	6	S	2239.9	2240.7	1.0	12.0	10.0		ML
	500	HIRA	42	SER	2240.7	2245.6	6.0	80.0			ML
	245	PALE	8	S	2241.0	2241.0	1.0	67.0			QL=4 ST=3 TYP=3
	245	PALE	8	S	2245.0	2245.0	1.0	34.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2245.0	2245.0	1.0	160.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	2245.0	2245.0	U	35.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2307.0	2307.0	1.0	54.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	2348.0	2348.0	U	220.0			QL=2 ST=2 TYP=3
	245	PALE	8	S	2348.0	2348.0	U	250.0			QL=4 ST=2 TYP=3
	200	HIRA	8	S	2348.0	2348.3	0.4	1400.0			WL
	500	HIRA	42	SER	2348.0	2348.6	3.0	10.0			WL
05	204	IZMI	44	NS	0700.0E		300.0D		10.0		
	127	TORN	43	NS	0720.0		390.0				3 V=1
	280	CUBA	44	NS	1350.0E		370.0D		17.0		
	235	CUBA	44	NS	1500.0E		300.0D		9.0		
	200	HIRA	44	NS	2150.0E	0006.0	570.0D	6.0	2.0		ML
	200	HIRA	8	S	0003.7	0003.8	0.3	44.0			WL
	245	PALE	8	S	0048.0	0049.0	1.0	51.0			QL=4 ST=2 TYP=3
	200	HIRA	8	S	0100.2U	0100.3	0.2U	29.0			O,CALB
	500	HIRA	8	S	0100.3	0100.5	0.2	13.0			WL
	500	HIRA	8	S	0115.0	0115.1	0.2	25.0			O
	245	SGMR	8	S	2016.0	2016.0	U	74.0			QL=4 ST=3 TYP=3
06	235	CUBA	44	NS	1520.0E		340.0D		6.0		
	2700	PURP	20	GRF	0601.0	0613.6	17.0	7.0			
	2700	PURP	20	GRF	0634.0	0642.9	25.0	7.0			
	2700	PURP	21	GRF	0713.0	0756.5	55.0D	14.0			
07	200	HIRA	44	NS	2150.0E	0330.0	570.0D	11.0	3.0		MR
	2700	PURP	20	GRF	0155.0	0204.4	45.0	10.0			
	245	LEAR	8	S	0744.0	0744.0	U	77.0			QL=2 ST=2 TYP=3
	245	SVTO	8	S	0744.0	0744.0	2.0	85.0			QL=4 ST=3 TYP=3
08	204	IZMI	43	NS	0700.0		300.0D		10.0		
	245	LEAR	8	S	0752.0	0752.0	U	52.0			QL=2 ST=2 TYP=3
	245	SVTO	8	S	0752.0	0752.0	U	54.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1116.0	1116.0	U	95.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1116.0	1116.0U	U	49.0			QL=4 ST=3 TYP=3
09	204	IZMI	7	C	0942.5	0942.7	0.5	17.0	8.0		
	204	IZMI	7	C	1033.0	1033.5	0.7	23.0	11.0		
11	204	IZMI	7	C	0744.8	0745.3	0.5	80.0	70.0		
	410	SVTO	8	S	0800.0	0801.0	1.0	110.0			QL=4 ST=2 TYP=3
13	2700	PURP	1	S	0044.9	0045.5	2.5	6.0			
	33	UPIC	2	S/F	0841.4	0841.5	0.5				
	204	IZMI	7	C	0856.0	0856.1	0.2	125.0	100.0		
	33	UPIC	2	S/F	1131.5	1131.6	0.6				
14	33	UPIC	2	S/F	1059.5	1059.6	1.0				

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

JANUARY 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
15	204	IZMI	7	C	0946.5	0947.2	1.5	17.0			
16	33	UPIC	45	C	1010.8	1011.7	1.1				
	204	IZMI	41	F	1120.0	1120.4	1.0	380.0			
18	204	IZMI	7	C	1131.0	1131.5	1.0	20.0	5.0		
19	3000	IZMI	5	S	1041.4	1041.5	0.3	5.0	3.0		
23	3000	IZMI	7	C	0933.5	0934.0	0.6	36.0			
	33	UPIC	45	C	1343.7	1345.6	2.2				
25	245	SVTO	8	S	1004.0	1005.0	1.0	94.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1004.0	1005.0	1.0	51.0			QL=4 ST=2 TYP=3
30	33	UPIC	2	S/F	1105.5	1105.6	0.5				

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:

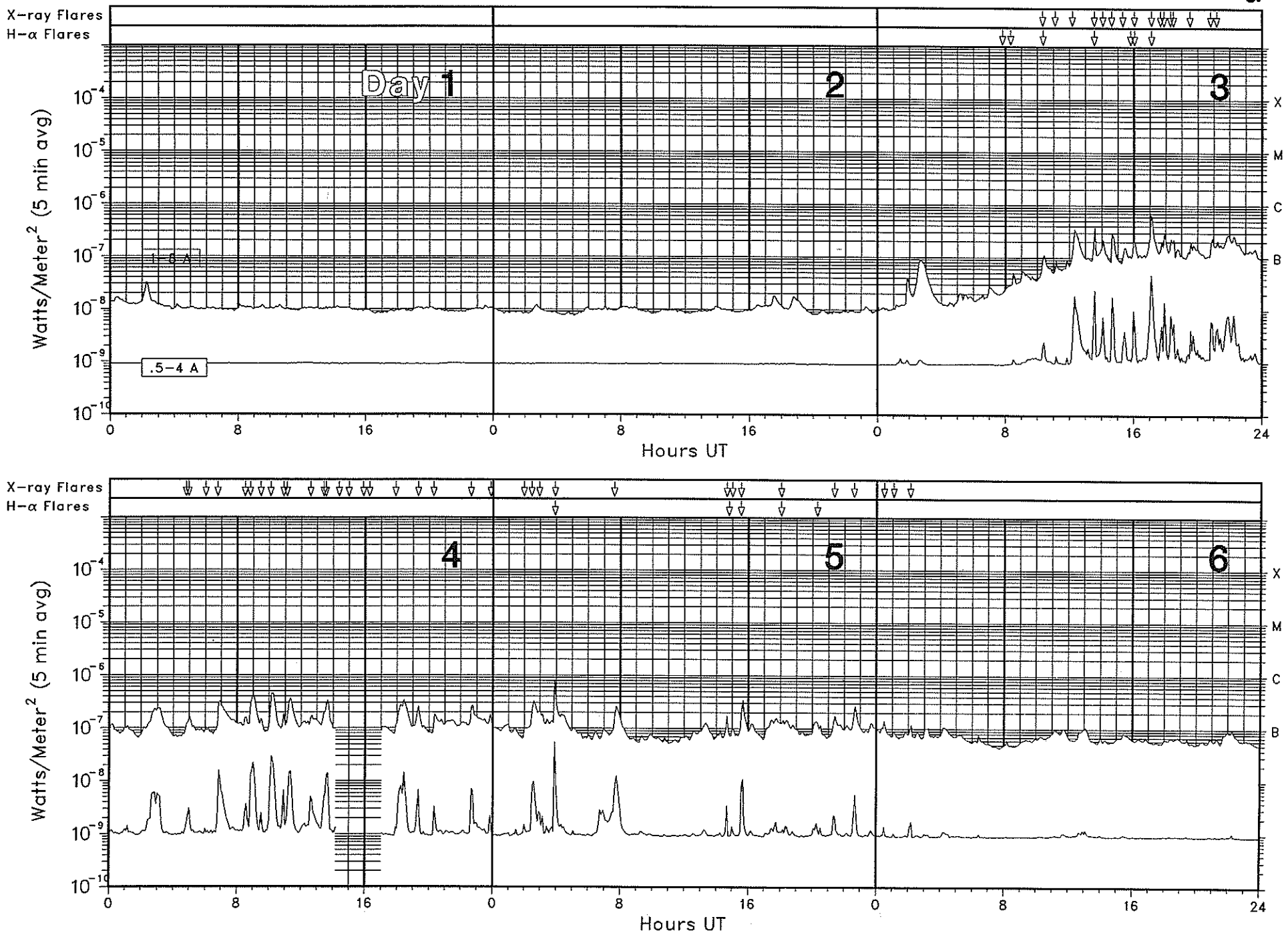
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 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.

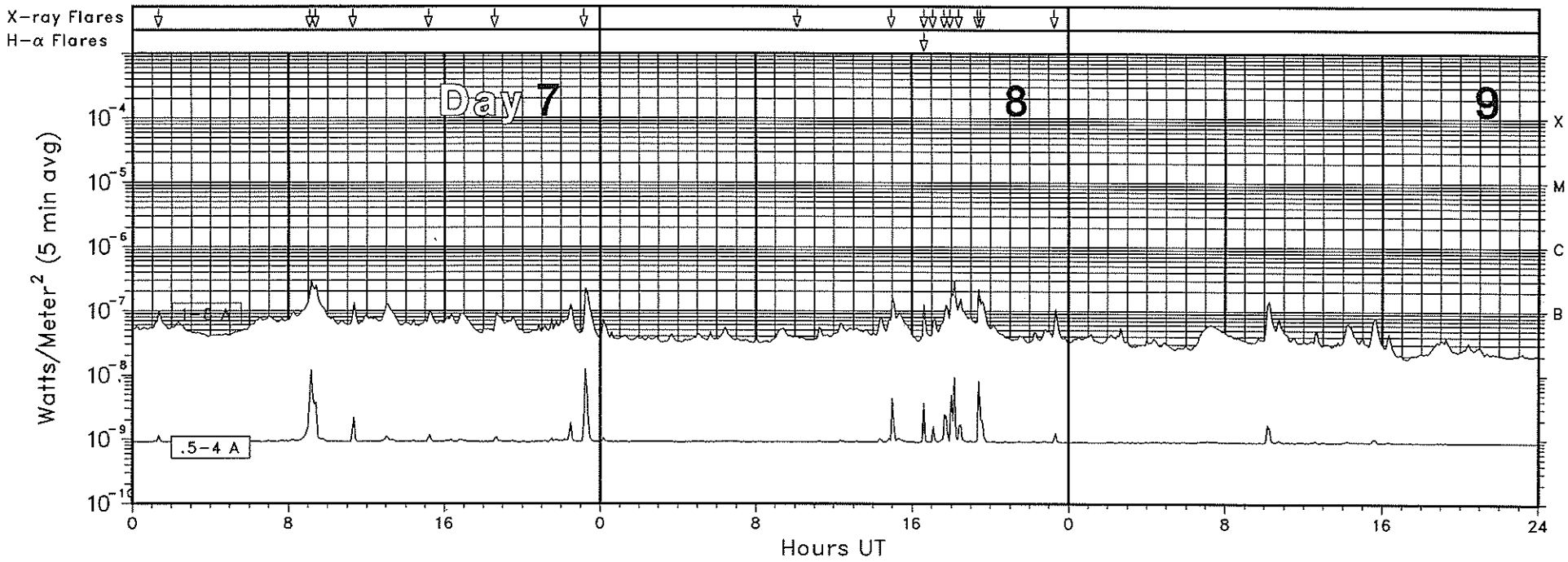
GOES-7 X-RAY DETECTOR

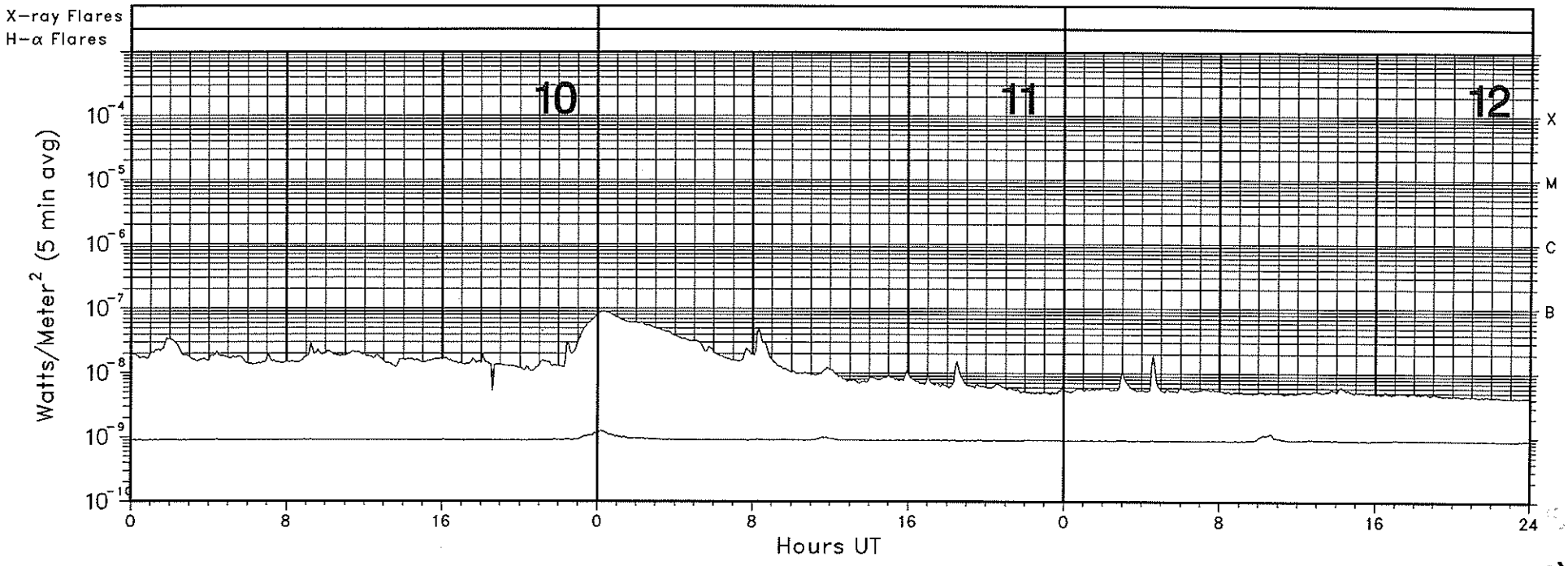
January 1996



GOES-7 X-RAY DETECTOR

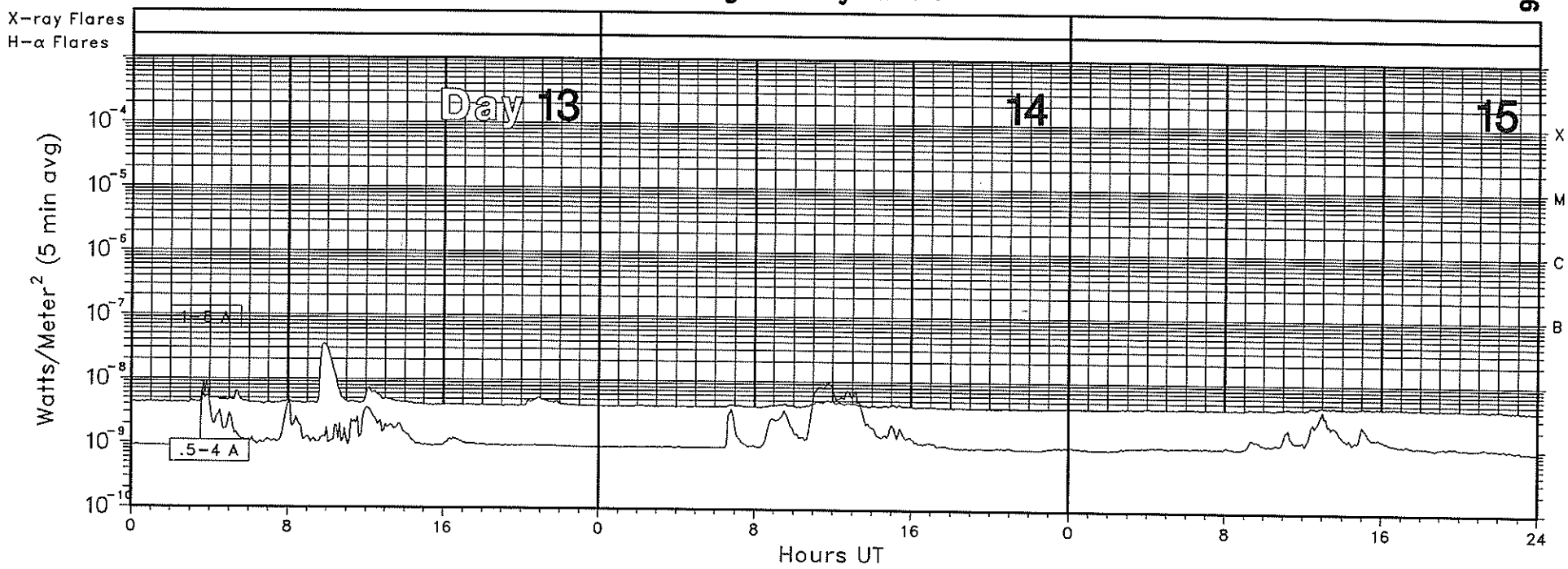
January 1996

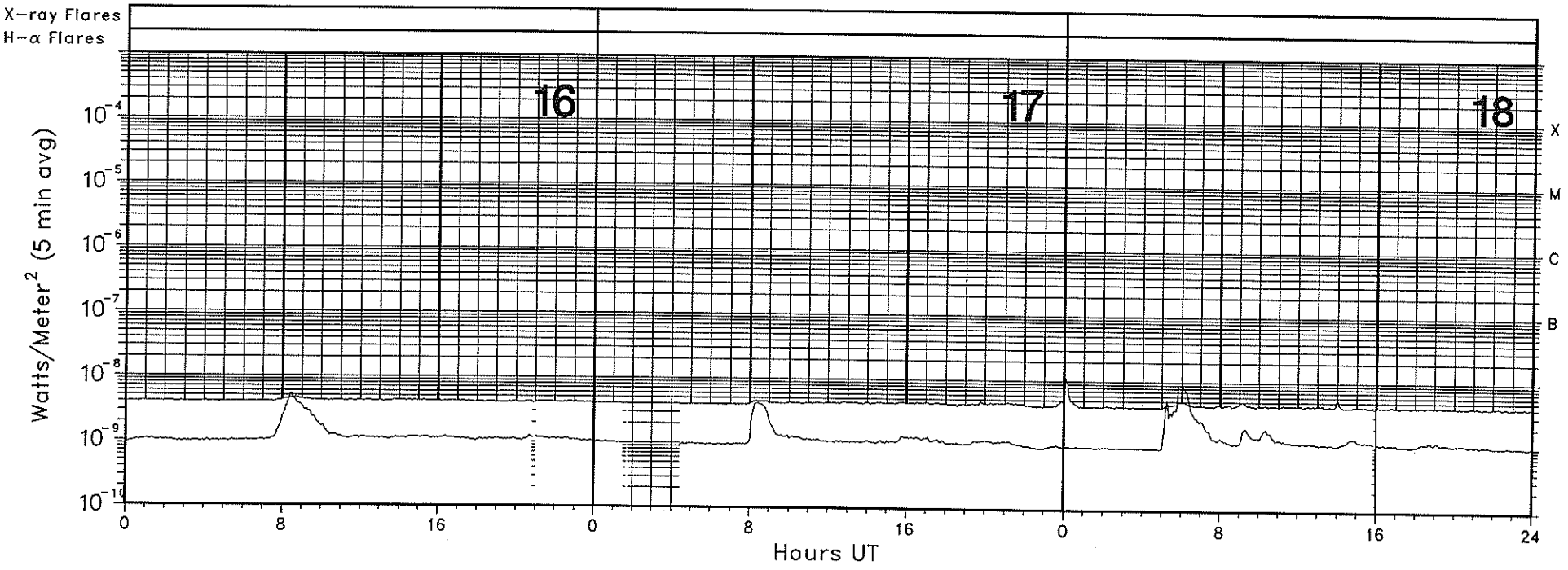




GOES-7 X-RAY DETECTOR

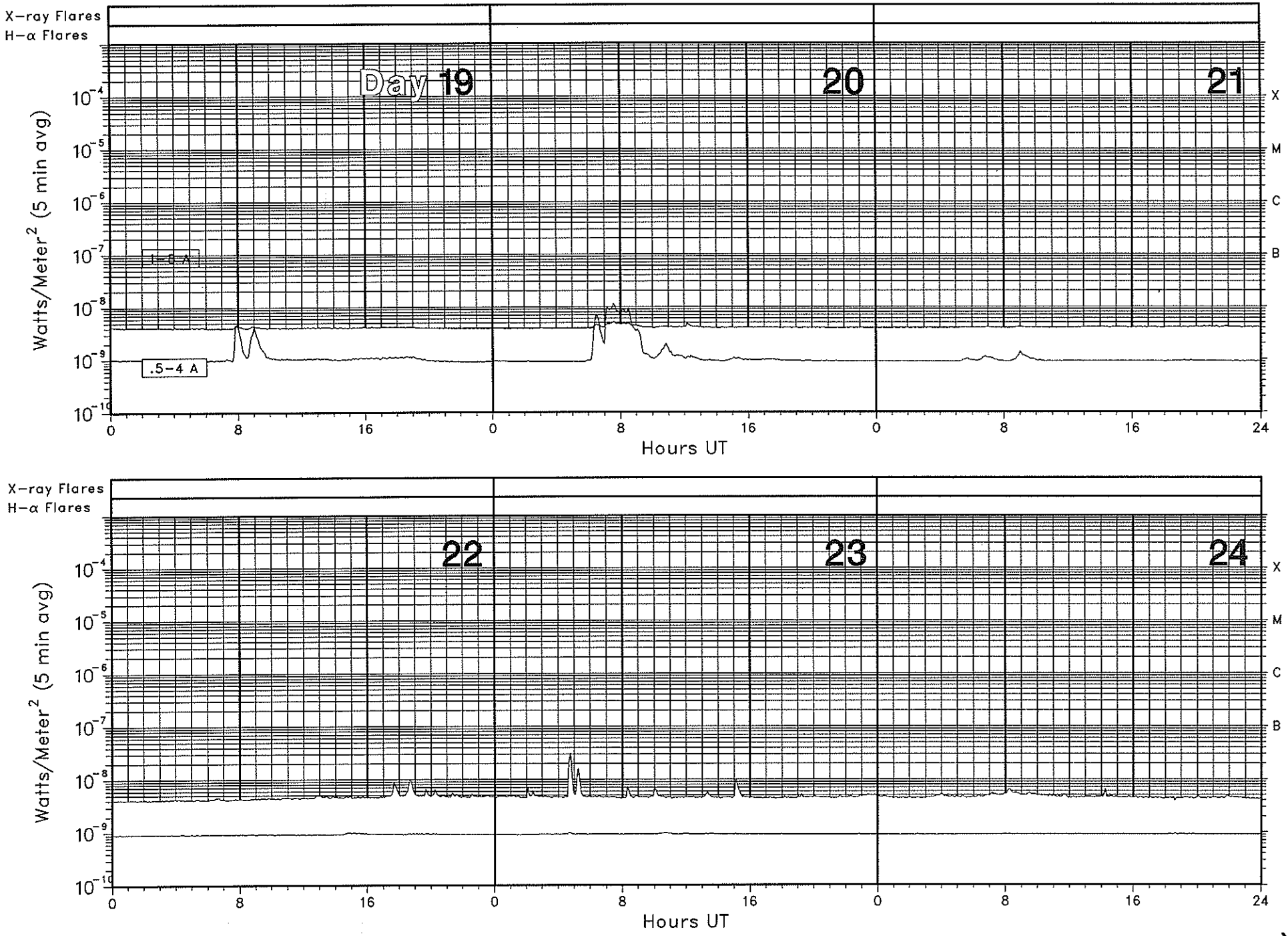
January 1996





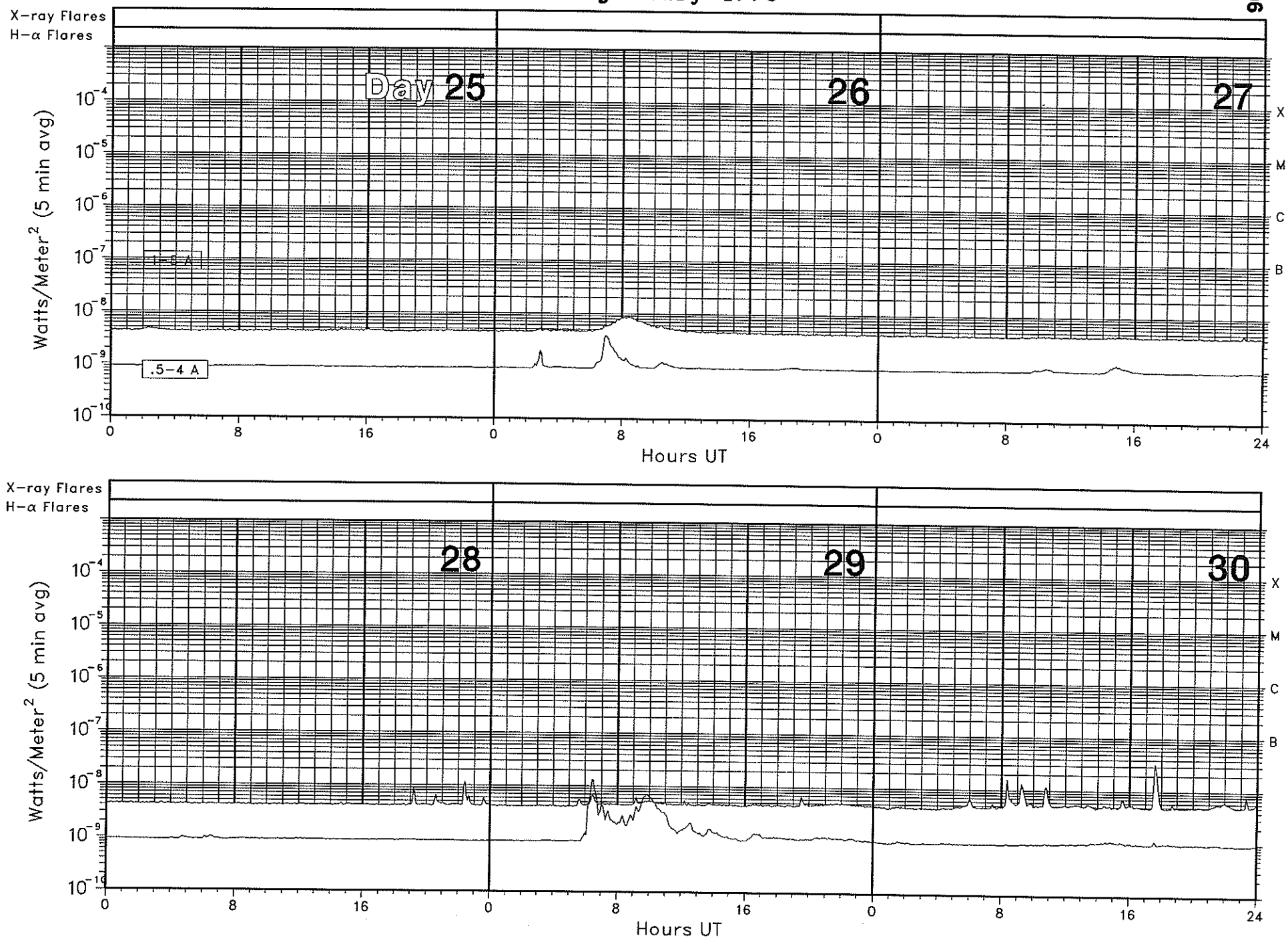
GOES-7 X-RAY DETECTOR

January 1996



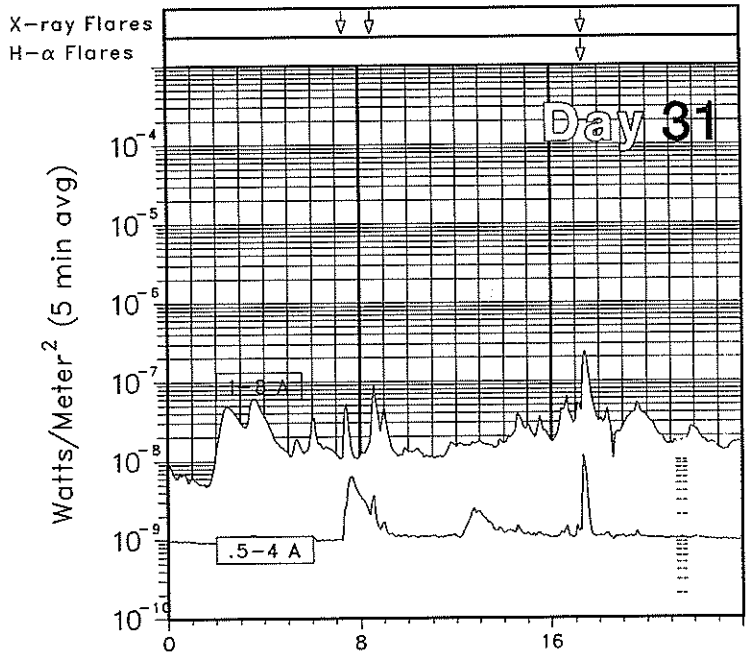
GOES-7 X-RAY DETECTOR

January 1996



GOES-7 X-RAY DETECTOR

January 1996



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

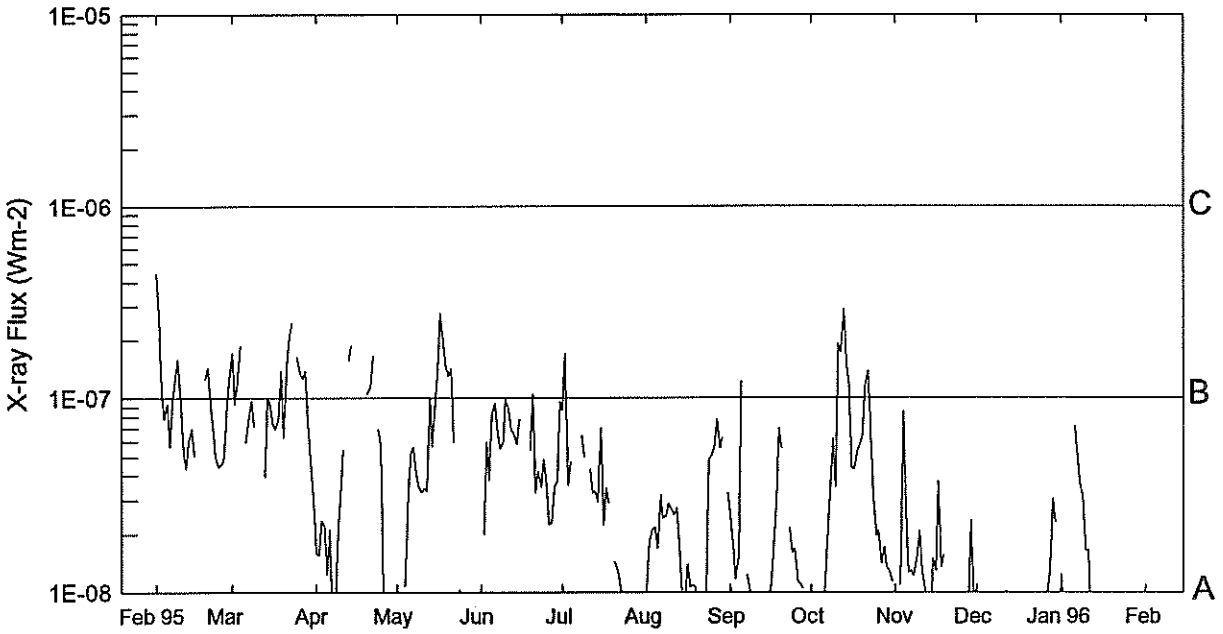
January 1996

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
03	1020	1026	1032				B1.1	
03	1107	1110	1113				B1.0	
03	1212	1223	1234				B3.6	
03	1334	1335	1343	N11	W11	SF	B6.0	
03	1405	1408	1410				B2.8	
03	1438	1443	1447				B4.5	
03	1520	1525	1535				B1.9	
03	1602	1603	1607	N10	W10	SF	B2.8	7938
03	1707	1707	1715	N11	W12	SF	C1.0	7938
03	1741	1745	1751				B2.2	
03	1753	1757	1801				B3.8	
03	1817	1824	1827				B2.6	
03	1829	1832	1834				B2.6	
03	1932	1936	1939				B2.2	
03	2048	2055	2102				B2.5	
03	2111	2114	2119				B2.5	
04	0447	0451	0455				B1.3	
04	0456	0501	0506				B1.7	
04	0601	0604	0606				B1.2	
04	0646	0654	0707				B4.0	
04	0828	0835	0837				B2.2	
04	0848	0903	0912				B4.5	
04	0928	0931	0933				B1.8	
04	1004	1014	1023				B4.9	
04	1053	1057	1059				B2.7	
04	1106	1120	1130				B3.8	
04	1234	1238	1246				B1.9	
04	1324	1327	1329				B2.3	
04	1331	1342	1347				B3.7	
04	1422	1438	1441				B3.4	
04	1458	1503	1506				B2.1	
04	1553	1600	1606				B1.7	
04	1616	1626	1639				B4.0	
04	1754	1827	1840				B3.5	
04	1918	1921	1923				B2.9	
04	2017	2023	2030				B2.2	
04	2238	2242	2250				B3.0	
04	2351	2354	2356				B2.2	

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
05	0159	0203	0209				B1.1	
05	0227	0237	0249				B3.2	
05	0256	0259	0304				B2.3	
05	0356	0356	0401	N10	W30	SF	C1.3	7938
05	0737	0747	0800				B2.6	
05	1438	1441	1443				B2.1	
05	1500	1504	1507				B1.3	
05	1531	1542	1558	N10	W37	SF	B3.8	7938
05	1803	1809	1812	S11	W05	SF	B1.6	7937
05	2121	2125	2127				B2.3	
05	2236	2240	2245				B3.1	
06	0028	0032	0035				B1.5	
06	0104	0107	0110				B1.0	
06	0206	0210	0212				B1.5	
07	0119	0122	0126				B1.0	
07	0905	0911	0918				B3.1	
07	0922	0925	0928				B3.0	
07	1116	1120	1124				B1.5	
07	1511	1515	1524				B1.0	
07	1836	1841	1859				B1.0	
07	2311	2318	2328				B2.4	
08	1458	1503	1506				B2.0	
08	1637	1638	1641	N03	W46	SF	B1.6	7939
08	1705	1709	1712				B1.1	
08	1740	1744	1746				B1.6	
08	1758	1812	1815				B3.7	
08	1825	1830	1833				B1.8	
08	1922	1926	1929				B2.8	
08	1932	1935	1937				B1.9	
08	2317	2321	2325				B1.1	
08	1008	1015	1020				B1.5	
31	0721	0724	0726				B1.0	
31	0832	0836	0840				B1.1	
31	1722	1732	1735	N09	W54	SF	B2.8	7944

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
Feb 95 - Jan 96



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

NOTE: Background levels below B1.0 are unreliable.

ACTIVE PROMINENCES AND FILAMENTS

JANUARY 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
01	DSD	0820E	0935D	S27	E55	01	5.6		03	9	9	E	LEAR		
01	BSL	1221	1234	S14	E90	01	8.3	1-				C	CATA		
01	BSL	1234	1234D	S38	E90	01	8.8	1-				C	CATA		
01	ADF	1600E	2135	S10	E51	01	5.5	1	10	8	9	E	RAMY	7937	
01	ADF	2345E	1042	S06	W32	12	30.7	1	06	6	5	E	LEAR		
02	BSL	0833	0841	N47	E90	01	9.9	1-				C	CATA		
02	BSL	1211	1230	S43	W90	12	26.2	1-				C	CATA		
02	BSL	1211	1230	S51	W90	12	25.9	1-				C	CATA		
02	DSD	1544E	1740D	N02	W37	12	31.0		01	9	9	E	RAMY		
02	ADF	2215E	2250D	N11	W22	01	1.3	1	04	5	7	E	HOLL	7935	
02	DSF	2331U	1507U	N25	E05	01	3.4		06	0	0	E	HOLL		
02	ADF	2345E	1042	S06	W32	12	31.6	1	06	6	5	E	LEAR		
03	DSD	0210	0358	N10	W01	01	3.0		03	9	9	E	PALE		
03	AFS	0220	0358	N11	W02	01	2.9		02	7	8	E	PALE		
03	ADF	0220	0358	N13	W02	01	2.9	1	05	9	9	E	PALE		
03	AFS	0520E	1047	N10	W04	01	2.9		02	9	9	E	LEAR		
03	DSD	0725E	1047	N10	W07	01	2.8		03	9	9	E	LEAR		
03	AFS	0727E	1505D	N10	W08	01	2.7		02	9	9	E	SVTO		
03	DSD	0728E	1425D	N11	W04	01	3.0		02	9	9	E	SVTO		
03	DSD	0729E	1425D	N12	W07	01	2.8		02	9	9	E	SVTO		
03	AFS	0737E	1442D	N10	W04	01	3.0		02	9	9	E	SVTO		
03	DSD	0829E	1209D	N11	W07	01	2.8		02	9	9	E	SVTO		
03	BSL	0855	0900	N37	W90	12	27.2	1-				C	CATA		
03	BSL	0855	0907	N53	W90	12	26.7	1-				C	CATA		
03	DSD	1320E	1822	N09	W07	01	3.0		01	9	9	E	RAMY	7938	
03	AFS	1325E	1822	N11	W07	01	3.0		01	9	9	E	RAMY	7938	
03	DSD	1336E	1822	N11	W11	01	2.7		04	9	9	E	RAMY	7938	
03	DSD	1423E	1518	N24	W09	01	2.9		03	9	9	E	SVTO		
03	DSD	1446E	0001	N12	W09	01	2.9		03	9	9	E	HOLL	7938	
03	DSD	1506E	0001	N09	W11	01	2.8		03	9	9	E	HOLL	7938	
03	AFS	1506E	0001	N10	W09	01	2.9	1	02	9	9	E	HOLL	7938	
03	DSD	1752E	0359	N08	W08	01	3.1		03	9	9	E	PALE	7938	
03	AFS	1754E	0359	N12	W10	01	3.0		03	9	9	E	PALE	7938	
03	DSD	2305E	0500D	N12	W13	01	3.0		03	9	9	E	LEAR	7938	
04	AFS	0240E	1032	N11	W14	01	3.0		02	9	9	E	LEAR	7938	
04	AFS	0815E	1336	N10	W20	01	2.8		02	9	9	E	SVTO	7838	
04	BSL	1029E	1033D	N38	W90	12	28.2	1-				C	CATA		
04	BSL	1106E	1117	N52	W90	12	27.9	1-				C	CATA		
04	BSL	1113	1121D	S76	E90	01	12.8	1-				C	CATA		
04	DSD	1116E	1215	N08	W16	01	3.3		02	9	9	E	RAMY	7938	
04	BSL	1135	1150	N73	W90	12	27.3	1-				C	CATA		
04	AFS	1147E	1215	N02	E14	01	5.5		01	9	9	E	RAMY	7939	
04	DSD	1147E	1215	N03	E12	01	5.4		01	9	9	E	RAMY	7939	
04	DSD	1159E	1215	N11	W20	01	3.0		02	9	9	E	RAMY	7938	
04	AFS	1209E	1215	N19	W30	01	2.2		01	9	9	E	RAMY		
04	DSD	1219E	1330D	N03	E12	01	5.4		02	9	9	E	SVTO		
04	AFS	1219E	1336	N18	W30	01	2.2		01	9	9	E	SVTO		
04	BSL	1233E	1236	S77	E90	01	12.8	1-				C	CATA		
04	BSL	1233E	1240D	N60	E90	01	12.4	1-				C	CATA		
04	AFS	1300E	1336	N03	E13	01	5.5		02	9	9	E	SVTO		
04	AFS	1658E	0001	N02	E10	01	5.4		02	9	9	E	HOLL	7939	
04	AFS	1710E	0001	N10	W23	01	3.0		01	9	9	E	HOLL	7938	
04	AFS	1747E	2031	N03	E11	01	5.6		03	9	9	E	PALE	7939	
04	DSD	1748E	2031	N02	E14	01	5.8		03	9	9	E	PALE	7939	
04	AFS	1750E	2031	N10	W25	01	2.9		03	9	9	E	PALE	7938	
04	AFS	2225E	1046	N11	W26	01	3.0		02	9	9	E	LEAR	7938	
04	AFS	2230E	1046	N02	E06	01	5.4		02	9	9	E	LEAR	7939	
04	DSD	2355E	1046	N02	E08	01	5.6		02	9	9	E	LEAR	7939	
05	AFS	1421E	2318	N03	W02	01	5.4		02	9	9	E	HOLL	7939	
05	AFS	1525	2318	N11	W36	01	2.9		01	9	9	E	HOLL	7938	
05	DSD	1630	2318	N02	E00	01	5.7		02	9	9	E	HOLL	7939	
05	AFS	2300E	1045	N03	W06	01	5.5		03	4	5	E	LEAR	7939	
05	AFS	2304E	1045	N12	W41	01	2.9		02	4	6	E	LEAR	7938	
06	AFS	1422E	0003	N02	W15	01	5.5		03	9	9	E	HOLL	7939	
06	AFS	1930E	0345	N11	W08	01	6.2		02	7	8	E	PALE	7939	

ACTIVE PROMINENCES AND FILAMENTS

JANUARY 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
06	AFS	2315E	1046D	N03	W20	01	5.5		03	5	6	E	LEAR	7939	
07	BSL	0810E	0912D	N42	E90	01	14.7	1-				C	CATA		
07	AFS	1000E	1002	N12	W64	01	2.6		02	7	8	E	SVTO	7938	
07	BSL	1028	1035	N50	E90	01	15.0	1-				C	CATA		
07	BSL	1028	1035	N82	E90	01	15.8	1-				C	CATA		
07	AFS	1422E	0004	N03	W30	01	5.3		02	9	9	E	HOLL	7939	
07	AFS	1422E	0004	N03	W30	01	5.3		02	9	9	E	HOLL	7939	
08	AFS	0850E	1045D	N10	W15	01	7.2		02	9	9	E	LEAR		
08	BSL	1129E	1131D	N86	E90	01	16.9	1-				C	CATA		
08	AFS	1422E	0004	N03	W44	01	5.3		02	6	7	E	HOLL	7939	
08	AFS	1422E	0004	N09	W18	01	7.2		01	4	5	E	HOLL	7940	
08	AFS	1825E	2325D	N04	W44	01	5.5		02	5	5	E	PALE	7939	
08	AFS	1828E	0007	N10	W18	01	7.4		03	9	9	E	PALE		
09	EPL	0339E	0403	N17	W90	01	2.3	3		9	9	E	LEAR	7938	
09	AFS	1004E	1202D	N02	W54	01	5.4		03	9	9	E	SVTO	7939	
09	BSL	1124E	1124D	N72	E90	01	17.7	1-				C	CATA		
09	ASR	1145E	1520	N15	W90	01	2.7			9	8	E	SVTO	7938	
09	AFS	1422E	0004	N03	W60	01	5.1		02	7	5	E	HOLL	7939	
09	ASR	1500E	0004	N11	W90	01	2.8			9	9	E	HOLL	7938	
09	APR	1500E	0004	N15	W90	01	2.8			5	6	E	HOLL	7938	
11	ASR	1816E	2033	N10	W69	01	6.6			6	7	E	RAMY	7939	
11	ASR	1819E	1856	S03	W90	01	5.0			9	9	E	HOLL	7937	
11	ASR	2158	2238	N05	W90	01	5.2			6	7	E	HOLL	7939	
12	ASR	0215E	0540D	N05	W90	01	5.4	1		8	6	E	LEAR	7939	
12	ASR	0315E	0345	N05	W90	01	5.4			7	7	E	PALE	7939	
12	DSD	1323E	1435D	S06	W02	01	12.4		03	0	0	E	RAMY		
15	ADF	1423E	2306	N44	W18	01	14.1	1	22	3	7	E	HOLL		
15	ADF	1920E	0205	N44	W18	01	14.3	1	22	3	5	E	PALE		
16	ADF	0045E	0830D	N51	W39	01	12.7	1	20	4	5	E	LEAR		
17	BSL	0726E	0815	N38	E90	01	24.6	1-				C	CATA		
17	AFS	1035E	1345D	S09	E19	01	18.9		02	9	9	E	SVTO		
17	AFS	1702E	2159	S08	E18	01	19.0		01	9	9	E	RAMY		
18	BSL	1045E	1056D	N31	E90	01	25.5	1-				C	CATA		
19	BSL	1115E	1127D	N82	W90	01	11.1	1-				C	CATA		
20	BSL	0852E	0902	S73	W90	01	12.1	1-				C	CATA		
20	BSL	0852E	0908	N76	E90	01	28.7	1-				C	CATA		
20	BSL	1020	1020D	N69	W90	01	12.3	1-				C	CATA		
20	BSL	1204	1222	N64	W90	01	12.5	1-				C	CATA		
21	AFS	0900E	1354	N02	W18	01	20.0		02	9	9	E	SVTO		
21	AFS	1128E	2157	N00	W18	01	20.1		01	9	9	E	RAMY	7942	
21	DSD	1400E	1940D	N01	W18	01	20.2		02	9	9	E	RAMY		
21	AFS	1438E	0015	N00	W22	01	20.0		01	9	9	E	HOLL	7942	
21	DSD	1438E	1900D	N02	W20	01	20.1		02	9	9	E	HOLL	7942	
21	AFS	2208E	2335D	N00	W23	01	20.2	1	03	9	9	E	PALE	7942	
21	AFS	2245E	0245D	N03	W25	01	20.1		02	9	9	E	LEAR	7942	
21	DSF	2347U	1454U	N10	E59	01	26.4	2	09	0	0	E	HOLL		
22	DSD	0940E	1045D	N04	W35	01	19.8		03	9	9	E	SVTO	7942	
22	ASR	1442E	1450D	N10	E90	01	29.4			6	6	E	RAMY		
22	ASR	1501E	0002	N04	E90	01	29.3			9	9	E	HOLL		
22	AFS	2340E	0200D	N02	W38	01	20.1		01	9	9	E	LEAR	7942	
23	ASR	0400E	1050D	N09	E90	01	29.9			9	9	E	LEAR		
23	ASR	0802E	1500D	N09	W90	01	16.6			9	9	E	SVTO		
23	APR	1155E	1645D	N08	E90	01	30.2	1		8	6	E	RAMY		
24	AFS	1235E	1627D	N08	E69	01	29.7		02	8	9	E	RAMY	7943	

ACTIVE PROMINENCES AND FILAMENTS

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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
26	ASR	0616E	0645D	N00	W87	01	19.8			9	9	E	LEAR	7942	
28	AFS	1817	0020	N10	W12	01	27.9		01	9	9	E	HOLL		
28	AFS	2230E	0415	N10	W12	01	28.0		01	9	9	E	PALE		
28	AFS	2245E	1049	N10	W14	01	27.9		01	7	7	E	LEAR		
28	DSD	2245E	2302D	N08	E12	01	29.8		02	9	9	E	LEAR	7943	
30	AFS	0215E	1045	N10	W29	01	27.9		02	9	9	E	LEAR		
30	AFS	1215E	2140D	N11	W35	01	27.9		02	9	9	E	RAMY	7944	
30	ADF	1526E	1944D	S07	W35	01	28.0	1	05	0	0	E	RAMY		
31	AFS	0815E	0934	N10	W19	01	29.9		01	9	9	E	LEAR	7943	
31	AFS	1224E	2153D	N10	W50	01	27.7		02	9	9	E	RAMY	7944	
31	AFS	1424E	1451	N10	W50	01	27.8		02	9	9	E	SVTO	7944	
31	AFS	2315E	1040	N11	W56	01	27.7		01	9	9	E	LEAR	7944	

ADF = Active Dark Filament
AFS = Arch Filament System
APR = Active Prominence
ASR = Active Surge Region
BSD = Bright Surge on Disk
BSL = Bright Surge on Limb
CAP = CAP Prominence (Tandberg-Hanssen)
CRN = Coronal Rain
DSD = Dark Surge on Disk
DSF = Disappearing Solar Filament
EPL = Eruptive Prominence on Limb
LPS = Loops
MDP = Mound Prominence
SDF/DSF = Sudden Disappearing Filament
SPY = Spray
SSB = Solar Sector Boundary

For SOLAR SECTOR BOUNDARY REPORTS, the latitude field contains the Carrington longitude of the point where a neutral line crosses the solar equator. The comments field may contain the Carrington longitude and central meridian distance of two more intersection points.

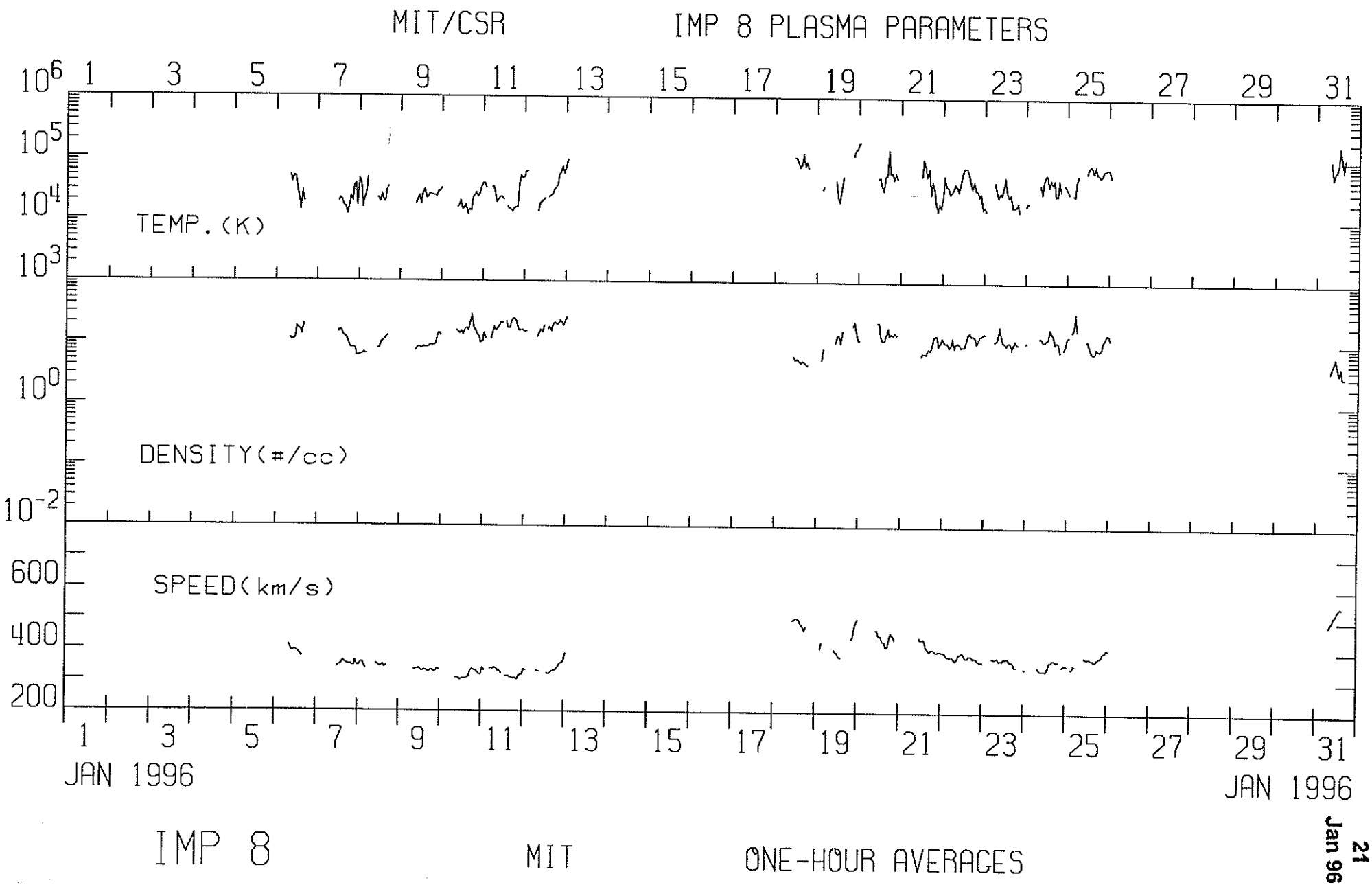
The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

The remark "Bright Emission 1/3" indicates that bright emission was observed 1/3 of time.
The remark "Normal Emission 1/3" indicates that normal emission was observed 1/3 of time.

Observation Type: C= Cinematographic, E= Electronic, P= Photographic, V= Visual.

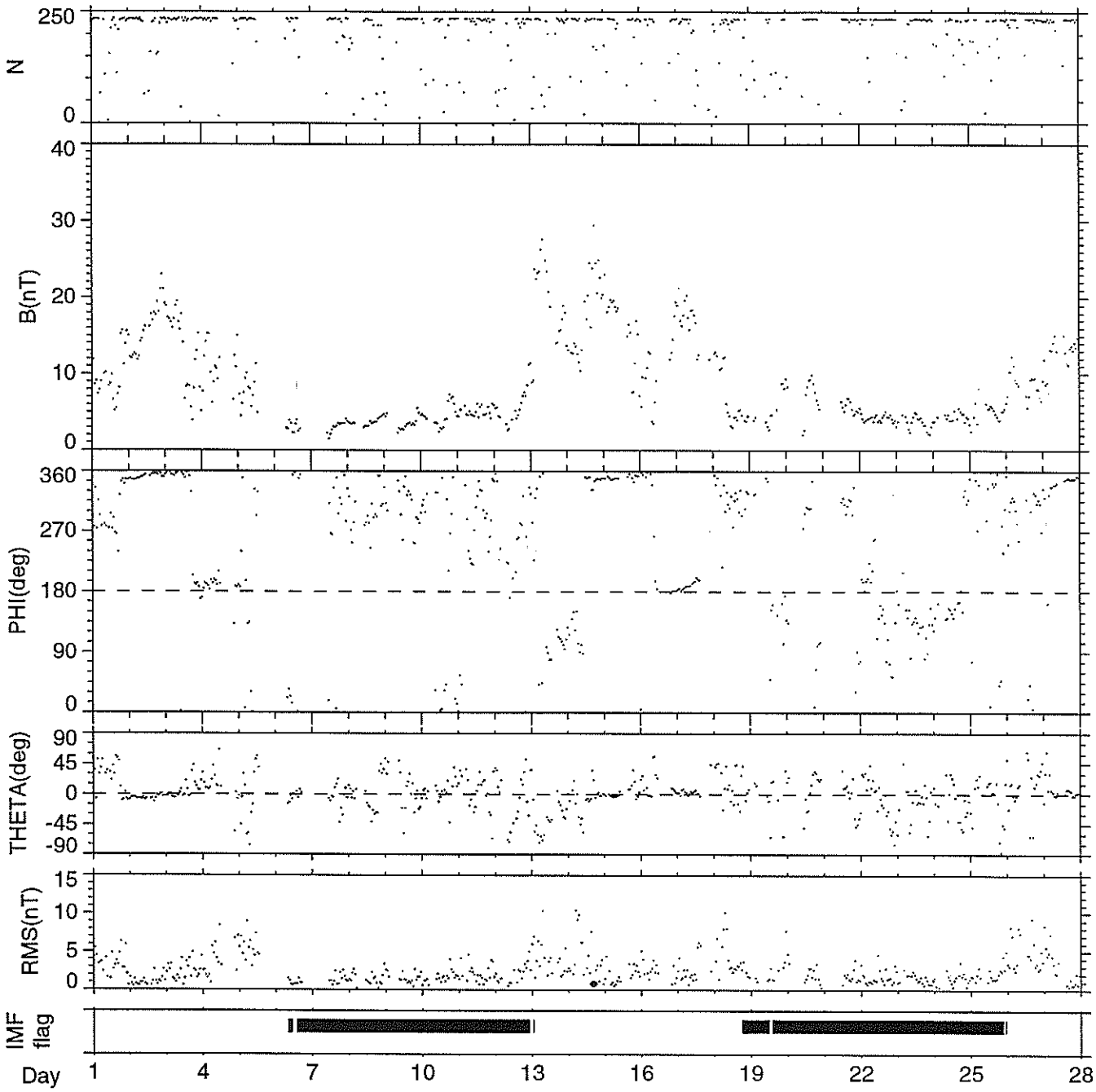
ABST = Abastumani
ATHN = Athens
BUCA = Bucharest
CATA = Catania
HOLL = Holloman
KHAR = Kharkov
LEAR = Learmonth
PALE = Palehua
RAMY = Ramey
SVTO = San Vito
VORO = Voroshilov
VALA = Valasske Mezirici

IMP 8 SOLAR WIND PLASMA
JANUARY 1996



IMP-8 Magnetic Field Data in GSE Coordinates

1 Hour Averages (c) DOY 1 - 28 January 1 1996 - January 28 1996

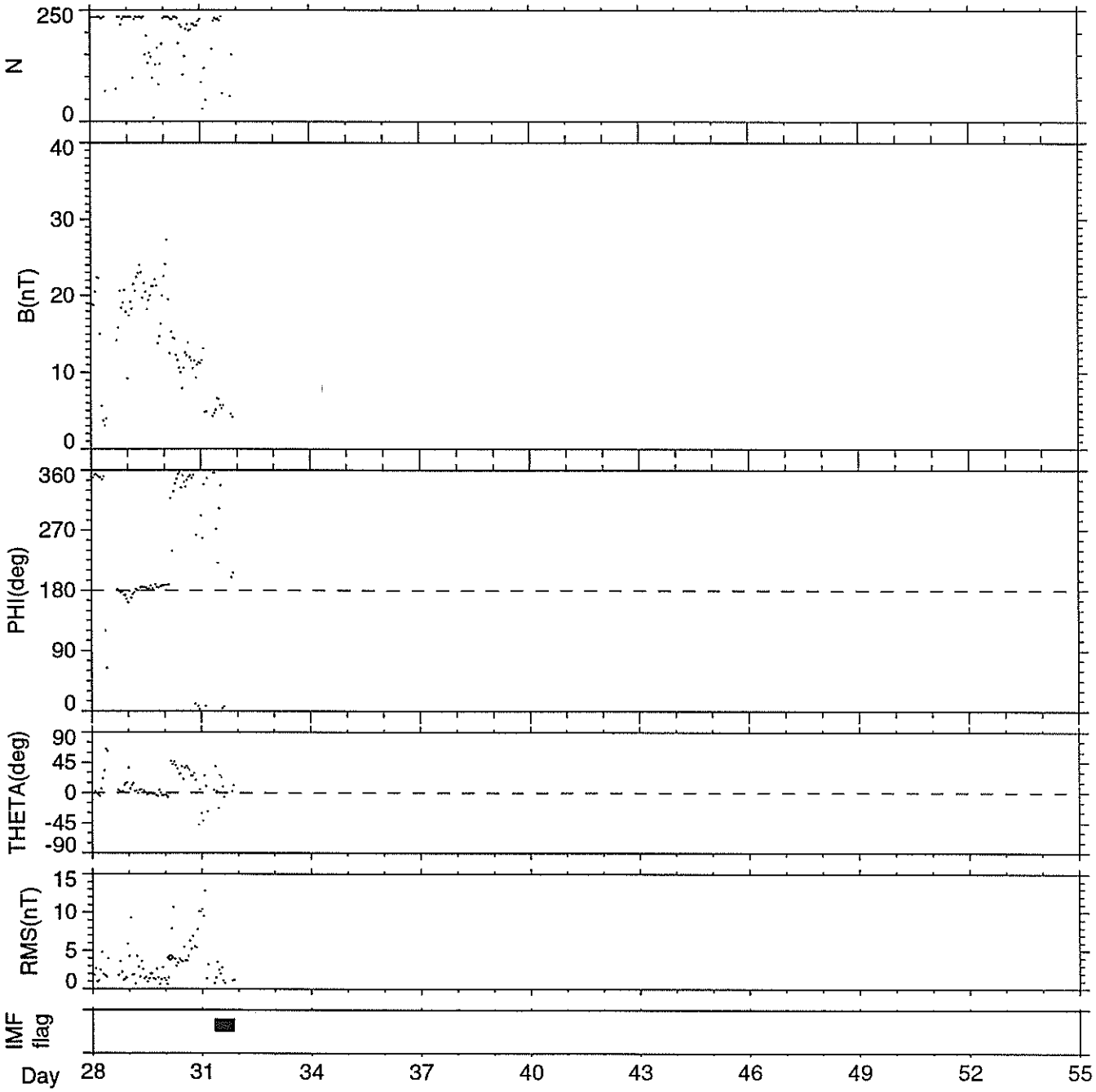


Generation Date : Wed Jun 5 14:41:12 1996

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 28 - 31 January 28 1996 - January 31 1996



Generation Date : Wed Jun 5 14:43:34 1996

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.

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Comprehensive Reports Number 623 Part II

MISCELLANEOUS DATA

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Preliminary Listing

PARTICLE EVENT			ASSOCIATED FLARE AND ACTIVE REGION			
Start (Day/UT)	Maximum	Proton Flux (pfu @ >10 MeV)	Maximum (Day/UT)	Importance (X ray/Opt)	Location	Region # (SESC)
			1976			
Apr 30/2120	May 01/1700	12	Apr 30/2114	X2/2B	S09W47	700
			1977			
Sep 19/1430	Sep 19/2130	200	Sep 19/1054	X2/3B	N08W58	889
Nov 22/1400	Nov 22/1800	160	Nov 22/1006	X1/2N	N24W38	939
			1978			
Feb 13/0930	Feb 14/1000	850	Feb 13/0255	M7/0B	N22W13	1001
Apr 11/1530	Apr 11/1630	65	Apr 11/1353	X2/2B	N19W54	1057
Apr 29/0445	Apr 30/2000	1,000	Apr 28/1306	X5/4B	N22E41	1092
May 07/0420	May 07/0420	100	May 07/0330	X2/2B	N22W64	1095
Jun 02/0730	Jun 02/0935	19	May 31/1009	M5/2B	N23W50	1129
Jun 24/0900	Jun 25/0230	25	Jun 22/1709	M2/3B	N19E18	1164
Jul 13/0300	Jul 13/1000	20				
Sep 23/1035	Sep 24/0400	2,200	Sep 23/1023	X1/3B	N35W50	1294
Nov 10/2130	Nov 10/2140	38	Nov 10/0042	M1/2N	N17E02	1385
			1979			
Feb 17/2020	Feb 17/2205	31	Feb 16/0200	X2/2B	N15E48	1574
Apr 03/1600	Apr 03/2310	45				
Jun 06/1850	Jun 07/0005	950	Jun 05/0529	X2/1N	N20E16	1781
Jul 07/0015	Jul 07/1010	50				
Aug 19/0850	Aug 21/0740	500	Aug 18/1416	X6/1B	N10E90	1943
Sep 15/1500	Sep 16/1200	60	Sep 14/0802	X2/	N10E90	1994
Nov 16/0430	Nov 16/1300	75	Nov 15/1639	M1/0B	N34W25	2110
			1980			
Feb 06/1340	Feb 06/1850	12				
Jul 17/2300	Jul 19/1930	100	Jul 17/0603	M3/1B	S12E06	2562
			1981			
Mar 30/0900	Mar 30/2115	30	Mar 30/0049	M3/2N	N13W74	2993
Apr 10/1745	Apr 11/1400	50	Apr 10/1655	X2/3B	N09W40	3025
Apr 24/1515	Apr 24/2330	160	Apr 24/1400	X5/2B	N18W50	3049
May 09/1200	May 10/2130	150	May 08/2252	M7/2B	N09E37	3099
May 15/0300	May 16/1950	130	May 13/0425	X1/3B	N11E58	3106
Jul 20/1430	Jul 20/1825	100	Jul 20/1329	M5/1B	S26W75	3204
Jul 25/0600	Jul 25/1320	18				
Aug 10/0115	Aug/10 0435	57	Aug 07/1916	M4/2B	S10E24	3257
Oct 08/1235	Oct 13/2247	2,000	Oct 07/2308	X3/1B	S19E88	3390
Dec 10/0545	Dec 11/0900	65	Dec 09/1854	M5/3B	N12W16	3496
			1982			
Jan 31/0055	Jan 31/1630	830	Jan 30/2358	X1/3B	S13E19	3576
Jun 06/0245	Jun 06/0245	10	Jun 03/1146	X8/2B	S09E72	3763
Jun 09/0040	Jun 09/0510	30	Jun 06/1637	X12/3B	S11E26	3763
Jul 11/0700	Jul 13/1615	2,900	Jul 09/0742	X9/3B	N17E73	3804

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PARTICLE EVENT			ASSOCIATED FLARE AND ACTIVE REGION			
Start (Day/UT)	Maximum	Proton Flux (pfu @ >10 MeV)	Maximum (Day/UT)	Importance (X ray/Opt)	Location	Region # (SESC)
Jul 22/2030	Jul 23/0220	240	Jul 22/1734	M4/0F	N29W86	3804
Sep 05/2205	Sep 06/0100	66	Sep 04/0400	M4/3N	N11E30	3886
Nov 22/1940	Nov 22/2140	40	Nov 22/1828	M7/1N	S11W43	3994
Nov 26/0605	Nov 26/1500	25	Nov 26/0253	X4/2B	S11W87	3994
Dec 08/0010	Dec 08/1000	1,000	Dec 07/2354	X2/0B	S14W81	4007
Dec 17/1845	Dec 18/0945	130	Dec 15/0202	X12/2B	S10E24	4026
Dec 19/1920	Dec 20/0515	85	Dec 19/1624	M9/2B	N10W75	4022
Dec 27/0600	Dec 27/1345	190	Dec 25/0752	X2/1B	S14E31	4033
			1983			
Feb 03/1200	Feb 04/1620	340	Feb 03/0619	X4/3B	S19W08	4077
Jun 15/0435	Jun 15/1800	18	Jun 14		S09W90	4201
			1984			
Feb 16/0915	Feb 16/1005	660	Feb 16		S12W90	4408
Feb 19/1310	Feb 21/1415	55	Feb 17/2301	X2/2B	N16E82	4421
Mar 13/1440	Mar 13/1450	10				
Mar 14/0405	Mar 14/0505	100	Mar 14/0334	M2/2B	S12W42	4433
Apr 25/1330	Apr 26/1420	2,500	Apr 25/0005	X13/3B	S12E43	4474
May 24/1045	May 24/1140	31	May 22/1503	M6/2B	S09E24	4492
May 31/1315	May 31/1415	15	May 31/1142	M1	S09W90	4492
			1985			
Jan 22/0415	Jan 22/0550	14	Jan 21/2350	X4/2B	S08W38	4617
Apr 25/1430	Apr 26/0600	160	Apr 24/0935	X1/3B	N06E27	4647
Jul 09/0235	Jul 09/0325	140	Jul 09/0204	M2/1B	S16W36	4671
			1986			
Feb 06/0925	Feb 07/1730	130	Feb 06/0625	X1/3B	S04W06	4711
Feb 14/1155	Feb 15/0400	130	Feb 14/0929	M6/1B	N01W76	4713
Mar 06/1835	Mar 06/1930	21	Mar 06/1703	C4/1F	N02E01	4717
May 04/1255	May 04/1320	16	May 04/1007	M1	N06W90	4717
			1987			
Nov 08/0200	Nov 08/0940	120	Nov 07/2014	M1	N31W90	4875
			1988			
Jan 02/2325	Jan 03/0835	92	Jan 02/2145	X1/3B	S34W18	4912
Mar 25/2225	Mar 25/2330	58	Mar 25/2145	EPL	N22W90	4965
Jun 30/1055	Jun 30/1140	21	Jun 30/0906	M9/2B	S16E22	5060
Aug 26/0000	Aug 26/0045	42	Aug 23/1804	M2/EPL	N24E90	5125
Oct 12/0920	Oct 12/0930	12	Oct 12/0511	X2/2N	S20W66	5175
Nov 08/2225	Nov 09/0635	13	Nov 07/1105	M3/1N	S17W47	5212
Nov 14/0130	Nov 14/0235	13	Nov 13/2309	M3/1N	S23W27	5227
Dec 17/0610	Dec 17/0855	18	Dec 15/0505	X1/1N	N27E59	5278
Dec 17/2000	Dec 18/0150	29	Dec 16/0841	X4/1B	N26E37	5278

NOAA SPACE WEATHER OPERATIONS

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Preliminary Listing

PARTICLE EVENT			ASSOCIATED FLARE AND ACTIVE REGION			
Start (Day/UT)	Maximum	Proton Flux (pfu @ >10 MeV)	Maximum (Day/UT)	Importance (X ray/Opt)	Location	Region # (SESC)
		1989				
Jan 04/2305	Jan 05/0130	28	Jan 04/1753	M4/1N	S20W60	5303
Mar 08/1735	Mar 13/0645	3,500	Mar 06/1405	X15/3B	N35E69	5395
Mar 17/1855	Mar 18/0920	2,000	Mar 17/1744	X6/2B	N33W60	5395
Mar 23/2040	Mar 24/0110	53	Mar 23/1948	X1/3B	N18W28	5409
Apr 11/1435	Apr 12/0125	450	Apr 09/0105	X3/4B	N35E29	5441
May 05/0905	May 05/1000	27	May 04/1115	M5/2N	S20W36	5464
May 06/0235	May 06/1045	110	May 05/0737	X2/3B	N30E01	5470
May 23/1135	May 23/1350	68				
May 24/0730	May 24/0905	15	May 22/0037	M5/2B	S21E16	5497
Jun 18/1650	Jun 18/1910	18	Jun 18/1447	C4/0F	N12W31	5534
Jun 30/0655	Jun 30/0710	17	Jun 29/2127	M3/2B	N26W60	5555
Jul 01/0655	Jul 01/0720	17				
Jul 25/0900	Jul 25/1225	54	Jul 25/0844	X2/2N	N25W84	5603
Aug 12/1600	Aug 13/0710	9,200	Aug 12/1427	X2/2B	S16W37	5629
Sep 04/0120	Sep 04/0510	44	Sep 03/1432	X1/1B	S18E16	5669
Sep 12/1935	Sep 13/0825	57	Sep 12/0814	M5/EPL	S18W79	5669
Sep 29/1205	Sep 30/0210	4,500	Sep 29/1133	X9/EPL	S26W90	5698
Oct 06/0050	Oct 06/0825	22				
Oct 19/1305	Oct 20/1600	40,000	Oct 19/1258	X13/4B	S27E10	5747
Nov 09/0240	Nov 09/0610	43				
Nov 15/0735	Nov 15/0910	71	Nov 15/0659	X3/3B	N11W26	5786
Nov 27/2000	Nov 28/1105	380	Nov 25/2355	X1/2N	N30E05	5800
Nov 30/1345	Dec 01/1340	7,300	Nov 30/1229	X2/3B	N26W59	5800
		1990				
Mar 19/0705	Mar 19/2315	950	Mar 19/0508	X1/2B	N31W43	5969
Mar 29/0915	Mar 29/1005	16	Mar 28/0751	M4/2N	S04W37	5988
Apr 07/2240	Apr 08/1330	18	Apr 04/1338	M7/0N	N22E72	6007
Apr 11/2120	Apr 11/2130	13				
Apr 17/0500	Apr 17/0655	12	Apr 15/0302	X1/2B	N32E39	6022
Apr 28/1005	Apr 28/1735	150				
May 21/2355	May 22/0750	410	May 21/2219	X5/2B	N35W36	6063
May 24/2125	May 25/0115	180	May 24/2051	X9/1B	N33W78	6063
May 28/0715	May 29/0100	45				
Jun 12/1140	Jun 12/1700	79	Jun 12/0541	M6/2B	N10W33	6089
Jul 26/1720	Jul 26/2315	21				
Aug 01/000	Aug 01/2015	230	Jul 30/0736	M4/2B	N20E45	6180
		1991				
Jan 31/1130	Jan 31/1620	240	Jan 31/0230	X1/2B	S17W35	6469
Feb 25/1210	Feb 25/1305	13	Feb 25/0819	X1/2N	S16W80	6497
Mar 23/0820	Mar 24/0350	43,000	Mar 22/2247	X9/3B	S26E28	6555
Mar 29/2120	Mar 30/0330	20				
Apr 03/0815	Apr 04/1000	52	Apr 02/2327	M6/3B	N14W00	6562
May 13/0300	May 13/0910	350	May 13/0144	M8	S09W90	6615
May 31/1225	Jun 01/0445	22				
Jun 04/0820	Jun 11/1420	3,000	Jun 04/0352	X12/3B	N30E70	6659
Jun 14/2340	Jun 15/1950	1,400	Jun 15/0821	X12/3B	N33W69	6659

NOAA SPACE WEATHER OPERATIONS

Solar Proton Events Affecting the Earth Environment

Preliminary Listing

PARTICLE EVENT			ASSOCIATED FLARE AND ACTIVE REGION			
Start (Day/UT)	Maximum	Proton Flux (pfu @ >10 MeV)	Maximum (Day/UT)	Importance (X ray/Opt)	Location	Region # (SESC)
Jun 30/0755	Jul 02/1010	110	Jun 28/0626	M6	N30E85	6703
Jul 07/0455	Jul 08/1645	2,300	Jul 07/0223	X1/2B	N26E03	6703
Jul 11/0240	Jul 11/0450	30	Jul 10/1228	M3/2N	S22E34	6718
Jul 11/2255	Jul 12/0205	14				
Aug 26/1740	Aug 27/1830	240	Aug 25/0115	X2/2B	N25E64	6805
Oct 01/1740	Oct 01/1810	12	Sep 29/1533	M7/4B	S21E32	6853
Oct 28/1300	Oct 28/1440	40	Oct 27/0548	X6/3B	S13E15	6891
Oct 30/0745	Oct 30/0810	94	Oct 30/0634	X2/3B	S08W25	6891
			1992			
Feb 07/0645	Feb 07/1115	78	Feb 06/1048	M4/2B	S13W10	7042
Mar 16/0840	Mar 16/0840	10	Mar 15/0154	M7/3B	S14E29	7100
May 09/1005	May 09/2100	4,600	May 08/1546	M7/4B	S26E08	7154
Jun 25/2045	Jun 26/0610	390	Jun 25/2014	X3/2B	N09W67	7205
Aug 06/1145	Aug 06/1210	14	Aug 03/0706	M4/1N	S09E68	7248
Oct 30/1920	Oct 31/0710	2,700	Oct 30/1816	X1/2B	S22W61	7321
			1993			
Mar 04/1505	Mar 04/1735	17	Mar 04/1240	C8/2N	S14W56	7434
Mar 12/2010	Mar 13/0155	44	Mar 12/1815	M7/3B	S00W51	7440
			1994			
Feb 20/0300	Feb 21/0900	10,000	Feb 20/0141	M4/3B	N09W02	7671
Oct 20/0030	Oct 20/0340	35	Oct 19/2127	M3/1F	N12W24	7790
			1995			
Oct 20/0825	Oct 20/1210	63	Oct 20/0607	M1/0F	S09W55	7912

Please Note: Proton fluxes are integral 5-minute averages for energies >10 MeV, given in *Particle Flux Units* (pfu), measured by GOES spacecraft at Geosynchronous orbit: 1 pfu = 1 p/sq. cm-s-sr. SWO defines the *start* of a proton event to be the first of 3 consecutive data points with fluxes greater than or equal to 10 pfu. The *end* of an event is the last time the flux was greater than or equal to 10 pfu. This definition, motivated by SWO customer needs, allows multiple proton flares and/or interplanetary shock proton increases to occur within one SWO proton event. Additional data may be necessary to more completely resolve any individual proton event.

Different detectors, onboard different GOES spacecraft, have taken the data since 1976. These proton data were processed using various algorithms. To date, no attempt has been made to cross-normalize the resulting proton fluxes.

*U.S. Government Printing Office: 1996 - 774-021/21010

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."