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Number 637

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CONTENTS

PART I (PROMPT REPORTS)

PART II (COMPREHENSIVE REPORTS)

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	JAN 97	FEB	MAR	APR	MAY	JUN	JUL	AUG
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	631A 39	632A 37	633A 39	634A 41	635A 42	636A 41	637A 41	
A.2aa	International Provisional Sunspot Numbers	630A 25	631A 23	632A 24	633A 23	634A 25	635A 24	636A 25	637A 24
A.2c	American Sunspot Numbers	630A 25	631A 23	632A 24	633A 23	634A 25	635A 24	636A 25	637A 24
A.3a	Mt. Wilson Magnetograms	631A 39	632A 37	633A 39	634A 41	635A 42	636A 41	637A 41	
A.3b	Sunspot Mag Class and Regions	631A 86	632A 79	633A 86	634A 86	635A 92	636A 89	637A 88	
A.3c	Kitt Peak Magnetograms	631A 39	632A 37	633A 39	634A 41	635A 42	636A 41	637A 41	
A.3d	Mean Solar Magnetic Field (Stanford)	630A 29	631A 29	632A 29	633A 28	634A 32	635A 28	636A 32	637A 32
A.3e	Stanford Magnetograms	631A 39	632A 37	633A 39	634A 41	635A 42	636A 41	637A 41	
A.4	H-alpha Filtergrams	631A 39	632A 37	633A 39	634A 41	635A 42	636A 41	637A 41	
A.5d	Photometric Ca II Faculae (San Fernando)	May 88-Dec 91 in 630B 37; Jan 92-Dec 96 in 631B 22							
A.6c	Stanford Solar Mag Field Synoptic Maps	631A 34	632A 32	633A 34	634A 36	635A 32	636A 36	637A 36	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps	631A 38	632A 36	633A 38	634A 40	635A 40	636A 40	637A 40	
A.6f	Active Prominences and Filaments	635B 17	636B 17	637B 18					
A.6g	Sac Peak Coronal Line Synoptic Maps	631A 36	632A 34	633A 36	634A 38	635A 36	636A 38	637A 38	
A.6h	Photometric White Light (San Fernando)	Aug 95-Jun 96 in 624B 24; Jul-Dec 96 630B 32							
A.7h	Coronal Line Emission (Sac Peak)	631A 39	632A 37	633A 39	634A 41	635A 42	636A 41	637A 41	
A.8aa	2800 MHz- Solar Flux (Penticton)	630A 25	631A 23	632A 24	633A 23	634A 25	635A 24	636A 25	637A 24
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	630A 25	631A 23	632A 24	633A 23	634A 25	635A 24	636A 25	637A 24
A.8g	Adjusted Daily Solar Fluxes (Learmonth)	630A 25	631A 23	632A 24	633A 23	634A 25	635A 24	636A 25	637A 24
A.10g	Nancay Radioheliograph - 164&327 MHz	631A 93	632A 88	633A 97	634A100	635A104	636A 99	637A 97	
A.11g	Solar X-ray GOES (graphs/event table)	635B 9	636B 10	637B 10					
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct 84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11n	Solar YOHKOH Soft X-ray Images	631A 70	632A 65	633A 70	634A 74	635A 73	636A 71	637A 72	
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.12g	Solar Particles (GOES-7)	630A 4	631A 4	632A 4	633A 4	634A 4	635A 4	636A 4	637A 4
A.12h	Interplanetary Particles (SAMPEX)	Jul 95-Dec 96 in 632B 22; Jan-Feb 97 in 633B 28							
A.13e	Solar Plasma (IMP-8)	635B 19	636B 19	637B 21					
A.16c	ERBS, NOAA-9 & -10 Solar Irradiance	ERBS Oct 84-Dec 95 in 620B 50; Jan-Dec 96 in 632B 64							
A.16d	UARS Solar Irradiance	Oct 91-Dec 96 in 634B 28							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan 94 in 611A118							
A.17	IMP-8 Interplanetary Mag Field	635B 20	636B 20	637B 22					
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	630A 28	631A 26	632A 27	633A 26	634A 28	635A 27	636A 28	637A 27
C.1ba	H-alpha Flare Groups	635B 4	636B 4	637B 4					
C.1d	Flare Patrol Obsevations	635B 6	636B 7	637B 6					
C.1h	H-alpha Flare Index (ImpxDur)	Jan 86-Oct 96 in 635B 24							
C.3	Radio Bursts Fixed Frequency	635B 8	636B 9	637B 8					
C.3	Radio Bursts Fixed Frequency Selected	----------	631A 28	----------	633A 28	634A 30	----------	636A 30	637A 30
C.4	Radio Bursts Spectral	631A 89	632A 83	633A 90	634A 92	635A 99	636A 95	637A 93	
C.6	Sudden Ionospheric Disturbances	631A 88	632A 82	633A 89	634A 91	635A 98	636A 94	637A 92	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	631A102	633A114	633A103	634A106	635A113	636A108	637A106	
D.1ba	27-day Chart of Kp Indices	631A104	632A 99	633A105	634A108	635A115	636A110	637A108	
D.1cb	Monthly Mean aa Indices	631A105	632A100	633A106	634A109	635A116	637A109	637A109	
D.1d	Principal Magnetic Storms	631A109	632A103	633A109	634A113	635A120	636A114	637A112	
D.1f	Sudden Commencements/Flare Effects	631A110	632A104	633A110	634A114	635A121	636A115	637A113	
D.1g	Equatorial Indices Dst	633A112	633A113	634A116	634A112	635A119			
D.1i	Polar Cap (PC) Index	631A107	632A102	633A108	634A111	635A118	636A113	637A111	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	631A 94	632A 89	633A 98	634A101	635A105	636A100	637A 98	
F.1h	Cosmic Ray Neutron Cts (Thule)	631A 94	632A 89	633A 98	634A101	635A105	636A100	----------	
F.1i	Cosmic Ray Neutron Cts (Kiel)	631A 94	632A 89	633A 98	634A101	635A105	636A100	637A 98	
F.1n	Cosmic Ray Neutron Cts (Beijing)	631A 94	632A 89	633A 98	634A101	635A105	636A100	637A 98	
F.1m	Cosmic Ray Neutron Cts (Haleakala)	631A 94	632A 89	633A 98	634A101	635A105	636A100	637A 98	
F.1o	Cosmic Ray Neutron Cts (Moscow)	631A 94	632A 89	633A 98	634A101	635A105	636A100	637A 98	
F.1p	Cosmic Ray Neutron Cts (Calgary)	631A 94	632A 89	633A 98	634A101	635A105	636A100	637A 98	
F.1r	Cosmic Ray Neutron Cts (Goose Bay)	631A 94	632A 89	633A 98			636A100	637A 98	
H.	MISCELLANEOUS								
H.60	ISES Alert Periods	630A 20	631A 18	632A 20	633A 19	634A 20	635A 19	636A 20	637A 20

The entry "631A 39" under Jan 97, for example, means that the sunspot drawings for Jan 1997 appear in SOLAR-GEOPHYSICAL DATA No. 631, Part I, and that they begin on page 39. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

CONTENTS

Comprehensive Reports Number 637 Part II

DATA FOR **MARCH 1997**

Hα S O L A R F L A R E S

MARCH 1997

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
		01	0000		0030	No Flare Patrol														
		01	0040		0041	No Flare Patrol														
		01	0208		0553	No Flare Patrol														
		01	1623		2101	No Flare Patrol														
0001	LEAR	06	0047	0048	0055	N02	E78	8020	03	11.8	8	SF	B	8.9	3	E		43		
0002		06	0611	0613	0618	N02	E78	8020	03	12.1	7	SF	B	3.9				56		
	LEAR	06	0611	0613	0617	N03	E77	8020	03	12.0	6	SF	B	3.9	3	E		33		
	SVTO	06	0615E	0615U	0618	N02	E78	8020	03	12.1	3D	SF			2	E		78		
		06	2025		2029	No Flare Patrol														
0003	KANZ	07	1217	1217	1225	N08	E69	8020	03	12.7	8	SF			2	C				
		07	2122		2127	No Flare Patrol														
		08	0635		0642	No Flare Patrol														
0004	KANZ	08	0800	0804	0812	N05	E53	8020	03	12.3	12	SF			2	C				
		12	2236		2243	No Flare Patrol														
		12	2314		2400	No Flare Patrol														
		13	0000		0113	No Flare Patrol														
		13	0248		0306	No Flare Patrol														
		13	0316		0415	No Flare Patrol														
		13	0429		0502	No Flare Patrol														
		13	0520		0530	No Flare Patrol														
		13	2201		2206	No Flare Patrol														
		13	2216		2238	No Flare Patrol														
		13	2243		2329	No Flare Patrol														
		14	0619		0640	No Flare Patrol														
		14	1028		1029	No Flare Patrol														
0005	LEAR	16	0042	0043	0045	S31	W44	8021	03	12.5	3	SF	B	1.8	3	E		15		F
		16	1422		1428	No Flare Patrol														
		16	1433		1448	No Flare Patrol														
		17	1021		1025	No Flare Patrol														
		17	1836		1847	No Flare Patrol														
		17	1947		2006	No Flare Patrol														
		17	2041		2127	No Flare Patrol														
		17	2137		2207	No Flare Patrol														
		17	2213		2223	No Flare Patrol														
		17	2232		2242	No Flare Patrol														
		18	1945		2001	No Flare Patrol														
		18	2007		2109	No Flare Patrol														
		19	1021		1044	No Flare Patrol														
		20	0220		0358	No Flare Patrol														
		20	1017		1047	No Flare Patrol														
		21	0929		0953	No Flare Patrol														
		21	1102		1113	No Flare Patrol														
		23	1732		1736	No Flare Patrol														
		24	1014		1041	No Flare Patrol														
		25	1010		1047	No Flare Patrol														
		25	1123		1137	No Flare Patrol														
		25	1224		1229	No Flare Patrol														
		25	2201		2249	No Flare Patrol														
		27	0201		0303	No Flare Patrol														
0006		27	14102	14162	1421	S24	E80	8026	04	2.8	11	SF	B	8.4				34		FH
	RAMY	27	1410	1416	1422	S24	E81	8026	04	2.8	12	SF	B	8.4	4	E		53		FH
	SVTO	27	1412	1418	1420	S25	E79	8026	04	2.7	8	SF			3	E		16		H
0007	RAMY	27	1926	1927	1931	S24	E80	8026	04	3.0	5	SF	B	5.3	3	E		20		F
0008	RAMY	27	1944	1951	1954	S24	E79	8026	04	2.9	10	SF			3	E		55		
0009	HOLL	27	2157	2158	2205	S25	E79	8026	04	3.0	8	SF	B	4.6	4	E		22		

Hα SOLAR FLARES

MARCH 1997

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
0010	HOLL	28	0022	0023	0026	S25	E75	8026	04	2.8	4	SF	B 1.1	3	E		12		
0011		28	08558	09092	0939	S25	E68	8026	04	2.6	44	SF	B 2.2				35		FH
	SVTO	28	0855	0911	1000	S27	E69	8026	04	2.7	65	SF	B 2.2	3	E		31		FH
	LEAR	28	0903	0909	0918	S23	E67	8026	04	2.5	15	SF		3	E		39		
0012	LEAR	28	0918	0919	0922	S23	E67	8026	04	2.5	4	SF		3	E		20		
0013	LEAR	28	0923	0929	0946	S23	E67	8026	04	2.5	23	SF		3	E		40		
0014	LEAR	28	0948	0948	0957	S23	E66	8026	04	2.5	9	SF		3	E		66		
0015	SVTO	28	1231	1231	1239	S28	E66	8026	04	2.7	8	SF		3	E		11		H
0016	RAMY	28	1420	1426	1440	S24	E67	8026	04	2.8	20	SF		3	E		16		
0017		28	14461	14511	1508	S26	E66	8026	04	2.7	22	SF					14		
	SVTO	28	1446	1451	1502	S28	E66	8026	04	2.8	16	SF		3	E		11		
	RAMY	28	1447	1452	1513	S24	E67	8026	04	2.8	26	SF		3	E		18		
		29	1012		1015	No Flare Patrol													
		29	1023		1032	No Flare Patrol													
0018	HOLL	29	2045	2045	2048	S25	E49	8026	04	2.7	3	SF	B 3.4	3	E		12		
		30	1026		1044	No Flare Patrol													
		30	1110		1114	No Flare Patrol													
		30	2227		2233	No Flare Patrol													
		30	2238		2251	No Flare Patrol													
		31	0517		0523	No Flare Patrol													
		31	0708		0724	No Flare Patrol													
		31	2100		2110	No Flare Patrol													
		31	2234		2306	No Flare Patrol													

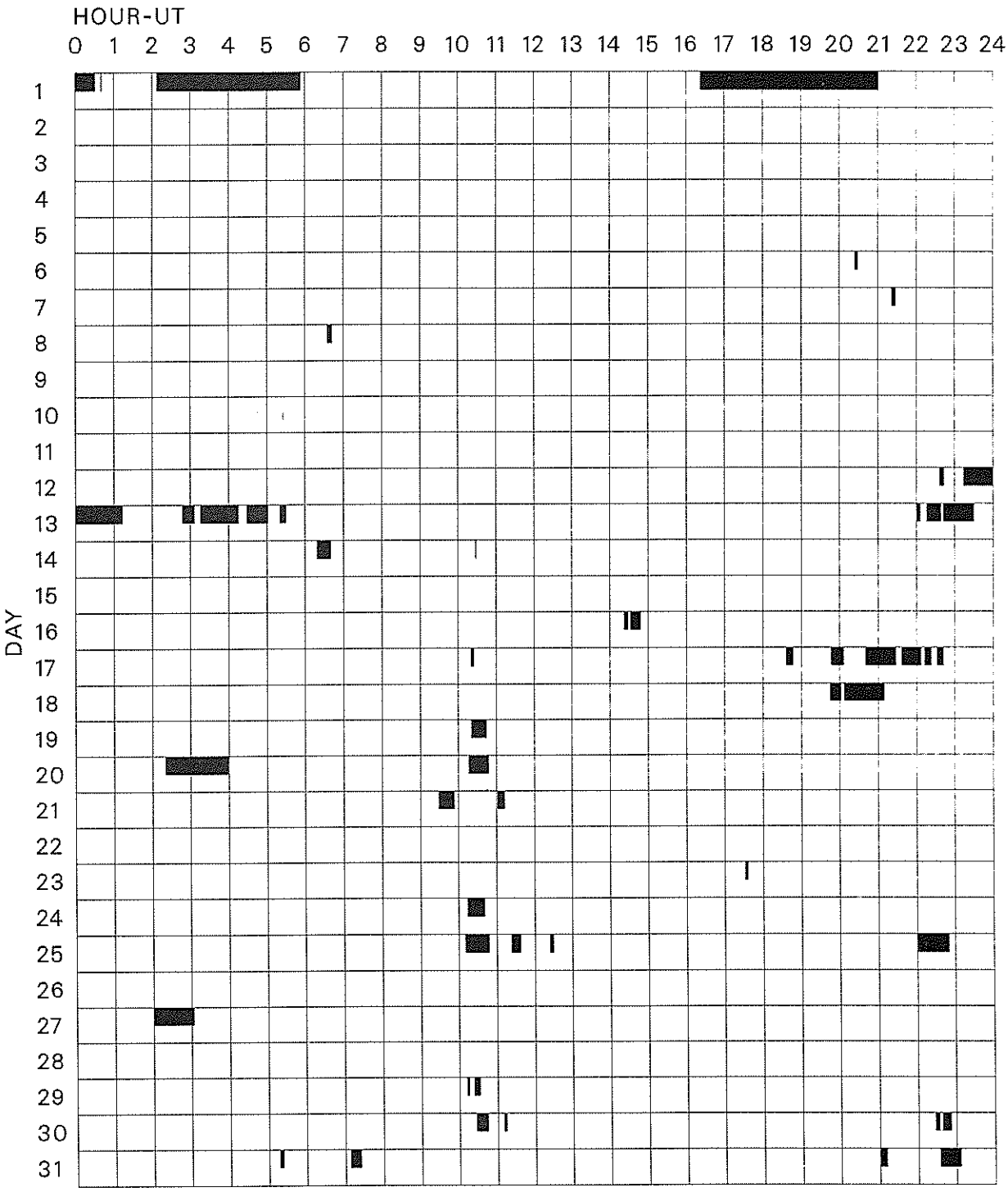
"Remarks"

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

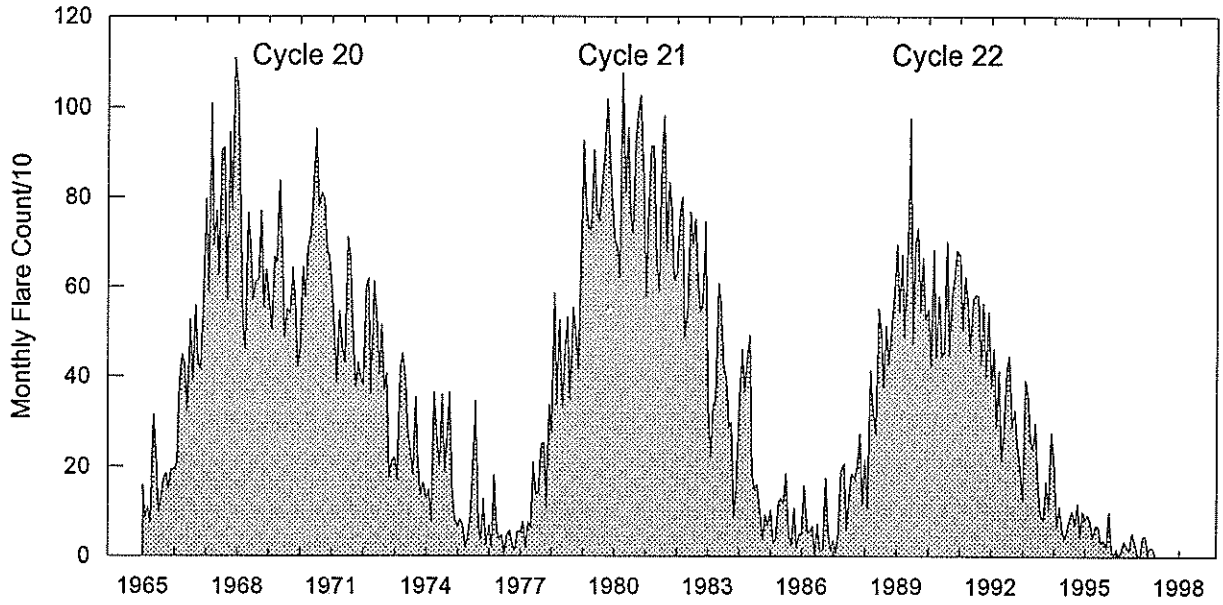
MARCH 1997



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.

Bucharest	Kanzelhoehe	Meudon	Ramey
Holloman	Kharkov	Mitaka	San Vito
Hurbanovo	Learmonth	Palehua	Voroshilov

Monthly Counts of Grouped Solar Flares
Jan 1965 - Mar 1997



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	45	280
1997	8	22	18										48

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

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

MARCH 1997

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	9100	GORK	1	S	0713.3	0714.4	2.9	4.2			
04	204	IZMI	41	F	0728.0	0731.0	7.0	27.0			
05	200	HIRA	42	SER	0550.2	0550.8	0.7	30.0			WL
	500	HIRA	8	S	0551.1	0551.2	0.2	3.0			O
	33	UPIC	42	SER	1136.2	1208.7	32.8				
	204	IZMI	42	SER	1143.0	1156.5	14.0	185.0			
┌	410	SGMR	4	S/F	1151.0	1156.0	7.0	2.0			QL=4 ST=2 TYP=3
├	245	SGMR	8	S	1155.0	1156.0	2.0	8.0			QL=4 ST=3 TYP=3
├	245	SVTO	8	S	1155.0	1156.0	1.0	8.0			QL=4 ST=2 TYP=3
├	127	TORN	47	GB	1155.5	1157.2	7.0	80.0	10.0		
├	410	SGMR	8	S	1156.0	1156.0	1.0	2.0			QL=4 ST=3 TYP=3
└	410	SVTO	8	S	1156.0	1156.0	2.0	2.0			QL=4 ST=2 TYP=3
┌	245	SGMR	8	S	1207.0	1208.0	2.0	6.0			QL=4 ST=3 TYP=3
└	245	SVTO	8	S	1207.0	1208.0	1.0	6.0			QL=4 ST=2 TYP=3
	33	UPIC	42	SER	1233.5	1325.6	55.5				
	33	UPIC	1	S	1407.7	1407.9	0.4				
	33	UPIC	2	S/F	1417.1	1417.2	0.4				
┌	410	SGMR	4	S/F	2054.0	2058.0	5.0	2.0			QL=4 ST=2 TYP=3
├	245	SGMR	4	S/F	2054.0	2058.0	5.0	8.0			QL=4 ST=2 TYP=3
├	245	PALE	8	S	2056.0	2058.0	2.0	8.0			QL=4 ST=3 TYP=3
├	410	PALE	4	S/F	2056.0	2059.0	3.0	11.0			QL=4 ST=3 TYP=3
├	410	SGMR	4	S/F	2056.0	2058.0	3.0	2.0			QL=4 ST=3 TYP=3
├	245	SGMR	4	S/F	2056.0	2058.0	3.0	8.0			QL=4 ST=3 TYP=3
├	610	SGMR	4	S/F	2056.0	2058.0	3.0	1.0			QL=4 ST=3 TYP=3
└	410	PALE	8	S	2058.0	2059.0	1.0	10.0			QL=4 ST=2 TYP=3
06	200	HIRA	46	C	0027.5	0028.7	2.5	78.0	4.0		O
├	245	LEAR	8	S	0028.0	0029.0	1.0	7.0			QL=4 ST=2 TYP=3
├	410	LEAR	8	S	0028.0	0029.0	1.0	3.0			QL=4 ST=2 TYP=3
├	245	PALE	8	S	0028.0	0029.0	1.0	7.0			QL=4 ST=2 TYP=3
└	500	HIRA	42	SER	0028.2	0029.0	2.7	24.0			O
┌	245	LEAR	8	S	0048.0	0049.0	1.0	12.0			QL=4 ST=2 TYP=3
└	245	PALE	8	S	0048.0	0049.0	1.0	13.0			QL=4 ST=2 TYP=3
	500	HIRA	42	SER	0321.8	0322.5	2.6	3.0			O
┌	500	HIRA	42	SER	0345.1	0346.1	2.5	3.0			O
└	200	HIRA	8	S	0345.7	0346.0	0.5	30.0			O
	245	SVTO	8	S	0535.0	0535.0	1.0	14.0			QL=2 ST=2 TYP=3
┌	245	SVTO	8	S	0809.0	0809.0	1.0	8.0			QL=4 ST=2 TYP=3
└	410	SVTO	8	S	0809.0	0809.0	1.0	9.0			QL=4 ST=2 TYP=3
	33	UPIC	2	S/F	0813.0	0813.1	0.3				
	33	UPIC	46	C	1042.6	1044.2	2.0				
	33	UPIC	2	S/F	1156.5	1156.8	0.6				
	33	UPIC	2	S/F	1410.0	1410.2	0.5				
07	500	HIRA	42	SER	0323.2	0323.8	2.0	5.0			WR
	204	IZMI	4	S/F	0704.0	0705.2	2.5	17.0			
09	245	PALE	43	NS	0230.0	0230.0	U	53.0			QL=4 ST=2 TYP=1
┌	127	TORN	43	NS	0643.0		240.0D		4.0		V=1
└	204	IZMI	43	NS	0700.0		120.0		10.0		
	245	PALE	8	S	0338.0	0338.0	2.0	66.0			QL=4 ST=2 TYP=3
	500	HIRA	27	RF	0445.0	0554.3	92.0	11.0	3.0		WR
	33	UPIC	45	C	0953.2	0954.0	1.3				
	33	UPIC	2	S/F	1000.4	1000.5	0.5				
	33	UPIC	1	S	1217.8	1217.9	0.4				
	33	UPIC	2	S/F	1221.1	1221.2	0.5				
	33	UPIC	45	C	1304.5	1304.6	1.0				
10	245	SGMR	8	S	2204.0	2205.0	1.0	130.0			QL=4 ST=2 TYP=3
12	33	UPIC	46	C	0930.7	0931.6	1.8				
15	33	UPIC	3	S	1204.5	1204.6	0.5				
20	9100	GORK	1	S	0708.6	0708.8	0.4	7.6			
21	9100	GORK	1	S	0827.7	0827.9	0.6	6.7			

SOLAR RADIO EMISSION
Outstanding Occurrences

MARCH 1997

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
23	9100	GORK	1	S	0938.2	0938.4	0.3	10.7			
26	33	UPIC	4	S/F	1251.0	1251.3	0.6				
29	200	HIRA	8	S	2124.7	2124.8	0.2	29.0			O
	500	HIRA	8	S	2124.9	2125.0	0.2	4.0			O
30	204	IZMI	41	F	0724.0	0725.0	1.2	250.0			
	204	IZMI	41	F	0843.0	0843.5	0.6	70.0			
	245	LEAR	8	S	0949.0	0949.0	1.0	290.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0949.0	0949.0	U	25.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0949.0	0949.0	1.0	340.0			QL=4 ST=2 TYP=3
	33	UPIC	8	S	0949.5	0949.8	0.5				
	204	IZMI	8	S	1045.4	1045.5	1.5	4000.0			
	127	TORN	7	C	1207.0U	1208.0U	1.4U	70.0	30.0		
	410	SGMR	8	S	1607.0	1607.0	U	40.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1607.0	1607.0	U	75.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1607.0	1607.0	U	43.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1607.0	1607.0	U	75.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	1904.0	1905.0	1.0	150.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1904.0	1904.0	1.0	100.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2239.0	2239.0	U	140.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	2254.0	2255.0	1.0	380.0			QL=4 ST=3 TYP=3
	245	PALE	8	S	2254.0	2255.0	1.0	410.0			QL=4 ST=2 TYP=3
31	204	IZMI	43	NS	0600.0		360.0D		10.0		
	500	HIRA	46	C	0324.7	0325.6	1.3	57.0	5.0		O
	500	HIRA	46	C	0535.0	0536.2	1.7	18.0	2.0		WL
	500	HIRA	8	S	0607.6	0607.8	0.7	13.0			WL
	204	IZMI	41	F	0854.0	0905.0	12.0	120.0			
	204	IZMI	41	F	1021.0	1023.0	5.0	500.0			
	410	SVTO	8	S	1021.0	1022.0	1.0	17.0			QL=2 ST=3 TYP=3
	245	SVTO	8	S	1021.0	1022.0U	1.0	87.0			QL=2 ST=3 TYP=3
	33	UPIC	45	C	1021.2	1022.9	2.0				
	245	PALE	8	S	1843.0	1843.0	U	56.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1843.0	1843.0	U	32.0			QL=2 ST=3 TYP=3
	245	PALE	8	S	1955.0	1957.0	2.0	42.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	1956.0	1957.0	1.0	16.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2007.0	2007.0	U	71.0			QL=4 ST=2 TYP=3
	200	HIRA	42	SER	2123.3	2123.5	1.3	37.0			WL
	245	PALE	8	S	2124.0	2124.0	2.0	38.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	2124.0	2124.0	2.0	18.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2124.0	2124.0	2.0	19.0			QL=4 ST=2 TYP=3
	500	HIRA	42	SER	2124.6	2124.8	1.5	63.0			WL

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

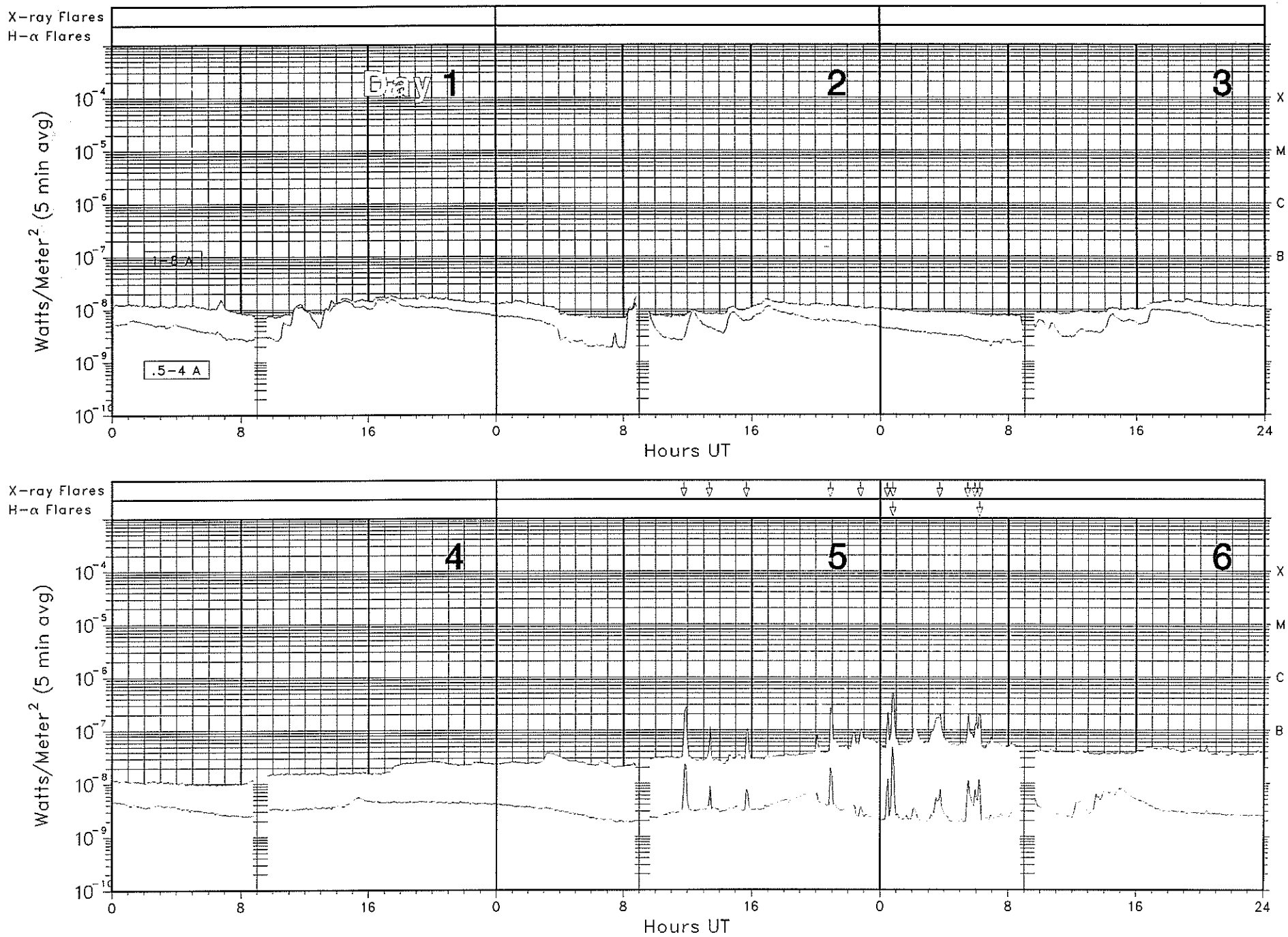
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

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 X-RAY DETECTOR

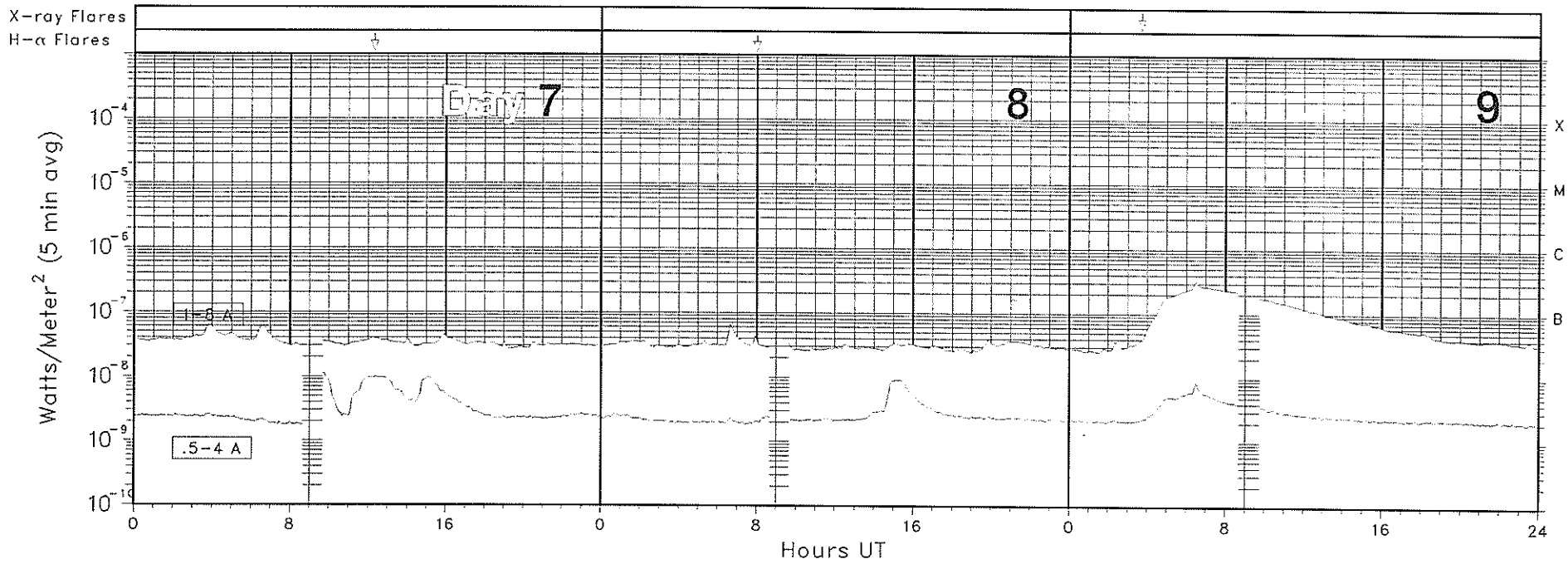
March 1997

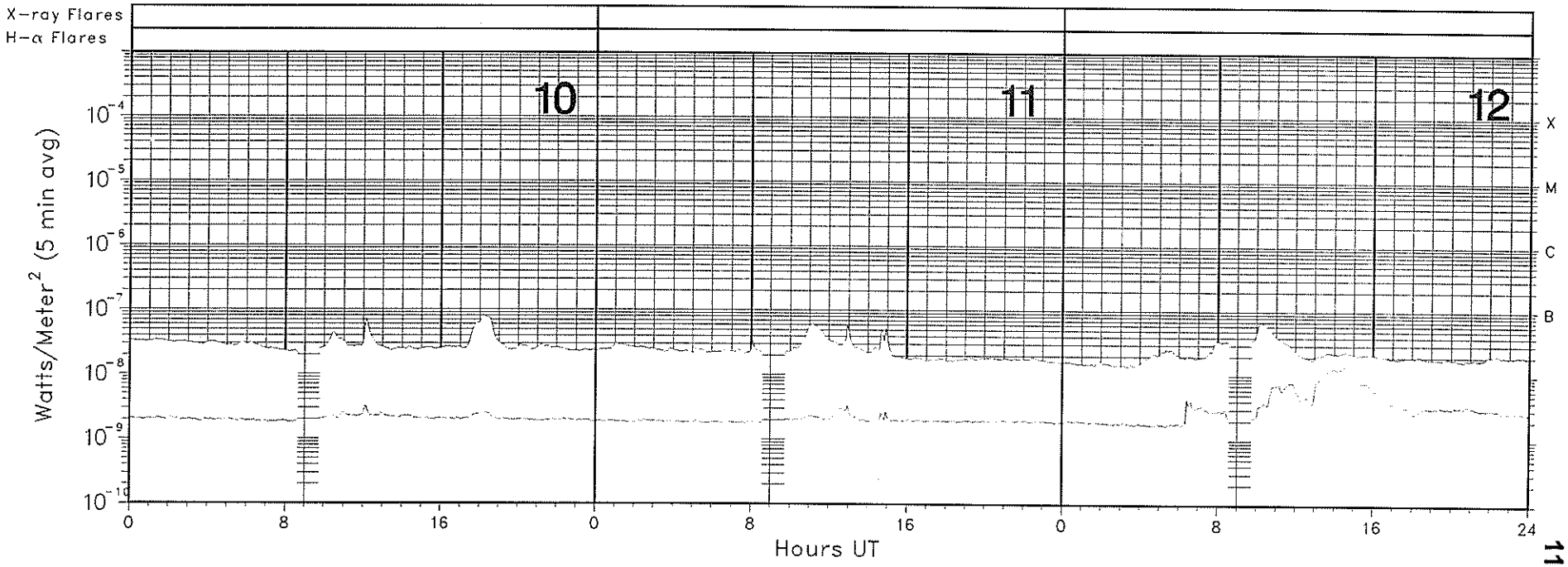
10 Mar 97



GOES X-RAY DETECTOR

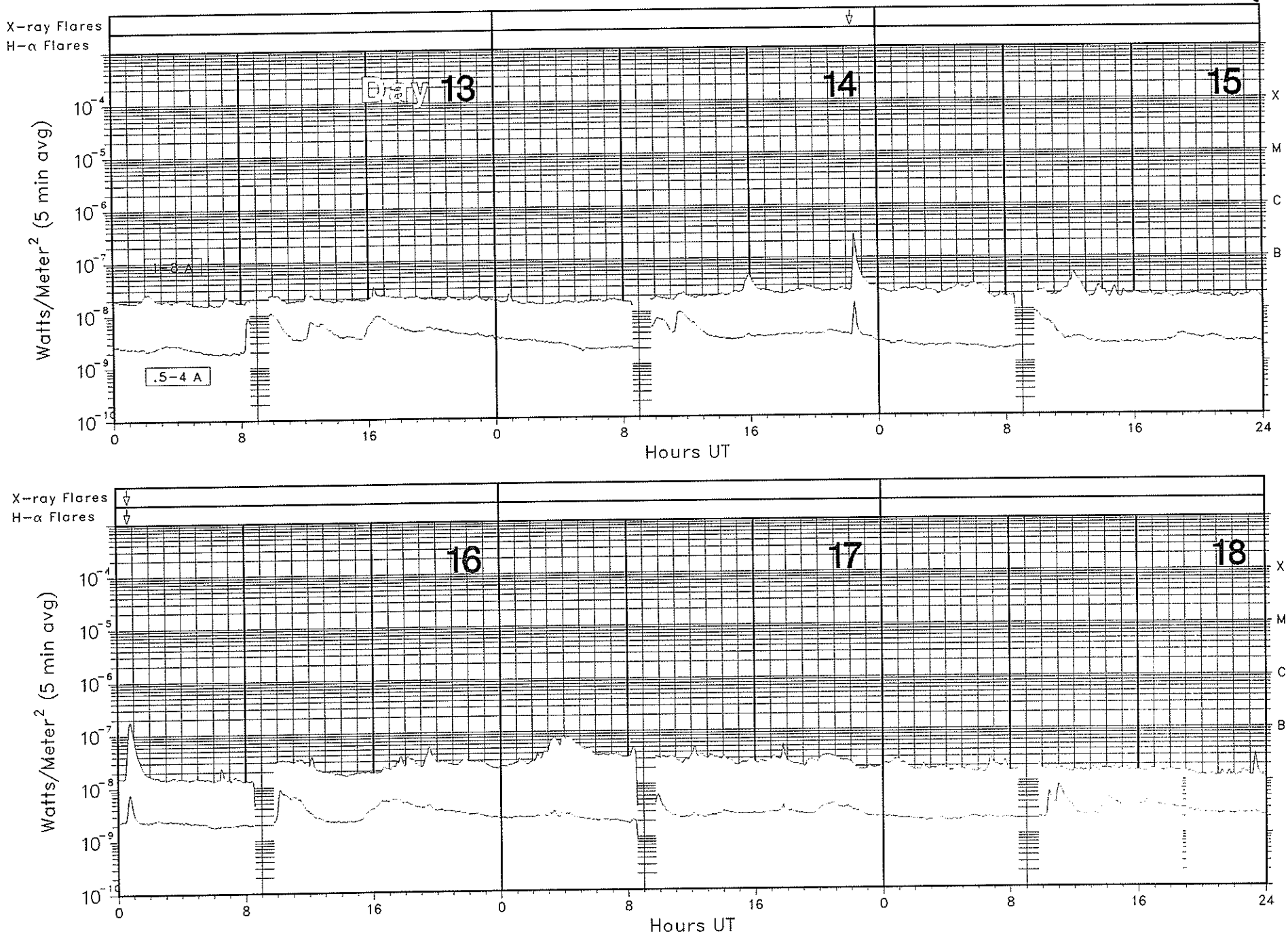
March 1997





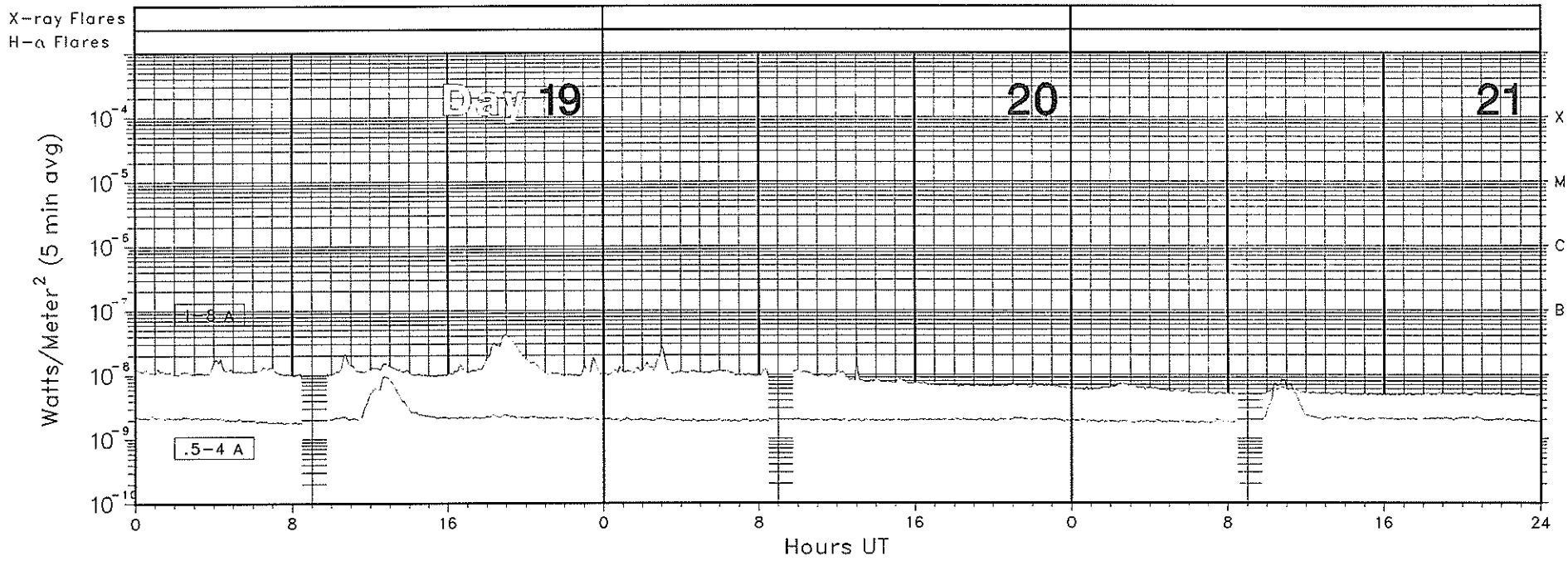
GOES X-RAY DETECTOR

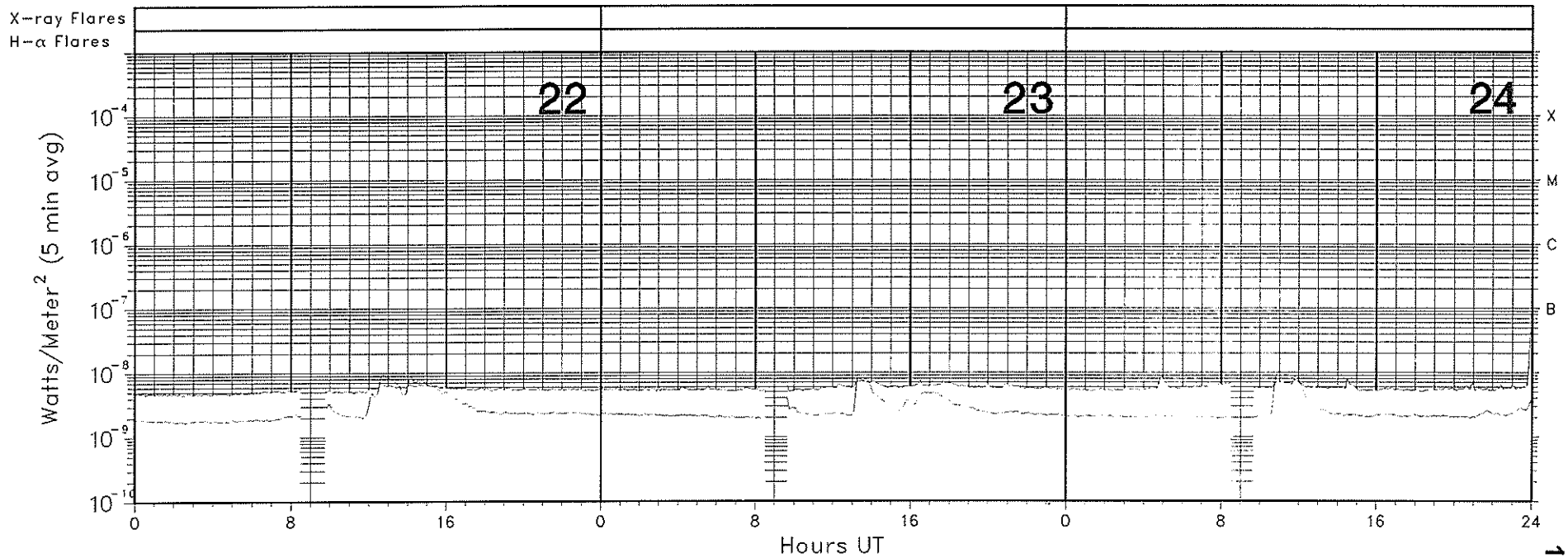
March 1997



GOES X-RAY DETECTOR

March 1997

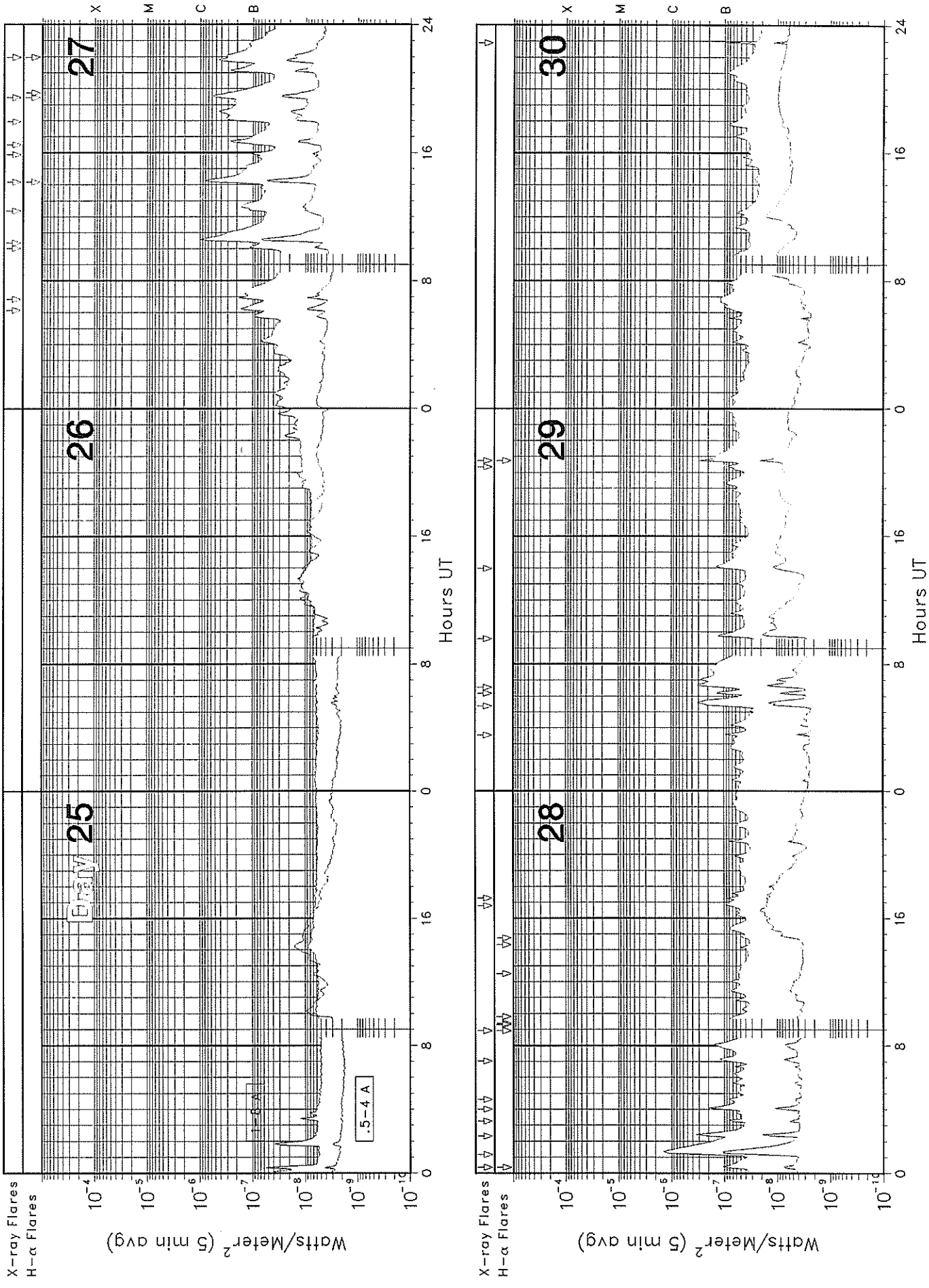




14
Mar 97

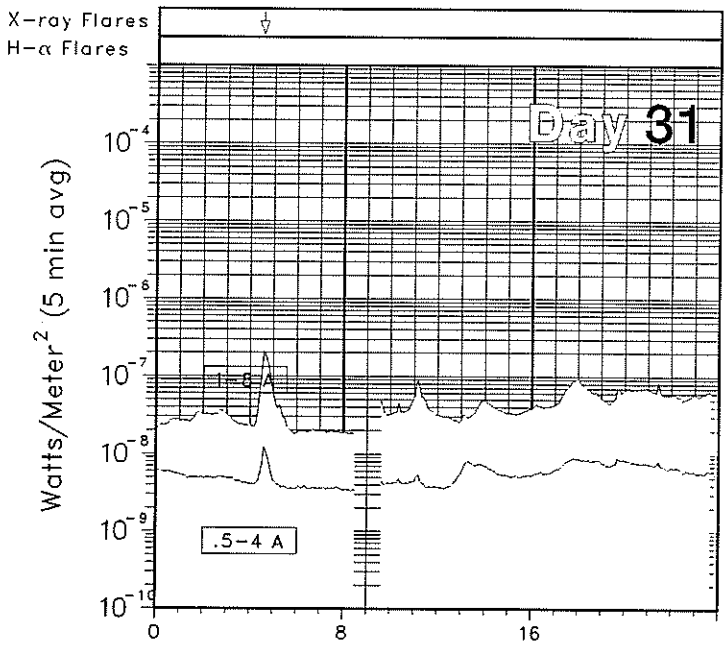
GOES X-RAY DETECTOR

March 1997



GOES X-RAY DETECTOR

March 1997



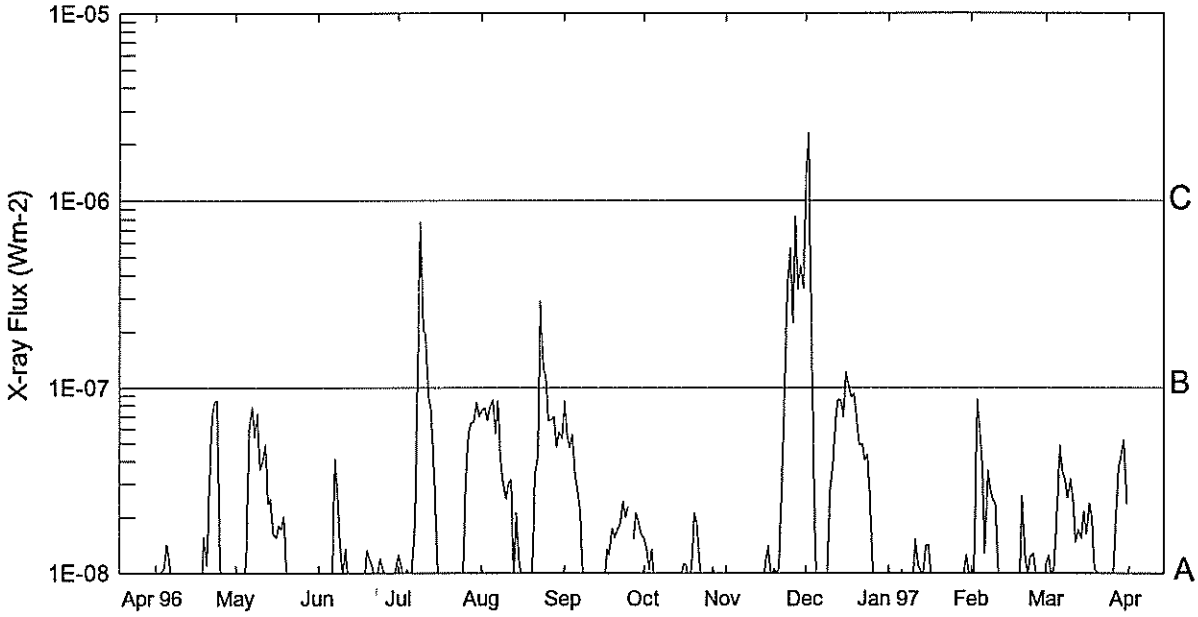
GOES S O L A R X-RAY F L A R E S
Preliminary Listing

March 1997

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
05	1146	1157	1159				B3.5	
05	1322	1326	1328				B1.8	
05	1539	1545	1548				B1.3	
05	2054	2059	2102				B4.3	
05	2246	2250	2257				B1.1	
06	0026	0030	0032				B3.4	
06	0047	0048	0055	N02	E78	SF	B8.9	8020
06	0342	0346	0348				B2.2	
06	0526	0530	0532				B3.2	
06	0554	0559	0604				B1.6	
06	0611	0613	0617	N03	E77	SF	B3.9	8020
09	0340	0633	0945				B3.2	
14	2226	2231	2236				B3.1	
16	0042	0043	0045	S31	W44	SF	B1.8	8021
27	0608	0616	0627				B1.7	
27	0650	0656	0704				B1.9	
27	1001	1005	1015				B1.1	
27	1022	1035	1041				C1.0	
27	1223	1238	1253				B1.8	
27	1410	1416	1422	S24	E81	SF	B8.4	8026
27	1553	1600	1602				B1.1	
27	1630	1645	1649				B3.4	
27	1756	1836	1850				B4.5	
27	1926	1927	1931	S24	E80	SF	B5.3	8026
27	2157	2158	2205	S25	E79	SF	B4.6	8026
28	0022	0023	0026	S25	E75	SF	B1.1	8026
28	0109	0120	0135				C1.5	
28	0218	0225	0230				B3.5	
28	0315	0319	0322				B1.2	
28	0400	0405	0410				B2.3	
28	0437	0440	0442				B1.1	
28	0702	0705	0707				B1.1	
28	0855	0911	1000	S27	E69	SF	B2.2	8026
28	1648	1651	1655				B1.0	
28	1716	1719	1721				B1.0	
29	0334	0337	0340				B1.0	
29	0522	0535	0548				B3.3	
29	0610	0613	0616				B2.4	
29	0634	0645	0654				B3.0	
29	0934	0948	0955				B1.5	
29	1358	1406	1418				B1.4	
29	2021	2024	2027				B1.0	
29	2045	2045	2048	S25	E49	SF	B3.4	8026
30	2253	2256	2258				B1.8	
31	0431	0437	0447				B2.1	

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
Apr 96 - Mar 97



Day	Apr 96	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar
1	<A1.0	<A1.0	<A1.0	A1.2	A7.4	A8.5	A1.5	<A1.0	C1.3	<A1.0	<A1.0	A1.1
2	<A1.0	<A1.0	<A1.0	A1.1	A7.7	A5.5	A1.3	<A1.0	C2.3	<A1.0	<A1.0	A1.2
3	A1.0	<A1.0	<A1.0	<A1.0	A6.6	A4.7	A1.0	<A1.0	B2.4	<A1.0	A8.7	<A1.0
4	A1.0	<A1.0	<A1.0	A1.0	A7.8	A5.5	A1.3	<A1.0	A3.7	<A1.0	A5.9	A1.0
5	A1.4	A1.3	<A1.0	<A1.0	A8.5	A3.2	<A1.0	<A1.0	<A1.0	<A1.0	A3.8	A2.3
6	A1.1	A5.9	A1.0	A1.0	A5.6	A2.7	<A1.0	<A1.0	<A1.0	A1.0	A1.2	A4.9
7	<A1.0	A7.8	A4.1	A1.8	A8.4	A2.1	<A1.0	<A1.0	<A1.0	<A1.0	A3.5	A3.4
8	<A1.0	A5.3	A2.6	B1.2	A4.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A2.7	A3.2
9	<A1.0	A7.2	A1.4	B7.7	A3.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A2.4	A2.5
10	<A1.0	A3.6	<A1.0	B2.0	A2.4	<A1.0	<A1.0	<A1.0	A2.7	<A1.0	A2.3	A3.2
11	<A1.0	A4.0	A1.3	B1.9	A3.0	<A1.0	<A1.0	<A1.0	A3.6	A1.5	A1.1	A2.4
12	<A1.0	A4.9	<A1.0	A9.0	A3.1	<A1.0	<A1.0	<A1.0	A6.7	A1.0	<A1.0	A1.4
13	<A1.0	A2.3	<A1.0	A7.4	<A1.0	<A1.0	<A1.0	<A1.0	A8.5	A1.0	<A1.0	A1.7
14	<A1.0	A2.4	<A1.0	A3.9	A2.1	<A1.0	<A1.0	<A1.0	A8.5	<A1.0	<A1.0	A1.5
15	<A1.0	A1.6	<A1.0	A1.5	A1.1	<A1.0	<A1.0	<A1.0	A6.8	A1.4	<A1.0	A2.1
16	<A1.0	A1.5	<A1.0	<A1.0	<A1.0	<A1.0	A1.1	A1.1	B1.2	A1.4	<A1.0	A1.6
17	<A1.0	A1.8	<A1.0	<A1.0	<A1.0	A1.3	A1.1	A1.3	B1.0	<A1.0	<A1.0	A2.3
18	<A1.0	A1.7	<A1.0	<A1.0	<A1.0	A1.2	<A1.0	<A1.0	A8.9	<A1.0	<A1.0	A1.9
19	A1.5	A2.0	A1.3	<A1.0	<A1.0	A1.7	A1.1	A1.0	A9.2	<A1.0	<A1.0	A1.0
20	A1.1	A1.0	A1.1	<A1.0	A1.0	A1.5	A2.1	A1.0	A6.7	<A1.0	A2.5	A1.0
21	A3.0	<A1.0	A1.1	<A1.0	A3.3	A1.7	A1.8	A1.0	A4.9	<A1.0	A1.2	<A1.0
22	A6.8	<A1.0	<A1.0	<A1.0	A4.3	A1.8	A1.2	A3.3	A4.9	<A1.0	<A1.0	<A1.0
23	A8.3	<A1.0	<A1.0	<A1.0	B2.9	A2.4	<A1.0	B1.0	A4.0	<A1.0	A1.2	<A1.0
24	A8.5	<A1.0	A1.2	<A1.0	B1.2	A1.9	<A1.0	B3.3	A4.3	<A1.0	A1.2	<A1.0
25	A1.0	<A1.0	A1.0	<A1.0	B1.1	A2.2	<A1.0	B5.5	A2.6	<A1.0	A1.0	<A1.0
26	<A1.0	<A1.0	<A1.0	A3.1	A6.6	---	<A1.0	B2.2	A1.0	<A1.0	<A1.0	<A1.0
27	<A1.0	<A1.0	<A1.0	A5.5	A6.7	A1.5	A1.0	B8.2	<A1.0	<A1.0	<A1.0	A2.0
28	<A1.0	<A1.0	<A1.0	A6.4	A6.9	A2.1	<A1.0	B3.3	<A1.0	<A1.0	<A1.0	A3.7
29	<A1.0	<A1.0	<A1.0	A6.5	A4.7	A1.8	<A1.0	B4.5	<A1.0	<A1.0		A4.3
30	<A1.0	<A1.0	A1.0	A8.3	A5.7	A1.6	<A1.0	B3.4	<A1.0	A1.2		A5.2
31		<A1.0		A7.0	A5.2		<A1.0		<A1.0	<A1.0		A2.3

ACTIVE PROMINENCES AND FILAMENTS

MARCH 1997

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	ADF	0816E	1622	N41	E23	03	3.2	1	13	7	7	E	SVTO		
01	ADF	0830E	1030	N41	E23	03	3.2	1	13	8	6	E	LEAR		Flare Associated
02	ADF	0050E	1026	N36	E12	03	3.0	1	10	8	8	E	LEAR		
02	ADF	0330E	1026	N25	W08	03	1.5	1	12	6	7	E	LEAR	8019	
02	ADF	0615E	1539	N34	E08	03	2.9	1	14	9	9	E	SVTO		
02	ADF	2340E	1040	S47	E37	03	6.1	1	18	7	6	E	LEAR		
03	ADF	0015E	1040	N27	W18	03	1.6	1	10	5	5	E	LEAR	8019	
03	ADF	0141E	0255	N39	E05	03	3.5	1	05	7	7	E	PALE		
05	ASR	1147E	1620D	N03	E90	03	12.2			9	9	E	SVTO		
05	ASR	1431E	0059	N04	E90	03	12.3			9	9	E	HOLL		
06	ASR	0045E	1030	N02	E83	03	12.2			9	9	E	LEAR		
06	ASR	0555E	1148D	N04	E85	03	12.6			9	9	E	SVTO	8020	
06	ADF	1530E	1940D	S15	E05	03	7.0	1	15	6	7	E	RAMY		
06	ASR	1640E	2105	N08	E90	03	13.4			6	8	E	RAMY	8020	
07	DSD	1646E	1915D	N06	E64	03	12.5		02	2	9	E	RAMY	8020	
08	AFS	0235E	0830D	S30	E54	03	12.3		01	7	9	E	LEAR		
08	AFS	0700E	1430D	S29	E52	03	12.4		02	9	9	E	SVTO		
08	DSD	1340E	1507D	N06	E51	03	12.4		02	9	9	E	RAMY	8020	
08	DSD	1722E	2020D	S30	E43	03	12.1		02	9	9	E	RAMY		
08	AFS	1748E	1943D	N05	E56	03	12.9		01	8	6	E	RAMY	8020	
08	ASR	1921E	2029D	N10	E90	03	15.6			9	8	E	RAMY		
09	AFS	0325E	0800D	N05	E47	03	12.6		02	9	9	E	LEAR	8020	
09	DSD	0715E	0915D	S29	E40	03	12.4		02	9	9	E	SVTO	8021	
09	DSD	1045E	1150D	S29	E39	03	12.5		02	9	9	E	SVTO	8021	
09	DSD	1243E	1502D	N04	E45	03	12.9		02	7	4	E	RAMY	8020	
09	DSD	1429E	1834	S28	E28	03	11.8		12	5	6	E	HOLL	8021	
09	DSD	1510E	1635	S29	E29	03	11.9		02	9	9	E	SVTO	8021	
09	DSD	1520E	1635	N04	E38	03	12.5		02	9	9	E	SVTO	8020	
09	AFS	1605E	1635	S31	E35	03	12.4		01	7	7	E	SVTO	8021	
09	AFS	1647E	0013	S28	E40	03	12.8		03	5	4	E	HOLL	8021	
09	DSD	1726E	1936D	N05	E39	03	12.6		01	9	9	E	RAMY	8020	
09	DSD	1945E	2018D	N04	E38	03	12.7		02	9	9	E	RAMY	8020	
10	DSD	0557E	0620D	N07	E33	03	12.7		01	9	9	E	SVTO	8020	
10	DSD	1358E	2211	S30	E21	03	12.2		01	8	9	E	RAMY	8021	
12	DSF	1801U	1550U	N03	E18	03	14.1	2	06	0	0	E	RAMY		
13	DSD	1520E	1605D	N09	W16	03	12.4		03	6	5	E	HOLL	8020	
14	DSD	1230E	1813D	S04	W14	03	13.5		01	9	9	E	RAMY	8022	
14	AFS	1230E	1610	S05	W16	03	13.3		01	9	9	E	SVTO		
14	AFS	1245E	2204	S05	W14	03	13.5		01	9	9	E	RAMY	8022	
14	AFS	1400E	1610	S32	W28	03	12.4		01	9	9	E	SVTO	8021	
14	BSD	1847E	1921D	N09	W34	03	12.2		03	9	9	E	RAMY	8020	
14	DSD	1915E	2204	S31	W29	03	12.5		01	9	9	E	RAMY	8021	
15	AFS	0200E	1019	S04	W21	03	13.5		02	5	5	E	LEAR	8022	
15	AFS	0200E	1019	S30	W33	03	12.5		05	4	4	E	LEAR	8021	
15	AFS	0620E	1612	S04	W26	03	13.3		02	7	7	E	SVTO	8022	
15	DSD	0720E	1305D	S04	W25	03	13.4		01	9	9	E	SVTO	8022	
15	AFS	1320E	1947D	S04	W28	03	13.5		01	9	9	E	RAMY	8022	
15	AFS	1530E	0102	S04	W16	03	14.4		01	9	9	E	HOLL	8022	
15	DSD	2025E	2100	S04	W33	03	13.4		02	9	9	E	RAMY	8022	
15	AFS	2309E	1019	S04	W34	03	13.4		01	4	5	E	LEAR	8022	
16	AFS	1030E	1530	S02	W45	03	13.1		01	9	9	E	SVTO	8022	
16	DSD	1345E	1530	S31	W55	03	12.2		03	9	9	E	SVTO	8021	
16	AFS	1510E	2155	S03	W44	03	13.3		01	9	9	E	RAMY	8020	
16	AFS	1521E	0026	S03	W43	03	13.4		01	9	8	E	HOLL	8022	
16	AFS	1722E	2348	S04	W44	03	13.4		02	9	9	E	PALE	8022	
16	AFS	2310E	1020	S04	W48	03	13.4		02	6	6	E	LEAR	8022	

ACTIVE PROMINENCES AND FILAMENTS

MARCH 1997

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
17	AFS	0540E	1623	S03	W55	03	13.1		04	9	9	E	SVTO	8022	
17	DSD	1150E	1303D	S29	W66	03	12.3		01	3	9	E	RAMY	8021	
17	AFS	1155E	1830	S02	W55	03	13.4		01	6	5	E	RAMY	8022	
18	DSD	0310E	0340D	S02	W61	03	13.6		02	9	9	E	LEAR	8022	
18	AFS	0540E	1020	S02	W64	03	13.4		02	5	6	E	LEAR	8022	
18	AFS	0540E	1020	S10	W12	03	17.3		01	9	9	E	LEAR		
18	AFS	0622E	1638	S12	W12	03	17.4		01	7	8	E	SVTO		
18	AFS	0721E	1414D	S03	W68	03	13.2		04	7	8	E	SVTO	8022	
18	AFS	1753E	2131	S10	W19	03	17.3		01	4	4	E	RAMY	8023	
19	ADF	0527E	0802D	S10	W25	03	17.3	1	03	9	9	E	SVTO	8023	
19	AFS	1325E	1711D	S10	W31	03	17.2		01	3	5	E	RAMY	8023	
19	AFS	1520E	1550	S09	W31	03	17.3		02	6	5	E	SVTO	8023	
19	APR	1709E	2006D	N16	W90	03	12.9	1		9	9	E	RAMY	8020	
19	ASR	1735E	1850D	N23	W90	03	12.8			9	9	E	RAMY		
19	APR	1826E	0105	N14	W85	03	13.3	1		7	7	E	HOLL	8020	
19	DSF	2005U	1137U	N52	W31	03	17.2	2	11	0	0	E	RAMY		
20	ADF	0815E	1016	S05	E03	03	20.6	1	01	6	4	E	LEAR		
20	DSD	0815E	1124D	S05	E03	03	20.6		02	9	9	E	SVTO	8024	
20	AFS	1115E	1609D	S05	E02	03	20.6		01	5	5	E	RAMY	8024	
20	DSD	1232E	2055	S05	E00	03	20.5		02	9	9	E	RAMY	8024	
20	BSD	1303E	1315D	S05	E00	03	20.5		01	9	9	E	RAMY	8024	
20	DSD	1305E	1327D	S04	E00	03	20.5		03	9	9	E	RAMY	8024	
21	AFS	0410E	0928	S02	W08	03	20.6		02	7	4	E	LEAR	8024	
21	AFS	0650E	1445D	S03	W09	03	20.6		01	6	4	E	SVTO	8024	
21	DSF	1418U	0548U	S42	E31	03	24.1	2	08	0	0	E	SVTO		
22	AFS	1103E	1219D	S40	W55	03	18.0		01	6	8	E	SVTO		
22	AFS	1320E	1530D	S40	W54	03	18.1		01	7	9	E	RAMY		
22	DSD	2023E	2041	N00	E20	03	24.3		01	9	9	E	RAMY		
26	DSF	1310U	1317U	N52	W16	03	25.2	2	05	0	0	E	SVTO		
27	ASR	0020E	1015	S25	E84	04	2.5			9	9	E	LEAR		
27	ASR	1048E	1230D	S25	E90	04	3.4			9	9	E	SVTO		
27	DSD	1050E	1827D	S24	E80	04	2.6		01	9	9	E	RAMY	8026	
27	DSD	1401E	1624	S26	E80	04	2.8		03	9	9	E	SVTO		
27	AFS	1401E	1624	S28	E78	04	2.7		02	9	9	E	SVTO		
27	BSD	1412	1424	S23	E82	04	2.9		08	9	9	E	RAMY	8026	Flare Associated
27	BSD	1415E	1425D	S26	E77	04	2.6		09	9	9	E	SVTO		
27	BSD	1641E	1648D	S24	E77	04	2.6		05	9	9	E	RAMY	8026	
27	ADF	1645E	1712	S23	E69	04	2.0	1	05	9	9	E	HOLL	8026	
27	DSD	1646E	1752D	S28	E74	04	2.5		08	9	9	E	RAMY	8026	
28	ADF	0613E	0847D	S27	E70	04	2.7	1	05	9	9	E	SVTO	8026	
28	DSD	0613E	1327D	S28	E70	04	2.7		02	9	9	E	SVTO	8026	Flare Associated
28	DSD	1145E	1445D	S25	E68	04	2.7		02	9	9	E	RAMY	8026	
28	DSD	1240E	1610D	S26	W09	03	27.8		01	5	4	E	RAMY		
28	ADF	1332E	1643	S26	E57	04	2.0	1	04	9	9	E	SVTO	8026	
28	AFS	1332E	1643	S28	E60	04	2.2		03	9	9	E	SVTO	8026	
28	ADF	1702E	1927D	S27	E55	04	2.0	1	06	9	9	E	RAMY	8026	
28	AFS	1910E	0324D	S27	E59	04	2.4		03	6	7	E	PALE	8026	
28	DSF	2044U	1045U	S29	E60	04	2.6	2	06	0	0	E	RAMY	8026	
28	ADF	2138	0051	S32	E60	04	2.6	1	08	9	9	E	HOLL	8026	
28	ADF	2140	0038	S28	E60	04	2.6	1	05	9	9	E	PALE	8026	
28	DSF	2244	0038	S28	E60	04	2.6	2	05	9	9	E	PALE	8026	
29	BSD	0636E	0712D	S24	E57	04	2.7		06	8	9	E	LEAR	8026	
29	AFS	0830E	1010	S25	E56	04	2.7		02	7	9	E	LEAR	8026	
29	DSD	1104E	1518D	S24	E49	04	2.2		02	9	9	E	RAMY	8026	
29	BSD	1109	1139D	S23	E54	04	2.6		03	9	9	E	RAMY	8026	
29	DSD	1213E	1810D	S23	E53	04	2.6		02	9	9	E	RAMY	8026	
29	ADF	1525	0029	S29	E49	04	2.5	1	05	9	9	E	HOLL	8026	
29	AFS	1550E	2230	S24	E50	04	2.5		03	9	9	E	RAMY	8026	
29	ADF	2353E	0232	S24	E43	04	2.3	1	02	8	9	E	PALE	8026	

ACTIVE PROMINENCES AND FILAMENTS

MARCH 1997

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
30	AFS	1152E	2225	S26	E39	04	2.5		02	4	8	E	RAMY	8026	
30	DSD	1155E	1530D	S22	E36	04	2.3		02	9	9	E	RAMY	8026	
30	DSD	1307E	1725D	S24	E43	04	2.9		01	8	8	E	RAMY	8026	
30	ADF	1309E	2225	S29	E37	04	2.4	1	10	9	9	E	RAMY	8026	
30	AFS	1406E	0032	S27	E35	04	2.3		03	6	8	E	HOLL	8026	
30	DSD	1427	1942D	S27	E33	04	2.2		02	4	4	E	HOLL	8026	
30	ADF	1600E	0032	S30	E34	04	2.3	1	07	5	6	E	HOLL	8026	
31	ADF	0831E	1629	S26	E28	04	2.5	1	03	9	9	E	SVTO	8026	
31	DSD	1730E	2233	S25	E18	04	2.1		02	9	9	E	RAMY	8026	
31	DSD	1843	1851	S25	E20	04	2.3		01	9	9	E	PALE	8026	
31	ADF	1910E	0114	S24	E24	04	2.6	1	09	9	9	E	PALE	8026	
31	DSD	2037	2045	S26	E25	04	2.8		02	9	9	E	PALE	8026	
31	DSF	2051U	1049U	S26	E24	04	2.7	2	07	0	0	E	RAMY	8026	
31	DSF	2051U	1050U	S23	E22	04	2.6	2	03	0	0	E	RAMY	8026	

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.

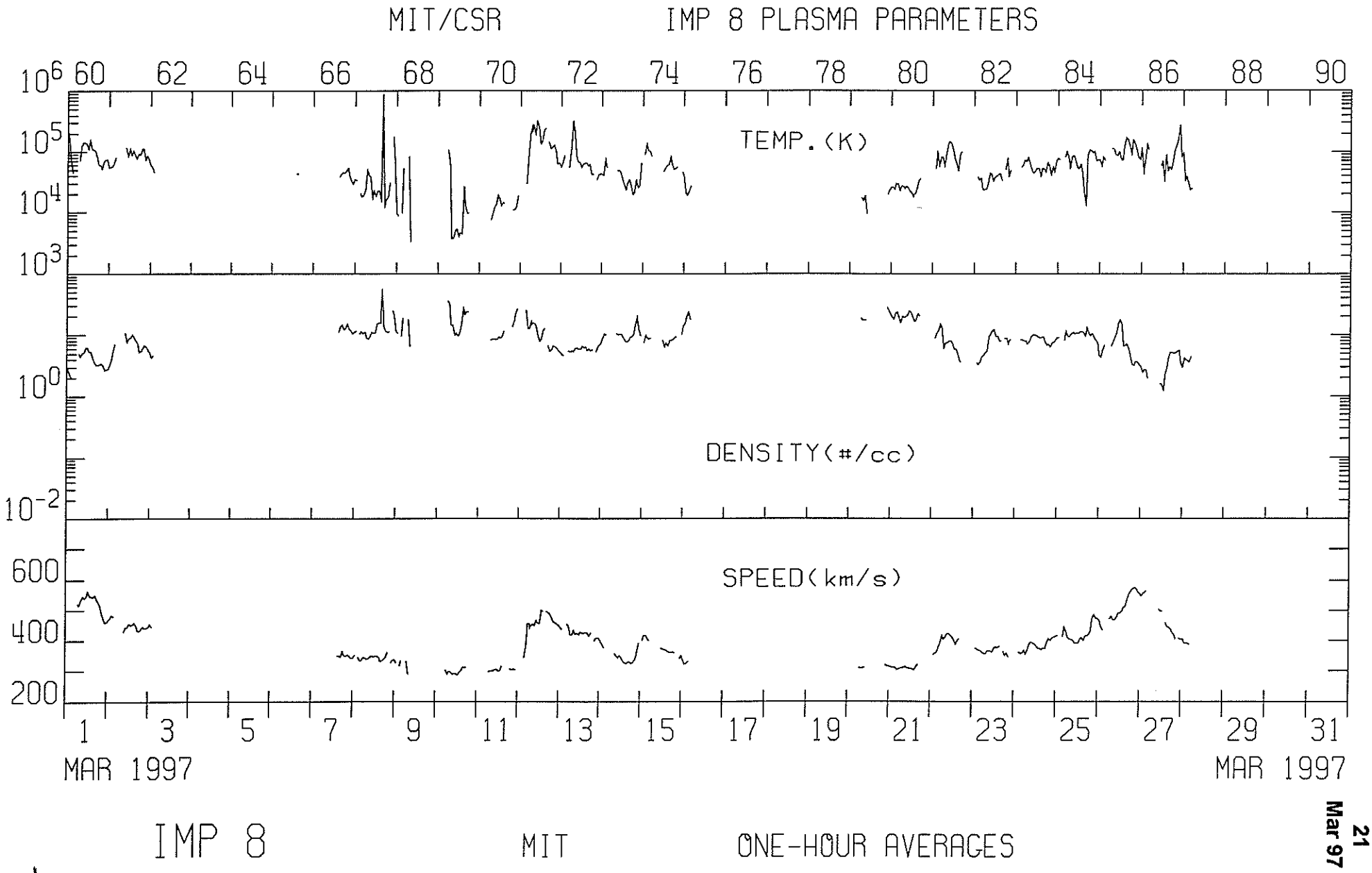
The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

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
WROC = Wroclaw

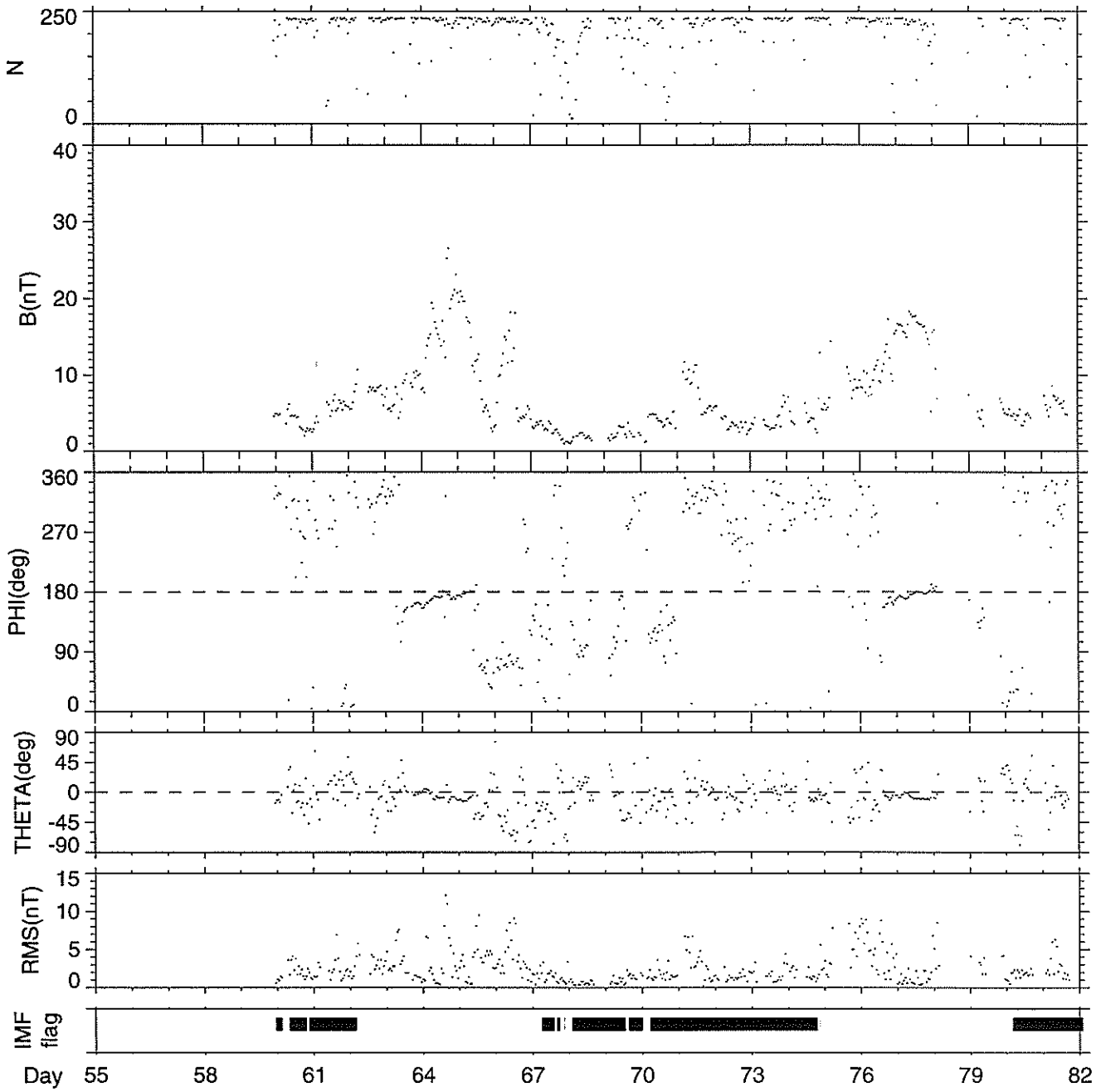
IMP 8 SOLAR WIND PLASMA
MARCH 1997



21 Mar 97

IMP-8 Magnetic Field Data in GSE Coordinates

1 Hour Averages (c) DOY 59 - 82 February 28 1997 - March 23 1997

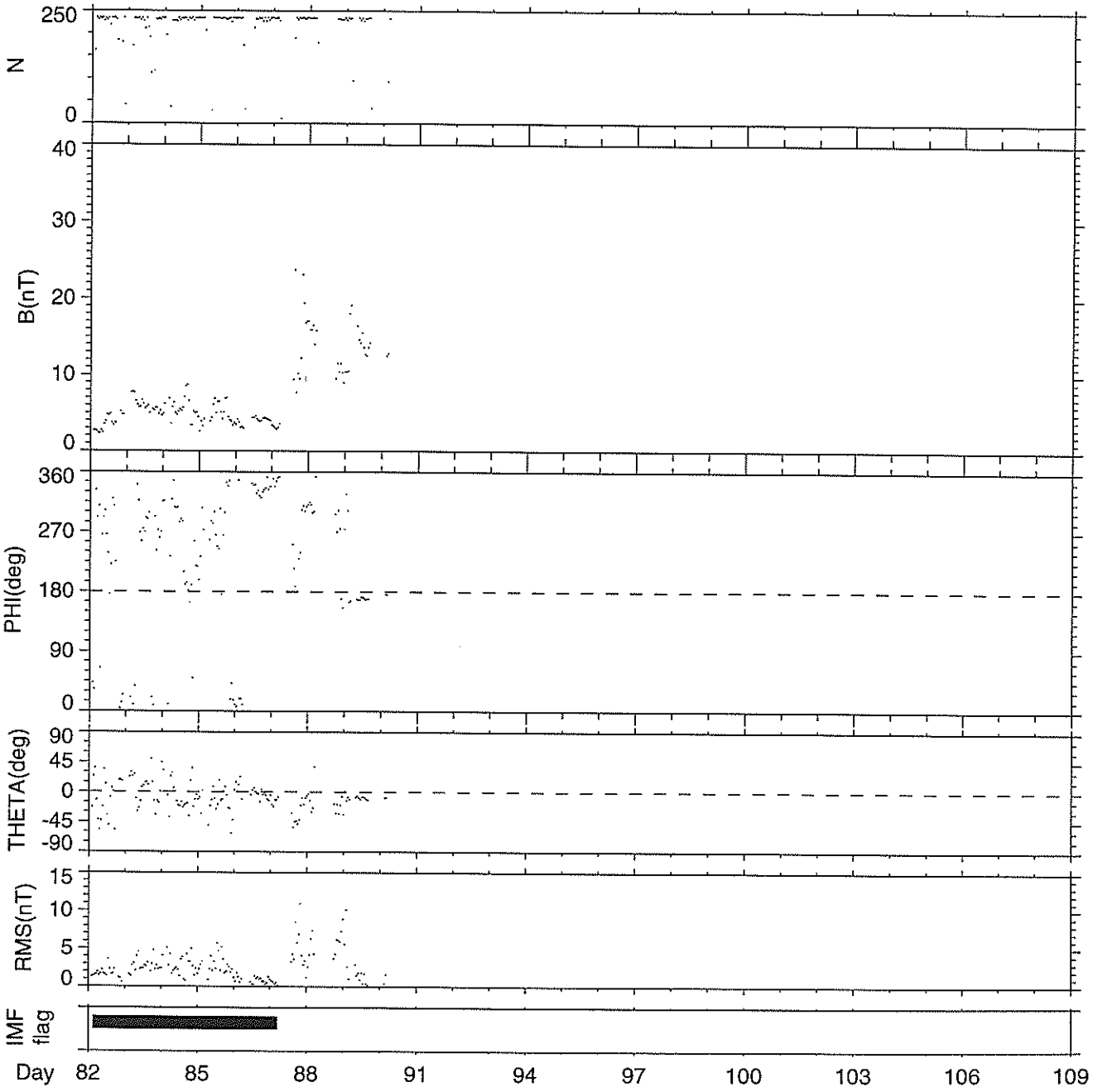


Generation Date : Thu Jun 12 08:14:14 1997

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 82 - 90 March 23 1997 - March 31 1997



Generation Date : Thu Jun 12 08:14:14 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.

*U.S. GOVERNMENT PRINTING OFFICE: 1997-573-001/29005

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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."