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NUMBER 526

(Issued in Two Parts)

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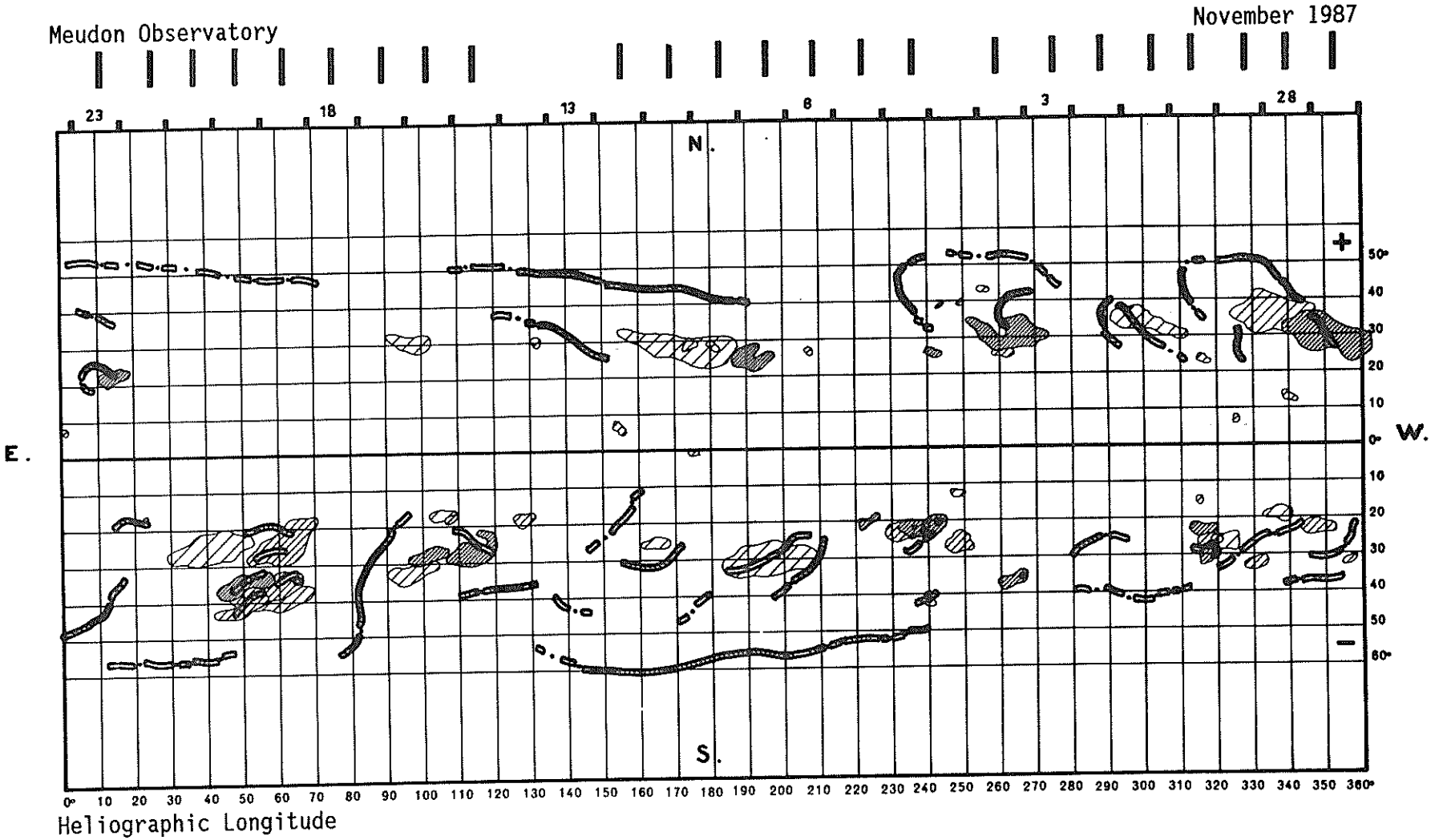
CARTE SYNOPTIQUE
ACTIVE REGIONS
CARRINGTON ROTATION 1796

(26 November to 24 December 1987)

Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1795	Activity at West Limb
1	32 S	357	1	+1	x		disappeared
2	30 N	351	1	>6	x	1	decreasing
3	23 S	348	1	>6	x	3	dispersed
4	36 N	335	1	>6	x		decreasing
5	32 S	331	1	+6	x		dispersed
6	30 S	318	1	+2	x		dispersed
7	23 S	316	1	+1	x		decreasing
8	23 N	316	1	0	x		dispersed
9	37 S	264	2	-4			stable
10	30 N	262	1	>6	x	9	decreasing
11	26 N	261	1	+1	x		decreasing
12	26 S	249	1	>6	x		decreasing
13	26 N	241	1	-1	x		decreasing
14	22 S	239	3	+2			stable
15	22 S	233	1	>6	x		dispersed
16	20 S	224	1	-2	x		stable
17	26 N	192	1	>6	x		dispersed
18	7 N	155	1	+5	x		disappeared
19	30 N	132	1	-3	x		stable
20	19 S	128	1	+6	x		dispersed
21	26 S	114	1	>6	x	28	decreasing
22	28 S	102	1	+4	x		decreasing
23	32 S	98	1	>6	x	28	dispersed
24	24 S	62	1	>6	x	33	decreasing
25	35 S	59	3	>6		32	decreasing
26	38 S	58	1	>6	x	30	decreasing
27	34 S	51	1	>6	x		decreasing
28	41 S	50	1	>6	x		decreasing
29	23 N	15	1	+5	x		dispersed

CARTE SYNOPTIQUE

CARRINGTON ROTATION NUMBER 1796
(26 November to 24 December 1987)



H - ALPHA S O L A R F L A R E S

DECEMBER 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
		01	1632		1641	No Flare Patrol													
0001	LEAR	02	0517	0517	0523	S23	W27	4898	11	30.1	6	SF		3	C		15		F
		02	1540		1630	No Flare Patrol													
0002	LEAR	03	0853	0853	0900	N35	E17		12	4.7	7	SF		3	C		37		FS
		03	1031		1038	No Flare Patrol													
		03	1046		1056	No Flare Patrol													
		03	1642		1655	No Flare Patrol													
		03	1748		1807	No Flare Patrol													
		03	1844		1908	No Flare Patrol													
0003	KHAR	04	0829		0840	N29	W01	4899	12	4.3	11	SF			V	0829			E
		04	2214		2234	No Flare Patrol													
		05	1058		1109	No Flare Patrol													
0004	RAMY	05	1447	1448	1453	S23	E10	4901	12	6.4	6	SF		3	C		14		F
0005	PALE	05	1740	1748	1749	S21	E08	4901	12	6.3	9	SF		2	C		23		F
0006	PALE	05	1742	1752	1753	S23	W77	4898	11	29.9	11	SF		2	C		13		
0007	LEAR	06	0239	0240	0244	S22	E02	4901	12	6.3	5	SF		3	C		22		F
0008		06	05505	05524	0604	S22	E00	4901	12	6.2	14	1N	C 3.7				169	3.3	E
	LEAR	06	0550	0552	0609	S22	E01	4901	12	6.3	19	SF	C 3.7	3	C		44		
	PEKG	06	0555	0556	0600	S22	W00	4901	12	6.2	5	1N	C 3.7		C	0556	294	3.3	E
0009	HTPR	06	1100		1123D	N06	E80	4905C	12	12.4	23D	SF			C	1110	20		
0010	HOLL	06	2312	2317	2324	S20	W14	4901	12	5.9	12	SF		4	C		17		
		07	0659		0705	No Flare Patrol													
		07	1212		1243	No Flare Patrol													
		07	1247		1254	No Flare Patrol													
		07	1343		1348	No Flare Patrol													
		07	1350		1407	No Flare Patrol													
0011	HTPR	08	1006	1012	1028	S23	W28	4901	12	6.3	22	SF			C	1012	20	0.2	E
0012	HTPR	08	1247	1300	1305	S30	E90		12	15.6	18	SN			C	1300	30		A
		08	1401		1403	No Flare Patrol													
0013	HOLL	08	1916	1918	1930	S22	W34	4901	12	6.2	14	SF		3	C		13		
0014		08	20274	20283	2038	S22	W34	4901	12	6.2	11	SF					14		F
	HOLL	08	2027	2028	2038	S21	W33	4901	12	6.3	11	SF		3	C		14		F
	PALE	08	2031	2031	2037	S22	W34	4901	12	6.2	6	SF		2	C		14		F
0015	LEAR	09	0106	0118	0123	S21	W36	4901	12	6.3	17	SF	C 1.1	3	C		20		
0016	KHAR	09	0855E		0915D	S20	W36	4901	12	6.6	20D	SF			V				D
		09	1051		1057	No Flare Patrol													
		09	1100		1115	No Flare Patrol													
0017	CATA	09	1116E	1116	1122D	N27	E05	4905A	12	9.8	6D	SN		2	P	1116	84	1.0	
		09	1147		1159	No Flare Patrol													
		09	1319		1342	No Flare Patrol													
0018	HOLL	09	1508	1509	1513	S22	W44	4901	12	6.2	5	SF		3	C		12		
		09	1659		1708	No Flare Patrol													
0019	HOLL	09	1728	1729	1740	S21	W48	4901	12	6.0	12	SF		3	C		15		

H - ALPHA S O L A R F L A R E S

DECEMBER 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0020	HTPR	10	1349	1410	1500	S20	W55	4901	12	6.4	71	1B				C	1410	130	2.3	E
		10	2035		2042	No Flare Patrol														
		10	2047		2112	No Flare Patrol														
		11	1517		1523	No Flare Patrol														
		12	1610		1615	No Flare Patrol														
		12	2031		2123	No Flare Patrol														
		13	0601		0644	No Flare Patrol														
		13	0746		0801	No Flare Patrol														
		13	0941		1036	No Flare Patrol														
		13	1042		1055	No Flare Patrol														
		13	2027		2349	No Flare Patrol														
		14	0251		0258	No Flare Patrol														
		14	0337		0344	No Flare Patrol														
		14	0726		0808	No Flare Patrol														
		14	0856		0859	No Flare Patrol														
		14	0907		0911	No Flare Patrol														
		14	0920		0942	No Flare Patrol														
		14	1000		1005	No Flare Patrol														
		14	1020		1109	No Flare Patrol														
		14	1640		1807	No Flare Patrol														
0021		14	2114	21152	2136	S24	E63	4908	12	19.7	22	SF	C	1.8				50		F
	RAMY	14	2114	2115	2137D	S24	E62	4908	12	19.7	23D	SF	C	1.8	3	C		54		F
	HOLL	14	2114	2117	2136	S23	E64	4908	12	19.8	22	SF	C	1.8	3	C		47		F
0022	LEAR	15	0245	0247	0251	S33	E59	4908A	12	19.8	6	SF			3	C		28		
0023		15	09059	0857*	0914	S36	E57	4908A	12	19.9	9	SN	C	1.1				79	2.4	F
	CATA	15	0857E	0857	0900	S35	E55	4908A	12	19.8	3D	1N			2	P	0857	141	3.0	
	KANZ	15	0905	0905	0921	S37	E59	4908A	12	20.1	16	SF			1					
	CATA	15	0905	0918	1000D	S36	E57	4908A	12	19.9	55D	SN			2	P	0918	84	1.9	
	LEAR	15	0914	0915	0922	S35	E57	4908A	12	19.9	8	SF	C	1.1	3	C		11		F
0024	HTPR	15	1148	1149	1151	S34	E47	4906	12	19.2	3	SN				C	1149	20	0.3	E
		15	1342		1408	No Flare Patrol														
0025	HTPR	15	1409E		1418	S34	E60	4908A	12	20.4	9D	SF				C	1412	10	0.2	
0026	HTPR	15	1410	1415	1422	S34	E46	4906	12	19.2	12	SN				C	1415	20	0.3	
		15	1526		2211	No Flare Patrol														
0027	LEAR	16	0317	0318	0323	S35	E47	4906	12	19.9	6	SF			3	C		18		
0028	LEAR	16	0336	0339	0400	S35	E47	4906	12	19.9	24	SF			3	C		42		E
0029	LEAR	16	0437	0439	0442	S35	E47	4906	12	19.9	5	SF			3	C		56		
0030	LEAR	16	0553	0554	0559	S34	E38	4906	12	19.3	6	SF			3	C		26		
0031	HTPR	16	1036	1047	1055	S34	E55		12	20.8	19	SF				C	1047	50	0.9	E
		16	1056		1110	No Flare Patrol														
0032	HTPR	16	1228	1230	1233	S31	E37	4906	12	19.4	5	SF				C	1230	20	0.2	E
0033	RAMY	16	1527	1531	1546	S34	E43	4906	12	20.1	19	SF			5	C		12		
0034	RAMY	16	1616	1620	1637	S35	E42	4906	12	20.0	21	SF			3	C		25		
		16	2140		2205	No Flare Patrol														
0035	LEAR	17	0022	0022	0030	S33	E37	4906	12	19.9	8	SF			3	C		16		F
0036	LEAR	17	0226	0227	0237	S34	E32	4906	12	19.6	11	SN			3	C		42		FH

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Opt	Imp	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0037		17	0250	02503	0255	S33	E43		12	20.5	5	SN						58	1.8	EF
	LEAR	17	0250	0250	0255	S34	E42		12	20.5	5	SF			3	C		11		F
	PEKG	17	0253E	0253	0255	S32	E44		12	20.6	2D	SN				P	0253	105	1.8	E
		17	0548		0636	No Flare Patrol														
		17	0709		0728	No Flare Patrol														
0038		17	0750	0801	0838	S36	E29	4906	12	19.6	48	SN						33	0.4	
	CATA	17	0750	0801	0825	S38	E29	4906	12	19.7	35	SN			2	C	0801	56	0.8	
	HTPR	17	0825E		0850	S34	E29	4906	12	19.7	25D	SF				C	0829	10	0.1	
0039	HTPR	17	1027	1028	1029	S35	E33	4906	12	20.1	2	SF				C	1028	10	0.1	
0040	HTPR	17	1048	1048	1055	S32	E23	4906	12	19.3	7	SN				C	1048	50	0.5	E
0041	RAMY	17	1437	1438	1451	N21	E72	4909	12	23.1	14	SF			3	C		11		
		17	2145		2229	No Flare Patrol														
0042	CATA	18	0832E	0840	0847D	S43	E38		12	21.5	15D	SN			2	P	0840	84	1.5	
		18	1933		2214	No Flare Patrol														
0043	LEAR	19	0207	0208	0210	S35	E06	4906	12	19.6	3	SF			3	C		16		
		19	1439		1522	No Flare Patrol														
		19	2022		2031	No Flare Patrol														
		19	2047		2055	No Flare Patrol														
		19	2227		2233	No Flare Patrol														
		20	1635		1652	No Flare Patrol														
		20	2140		2221	No Flare Patrol														
0044	YUNN	21	0623	0625	0644	N22	E26	4909	12	23.3	21	SN				C		32	0.4	
0045	YUNN	21	0624	0630	0655	S21	W76	4910	12	15.4	31	SN				C		161		
0046	CATA	21	1016E	1016	1034	S25	W80	4910	12	15.2	18D	1B			2	P	1016	112		
		21	1041		1044	No Flare Patrol														
0047	HOLL	21	1914	1915	1921	S21	W91	4910	12	14.8	7	SF			4	C		26		
0048	HOLL	21	1943	1945	1957	S19	W89	4910	12	15.0	14	SF			4	C		78		
0049	HOLL	21	2009	2012	2013	S21	W91	4910	12	14.9	4	SF			4	C		11		
0050	YUNN	22	0735	0747	0808	N20	E12		12	23.2	33	SN				C		16	0.2	
0051		22	10092	10114	1028	N22	E09		12	23.1	19	SN						52	0.6	E
	HTPR	22	1009	1015	1030	N23	E09		12	23.1	21	SF				C	1015	20	0.2	E
	CATA	22	1011	1011	1025	N21	E09		12	23.1	14	SN			2	C	1011	84	1.0	
		22	2017		2022	No Flare Patrol														
0052	HTPR	24	1257	1259	1318	S34	E90	4912	12	31.7	21	SN				C	1259	20		AE
0053		24	1854	1855	1903	S34	E87	4912	12	31.7	9	SF	C	1.2				42		
	PALE	24	1854	1855	1902	S34	E90	4912	01	1.0	8	SF	C	1.2	3	C				
	HOLL	24	1854	1855	1904	S35	E84	4912	12	31.5	10	SF	C	1.2	3	C		42		
0054	KHAR	25	0754E	0755U	0824D	S34	E87	4912	01	1.3	30D	1F				P	0805			HPT
0055		25	0907E	0907U	0935	S34	E87	4912	01	1.3	28D	1F								CHT
	KHAR	25	0907E	0907U	0935	S34	E87	4912	01	1.3	28D	1F				V	0907			HT
	KHAR	25	0946E		1014D	S34	E87	4912	01	1.3	28D	SF				V	0946			CHT
0056	KHAR	25	1028	1030	1050	S34	E86	4912	01	1.3	22	SF				V	1028			CT
		25	1051		1137	No Flare Patrol														
		25	1439		1544	No Flare Patrol														

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0057	RAMY	25	1734	1735	1743	S32	E69	4912	12	31.2	9	SF			3	C		23		F
		25	1803		1819	No Flare Patrol														
0058		25	1903	1903*	1944	S32	E71	4912	12	31.4	41	SF	C	2.5				25		
	RAMY	25	1903	1903	1937	S32	E69	4912	12	31.2	34	SF	C	2.5	3	C		14		
	PALE	25	1921E	1931	1950	S33	E73	4912	12	31.6	29D	SF			3	C		36		
0059	RAMY	25	2041	2050	2106	S34	E76	4912	12	31.9	25	SF	C	2.2	3	C		10		
		25	2050		2103	No Flare Patrol														
		25	2140		2147	No Flare Patrol														
		25	2159		2206	No Flare Patrol														
0060	PALE	25	2216E	2218	2222	S34	E76	4912	01	1.0	6D	SF			3	C		14		
0061	LEAR	26	0024	0024	0033	S34	E76	4912	01	1.1	9	SF			3	C		18		
0062		26	01165	01213	0137	S34	E78	4912	01	1.3	21	1N						89		E
	MITK	26	0116	0121	0144	S34	E80	4912	01	1.4	28	1N				C	0121	150		E
	LEAR	26	0121	0124	0130	S34	E76	4912	01	1.1	9	SF			3	C		28		
0063		26	0152	0158*	0224	S34	E75	4912	01	1.0	32	1N	C	4.6				92		E
	MITK	26	0152	0158	0211	S34	E74	4912	01	1.0	19	1N				C	0158	130		E
	LEAR	26	0152	0216	0236	S34	E76	4912	01	1.1	44	1N	C	4.6	3	C		53		
0064	LEAR	26	0237	0244	0257	S34	E76	4912	01	1.2	20	SF			3	C		24		
0065		26	06477	06496	0702	S34	E79	4912	01	1.6	15	1F						56		D
	ABST	26	0647	0649	0704	S34	E82	4912	01	1.8	17	1F				C	0649	87		D
	LEAR	26	0654	0655	0700	S34	E76	4912	01	1.3	6	SF			3	C		24		
0066		26	09032	09045	0924	S34	E73	4912	01	1.2	21	SF						53		E
	SVTO	26	0903	0904	0908	S33	E71	4912	01	1.0	5	SF			3	C		22		
	LEAR	26	0903	0904	0915	S34	E70	4912	12	31.9	12	SF			3	C		31		
	KANZ	26	0905	0905	0916	S35	E75	4912	01	1.4	11	SF			2					
	BUCA	26	0905	0909	0955	S34	E75	4912	01	1.3	50	1N				C	0909	107		E
0067		26	09284	09285	0938	S32	E76	4912	01	1.4	10	SF						53		A
	LEAR	26	0928	0928	0933	S32	E76	4912	01	1.4	5	SF			3	C		16		
	KANZ	26	0928	0928	0934	S34	E75	4912	01	1.4	6	SF			2					
	SVTO	26	0928	0930	0932	S31	E71	4912	01	1.0	4	SF			3	C		13		
	BUCA	26	0932	0933	0955	S32	E80	4912	01	1.7	23	1N				C	0933	129		A
0068	HTPR	26	1004	1006	1012	S34	E61	4912	12	31.3	8	SF				C	1006	30	0.6	
0069		26	10271	10283	1043	S36	E66	4912	12	31.7	16	SF						20	0.4	
	HTPR	26	1027	1028	1040	S34	E58	4912	12	31.0	13	SF				C	1028	20	0.4	
	KANZ	26	1028	1031	1046	S37	E74	4912	01	1.4	18	SF			2					
0070	HTPR	26	1159	1204	1216	S34	E60	4912	12	31.3	17	SN				C	1204	40	0.8	E
0071	HTPR	26	1249	1303	1308	S34	E60	4912	12	31.3	19	SN				C	1303	40	0.8	E
		26	1559		1604	No Flare Patrol														
		26	1633		1803	No Flare Patrol														
0072	RAMY	26	1804E	1805U	1827	S33	E66	4912	01	1.0	23D	SF	M	1.8	2	C		40		
0073		26	1940	2016*	2137	S34	E64	4912	12	31.9	117	1N	M	1.1				207		FZ
	RAMY	26	1935E	2020U	2124	S34	E66	4912	01	1.1	109D	1N	M	1.1	2	C		178		F
	HOLL	26	1940	2016	2122	S34	E62	4912	12	31.8	102	1N	M	1.1	3	C		225		ZF
	PALE	26	2019E	2026	2204	S34	E63	4912	12	31.9	105D	1N			3	C		218		F
0074	LEAR	27	0107	0107	0113	S33	E62	4912	01	1.0	6	SF			3	C		20		
0075	LEAR	27	0447	0448	0452	S33	E60	4912	01	1.0	5	SF			3	C		30		
0076	LEAR	27	0714	0719	0732	S34	E62	4912	01	1.2	18	SF	C	5.5	3	C		61		F

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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
		27	1036		1123	No Flare Patrol													
		27	1137		1148	No Flare Patrol													
0077	RAMY	27	1226	1247	1253	S34	E62	4912	01	1.4	27	SF	C 1.3	3	C		38		
0078	RAMY	27	1324	1325	1330	S35	E62	4912	01	1.5	6	SF	C 1.3	3	C		18		
0079	SVTO	27	1420E	1420	1442D	S33	E48	4912	12	31.4	22D	SF		2	C		30		
0080	MITK	23	0416	0421	0541	N23	E03		12	23.4	85	SN			C	0421			EG
		27	1536		1542	No Flare Patrol													
0081		27	17562	17563	1818	S33	E60	4912	01	1.5	22	SN	C 3.1				36		EF
	RAMY	27	1756	1756	1810	S34	E58	4912	01	1.4	14	SF	C 3.1	2	C		14		F
	HOLL	27	1756	1757	1827	S33	E61	4912	01	1.6	31	SN	C 3.1	3	C		48		FE
	PALE	27	1758	1759	1818	S33	E60	4912	01	1.5	20	SN	C 3.1	3	C		46		F
0082		27	2129	21331	2220	S34	E56	4912	01	1.3	51	SF	C 4.4				53		F
	PALE	27	2126E	2133	2225	S34	E56	4912	01	1.3	59D	SF	C 4.4	3	C		56		F
	HOLL	27	2129	2134	2216	S33	E55	4912	01	1.3	47	SF	C 4.4	3	C		50		F
0083	HOLL	27	2302	2303	2309	S34	E58	4912	01	1.6	7	SF	C 1.1	3	C		15		
0084	LEAR	28	0027	0028	0031	S35	E48	4912	12	31.8	4	SF		3	C		27		
0085	PALE	28	0148	0149	0153	S35	E57	4912	01	1.6	5	SF	C 1.3	3	C		15		
0086		28	04097	0418	0432	S33	E50	4912	01	1.1	23	SN	C 1.8				42	0.9	F
	YUNN	28	0409	0418	0430	S33	E51	4912	01	1.2	21	SN			C		48	0.9	
	LEAR	28	0416	0418	0433	S33	E50	4912	01	1.1	17	SF	C 1.8	3	C		37		F
0087	LEAR	28	0605	0610	0633	S34	E51	4912	01	1.3	28	SN	C 7.3	3	C		92		F
0088		28	1421	1425	1443	S34	E47	4912	01	1.3	22	SN	C 1.4				28		F
	SVTO	28	1420E	1423U	1442D	S33	E48	4912	01	1.4	22D	SF	C 1.4	2	C		30		
	RAMY	28	1421	1425	1443	S35	E46	4912	01	1.3	22	SN	C 1.4	3	C		26		F
0089		28	15372	15391	1554	S36	E50	4912	01	1.7	17	SF	C 1.1				54		FH
	HOLL	28	1537	1540	1600	S35	E50	4912	01	1.6	23	SF	C 1.1	3	C		76		H
	RAMY	28	1539	1539	1548	S36	E49	4912	01	1.6	9	SF	C 1.1	3	C		31		F
0090		28	1659	1659	1716	S34	E44	4912	01	1.2	17	SF					12		
	RAMY	28	1659	1659	1710	S34	E41	4912	01	1.0	11	SF		3	C		11		
	HOLL	28	1659	1659	1721	S33	E46	4912	01	1.4	22	SF		3	C		13		
0091		28	1722*	1742*	1757	S34	E48	4912	01	1.5	35	SF					19		FH
	HOLL	28	1722	1742	1746	S34	E49	4912	01	1.6	24	SF		4	C		16		F
	PALE	28	1753	1754	1759	S33	E45	4912	01	1.3	6	SF		2	C		15		FH
	HOLL	28	1753	1801	1806	S34	E49	4912	01	1.6	13	SF		3	C		27		
0092	PALE	28	1818	1819	1825	S34	E45	4912	01	1.3	7	SF		3	C		11		
0093		28	18312	18361	1851	S34	E46	4912	01	1.4	20	SN	C 1.1				36		F
	PALE	28	1831	1836	1854	S34	E45	4912	01	1.3	23	SN	C 1.1	3	C		33		F
	HOLL	28	1833	1837	1848	S34	E46	4912	01	1.4	15	SF	C 1.1	3	C		38		
0094	HOLL	28	2308	2326	2335	S34	E43	4912	01	1.4	27	SF		3	C		22		
0095	LEAR	29	0708	0709	0732	S33	E37	4912	01	1.2	24	SF		3	C		21		E
0096	RAMY	29	1630	1640	1658	S34	E31	4912	01	1.1	28	SF		4	C		25		FH
0097	PALE	29	1950	1951	2002	S36	E35	4912	01	1.6	12	SF		3	C		23		
0098	PALE	29	2211	2212	2216	S34	E28	4912	01	1.1	5	SF		3	C		25		
0099		29	2246*	2248*	2258	S33	E29	4912	01	1.2	12	SF					16		F
	PALE	29	2246	2248	2250	S33	E29	4912	01	1.2	4	SF		3	C		21		F
	PALE	29	2258	2301	2305	S33	E29	4912	01	1.3	7	SF		3	C		11		

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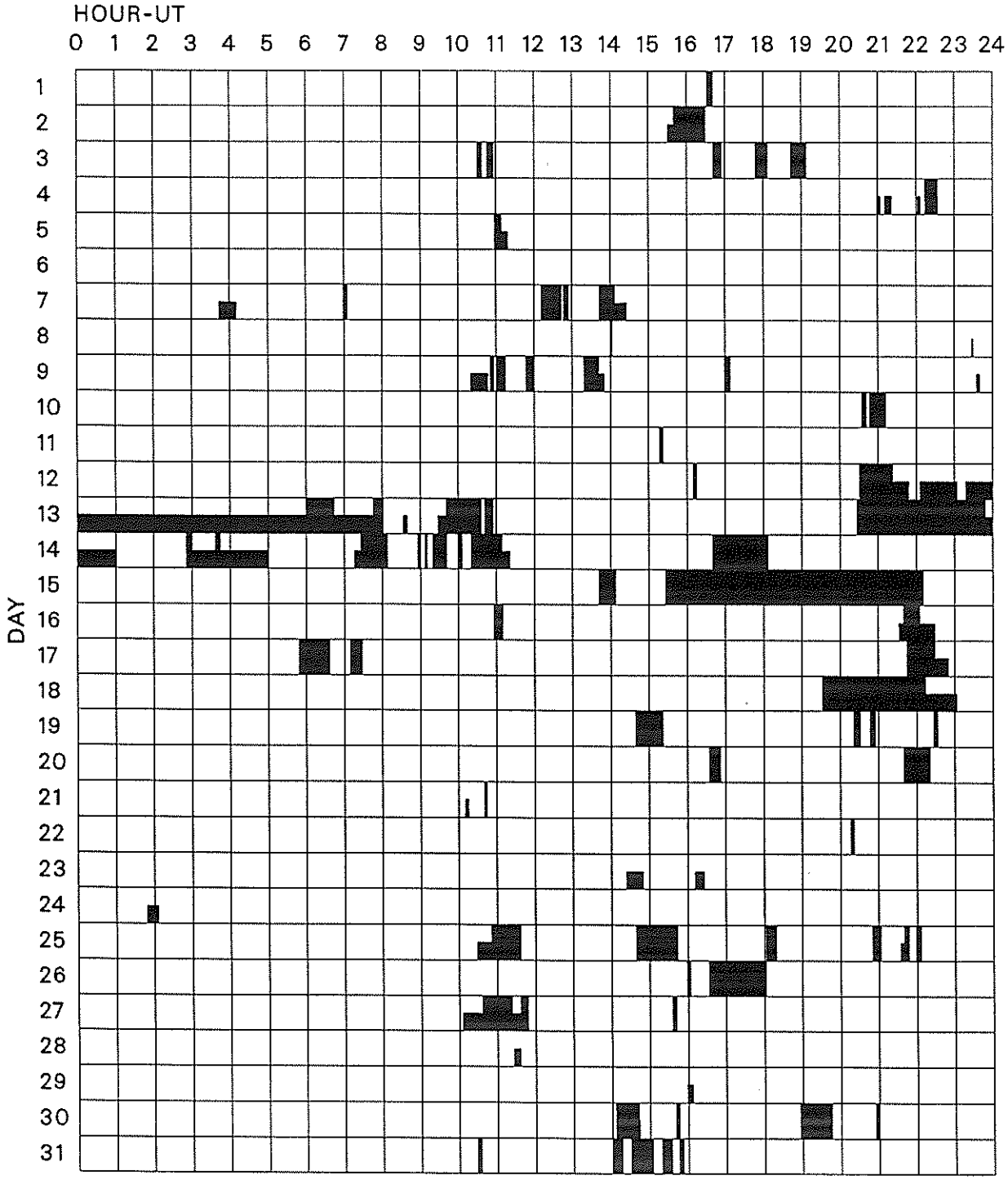
Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0100		29	23211	2322*	2352	S34	E32	4912	01	1.5	31	SF	C 1.7				60		F
	PALE	29	2321	2332	2351	S33	E29	4912	01	1.3	30	SF	C 1.7	3	C		82		F
	LEAR	29	2322	2322	2353	S36	E34	4912	01	1.7	31	SF	C 1.7	3	C		37		F
0101		30	01402	0149*	0247	S36	E32	4912	01	1.6	67	1N	C 4.1				151	3.0	EFU
	MITK	30	0140	0152	0326	S35	E33	4912	01	1.7	106	1N			C	0152	270	3.9	E
	LEAR	30	0142	0149	0220	S36	E32	4912	01	1.6	38	1F	C 4.1	3	C		156		UF
	YUNN	30	0159E	0159U	0235	S38	E34	4912	01	1.8	36D	1B			P		145	2.2	
	PALE	30	0213E	0231	0237D	S33	E27	4912	01	1.2	24D	SF		3	C		33		F
0102	HTPR	30	0938	0941	1012	S37	E28	4912	01	1.6	34	SN			C	0941	120	1.6	E
0103	HTPR	30	1040	1047	1052	S32	E16	4912	12	31.7	12	SF			C	1047	20	0.2	E
0104	HTPR	30	1324	1340	1350	S37	E26	4912	01	1.6	26	SB			C	1340	70	0.9	E
0105	HTPR	30	1352	1355	1400	S31	E15	4912	12	31.8	8	SN			C	1355	20	0.2	E
		30	1406		1442	No Flare Patrol													
0106	RAMY	30	1500	1500	1517	S36	E27	4912	01	1.8	17	SF		3	C		14		
0107	RAMY	30	1508	1510	1528	S35	W43	4915	12	27.2	20	SN	C 1.0	3	C		44		
		30	1541		1546	No Flare Patrol													
0108	HOLL	30	1623	1633	1636	S33	E23	4912	01	1.5	13	SF		3	C		17		
		30	1856		1946	No Flare Patrol													
		30	2055		2058	No Flare Patrol													
0109	LEAR	31	0231	0232	0237	S33	E14	4912	01	1.2	6	SF		3	C		88		EU
		31	1028		1034	No Flare Patrol													
		31	1400		1416	No Flare Patrol													
		31	1430		1504	No Flare Patrol													
		31	1519		1534	No Flare Patrol													
		31	1546		1552	No Flare Patrol													
0110		31	2154	2156	2205	S36	E10	4912	01	1.7	11	SF					14		FH
	PALE	31	2153E	2155U	2208D	S36	E10	4912	01	1.7	15D	SF		2	C		14		FH
	HOLL	31	2154	2156	2205	S36	E10	4912	01	1.7	11	SF		3	C		14		FH
0111	HOLL	31	2313E	2320U	2328D	S36	E08	4912	01	1.6	15D	SF		3	C		96		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.

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

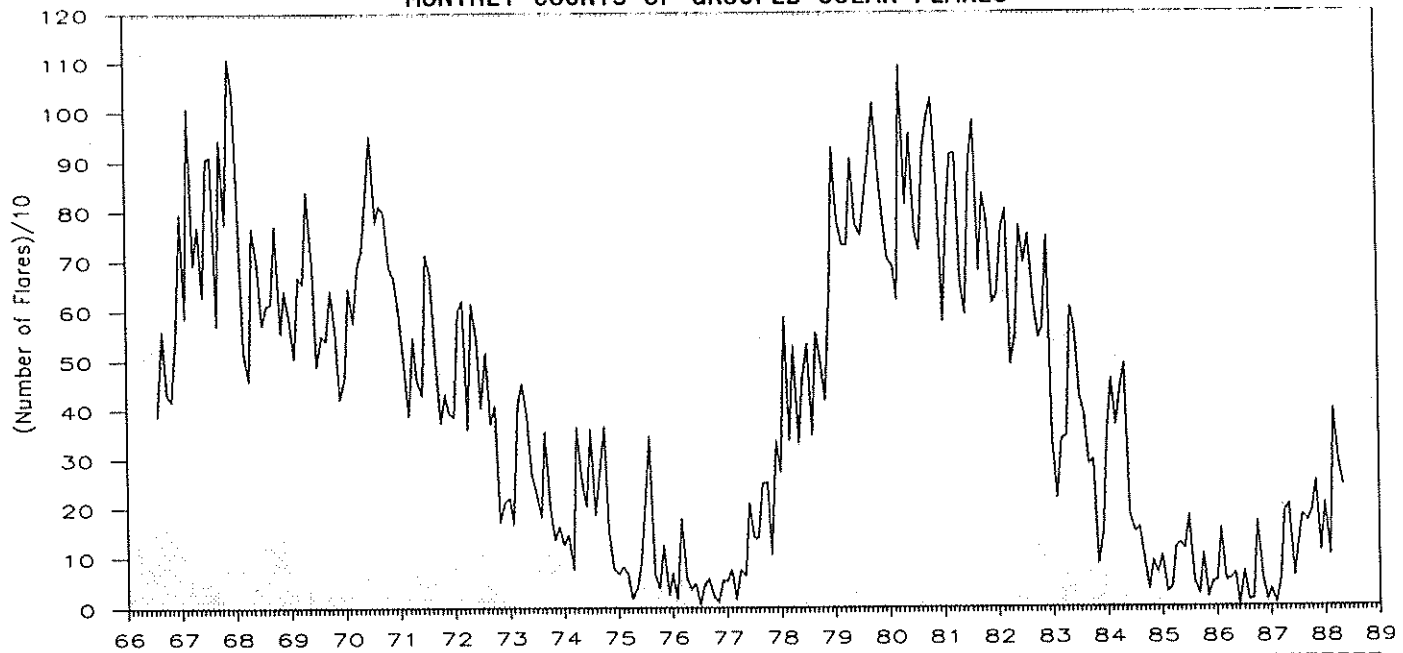
DECEMBER 1987



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	Haute Provence	Kharkov	Mitaka	San Vito
Bucharest	Holloman	Learmonth	Palehua	Urumqi
Catania	Istanbul	Lvov	Peking	Voroshilov
	Kanzelhoehe	Manila	Ramey	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	56	13	730
1987	36	7	52	192	205	61	132	185	171	193	254	111	1599
1988	209	102	399	290	243								1243

*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.

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

DECEMBER 1987

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
01	245	LEAR	8	S	0631.0	0631.0	2.0	86.0			QL=5 ST=2 TYP=5
	260	ONDR	40	F	1143.1	1143.1	0.7	0.3			
	260	ONDR			1210.0U	1212.4	4.2U	0.3			
	260	ONDR			1242.2	1246.3	4.9	0.8			
	9400	HUAN	20	GRF	1356.9	1412.6	42.7	4.9	2.1		
	9400	HUAN	20	GRF	1534.6	1601.6	55.2	3.7	1.2		
02	810	KRAK	8	S	0848.8	0849.0	0.5	4.8			
	810	KRAK	8	S	0907.2	0907.2	0.3	0.5			
	810	KRAK	8	S	0916.5	0916.5	0.3	0.6			
	260	ONDR	41	F	1154.6	1203.3	15.0	0.2			
	260	ONDR			1305.4	1312.7	12.5	0.1			
	9400	HUAN	1	S	1740.8	1743.0	3.8	2.5	1.9		
	9400	HUAN	20	GRF	1821.0	1829.2	14.4	5.0	3.2		
	9400	HUAN	1	S	1913.0	1914.5	3.1	2.5	1.1		
	9400	HUAN	2	S/F	2010.0	2010.8	2.1	8.8	2.5		
	9400	HUAN	1	S	2107.0	2108.2	2.8	10.0	2.6		
03	500	HIRA	6	S	0233.9	0234.3	3.5	6.0	1.0		WL
	260	ONDR	40	F	1005.0	1252.6	167.6	0.2			
04	260	ONDR	8	S	1124.0	1124.1	0.7	0.6			
05	260	ONDR	40	F	1024.3	1118.4	144.4	0.2			
	9400	TYKW	20	GRF	2250.0	2305.0	45.0	3.0	1.5		
06	245	SGMR	43	NS	1445.0	1638.0	555.0	150.0			QL=1 ST=1 TYP=1
	9400	TYKW	20	GRF	0117.0	0125.0	55.0	3.0	1.5		
┌	3750	TYKW	28	PRE	0213.0	0238.0	25.0	1.0	0.5		
├	9400	TYKW	20	GRF	0236.0	0246.0	40.0	2.0	1.0		
├	2000	TYKW	5	S	0238.0	0239.1	2.0	1.5	1.0		
└	3750	TYKW	5	S	0238.0	0239.4	4.0	3.5	2.0		
┌	2000	TYKW	29	PBI	0240.0		70.0	1.0	0.5		
└	3750	TYKW	29	PBI	0242.0		75.0	2.0	1.0		
┌	3750	TYKW	45	C	0549.0	0554.8	16.0	4.5	2.5		
├	2000	TYKW	20	GRF	0550.0	0553.0	60.0	2.0	1.0		
└	9400	TYKW	5	S	0550.0	0557.6	20.0	6.0	2.0		
	3750	TYKW	29	PBI	0605.0		35.0	2.0	1.0		
┌	536	ONDR	40	F	1058.0	1125.7	208.0	8.8U			
└	260	ONDR	4	S/F	1124.4	1124.4	3.6	0.5			
07	245	SVTO	44	NS	0622.0E	0846.0	168.0D	430.0			QL=1 ST=2 TYP=1
┌	410	PALE	46	C	0045.0	0047.0	3.0	17.0			QL=5 ST=2 TYP=8
├	410	LEAR	4	S/F	0046.0E	0046.0	3.0D	14.0			QL=3 ST=2 TYP=3
├	245	LEAR	8	S	0046.0	0047.0	1.0	170.0			QL=5 ST=2 TYP=5
└	245	PALE	8	S	0046.0	0047.0	1.0	78.0			QL=5 ST=2 TYP=5
┌	410	LEAR	4	S/F	0114.0E	0114.0	3.0D	24.0			QL=3 ST=2 TYP=3
├	410	PALE	4	S/F	0114.0E	0114.0	3.0D	23.0			QL=5 ST=2 TYP=3
├	245	LEAR	8	S	0115.0	0115.0	1.0	160.0			QL=5 ST=2 TYP=5
└	245	PALE	8	S	0115.0	0115.0	1.0	100.0			QL=5 ST=2 TYP=5
	260	ONDR	41	F	1144.6	1144.6	5.3	0.5			
08	260	ONDR	45	C	1006.7	1007.2	0.9	0.1			
	536	ONDR	4	S/F	1118.7	1118.8	0.9	0.6			
	260	ONDR	45	C	1141.5	1141.7	0.7	0.1			
	2695	SGMR	48	C	1309.0	1314.0		120.0			QL=1 ST=1 TYP=8
09	245	SVTO	43	NS	0624.0	0734.0	436.0D	10.0			QL=1 ST=2 TYP=1
	9400	TYKW	5	S	0014.0	0015.5	3.0	6.0	2.0		
┌	245	LEAR	8	S	0251.0	0251.0	1.0	130.0			QL=5 ST=2 TYP=5
└	245	PALE	8	S	0251.0	0251.0	1.0	90.0			QL=5 ST=2 TYP=5
	204	IZMI	5	S	1131.5	1131.7	0.8	16.0	8.0		
10	9400	TYKW	20	GRF	0102.0	0106.0	40.0	3.0	1.5		
├	2000	TYKW	20	GRF	0103.0	0106.0	30.0	1.0	0.5		
└	3750	TYKW	5	S	0103.0	0106.6	6.0	2.0	1.0		

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

DECEMBER 1987

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
10	3750	TYKW	29	PBI	0109.0		25.0	1.0	0.5		
	2000	TYKW	20	GRF	0500.0	0510.0	90.0	1.0	0.5		
	3750	TYKW	20	GRF	0500.0	0520.0	90.0	1.0	0.5		
	9400	HUAN	21	GRF	1407.0	1426.8	34.7	2.6	1.7		
	9400	HUAN	2	S/F	1417.0	1418.6	4.9	9.0	3.0		
	9400	HUAN	1	S	1423.2	1425.0	2.6	6.4	2.1		
	9400	HUAN	1	S	1428.4	1429.7	2.6	8.4	2.8		
12	2000	TYKW	20	GRF	0210.0	0335.0	180.0	2.0	1.0		
	3750	TYKW	20	GRF	0210.0	0325.0	180.0	2.0	1.0		
ZD	2800	OTTA	24	R	1635.0	1750.0	400.0D	6.5			
	2800	OTTA	3	S	1635.5	1636.5	6.0	4.7	2.5		
	3750	TYKW	21	GRF	2250.0	2305.0	80.0	2.0	1.0		RAIN
	2000	TYKW	21	GRF	2250.0	2315.0	100.0	2.0	1.0		
	2000	TYKW	5	S	2250.0	2250.9	4.0	2.0	0.7		
	3750	TYKW	5	S	2250.0	2250.9	4.0	3.0	1.0		
13	3750	TYKW	21	GRF	0100.0	0255.0	290.0	2.0	1.0		
	9400	TYKW	20	GRF	0335.0	0410.0	110.0	3.0	1.5		
	3750	TYKW	20	GRF	0335.0	0355.0	110.0	2.0	1.0		
	2000	TYKW	20	GRF	0335.0	0420.0	130.0	1.5	0.7		
	245	LEAR	8	S	0938.0	0938.0	1.0	38.0			QL=5 ST=2 TYP=3
	9400	HUAN	20	GRF	1544.8	1601.0	31.8	6.2	5.0		
14	2000	TYKW	21	GRF	0405.0	0500.0	140.0	1.5	0.7		
	3750	TYKW	21	GRF	0405.0	0500.0	140.0	2.0	1.0		
	2000	TYKW	45	C	0407.0	0412.1	10.0	1.5	0.5		
	100	HIRA	46	C	0420.6	0423.1	4.6	2600.0	520.0		0
	2000	TYKW			0422.0	0424.1		3.0			
	1000	TYKW			0422.0	0424.2		3.0			
	1000	TYKW	45	C	0422.0	0423.4	5.0	5.0	1.0		
	2000	TYKW	45	C	0422.0	0423.4	4.0	40.0	1.5		
	3750	TYKW	5	S	0422.0	0423.4	4.0	6.0	1.5		
	9400	TYKW	45	C	0422.0	0423.6	2.0	7.0	2.0		
	200	HIRA	46	C	0422.4	0423.5	2.0	240.0	65.0		0
	33	UPIC	45	C	1015.3	1015.4	1.5				
	29	UPIC	4	S/F	1015.6	1015.8	1.5				
	2700	PENT	1	S	2113.8	2114.9	1.8	11.7	7.0		
	2700	PENT	24	R	2115.6	2134.0	26.0	2.5			
15	260	ONDR	44	NS	1000.0E	1247.0U	211.0D				
	3750	TYKW	21	GRF	0210.0	0340.0	260.0	2.0	1.0		
	3750	TYKW	20	GRF	0350.0	0446.0	120.0	3.0	1.5		
	2000	TYKW	20	GRF	0350.0	0450.0	130.0	1.0	0.5		
	9400	TYKW	5	S	0442.5	0444.0	3.0	5.0	2.0		
	9400	TYKW	5	S	0447.0	0450.0	13.0	2.0	1.0		
	204	IZMI	5	S	0708.0	0708.1	0.2	45.0	35.0		
	204	IZMI	5	S	0714.0	0714.5	0.8	121.0	100.0		
	650	GORK	21	GRF	0850.1		10.6	5.0	2.5		
	3100	CRIM	29	PBI	0850.7	0857.0	23.0	2.0	1.0		
	3100	CRIM	3	S	0850.7	0853.8	6.0	25.0	8.0		
	1470	POTS	4	S/F	0851.0	0853.7	11.0		33.0		
	9500	POTS	3	S	0851.5	0853.5	9.5		15.0		
	3000	POTS	4	S/F	0851.5	0853.7	8.5U		30.0		
	2950	GORK	3	S	0851.8	0853.7	7.1	28.0	10.0		
	9100	GORK	1	S	0851.9	0853.6	6.7	15.0	6.0		
	3013	IZMI	5	S	0852.0	0854.0	6.0	75.0	65.0		
	245	SVTO	8	S	0852.0	0853.0	2.0	10.0			QL=5 ST=2 TYP=3
	650	GORK	1	S	0852.9	0853.7	3.0	2.0			
	8800	SVTO	8	S	0853.0		1.0	10.0			QL=5 ST=2 TYP=3
	2695	SVTO	8	S	0853.0	0853.0	1.0	33.0			QL=5 ST=2 TYP=3
	4995	SVTO	8	S	0853.0	0853.0	1.0	29.0			QL=5 ST=2 TYP=3
	1415	SVTO	8	S	0853.0	0854.0	2.0	33.0			QL=5 ST=2 TYP=3
	8800	SVTO	8	S	0853.0	0853.0	1.0	10.0			QL=5 ST=2 TYP=3
	430	KRAK	1	S	0853.0	0853.5	1.5	2.0	1.0		
	810	KRAK	3	S	0853.3	0853.0	4.5	8.0	4.0		

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

DECEMBER 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
15	536	ONDR	40	F	1018.0E	1147.9	192.0D	3.7U			
	29	UPIC	45	C	1146.5	1146.9	1.4				
	2800	OTTA	22	GRF	1530.0	1640.0	260.0	3.1			
16	1000	TYKW	45	C	0316.5	0317.0	1.5	6.0	0.5		
	200	HIRA	42	SER	0326.8	0347.5	21.8	2600.0			ML
	100	HIRA	42	SER	0327.0	0341.2	22.0	3200.0			WL
	1000	TYKW	45	C	0333.0	0338.0	5.5	13.0	1.0		
	9400	TYKW			0333.0	0336.0		6.0			
	1000	TYKW			0333.0	0334.1		1.5			
	3750	TYKW			0333.0	0334.2		4.0			
	9400	TYKW	45	C	0333.0	0334.2	7.0	6.0	2.0		
	3750	TYKW	45	C	0333.0	0342.2	27.0	4.0	2.0		
	2000	TYKW	45	C	0333.0	0335.5	7.0	7.0	1.0		
	200	HIRA	4	S/F	0339.0	0348.0	10.0	7000.0			QL= ST= TYP=4
	2000	TYKW	29	PBI	0340.0		20.0	1.0	0.5		
	9400	TYKW	29	PBI	0340.0		20.0	2.0	1.0		
	245	LEAR	8	S	0341.0	0341.0	1.0	52.0			QL=5 ST=2 TYP=5
	245	LEAR	49	GB	0346.0E	0348.0	3.0D	840.0			QL=5 ST=2 TYP=6
	3750	TYKW	30	PBI	0400.0		100.0	1.5	0.7		
	3750	TYKW	20	GRF	0405.0	0438.0	85.0	2.0	1.0		
	2000	TYKW	20	GRF	0420.0	0438.0	90.0	1.5	0.7		
	100	HIRA	41	F	0436.7	0438.0	3.0	2700.0			ML
	200	HIRA	41	F	0436.8	0438.2	2.1	4500.0			ML
	4995	LEAR	4	S/F	0437.0	0437.0		14.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	0439.0E	0439.0		690.0			QL=5 ST=2 TYP=6
	410	LEAR	4	S/F	0439.0E	0439.0	3.0D	140.0			QL=3 ST=2 TYP=5
	610	LEAR	4	S/F	0439.0E	0439.0		120.0			QL=5 ST=2 TYP=5
	200	HIRA	42	SER	0515.1	0552.8	42.0	1030.0			
	100	HIRA	42	SER	0515.2	0553.2	41.0	1000.0D			
	245	LEAR	8	S	0622.0	0622.0	1.0	35.0			QL=5 ST=2 TYP=3
	245	LEAR	8	S	0742.0	0742.0	1.0	43.0			QL=5 ST=2 TYP=3
	2800	OTTA	22	GRF	1600.0	1615.0	140.0D	4.3			
	245	LEAR	8	S	2257.0	2257.0	1.0	33.0			QL=5 ST=2 TYP=3
17	3750	TYKW	20	GRF	0016.0	0019.0	80.0	1.0	0.5		
	500	HIRA	45	C	0017.2	0018.0	2.5	13.0	3.0		0
	2000	TYKW	5	S	0122.0	0122.1	1.0	1.5	0.5		
	1000	TYKW	45	C	0122.0	0122.2	0.5	12.0	2.0		
	9400	TYKW	28	PRE	0220.0	0226.0	6.0	3.0	1.5		
	3750	TYKW	28	PRE	0221.0	0226.0	5.0	3.0	1.5		
	2000	TYKW	28	PRE	0221.0	0225.0	4.0	1.5	0.7		
	1000	TYKW	45	C	0221.0	0226.7	9.0	20.0	2.0		
	200	HIRA	46	C	0224.6	0226.5	3.0	900.0	135.0		0
	2000	TYKW	45	C	0225.0	0227.3	4.0	25.0	4.0		
	3750	TYKW	45	C	0226.0	0227.3	3.0	12.0	4.0		
	9400	TYKW	45	C	0226.0	0226.8	3.0	14.0	6.0		
	245	LEAR	49	GB	0226.0E	0226.0	1.0D	610.0			QL=5 ST=2 TYP=6
	410	LEAR	8	S	0226.0	0226.0	1.0	57.0			QL=3 ST=2 TYP=5
	2695	LEAR	8	S	0226.0	0227.0	2.0	13.0			QL=5 ST=2 TYP=3
	4995	LEAR	8	S	0226.0	0226.0	2.0	1.0			QL=5 ST=2 TYP=3
	8800	LEAR	8	S	0226.0	0226.0	2.0	1.0			QL=5 ST=3 TYP=3
	15400	LEAR	8	S	0226.0	0227.0	1.0	18.0			QL=5 ST=2 TYP=3
	610	LEAR	4	S/F	0226.0	0226.0		17.0			QL=5 ST=2 TYP=3
	500	HIRA	46	C	0226.5	0226.7	2.0	24.0	18.0		0
	2000	TYKW	29	PBI	0229.0		10.0	1.5	0.7		
	3750	TYKW	29	PBI	0229.0		10.0	3.0	1.5		
	9400	TYKW	29	PBI	0229.0		10.0	3.0	1.5		
ZD	3750	TYKW	20	GRF	0248.0	0253.0U	45.0	1.0	0.5D		
	9400	TYKW	20	GRF	0249.0	0255.0	55.0	2.0	1.0		
	2000	TYKW	5	S	0249.0	0251.0	7.0	1.0	0.3		
	500	HIRA	41	F	0409.1	0409.3	2.5	14.0			0
	3750	TYKW	21	GRF	0435.0	0510.0	130.0	3.0	1.5		
	3750	TYKW	45	C	0618.0	0618.9	3.0	6.0	1.0		
	3100	CRIM	1	S	0748.0	0749.1	3.0	5.0	2.0		
	2950	GORK	21	GRF	0748.0	0748.5	32.0	2.1			

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

DECEMBER 1987

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
17	9100	GORK	1	S	0748.2	0749.1	20.5	9.0			
	650	GORK	1	S	0748.5	0749.2	1.5	2.5			
	950	GORK	1	S	0748.8	0749.0	0.7	3.0			
	2950	GORK	1	S	0748.8	0749.2	1.0	5.9	2.8		
	245	SVTO	8	S	0815.0E	0815.0	2.0D	160.0			QL=1 ST=2 TYP=5
	410	SVTO	4	S/F	0815.0E	0815.0		32.0			QL=1 ST=2 TYP=3
	260	ONDR	42	SER	1121.4	1217.5	184.6	0.8			
	536	ONDR	8	S	1123.6	1123.7	0.6	1.4			
	536	ONDR	8	S	1226.7	1226.8	0.6	2.1			
18	3750	TYKW	20	GRF	0108.0	0115.0	40.0	1.5	0.7		
19	3750	TYKW	5	S	0206.0	0207.2	10.0	1.5	0.5		
	2000	TYKW	45	C	0206.5	0206.9	1.5	4.0	0.7		
	1000	TYKW	45	C	0206.6	0206.9	0.6	4.0	0.5		
	260	ONDR	42	SER	0945.0	0945.0	215.0	0.4			
	2000	TYKW	21	GRF	2320.0	0002.0	100.0	1.5	0.7		
	3750	TYKW	20	GRF	2330.0	2359.0	65.0	2.0	1.0		
	2000	TYKW	5	S	2357.0	2358.6	4.0	4.0	1.0		
	1000	TYKW	5	S	2358.0	2358.6	1.5	1.0	0.3		
20	2000	TYKW	20	GRF	0325.0	0340.0	75.0	1.0	0.5		
	3750	TYKW	20	GRF	0330.0	0410.0	120.0	2.0	1.0		
	245	LEAR	4	S/F	0704.0E	0704.0		41.0			QL=5 ST=2 TYP=3
	260	ONDR	42	SER	0940.0	0941.3	134.4	0.3			
21	260	ONDR	42	SER	0947.0	1133.6	191.0	0.1			
	536	ONDR	8	S	1012.7	1012.9	1.2	6.5			
	9400	HUAN	1	S	1311.3	1315.3	7.4	3.9	1.3		
	9400	HUAN	2	S/F	1340.7	1342.8	4.7	5.2	3.1		
22	260	ONDR	43	NS	0840.0	1011.6	280.0D	0.5			
	204	IZMI	7	C	1011.5	1011.8	1.0	51.0	45.0		
	245	LEAR	8	S	2258.0	2258.0	1.0	40.0			QL=5 ST=2 TYP=3
23	9400	TYKW	20	GRF	0415.0	0440.0	75.0	2.0	1.0		
	2000	TYKW	20	GRF	0415.0	0435.0	85.0	1.5	0.7		
	3750	TYKW	20	GRF	0415.0	0430.0	85.0	1.5	0.7		
	1415	SVTO	49	GB	0905.0E	0905.0	2.0D	520.0			QL=1 ST=2 TYP=6
	260	ONDR	42	SER	0926.0	0926.8	240.7	0.3			
	650	GORK	2	S/F	1109.5	1109.7	0.5	6.6			
24	127	TORN	43	NS	1230.0		60.0D		3.0		V=0
	200	HIRA	44	NS	2144.0E	0343.0	580.0D	33.0	11.0		WL
	245	LEAR	43	NS	2157.0	0232.0	773.0	230.0			QL=5 ST=2 TYP=1
	245	LEAR	8	S	0314.0	0315.0	1.0	6.0			QL=5 ST=2 TYP=3
	245	PALE	8	S	1815.0	1815.0	1.0	53.0			QL=5 ST=2 TYP=5
	9400	TYKW			2346.0	2346.1	1.0	7.0			
	9400	TYKW	45	C	2346.0	2347.3	3.0	7.0	2.0		
25	245	PALE	44	NS	0202.0E	0232.0	96.0D	140.0			QL=5 ST=2 TYP=1
	200	GORK	44	NS	0627.0E		306.0D		40.0		
	245	SVTO	43	NS	0635.0	0637.0	507.0D	120.0			QL=5 ST=2 TYP=1
	204	IZMI	44	NS	0700.0E		300.0D	50.0			
	127	TORN	43	NS	0751.0		299.0D		4.0		V=0
	245	SGMR	43	NS	1237.0	1716.0	492.0D	74.0			QL=5 ST=2 TYP=1
	245	PALE	43	NS	1726.0	2039.0U	613.0D	57.0			QL=5 ST=2 TYP=1
	100	HIRA	44	NS	2144.0E	2256.0	130.0D	90.0	24.0		
	200	HIRA	44	NS	2144.0E	0014.0	580.0D	18.0	5.0		WL
	245	LEAR	43	NS	2157.0	0738.0	773.0	100.0			QL=5 ST=2 TYP=1
	245	PALE	8	S	0139.0	0139.0	1.0	88.0			QL=5 ST=2 TYP=5
	245	PALE	8	S	0148.0	0149.0	1.0	66.0			QL=5 ST=2 TYP=5
	2000	TYKW	20	GRF	0312.0	0331.0	70.0	1.5	0.7		
	3750	TYKW	21	GRF	0320.0	0400.0	230.0D	3.0	1.5D		
	3750	TYKW	20	GRF	0415.0	0521.0	160.0	3.0	1.5		
	2000	TYKW	20	GRF	0420.0	0520.0	170.0	3.0	1.5		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
25	127	TORN	45	C	1148.0	1150.8	4.5	20.0	10.0		
	2800	OTTA	28	PRE	1605.0	1736.0	91.0	5.0	2.3		
	2800	OTTA	4	S/F	1736.0	1745.0	9.0	19.5	13.0		
	9400	HUAN	20	GRF	1738.5	1744.1	20.4	9.7	4.8		
	410	PALE	20	GRF	1741.0	1743.0	6.0	23.0			QL=5 ST=2 TYP=2
	610	PALE	20	GRF	1741.0	1742.0	6.0	46.0			QL=5 ST=2 TYP=2
	1415	PALE	20	GRF	1741.0	1743.0	3.0	20.0			QL=5 ST=2 TYP=2
	2695	PALE	20	GRF	1744.0	1745.0	1.0	13.0			QL=5 ST=2 TYP=2
	2800	OTTA	30	PBI	1752.0	1752.0		12.0			
26	200	GORK	44	NS	0618.0E		312.0D		10.0		
	245	SVTO	43	NS	0635.0	1418.0	508.0D	200.0			QL=5 ST=2 TYP=1
	204	IZMI	43	NS	0845.0		195.0D	25.0			
	127	TORN	43	NS	0846.0		326.0D		2.0		V=1
	245	SGMR	43	NS	1237.0	1537.0	493.0D	230.0			QL=5 ST=2 TYP=1
	410	PALE	43	NS	1726.0	1958.0	224.0D	37.0			QL=5 ST=2 TYP=1
	245	PALE	43	NS	1726.0	1750.0	613.0D	160.0			QL=5 ST=2 TYP=1
	100	HIRA	44	NS	2144.0E	0148.0	580.0D	160.0	60.0		
	200	HIRA	44	NS	2144.0E	0137.0	580.0D	34.0	25.0		ML
	610	LEAR	43	NS	2158.0	2239.0	270.0D	56.0			QL=5 ST=2 TYP=1
	245	LEAR	43	NS	2158.0	2202.0	773.0D	220.0			QL=5 ST=2 TYP=1
	410	LEAR	43	NS	2158.0	2229.0	773.0D	30.0			QL=3 ST=2 TYP=1
	610	PALE	43	NS	2236.0	2240.0	215.0D	49.0			QL=5 ST=2 TYP=1
	410	PALE	43	NS	2236.0	2239.0	303.0D	15.0			QL=5 ST=2 TYP=1
	9400	TYKW	20	GRF	0032.0	0050.0	40.0	2.0	1.0		
	3750	TYKW	21	GRF	0037.0	0102.0	250.0	3.0	1.5		
	1000	TYKW	45	C	0133.0	0133.4	1.0	25.0	5.0		
	3750	TYKW	21	GRF	0149.0	0207.0	60.0	2.0	1.0		
	2000	TYKW	20	GRF	0156.0	0207.0	40.0	1.0	0.5		
	9400	TYKW	45	C	0156.0	0205.0	16.0	4.0	2.0		
	9400	TYKW	30	PBI	0212.0		40.0	2.0	1.0		
	9400	TYKW	5	S	0214.4	0214.8	1.6	7.0	2.5		
	3750	TYKW	5	S	0214.5	0214.9	1.5	3.0	1.5		
	3750	TYKW	30	PBI	0216.0		15.0	1.0	0.5		
	3750	TYKW	5	S	0217.0	0218.2	3.0	2.0	0.5		
	9400	TYKW	5	S	0217.7	0218.1	1.3	8.0	2.5		
	9400	TYKW	29	PBI	0219.0		15.0	2.0	1.0		
	245	LEAR	8	S	0654.0	0654.0	1.0	21.0			QL=5 ST=2 TYP=3
	9100	GORK	20	GRF	0833.0	1016.9	160.4	6.7			
	9300	KISV	45	C	0939.0	0939.4	2.0	17.0			
	9300	KISV			0939.0	0939.8		14.0			
	9300	KISV	40	F	0941.1	0942.3	2.0	4.0			
	2800	OTTA	22	GRF	1430.0	1757.0	310.0	13.0			
	9400	HUAN	21	GRF	1718.2	1803.2	109.4	17.7	8.5		
	9400	HUAN	2	S/F	1755.8	1756.9	4.2	14.4	8.2		
	9400	HUAN	21	GRF	1938.0	2037.5	120.8	44.3	27.3		
	2800	OTTA	46	C	1941.0	2026.0	108.0	86.0	60.0		
	1415	PALE	48	C	1947.0	2005.0	41.0	220.0			QL=5 ST=2 TYP=8
	2695	PALE	48	C	1948.0	2004.0	40.0	170.0			QL=5 ST=2 TYP=8
	610	PALE	48	C	1949.0	2017.0	39.0	200.0			QL=5 ST=2 TYP=8
	4995	PALE	48	C	1950.0	2004.0	38.0	64.0			QL=5 ST=2 TYP=8
	9400	HUAN	4	S/F	1950.5	1954.0	18.4	21.0			
	9400	HUAN			1950.5	2004.2		58.6			
	9400	HUAN			1950.5	2000.2		32.1			
	1415	SGMR	48	C	1952.0	2006.0	23.0	190.0			QL=5 ST=3 TYP=8
	8800	PALE	48	C	1952.0	2004.0	35.0	51.0			QL=1 ST=2 TYP=8
	15400	PALE	8	S	1953.0	1954.0	1.0	15.0			QL=5 ST=2 TYP=3
	410	SGMR	48	C	1953.0	1956.0	11.0	81.0			QL=5 ST=2 TYP=8
	2695	SGMR	48	C	1954.0	2004.0	17.0	140.0			QL=5 ST=2 TYP=8
	4995	SGMR	48	C	1954.0	2005.0	17.0	61.0			QL=5 ST=2 TYP=8
	610	SGMR	48	C	1954.0	2017.0	29.0	190.0			QL=5 ST=2 TYP=8
	245	SGMR	48	C	1955.0	2000.0	16.0	110.0			QL=5 ST=2 TYP=8
	8800	SGMR	4	S/F	2000.0E	2000.0	3.0D	17.0			QL=5 ST=2 TYP=3
	2695	PALE	4	S/F	2037.0	2039.0	3.0	75.0			QL=5 ST=2 TYP=5
	245	PALE	8	S	2127.0	2128.0	2.0	140.0			QL=5 ST=3 TYP=5
	200	HIRA	27	RF	2144.0E		150.0D		25.0		ML SUNRISE

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
26	500	HIRA	27	RF	2144.0E		200.0D		17.0		ML SUNRISE
	100	HIRA	42	SER	2144.0E	2215.0	42.0D	140.0			SUNRISE
	1000	TYKW			2225.0	2334.6		15.0			
	1000	TYKW	45	C	2225.0E	2240.6	190.0D	40.0	3.0D		
	3750	TYKW	20	GRF	2309.0	2334.0	70.0	2.0	1.0		
	9400	TYKW	20	GRF	2330.0	2334.0	45.0	3.0	1.5		
27	200	GORK	44	NS	0616.0E		315.0D		5.0		
	100	GORK	44	NS	0616.0E		314.0D		5.0		
	245	SVTO	43	NS	0635.0	0828.0	492.0D	100.0			QL=1 ST=2 TYP=1
	204	IZMI	44	NS	0700.0E		300.0D	25.0			
	127	TORN	44	NS	0750.0E		390.0D		11.0		V=1
	260	ONDR	44	NS	0935.0E	1111.0	227.0D	0.2			
	245	PALE	43	NS	1726.0	1729.0	614.0D	31.0			QL=5 ST=2 TYP=1
	200	HIRA	44	NS	2144.0E	0116.0	580.0D	11.0	6.0		WL
	245	LEAR	43	NS	2159.0	0616.0	772.0D	75.0			QL=5 ST=2 TYP=1
	3750	TYKW	21	GRF	0043.0	0100.0	65.0	1.0	0.5		
	3750	TYKW	20	GRF	0110.0	0120.0	35.0	1.0	0.5		
	9400	TYKW	20	GRF	0110.0	0120.0	40.0	2.0	1.0		
	3750	TYKW	20	GRF	0210.0	0305.0	150.0	2.0	1.0		
	100	HIRA	46	C	0640.7	0641.2	26.0	440.0	130.0		
	9100	GORK	20	GRF	0709.8	0717.8	46.3	11.0			
	9300	KISV	20	GRF	0710.8	0716.9	43.0	11.0			
	3100	CRIM	20	GRF	0714.0	0717.0	9.0	2.0	1.0		
	950	GORK	41	F	0716.7	0717.1	1.9	21.0			
	650	GORK	41	F	0716.7	0717.2	2.0	2.5			
	950	GORK	41	F	0716.7	0718.6		10.0			
	650	GORK	41	F	0716.7	0718.6		1.8			
	950	GORK	41	F	0716.7	0717.9		11.5			
	650	GORK	41	F	0716.7	0717.9		1.8			
	9300	KISV	2	S/F	1012.9	1013.3	8.0	7.0			
	9100	GORK	20	GRF	1012.9	1037.3	68.0	12.5			
	9300	KISV	20	GRF	1024.0	1035.8	42.0	15.0			
	3100	CRIM	20	GRF	1035.0	1041.0	15.0	4.0	1.0		
	9400	HUAN	21	GRF	1740.5	1803.7	65.6	8.9	6.5		
	9400	HUAN	1	S	1754.6	1756.5	3.5	14.3	6.2		
	8800	PALE	8	S	1756.0	1756.0	1.0	41.0			QL=1 ST=2 TYP=3
	4995	PALE	8	S	1756.0	1756.0	1.0	22.0			QL=5 ST=2 TYP=3
	9400	HUAN	1	S	2131.3	2133.2	6.2	10.7	5.2		
	3750	TYKW	20	GRF	2230.0E	2230.0U	40.0D	4.0	2.0D		
	9400	TYKW	20	GRF	2230.0E	2230.0U	50.0D	15.0	6.0D		
	3750	TYKW	21	GRF	2325.0	0050.0	370.0	5.0	2.5		
28	200	GORK	44	NS	0621.0E		329.0D		15.0		
	100	GORK	44	NS	0621.0E		329.0D		25.0		
	245	SVTO	43	NS	0636.0	1416.0	508.0D	120.0			QL=1 ST=2 TYP=1
	245	SVTO	43	NS	0636.0	1416.0	1044.0D	120.0			QL=1 ST=2 TYP=1
	204	IZMI	44	NS	0700.0E		300.0D	20.0			
	127	TORN	44	NS	0810.0E		370.0D		30.0U		V=1
	260	ONDR	44	NS	0923.0E	1150.0U	247.0D				
	245	SGMR	44	NS	1238.0E	1436.0	493.0D	96.0			QL=5 ST=2 TYP=1
	245	PALE	44	NS	2044.0E	0327.0	417.0D	47.0			QL=5 ST=2 TYP=1
	200	HIRA	44	NS	2145.0E	0400.0	580.0D	48.0	20.0		ML
	100	HIRA	44	NS	2145.0E	0328.0	580.0D	95.0	62.0		
	245	LEAR	43	NS	2159.0	0639.0	773.0	140.0			QL=5 ST=2 TYP=1
	9400	TYKW	5	S	0027.0	0027.3	2.0	4.0	1.0		
	9400	TYKW	45	C	0146.5	0147.0	5.5	15.0	3.0		
	9400	TYKW	29	PBI	0152.0		20.0	2.0	1.0		
	3750	TYKW	28	PRE	0409.0	0415.0	6.0	2.0	1.0		
	3750	TYKW	5	S	0415.0	0417.1	6.0	7.0	3.5		
	9400	TYKW	45	C	0415.0	0416.8	4.0	13.0	4.0		
	9400	TYKW	29	PBI	0419.0		40.0	3.0	1.5		
	3750	TYKW	29	PBI	0421.0		70.0	3.0	1.5		
	245	LEAR	8	S	0530.0	0530.0	1.0	43.0			QL=5 ST=2 TYP=3
	3750	TYKW	5	S	0606.0	0609.6	16.0	71.0	14.0		
	9300	KISV	4	S/F	0607.1	0609.6	5.0	71.0			

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
28	9400	TYKW	5	S	0607.5	0609.6	10.5	58.0	14.0		
	2000	TYKW	5	S	0608.0E	0609.5	8.0D	13.0	4.0D		
	4995	LEAR	4	S/F	0608.0	0609.0	6.0	71.0			QL=1 ST=2 TYP=5
	15000	KISV	25	R	0608.9	0609.6	351.0	12.0			
	8800	LEAR	8	S	0609.0	0609.0	1.0	45.0			QL=5 ST=2 TYP=3
	2695	LEAR	8	S	0609.0	0609.0	2.0	38.0			QL=5 ST=2 TYP=3
	9300	KISV	29	PBI	0610.5	0610.5	58.5	24.0			
	2000	TYKW	29	PBI	0616.0		50.0	2.0	1.0		
	9400	TYKW	29	PBI	0618.0		40.0D	8.0	6.0D		
	3750	TYKW	29	PBI	0622.0		35.0D	6.0	4.0D		
	410	SVTO	8	S	0750.0	0750.0	1.0	26.0			QL=3 ST=2 TYP=3
	245	SVTO	8	S	0750.0	0750.0	1.0	120.0			QL=3 ST=2 TYP=5
	536	ONDR	41	F	0914.0	1030.0U	239.0				
	29	UPIC	42	SER	1238.7	1238.8	29.3				
	9400	HUAN	20	GRF	1423.2	1436.8	24.1	5.2	4.0		
	9400	HUAN	1	S	1605.3	1607.8	4.1	3.9	0.8		
	3750	TYKW	21	GRF	2345.0	2354.0	50.0	1.0	0.5		
	3750	TYKW	5	S	2346.0	2347.7	5.0	1.5	0.5		
29	221	ABST	43	NS	0500.0	0947.0	360.0	10.0			QL= ST= TYP=1
	200	GORK	44	NS	0627.0E		321.0D		15.0		
	100	GORK	44	NS	0627.0E		321.0D		45.0		
	245	SVTO	43	NS	0636.0	0020.0	509.0D	110.0			QL=5 ST=2 TYP=1
	245	SVTO	43	NS	0636.0	0820.0	509.0D	110.0			QL=5 ST=2 TYP=1
	245	SVTO	44	NS	0636.0E	0703.0	1044.0D	61.0			QL= ST= TYP=1
	127	TORN	44	NS	0700.0E		190.0D		62.0U		V=2
	204	IZMI	44	NS	0700.0E		300.0D	20.0			
	33	UPIC	43	NS	0741.5		408.5D				
	29	UPIC	43	NS	0742.0		408.0D				
	260	ONDR	44	NS	0900.0E	1202.0U	276.0D				
	100	HIRA	44	NS	2147.0E	0007.0	580.0D	320.0	130.0		
	200	HIRA	44	NS	2147.0E	0012.0	580.0D	66.0	30.0		WL
	245	LEAR	44	NS	2200.0E	0014.0	772.0D	140.0			QL=5 ST=2 TYP=1
	410	LEAR	43	NS	2324.0	0017.0	36.0	11.0			QL=3 ST=1 TYP=1
	245	PALE	44	NS	2325.0E	0014.0	256.0D	45.0			QL=5 ST=2 TYP=1
	3750	TYKW	21	GRF	0040.0	0210.0	290.0	2.0	1.0		
	3750	TYKW	5	S	0056.0	0056.8	4.0	1.0	0.3		
	245	LEAR	8	S	0101.0	0102.0	1.0	89.0			QL=5 ST=2 TYP=5
	3750	TYKW	5	S	0128.0	0128.4	1.0	1.0	0.3		
	3750	TYKW	5	S	0245.0	0247.7	5.0	3.0	1.5		
	3750	TYKW	29	PBI	0250.0		30.0	1.0	0.5		
	3750	TYKW	21	GRF	0330.0	0333.0	90.0	1.0	0.5		
	9400	TYKW	20	GRF	0356.0	0405.0	40.0	2.0	1.0		
	2000	TYKW	20	GRF	0358.0	0401.0	30.0	1.0	0.5		
	3750	TYKW	20	GRF	0358.0	0401.0	50.0	2.0	1.0		
	3750	TYKW	20	GRF	0543.0	0550.0	70.0	2.0	1.0		
	9100	GORK	1	S	0704.9	0706.4	3.9	4.2			
	2000	TYKW	45	C	0705.0	0707.1	4.0	10.0	3.0		
	3750	TYKW	45	C	0705.0	0706.9	4.0	12.0	4.0		
	3013	IZMI	5	S	0705.0	0707.0	5.0	22.0	11.0		
	9300	KISV	1	S	0705.2	0706.5	5.5	5.0			
	2950	GORK	3	S	0705.3	0706.8	2.3	15.0	7.0		
	3100	CRIM	3	S	0705.6	0707.0	4.0	12.0	4.0		
	2695	LEAR	8	S	0706.0	0707.0	1.0	20.0			QL=5 ST=2 TYP=3
	2950	GORK	29	PBI	0707.6	0707.7	31.0	4.8			
	9400	HUAN	1	S	1237.1	1238.8	2.9	3.5	0.9		
	2800	OTTA	22	GRF	1700.0	1934.0		6.9			
	3750	TYKW	5	S	2246.0	2249.0	10.0	5.0	2.0		
	3750	TYKW	29	PBI	2256.0		15.0	2.0	1.0		
	3750	TYKW	45	C	2321.0	2332.0	30.0	14.0	6.0		
	500	HIRA	27	RF	2348.0	0140.0	240.0	9.0	3.0		WL
	3750	TYKW	29	PBI	2351.0		30.0	3.0	1.5		
30	245	SVTO	43	NS	0636.0	0754.0	511.0D	33.0			QL=1 ST=2 TYP=1
	204	IZMI	44	NS	0700.0E		300.0D	15.0			
	100	GORK	44	NS	0706.0E		260.0D		20.0		

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

DECEMBER 1987

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
30	200	GORK	44	NS	0709.0E		270.0D		10.0		
	260	ONDR	44	NS	0940.0E	1005.5	233.0D	0.4			
	127	TORN	44	NS	1140.0E		160.0D		16.0		V=1
	410	SGMR	44	NS	1238.0E	1245.0	682.0D	73.0			QL=5 ST=1 TYP=1
	410	SGMR	44	NS	1238.0E	1302.0	682.0D	110.0			QL=5 ST=1 TYP=1
	245	SGMR	44	NS	1426.0E	1506.0	387.0D	30.0			QL=5 ST=2 TYP=1
	245	PALE	43	NS	1728.0	0231.0	614.0D	86.0			QL=5 ST=3 TYP=1
	100	HIRA	44	NS	2147.0E	2350.0	580.0D	24.0	8.0		
	200	HIRA	44	NS	2147.0E	2331.0	580.0D	15.0	9.0		ML
	245	LEAR	43	NS	2200.0	0415.0	773.0	92.0			QL=5 ST=2 TYP=1
	3750	TYKW	28	PRE	0035.0	0043.0	8.0	2.0	1.0		
	3750	TYKW	5	S	0043.0	0048.3	17.0	8.0	4.5		
	100	HIRA	42	SER	0044.8	0045.5	28.4	390.0			
	245	LEAR	8	S	0047.0	0048.0	1.0	300.0			QL=5 ST=2 TYP=5
	3750	TYKW	30	PBI	0100.0		160.0	3.0	1.5		
	3750	TYKW	28	PRE	0133.0	0137.6	7.0	3.0	1.0		
	9400	TYKW	20	GRF	0140.0	0148.0	110.0	5.0	2.5		
	2000	TYKW	45	C	0140.0	0148.2	16.0	8.0	4.0		
	3750	TYKW	5	S	0140.0	0148.2	35.0	18.0	9.0		
	2000	TYKW	29	PBI	0156.0		40.0	3.0	1.5		
	3750	TYKW	30	PBI	0215.0		75.0	6.0	3.0		
	3750	TYKW	21	GRF	0233.0	0238.0	50.0	1.0	0.5		
	3750	TYKW	5	S	0248.0	0255.0	20.0	3.0	1.0		
	3750	TYKW	5	S	0408.0	0409.4	2.0	5.0	2.0		
	3750	TYKW	29	PBI	0410.0		20.0	1.5	0.7		
	3750	TYKW	5	S	0439.0	0441.8	6.0	1.5	0.5		
	3750	TYKW	5	S	0450.0	0452.0	5.0	3.0	1.5		
	3750	TYKW	29	PBI	0455.0		15.0	1.0	0.5		
	3750	TYKW	5	S	0530.0	0535.0	15.0	2.0	0.7		
	3750	TYKW	5	S	0609.0	0614.0	15.0	1.5	0.5		
	3750	TYKW	5	S	0634.0	0636.0	8.0	2.5	1.0		
	33	UPIC	4	S/F	0829.0	0830.1	5.0				
	29	UPIC	4	S/F	0830.0	0830.2	0.7				
	536	ONDR	41	F	0920.0	1224.7U	253.0	2.4			
	2800	OTTA	28	PRE	1423.5	1424.0	2.0	2.8	1.4		
	2800	OTTA	46	C	1424.0	1428.6	6.0	19.4	13.0		
	610	SGMR	8	S	1425.0	1426.0	2.0	43.0			QL=5 ST=3 TYP=3
	245	SGMR	49	GB	1425.0	1426.0	1.0	1700.0			QL=5 ST=3 TYP=6
	410	SGMR	8	S	1425.0	1426.0	2.0	87.0			QL=5 ST=3 TYP=5
	9400	HUAN	1	S	1425.8	1428.5	4.7	5.9	3.5		
	1415	SGMR	4	S/F	1426.0E	1426.0		12.0			QL=5 ST=3 TYP=3
	4995	SGMR	4	S/F	1426.0E	1426.0	3.0D	42.0			QL=5 ST=3 TYP=3
	2695	SGMR	8	S	1426.0E	1426.0	2.0D	19.0			QL=5 ST=3 TYP=3
	2695	SVTO	4	S/F	1426.0E	1426.0	3.0D	15.0			QL=5 ST=2 TYP=3
	410	SVTO	8	S	1426.0E	1426.0	2.0D	88.0			QL=5 ST=2 TYP=5
	1415	SVTO	8	S	1426.0E	1426.0	2.0D	10.0			QL=5 ST=2 TYP=3
	245	SVTO	49	GB	1426.0E	1426.0	1044.0D	3900.0			QL=1 ST=2 TYP=6
	4995	SVTO	8	S	1427.0	1428.0	1.0	35.0			QL=5 ST=2 TYP=3
	2800	OTTA	30	PBI	1430.0	1430.0	150.0	3.5			
	2800	OTTA	22	GRF	1447.0	1500.0	50.0	9.3			
	9400	HUAN	2	S/F	1704.6	1707.8	5.2	4.4	1.3		
	245	PALE	8	S	1848.0	1849.0	1.0	73.0			QL=5 ST=2 TYP=5
	245	SGMR	8	S	1848.0	1849.0	1.0	55.0			QL=5 ST=2 TYP=5
	245	LEAR	4	S/F	2310.0E	2310.0D	3.0	60.0			QL=5 ST=2 TYP=5
	610	LEAR	4	S/F	2310.0E	2310.0D	5.0	14.0			QL=5 ST=2 TYP=3
	500	HIRA	6	S	2310.4	2310.6	1.0	4.0			0
31	100	GORK	44	NS	0606.0E		240.0D		5.0		
	200	GORK	44	NS	0606.0E		270.0D		5.0		
	245	SVTO	43	NS	0636.0	1140.0	511.0D	65.0			QL=1 ST=2 TYP=1
	204	IZMI	44	NS	0700.0E		300.0D	30.0			
	127	TORN	44	NS	0700.0E		440.0D		18.0		V=1
	245	SGMR	43	NS	1238.0	1458.0	496.0	71.0			QL=5 ST=2 TYP=1
	245	PALE	43	NS	1728.0	1909.0	615.0D	30.0			QL=5 ST=2 TYP=1
	200	HIRA	44	NS	2147.0E	2330.0	580.0D	27.0	21.0		ML
	100	HIRA	44	NS	2147.0E	0319.0	580.0D	84.0	39.0		

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

DECEMBER 1987

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
31	245	LEAR	43	NS	2201.0	0329.0	772.0D	54.0			QL=5 ST=2 TYP=1
	500	HIRA	42	SER	0227.0	0231.8	6.5	29.0			0
	2000	TYKW	45	C	0231.0	0231.9	3.0	7.0	1.5		
	610	LEAR	8	S	0231.0	0232.0	1.0	27.0			QL=5 ST=2 TYP=3
	410	LEAR	8	S	0231.0	0231.0	1.0	29.0			QL=3 ST=2 TYP=3
	245	LEAR	8	S	0231.0	0232.0	1.0	260.0			QL=5 ST=2 TYP=5
	610	PALE	8	S	0231.0	0232.0	1.0	23.0			QL=5 ST=2 TYP=3
	410	PALE	8	S	0231.0	0231.0	1.0	26.0			QL=5 ST=2 TYP=3
	1000	TYKW	5	S	0231.5	0232.1	2.5	15.0	2.5		
	3750	TYKW	45	C	0231.5	0231.9	2.0	3.0	1.0		
	245	PALE	4	S/F	2105.0	2105.0	392.0	66.0			QL=5 ST=2 TYP=5

Reports are received routinely from the following observatories:
LEAR = Learmonth OTTA = Ottawa PALE = Palehua SGMR = Sagamore Hill SVTO = San Vito

Explanation of Type Code:

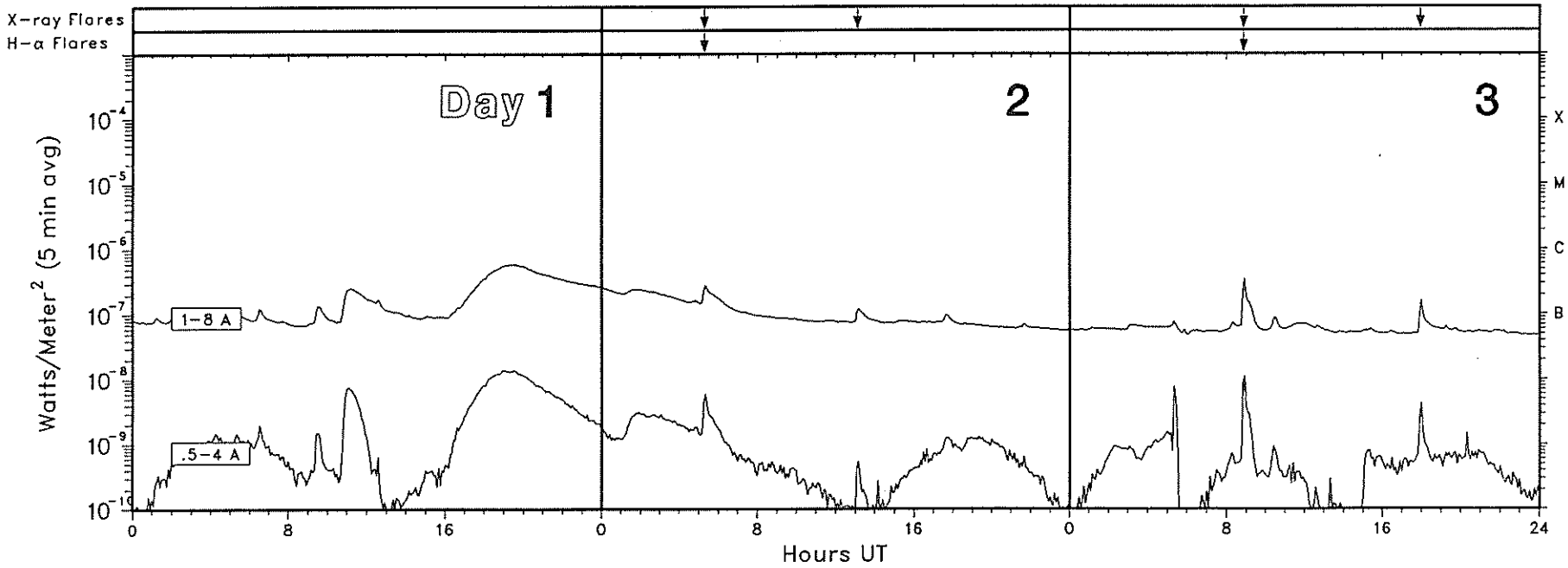
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple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

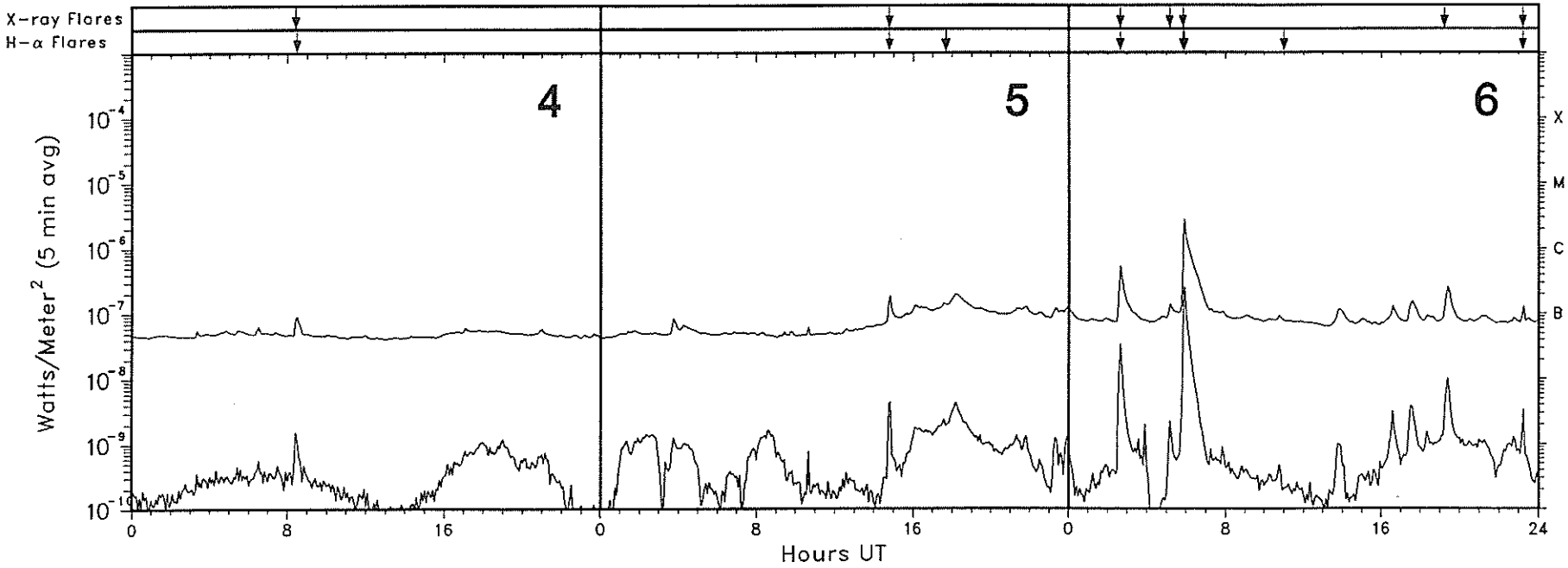
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A
			46F Complex F

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; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

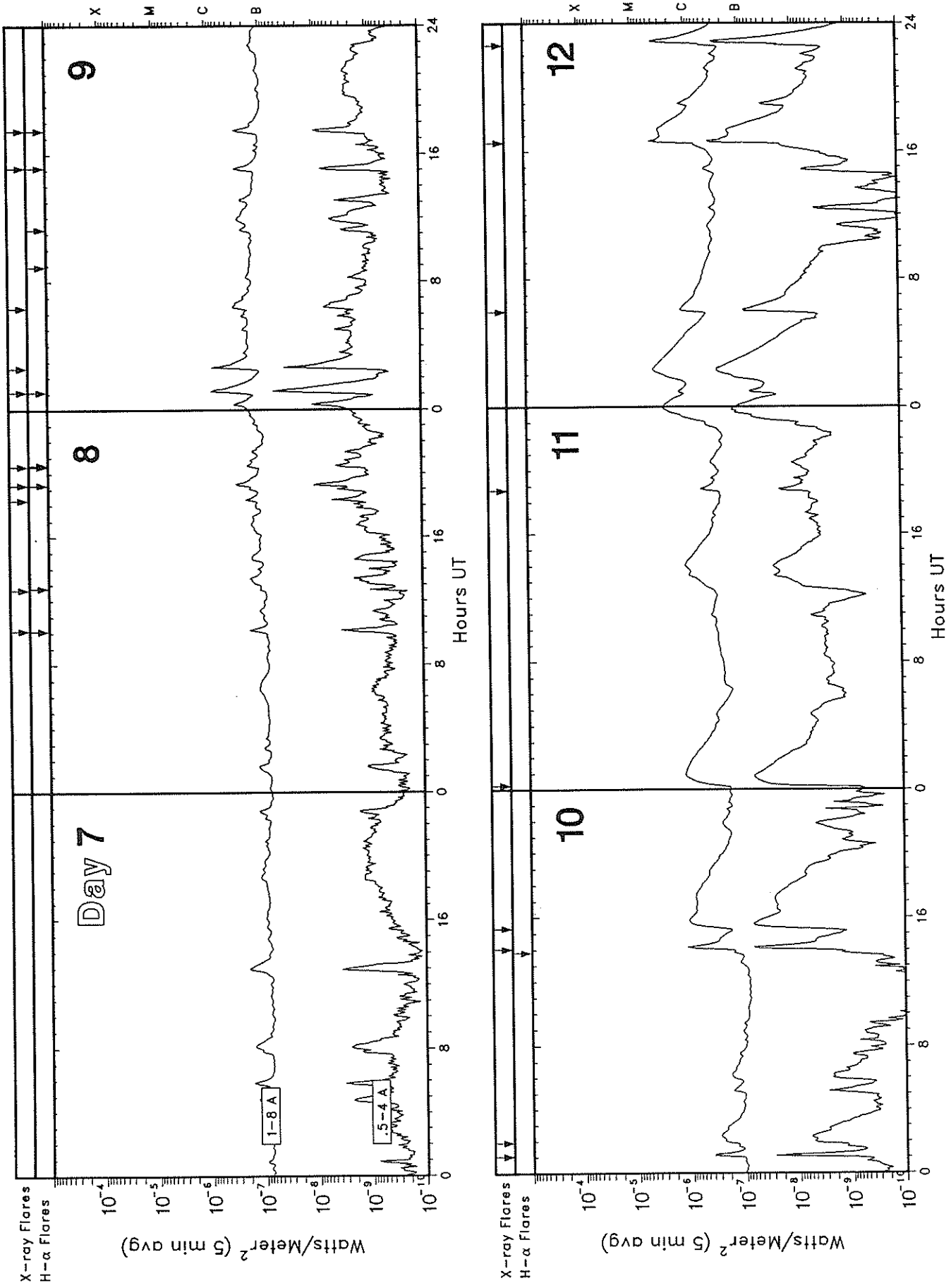
GOES-7 X-RAY DETECTOR

December 1987



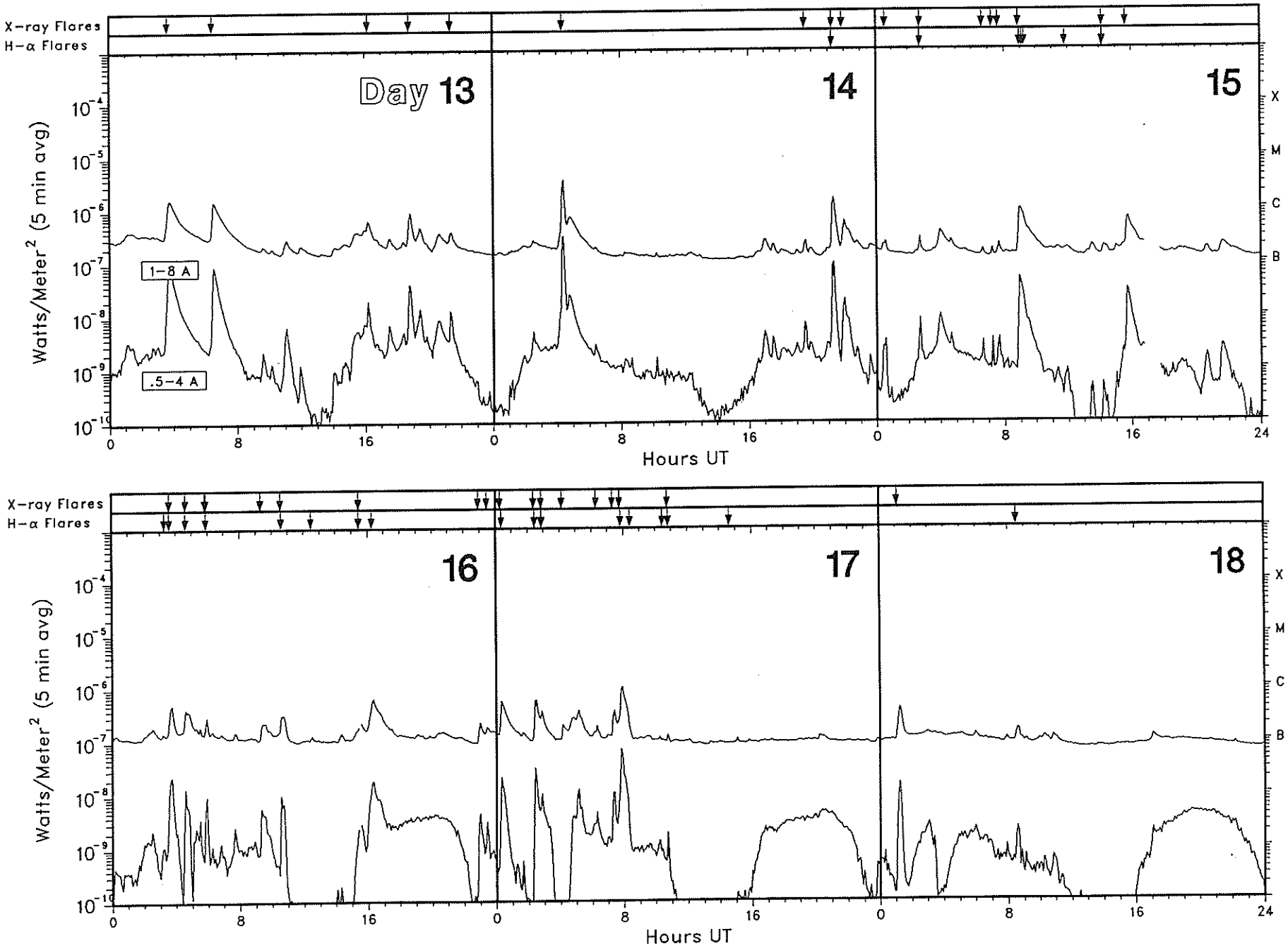


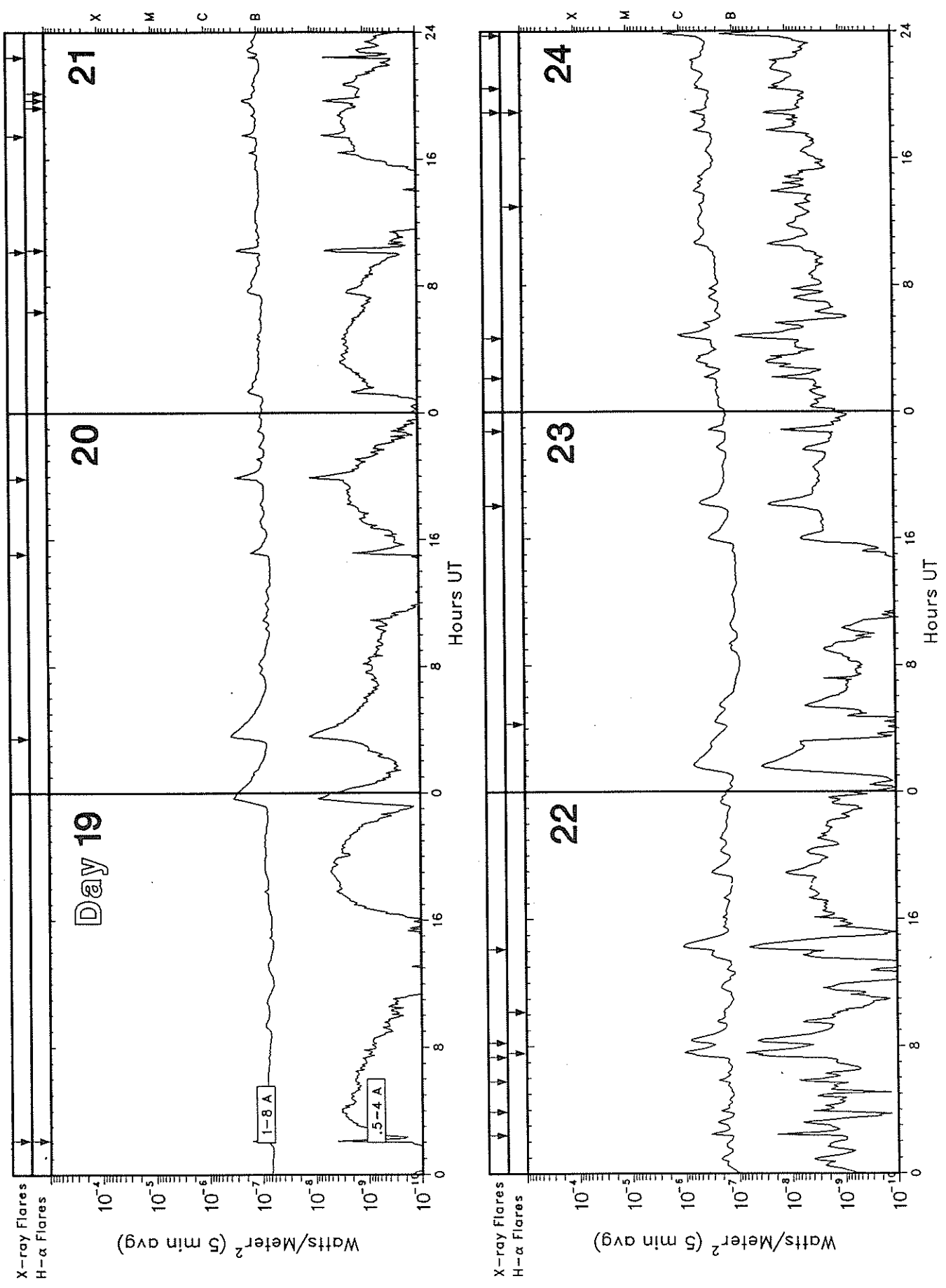
23 Dec 87


GOES-7 X-RAY DETECTOR
December 1987
Day 7
8
9
10
11
12
1-8 A
.5-4 A
X-ray Flares
H-α Flares
Watts/Meter² (5 min avg)
Hours UT
X
M
C
B

GOES-7 X-RAY DETECTOR

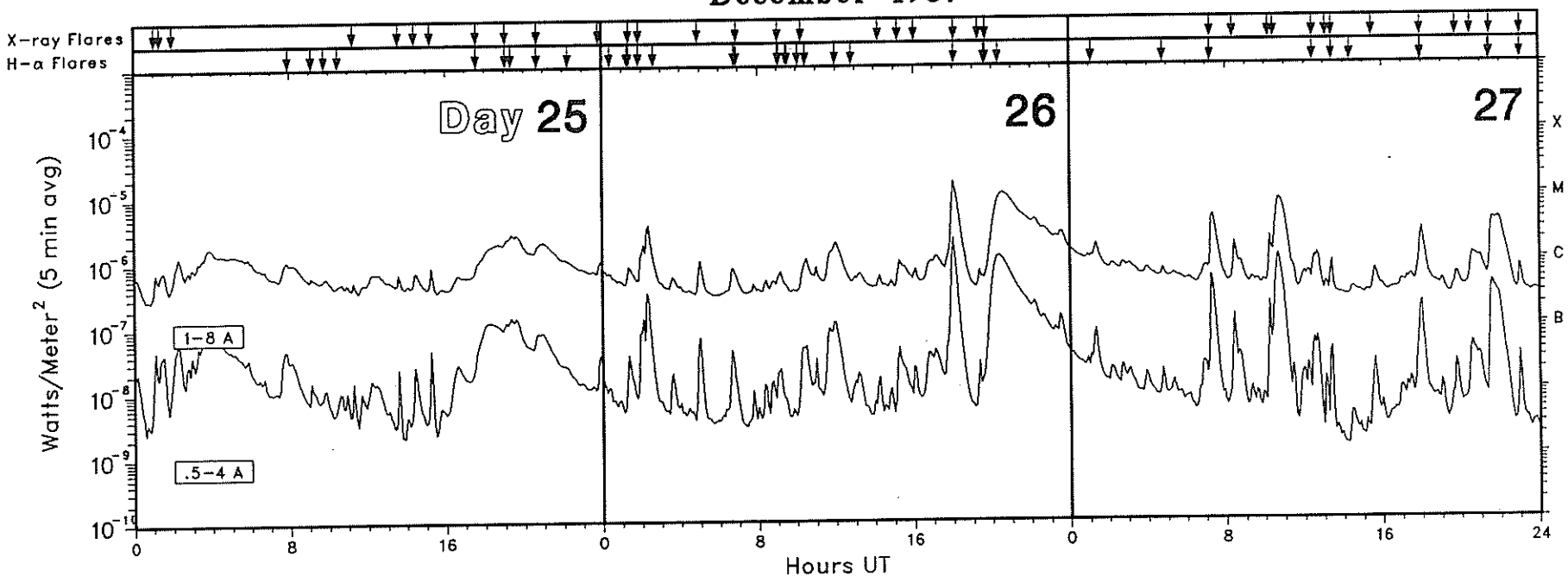
December 1987

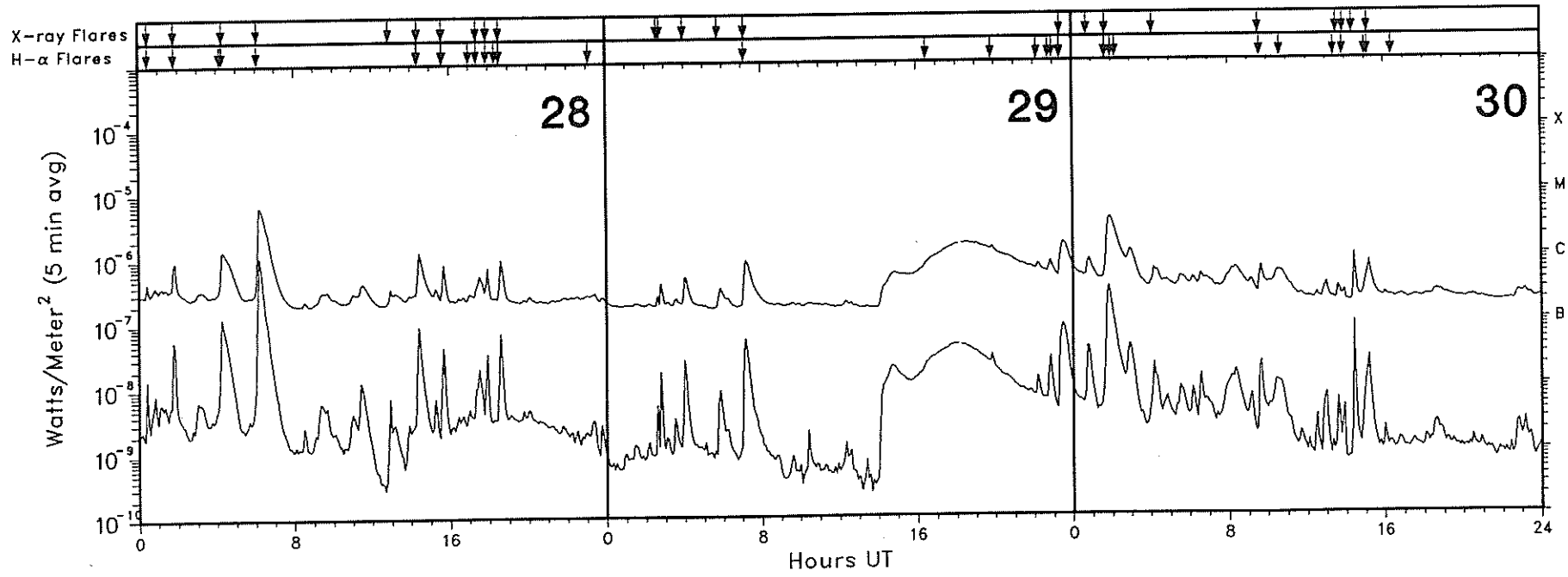



GOES-7 X-RAY DETECTOR
December 1987
Day 19
20
21
22
23
24
1-8 A
.5-4 A
X
M
C
B
X-ray Flares
H-α Flares
Watts/Meter² (5 min avg)
Hours UT
0
8
16
24

GOES-7 X-RAY DETECTOR

December 1987

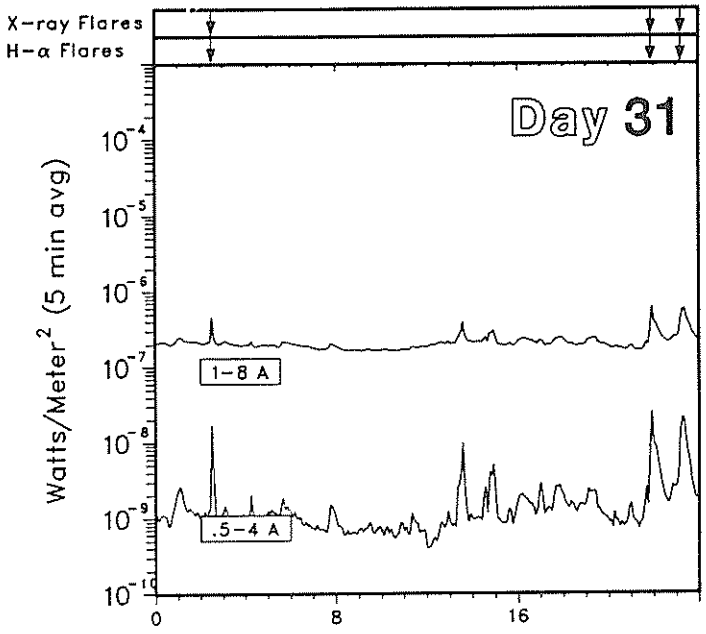




27 Dec 87

GOES-7 X-RAY DETECTOR

December 1987



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

Preliminary Listing

December 1987

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
02	0517	0517	0523	S23	W27		SF	B3.0	4898
02	1306	1311	1327					B1.3	
03	0853	0853	0900	N35	E17		SF	B4.7	4899
03	1757	1800	1804					B2.5	
04	0825	0829	0838					B1.1	
05	1447	1448	1453	S23	E10		SF	B2.4	4901
06	0239	0240	0244	S22	E02		SF	B6.4	4901
06	0510	0513	0518					B1.6	
06	0550	0552	0609	S22	E01		SF	C3.7	4901
06	1914	1929	1936					B2.8	
06	2312	2317	2324	S20	W14		SF	B1.7	4901
08	1007	1012	1018					B1.8	
08	1241	1244	1246					B1.3	
08	1819	1823	1827					B2.2	
08	1916	1918	1930	S22	W34		SF	B3.7	4901
08	2027	2028	2038	S21	W33		SF	B2.1	4901
09	0106	0118	0123	S21	W36		SF	C1.1	4901
09	0236	0243	0248					C1.0	1
09	0621	0630	0649					B3.6	1
09	1508	1509	1513	S22	W44		SF	B3.3	4901
09	1728	1729	1740	S21	W48		SF	B3.5	4901
10	0103	0110	0115					B5.6	
10	0155	0219	0245					B3.3	
10	1402	1410	1418					C1.5	4901
10	1519	1551	1800					C1.1	
11	0016	0100	0227					C1.3	
11	1845	1850	1901					B6.3	
12	0557	0606	0643					C1.3	4906
12	1633	1641	1735	S29	E90			C5.3	4906
12	2239	2257	2306					C4.6	
13	0337	0349	0407					C1.8	
13	0625	0634	0655					C1.6	4906
13	1610	1614	1619					B7.7	
13	1845	1850	1857					C1.1	
13	2121	2125	2129					B5.3	
14	0420	0425	0427					C9.7	4906
14	1931	1936	1938					B3.3	
14	2114	2115	2137D	S24	E62		SF	C1.8	4908
14	2152	2203	2211					B6.7	
15	0033	0036	0038					B3.3	
15	0245	0247	0251	S33	E59		SF	B4.3	4906
15	0638	0641	0644					B2.1	
15	0714	0717	0719					B2.3	
15	0737	0741	0746					B2.5	4906
15	0853	0904	0922	S35	E57		SF	C1.1	4906
15	1409	1412	1431					B1.9	
15	1537	1545	1559					B7.8	
16	0336	0339	0400	S35	E47		SF	B6.1	4906
16	0437	0439	0442	S35	E47		SF	B6.0	4906
16	0550	1620	1700					B7.0	4906
16	0553	0554	0559	S34	E38		SF	B3.8	4906
16	0919	0924	0943					B2.7	
16	1034	1040	1053					B4.5	
16	1527	1531	1546	S34	E43		SF	B2.5	4906
16	2255	2301	2310					B2.7	
16	2327	2330	2332					B2.8	
17	0016	0024	0035					B7.4	4906
17	0222	0230	0237	S34	E32		SN	B8.1	4906
17	0250	0250	0255	S34	E42		SF	B4.3	4906
17	0408	0413	0426					B2.7	
17	0618	0621	0627					B2.0	
17	0719	0726	0732					B4.5	4906
17	0746	0756	0803					C1.2	4906
17	1045	1048	1051					B1.7	
18	0106	0119	0127					B4.8	4906
19	0207	0208	0210	S35	E06		SF	B2.5	4906
20	0326	0339	0408					B4.0	4906
20	1506	1513	1526					B1.6	
20	1951	1958	2004					B3.1	
21	1010	1016	1025					B3.1	
21	1726	1732	1735					B2.2	
21	2225	2228	2230	S21	W90		SF	B1.9	4910
22	0223	0229	0234					B4.4	
22	0353	0357	0403					B2.4	
22	0547	0551	0557					B2.8	
22	0719	0739	0748					C1.2	
22	0813	0825	0834					B9.4	
22	1406	1420	1436					C1.1	
23	1805	1820	1832					B4.9	
23	2247	2253	2302					B3.3	
24	0208	0212	0218					B3.9	
24	0438	0450	0456					C1.3	
24	1854	1855	1904	S35	E84		SF	C1.2	
24	2024	2027	2030					B5.8	
24	2345	2352	2358					C2.1	
25	0102	0108	0115					B8.6	
25	0118	0132	0136					B9.0	
25	0156	0219	0229					C1.4	
25	1114	1117	1120					B6.4	
25	1334	1339	1343					B8.0	
25	1424	1431	1440					B8.3	
25	1513	1518	1522					C1.0	
25	1734	1736	1739					C1.0	4912
25	1903	1903	1937	S32	E69		SF	C2.5	4912
25	2041	2050	2106	S34	E76		SF	C2.2	4912
25	2350	2358	0004					C1.1	

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

Preliminary Listing

December 1987

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region
26	0121	0124	0130	S34	E76	SF	B9.0	4912
26	0152	0216	0236	S34	E76	1N	C4.6	4912
26	0454	0501	0509				C1.1	
26	0654	0655	0700	S34	E76	SF	B9.1	4912
26	0903	0904	0915	S34	E70	SF	B8.3	4912
26	1015	1031	1041				C1.2	
26	1412	1416	1421				B7.1	
26	1512	1518	1530				C1.1	
26	1602	1605	1608				C1.1	
26	1804E	1805	1827	S33	E66	SF	M1.8	4912
26	1918	1923	1927				B8.2	
26	1940	2016	2122	S34	E62	1N	M1.1	4912
27	0714	0719	0732	S34	E62	SF	C5.5	4912
27	0822	0828	0835				C1.9	
27	1011	1018	1024				C2.5	
27	1027	1046	1103				C9.1	
27	1226	1247	1253	S34	E62	SF	C1.3	4912
27	1306	1310	1312				B6.6	
27	1324	1325	1330	S35	E62	SF	C1.3	4912
27	1528	1539	1547				B7.5	
27	1756	1757	1827	S33	E61	SN	C3.1	4912
27	1945	1950	1955				B7.0	
27	2029	2038	2108				C1.2	
27	2129	2134	2216	S33	E55	SF	C4.4	4912
27	2302	2303	2309	S34	E58	SF	C1.1	4912
28	0027	0028	0031	S35	E48	SF	B7.8	4912
28	0148	0149	0153	S35	E57	SF	C1.3	4912
28	0416	0418	0433	S33	E50	SF	C1.8	4912
28	0605	0610	0633	S34	E51	SN	C7.3	4912
28	1253	1257	1302				B4.1	
28	1421	1425	1443	S35	E46	SN	C1.4	4912
28	1537	1540	1600	S35	E50	SF	C1.1	4912
28	1722	1742	1746	S34	E49	SF	B6.2	4912
28	1753	1801	1806	S34	E49	SF	B9.6	4912
28	1831	1836	1854	S34	E45	SN	C1.1	4912
29	0235	0239	0241				B4.3	
29	0244	0248	0253				B5.1	
29	0358	0404	0411				B6.0	
29	0546	0552	0603				B3.8	
29	0708	0709	0732	S33	E37	SF	B9.8	4912
29	2322	2322	2353	S36	E34	SF	C1.7	4912
30	0045	0052	0100				B9.7	
30	0142	0149	0220	S36	E32	1F	C4.1	4912
30	0408	0412	0428				B7.0	
30	0934	0942	0949				B7.3	
30	1333	1340	1346				B3.6	
30	1353	1356	1358				B4.1	
30	1422	1428	1431				C1.6	
30	1508	1510	1528	S35	W43	SN	C1.0	4915
31	0231	0232	0237	S33	E14	SF	B7.9	4912
31	2154	2156	2205	S36	E10	SF	B7.4	4912
31	2313E	2320	2328D	S36	E08	SF	B6.5	4912

Preliminary GOES Satellite Data
Daily Average X-ray Background

January 1987 - December 1987

Day	1987 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	<A1.3	<A1.0	<A1.0	A1.1	A4.9	A4.8	---	B1.2	B1.1	A6.8	B2.2	A7.6
2	<A1.0	<A1.0	<A1.0	<A1.0	A5.0	A3.2	A1.7	B1.2	B1.3	A6.8	B3.8	A8.3
3	<A1.0	<A1.0	<A1.0	<A1.0	A8.8	A2.7	A1.4	B1.0	B1.3	A7.7	B3.4	A5.2
4	<A1.0	<A1.0	<A1.0	A2.2	A8.6	A2.7	A1.3	A6.7	B1.3	B1.2	B3.4	A4.8
5	<A1.0	<A1.0	<A1.0	A2.3	A8.1	A2.3	A1.2	A6.5	B1.4	B1.1	B2.1	A5.3
6	<A1.0	<A1.0	A2.6	B2.7	A8.0	A2.0	A1.3	A6.9	B1.4	B1.0	B2.1	A7.8
7	<A1.0	<A1.0	A4.1	---	A6.5	A1.9	A1.5	B1.7	B2.7	B1.1	B1.7	A8.5
8	<A1.0	<A1.0	A5.2	---	A5.9	A1.9	A5.0	B2.8	B2.2	B1.7	B1.2	A9.1
9	<A1.0	<A1.0	A3.1	---	A5.3	A2.8	A3.5	B2.1	B1.6	B2.1	A8.8	B1.4
10	<A1.0	<A1.0	A1.9	B2.2	A5.7	A6.3	A3.2	B2.3	B1.7	B2.0	A8.8	A9.4
11	<A1.0	<A1.0	A2.2	B1.9	A4.8	A8.5	A2.7	B2.9	B1.6	B1.8	B1.9	B2.3
12	<A1.0	<A1.0	A3.0	B1.6	A4.9	A8.7	A1.9	B2.9	B1.3	B1.7	B1.4	B3.2
13	<A1.0	<A1.0	A2.6	B1.4	A9.5	A8.8	A1.9	B2.6	B1.2	B2.3	B1.4	B1.8
14	<A1.0	<A1.0	A5.3	B1.4	B1.8	A7.9	A3.3	B1.9	A9.5	B2.1	A8.2	B1.3
15	<A1.0	<A1.0	A1.9	B1.2	B2.0	A7.3	A4.3	B1.2	A7.1	B2.2	A9.7	B1.4
16	<A1.0	<A1.0	<A1.0	B2.2	B2.8	A7.1	A5.3	B1.4	A4.6	B2.6	B1.1	B1.2
17	<A1.0	<A1.0	<A1.0	B2.6	B1.9	A8.9	A4.0	B1.1	A5.2	B2.1	B1.1	A9.5
18	<A1.0	<A1.0	<A1.0	B2.9	B1.9	A8.6	A5.2	B1.1	A3.8	B2.6	B1.6	A8.9
19	<A1.0	<A1.0	A1.0	B2.2	B2.0	A7.4	B1.1	B1.2	A4.7	B2.4	B2.7	A7.3
20	<A1.0	<A1.0	A1.3	B1.5	B1.8	A6.4	B1.8	B1.3	A7.6	B1.7	B5.2	A7.1
21	<A1.0	<A1.0	A1.5	A7.2	B2.1	A7.7	B2.0	B1.6	A5.9	B1.5	B3.5	A9.8
22	A2.5	<A1.0	A1.4	A3.5	B2.4	B1.2	---	B1.6	A5.0	B1.6	B3.6	B1.5
23	A1.3	<A1.0	A1.7	A2.1	B1.6	A9.7	B3.9	B1.5	A3.4	B1.4	B3.0	B1.0
24	<A1.0	A1.7	A5.3	A2.2	B3.1	B1.1	B3.5	B1.5	A3.7	B1.4	B2.9	B2.3
25	<A1.0	A2.3	A4.2	A1.8	B4.9	A9.5	B3.4	B1.4	A3.0	B1.8	B2.9	B4.9
26	A1.7	A2.3	A3.8	A1.4	B3.6	A8.3	B3.6	B1.1	A2.7	B1.9	B2.9	B4.7
27	<A1.0	A1.5	A3.2	A1.7	B2.3	A5.5	B3.7	B1.1	A7.6	B2.5	B2.0	B3.4
28	<A1.0	<A1.0	A2.2	A1.7	B2.3	A4.6	B3.2	A8.6	B1.0	B2.7	B1.7	B2.3
29	<A1.0		A1.2	A1.7	B1.4	A4.0	B2.2	A6.6	A9.8	B1.9	B1.7	B1.8
30	<A1.0		A1.2	A2.6	B1.4	A3.9	B1.6	A7.6	A7.0	B2.7	B1.1	B2.5
31	<A1.0		<A1.0		A6.7		B1.4	B1.3		B2.7		---

MASS EJECTIONS FROM THE SUN

DECEMBER 1987

Sta	Day	Observed UT Start		Max	End	Location RA^{o}	R/R_{o}	Freq or Wavelength	Kind of Event
KHAR	Dec 05	0755	E		0945	U 146	0.44	H-alpha	S
KHAR	Dec 09	0855	E		0908	U 240	0.65	H-alpha	S
KHAR	Dec 09	1010	E		1025	U 240	0.65	H-alpha	S
KHAR	Dec 09	1040	E		1050	U 239	0.71	H-alpha	S
KHAR	Dec 25	0754	E		0824	U 124	1.00	H-alpha	S
KHAR	Dec 25	0805			0824	U 122	1.00	H-alpha	S
KHAR	Dec 25	0926			0932	U 124	1.00	H-alpha	S
KHAR	Dec 25	0926			1015	122	1.00	H-alpha	S
KHAR	Dec 25	0938			1002	126	0.97	H-alpha	S
ABST	Dec 26	0656		0711	0720	120	1.00	H-alpha	SP

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

REPORTING STATIONS
- ABST = Abastumani
- KHAR = Kharkov

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

DECEMBER 1987

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	AFS	0050E	0331D	S23	W11	11	30.2		02	9	9	E	PALE	4898	
01	AFS	0125E	1020D	N23	W12	11	30.1		02	9	9	E	LEAR	4900	
01	AFS	0125E	1020D	S22	W12	11	30.1		02	9	9	E	LEAR	4898	
01	ADF	0526E	0632D	N54	W38	11	28.0	1				C	ABST		
01	BSL	0646E	0855D	S30	W90	11	24.3	1				C	ABST		
01	BSL	0717	0717	N88	E90	12	9.7	1-				C	CATA		
01	BSL	0728	0739	N74	E90	12	9.6	1-				C	CATA		
01	AFS	0807E	1044D	N22	W16	11	30.1		02	9	9	E	SVTO	4900	
01	AFS	0809E	1044D	S23	W15	11	30.2		03	9	9	E	SVTO	4898	
01	BSL	0905E	0918D	S68	W90	11	23.3	1-				C	CATA		
01	BSL	0911E	0918D	N82	W90	11	23.1	1-				C	CATA		
01	ADF	0915E	1044D	N42	E37	12	4.4	2	09	9	9	E	SVTO	4899	
01	BSL	0935E	0942D	N77	W90	11	23.2	1-				C	CATA		
01	BSL	0942E	0950	S88	W90	11	23.1	1-				C	CATA		
01	BSL	0942E	0950D	S09	E90	12	8.1	1-				C	CATA		
01	BSL	1003	1016D	N13	E90	12	8.2	1-				C	CATA		
01	BSL	1021E	1031D	N13	E90	12	8.2	1-				C	CATA		
01	BSL	1021E	1031D	N89	E90	12	9.8	1-				C	CATA		
01	AFS	1158E	1822D	N29	E37	12	4.4		01	9	9	E	RAMY	4899	
01	ADF	1158E	1822D	N40	E37	12	4.5	1	06	9	9	E	RAMY	4899	
01	AFS	1158E	1822D	S22	W18	11	30.1		02	9	9	E	RAMY	4898	
01	BSL	1213E	1240	N41	E90	12	8.9	2				C	CATA		
01	BSL	1240E	1240	N83	E90	12	9.9	1-				C	CATA		
01	ADF	2256E	0750D	N30	W55	11	27.7		09	9	9	E	LEAR	4895	
01	ADF	2256E	1011D	N36	E34	12	4.7		06	9	9	E	LEAR	4899	
01	AFS	2256E	1011D	S22	W23	11	30.2		02	9	9	E	LEAR	4898	
02	APR	0142	0210	S35	W90	11	25.0	1				C	VORO		
02	APR	0142E	0300D	N48	W90	11	24.6	1				C	VORO		
02	BSL	0642E	1002D	N40	E90	12	9.6	1				C	ABST		
02	BSL	0642E	1002D	S36	W90	11	25.1	1				C	ABST		
02	AFS	0710E	1011D	N07	E09	12	3.0		02	9	9	E	LEAR		
02	BSL	0727E	0757	N71	W90	11	24.2	1-				C	CATA		
02	BSL	0729	0736D	N15	E90	12	9.1	1-				C	CATA		
02	ADF	0934E	1215D	N42	E19	12	3.9	1	12	9	9	E	SVTO	4899	
02	ADF	0934E	1215D	S21	E57	12	6.8	1	03	9	9	E	SVTO		
02	ADF	1330E	1907D	N28	W30	11	30.2	2	12	7	9	E	RAMY	4900	
02	ADF	1335E	1907D	N42	E17	12	4.0	2	25	9	9	E	RAMY	4899	
02	ASR	1510E	1924D	N20	W90	11	25.8			9	9	E	HOLL	4895	
02	ASR	1625E	1907D	N19	W83	11	26.4			8	6	E	RAMY		
02	SDF	1748E	1445D	N25	W29	11	30.5		09	0	0	E	RAMY		
02	AFS	1915E	0331D	S27	E37	12	5.7		01	8	8	E	PALE		
02	ADF	2023E	2032D	S27	W07	12	2.3	2	05	8	5	E	HOLL		
02	AFS	2230E	1019D	N33	E21	12	4.6		02	9	9	E	LEAR	4899	
03	AFS	0200E	0331D	S23	E45	12	6.5		02	9	9	E	PALE		
03	SDF	0331E	2045D	N36	W14	12	2.0		11	0	0	E	PALE		
03	ADF	0410E	1019D	N33	E18	12	4.6		04	9	9	E	LEAR	4899	
03	ADF	1018E	1448D	N41	E13	12	4.5	1	08	9	9	E	SVTO	4899	
03	ADF	1143E	2051D	S24	E38	12	6.4	1	05	9	9	E	RAMY		
03	AFS	1256E	1448D	N27	E10	12	4.3		02	8	8	E	SVTO	4899	
03	AFS	1411E	2051D	N26	E11	12	4.4		02	9	9	E	RAMY	4899	
03	AFS	1437E	2050D	N27	E10	12	4.4		02	9	9	E	HOLL	4899	
03	SDF	1530E	1530D	N35	W25	12	1.6		18	0	0	E	HOLL		
03	SDF	1748E	1445D	N25	W29	12	1.5		09	0	0	E	RAMY		
03	ASR	2005E	2255D	N32	W67	11	28.6			9	9	E	HOLL	4895	
03	ADF	2020E	2341D	N33	E20	12	5.4	1	03	9	8	E	HOLL	4899	
03	ADF	2023E	2341D	S27	W07	12	3.3	2	05	8	5	E	HOLL		
03	AFS	2240E	0104D	S22	E34	12	6.5		01	8	8	E	PALE	4901	
03	AFS	2340E	1027D	S21	E34	12	6.6		02	9	9	E	LEAR	4901	
04	AFS	0835E	1420D	S21	E30	12	6.6		02	9	9	E	SVTO	4901	
04	ADF	0837E	1420D	N26	E72	12	9.9	1	05	9	9	E	SVTO		
04	APR	0905	1000	N27	W90	11	27.5	1				V	KHAR		
04	SDF	0907E	0415D	S30	W03	12	4.1		09	0	0	E	LEAR		
04	AFS	1130E	1756D	N31	W03	12	4.2		03	6	8	E	RAMY	4899	
04	ADF	1245E	1420D	S25	W59	11	30.0	1	06	9	9	E	SVTO	4898	
04	AFS	1355E	2058D	S23	E25	12	6.5		02	9	9	E	RAMY	4901	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1987

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
04	ADF	1445E	2058D	N43	W12	12	3.6	2	25	8	7	E	RAMY	4899	
04	AFS	1504E	1948D	S20	E23	12	6.4		02	9	9	E	HOLL	4901	
04	AFS	1504E	1948D	S22	E23	12	6.4		01	8	7	E	HOLL	4901	
04	SDF	1516E	1120D	S25	E17	12	5.9		06	0	0	E	RAMY	4901	
04	AFS	1907E	0335D	S23	E21	12	6.4		02	9	9	E	PALE	4901	
05	APR	0045	0215D	N46	W90	11	27.6	2				C	VORO		
05	APR	0100	0215D	N33	W90	11	28.0	2				C	VORO		
05	AFS	0103E	1030D	S21	E17	12	6.3		02	9	9	E	LEAR	4901	
05	SDF	0335E	2330D	S26	E11	12	6.0		08	0	0	E	PALE		
05	SDF	0335E	2330D	S26	E11	12	6.0		08	0	0	E	PALE		
05	AFS	0340E	1030D	N30	W11	12	4.3		01	9	9	E	LEAR	4899	
05	DSD	0755E	0945D	S21	E16	12	6.5	1				V	KHAR		
05	ADF	1250E	1921D	N44	W21	12	3.8	2	23	7	6	E	RAMY	4899	
05	ADF	1250E	1921D	S22	E08	12	6.1	2	07	9	8	E	RAMY	4901	
05	AFS	1250E	1921D	S22	E09	12	6.2		03	9	9	E	RAMY	4901	
05	AFS	1250E	1921D	S22	W74	11	29.9		03	9	9	E	RAMY	4898	
05	AFS	1330E	1720D	N32	W17	12	4.2		03	7	6	E	RAMY	4899	
05	SDF	1400E	1540D	S23	W46	12	2.0		07	0	0	E	RAMY		
05	SDF	1400E	1540D	S36	W42	12	2.2		02	0	0	E	RAMY		
05	DSD	1430E	1705D	S22	E11	12	6.4		01	9	7	E	RAMY	4901	
05	SDF	1516E	1120D	S25	E17	12	6.9		06	0	0	E	RAMY	4901	
05	DSD	1650E	1921D	S22	E08	12	6.3		03	9	9	E	RAMY	4901	
05	DSD	1717E	1921D	S20	W77	11	29.9		02	9	9	E	RAMY	4898	
05	AFS	1740E	0030D	S21	E08	12	6.3		02	9	9	E	PALE	4901	
05	DSD	2130E	0030D	S23	W85	11	29.4		02	9	9	E	PALE	4898	
05	AFS	2233E	1020D	S22	E05	12	6.3		03	9	9	E	LEAR	4901	
05	AFS	2315E	0030D	S26	W05	12	5.6		01	9	9	E	PALE		
06	AFS	0720E	1020D	N30	W26	12	4.3		02	9	9	E	LEAR	4899	
06	DSD	0729E	0812D	S23	W03	12	6.1		03	9	9	E	LEAR	4901	
06	ADF	0915	0945	N35	W25	12	4.4	1				V	KHAR		
06	AFS	1215E	1735D	S21	W02	12	6.3		01	9	9	E	RAMY	4901	
06	ADF	1220E	1735D	N42	W29	12	4.1	2	12	9	9	E	RAMY	4899	
06	AFS	1320E	1610D	N05	E79	12	12.5		01	9	9	E	RAMY		
06	ASR	1638E	1735D	S21	W90	11	29.9			9	9	E	RAMY	4898	
06	DSD	1640E	1735D	S20	W06	12	6.2		02	9	9	E	RAMY	4901	
06	ASR	1930E	2349D	S21	W90	11	30.0			9	9	E	HOLL	4898	
06	DSD	2045E	0309D	S21	W11	12	6.0		03	9	9	E	PALE	4901	
06	AFS	2048E	0309D	N26	W13	12	5.8		02	9	9	E	PALE		
06	ASR	2115E	0309D	S24	W90	11	30.0			7	6	E	PALE	4898	
06	AFS	2117E	2349D	N26	W14	12	5.8		02	9	9	E	HOLL		
06	DSD	2135E	2349D	S21	W12	12	6.0		03	9	9	E	HOLL	4901	
06	AFS	2140E	0309D	S21	W09	12	6.2		02	9	9	E	PALE	4901	
06	AFS	2158E	2349D	S21	W09	12	6.2		03	9	9	E	HOLL	4901	
06	ASR	2204E	0351D	S23	W90	11	30.0			9	9	E	LEAR	4898	
06	AFS	2204E	1023D	S21	W10	12	6.1		03	9	9	E	LEAR	4901	
06	AFS	2243E	0017D	S25	W04	12	6.6		02	9	9	E	LEAR		
07	DSD	0115E	0351D	S21	W15	12	5.9		05	9	9	E	LEAR	4901	
07	AFS	0535E	0956D	N26	W18	12	5.8		02	9	9	E	LEAR		
07	AFS	1310E	1548D	S22	W19	12	6.1		01	9	9	E	RAMY	4901	
07	ADF	1342E	1548D	N41	W38	12	4.5	1	07	9	9	E	RAMY	4899	
07	ASR	1700E	1923D	S21	W90	11	30.8			8	9	E	HOLL	4898	
07	AFS	1845E	0320D	S22	W22	12	6.1		02	6	7	E	PALE	4901	
07	AFS	2043E	2348D	S21	W23	12	6.1		01	8	9	E	HOLL	4901	
07	DSD	2204E	0032D	S20	W13	12	6.9		03	9	9	E	LEAR	4901	
07	AFS	2222E	1028D	N26	W27	12	5.8		01	9	9	E	LEAR	4902	
07	AFS	2222E	1028D	S21	W23	12	6.2		02	9	9	E	LEAR	4901	
07	AFS	2245E	0032D	N26	W15	12	6.8		02	9	9	E	LEAR		
08	ADF	0315E	1028D	S24	W30	12	5.8	2	01	9	9	E	LEAR	4901	
08	SDF	0320E	1915D	S33	E20	12	9.7		13	0	0	E	PALE		
08	MDP	1050E	1055D	.10	40	12	11.4	0				C	MANI		
08	LPS	1050E	1055D	.10	130	12	10.7	1				C	MANI		
08	LPS	1050E	1055D	.12	315	12	9.6	1				C	MANI		
08	AFS	1050E	1055D	N42	E49	12	12.5	0				P	MANI		
08	AFS	1050E	1055D	S37	E26	12	10.5	0				P	MANI		

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1987

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
08	AFS	1050E	1055D	S56	E28	12	10.9	0				P	MANI		
08	SDF	1408E	1408D	S28	E10	12	9.4		15	0	0	E	HOLL		
08	SDF	1408E	1408D	S36	E27	12	10.7		06	0	0	E	HOLL		
08	DSD	1907E	2348D	S38	W57	12	4.2		04	9	9	E	HOLL	4903	
08	AFS	1912E	2348D	S21	W35	12	6.1		03	9	6	E	HOLL	4901	
08	AFS	1929E	2129D	S21	W35	12	6.1		03	9	9	E	PALE	4901	
08	AFS	1929E	2129D	S37	W63	12	3.7		02	9	9	E	PALE	4903	
08	AFS	2000E	2348D	S37	W59	12	4.1		01	8	9	E	HOLL	4903	
08	AFS	2215E	2222D	S20	W37	12	6.1		01	9	9	E	LEAR	4901	
08	ADF	2240E	1019D	S22	W37	12	6.1	2	04	9	9	E	LEAR	4901	
08	AFS	2300E	1019D	S36	W63	12	3.9		01	9	9	E	LEAR	4903	
08	ADF	2310E	0545D	N28	E14	12	10.0	2	04	9	9	E	LEAR		
09	SDF	0022E	0300D	S29	E19	12	10.5		15	0	0	E	LEAR		
09	ASR	0250E	0355D	S30	E89	12	16.1			9	9	E	LEAR		Flare Associated
09	DSD	0855	0908	S20	W37	12	6.5	1				V	KHAR		
09	BSL	1006	1006	N85	W90	12	1.0	1-				C	CATA		
09	DSD	1010	1025	S20	W37	12	6.6	1				V	KHAR		
09	DSD	1040	1050D	S22	W42	12	6.2	1				V	KHAR		
09	BSL	1234	1236D	N84	E90	12	17.9	1-				C	CATA		
09	AFS	1545E	2349D	S21	W30	12	7.3		01	7	8	E	HOLL	4904	
09	AFS	1545E	2349D	S21	W46	12	6.1		02	8	8	E	HOLL	4901	
09	AFS	1735E	0255D	S21	W31	12	7.3		01	9	9	E	PALE	4904	
09	AFS	1735E	0255D	S22	W46	12	6.2		02	9	9	E	PALE	4901	
09	DSD	1840E	2000D	S35	W78	12	3.5		03	9	9	E	HOLL	4903	
09	ADF	2000E	2157D	N28	E00	12	9.8	2	04	9	9	E	HOLL		
09	ADF	2010E	0255D	N27	E00	12	9.8	1	04	9	9	E	PALE		
10	AFS	0155E	0800D	S21	W49	12	6.3		02	9	9	E	LEAR	4901	
10	SDF	0252E	1713	S23	W17	12	8.8		15	0	0	E	PALE		
10	AFS	0308E	0800D	S21	W37	12	7.3		01	8	9	E	LEAR	4904	
10	SDF	0515E	0620D	N28	W06	12	9.7		06	0	0	E	LEAR		
10	SDF	0840E	2202D	S26	W13	12	9.3		24	0	0	E	LEAR		
10	LPS	0940E	1028D	.2	105	12	10.8	1				C	MANI		
10	SPY	0940E	1028D	.2	118	12	11.7	1				C	MANI		
10	AFS	0940E	1028D	N46	E27	12	12.6	0				P	MANI		
10	AFS	0940E	1028D	S34	W16	12	9.1	0				P	MANI		
10	AFS	0940E	1028D	S56	E16	12	11.8	0				P	MANI		
10	SDF	1415E	1415D	S37	W15	12	9.4		08	0	0	E	HOLL		
10	SDF	1449E	1209D	S34	W28	12	8.4		08	0	0	E	RAMY		
10	AFS	1500E	2046D	S20	W60	12	6.0		02	9	9	E	RAMY	4901	
10	AFS	1540E	2349D	S20	W60	12	6.1		02	7	5	E	HOLL	4901	
10	ADF	1602E	1825D	S27	E67	12	15.9		04	9	9	E	HOLL		
10	ASR	1612E	2349D	S36	E88	12	17.7			7	7	E	HOLL	4903	
10	ASR	1838E	2020D	S36	W90	12	3.5			9	9	E	RAMY	4903	
10	APR	2322E	2349D	S27	W90	12	4.0			9	7	E	HOLL	4899	
11	DSD	0217E	0258D	N19	E06	12	11.5		01	6	8	E	PALE		
11	SDF	0258E	1711D	S55	E05	12	11.5		10	0	0	E	PALE		
11	LPS	0748E	0752D	.12	140	12	14.3	1				C	MANI		
11	APR	0748E	0752D	.2	105	12	11.7	1				C	MANI		
11	AFS	0748E	0752D	N42	W53	12	7.0	0				P	MANI		
11	AFS	0748E	0752D	N43	E06	12	11.8	0				P	MANI		
11	AFS	0748E	0752D	S30	E15	12	12.5	0				P	MANI		
11	AFS	0748E	0752D	S60	E14	12	12.5	0				P	MANI		
11	SDF	1209	0752	S37	W27	12	9.3	1				C	CATA		
11	SDF	1209	0752	S46	E06	12	12.0	1				C	CATA		
11	ADF	1250E	1832D	S27	E56	12	15.9	1	05	9	9	E	RAMY		
11	ASR	1250E	1832D	S87	W35	12	8.3			9	9	E	RAMY	4903	
11	SDF	1449E	1209D	S34	W28	12	9.4		08	0	0	E	RAMY		
11	AFS	1730E	0058D	N27	W41	12	8.5		02	9	9	E	PALE		
11	AFS	1750E	2050D	N27	W42	12	8.5		02	6	9	E	HOLL		
11	AFS	1754E	0258D	S23	W60	12	7.1		01	9	9	E	PALE	4901	
11	ASR	1826E	0258D	S36	W90	12	4.5			8	8	E	PALE	4903	
11	ADF	1830	2349D	S29	E51	12	15.8	2	05	9	9	E	HOLL		
11	ASR	1845	2015D	S22	W77	12	5.9			9	7	E	HOLL	4901	
11	ASR	1857E	1947D	S22	W78	12	5.8			9	9	E	PALE	4901	
11	ASR	2335E	0003D	S31	E90	12	19.1			9	9	E	PALE		

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
12	ASR	0039E	0058D	S31	E90	12	19.1			9	9	E	PALE		
12	ASR	0205E	1039D	S20	W86	12	5.5			9	9	E	LEAR	4901	
12	ASR	0558	1019D	S33	E90	12	19.4			9	9	E	LEAR		
12	DSD	1200E	1450D	N27	W52	12	8.4		02	9	9	E	RAMY		
12	ASR	1500E	2345D	S21	W85	12	6.1			9	9	E	HOLL	4901	
12	AFS	1535E	2345D	N27	W53	12	8.5		02	9	8	E	HOLL	4905	
12	ASR	1535E	2345D	S31	E90	12	19.7			9	9	E	HOLL	4906	
12	BSL	1639E	1735D	S28	E90	12	19.7			9	9	E	RAMY	4906	
12	BSL	1642E	1712D	S31	E90	12	19.8			9	9	E	HOLL	4906	
13	AFS	1005E	1005D	S29	E67	12	18.7	0				P	MANI		
13	AFS	1005E	1005D	S31	W32	12	10.9	0				P	MANI		
13	AFS	1005E	1005D	S60	W10	12	12.5	0				P	MANI		
13	ASR	1133E	1848D	S22	W81	12	7.2			9	9	E	RAMY	4904	
13	BSL	1146E	1152D	N84	W90	12	5.1	1-				C	CATA		
13	AFS	1150E	1744D	N27	W50	12	9.6		01	9	9	E	RAMY		
13	ASR	1159E	2026D	S31	E75	12	19.4			9	9	E	RAMY	4906	
13	AFS	1215E	2026D	S26	E39	12	16.5		01	9	9	E	RAMY		
13	ASR	1405E	1744D	S34	E86	12	20.4			9	9	E	RAMY		
13	SDF	1744E	1725D	N28	W12	12	12.8		12	0	0	E	RAMY		
14	BSL	0437E	0458D	S34	E86	12	21.0			9	9	E	LEAR		
14	BSL	0917	0917	S37	E90	12	21.6	1-				C	CATA		
14	BSL	1006	1013	S37	E90	12	21.7	1-				C	CATA		
14	ADF	1330E	2137D	S25	E12	12	15.5	2	09	9	7	E	RAMY		
14	ADF	1330E	2137D	S32	E19	12	16.1	2	05	5	9	E	RAMY		
14	ADF	1337E	2137D	S34	E64	12	19.7	2	16	9	8	E	RAMY	4906	
14	ADF	1836E	2046D	S24	E08	12	15.4	2	12	9	6	E	RAMY		
14	DSD	1934E	2046D	S26	E23	12	16.6		01	7	9	E	RAMY	4907	
14	DSD	2225E	2350D	S26	E22	12	16.6		03	9	9	E	HOLL	4907	
14	DSD	2240E	2325D	S33	E57	12	19.5		13	9	9	E	LEAR	4906	
14	AFS	2242E	1032D	S25	E22	12	16.6		02	9	9	E	LEAR	4907	
15	ADF	0220E	0825D	S25	E04	12	15.4	2	04	9	9	E	LEAR		
15	ADF	0230E	1032D	S31	E52	12	19.2	2	03	9	9	E	LEAR	4906	
15	BSL	1050E	1050	S03	W90	12	8.7	1-				C	CATA		
15	BSL	1230E	1235	S07	W90	12	8.8	1-				C	CATA		
15	AFS	2222E	1008D	S26	E09	12	16.6		02	9	9	E	LEAR	4907	
15	AFS	2225E	1008D	S49	E35	12	18.9		02	9	9	E	LEAR	4906	
16	ADF	0045E	1008D	S33	W59	12	11.3		05	9	9	E	LEAR	4906	Bright Emission 1/3
16	DSD	0115E	0700D	S33	W57	12	11.5		02	9	9	E	LEAR	4906	
16	BSL	0920E	0920	N28	E90	12	23.4	1-				C	CATA		
16	BSL	1115E	1135D	N54	W90	12	8.7	1-				C	CATA		
16	DSD	1140E	1347D	S33	E44	12	20.0		02	9	9	E	RAMY	4906	
16	AFS	1140E	1710D	S26	E01	12	16.6		03	8	7	E	RAMY	4907	
16	ADF	1140E	2139D	S33	E37	12	19.4	2	10	9	9	E	RAMY	4906	
16	ADF	1220E	1446D	S29	E36	12	19.3		04	9	9	E	SVTO	4906	
16	ADF	1405E	2139D	S42	E52	12	20.8	2	06	9	9	E	RAMY		
16	ADF	1405E	2139D	S42	E52	12	20.8	2	06	9	9	E	RAMY		
17	ADF	0938E	1414D	S24	W12	12	16.5	1	05	9	9	E	SVTO	4907	
17	ADF	0939E	1414D	S33	E40	12	20.6	1	03	9	9	E	SVTO	4906	
17	AFS	1105E	1414D	N25	E77	12	23.4		02	9	9	E	SVTO		
17	SDF	1220	0736	N35	W32	12	14.9	1				C	CATA		
17	ADF	1222E	2008D	S35	E25	12	19.5	2	06	9	9	E	RAMY	4906	
17	ADF	1222E	2135D	S42	E40	12	20.8	2	04	9	9	E	RAMY		
17	DSD	1312E	1414D	S26	W13	12	16.5		03	9	9	E	SVTO	4907	
17	DSD	1325E	1959D	S26	W14	12	16.5		05	9	9	E	RAMY	4907	
17	DSD	1516E	1959D	N21	E68	12	22.8		02	9	9	E	RAMY	4909	
17	DSD	1516E	1959D	N23	E69	12	22.9		02	9	9	E	RAMY	4909	
17	DSD	2018E	2135D	S27	W19	12	16.4		02	9	9	E	RAMY	4907	
18	ADF	0910E	0925	S40	E27	12	20.6	1				V	KHAR		
18	BSL	1008E	1012	N21	W90	12	11.5	1-				C	CATA		
18	BSL	1026	1035D	N20	W90	12	11.5	1-				C	CATA		
18	ADF	1120E	1359D	S22	E15	12	19.6	1	05	8	9	E	SVTO	4908	
18	ADF	1125E	1359D	S40	E24	12	20.4	2	07	9	9	E	SVTO		

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
18	BSL	1230E	1230	N86	E90	12	26.9	1-				C	CATA		
18	AFS	1310E	1458D	S19	E14	12	19.6		01	9	9	E	RAMY	4908	
18	ADF	1310E	1932D	S33	E23	12	20.4	1	03	9	9	E	RAMY	4906	
18	ADF	1310E	1932D	S41	E25	12	20.6	1	04	9	9	E	RAMY		
20	LPS	1010E	1020D	.10	55	12	24.5	1				C	MANI		
20	LPS	1010E	1020D	.15	135	12	23.1	1				C	MANI		
20	LPS	1010E	1020D	.15	215	12	21.5	1				C	MANI		
20	LPS	1010E	1020D	.15	315	12	21.5	1				C	MANI		
20	AFS	1010E	1020D	S35	W25	12	18.4	0				P	MANI		
20	BSL	1121E	1130D	N55	E90	12	28.2	1-				C	CATA		
20	ADF	1525E	2127D	S21	W80	12	14.5	1	06	9	9	E	RAMY	4908	
20	ASR	1729E	2127D	N32	W89	12	13.7			9	9	E	RAMY		
20	DSD	1802E	1938D	S21	W80	12	14.6		02	9	9	E	RAMY	4907	
20	DSD	1802E	2127D	S22	W79	12	14.7		02	9	9	E	RAMY	4907	
21	APR	0707E	0852D	S30	E90	12	28.4	1				V	ABST		
21	APR	0707E	0852D	S40	E90	12	28.6	1				V	ABST		
21	MDP	0745E	0750D	.12	215	12	22.4	0				C	MANI		
21	LPS	0745E	0750D	.15	315	12	22.4	1				C	MANI		
21	LPS	0745E	0750D	.3	125	12	23.2	1				C	MANI		
21	AFS	0745E	0750D	S41	W40	12	18.0	0				P	MANI		
21	BSL	0921E	0945	N47	E90	12	28.9	1-				C	CATA		
21	BSL	1051	1152	N42	E90	12	28.8	1-				C	CATA		
21	ADF	1100E	1139D	N21	E19	12	22.9	1	05	9	9	E	SVTO	4909	
21	ADF	1111E	1142D	S30	W16	12	20.2	1	03	9	9	E	SVTO	4906	
21	BSD	1120E	1236D	S24	W83	12	15.0			9	9	E	SVTO	4910	
21	ADF	1208E	2053D	S20	W21	12	19.9	1	05	9	9	E	RAMY	4908	
21	ASR	1214E	2053D	S20	W90	12	14.6			9	9	E	RAMY	4910	
21	ASR	1235E	1313D	S24	W90	12	14.6			8	8	E	SVTO	4810	
21	ADF	1836E	2353D	S26	E21	12	23.4	2	09	8	9	E	HOLL	4909	
21	ASR	2245E	1034D	S22	W84	12	15.5			9	9	E	LEAR	4910	
22	AFS	0555E	1034D	S40	W20	12	20.6		02	9	9	E	LEAR		
22	ADF	0805E	1503D	N22	E12	12	23.2	1	08	9	9	E	SVTO	4909	
22	ADF	0806E	1503D	S27	W33	12	19.8	1	05	9	9	E	SVTO	4908	
22	AFS	0807E	1503D	S41	W20	12	20.7		02	9	9	E	SVTO		
22	AFS	1002E	1503D	N21	E13	12	23.4		02	9	9	E	SVTO	4909	
22	BSL	1045E	1050	N17	W90	12	15.6	1-				C	CATA		
22	ADF	1507E	2353D	N20	E11	12	23.5	1	11	9	9	E	HOLL	4909	
22	ASR	1508E	1740D	S22	W90	12	15.7			9	9	E	HOLL	4910	
22	ADF	1527E	2353D	S45	E56	12	27.3	1	15	9	9	E	HOLL		
22	AFS	1549E	1632D	S34	E32	12	25.2		02	8	9	E	RAMY		
22	ADF	1555E	1632D	S22	W33	12	20.1	2	07	9	9	E	RAMY	4908	
23	BSL	0817E	0825	N84	E90	12	31.7	1-				C	CATA		
23	ADF	0830E	1035	S22	W43	12	20.0	1				V	KHAR		
23	APR	0830E	1055D	S43	E90	12	30.8	1				V	KHAR		
23	ADF	0857E	1423D	S25	W49	12	19.6	1	08	9	9	E	SVTO	4908	
23	AFS	1114E	1423D	S41	W34	12	20.7		02	9	9	E	SVTO	4911	
23	AFS	1128E	1423D	N08	W27	12	21.4		01	9	9	E	SVTO		
23	SDF	1235	0731	N23	E14	12	24.6	1				C	CATA		
23	ADF	1650E	1942D	S21	W47	12	20.1	2	08	9	9	E	RAMY	4908	
23	DSD	2105E	2352D	S34	W53	12	19.6		02	9	9	E	HOLL	4906	
23	ADF	2145E	2352D	S22	W52	12	19.9	1	06	9	9	E	HOLL	4908	
24	APR	0750E	1055D	S41	E90	12	31.7	1				V	KHAR		
24	APR	0845E	0913D	.2	225	12	26.2	1				C	MANI		
24	APR	0845E	0913D	.3	135	12	27.0	1				C	MANI		
24	AFS	0845E	0913D	S39	W54	12	20.0	0				P	MANI		
24	ADF	1120E	1421D	S35	W64	12	19.3	1	05	9	9	E	SVTO	4906	
24	ASR	1130E	1421D	S31	E90	12	31.6			9	9	E	SVTO		
24	ASR	1226E	2119D	S32	E85	12	31.2			9	9	E	RAMY		
24	ADF	1226E	2119D	S33	W54	12	20.2	1	04	9	9	E	RAMY	4911	
24	SDF	1429E	1429D	S40	E66	12	30.0		14	0	0	E	HOLL		
24	ASR	1520E	2317D	S34	E85	12	31.4			8	9	E	HOLL		
24	ASR	1826E	0326D	S34	E90	12	31.9			9	9	E	PALE		
24	ASR	2214E	1021D	S34	E82	12	31.5			9	9	E	LEAR		

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1987

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
24	ADF	2245E	0823D	S19	W47	12	21.4	1	16	9	9	E	LEAR	4908	
25	AFS	0425E	1021D	S20	W01	12	25.1		02	8	9	E	LEAR		
25	ASR	0739E	0955D	S32	E90	01	1.4			9	9	E	SVTO		
25	BSL	0750E	0840D	S33	E90	01	1.5	1-				C	CATA		
25	APR	0754E	0824D	N28	E90	01	1.4	1				V	KHAR		
25	BSL	0754E	0824D	S34	E90	01	1.5	1				V	KHAR		
25	BSL	0805	0824D	S32	E90	01	1.5	1				V	KHAR		
25	BSL	0926	0932	S34	E90	01	1.6	1				V	KHAR		
25	BSL	0926	1015	S32	E90	01	1.5	1				V	KHAR		
25	DSD	0938	1002	S35	E80	12	31.8	1				V	KHAR		
25	ADF	1010E	1025	S22	W77	12	19.5	1				V	KHAR		
25	MDP	1045E	1050D	.1	50	12	29.2	0				C	MANI		
25	APR	1045E	1050D	.25	225	12	27.4	1				C	MANI		
25	ASR	1214E	1941D	S33	E90	01	1.6			9	9	E	RAMY	4912	
25	AFS	1920E	2303D	S34	E77	12	31.9		01	9	9	E	PALE	4912	
25	AFS	1944E	2303D	N14	E17	12	27.1		01	9	9	E	PALE		
25	ASR	2023E	2303D	S37	E90	01	2.1			9	9	E	PALE	4912	
25	AFS	2043E	2139D	N14	E15	12	27.0		02	9	9	E	RAMY		
25	ASR	2235E	0133D	S34	E83	01	1.5			9	9	E	LEAR	4912	
26	ASR	0250E	0254D	S33	E75	01	1.1			8	7	E	LEAR	4912	
26	BSL	0654	0722D	S32	E76	01	1.3			9	9	E	LEAR	4912	
26	BSL	0656E	0720D	S30	E90	01	2.4	1				V	ABST		
26	BSD	0743	0800D	S30	E77	01	1.4			6	6	E	SVTO	4912	
26	BSL	0831	0845D	S38	E90	01	2.6	1				C	CATA		
26	BSD	0926E	0953D	S30	E74	01	1.2			9	9	E	SVTO	4912	
26	BSD	0928	0952D	S31	E76	01	1.4		10	9	9	E	LEAR	4912	
26	SDF	0933	0800	S47	E07	12	27.0	1				C	CATA		
26	BSL	0935	0955D	S32	E90	01	2.5	2				C	CATA		
26	DSD	1943E	2213D	S31	E61	12	31.6		09	9	9	E	HOLL	4912	Flare Associated
26	DSD	1946E	2130D	S31	E59	12	31.5		05	9	9	E	RAMY	4912	
26	DSD	2231E	2349D	S33	E65	01	1.1		12	9	9	E	HOLL	4912	
26	DSD	2231E	2349D	S38	E79	01	2.3		04	9	9	E	HOLL	4912	
26	ASR	2235E	0133D	S34	E83	01	2.5			9	9	E	LEAR	4912	
26	DSD	2242E	0257D	S35	E73	01	1.8		02	9	9	E	PALE	4912	
27	APR	0742E	0935D	S26	E90	01	3.3	1				V	ABST		
27	BSL	0745E	0921D	S24	W90	12	20.4	1				V	ABST		
27	MDP	0804E	0810D	.10	248	12	30.9	0				C	MANI		
27	LPS	0804E	0810D	.15	45	12	30.7	1				C	MANI		
27	AFS	0804E	0810D	S31	E53	12	31.5	0				P	MANI		
27	ADF	0840E	1035D	S35	E66	01	1.6	1	10	9	9	E	LEAR	4912	
27	ASR	1338E	1429D	S42	W90	12	20.2			9	9	E	RAMY	4911	
27	AFS	1435E	1720D	S22	W33	12	25.1		02	9	9	E	RAMY	4913	
27	DSD	1613E	2143D	S35	E48	12	31.5		03	9	9	E	RAMY	4912	
27	ASR	1753E	2342D	S34	W90	12	20.6			9	9	E	HOLL	4911	
27	ASR	1759E	0245D	S33	W90	12	20.6			9	9	E	PALE	4911	
27	AFS	1835E	0320D	S21	W36	12	25.0		01	9	9	E	PALE	4913	
27	DSD	2229E	0123D	S33	E60	01	1.7		02	9	9	E	PALE	4912	
28	ADF	0123E	0312D	S33	E58	01	1.7	1	02	9	9	E	PALE	4912	
28	AFS	0420E	1020D	S35	E55	01	1.6		04	6	6	E	LEAR	4912	
28	ADF	1242E	1442D	S33	E44	01	1.0	1	13	9	9	E	SVTO	4912	
28	ADF	1300E	2142D	S35	E57	01	2.1	2	09	9	9	E	RAMY	4912	
28	AFS	1524E	1650D	S34	E48	01	1.5		03	9	4	E	RAMY	4912	
28	ADF	1524E	2142D	S35	E50	01	1.6	2	07	9	7	E	RAMY	4912	
28	DSD	1545	1745D	S32	E52	01	1.8		04	9	9	E	HOLL	4912	Flare Associated
28	DSD	1800E	2030D	S33	E39	12	31.8		03	9	9	E	PALE	4912	
28	ADF	2034E	0241D	S35	E46	01	1.5	1	03	9	9	E	PALE	4912	
29	SPY	0757E	0802D	.15	50	01	2.1	1				C	MANI		
29	AFS	0757E	0802D	S27	E68	01	3.6	0				P	MANI		
29	BSL	0815	0821	N70	W90	12	21.2	1-				C	CATA		
29	ADF	0843E	0848D	S33	E36	01	1.2	1	04	9	9	E	SVTO	4912	
29	ADF	1220E	1902D	S36	E37	01	1.5	1	06	9	9	E	RAMY	4912	
29	AFS	1448E	2139D	S35	W29	12	27.3		03	9	9	E	HOLL	4915	
29	ADF	1545E	2139D	S34	E36	01	1.5		04	6	8	E	HOLL	4912	

DECEMBER 1987

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
29	DSD	1641E	1705D	S35	E29	01	1.0		03	9	9	E	RAMY	4912	Flare Associated
29	ADF	1710	2139D	S34	E30	01	1.1		04	9	9	E	HOLL	4912	
29	ADF	1722E	2100D	S33	E32	01	1.3	1	03	9	9	E	PALE	4912	
29	ADF	1722E	2100D	S33	E36	01	1.6	1	05	9	9	E	PALE	4912	
29	AFS	1833E	0331D	S37	W31	12	27.3		02	9	9	E	PALE	4915	
29	ADF	2100E	0331D	S34	E42	01	2.2	1	08	9	9	E	PALE	4912	
29	ADF	2100E	0331D	S36	E35	01	1.7	1	10	9	9	E	PALE	4912	
29	ADF	2235E	1038D	S34	E29	01	1.2	1	07	9	9	E	LEAR	4912	
29	AFS	2235E	1038D	S36	W34	12	27.2		02	9	9	E	LEAR	4915	
30	AFS	0420E	1038D	S32	E19	12	31.7		03	9	9	E	LEAR	4912	
30	LPS	0839E	0850D	.10	225	01	1.2	1				C	MANI		
30	AFS	0839E	0850D	N49	E50	01	3.6	0				P	MANI		
30	AFS	0839E	0850D	S28	E53	01	3.5	0				P	MANI		
30	AFS	0839E	0850D	S47	E62	01	4.5	0				P	MANI		
30	AFS	0840E	1450D	S35	E29	01	1.7		02	9	9	E	SVTO	4912	
30	ADF	0845E	1450D	S34	E36	01	2.2	1	06	9	9	E	SVTO	4912	
30	BSL	0927E	0940D	S32	E90	01	6.5	1-				C	CATA		
30	ADF	1035E	1450D	S32	E18	12	31.9	1	04	9	9	E	SVTO	4912	
30	BSL	1050E	1055D	S31	E90	01	6.5	1-				C	CATA		
30	DSD	1055E	1120D	S33	E10	12	31.2	1				C	CATA		
30	DSD	1105E	1147D	S32	E13	12	31.5		04	9	9	E	SVTO	4912	
30	ADF	1229E	1450D	S35	E18	12	31.9	1	04	9	9	E	SVTO	4912	
30	ADF	1500E	2142D	S33	E11	12	31.5	2	08	9	9	E	RAMY	4912	
30	ADF	1500E	2142D	S34	E25	01	1.6	2	07	9	9	E	RAMY	4912	
30	ADF	1500E	2142D	S36	E33	01	2.3	2	12	9	9	E	RAMY	4912	
30	DSD	1700E	2359D	S33	E23	01	1.5		03	9	9	E	HOLL	4912	
30	DSD	1715E	2029D	S31	E09	12	31.4		05	9	9	E	HOLL	4912	
30	SDF	2142E	1427D	S35	E22	01	1.7		08	0	0	E	RAMY	4912	
30	AFS	2210E	1016D	S32	E12	12	31.9		03	9	9	E	LEAR	4912	
30	ADF	2210E	1016D	S35	E15	01	1.1	2	08	9	9	E	LEAR	4912	
31	AFS	0805E	0820D	N52	E47	01	4.3	0				P	MANI		
31	AFS	0805E	0820D	S28	E40	01	3.5	0				P	MANI		
31	AFS	0805E	0820D	S33	E18	01	1.8	0				P	MANI		
31	AFS	0805E	0820D	S49	E51	01	4.6	0				P	MANI		
31	ADF	1242E	1545D	S36	E12	01	1.5	1	09	6	9	E	RAMY	4912	
31	ADF	1505E	1545D	S30	W01	12	31.5	1	05	4	8	E	RAMY	4912	
31	DSD	1552E	2214D	S30	E02	12	31.8		03	9	9	E	HOLL	4912	
31	ADF	1603E	2328D	S36	E10	01	1.5	2	14	9	9	E	HOLL	4912	
31	DSD	2103	2328D	S36	E10	01	1.7		06	9	9	E	HOLL	4912	Flare Associated
31	DSD	2153E	2208D	S36	E06	01	1.4		06	9	9	E	PALE	4912	Flare Associated

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

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.

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."