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Part II (Comprehensive Reports)

NO. 517 SEPTEMBER 1987

DATA FOR
MARCH 1987

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S O L A R - G E O P H Y S I C A L D A T A

NUMBER 517

(Issued in Two Parts)

Co-Editors: Helen E. Coffey
John A. McKinnon

Chief: Joe H. Allen
Solar-Terrestrial Physics Division

Staff: Daniel C. Wilkinson
(new father as of 9/26/87)
Viola W. Miller
Carol Weathers
Charles T. Shanks

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Mar 87

CARTE SYNOPTIQUE
ACTIVE REGIONS
CARRINGTON ROTATION 1786

(27 February to 26 March 1987)

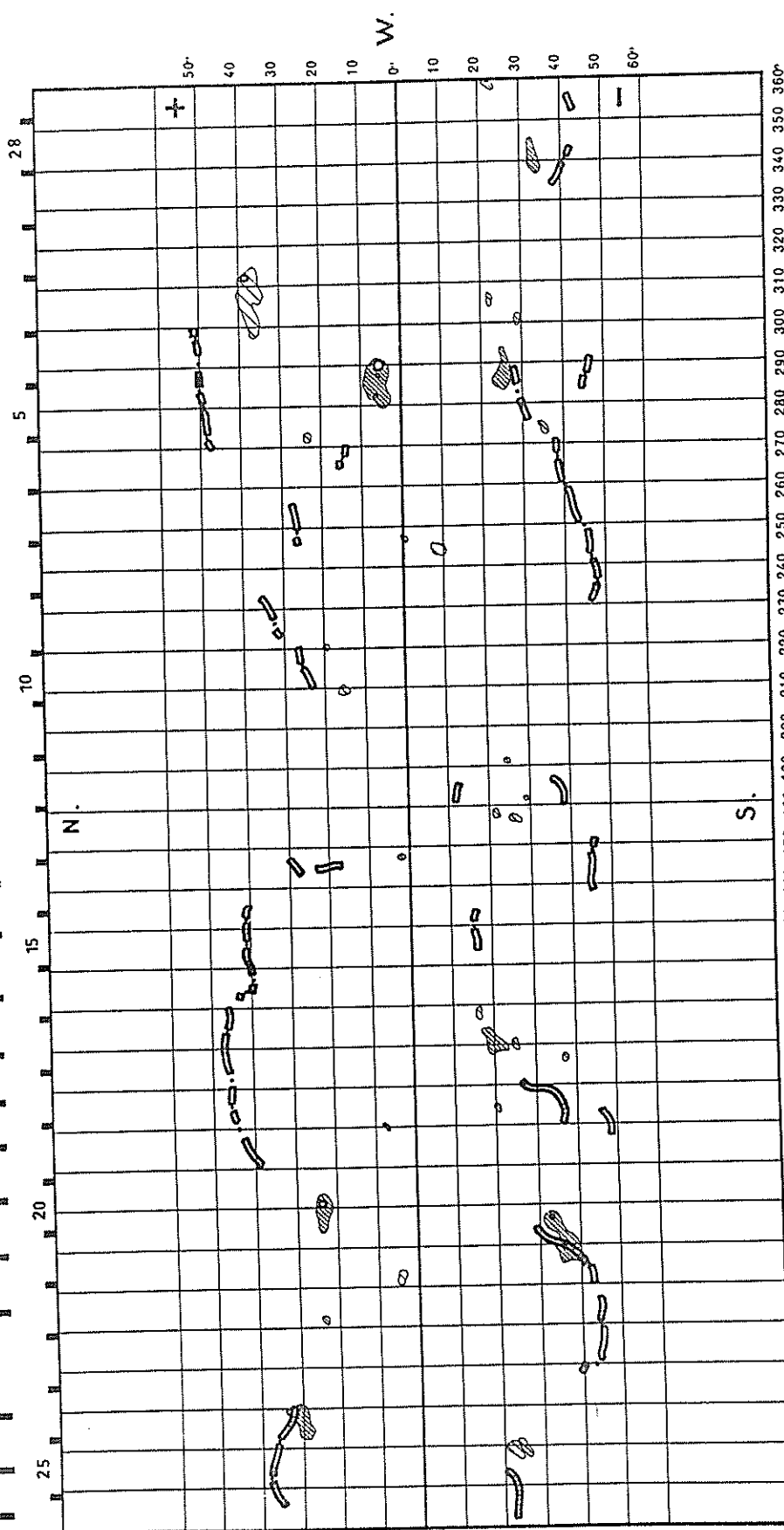
Region No.	Coordinates		Imp	Age at CMP (Days)		Spotless Region	Region No. in Rotation 1785	Activity at West Limb
	Lat.	Long.						
1	33°S	341	1	0	x			decreasing
2	38°N	307	2	>6				decreasing
3	25°S	288	1	>6	x			disappeared
4	6°N	286	3	+1				stable
5	9°S	244	1	+5	x			disappeared
6	19°S	121	1	+3	x			decreasing
7	24°N	79	2	+1				decreasing
8	35°S	71	2	>6				dispersed
9	31°N	26	1	>6	x			dispersed
10	24°S	19	1	-3	x			stable
11	21°S	18	1	+6	x			disappeared

CARTE SYNOPTIQUE

CARRINGTON ROTATION NUMBER 1786
(27 February to 26 March 1987)

February 1987

Meudon Observatory



E.

Heliographic Longitude

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Mar 87

H - ALPHA SOLAR FLARES

MARCH 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
																	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
0001	LEAR	01	0440	0441	0456	N40	E26	4773	03	3.3	16	SF		3	C		28		F
			01 0556		0611	No Flare Patrol													
			01 1001		1013	No Flare Patrol													
			01 1030		1042	No Flare Patrol													
0002		01	1118	1129U	1150D	N40	E24	4773	03	3.4	32D	1F					232	2.5	EFJ
	SVTO	01	1118		1150D	N40	E22	4773	03	3.3	32D	1F		3	C		263		F
	LVOV	01	1124E	1129U	1150D	N41	E25	4773	03	3.5	26D	1F			C	1132	200	2.5	EJ
		01	1340		1356	No Flare Patrol													
0003	LEAR	02	0928	0931	0934	N39	E12	4773	03	3.4	6	SF		3	C		28		
0004		02	1018	1020	1027	N38	E13	4773	03	3.5	9	SN					126		DF
	SVTO	02	1018	1020	1026	N38	E11	4773	03	3.3	8	SN		3	C		126		F
	KHAR	02	1019E	1022U	1028	N38	E15	4773	03	3.6	9D	SF			V	1022			D
0005	SVTO	02	1043	1044	1107	N36	E13	4773	03	3.5	24	SN		3	C		41		F
		02	1141		1153	No Flare Patrol													
		02	1343		1504	No Flare Patrol													
		02	1722		1728	No Flare Patrol													
0006	HOLL	02	1746	1748	1749	S10	E72		03	8.1	3	SF		3	C		26		FH
		02	2145		2257	No Flare Patrol													
		03	1131		1137	No Flare Patrol													
		03	1147		1149	No Flare Patrol													
0007	HTPR	04	1106E		1126D	S20	W54	4777	02	28.3	20D	SN				1113	20	.4	
0008	HTPR	04	1552		1607D	S20	W56	4777	02	28.4	15D	SF				1559	10	.2	
0009	HTPR	05	0829E		0845	N07	W07	4778	03	4.8	16D	SF				0838	30	.3	E
0010	HTPR	05	0919	0926	0938	N07	W08	4778	03	4.8	19	SF				0926	40	.4	E
0011	HOLL	05	1649	1657	1714	N04	W06	4778	03	5.2	25	SF		3	C		19		
0012	HOLL	05	2315	2322	2325	N05	W10	4778	03	5.2	10	SF		3	C		30		
0013	RAMY	06	1112	1132	1144D	N04	W16	4778	03	5.3	32D	1N		3	C		241		FH
		06	1607		1623	No Flare Patrol													
		06	2228		2245	No Flare Patrol													
0014		07	0827*	0831*	0849	N05	W32	4778	03	4.9	22	SN					46	1.0	DF
	ABST	07	0827	0831	0855	N05	W33	4778	03	4.9	28	SN			C	0831	87	1.0	D
	LEAR	07	0830	0831	0837	N05	W32	4778	03	5.0	7	SN		3	C		27		
	LEAR	07	0847	0850	0856	N04	W31	4778	03	5.0	9	SF		3	C		25		F
		07	0937		0946	No Flare Patrol													
		07	1230		1258	No Flare Patrol													
		07	1300		1320	No Flare Patrol													
		07	1335		1410	No Flare Patrol													
0015	HOLL	07	1513	1522	1524	N06	W35	4778	03	5.0	11	SF		3	C		15		
0016		08	1647	1736E	1830	N06	W49	4778	03	5.0	103	SN					89		FH
	HOLL	08	1542E	1738	1828	N06	W49	4778	03	5.0	166D	SN		4	C		90		FH
	RAMY	08	1647	1736	1833	N06	W49	4778	03	5.0	106	SN		3	C		88		H
0017		08	1834*	1847*	1951	N06	W51	4778	03	4.9	77	SF	C 1.9				47		FH
	RAMY	08	1834	1928	2034	N06	W51	4778	03	4.9	120	SN	C 1.9	3	C		79		F
	HOLL	08	1841	1847	1854	N06	W50	4778	03	5.0	13	SF		3	C		34		F
	HOLL	08	1909	1928	2005	N06	W52	4778	03	4.9	56	SF		3	C		28		FH
0018		08	2102*	2102*	2119	N06	W52	4778	03	5.0	17	SF					32		H
	RAMY	08	2102	2102	2111	N06	W53	4778	03	4.9	9	SF		3	C		46		
	RAMY	08	2114	2122	2127	N06	W51	4778	03	5.1	13	SF		3	C		18		H

H - ALPHA SOLAR FLARES

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Mar 87

MARCH 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
																Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
			08 2200		2219			No Flare Patrol											
			08 2225		2233			No Flare Patrol											
			08 2241		2251			No Flare Patrol											
			08 2308		2324			No Flare Patrol											
			08 2330		2343			No Flare Patrol											
0019	LEAR	08	2359		2411	N06	W54	4778	03	4.9	12	SF		3	C		17		
0020	LEAR	09	0637E	0637	0646	N06	W56	4778	03	5.1	90	SF		2	C		16		F
			09 0650		0655			No Flare Patrol											
			09 2111		2139			No Flare Patrol											
			09 2150		2159			No Flare Patrol											
			10 1637		1717			No Flare Patrol											
			10 1745		2041			No Flare Patrol											
			10 2128		2134			No Flare Patrol											
			10 2253		2351			No Flare Patrol											
			12 1257		1305			No Flare Patrol											
0021		13	1639	1640	1658	S36	E90	4779	03	20.9	19	SB					91		
	HOLL	13	1639	1640	1657	S36	E90	4779	03	20.9	18	SB		3	C		89		
	RAMY	13	1639	1640	1658	S36	E90	4779	03	20.9	19	SN		3	C		93		
0022		13	20312	20372	2051	S36	E90	4779	03	21.1	20	SN					99		
	HOLL	13	2031	2039	2048	S36	E90	4779	03	21.1	17	SN		4	C		99		
	PALE	13	2033	2037	2054	S36	E90	4779	03	21.1	21	SF		3	C				
0023		13	21251	2126*	2150	S35	E90	4779	03	21.1	25	1B C	5.5				166		
	RAMY	13	2125	2146	2148	S35	E90	4779	03	21.1	23	SB		3	C		95		
	HOLL	13	2126	2126	2152	S35	E90	4779	03	21.1	26	1B C	5.5	3	C		236		
0024	KHAR	14	1028E	1040U	1122	S39	E88	4779	03	21.6	54D	1F			P	1040			EHO
0025	RAMY	14	1249	1251	1251	S35	E90	4779	03	21.7	2	SF		3	C		18		
0026		14	16371	16373	1643	S35	E89	4779	03	21.8	6	SF					46		F
	HOLL	14	1637	1637	1643	S35	E90	4779	03	21.9	6	SF		4	C		46		F
	RAMY	14	1638	1640	1643	S35	E88	4779	03	21.7	5	SF		3	C				F
		14	2003		2012			No Flare Patrol											
0027		14	20478	20479	2059	S38	E88	4779	03	22.0	12	SF					22		
	PALE	14	2047	2047	2053	S39	E89	4779	03	22.1	6	SF		3	C		21		
	PALE	14	2055	2056	2105	S36	E86	4779	03	21.8	10	SF		3	C		22		
0028		15	00424	0047	0049	S35	E85	4779	03	21.8	7	SF					79		CJW
	VORO	15	0039E	0048U	0106D	S36	E85	4779	03	21.8	27D	1F			C	0058	134		CJW
	HOLL	15	0042	0050U	0102D	S34	E87	4779	03	22.0	20D	SN		2	C		83		
	PALE	15	0046	0047	0049	S36	E82	4779	03	21.6	3	SF		3	C		20		
		16	1001		1051			No Flare Patrol											
		16	1058		1103			No Flare Patrol											
		16	1604		1659			No Flare Patrol											
		16	1950		2001			No Flare Patrol											
		16	2235		2244			No Flare Patrol											
0029	HTPR	17	1106	1106	1111	S30	E47	4779	03	21.1	5	SF				1106	20	.3	
0030	HTPR	17	1143	1152	1212	S30	E47	4779	03	21.2	29	SN				1152	20	.3	
		17	2033		2054			No Flare Patrol											
		17	2102		2112			No Flare Patrol											
		17	2134		2140			No Flare Patrol											
		17	2226		2231			No Flare Patrol											
0031	HTPR	18	1255	1305	1335	S25	E90		03	25.5	40	SF				1305	30		E
0032	HTPR	19	0828	0838	0842	S37	E29	4779	03	21.7	14	SF				0838	20	.2	E
0033	RAMY	19	1046E	1105U	1140D	S12	E35		03	22.1	54D	SF		2	C		72		FU

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H - ALPHA SOLAR FLARES

MARCH 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur	Imp	Obs	Time	Area Measurement		Corr	Remarks	
								USAF Region						Mo	Day			(Min)
0034	HTPR	19	1311	1313	1313	S33	E21	4779	03	21.2	2	SF			1313	10	.1	
0035	RAMY	19	1737	1737	1739	S34	E18	4779	03	21.2	2	SF	3	C		23		
0036		20	10373	10422	1155	S34	E14	4779	03	21.5	78	SN				44	1.4	EFU
	HTPR	20	1037	1044	1155	S36	E14	4779	03	21.6	78	SB			1044	12	1.4	EU
	SVTO	20	1040	1042	1134D	S32	E13	4779	03	21.5	54D	SF	3	C		75		UF
0037	HTPR	20	1540	1600	1650	N24	E07	4781	03	21.2	70	SN			1600	30	.3	W
0038	VORO	21	0150	0224	0238	N28	W02	4781	03	20.9	48	1F		C	0224	269	3.1	DIT
0039		21	11541	12001	1236	N24	W10	4781	03	20.7	42	SF				40		EH
	RAMY	21	1154	1200	1248	N23	W10	4781	03	20.7	54	SF	3	C		48		EH
	SVTO	21	1155	1201	1223	N25	W10	4781	03	20.7	28	SF	3	C		33		E
0040	HOLL	21	2210	2214	2220	N24	W14	4781	03	20.8	10	SF	3	C		11		
0041	HOLL	21	2308	2317	2325	N24	W14	4781	03	20.9	17	SF	3	C		15		
		21	23372	23392	2346	N24	W16	4781	03	20.7	9	SF				24		
	HOLL	21	2337	2341	2347	N24	W15	4781	03	20.8	10	SF	3	C		26		
	LEAR	21	2339	2339	2345	N23	W16	4781	03	20.7	6	SF	3	C		22		
0043		22	00151	0017	0020	N24	W16	4781	03	20.8	5	SF				25		
	HOLL	22	0015	0017	0021	N24	W15	4781	03	20.8	6	SF	3	C		19		
	LEAR	22	0016	0017	0020	N23	W16	4781	03	20.8	4	SF	3	C		31		
0044		22	00502	0107	0116	N24	W16	4781	03	20.8	26	SN				30		
	HOLL	22	0050	0057U	0102	N24	W15	4781	03	20.9	12	SF	2	C		20		
	LEAR	22	0052	0107	0130	N23	W17	4781	03	20.7	38	SN	3	C		39		
0045	YUNN	22	0205E	0211U	0256D	N25	W17	4781	03	20.8	51D	SN		P	0211	63	.8	
		22	0508		0516	No Flare Patrol												
		22	1919		1942	No Flare Patrol												
		22	2120		2121	No Flare Patrol												
		22	2133		2238	No Flare Patrol												
0046	HOLL	23	1807	1836	1839	S33	W31		03	21.3	32	SF	3	C		17		
		25	1222		1226	No Flare Patrol												
		25	1228		1234	No Flare Patrol												
0047	HOLL	25	1439	1440	1443	N24	W62	4781	03	20.8	4	SF	3	C		17		
		25	1608		1642	No Flare Patrol												
		25	2046		2057	No Flare Patrol												
0048	VORO	25	2253E	2258	2336	N24	W67	4781	03	20.8	43D	1F		C	2258	108		BDFI
		26	1013		1017	No Flare Patrol												
		26	1154		1214	No Flare Patrol												
		26	1229		1237	No Flare Patrol												
		26	1401		1445	No Flare Patrol												
		26	1936		1940	No Flare Patrol												
		26	2006		2013	No Flare Patrol												
		26	2041		2044	No Flare Patrol												
		27	0757		0844	No Flare Patrol												
0049	RAMY	27	1714	1715	1730	N07	E56	4783	03	31.9	16	SF	3	C		46		
		28	0643		0728	No Flare Patrol												
		28	0736		0805	No Flare Patrol												
		28	0935		1039	No Flare Patrol												
		28	1144		1209	No Flare Patrol												
		28	1213		1315	No Flare Patrol												
		28	2118		2138	No Flare Patrol												
		28	2146		2200	No Flare Patrol												
		28	2208		2218	No Flare Patrol												

H - ALPHA SOLAR FLARES

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MARCH 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
																Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
			29 0639		0700			No Flare Patrol											
			29 0706		0739			No Flare Patrol											
			29 1201		1226			No Flare Patrol											
			29 1241		1308			No Flare Patrol											
			29 1312		1404			No Flare Patrol											
			29 1420		1600			No Flare Patrol											
			29 1829		1838			No Flare Patrol											
			29 1934		2003			No Flare Patrol											
			29 2102		2249			No Flare Patrol											
			30 1201		1226			No Flare Patrol											
			30 1241		1311			No Flare Patrol											
0050	HTPR	31	0941	0947	1005	N11	E06	4783	03	31.8	24	SF				0947	10	.1	
0051	HTPR	31	1312	1316	1325	N11	E04	4783	03	31.8	13	SF				1316	20	.2	E

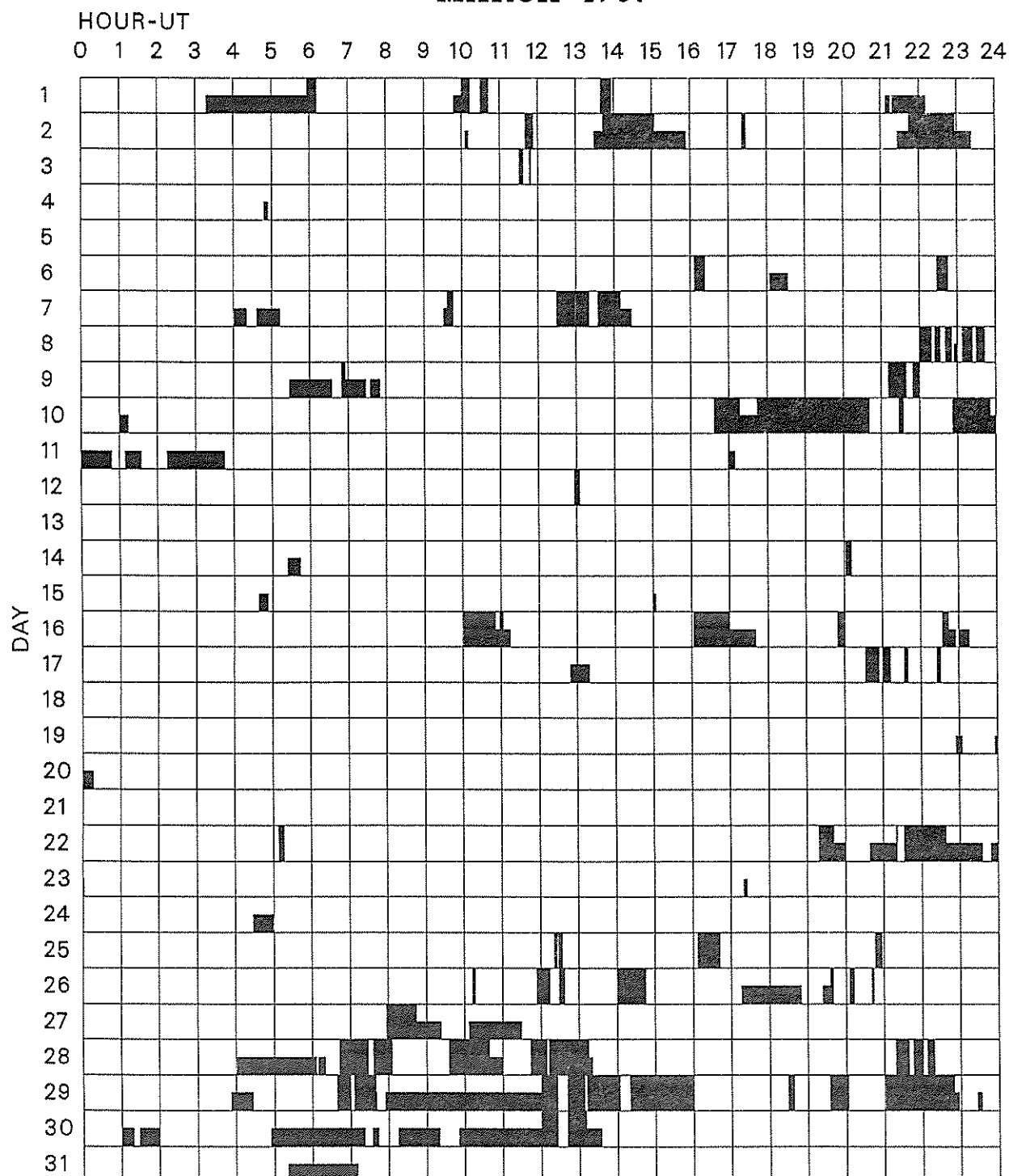
"Remarks"

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.

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

MARCH 1987



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

Abastumani
Bucharest
Holloman
Haute-Provence

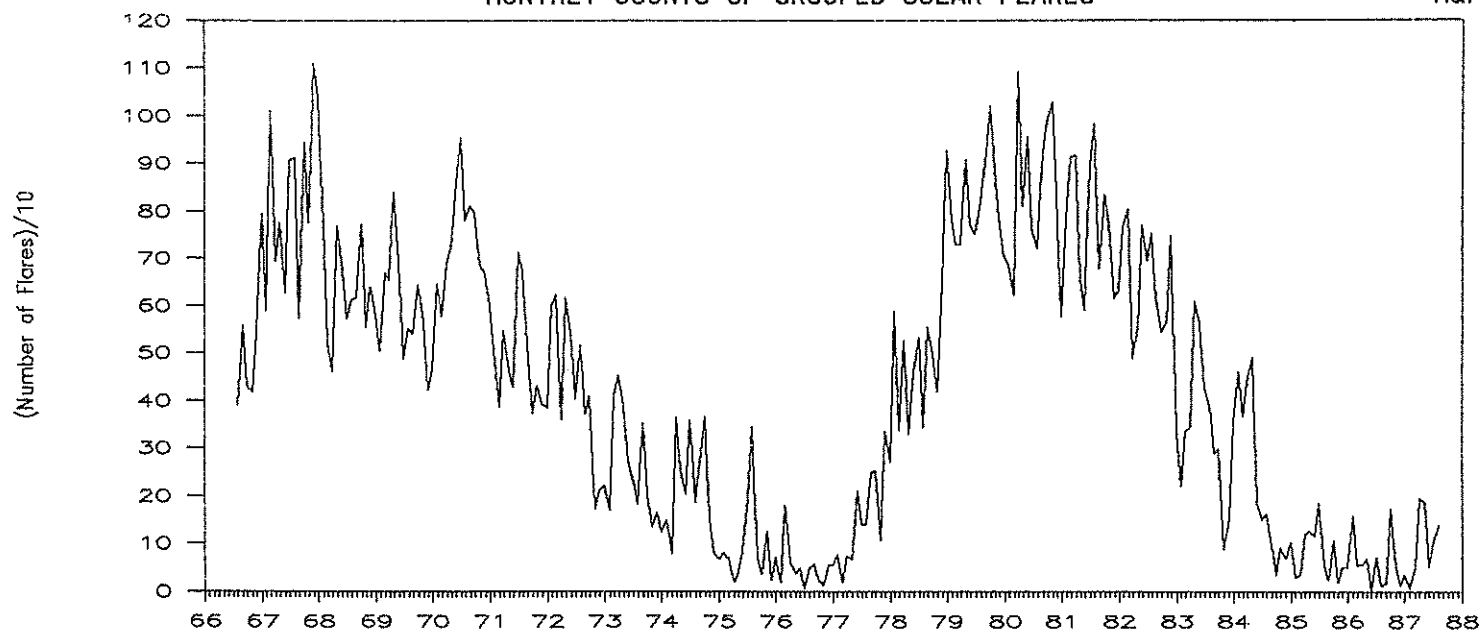
Istanbul
Kanzelhoehe
Kharkov
Learmonth

Lvov
Manila
Mitaka
Palehua

Peking
Purple Mt.
Ramey
San Vito

Tashkent
Urumqi
Voroshilov
Wendelstein
Yunnan

MONTHLY COUNTS OF GROUPED SOLAR FLARES*



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966								391	558	432	417	543	2341
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	53	12	726
1987	36	7	51	195	186	53	103	138					769

*Flare counts are preliminary from July 1982 to present. In particular, the monthly totals for the last 6 months may change significantly, as more sites submit their reports. The term "grouped" means that observations of the same event by different stations have been lumped together and counted as one.

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SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1987

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 ⁻²² W/m ² Hz)	Mean		
01	808 ONDR	8 S	1101.3	1101.4	.2				
	930 BORD	8 S	1513.0	1513.1	.3	20.0	2.0		
	9400 HUAN	20 GRF	1629.7	1647.1	36.4	4.1	1.0		
02	2000 TYKW	20 GRF	0303.0	0335.0	90.0	1.0	.5		
	3750 TYKW	20 GRF	0310.0	0330.0	80.0	1.0	.5		
03	9400 HUAN	20 GRF	1516.8	1534.1	31.9	8.1	3.6		
04	260 ONDR	44 NS	0810.0E		413.0D	4.0			
05	410 SVTO	44 NS	0538.0E	0604.0	1102.0D	22.0			QL=5 ST=1 TYP=1
	245 SVTO	44 NS	0538.0E	0604.0	1102.0D	30.0			QL=5 ST=1 TYP=1
	260 ONDR	42 SER	1041.5	1044.0	3.5	8.0			
06	3750 TYKW	20 GRF	0300.0U	0350.0	110.0U	1.0	.5		
07	260 ONDR	44 NS	0715.0E		467.0D	2.0			
	245 LEAR	43 NS	2239.0	0052.0	711.0D	39.0			QL=5 ST=2 TYP=1
08	260 ONDR	44 NS	0720.0E	1150.5	470.0D	25.0			
	245 LEAR	44 NS	2240.0E	2323.0	709.0D	42.0			QL=5 ST=2 TYP=1
	808 ONDR	8 S	1019.0	1019.3	.6				
	2800 OTTA	20 GRF	1850.0	1858.5	140.0	3.2	2.0		
	2000 TYKW	20 GRF	2350.0	0010.0	90.0	1.0	.5		
	9400 TYKW	20 GRF	2351.0	0010.0	90.0	4.0	2.0		
	3750 TYKW	20 GRF	2351.0	0010.0	90.0	3.0	1.5		
09	204 IZMI	43 NS	0600.0		360.0	10.0			
	260 ONDR	44 NS	0706.0E	1015.0	477.0D	5.0			
	245 LEAR	8 S	0526.0E	0527.0	1.0D	31.0			QL=5 ST=3 TYP=3
	2000 TYKW	20 GRF	0640.0	0700.0	90.0D	2.0	1.0D		
	3750 TYKW	20 GRF	0640.0U	0700.0	90.0D	2.0	1.0D		
	808 ONDR	8 S	1050.0	1050.2	.5				
	536 ONDR	8 S	1154.5	1154.5	.1	8.0			
10	9300 KISV	2 S/F	0550.1	0550.9	3.5	5.0			
	5900 KISV	20 GRF	0737.0	0809.5	61.0	3.0			
	260 ONDR	42 SER	1032.5	1032.5	53.5	4.0			
	9400 HUAN	20 GRF	1918.2	1946.5	47.6	6.0	1.7		
11	260 ONDR	43 NS	1333.0		90.0D	7.0			
	2000 TYKW	20 GRF	0400.0	0420.0	80.0	1.5	.7		
	9400 TYKW	20 GRF	0404.0	0420.0	60.0	2.0	1.0		
	3750 TYKW	20 GRF	0404.0	0420.0	80.0	2.0	1.0		
12	260 ONDR	42 SER	0840.0	0845.0	45.5	4.0			
	260 ONDR	42 SER	1034.0	1034.5	30.5	1.0			
	9400 HUAN	20 GRF	1421.3	1432.4	21.9	3.3	.8		
13	260 ONDR	44 NS	0714.0E		194.0D	2.0			
	2800 OTTA	21 GRF	2123.2	2225.3	165.0	7.1	5.2		
	100 HIRA	41 F	2127.0	2135.0	38.0	21.0			
	2800 OTTA	45 C	2133.2	2139.1	15.8	12.4	6.2		
	500 HIRA	45 C	2134.6	2144.9	15.0	15.0	.3		
	200 HIRA	41 F	2134.7	2140.9	25.0	56.0			
	500 HIRA	4 S/F	2135.0	2145.0	15.0				
	245 PALE	47 GB	2232.0E	2233.0	5.0D	100.0			QL=5 ST=2 TYP=5
	410 PALE	4 S/F	2233.0E	2233.0	4.0D	20.0			QL=5 ST=2 TYP=3
14	245 SVTO	43 NS	1532.0	0000.0		23.0			QL=1 ST=2 TYP=1
	2800 OTTA	1 S	1636.5	1639.4	9.0	1.5	.7		
	2800 OTTA	1 S	2045.2	2048.2	6.3	1.5	.8		
15	2000 TYKW	5 S	0052.0	0054.4	6.0	1.0	.3		
	3750 TYKW	5 S	0052.0	0054.4	10.0	1.5	.3		
	204 IZMI	3 S	0712.6	0712.8	.4	12.0	6.0		
	204 IZMI	3 S	0738.5	0738.7	.4	14.0	7.0		
	204 IZMI	3 S	0836.6	0836.8	.4	6.0	3.0		
	245 SVTO	8 S	0932.0E	0933.0	2.0D	18.0			QL=1 ST=2 TYP=3

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1987

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²²	Mean W/m ² Hz)		
16	930	BORD	8 S	1156.4	1156.5	.2	13.0	2.0		
	9400	HUAN	20 GRF	2007.2	2030.0	51.7	6.8	4.8		
18	9400	HUAN	1 S	1320.1	1323.4	6.8	5.7	2.8		
	9400	HUAN	2 S/F	1345.4	1347.0	4.2	5.0	3.5		
	9400	HUAN	21 GRF	1536.1	1551.0	34.0	4.3	1.6		
	9400	HUAN	1 S	1539.0	1541.4	4.1	5.7	1.6		
	3750	TYKW	5 S	2236.0	2236.2	.8	4.0	.1		
20	536	ONDR	46 C	1035.0U	1039.5U	10.0U	23.0			
	260	ONDR	28 PRE	1036.0	1036.5	1.8	4.0			
	260	ONDR	46 C	1037.8	1041.3	10.0	8.0			
	260	ONDR	29 PBI	1058.0		26.0	1.0			
	260	ONDR	4 S/F	1058.0	1100.0	3.0	3.0			
	260	ONDR	40 F	1102.5	1111.5	10.5	3.0			
21	3750	TYKW	20 GRF	0500.0	0530.0	120.0	1.0	.5		
	9400	HUAN	20 GRF	1349.2	1422.9	52.9	4.1	2.3		
	9400	HUAN	20 GRF	1810.6	1826.0	37.1	2.7	1.1		
23	245	SGMR	43 NS	1103.0	2045.0	777.00	770.0			QL=1 ST=3 TYP=1
	260	ONDR	43 NS	1321.3	1325.0	24.7				
	245	LEAR	43 NS	2245.0	0045.0	690.00	27.0			QL=5 ST=2 TYP=1
	245	PALE	43 NS	2257.0	0104.0	331.00	28.0			QL=1 ST=2 TYP=1
	536	ONDR	8 S	0902.7	0902.7	.1	7.0			
	808	ONDR	8 S	0904.8	0904.8	.1				
	808	ONDR	8 S	0954.0	0954.0	.1				
	536	ONDR	8 S	1206.0	1206.0	.1	6.0			
24	260	ONDR	43 NS	0708.0	0907.0	187.0				
	2000	TYKW	45 C	0302.0	0304.5	3.00	16.0	2.50		
	3750	TYKW	45 C	0303.0E	0304.5	3.00	3.0	.70		
	1000	TYKW	45 C	0303.0E	0304.6	4.00	34.0	7.00		
	500	HIRA	6 S	0303.6	0304.9	2.3	80.0	38.0		
	610	PALE	8 S	0304.0E	0304.0	1.00	370.0			QL=5 ST=3 TYP=5
	610	LEAR	8 S	0304.0E	0304.0	1.00	420.0			QL=5 ST=2 TYP=5
	1415	PALE	8 S	0304.0E	0304.0	2.00	20.0			QL=5 ST=3 TYP=3
	410	LEAR	8 S	0304.0E	0305.0	1.00	41.0			QL=5 ST=2 TYP=3
	410	PALE	8 S	0304.0E	0305.0	1.00	34.0			QL=5 ST=2 TYP=3
	1415	PALE	8 S	0304.0E	0306.0	2.00	62.0			QL=5 ST=2 TYP=5
	808	ONDR	8 S	0903.5	0903.5	.2				
	204	IZMI	42 SER	0906.5	0910.0	35.0	40.0	20.0		
	808	ONDR	8 S	1004.7	1004.8	.2				
25	260	ONDR	44 NS	0655.0E		488.00	9.0			
	245	LEAR	44 NS	2246.0E	0445.0	688.00	100.0			QL=5 ST=2 TYP=1
	245	PALE	8 S	0230.0E	0233.0	4.00	110.0			QL=1 ST=2 TYP=5
	810	KRAK	8 S	1012.8	1012.8	.1	8.0			
	204	IZMI	42 SER	1031.0	1036.0	16.0	37.0	15.0		
	204	IZMI	42 SER	1106.2	1111.8	8.8	26.0	10.0		
	5900	KISV	20 GRF	1143.5	1159.5	69.0	2.0			
	9400	HUAN	20 GRF	1414.1	1451.0	48.5	7.2	3.8		
	9400	TYKW	21 GRF	2134.0	2139.0	40.0	3.0	1.5		
	2000	TYKW	21 GRF	2134.0U	2140.0	40.0U	1.0	.5		
	2000	TYKW	5 S	2142.0	2142.7	2.0	1.0	.5		
	9400	TYKW	5 S	2142.0	2142.7	2.0	8.0	2.0		
26	260	ONDR	44 NS	0656.0E	0931.0	238.00	32.0			
	260	ONDR	43 NS	1355.0	1355.5	68.00	4.0			
	245	PALE	43 NS	1836.0	2114.0	512.00	12.0			QL=1 ST=2 TYP=1
	410	PALE	43 NS	2010.0	2351.0	418.00	37.0			QL=5 ST=2 TYP=1
	2000	TYKW	20 GRF	0150.0	0220.0	100.0	1.0	.5		
	3750	TYKW	20 GRF	0150.0	0220.0	100.0	1.0	.5		
	113	POTS	4 S/F	0608.0	0608.9	2.5	280.0	30.0		
	234	POTS	4 S/F	0608.0	0609.1	1.5	16.0	4.0		
	30	POTS	4 S/F	0608.1	0609.1	3.9	8800.0	200.0		
	204	IZMI	41 F	0608.2	0609.1	5.0	5.0	5.0		
	260	ONDR	43 NS	0645.0	0839.0	489.00	6.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1987

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 ⁻²² W/m ² Hz)	Mean	Int	Remarks
27	245	LEAR	44 NS	0657.0E	0722.0	123.0D	18.0			QL=5 ST=2 TYP=1
	204	IZMI	43 NS	0704.0		110.0	19.0			
	410	PALE	44 NS	1414.0E	1714.0	586.0D	7.0			QL=3 ST=1 TYP=1
	245	PALE	43 NS	1714.0	0037.0	675.0D	49.0			QL=1 ST=2 TYP=1
	410	PALE	44 NS	1714.0E	1714.0	406.0D	7.0			QL=5 ST=3 TYP=1
	204	IZMI	41 F	0732.8	0735.0	5.3	97.0			
28	245	LEAR	44 NS	0530.0E	0556.0	282.0D	70.0			QL=5 ST=3 TYP=1
	245	SGMR	44 NS	1054.0E	1516.0	709.0D	87.0			QL=1 ST=2 TYP=1
	204	IZMI	41 F	0807.6	0819.6	18.0	50.0			
	810	KRAK	8 S	1059.7	1059.7	.2	11.0			
29	260	ONDR	44 NS	0726.0E	1112.5	401.0D	68.0			
	204	IZMI	43 NS	0950.0		130.0	95.0			
	430	KRAK	43 NS	0956.0	1043.5	184.0D	94.0	30.0		
	245	SVTO	44 NS	1001.0E	1031.0	408.0D	160.0			QL=1 ST=2 TYP=1
	410	SVTO	44 NS	1001.0E	1048.0	408.0D	78.0			QL=1 ST=2 TYP=1
	810	KRAK	43 NS	1033.0	1054.2	133.0	13.0	8.0		
	245	SGMR	44 NS	1053.0E	1827.0	711.0D	290.0			QL=1 ST=2 TYP=1
	245	PALE	43 NS	1645.0	1948.0	705.0D	82.0			QL=5 ST=3 TYP=1
	245	LEAR	43 NS	2247.0	0538.0	683.0D	46.0			QL=5 ST=2 TYP=1
	2000	TYKW	5 S	0500.0	0500.9	7.0	1.5	.3		
	3750	TYKW	20 GRF	0500.0	0504.0	30.0	1.0	.5		
	204	IZMI	41 F	0728.0	0728.2	16.8	36.0			
	536	ONDR	40 F	0838.0	0854.3	52.0	18.0			
	930	BORD	40 F	1000.0	1204.4	180.0	15.0	.5		
	113	POTS	23 GRF	1005.0	1202.0	265.0U	140.0			
	808	ONDR	27 RF	1040.0	1118.0	90.0				
	234	POTS	23 GRF	1040.0	1126.0	230.0U	190.0			
30	260	ONDR	44 NS	0638.0E	1134.5	446.0D	21.0			
	245	SVTO	43 NS	0930.0	1630.0	441.0D	120.0			QL=5 ST=2 TYP=1
	245	SGMR	44 NS	1051.0E	1545.0	714.0D	42.0			QL=1 ST=2 TYP=1
	410	SVTO	43 NS	1405.0	1639.0	166.0D	110.0			QL=5 ST=2 TYP=1
	245	PALE	43 NS	1752.0	1918.0	638.0D	29.0			QL=5 ST=2 TYP=1
	245	LEAR	43 NS	2247.0	0538.0	483.0D	46.0			QL=5 ST=2 TYP=1
	2000	TYKW	20 GRF	0530.0	0548.0	120.0	2.0	.1		
	9400	TYKW	20 GRF	0530.0	0600.9	140.0	3.0	1.5		
	3750	TYKW	20 GRF	0530.0	0610.0	140.0	3.0	1.5		
	1000	TYKW	45 C	0547.8	0548.1	.7	11.0	1.5		
	204	IZMI	41 F	0610.0	0612.8	5.0	168.0			
31	260	ONDR	44 NS	0617.0E	1302.5	538.0D	32.0			
	245	LEAR	43 NS	2248.0	0525.0U	680.0D	66.0			QL=5 ST=3 TYP=1
	410	LEAR	43 NS	2248.0	0621.0U	680.0D	82.0			QL=5 ST=2 TYP=1
	500	HIRA	27 RF	2337.6	0048.8	128.0				
	200	HIRA	41 F	2356.0	0010.2	67.0	62.0			

Reports are received routinely from the following observatories:

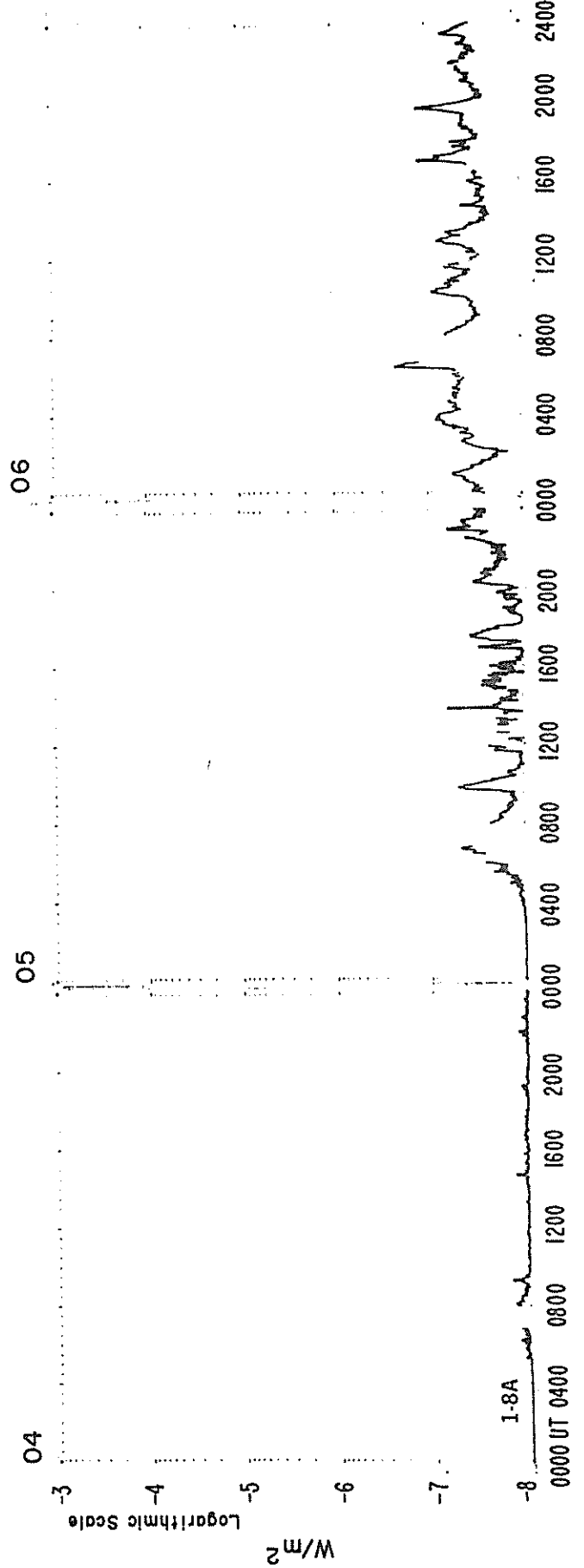
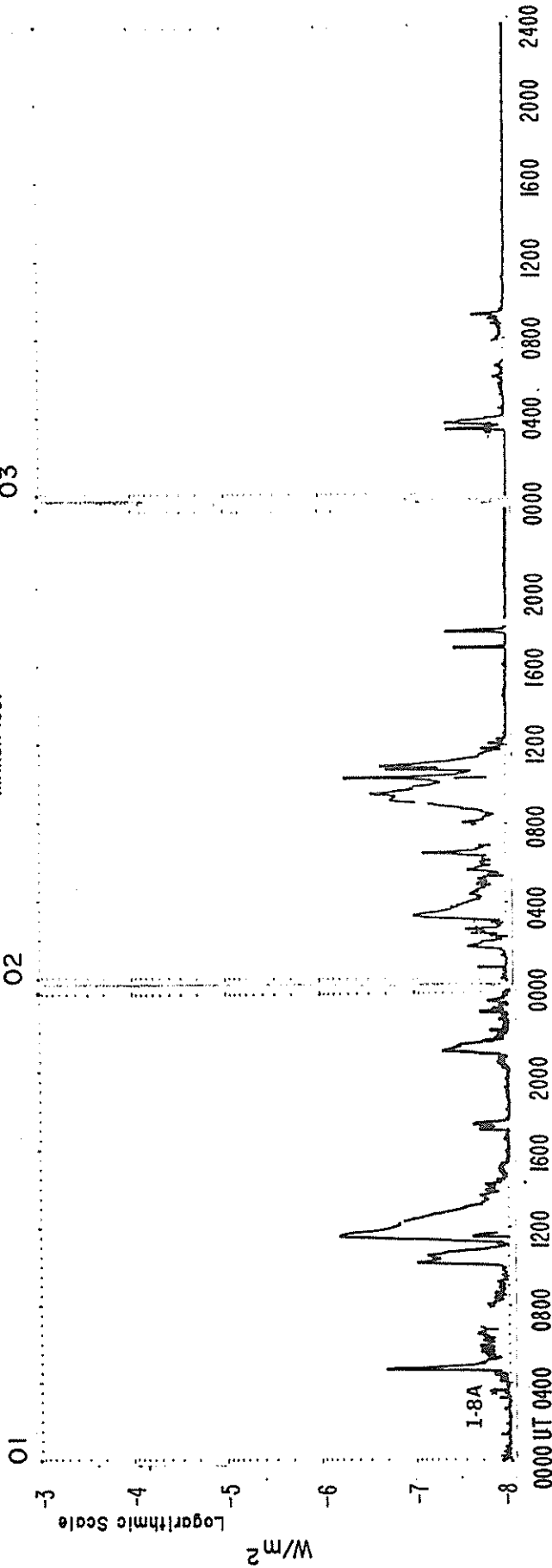
ATHN = Athens	IZMI = IZMIRAN	OTTA = Ottawa	SVTO = San Vito
BERN = Berne	KISK = Kislovodsk	PALE = Palehua	SYDN = Sydney
BORD = Bordeaux	KRAK = Krakow	PEKG = Peking	TORN = Torun
CRIM = Crimea	LEAR = Learmonth	PENT = Penticton	TYKW = Toyokawa
GORK = Gorky	MANI = Manila	POTS = Potsdam	TRST = Trieste
HIRA = Hiraio	NOBE = Nobeyama	SAOP = Sao Paulo	UPIC = Upice
HUAN = Huancayo	ONDR = Ondrejov	SGMR = Sagamore Hill	VORO = Voroshilov

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 Precursor	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	
			46F Complex F	

GOES 6 X-RAYS

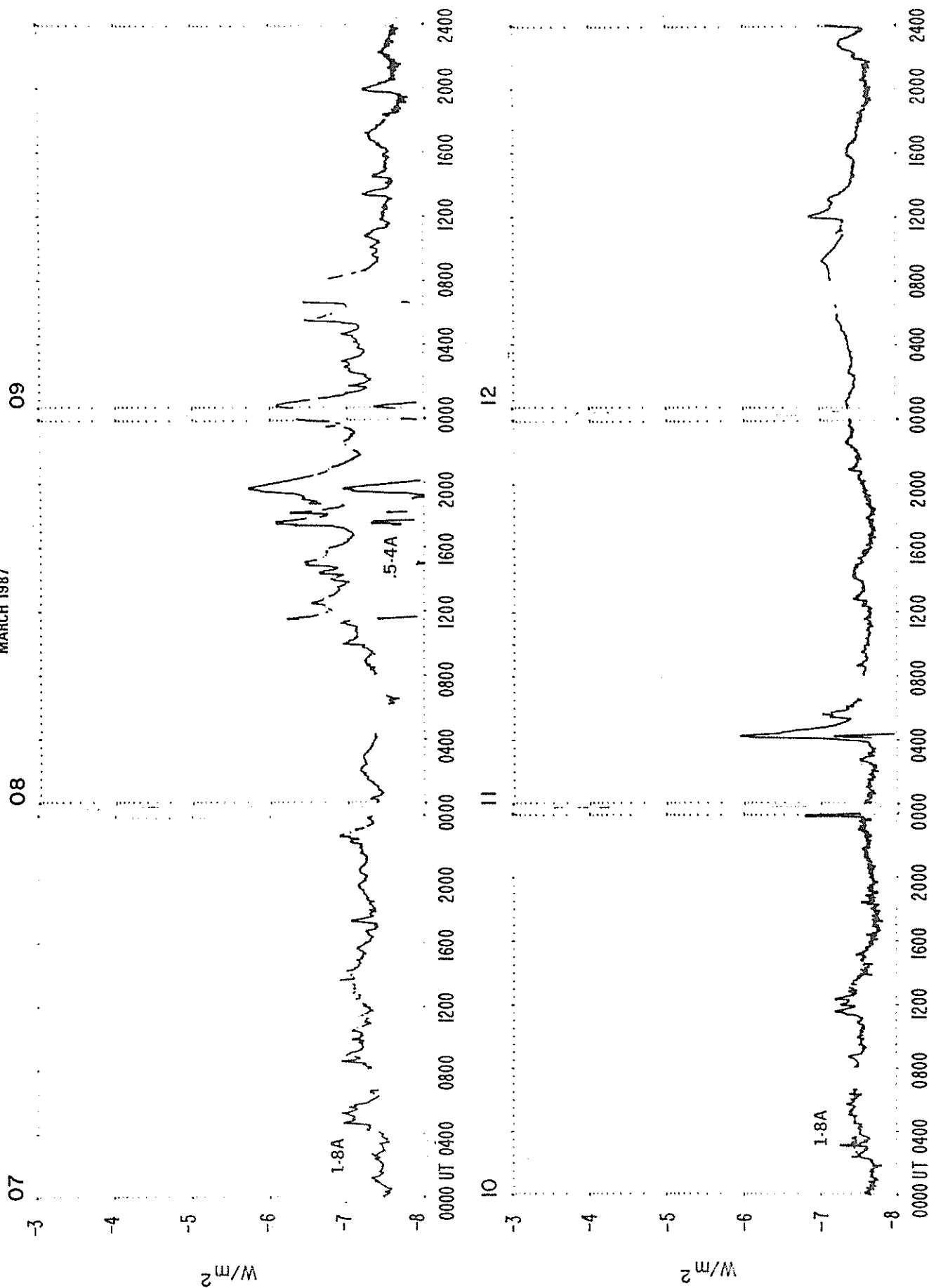
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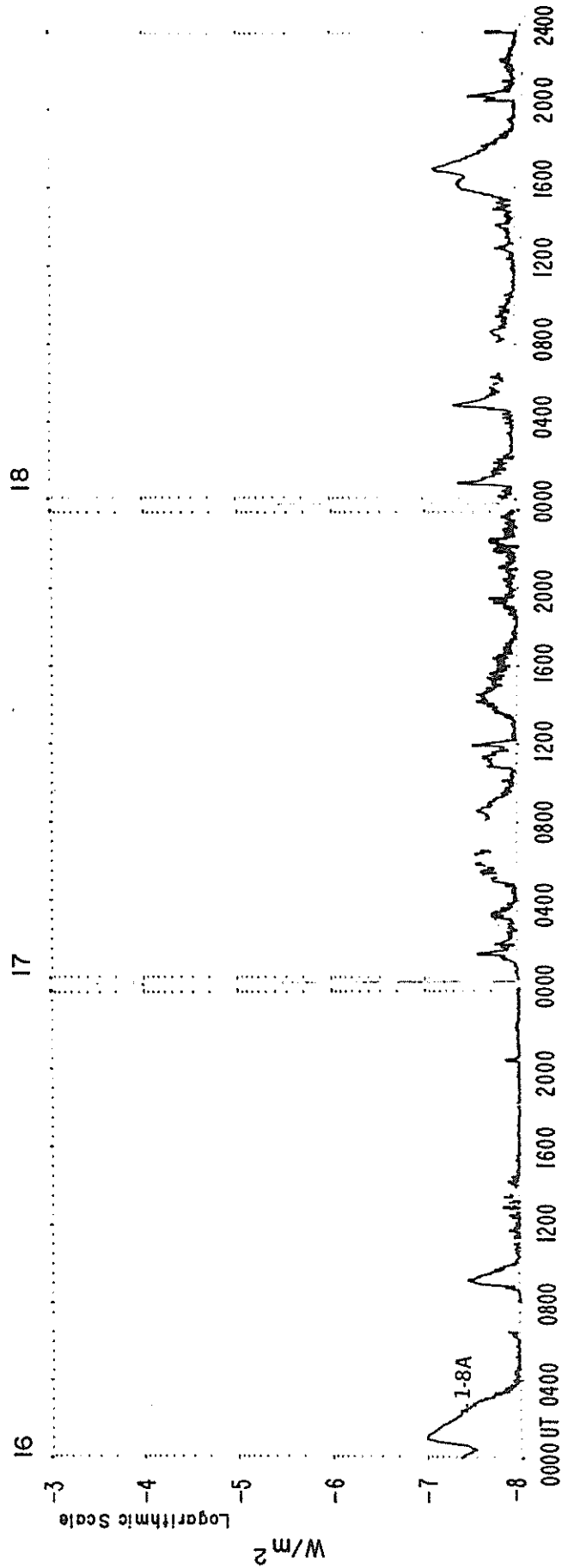
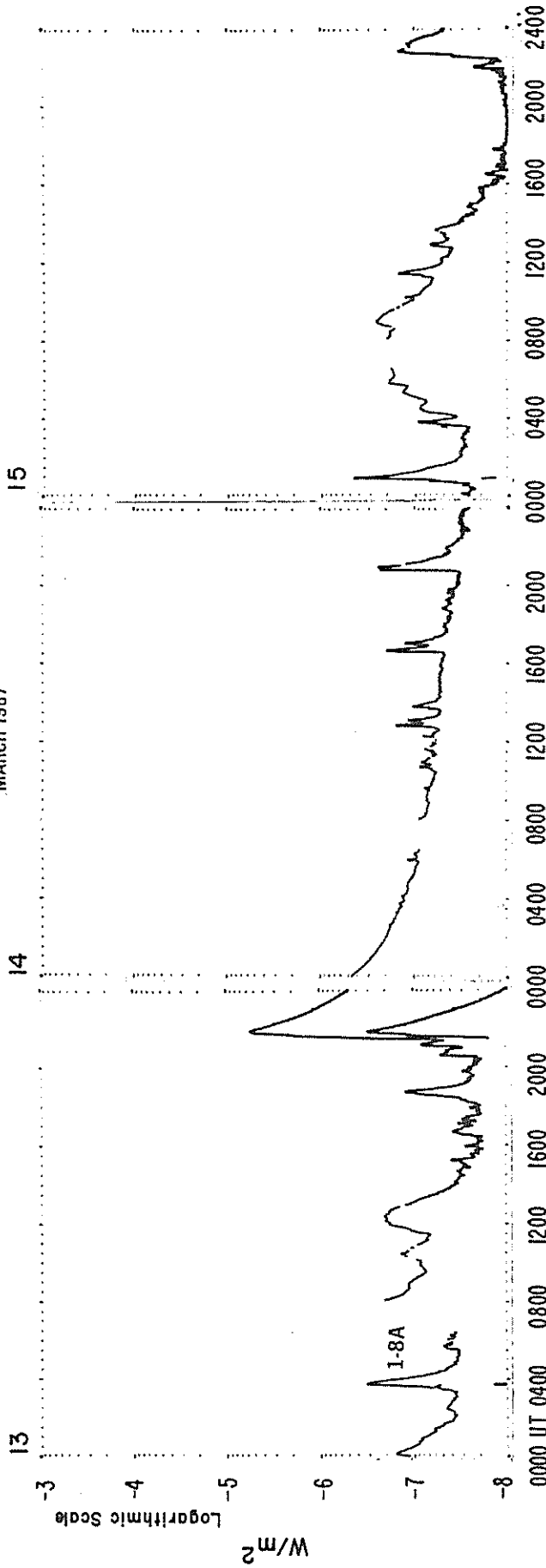
GOES 6 X-RAYS

MARCH 1987



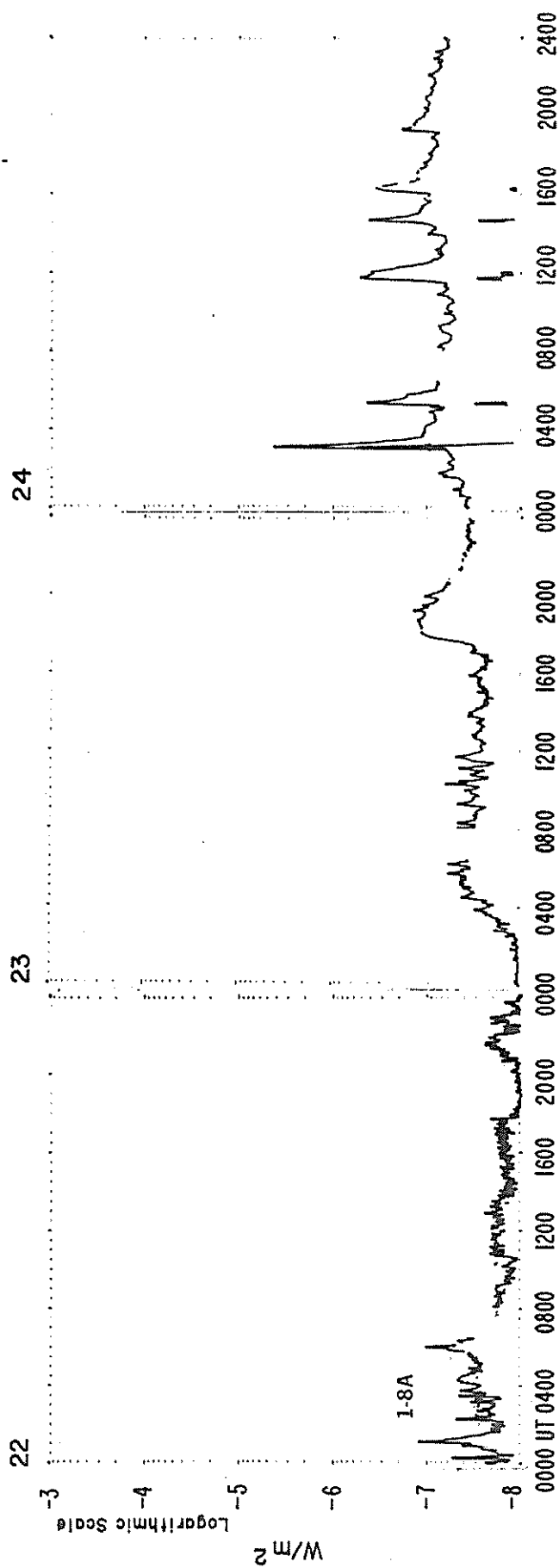
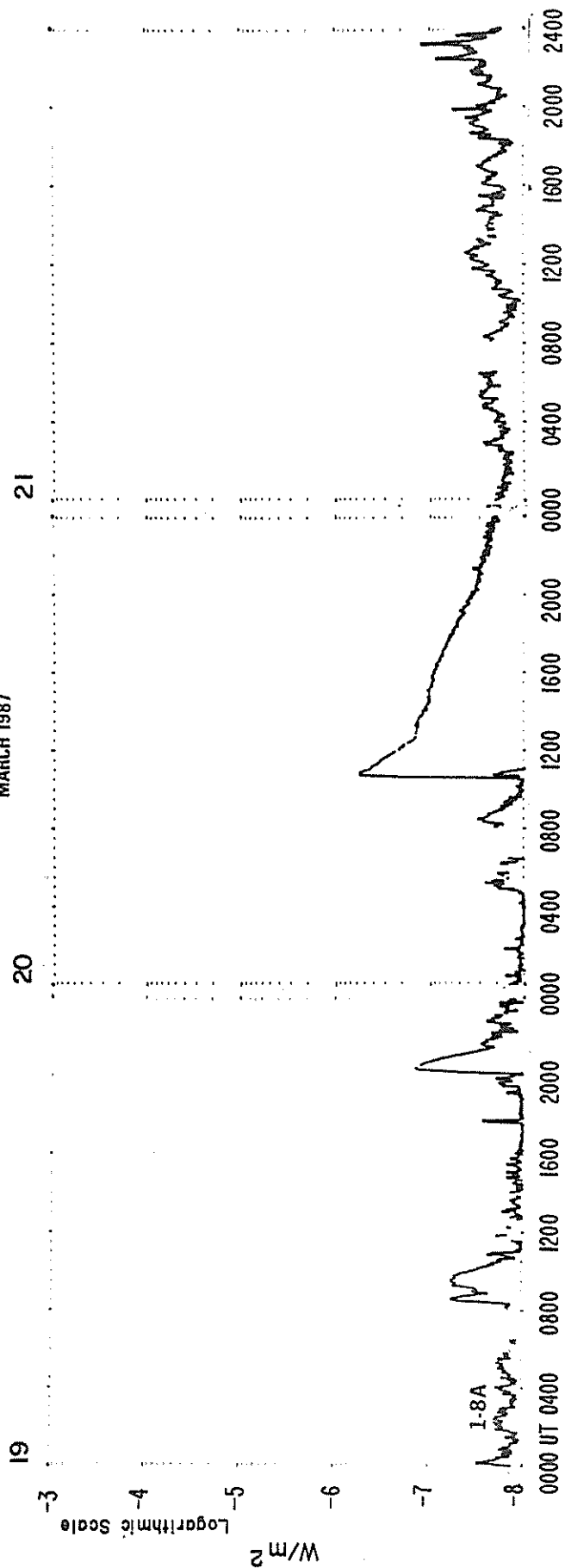
GOES 6 X-RAYS

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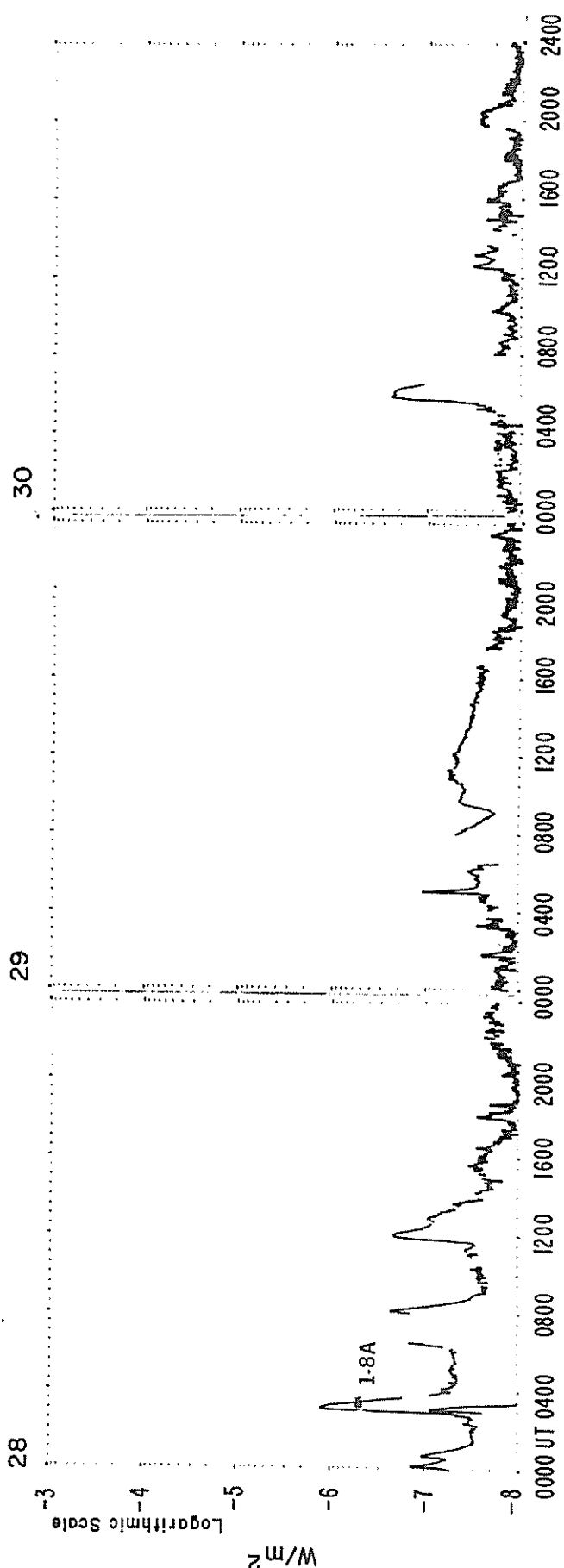
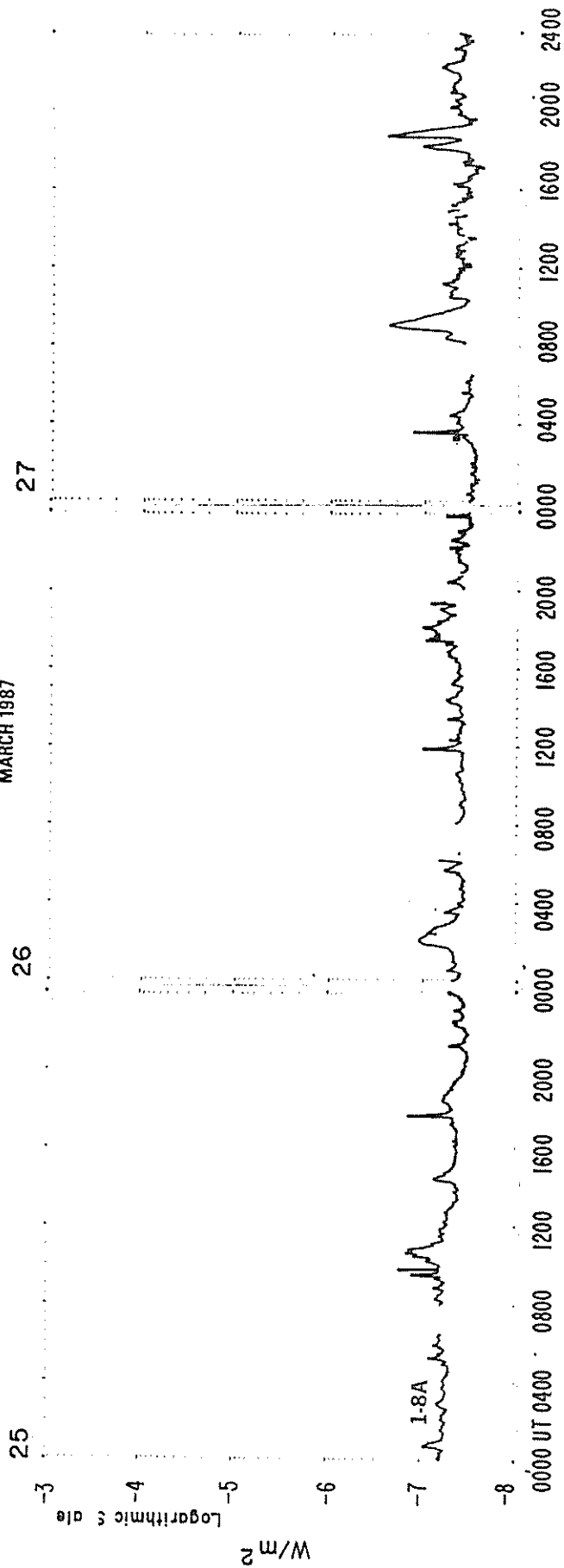
GOES 6 X-RAYS

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GOES 6 X-RAYS

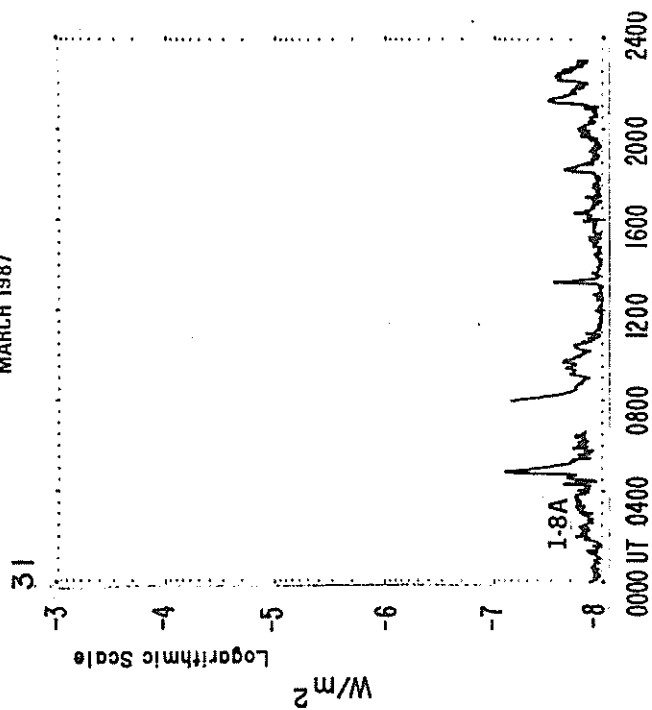
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GOES 6 X-RAYS

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GOES SOLAR X-RAY FLARES
Preliminary Listing

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March 1987

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	Imp Opt	Xray
01	0440	0441	0456	N40	E26	4773	SF	B2.1
01	1010	1013	1015					B1.0
01	1118	0000	1150D	N40	E22	4773	1F	B6.2
02	0316	0320	0323					B1.0
02	0928	0931	0934	N39	E12	4773	SF	B2.8
02	1018	1020	1026	N38	E11	4773	SN	B7.2
02	1043	1044	1107	N36	E13	4773	SN	B2.2
06	0624	0630	0643					B2.2
06	1655	1659	1703					B1.1
06	1933	1938	1942					B1.3
07	0438	0442	0448					B1.1
07	0513	0519	0521					B1.1
07	0830	0831	0837	N05	W32	4778	SN	B1.1
07	0847	0850	0856	N04	W31	4778	SF	B1.1
07	1339	1343	1345					B1.1
07	2241	2244	2251					B1.2
08	0955	1000	1012					B1.1
08	1109	1118	1123					B1.2
08	1130	1134	1140					B6.1
08	1205	1231	1241					B2.9
08	1245	1248	1250					B2.0
08	1326	1331	1333					B1.4
08	1351	1402	1411					B1.6
08	1421	1424	1431					B2.3
08	1442	1506	1515					B3.5
08	1542E	1738	1828	N06	W49	4778	SN	B1.9
08	1626	1629	1631					B1.0
08	1647	1736	1833	N06	W49	4778	SN	B8.8
08	1759	1803	1805					B1.9
08	1834	1928	2034	N06	W51	4778	SN	C1.9
08	2212	2228	2236					B1.1
08	2323	2331	2333					B1.8
08	2337	0009	0026					B8.1
09	0213	0258	0302					B1.1
09	0433	0440	0445					B1.1
09	0518	0532	0542					B3.5
09	0637	0637	0646	N06	W56	4778	SF	B3.6
10	2115	2118	2120					B1.0
11	0406	0416	0422			4778		C1.1
12	1155	1203	1214					B1.3
12	2358	0009	0023					B1.6
13	0337	0346	0356			4779		B3.2
13	0741	0753	0802					B4.5
13	1011	1027	1038					B1.2
13	1135	1224	1252					B2.0
13	1839	1846	1849					B1.1
13	2125	2126	2152	S35	E90	4779	1B	C5.5

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	Imp Opt	Xray
14	0556	0559	0602					B1.1
14	0614	0617	0619					B1.0
14	1249	1251	1251	S35	E90	4779	SF	B1.5
14	1301	1307	1310					B1.1
14	1637	1637	1643	S35	E90	4779	SF	B1.9
14	1657	1702	1707					B1.2
14	2047	2047	2053	S39	E89	4779	SF	B2.5
14	2055	2056	2105	S36	E86	4779	SF	B2.5
15	0505	0556	0638					B1.8
15	0618	0622	0624					B1.7
15	0633	0640	0643					B1.9
15	0714	0739	0750					B3.8
15	0823	0827	0830					B1.8
15	0838	0902	0923					B2.5
15	1010	1014	1017					B1.2
15	1120	1128	1135					B1.4
15	2241	2249	2320					B1.4
15	2309	2313	2315					B1.1
16	0057	0102	0109			4779		B1.0
19	2017	2027	2036			4779		B1.3
20	1043	1047	1058	S32	E13	4779	SF	B5.6
23	1752	1835	2115	S33	W31	4779	SF	B1.4
24	0300	0306	0310	S31	W90			C4.6
24	0343	0346	0349					B1.1
24	0351	0354	0402					B1.1
24	0514	0522	0529					B4.5
24	1134	1146	1209					B5.2
24	1357	1400	1404					B1.0
24	1429	1440	1446					B4.3
24	1540	1549	1553					B1.0
24	1650	1657	1706					B1.4
24	1732	1737	1739					B1.1
24	1801	1806	1808					B1.0
24	1910	1918	1944					B1.8
25	1025	1039	1053					B1.4
26	0152	0205	0216					B1.1
26	0158	0204	0209					B1.0
26	1803	1807	1810					B1.0
27	0852	0903	0914					B2.4
27	1807	1814	1817					B1.0
27	1851	1854	1856					B1.8
28	0039	0043	0048					B1.0
28	0303	0308	0317					C1.2
28	0624	0631	0633					B1.4
28	0805	0809	0814					B2.3
28	1151	1203	1212					B2.1
30	0541	0553	0625					B2.4

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Preliminary GOES Satellite Data
Daily Average X-ray Background

April 1986 - March 1987

Day	1986									1987		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	<B0.1	B0.5	B0.2	<B0.1	<B0.1	<B0.1	<A1.0	B2.7	<A1.0	<A1.3	<A1.0	<A1.0
2	<B0.1	B1.0	<B0.1	<B0.1	<B0.1	<B0.1	<A1.0	A9.0	<A1.0	<A1.0	<A1.0	<A1.0
3	<B0.1	B1.4	<B0.1	<B0.1	B0.3	<B0.1	<A1.0	A5.1>	<A1.0	<A1.0	<A1.0	<A1.0
4	<B0.1	B0.5	<B0.1	<B0.1	B0.2	<B0.1	<A1.0	A8.6	<A1.0	<A1.0	<A1.0	<A1.0
5	<B0.1	B0.2	<B0.1	B0.2	<B0.1	<B0.1	<A1.0	A6.1	<A1.0	<A1.0	<A1.0	<A1.0
6	<B0.1	<B0.1	<B0.1	B0.4	<B0.1	<B0.1	A1.5	A7.0	<A1.0	<A1.0	<A1.0	A2.6
7	B0.2	<B0.1	<B0.1	B0.6	<B0.1	<B0.1	A2.2	A3.6	<A1.0	<A1.0	<A1.0	A4.1
8	<B0.1	<B0.1	<B0.1	<B0.1	B0.4	<B0.1	A2.0	A2.5	<A1.0	<A1.0	<A1.0	A5.2
9	<B0.1	<B0.1	<B0.1	B0.2	B0.4	<B0.1	A2.4	A2.1	A1.6	<A1.0	<A1.0	A3.1
10	<B0.1	<B0.1	<B0.1	B0.9	<B0.1	<B0.1	A2.2	<A1.0	A1.6	<A1.0	<A1.0	A1.9
11	<B0.1	<B0.1	<B0.1	B0.5	<B0.1	<B0.1	A1.8	<A1.0	<A1.0	<A1.0	<A1.0	A2.2
12	B0.2	<B0.1	<B0.1	B0.4	<B0.1	<B0.1	A4.3	A2.3	<A1.0	<A1.0	<A1.0	A3.0
13	<B0.1	<B0.1	<B0.1	B0.7	<B0.1	<B0.1	B1.6	A6.2	<A1.0	<A1.0	<A1.0	A2.6
14	<B0.1	<B0.1	<B0.1	B1.0	<B0.1	<B0.1	B2.5	A4.0	<A1.0	<A1.0	<A1.0	A5.3
15	B0.4	<B0.1	<B0.1	B0.5	<B0.1	B0.3	B1.5	A4.1	<A1.0	<A1.0	<A1.0	A1.9
16	B0.3	B0.2	<B0.1	B0.3	<B0.1	B0.5	B4.0	A3.9	<A1.0	<A1.0	<A1.0	<A1.0
17	B0.3	B0.3	<B0.1	B0.3	<B0.1	<B0.1	B3.7	A3.2	<A1.0	<A1.0	<A1.0	<A1.0
18	B0.2	B0.8	<B0.1	B0.3	<B0.1	<B0.1	B2.5	A3.4	<A1.0	<A1.0	<A1.0	<A1.0
19	B0.2	B0.6	<B0.1	B0.2	<B0.1	<B0.1	B3.8	A3.0	<A1.0	<A1.0	<A1.0	A1.0
20	B0.2	B0.6	<B0.1	B0.2	<B0.1	<B0.1	B2.2	A3.3	<A1.0	<A1.0	<A1.0	A1.3
21	B0.2	B0.6	<B0.1	B0.1	<B0.1	<B0.1	B1.5	A2.1	<A1.0	<A1.0	<A1.0	A1.5
22	B0.2	B0.5	<B0.1	B0.1	<B0.1	<A1.0	B1.6	A2.3	<A1.0	A2.5	<A1.0	A1.4
23	B1.2	B0.4	<B0.1	B0.1	<B0.1	<A1.0	B2.1	A2.1	<A1.0	A1.3	<A1.0	A1.7
24	B2.8	B0.5	<B0.1	B0.1	<B0.1	<A1.0	B2.1	A4.4	<A1.0	<A1.0	A1.7	A5.3
25	B0.9	B0.8	<B0.1	B0.2	<B0.1	<A1.0	B1.7	A2.9	<A1.0	<A1.0	A2.3	A4.2
26	B1.1	B0.5	<B0.1	B0.2	<B0.1	<A1.0	B1.9	A1.3	<A1.0	A1.7	A2.3	A3.8
27	B1.5	B0.3	<B0.1	B0.1	<B0.1	<A1.0	B1.9	A1.2	<A1.0	<A1.0	A1.5	A3.2
28	B1.0	B0.3	<B0.1	B0.2	<B0.1	<A1.0	B1.8	<A1.0	<A1.0	<A1.0	<A1.0	A2.2
29	B0.5	B0.2	<B0.1	B0.3	<B0.1	<A1.0	B1.6	<A1.0	<A1.0	<A1.0		A1.2
30	B0.6	B0.2	B0.7	<B0.1	<B0.1	<A1.0	B1.8	<A1.0	<A1.0	<A1.0		A1.2
31		B0.2		<B0.1	<B0.1		B2.1		<A1.0	<A1.0		<A1.0

MASS EMISSIONS FROM THE SUN

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Mar 87

MARCH 1987

Sta	Day	Observed UT			Location		Freq or Wavelength	Kind of Event
		LStart	Max	End	RA ⁰	R/R ₀		
CULG	Mar 11	2251.0		2300.0			Meter	II
PALE	Mar 11	2251.0		2258.0			Meter	II
CULG	Mar 13	2144.0		2211.0			Meter	II
PALE	Mar 13	2152.0		2207.0			Meter	II
CULG	Mar 13	2156.0		2204.0			Meter	IV
LEAR	Mar 15	0633.0		0644.0			Meter	II

QUALIFIERS ON START, MAX AND END TIMES

D = event ended after tabulated time
 E = event began before the tabulated time
 U = uncertain time

REPORTING STATIONS

CULG = Culgoora
 LEAR = Learmonth
 PALE = Palehua

TYPE OF EVENT

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

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Mar 87

ACTIVE PROMINENCES AND FILAMENTS

MARCH 1987

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/USAF Reg#	Remarks
01	APR	0410E	0933D	N35	W90	02 22.1	2		8	5	E	LEAR		
01	SDF	0420E	1815D	N40	E22	03 3.0		08	0	0	E	PALE	4773	
01	AFS	0515E	0933D	S33	W06	02 28.7		02	9	9	E	LEAR	4775	
01	BSL	0731	0945	N31	W90	02 22.3	1				C	ABST		
01	ADF	1055E	1612D	N40	E25	03 3.5	1	05	9	9	E	SVTO	4773	
01	AFS	1105E	1454D	S32	W10	02 28.7		01	5	6	E	SVTO	4775	
01	AFS	1810E	0244D	S32	W14	02 28.6		02	7	5	E	PALE	4775	
01	AFS	2220E	0042D	S32	W16	02 28.7		03	9	9	E	HOLL	4775	
01	AFS	2320E	0406D	S33	W03	03 1.7		01	6	6	E	LEAR	4775	
02	AFS	0108E	0947D	S33	W18	02 28.6	1	01	7	7	E	LEAR	4775	
02	AFS	0240E	0947D	N37	E13	03 3.1		03	8	7	E	LEAR	4773	
02	AFS	0717E	1342D	N38	E12	03 3.3	1	02	6	7	E	SVTO	4773	
02	ADF	0829E	1342D	N40	E15	03 3.6	2	04	9	9	E	SVTO	4773	
02	ASR	1310E	1342D	S29	E90	03 9.6			9	6	E	SVTO		
02	DSD	1746	1820D	S10	E71	03 8.1		03	9	9	E	HOLL		Flare Associated
02	DSD	1852	2041D	S10	E71	03 8.1		04	9	9	E	HOLL	4776	
03	BSL	0520	0625	S47	E90	03 10.7	1				C	ABST		
03	BSL	0539	0951	N25	E90	03 10.2	1				C	ABST		
04	SDF	0034E	1412D	S40	E22	03 5.8		33	0	0	E	HOLL		
04	SDF	0728E	2326D	S41	W53	02 28.0	3	23	0	0	E	LEAR		
05	BSL	0807	0949	S39	W90	02 26.1	1				C	ABST		
05	AFS	1240E	1312D	N06	W04	03 5.2	1	02	8	6	E	SVTO	4778	
05	AFS	1435E	0035D	N05	W06	03 5.1		03	9	9	E	HOLL	4778	
05	ADF	1457E	2210D	N06	W04	03 5.3		01	9	9	E	HOLL	4778	
05	AFS	1553E	0059D	S21	W67	02 28.5		02	9	8	E	HOLL		
05	AFS	1805E	0430D	N06	W07	03 5.2	1	01	9	9	E	PALE	4778	
05	DSD	1812E	1828D	N06	W10	03 5.0		03	9	9	E	PALE	4778	
05	DSD	1853	2210D	N06	W10	03 5.0		02	9	9	E	HOLL	4778	
05	ADF	2036E	2345D	N05	W08	03 5.2	1	03	9	9	E	PALE	4778	
06	AFS	0121E	0942D	N05	W12	03 5.1		03	9	9	E	LEAR	4778	
06	AFS	1435E	0035D	N05	W06	03 6.1		03	9	9	E	HOLL	4778	
06	AFS	1518E	0050D	N05	W19	03 5.2		02	9	9	E	HOLL	4778	
06	AFS	1801E	0049D	N06	W21	03 5.2	1	02	9	9	E	PALE	4778	
06	AFS	2343E	0936D	N06	W25	03 5.1		02	7	6	E	LEAR	4778	
07	DSD	0025E	0050D	N06	W26	03 5.1		01	9	9	E	HOLL	4778	
07	DSD	0030E	0146D	N04	W25	03 5.1		03	9	9	E	LEAR	4778	
07	DSD	0037E	0049D	N06	W27	03 5.0		02	9	9	E	PALE	4778	
07	DSD	0839	0928D	N05	W33	03 4.9		05	9	9	E	LEAR	4778	
07	DSD	1550E	2025D	N06	W37	03 4.9		06	9	9	E	HOLL	4778	
07	AFS	1759E	0353D	N06	W36	03 5.0	1	03	9	9	E	PALE	4778	
08	ADF	0225E	0847D	N06	W41	03 5.0	2	04	9	9	E	LEAR	4778	
08	DSD	1144E	1549D	N03	W47	03 5.0	2	03	9	9	E	RAMY	4778	Flare Associated
08	DSD	1545E	1940D	N06	W50	03 4.9		03	9	9	E	HOLL	4778	Flare Associated
08	DSD	1705E	1842D	N05	W51	03 4.9		02	9	9	E	PALE	4778	
08	DSD	1830E	1845D	N09	W54	03 4.7	2	05	9	9	E	RAMY	4778	Flare Associated
08	DSD	1845E	2127D	N03	W49	03 5.1	2	04	9	9	E	RAMY	4778	Flare Associated
08	DSD	2020E	2105	N08	W55	03 4.7		05	9	9	E	PALE	4778	
08	ADF	2027E	0110D	N08	W52	03 4.9	1	06	9	9	E	PALE	4778	
08	DSD	2304E	0017D	N07	W54	03 4.9		05	9	9	E	LEAR	4778	
09	ADF	0141E	0906D	N07	W54	03 5.0	2	05	9	9	E	LEAR	4778	
09	ADF	0845E	1424D	N09	W57	03 5.1	1	03	9	8	E	SVTO	4778	
09	ADF	0845E	1424D	N09	W57	03 5.1	1	03	9	8	E	XXX	4778	
09	DSD	1505E	1655D	N07	W64	03 4.8		02	9	9	E	HOLL	4778	
09	APR	1550E	2235D	N39	E78	03 16.0	1		9	9	E	HOLL		
09	AFS	1820E	0038D	N09	W78	03 3.9		03	9	9	E	PALE	4778	
09	ADF	1820E	0038D	N10	W74	03 4.2	1	04	9	9	E	PALE	4778	
09	AFS	1825E	0030D	N07	W62	03 5.1		01	9	8	E	HOLL	4778	
09	DSD	1825E	1903D	N07	W63	03 5.0		02	9	9	E	HOLL	4778	
11	ASR	0411	0518D	N04	W90	03 4.4			9	9	E	LEAR	4778	
11	ASR	0411	0518D	N09	W90	03 4.4			9	9	E	LEAR	4778	
11	SDF	0550E	0618D	N35	E47	03 15.0	3	08	0	0	E	LEAR		
11	ASR	1035E	1603D	N08	W90	03 4.7			9	9	E	SVTO	4778	

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Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/USAF Reg#	Remarks
11	SDF	1917E	1917D	N37	E47	03 15.6		22	0	0	E	HOLL		
11	DSD	2338E	2352D	N24	E13	03 13.0		01	9	9	E	LEAR		
12	BSL	0600	0746	N37	W90	03 5.0	1				C	ABST		
13	ASR	0350E	0629D	S36	E90	03 20.4			9	6	E	LEAR		
13	BSL	0629	0937	S50	E90	03 20.9	1				C	ABST		
13	BSL	0742	0831	S36	E90	03 20.5	1				C	ABST		
13	ASR	0820E	0911D	S35	E90	03 20.5			9	9	E	LEAR		
13	BSL	0831	0903	S07	E90	03 20.1	1				C	ABST		
13	ASR	0835	0945D	S05	E90	03 20.1			9	8	E	LEAR		
13	ASR	1440E	2222D	S48	E80	03 20.3	2		7	6	E	RAMY		
13	APR	1725E	1800D	S37	E90	03 21.0	2		9	9	E	HOLL		
13	ASR	1755E	1805	S32	E90	03 20.9			9	9	E	HOLL		
13	ASR	1825	1920	S36	E90	03 21.0			9	9	E	PALE		
13	ASR	1850E	1910D	S39	E90	03 21.1			9	9	E	HOLL		
13	ASR	2031	0102D	S36	E90	03 21.1			9	9	E	HOLL		Flare Associated
13	ASR	2032	0420D	S36	E90	03 21.1			9	9	E	PALE		
13	BSL	2142E	2155	S36	E90	03 21.1			9	9	E	PALE		
13	EPL	2145E	2150D	S35	E90	03 21.1			9	9	E	HOLL		Flare Associated
14	LPS	0019E	0300D	S30	E90	03 21.1			9	9	E	LEAR		
14	APR	0143	0400	S47	E90	03 21.6	1				C	VORO		
14	APR	0458E	0825D	S44	E90	03 21.6	2		9	9	E	LEAR	4779	
14	APR	0735E	1223D	S48	E90	03 21.9	2		9	6	E	SVTO		
14	APR	0743	1405	N24	E90	03 21.3	1				C	WEND		J, P, B, W1
14	APR	0925E	0930D	S48	E90	03 21.9	1				V	KHAR		
14	BSL	1035	1125	S39	E90	03 21.7	1				V	KHAR		
14	ASR	1038	1450D	S39	E90	03 21.7			9	9	E	SVTO	4779	
14	ASR	1104E	1528D	S38	E90	03 21.7			9	9	E	RAMY	4779	
14	APR	1231E	1714D	S46	E90	03 22.0	2		8	7	E	RAMY		
14	ASR	1635E	2159D	S40	E90	03 22.0	1		7	6	E	HOLL		
14	ASR	1640E	1716D	S38	E87	03 21.7	2		9	9	E	HOLL	4779	Flare Associated
14	ASR	1658E	1732D	S38	E90	03 22.0	2		8	9	E	RAMY	4779	Flare Associated
14	ASR	1902	1945	S40	E90	03 22.1			9	9	E	PALE	4779	
14	ASR	2047	2129	S40	E90	03 22.2			9	9	E	PALE	4779	Flare Associated
15	ASR	0057E	0140D	S36	E86	03 21.9			9	9	E	LEAR	4779	
15	BSL	0057	0112	S35	E90	03 22.2	1				C	VORO		
15	ASR	0058	0401D	S36	E83	03 21.7			9	9	E	PALE	4779	
15	BSL	0614	0900	N27	W90	03 8.2	1				C	ABST		
15	BSL	0614	0900	S40	E90	03 22.6	1				C	ABST		
15	ADF	1812E	1918D	S38	E77	03 22.0	1	04	9	9	E	PALE	4779	
16	ADF	0200E	0425D	S36	E70	03 21.7	1	07	9	9	E	PALE	4779	
16	BSL	0700	0940	S43	E90	03 23.7	1				C	ABST		
16	DSD	1120E	1140D	S33	E67	03 21.8	2	04	9	9	E	RAMY	4779	
16	AFS	1345E	1603D	S15	E20	03 18.1		02	8	9	E	RAMY	4780	
16	ADF	1809	1841D	S35	E61	03 21.6	1	02	7	9	E	PALE	4779	
16	AFS	1809E	0422D	S19	E11	03 17.6		02	9	9	E	PALE	4780	
16	AFS	2143E	0010D	S19	E10	03 17.7		02	9	9	E	HOLL	4780	
16	AFS	2325E	0950D	S20	E08	03 17.6		02	9	9	E	LEAR	4780	
17	DSD	0524E	0535	S32	E49	03 21.1		03	9	9	E	LEAR	4779	
17	DSD	0524E	0535	S32	E49	03 21.1		03	9	9	E	LEAR	4779	
17	ADF	1310E	1509D	S31	E45	03 21.1	1	02	9	9	E	SVTO	4779	
17	ADF	1310E	1509D	S36	E41	03 20.8	1	16	9	7	E	SVTO	4779	
17	DSD	1500E	1620D	S31	E44	03 21.1		03	9	9	E	HOLL	4779	
17	ADF	1618	1735D	S33	E48	03 21.5		03	9	8	E	HOLL	4779	
17	ADF	1826E	0410D	S40	E54	03 22.2	1	05	9	9	E	PALE	4779	
17	ADF	2006E	0410D	S28	E44	03 21.3	1	07	9	9	E	PALE	4779	
18	AFS	0245E	0947D	S19	W08	03 17.5		02	7	9	E	LEAR	4780	
18	SDF	0410E	1753D	S45	E58	03 23.0		08	0	0	E	PALE	4779	
18	ADF	0622E	1643D	S38	E28	03 20.5	1	13	9	9	E	SVTO	4779	
18	ADF	0655E	0947D	S27	E38	03 21.2	2	15	9	9	E	LEAR	4779	
18	AFS	0721E	1634D	S10	W19	03 16.9	1	05	5	8	E	SVTO	4780	
18	ADF	1213E	2037D	S30	E37	03 21.4	1	13	9	9	E	RAMY	4779	
18	SDF	1310E	1633D	S28	W10	03 17.8		07	0	0	E	RAMY		
18	ASR	1310E	1400D	S24	E90	03 25.5			9	9	E	SVTO		
18	AFS	1353E	1718D	S19	W13	03 17.6		02	7	8	E	RAMY	4780	

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Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	NOAA/USAF Sta Reg#	Remarks
18	ADF	1735E	0301D	S28	E32	03 21.2	1	14	8	9	E	PALE 4779	
18	APR	1742E	0048D	N34	E90	03 25.9	1		7	6	E	PALE	
18	ADF	1915E	0040D	S27	E29	03 21.1	2	14	9	9	E	HOLL 4779	
19	ADF	0004E	0111D	S42	E40	03 22.3	2	28	9	9	E	LEAR 4779	
19	ADF	0027	0147*	S28	E28	03 21.2	1				C	CULG	15° Filament
19	SDF	0301E	1955D	S36	E02	03 19.3		14	0	0	E	PALE	
19	SDF	0704E	2305D	S39	W02	03 19.1		11	0	0	E	LEAR	
19	ADF	0715E	1628D	S26	E23	03 21.1	1	15	9	9	E	SVTO 4779	
19	ADF	0747	0246	S35	W09	03 18.6	3				C	CULG	10° Filament
19	SDF	0840E	1122D	S26	E23	03 21.1		15	3	3	E	SVTO 4779	
19	AFS	1210E	1628D	N30	E66	03 24.7	1	04	6	6	E	SVTO	
19	ADF	1245E	1305D	S36	E26	03 21.6	1	07	9	8	E	RAMY 4779	
19	ADF	1445E	2107D	S26	E20	03 21.2	1	15	8	9	E	HOLL 4779	
19	SDF	1506E	1506D	S28	W15	03 18.4		14	0	0	E	HOLL	
19	ADF	1630E	1645D	S18	W29	03 17.5	2	04	6	9	E	RAMY 4780	
19	ADF	1715E	1725D	S19	W25	03 17.8	2	04	7	6	E	RAMY 4780	
19	ADF	1800E	2247D	S25	E18	03 21.1	1	15	9	9	E	PALE 4779	
19	DSO	1852E	2010D	N30	E64	03 24.8		03	9	9	E	PALE	
19	SDF	1945	2100	S25	E18	03 21.2		09	9	9	E	PALE 4779	
19	SDF	2107E	2139D	S28	E17	03 21.2		14	9	9	E	HOLL 4779	
19	ADF	2245E	0403D	N34	E66	03 25.2	1	04	9	9	E	PALE	
19	ADF	2249E	0101D	N35	E68	03 25.4	1	04	7	8	E	HOLL	
20	ADF	0147	0520	S28	E16	03 21.3	3				C	CULG	15° Filament
20	ADF	0927E	0950D	S40	E18	03 21.9	2	08	9	9	E	LEAR 4779	
20	ADF	1030E	1623D	N32	E12	03 21.4	1	12	9	9	E	SVTO 4779	
20	SDF	1200E	1415D	S41	E15	03 21.7		06	0	0	E	RAMY 4779	
20	SDF	1200E	1415D	S41	E15	03 21.7		06	0	0	E	RAMY 4779	
20	ADF	1440E	2152D	S39	E14	03 21.7	1	11	9	9	E	RAMY 4779	
20	ADF	1500E	0101D	S34	E10	03 21.4	1	09	9	9	E	HOLL 4779	
20	AFS	1512E	0101D	N24	E04	03 20.9		01	9	9	E	HOLL 4781	
20	DSO	1513E	1555D	N24	E03	03 20.9		01	9	9	E	HOLL	
20	DSO	1605E	1618D	N24	E03	03 20.9		01	9	9	E	HOLL	
20	DSO	1822E	1914D	N24	E01	03 20.8		04	5	7	E	HOLL 4781	
20	DSO	1946E	2355D	N24	E00	03 20.8		02	7	7	E	HOLL 4781	
20	AFS	2330E	0945D	N24	W01	03 20.9		03	9	9	E	LEAR 4781	
21	DSO	0158E	0945D	N25	W02	03 20.9		03	9	9	E	LEAR 4781	
21	ADF	0200E	0945D	S39	E10	03 21.9	2	06	9	9	E	LEAR 4779	
21	DSO	0220	0239	N26	W03	03 20.9	1				C	VORO	
21	ADF	0248	0358	S39	E06	03 21.6	1				C	VORO	
21	AFS	0423	0945D	N07	W29	03 19.0		02	9	9	E	LEAR	
21	AFS	0615E	1644D	N26	W05	03 20.9	2	02	9	9	E	SVTO 4781	
21	ADF	0615E	1644D	S26	E00	03 21.3	1	17	9	9	E	SVTO 4779	
21	AFS	1130E	2020D	N23	W08	03 20.9		03	9	9	E	RAMY 4781	
21	ADF	1130E	2020D	S31	W02	03 21.3	1	18	9	9	E	RAMY 4779	
21	DSO	1145E	2020D	N25	W09	03 20.8	1	02	9	9	E	RAMY 4781	
21	DSO	1205E	1220D	N27	W10	03 20.7	1				V	KHAR	
21	AFS	1443E	0109D	N24	W10	03 20.8		03	9	9	E	HOLL 4781	
21	DSO	1530E	1600D	N24	W12	03 20.7		03	9	9	E	HOLL 4781	
21	ADF	1938E	0302D	S33	W08	03 21.2	1	11	9	9	E	PALE 4779	
21	AFS	2032E	0302D	N24	W09	03 21.2	1	03	9	9	E	PALE 4781	
21	AFS	2300E	0021D	N25	W15	03 20.8		03	9	9	E	LEAR 4781	
21	AFS	2300E	0933D	N25	W15	03 20.8		03	9	9	E	LEAR 4781	
21	DSO	2321E	2359D	N26	W19	03 20.5		03	9	9	E	LEAR 4781	
22	ADF	0002E	0933D	S33	W08	03 21.4	1	10	9	8	E	LEAR 4779	
22	DSO	0214E	0332D	N24	W22	03 20.4		03	9	9	E	LEAR 4781	
22	AFS	1107E	2132D	N22	W23	03 20.7		01	8	7	E	RAMY 4781	
22	ADF	1107E	2132D	S32	W15	03 21.3	1	08	9	8	E	RAMY 4779	
22	ADF	1524E	1918D	N25	W23	03 20.8		04	8	9	E	HOLL 4781	
22	ADF	1524E	1918D	S35	W16	03 21.4		04	8	8	E	HOLL 4779	
22	ADF	1534E	2132D	N24	W24	03 20.8	1	03	9	9	E	RAMY 4781	
22	ADF	1602E	0025D	S34	W03	03 22.4	1	07	9	9	E	HOLL 4779	
22	ADF	1604E	0025D	N31	E38	03 25.7	1	05	7	5	E	HOLL	
22	ADF	2336E	0943D	S46	W01	03 22.9	2	21	9	9	E	LEAR 4779	
23	ADF	0050E	0745D	N31	E20	03 24.6	2	06	8	9	E	LEAR	
23	DSO	0100E	0316D	N24	W26	03 21.0		01	9	9	E	LEAR 4781	
23	ADF	0105E	0515D	S44	E58	03 27.8	2	21	8	8	E	LEAR	

* On 19 March the first entry for Culgoora begins at 0027 UT 19 March and ends at 0147 UT 20 March.

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Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/USAF Reg#	Remarks
23	AFS	0127E	0943D	N24	W29	03 20.8		03	9	9	E	LEAR	4781	
23	AFS	0255E	0943D	N04	W13	03 22.1		01	9	9	E	LEAR		
23	AFS	0705E	1140D	N05	W16	03 22.1		02	9	9	E	SVTO		
23	AFS	0705E	1628D	N25	W34	03 20.7		02	9	9	E	SVTO	4781	
23	ADF	1153E	1907D	S35	W27	03 21.3	2	07	8	8	E	RAMY	4779	
23	AFS	1352E	2147D	N23	W38	03 20.6		02	8	8	E	RAMY	4781	
23	AFS	1549E	0111D	N24	W37	03 20.8		02	9	9	E	HOLL	4781	
23	SDF	1710E	1740D	S29	W32	03 21.2		15	0	0	E	HOLL	4779	
23	SDF	1730E	1803	S31	W32	03 21.2		12	0	0	E	PALE	4779	
23	AFS	1810E	0245D	N05	W22	03 22.1		01	9	9	E	PALE	4782	
23	AFS	1840E	0111D	N05	W22	03 22.1		02	9	9	E	HOLL	4782	
23	SDF	1907E	1907D	S26	W36	03 21.0	3	15	0	0	E	RAMY	4779	
23	ASR	1917E	0245D	S28	W90	03 16.8			9	9	E	PALE		
23	ASR	1931E	0111D	S31	W90	03 16.7	1		9	9	E	HOLL		
23	ASR	1941E	2147D	S30	W90	03 16.7	1		9	9	E	RAMY		
23	ADF	2022E	0420D	S35	W21	03 22.2	1	09	9	9	E	PALE	4779	
24	ASR	0025E	0905D	S31	W90	03 16.9			9	9	E	LEAR		
24	BSL	0319E	0325D	S31	W90	03 17.0			9	9	E	LEAR		
24	ASR	0758E	1643D	S30	W90	03 17.2			9	9	E	SVTO		
24	AFS	0826E	1643D	N05	W30	03 22.1		01	5	5	E	SVTO	4782	
24	ASR	1428E	1752D	S33	W90	03 17.4			9	9	E	HOLL		
25	BSL	0558	0753	N39	W90	03 17.9	1				C	ABST		
25	DSD	1610E	1646D	N34	W14	03 24.5		04	6	5	E	SVTO		
26	SDF	0005E	0040D	N42	W01	03 25.9		11	0	0	E	LEAR		
26	ADF	1359E	2134D	N05	E72	04 1.0	1	02	8	8	E	RAMY	4783	
26	ASR	1522E	2210D	N21	W80	03 20.5	2		9	9	E	RAMY	4781	
26	DSD	2053E	2205D	N04	E66	03 31.8		03	9	9	E	HOLL	4783	
26	DSD	2134E	2210D	N02	E64	03 31.7		02	9	9	E	RAMY	4783	
26	ASR	2325E	0939D	N24	W90	03 20.0			9	9	E	LEAR	4781	
26	ASR	2330E	0024D	N24	W81	03 20.7			9	9	E	HOLL	4781	
26	SDF	2330E	2330D	N08	W35	03 24.3		08	0	0	E	HOLL		
27	BSL	0905E	0915D	S17	W90	03 20.5	1				V	KHAR		
27	ASR	0924E	1006D	N23	W90	03 20.4			9	9	E	SVTO	4781	
27	BSL	0925E	1000D	S19	W90	03 20.5	1				V	KHAR		
27	ADF	1151E	2207D	N05	E59	03 31.9	2	03	9	9	E	RAMY	4783	
27	ASR	1243E	1325D	N18	W90	03 20.7	2		8	7	E	RAMY	4781	
27	ADF	1425E	2140D	N05	E59	04 1.0	1	03	9	9	E	HOLL	4783	
27	AFS	1712E	2140D	S12	E12	03 28.6		02	9	9	E	HOLL		
27	AFS	1808E	2207D	S13	E12	03 28.7		02	9	9	E	RAMY		
27	DSD	1819E	1843D	N06	E53	03 31.7	2	02	9	9	E	RAMY	4783	
27	AFS	2032E	2158D	S14	E10	03 28.6		01	9	9	E	PALE		
27	DSD	2349E	2350D	N02	E52	03 31.9		02	9	8	E	PALE	4783	
28	ASR	1750	1850D	S35	W90	03 21.5			9	9	E	HOLL	4779	
28	ASR	1800E	1905D	S35	W89	03 21.6			9	9	E	RAMY	4779	
28	DSD	1857E	1914	N06	E42	03 31.9	2	03	9	9	E	RAMY	4783	
29	SDF	1912E	1912D	N38	W58	03 25.1		19	0	0	E	HOLL		
29	SDF	1912E	1912D	N50	W70	03 23.9		19	0	0	E	HOLL		
30	ADF	1336E	1433	N04	E19	04 1.0	2	06	9	9	E	HOLL	4783	
30	SDF	1425E	1433	N04	E19	04 1.0		06	0	0	E	HOLL	4783	
30	DSD	1509E	1615D	N03	E16	03 31.8		02	9	9	E	HOLL	4783	
30	DSD	1650E	1810	N25	W70	03 25.3		01	8	9	E	HOLL		
30	AFS	1652E	1828D	N03	E15	03 31.8		01	9	9	E	RAMY	4783	
30	AFS	2218E	0116D	N02	E12	03 31.8		02	9	9	E	HOLL	4783	
31	ADF	1155E	1933D	N06	E06	03 31.9	2	04	6	8	E	RAMY	4783	
31	ADF	1540E	1840D	N08	E00	03 31.6	1	04	9	9	E	HOLL	4783	
31	DSD	1550E	1933D	N09	E00	03 31.6	1	03	8	9	E	RAMY	4783	
31	AFS	2150E	2342D	N06	W01	03 31.8		01	9	9	E	PALE	4783	
31	AFS	2255E	0146	N05	E11	04 1.8		02	9	9	E	PALE	4783	

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
EPL = Eruptive Prominence on Limb

LPS = Loops
MDP = Mound Prominence
SDF = Sudden Disappearing Filament
SPY = Spray
SSB = Solar Sector Boundary

C O N T E N T S

Comprehensive Reports

MISCELLANEOUS DATA

Number 517 Part II

Page

MASS EJECTIONS FROM THE SUN February 1987. 30

INTERPLANETARY SOLAR WIND IMP 8
November 1986 - April 1987. 31-36

30
Late
Feb 87

MASS EJECTIONS FROM THE SUN

FEBRUARY 1987

Sta	Day	Observed UT			Location		Freq or Wavelength	Kind of Event
		Start	Max	End	RA ⁰	R/R ₀		
PALE	Feb 01	1448.0		1448.0			Meter	II
PALE	Feb 01	1448.0		1448.0			Meter	IV
SGMR	Feb 02	1900.0		2000.0			Meter	IV

QUALIFIERS ON START, MAX AND END TIMES

D = event ended after tabulated time
E = event began before the tabulated time
U = uncertain time

REPORTING STATIONS

PALE = Palehua
SGMR = Sagamore Hill

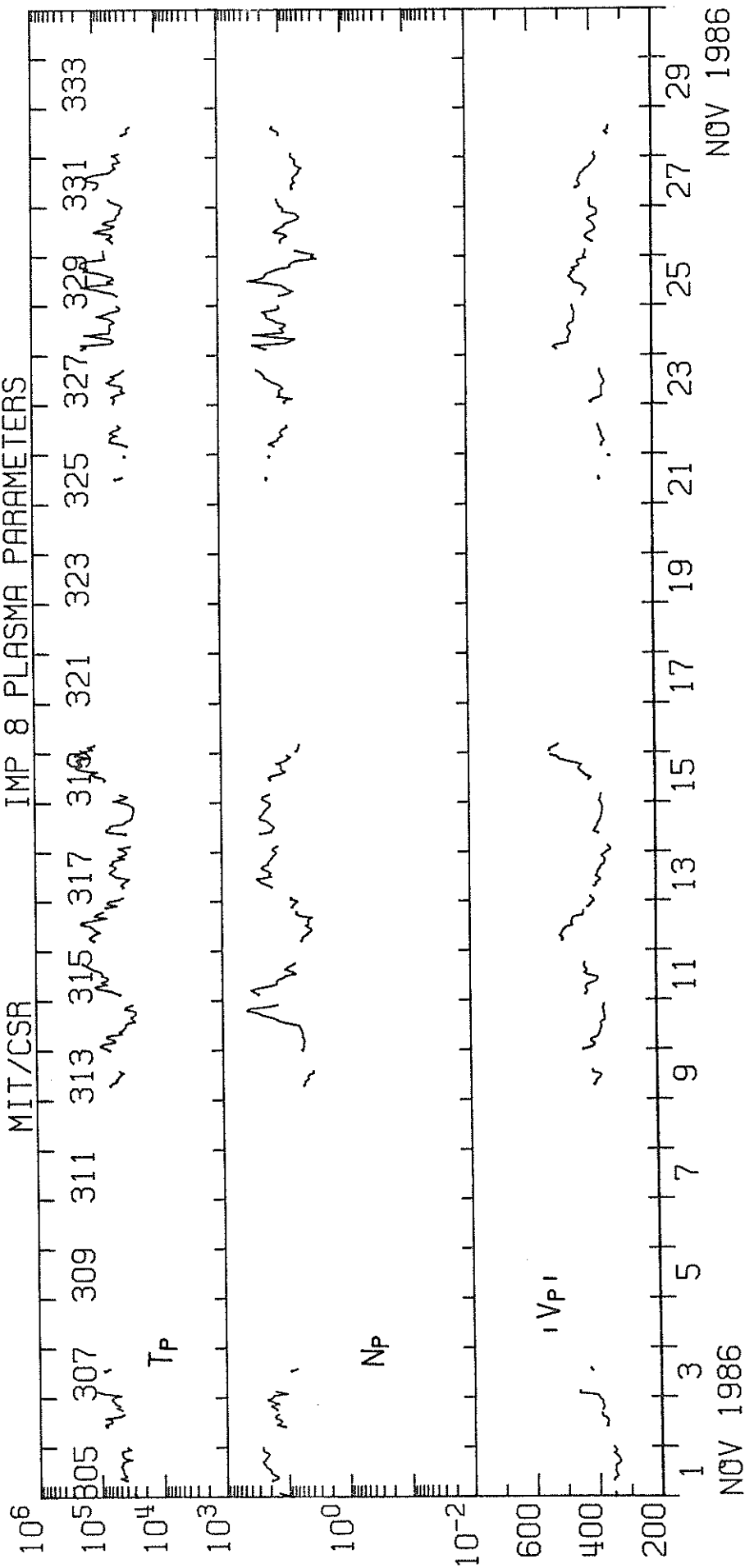
TYPE OF EVENT

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

IMP 8 SOLAR WIND PLASMA

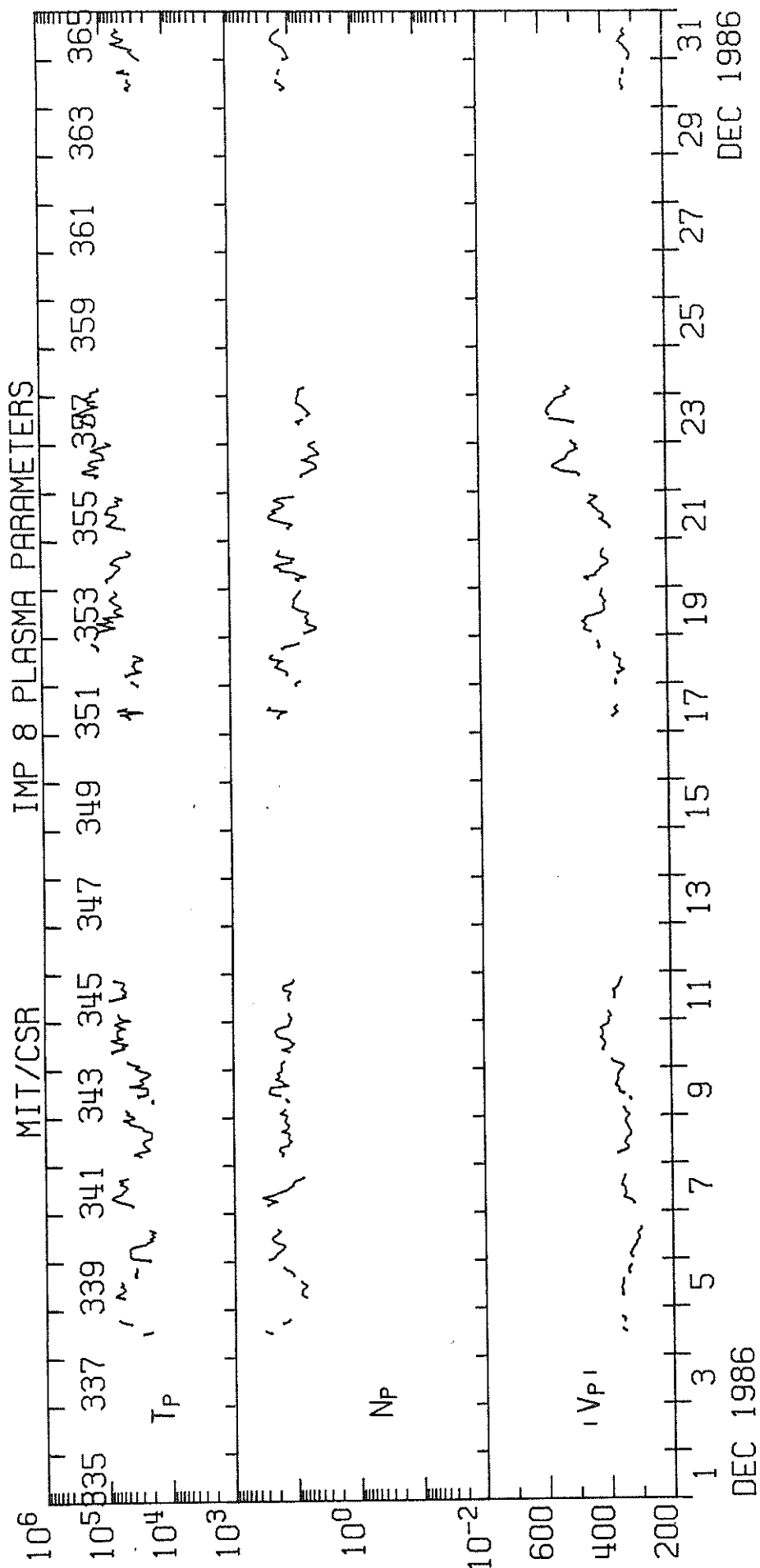
NOVEMBER 1986

MIT/CSR IMP 8 PLASMA PARAMETERS



IMP 8 SOLAR WIND PLASMA

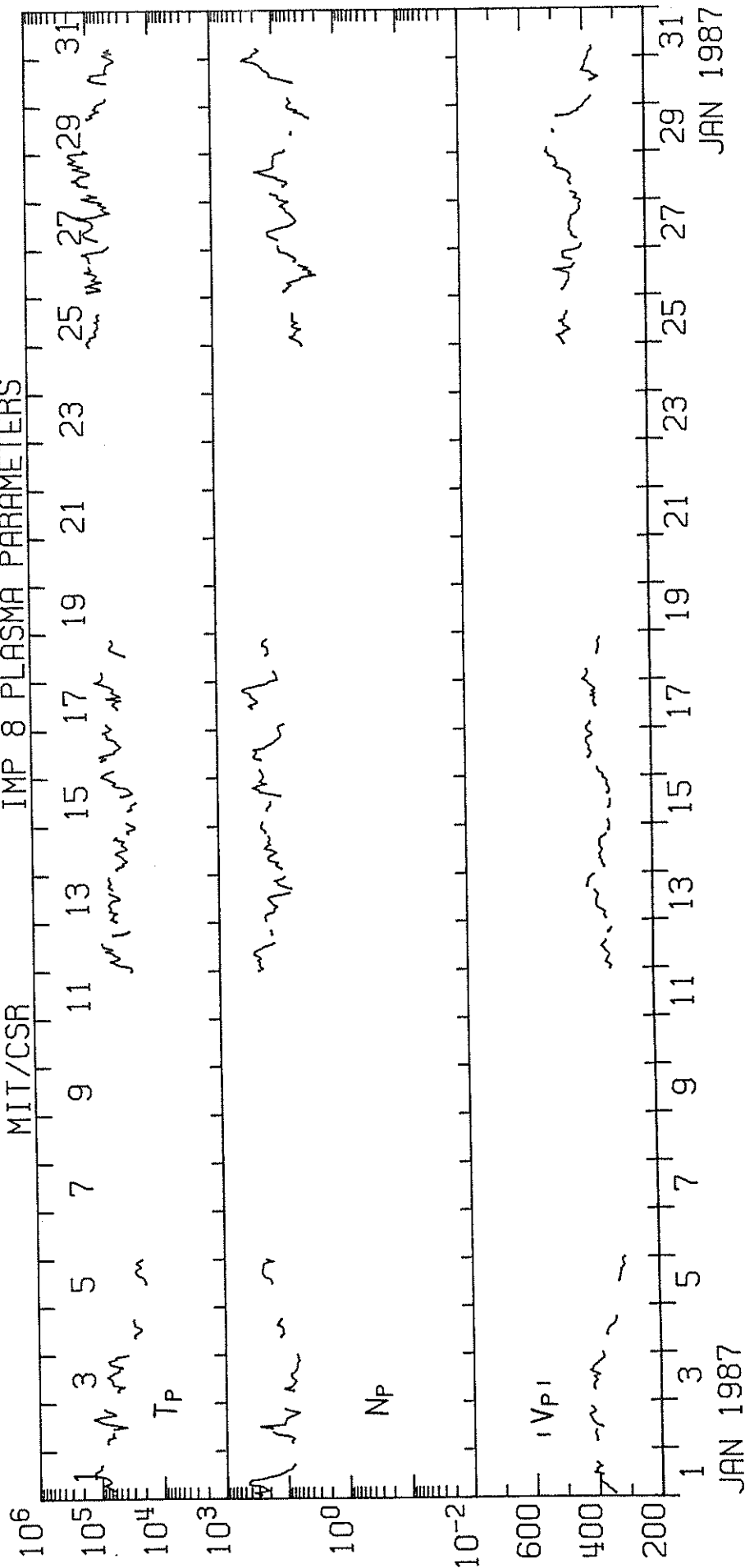
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IMP 8 SOLAR WIND PLASMA

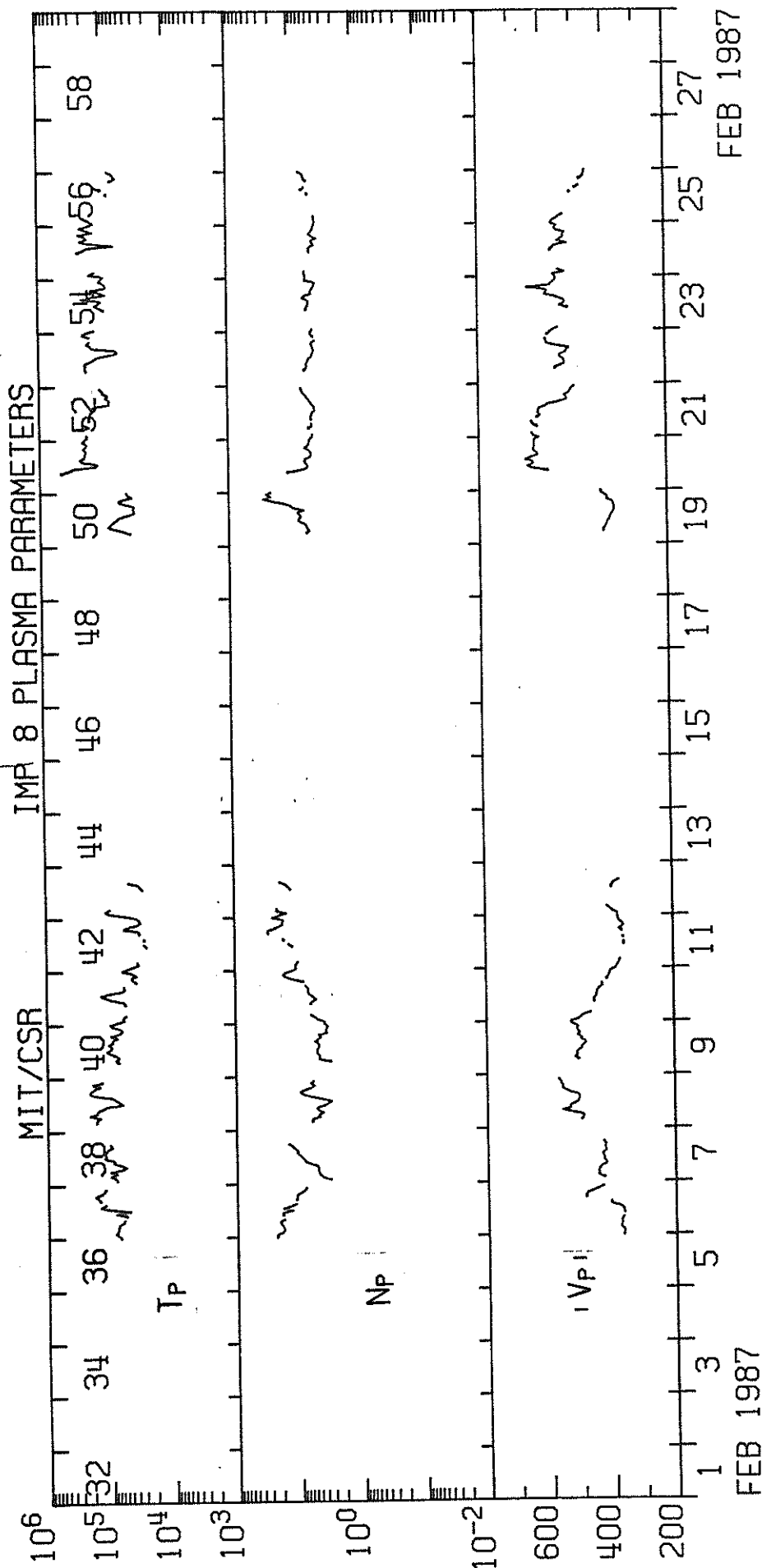
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MIT/CSR IMP 8 PLASMA PARAMETERS



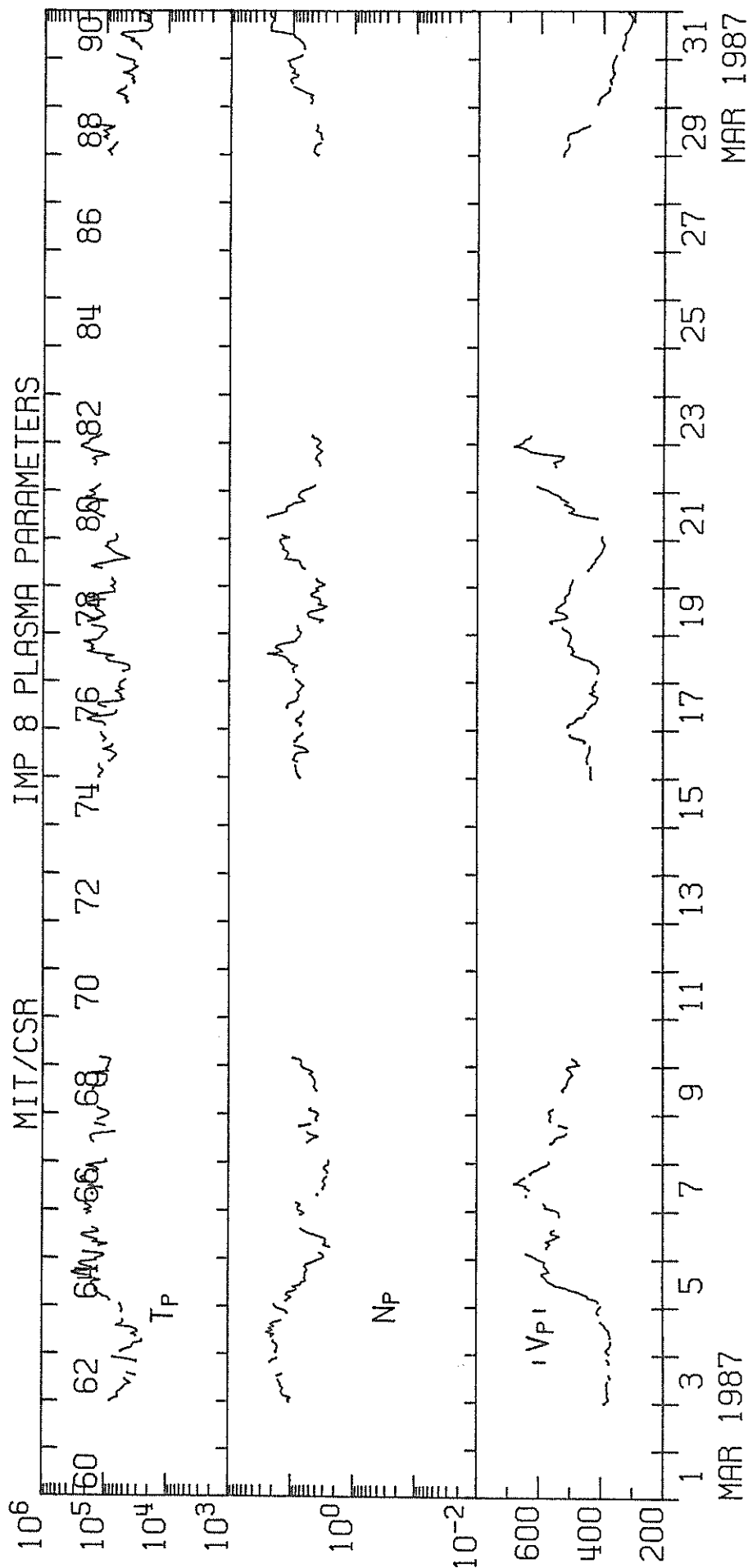
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FEBRUARY 1987



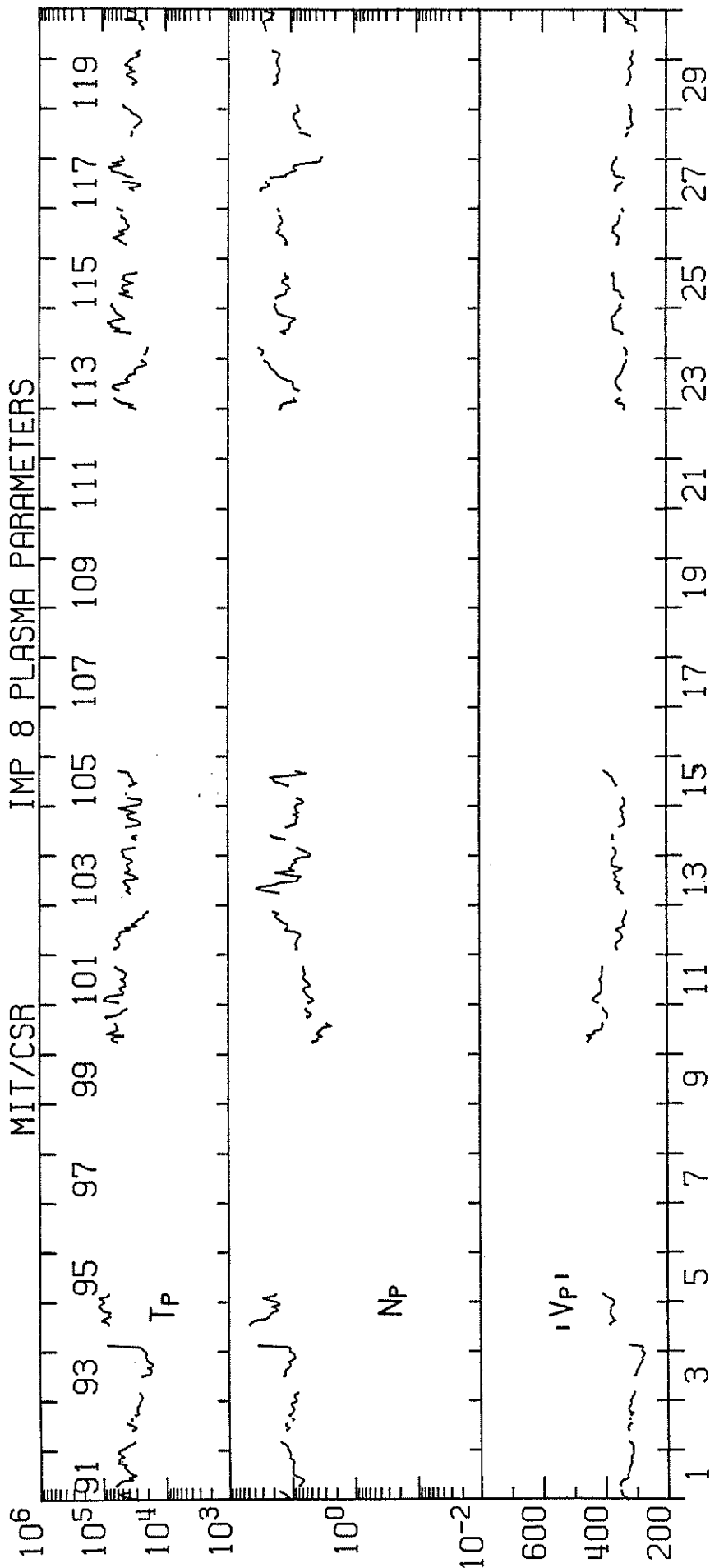
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MARCH 1987



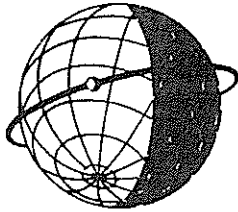
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APRIL 1987



APR 1987

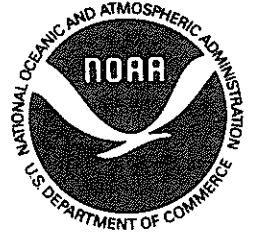
APR 1987



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."